

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,
MELBOURNE.

OFFICIAL
YEAR BOOK

OF THE
COMMONWEALTH OF AUSTRALIA,

CONTAINING AUTHORITATIVE STATISTICS FOR THE PERIOD

1901-1918

AND CORRECTED STATISTICS FOR THE PERIOD 1788 TO 1900.

No. 12.—1919.

Prepared under Instructions from
The Minister of State for Home and Territories,

BY

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COMMONWEALTH STATISTICIAN.



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PREFACE.

By the Constitution of the Commonwealth of Australia, the Commonwealth is empowered "to make laws for the peace, order, and good government of the Commonwealth, with respect to," *inter alia*, "Census and Statistics." In the exercise of the power so conferred, a "Census and Statistics Act" was passed in 1905, and in the year following the "Commonwealth Bureau of Census and Statistics" was created. The first Official Year Book was published early in 1908. The publication here presented is the twelfth Official Year Book issued under the authority of the Commonwealth Government.

The inclusion of the total available information in the more important branches of statistics enables this publication to be used wherever it is desired to make a comparative survey of the evolution of this portion of the British Empire. Not only are the results given for the Commonwealth as a whole, but also for each State therein.

The general arrangement of the work, which has received wide approval, corresponds with that of previous issues, and is shewn in the synopsis on pp. xi. to xxvii. immediately following.

In addition, however, to what may be called purely statistical matter, each issue contains special articles dealing at length with some particular subject or subjects of more or less permanent interest. These cannot of course be repeated year after year, but in some instances a brief condensation is given in subsequent issues. Though many articles in Year Books Nos. 1 to 11 have been reduced to synopses or deleted, sufficient indication is given to enable the subject to be traced in previous issues.

The present issue contains two specially-contributed articles—one dealing with "The Plains and Penepains of Australia," and the other with "The Building Stones of Queensland." The former serves to complete the description of the principal physical features of Australia contained in preceding issues of the Official Year Book, while the latter completes the description of the Building Stones of the Commonwealth which appeared in Official Year Book No. 9.

Amongst new matter incorporated in the various Sections, mention may be made of the description of the Methods of Measuring Rates of Mortality which appears at the end of the Section dealing with Vital Statistics. In the Defence Section will be found a brief account of the work of the Australian Army and Navy during the war, together with a Conspectus of State Acts relating to the Settlement of Returned Soldiers on the land.

The subject matter throughout is dealt with, as far as possible, from the following points of view, viz. :—

(i) The development of the individual States. (ii) The progress of Australia as a whole from the earliest times. (iii) The statistical comparison of Australia with other leading countries of the world.

The full text of the Commonwealth Constitution Act and Amendments appears on pages 14 to 32.

A feature of this publication is the use made of maps and diagrams. As a rule, facts can be properly appreciated only by the use of graphs, and the progress of events, the characteristics of growth and decline, can in general be grasped much more readily graphically than numerically. The diagram or "graph" is a direct picture in which the relative magnitudes are preserved and by which instantaneous comparisons of a wide range of facts are made possible at a glance. The statistical data, however, are also given *in extenso* numerically. It may be noted here that the large map of Australia which appeared at the end of previous editions has been replaced in the present issue by an orographical map based thereon, the orographical features in which have been inserted by the Commonwealth Meteorologist.

The development of Australia has been in many instances very remarkable, and this could be shewn only by tables and graphs dating back to its beginning in 1788. In most cases accurate data are not available for years much before 1860. In such cases, therefore, it would appear sufficient at present to give continuous results from that year onwards.

The great mass of material embodied in each Year Book is always carefully examined, but it would be idle to hope that all error has been avoided. The Commonwealth Statistician desires to express appreciation of the opportunity afforded him of perfecting the matter of the Year Book, by those who have been kind enough to point out defects or make suggestions.

The corresponding years indicated in various sections of this book do not always necessarily refer to the same period, the year ending in some cases on 31st December, 30th June, 31st March, etc. The precise period for which returns are given is indicated where necessary.

Recent information or returns which have come to hand since the various Sections were sent to press may be found in the Appendix, p. 1202.

In conclusion, the Commonwealth Statistician desires to express his cordial thanks to the State Statisticians, to the responsible officers of the various Commonwealth and State Departments, and to others, who have kindly, and often at considerable trouble, supplied all desired information.

G. H. KNIBBS,

Commonwealth Statistician.

INDEX TO SPECIAL ARTICLES, ETC., APPEARING IN PREVIOUS ISSUES.

These articles have appeared in former issues of the Commonwealth Year Book, but, owing to exigencies of space, they are not included in this publication.

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STATISTICAL SUMMARY.

STATISTICAL SUMMARY FOR THE COMMONWEALTH, 1871 TO 1917.

(Figures for 1918, where available, will be found in the Appendix, and, in some instances, have been incorporated in the various sections hereinafter.)

Heading.	Years.						
	1871.	1881.	1891.	1901.	1911.	1916.	1917.
Population ..	Males 928,918	1,247,059	1,736,617	2,004,836	2,377,920	2,401,064	2,410,001
	Females 771,970	1,059,677	1,504,368	1,820,077	2,190,787	2,474,261	2,516,310
	Total 1,700,888	2,306,736	3,240,985	3,824,913	4,568,707	4,875,325	4,935,311
Births ..	No. 63,625	80,004	110,187	102,945	122,193	131,426	129,965
	Rate 38.00	35.26	34.47	27.16	27.21	26.78	26.51
Deaths ..	No. 22,175	33,327	47,430	46,330	47,869	54,197	48,029
	Rate 13.24	14.69	14.84	12.22	10.66	11.04	9.80
Marriages ..	No. 11,623	17,244	23,662	27,753	39,482	40,289	33,666
	Rate 6.94	7.60	7.47	7.32	8.79	8.21	6.87
Agriculture—							
Wheat ..	Area, acs. 1,279,778	3,002,064	3,335,528	5,115,965	7,427,834	11,532,828	9,774,658
	Yld., bshl. 11,917,741	21,443,862	25,675,265	38,561,619	71,636,347	152,420,189	114,733,584
	Av. 9.31	7.14	7.70	7.54	9.64	13.22	11.74
Oats ..	Area, acs. 225,492	194,816	246,129	461,430	616,857	844,140	615,800
	Yld., bshl. 4,251,630	4,795,897	5,726,256	9,789,854	9,561,771	14,018,009	10,387,431
	Av. 18.85	24.62	23.27	21.21	15.50	16.61	16.87
Barley ..	Area, acs. 48,164	75,864	68,068	74,511	116,466	230,253	204,870
	Yld., bshl. 726,158	1,353,380	1,178,560	1,519,819	2,056,836	4,080,492	3,996,858
	Av. 15.08	17.84	17.31	20.40	17.68	17.72	19.51
Maize ..	Area, acs. 142,078	165,777	284,428	294,489	340,065	360,072	332,057
	Yld., bshl. 4,576,635	5,726,266	9,261,922	7,034,786	8,939,855	8,526,136	8,843,260
	Av. 32.21	34.54	32.56	23.86	26.29	23.68	26.93
Hay ..	Area, acs. 303,274	788,385	942,166	1,688,402	2,518,288	2,671,862	2,212,914
	Yld., tons 375,871	767,194	1,067,255	2,024,608	2,867,973	3,507,589	2,723,921
	Av. 1.24	1.00	1.13	1.20	1.14	1.34	1.23
Potatoes ¹ ..	Area, acs. 67,911	76,265	112,884	109,685	130,463	149,895	136,233
	Yld., tons 212,896	243,216	380,477	322,524	301,489	357,002	347,363
	Av. 3.13	3.19	3.37	2.94	2.31	2.38	2.55
Sugar Cane ⁴ ..	Area, acs. 11,576	19,708	45,444	86,950	101,010	178,190	186,484
	Yld., tons 176,632	349,627	737,573	1,367,802	1,682,250	1,723,072	2,879,092
	Av. 15.25	17.74	16.23	15.73	16.65	21.24	25.19
Vineyards ..	Area, acs. 16,253	14,570	48,882	63,677	60,602	65,394	67,862
	Wine, gal. 2,104,000	1,488,000	3,535,000	5,816,087	4,975,147	5,126,268	6,865,106
Total value all agricultural production ..	£ 8,941,000	15,519,000	16,480,000	23,835,000	38,774,000	60,207,000	57,967,307
Pastoral, dairying, etc.—							
Live { Sheep No. 40,072,955	65,092,719	106,421,068	72,040,211	93,003,521	76,668,604	84,965,012	
{ Cattle .. 4,277,228	8,010,991	11,112,112	8,491,428	11,828,954	10,467,737	11,956,024	
{ Horses .. 701,530	1,088,029	1,584,737	1,620,420	2,279,027	2,437,157	2,498,940	
{ Pigs .. 586,017	705,188	845,888	931,309	1,110,721	1,006,387	1,168,899	
Wool prod., lb. greasy 179,000,000	332,759,000	631,587,000	543,131,661	726,408,625 ⁵	547,702,295 ⁵	573,068,155 ⁵	
Butter production lbs. ..	..	..	47,433,564	101,671,066	211,573,745	182,470,778	200,497,014
Cheese ..	..	..	19,146,929	11,575,692	15,886,712	25,408,872	27,430,805
Bacon and ham ..	..	..	..	34,020,629	53,264,652	51,374,776	64,911,047
Total estimated value of pastoral and dairying production ..	£ 20,736,000	29,538,000	39,256,000	36,890,000	69,832,000	116,889,000	124,720,784
Mineral production—							
Gold ..	£ 7,916,627	5,194,390	5,281,309	14,017,508	10,551,624	7,075,980	6,185,410
Silver and lead ..	£ 36,528	45,622	3,736,352	2,367,687	3,022,177	4,407,807	5,510,303
Copper ..	£ 830,242	714,003	367,373	2,215,431	2,564,278	4,635,525	4,863,890
Tin ..	£ 24,020	1,145,889	560,502	448,234	1,209,973	915,506	1,054,330
Zinc ..	£ 369	200	2,979	4,067	1,415,169	962,479	441,486
Coal ..	£ 330,759	637,865	1,914,026	2,602,770	3,929,673	4,118,201	5,596,425
Total value all mineral production ..	£ 9,190,330	7,820,290	12,108,759	21,922,665	23,494,324	23,606,373	25,590,839
Forestry production—							
Quantity of local timber sawn or hewn 1,000 sup. ft. ..	..	..	..	452,131	593,345	454,363	440,952
Manufactories—							
No. of factories ..	..	..	..	..	14,455	15,010	15,179
Hands employed ..	..	..	..	..	311,710	316,752	321,670
Wages paid ..	£ ..	£ ..	£ ..	£ ..	27,528,703	33,828,840	36,618,218
Total value of output ..	£ ..	£ ..	£ ..	£ ..	133,022,090	172,574,845	206,386,646
Value added in process of manufacture ..	£ ..	£ ..	£ ..	£ ..	54,017,714	67,394,400	74,103,550

¹ Partly estimated 1871 and 1881. ² Owing to variation in classification and lack of information effective comparison is impossible. ³ Information not available. ⁴ Area of productive cane. ⁵ Season ended 30th June, year following.

STATISTICAL SUMMARY FOR THE COMMONWEALTH—continued.

Heading.	Years.						
	1871.	1881.	1891.	1901.	1911.	1916.	1917.
Shipping—							
Oversea vessels { No. ent. & cleared { ton.	2,748 1,312,642	3,284 2,549,364	3,778 4,726,307	4,028 6,541,991	4,174 9,984,801	2,986 7,694,442	2,197 5,031,750
Commerce—							
Imports oversea £	17,017,000	29,067,000	37,711,000	42,434,000	66,967,488	76,228,679	60,822,164 ^a
" per head £	10/3/3	12/16/2	11/16/0	11/3/11	14/18/3	15/12/9	12/6/6 ^a
Exports oversea £	21,725,000	27,528,000	36,043,000	49,696,000	79,482,258	97,955,482	75,035,222 ^a
" per head £	12/19/6	12/2/8	11/5/6	13/2/2	17/14/1	20/1/10	15/4/1 ^a
Total oversea trade £	38,742,000	56,595,000	73,754,000	92,130,000	146,449,746	174,184,161	135,857,386 ^a
" per head £	23/2/9	24/18/10	23/1/6	24/6/1	32/12/4	35/14/7	27/10/7 ^a
Customs and excise duties .. £	..	4,809,326	7,440,869	8,656,530	13,515,005	15,566,774	13,176,834
Principal " per head, £	..	2/2/5	2/6/7	2/5/8	3/0/2	3/3/10	2/13/5
Oversea Ex-ports—							
Wool { lbs. (greasy) £	176,635,820	328,369,169	619,259,753	518,018,134	720,364,903	446,587,327	377,702,399
" bushels £	9,459,629	13,173,026	19,940,029	15,237,454	20,071,193	28,505,623	24,518,387
Wheat { £	799,924	5,364,653	9,794,791	20,260,058	55,147,840	55,278,872	22,981,771
" £	193,732	1,189,762	1,938,864	2,774,643	9,641,608	13,374,511	5,990,298
Flour { tons £	12,988	49,549	33,363	96,814	175,891	290,633	373,958
" £	170,415	519,635	328,423	589,604	1,391,529	3,463,363	4,419,185
Butter { lbs. £	1,812,688	1,298,758	4,239,494	34,607,397	101,722,136	74,878,634	72,277,526
" £	45,813	39,383	206,868	1,451,168	4,637,362	5,301,273	4,904,421
Skins and hides £	100,123	316,878	873,695	1,250,938	3,227,236	2,273,572	2,851,451
Tallow .. £	914,278	644,149	571,069	677,745	1,935,836	1,229,218	897,822
Meats .. £	566,780	362,965	460,894	2,611,244	4,303,159	8,856,543	8,313,948
Timber (undressed) £	42,586	118,117	38,448	731,301	1,023,960	274,598	222,866
Gold .. £	7,184,833	6,445,365	5,703,532	14,315,741	12,045,766	10,580,796	4,202,957
Silver and lead £	37,891	57,954	1,932,278	2,250,253	3,212,584	5,000,268	3,115,253
Copper .. £	598,538	676,515	417,687	1,619,145	2,345,961	4,317,366	260,351
Coal .. £	134,355	381,081	645,972	986,957	900,622	415,560	
Govt. Railways—							
Lgth. of line open. mls.	970	3,832	9,541	12,577	16,079	21,642	22,181
Capital cost £	19,269,786	42,741,350	99,764,090	123,587,000	152,194,603	214,279,982	220,301,722
Gross revenue £	1,102,650	3,910,122	8,654,085	11,038,000	17,847,843	23,042,653	24,323,218
Working expenses £	608,332	2,141,735	5,630,182	7,149,000	11,054,383	16,960,830	17,659,941
Per cent. of work'g expenses on earnings %	55.17	54.77	65.06	64.76	61.94	73.61	72.61
Postal—							
Letters and postcards dealt with No.	24,382,000	67,640,000	157,297,000	220,853,000	453,885,410	584,148,939	576,436,447
" per head ..	14.54	29.61	49.07	58.26	101.08	119.82	116.98
Newspapers dealt with No.	3,336,000	38,063,000	85,280,000	102,727,000	139,603,510	146,857,674	132,932,540
" per head ..	7.95	16.66	26.61	27.10	31.09	30.12	26.95
Cheque-paying Banks—							
Note circulation £	2,456,487	3,978,711	4,417,269	3,406,175	876,428 ^a	251,763 ^a	238,350 ^a
Coin & bullion held £	6,168,869	9,108,243	16,712,923	19,737,572	30,024,225	25,919,332	22,886,899
Advances .. £	26,039,573	57,732,824	129,741,583	89,167,499	116,769,133	134,239,247	147,954,641
Deposits .. £	21,856,959	53,849,455	98,345,338	90,965,530	147,103,081	196,665,369	204,594,575
Savings Banks—							
Number of depositors	100,713	250,070	614,741	964,553	1,600,112	2,418,297	2,621,872
Total deposits £	3,193,285	7,854,480	15,536,592	30,882,645	59,393,682	96,284,078	110,720,629
Aver. per depositor £	31/14/2	31/8/2	25/5/6	32/0/4	37/2/4	39/16/5	42/4/7
Aver. per head of population £	1/18/9	3/10/5	4/18/7	8/3/0	13/8/5	19/12/10	22/8/8
State Schools—							
Number of schools ..	2,502	4,494	6,231	7,012	8,060	8,875	9,030
Teachers .. No.	4,641	9,028	12,564	14,500	16,971	23,389	24,928
Enrolment ..	236,710	432,320	561,153	638,478	638,850	751,126	792,596
Aver. attendance ..	137,767	255,143	350,773	450,246	463,799	569,306	601,222

¹ Australian produce, except gold, which includes re-exports.² Decrease due to prohibition of re-issue.³ Excluding gold.

CHRONOLOGICAL TABLE.

CHRONOLOGICAL TABLE OF CHIEF EVENTS SINCE THE ESTABLISHMENT OF SETTLEMENT IN AUSTRALIA.

NOTE.—The Government was centralised in Sydney, New South Wales, up to 1825, when Tasmania (Van Diemen's Land) was made a separate colony. In the Table, the names now borne by the States serve to indicate the localities.

Year.

- 1788 N.S.W.—Arrival of "First Fleet" at Botany Bay. Land in vicinity being found unsuitable for settlement, the expedition moved to Sydney Cove (now Port Jackson). Formal possession of Port Jackson taken by Captain Phillip on 26th January. Formal proclamation of colony on 7th February. Population, 1,024. Branch settlement established at Norfolk Island. French navigator Lapérouse visited Botany Bay. First cultivation of wheat and barley. First grape vines planted.
- 1789 N.S.W.—First wheat harvest at Parramatta, near Sydney. Discovery of Hawkesbury River. Outbreak of small-pox amongst aborigines.
- 1790 N.S.W.—"Second Fleet" reached Port Jackson. Landing of the New South Wales Corps. Severe suffering through lack of provisions. First circumnavigation of Australia by Lieut. Ball.
- 1791 N.S.W.—First Exploration Map of Australia published. Arrival of "Third Fleet." Territorial seal brought by King.
- 1792 N.S.W.—Visit of *Philadelphia*, first foreign trading vessel. Population, 4,203.
- 1793 N.S.W.—First free immigrants arrived in the *Bellona*. First Australian church opened at Sydney. Tas.—D'Entrecasteaux discovered the Derwent River.
- 1794 N.S.W.—Establishment of settlement at Hawkesbury River
- 1795 N.S.W.—Erection of the first printing press at Sydney. Descendants of strayed cattle discovered at Cowpastures, Nepean River.
- 1796 N.S.W.—First Australian theatre opened at Sydney. Coal discovered by fishermen at Newcastle.
- 1797 N.S.W.—Introduction of merino sheep from Cape of Good Hope.
- 1798 Tas.—Tasmania proved an island by voyage of Bass and Flinders.
- 1800 N.S.W.—First export of coal. First Custom House in Australia established at Sydney. Flinders' charts published. First issue of copper coin. Population, 5,995.
- 1801 N.S.W.—First colonial manufacture of blankets and linen.
- 1802 Vic.—Discovery of Port Phillip by Lieut. Murray. S.A.—Discovery of Spencer's and St. Vincent Gulfs by Flinders. Q'land.—Discovery of Port Curtis and Port Bowen by Flinders.
- 1803 N.S.W.—First Australian wool taken to England by Capt. Macarthur. Issue of "The Sydney Gazette," first Australian newspaper. Vic.—Attempted colonisation of Port Phillip by Collins. Discovery of Yarra by Grimes. Tas.—First settlement formed at Risdon by Lieut. Bowen.
- 1804 N.S.W.—Insurrection of convicts at Castle Hill. Vic.—Abandonment of settlement at Port Phillip. Tas.—Foundation of settlement at Hobart by Collins, and at Yorktown by Colonel Paterson.
- 1805 N.S.W.—First extensive sheep farm established at Camden by Capt. Macarthur. Portion of settlers from Norfolk Island transferred to Tasmania.
- 1806 N.S.W.—Shortage of provisions. Floods. Tas.—Settlement at Launceston.
- 1807 N.S.W.—Final shipment of convicts from Norfolk Island. First shipment of merchantable wool (245 lbs.) to England.
- 1808 N.S.W.—Deposition of Governor Bligh.
- 1810 N.S.W.—First post-office established at Sydney. First race meeting in Australia at Hyde Park, Sydney. Population, 11,590. Tas.—First Tasmanian newspaper printed.
- 1813 N.S.W.—Passage across Blue Mountains discovered by Wentworth, Lawson, and Blaxland. Macquarie River discovered by Evans.

- Year.
- 1814 N.S.W.—Australia, previously known as “New Holland,” received present name on recommendation of Flinders. Creation of Civil Courts.
- 1815 N.S.W.—Town of Bathurst founded by Governor Macquarie. First steam engine in Australia erected at Sydney. Lachlan River discovered by Evans. Tas.—Arrival of first immigrant ship with free settlers. First export of wheat to Sydney. Port Davey and Macquarie Harbour discovered by Capt. Kelly.
- 1816 N.S.W.—Botanic Garden formed at Sydney.
- 1817 N.S.W.—Oxley’s first exploration inland. Discovery of Lakes George and Bathurst and the Goulburn Plains by Meehan and Hume. First bank in Australia opened at Sydney. Tas.—Great prosperity in wool and whaling industries.
- 1818 N.S.W.—Cessation of free immigration. Liverpool Plains, and the Peel, Hastings, and Manning Rivers discovered by Oxley, and Port Essington by Captain King.
- 1819 N.S.W.—First Australian Savings Bank at Sydney opened.
- 1820 N.S.W.—Foundation of Campbelltown. Clyde River discovered by Lieut. Johnson. Tas.—First importation of pure merino sheep.
- 1821 N.S.W.—Foundation of Philosophical (now Royal) Society. Population, 35,610. Tas.—Establishment of penal settlement at Macquarie Harbour. First Circuit Court held at Hobart.
- 1822 N.S.W.—Formation of Agricultural Society of N.S.W.
- 1823 N.S.W.—First Australian Constitution. Discovery of gold at Fish River by Assistant-Surveyor McBrien. Arrival in Sydney of Dr. John Dunmore Lang. Qld.—Brisbane River discovered by Oxley.
- 1824 N.S.W.—Became a Crown Colony. Executive Council formed. Establishment of Supreme Court at Sydney, and introduction of trial by jury. First Australian Enactment (Currency Bill) passed by the Parliament at Sydney. Proclamation of freedom of the press. First land regulations. First manufacture of sugar. Vic.—Hume and Hovell, journeying overland from Sydney, arrived at Corio Bay. Qld.—Penal settlement founded at Moreton Bay (Brisbane). Fort Dundas Settlement formed at Melville Island, N. Terr.
- 1825 Tas.—Proclamation of Independence of Van Diemen’s Land (Tasmania) and appointment of a nominated Legislative Council for the new colony.
- 1826 N.S.W.—Illawarra founded by Captain Bishop. Vic.—Settlement at Corinella, Western Port, formed by Captain Wright. W.A.—Military Settlement founded at King George’s Sound, Albany, by Major Lockyer.
- 1827 N.S.W.—Colony became self-supporting. Feverish speculation in land and stock. Qld.—Darling Downs and the Condamine River discovered by Allan Cunningham. Fort Wellington established at Raffles Bay, N. Terr. Tas.—Copper ore discovered at Macquarie Harbour.
- 1828 N.S.W.—Second constitution. First Census. Sturt’s expedition down Darling River. Cotton first grown in Sydney Botanical Gardens. Gas first used at Sydney. Richmond and Clarence Rivers discovered by Captain Rous. Vic.—Abandonment of settlement at Western Port. Qld.—Cunningham discovered a route from Brisbane to the Darling Downs, and explored Brisbane River to its source. Tas.—First land sales.
- 1829 N.S.W.—Sturt’s expedition down Murrumbidgee River. New South Wales Act proclaimed. All English law, so far as circumstances of the Colony allowed, came into force. W.A.—Foundation of settlement at Swan River, under command of Lieut.-Governor Stirling. Perth also founded.
- 1830 N.S.W.—Insurrection of convicts at Bathurst. Sturt, voyaging down Murrumbidgee and Murray Rivers, arrived at Lake Alexandrina. Qld.—Murder of Captain Logan by convicts at Brisbane. Tas.—Trouble with natives. Black line organised to force aborigines into Tasman’s Peninsula, but failed. Between 1830 and 1835, however, George Robinson, by friendly suasion, succeeded in gathering the small remnant of aborigines (203) into settlement on Flinders Island.
- 1831 N.S.W.—Crown lands first disposed of by public competition. Mitchell’s explorations north of Liverpool Plains. Arrival at Sydney of first steamer, *Sophia Jane*, from England. S.S. *Surprise*, first steamship built in Australia, launched at Sydney. First coal shipped from Australian Agricultural Company’s workings at Newcastle, N.S.W. First assisted immigration to N.S.W. S.A.—Adelaide district discovered by Captain Barker. Murder of Barker by aborigines at Lake Alexandrina. Wakefield’s first colonisation committee. W.A.—Appointment of Executive and Legislative Council. First newspaper—“Fremantle Observer.” Lord Ripon’s land regulations in N.S.W., W.A., and Tas.

Year.

- 1832 N.S.W.—Savings Bank of N.S.W. established.
- 1833 N.S.W.—First School of Arts established at Sydney.
- 1834 N.S.W.—First settlement at Twofold Bay. Vic.—Settlement formed at Portland Bay by Henty Bros. Qld.—Leichhardt reached Gulf of Carpentaria. S.A.—Formation of the South Australian Association. Imperial Act Colonisation of S.A. W.A.—Severe reprisals against natives at Pinjarrah.
- 1835 N.S.W.—Establishment of depot at Fort Bourke on the Darling River, by Mitchell. Vic.—John Batman arrived at Port Phillip; made treaty with the natives for 600,000 acres of land; claim afterwards disallowed by Imperial Government. John Pascoe Fawcner founded Melbourne.
- 1836 N.S.W.—Mitchell's overland journey from Sydney to Cape Northumberland, Vic., "Squatting" formally recognised. Vic.—Proclamation of Port Phillip district as open for settlement. Captain Lonsdale first Resident Magistrate. S.A.—Settlement founded at Adelaide under Governor Hindmarsh.
- 1837 N.S.W.—Appointment in London of Select Committee on Transportation. Vic.—Melbourne planned and named by Governor Bourke. First Victorian post-office established in Melbourne. First sale of Crown lands in Melbourne. First overlanders from Sydney arrived at Port Phillip. S.A.—Adelaide planned by Captain Light. First newspaper published, and first sale of Crown lands.
- 1838 N.S.W.—Discontinuance of assignment of convicts. Drought and failure of crops. Frenzied speculation. Vic.—First Victorian paper published at Melbourne. Qld.—Settlement of German missionaries at Brisbane. S.A.—"Overlanding" of cattle from Sydney to Adelaide along the Murray route by Hawden and Bonney. Settlement at Port Essington, Northern Territory, formed by Captain Bremer.
- 1839 N.S.W.—Gold found at Vale of Clwydd by Count Strzelecki. Vic.—Appointment of Mr. C. J. La Trobe as Superintendent Port Phillip district. S.A.—Lake Torrens discovered by Eyre. Port Darwin discovered by Captain Stokes. W.A.—Murchison River discovered by Captain Grey.
- 1840 N.S.W.—Abolition of transportation to New South Wales. Land regulations—proceeds of sales to be applied to payment for public works and expenditure on immigration. Foundation of viticultural industry. Monetary crisis. Vic.—Determination of northern boundary. Colonists desire separation. Qld.—Penal settlement broken up and Moreton Bay district thrown open. S.A.—Incorporation of Adelaide. Eyre began his overland journey from Adelaide to King George's Sound. Tas.—Visit of the *Erebus* and *Terror* to Hobart. Dr. Hooker investigated the island flora.
- 1841 N.S.W.—Gold found near Hartley by Rev. W. B. Clarke. Separation of New Zealand. W.A.—Completion of Eyre's overland journey from Adelaide to King George's Sound. Tas.—Renewal of transportation.
- 1842 N.S.W.—Incorporation of Sydney. Vic.—Incorporation of Melbourne. S.A.—Discovery of copper at Kapunda.
- 1843 N.S.W.—First Representative Constitution. First manufacture of tweed. Financial crisis. Qld.—Moreton Bay granted legislative representation. Tas.—Agitation against further introduction of convicts.
- 1844 S.A.—Sturt's last expedition inland. Qld.—Leichhardt's expedition from Condamine River to Port Essington.
- 1845 N.S.W.—Mitchell's explorations on the Barcoo. Qld.—Explorations by Mitchell and Kennedy. S.A.—Discovery of the Burra copper deposits. Sturt discovered Cooper's Creek. W.A.—First steam vessel (*H.M.S. Driver*) visited Fremantle.
- 1846 N.S.W.—Mr. Gladstone proposed to revive transportation. Initiation of meat preserving. Qld.—Foundation of settlement at Port Curtis. S.A.—Proclamation of North Australia. W.A.—Organisation of first mining company. Foundation of New Norcia Mission.
- 1847 N.S.W.—Crown Land Leases Act. Iron smelting commenced near Berrima. Overland mail established between Sydney and Adelaide. Vic.—Melbourne created a City. Qld.—Explorations by Leichhardt, Burnett, and Kennedy. W.A.—Issue of regulations for leasing Crown lands. First export of guano.
- 1848 N.S.W.—Attempts to revive transportation. Influx of Chinese. Qld.—Leichhardt's last journey. Kennedy speared by the blacks at York Peninsula. Chinese brought in as shepherds. W.A.—Copper and lead discovered in the Champion Bay district by the Messrs. Gregory.

- Year.
- 1849 N.S.W.—Indignation of colonists at arrival of convict ship *Hashemy*. Exodus of population to goldfields of California. Vic.—*Randolph* prevented from landing convicts. Qld.—Assignment of convicts per *Hashemy* to squatters on Darling Downs. W.A.—Commencement of transportation to Western Australia.
- 1850 N.S.W.—Final abolition of transportation. First sod of first Australian railway turned at Sydney. University incorporated. Vic.—Gold discovered at Clunes by Hon. W. Campbell. Representative government granted. S.A.—Representative government granted. W.A.—Pearl oysters found by Lieut. Helpman at Saturday Island Shoal. Tas.—Representative government granted. Discovery of coal at the Don and Mersey.
- 1851 N.S.W.—Payable gold discovered by Hargraves at Lewis Ponds and Summerhill Creeks. Telegraph first used. Vic.—Separation of Port Phillip—erected into independent colony under the name of Victoria. Discovery of gold in various localities. "Black Thursday," 6th Feb., a day of intense heat, when several persons died and a vast amount of damage to property was occasioned by fires. Qld.—Agitation for separation from New South Wales. S.A.—Financial depression. Tas.—Serious exodus of population to goldfields on mainland. W.A.—Proclamation of Legislative Council Act.
- 1852 N.S.W.—Destruction of Gundagai by flood—77 lives lost. Arrival of the *Chusan*, first P. and O. mail steamer from England. S.A.—First steamer ascends the Murray River to the junction with the Darling. Tas.—Meeting of first elective Council protests against transportation. Payable gold discovered at The Nook, near Fingal, and at Nine Mile Springs.
- 1853 Vic.—University established. Tas.—Abolition of transportation.
- 1854 N.S.W.—Russian war-scare and volunteer movement. Vic.—Opening of first Australian railway—Flinders Street to Port Melbourne. Riots on Ballarat goldfields. Storming of the Eureka Stockade, 3rd Dec.
- 1855 N.S.W.—Opening of railway—Sydney to Parramatta. Introduction of responsible Government. Mint opened. Vic.—Proclamation of Constitution. Qld.—Gregory's expedition in search of Leichhardt. Tas.—Responsible government introduced.
- 1856 N.S.W.—First elective Parliament. Pitcairn Islanders placed on Norfolk Island, which was placed under jurisdiction of Governor of New South Wales. Vic.—First Parliament under responsible government. S.A.—Responsible government introduced. Tas.—First Parliament under responsible government. W.A.—A. C. Gregory's expedition in search of Leichhardt.
- 1857 N.S.W.—Heavy floods. Wreck of the *Dunbar* (119 lives lost), and *Catherine Adamson* (21 lives lost), at Sydney Heads. Select Committee on Federation. Vic.—Manhood suffrage established. S.A.—First Parliament under responsible government. Exploration by Babbage and Warburton. Passage of Terrens' Real Property Act.
- 1858 N.S.W.—Establishment of manhood suffrage and vote by ballot. Telegraphic communication between Sydney, Melbourne, and Adelaide. S.A.—Stuart's explorations. Qld.—The Canoona gold rush.
- 1859 Qld.—Proclamation of Queensland as separate colony. Tas.—First submarine cable, *via* Circular Head and King Island, to Cape Otway.
- 1860 N.S.W.—Disastrous floods on the Shoalhaven and at Araluen. Vic.—Burke and Wills left Melbourne on their journey across Continent. Qld.—First Parliament under responsible government. S.A.—Copper discoveries at Wallaroo and Moonta.
- 1861 N.S.W.—Anti-Chinese riots at Lambing Flat and Burrangong goldfields. Opening of first tramway in Sydney. Robertson's Land Acts. Messrs. Parkes and Dalley proceeded to London as emigration lecturers. Regulation of Chinese immigration. Vic.—Conference of Statisticians, Melbourne. Burke and Wills perished at Cooper's Creek, near Innamincka, S.A. W.A.—Exploration of F. Gregory in the North-west.
- 1862 N.S.W.—Raid by bushrangers on the Lachlan gold escort (£14,000 taken). Abolition of State aid to religion. Real Property Act. Vic.—C. Gavan Duffy's Land Act. Qld.—McKinlay's explorations. Heavy floods on Fitzroy River. S.A.—Stuart crossed the Continent from south to north. W.A.—Severe floods—damage to property, £30,000. First export of pearl-shell.
- 1863 N.S.W.—Bathurst and Canowindra "held up" by bushranger Gilbert. Vic.—Intercolonial conference at Melbourne. S.A.—Northern Territory taken over. W.A.—Initiation of settlement in the North-west district. Establishment of Post Office (now Government) Savings Bank.

Year.

- 1864 N.S.W.—Frequent outrages by bushrangers. Qld.—First railway begun and opened. First sugar made from Queensland cane. W.A.—Messrs. Panton, Harding, and Goldwyer murdered by natives. Tas.—First successful shipment of English salmon ova.
- 1865 N.S.W.—Destruction by fire of St. Mary's Cathedral, Sydney.
- 1866 N.S.W.—Passage of Public Schools Act of (Sir) Henry Parkes. Qld.—Financial crisis. S.A.—Introduction of camels for exploration, etc.
- 1867 Vic.—Imposition of protective tariff. Qld.—Discovery of gold at Gympie.
- 1868 N.S.W.—Attempted assassination of the Duke of Edinburgh at Clontarf, near Sydney. Qld.—Passage of Act to regulate island labour traffic. W.A.—Arrival of the *Hougomont*, last convict ship. Tas.—First sod of first railway (Launceston and Western) turned by Duke of Edinburgh.
- 1869 N.S.W.—Establishment of Eskbank Iron Company. Vic.—Reduction of property qualification for members and electors of Legislative Council. W.A.—First telegraph line opened from Perth to Fremantle. Tas.—Second cable opened.
- 1870 N.S.W.—Intercolonial Exhibition opened at Sydney. Imperial troops withdrawn. Vic.—Intercolonial Congress at Melbourne. S.A.—Commencement of transcontinental telegraph. W.A.—Meeting of first Legislative Council under responsible government.
- 1871 N.S.W.—Permanent military force raised. Vic.—Increase of protective duties. W.A.—Passage of Elementary Education Act. Forrest's explorations. Tas.—Discovery of tin at Mount Bischoff. Launceston-Western railway opened for traffic.
- 1872 N.S.W.—International Exhibition at Sydney. Death of W. C. Wentworth. Vic.—Mint opened. Qld.—Discovery of tin at Stanthorpe, copper at Mt. Perry, coal at Wide Bay, gold at the Palmer. S.A.—Cable from Java to Port Darwin. Completion of transcontinental telegraph line. W.A.—Cyclonic storms—destruction of town of Roebourne. Tas.—Completion of direct telegraphic communication with England.
- 1873 N.S.W.—Intercolonial Conference at Sydney. First volunteer encampment. Inauguration of mail service with San Francisco. W.A.—Warburton crossed from transcontinental telegraph line to head of De Grey River.
- 1874 N.S.W.—Triennial Parliaments Act passed. Intercolonial Conference. Qld.—Dalrymple's discoveries on north-eastern seaboard. S.A.—Adelaide University founded. W.A.—Explorations by F. Giles. John and Alexander Forrest arrived at Overland Telegraph from Murchison.
- 1875 Qld.—Transfer of Port Albany Settlement to Thursday Island. S.A.—Wreck of the *Gothenburg*—Judge Wearing and other well-known Adelaide citizens drowned. Education Act passed. Explorations by Giles, Gosse, and Warburton. Tas.—Conference of Statisticians, Hobart.
- 1876 N.S.W.—Completion of cable—Sydney (La Perouse) to Wellington (Wakapuaka). Vic.—Members of Legislative Assembly increased to 86. W.A.—Violent gale at Exmouth Gulf, number of pearling vessels wrecked, 69 lives lost. Giles crosses colony from east to west. Tas.—Death of Truganini, last representative of Tasmanian aborigines.
- 1877 Vic.—Deadlock on question of payment to members. W.A.—Opening of telegraphic communications with South Australia. Tas.—Discovery of rich gold-bearing quartz reef at Beaconsfield.
- 1878 N.S.W.—Seamen's strike. Vic.—Visit to England of Victorian delegation re alteration of Victorian Constitution. "Black Wednesday"—wholesale dismissal of civil servants. Qld.—Restriction of Chinese immigration.
- 1879 N.S.W.—First artesian bore at Killara. International Exhibition at Garden Palace, Sydney. First steam tramway. First issue of silver coin from Mint. W.A.—Celebration of 50th anniversary of foundation of colony. A. Forrest's explorations in the Kimberley district, and discovery of the Fitzroy pastoral country.
- 1880 N.S.W.—Public Instruction Act passed. Sydney streets partially wood-paved. Vic.—Opening of first Victorian International Exhibition at Melbourne. Federal Conference, at Melbourne and Sydney.
- 1881 N.S.W.—Further restrictions on Chinese immigration. Vic.—Reduction of property qualification for members and electors of Legislative Council, number of members increased to 42. W.A.—Cyclone near Roebourne wrecked number of pearling vessels. On the Ashburton, 1,000 sheep destroyed by cyclone. First simultaneous Australian Census, population 2,250,194 Visit to Australia of T.R.H. Prince Albert Victor and Prince George of Wales.

- Year.
- 1882 N.S.W.—Garden Palace destroyed by fire. W.A.—Nugget of gold found between Roebourne and Cossack.
- 1883 N.S.W.—Discovery of silver at Broken Hill. Completion of railway between New South Wales and Victoria. Qld.—Annexation of New Guinea—repudiated by Imperial authorities. Federal Conference held at Sydney. Federal Council created.
- 1884 N.S.W.—Land legislation restricting sales by auction. Vic.—Appointment of First Public Service Board. W.A.—Stockdale's explorations. Federation Bill passed in Victoria and rejected in New South Wales. British protectorate declared over New Guinea.
- 1885 N.S.W.—Military contingent sent to the Sudan. Opening of the Broken Hill Proprietary Silver Mines. Qld.—Agitation for division of the colony. W.A.—Gold found by prospectors on the Margaret and Ord Rivers in the Kimberley district. Tas.—Silver-lead discovered at Mount Zeehan.
- 1886 N.S.W.—Industrial depression. Wreck of the *Ly-ee-Moon*, *Corinjamite*, and *Helen Nicol*. S.A.—Celebration of jubilee of foundation of province. W.A.—Proclamation of Kimberley goldfields. Tas.—Discovery of gold and copper at Mount Lyell. First session of Federal Council met at Hobart on the 26th January.
- 1887 N.S.W.—Disaster at Bulli coal mine (81 lives lost). Peat's Ferry (Hawkesbury River) railway accident. S.A.—International Exhibition at Adelaide. W.A.—Cyclone destroyed nearly the whole pearling fleet off the Ninety-Mile Beach—200 lives lost. Gold discovered at Southern Cross. Australasian Conference in London. Australasian Naval Defence Force Act passed.
- 1888 N.S.W.—Destructive bush fires. Centennial celebrations. Restrictive legislation against Chinese, imposing poll tax of £100. Vic.—Second Victorian International Exhibition held at Melbourne. Members of Legislative Council increased to 48, and of Assembly to 95. Qld.—Railway communication opened between Sydney and Brisbane. W.A.—Favenc's explorations. Centenary of first settlement in Australia. Conference of Australian Ministers at Sydney to consider question of Chinese immigration. First meeting of the Australasian Association for the Advancement of Science held in Sydney. Imperial Defence Act passed.
- 1889 N.S.W.—Destructive floods, Hunter River. Qld.—Direct railway communication established between Brisbane and Adelaide. W.A.—Framing of new Constitution. Tas.—University founded.
- 1890 N.S.W.—Strike at Broken Hill. Maritime and shearers' strikes. Payment of members of Parliament. Destructive bush fires. Qld.—Wreck of the *Quetta*—146 lives lost. Floods and hurricanes. Industrial depression. W.A.—Responsible government granted. Meeting at Melbourne of Australasian Federation Conference. Pre-censal Conference of Statisticians at Hobart.
- 1891 N.S.W.—Election to Legislative Assembly of 35 Labour members. Arrival of Australian Auxiliary Squadron. Collapse of several building societies. Cessation of assisted immigration. W.A.—Discovery of gold on the Murchison. Federal Convention in Sydney, draft bill framed and adopted. Second simultaneous Australian census. Population, 3,174,392.
- 1892 N.S.W.—Broken Hill miners' strike. Run on Government Savings Bank. Women's College, Sydney University, opened. Vic.—Suspension of Railway Commissioners. W.A.—Discovery of gold by Messrs. Bayley and Ford at Coolgardie.
- 1893 N.S.W.—Departure by the *Royal Tar* of colonists for "New Australia." Electoral Act—"One man one vote." Financial crisis, chiefly affecting the eastern States. Qld.—Brisbane floods.
- 1894 N.S.W.—Shearers' strike. S.A.—Adult Suffrage Bill assented to. Industrial depression.
- 1895 N.S.W.—Crown Lands Act of 1895. Free-trade tariff. Land and income taxes introduced. Conference of Premiers at Hobart *re* Federation.
- 1896 N.S.W.—People's Federal Convention at Bathurst. S.A.—Departure of Calvert expedition.
- 1897 S.A.—Floods and storms at Adelaide. Death of Sir Thomas Elder. Earthquake and hurricane in Northern Territory. Town of Palmerston destroyed.
- 1897-8 Sessions of Federal Convention at Adelaide, Sydney, and Melbourne.

- Year.**
- 1898 N.S.W.—First surplus of wheat for export.
Draft Federal Constitution Bill submitted to electors in Victoria, New South Wales, South Australia, and Tasmania. Requisite statutory number of votes not obtained in New South Wales
- 1899 First contingent of Australian troops sent to South Africa. Conference of Premiers in Melbourne to consider amendments to Federal Constitution Bill. Referendum—Bill accepted by New South Wales, Victoria, Queensland, South Australia, and Tasmania.
- 1900 N.S.W.—Old-age pensions instituted. W.A.—Agitation for separation by gold-fields.
Contingents of naval troops sent to China.
Commonwealth Constitution Act received Royal Assent, 9th July. Mr. (afterwards Sir) Edmund Barton formed first Federal Ministry.
- 1901 Vic.—Old-age Pensions instituted.
Proclamation of the Commonwealth at Sydney. First Federal Parliament opened at Melbourne by the Duke of Cornwall and York. Simultaneous Australasian Census—population of the Commonwealth, 3,773,801. Interstate freetrade established.
- 1902 N.S.W.—Disastrous explosion at Mount Kembla Colliery—95 lives lost. Women's franchise granted. Jubilee of Sydney University. S.A.—Reduction of number of members of both Houses of Parliament. W.A.—Opening of pumping station at Northam in connection with Goldfields water supply.
First Federal Tariff.
- 1903 Vic.—Railway Strike (Enginemmen). W.A.—Coolgardie and Kalgoorlie water supply scheme completed.
Inauguration of the Federal High Court. Conference of Statisticians in Melbourne
- 1904 N.S.W.—Reduction of members of Legislative Assembly from 125 to 90.
- 1905 N.S.W.—Re-introduction of assisted immigration.
- 1906 Wireless telegraphy installed between Queenscliff, Vic., and Devonport, Tas. Conference of Statisticians of Australian States and New Zealand. Papua taken over by Commonwealth.
- 1907 N.S.W.—Telephone, Sydney to Melbourne, opened.
Imperial Conference in London. Introduction of new tariff in Federal Parliament. Preference to United Kingdom. Allowance to Federal members of Parliament increased from £400 to £600.
- 1908 Vic.—Railway accident at Braybrook Junction (Sunshine)—44 killed, 412 injured; compensation paid, £126,000.
Yass-Canberra chosen as site of Federal Capital. Interstate Premiers' Conference at Melbourne. Visit of American Fleet to Australia.
- 1909 N.S.W.—Miners' strikes at Broken Hill and Newcastle. Qld.—University established. S.A.—*Clan Ranald* foundered in St. Vincent's Gulf—40 drowned. W.A.—Cyclone at Broome.
Imperial Defence Conference in London—Commonwealth ordered two destroyers and one first-class cruiser for fleet unit. Visit of Lord Kitchener to report and advise on Commonwealth military defence. Loss of the *Waratah* with 300 passengers and crew.
- 1910 Vic.—Railway accident at Richmond—9 killed, over 400 injured; compensation paid, £129,000. W.A.—Cyclone at Broome—several pearling vessels wrecked, three whites and many coloured fishermen drowned. Wreck of the *Pericles* off Cape Leeuwin.
Rt. Hon. Sir G. H. Reid appointed High Commissioner for the Commonwealth in London. Referendum on financial relations between the Commonwealth and the States. Proclamation taking over Yass-Canberra (in New South Wales) as site for Federal Capital. Penny postage. Visit of Scottish Agricultural Commission. Dutch squadron visited Australia. Arrival of the *Yarra* and *Parramatta*, first vessels of Australian navy. Australian Notes Act passed and first Commonwealth notes issued. Admiral Sir R. Henderson visited Australia to advise on naval defence.

Year.

- 1911 First Federal Census—population of the Commonwealth, 4,455,005. Transfer of Northern Territory to Commonwealth. Federal referenda relating to Monopolies and Industrial Legislation—proposals rejected. Introduction of compulsory military training. Launch of Commonwealth destroyer *Warrego* at Sydney. Establishment of penny postage to all parts of British Empire. Western Australian University founded.
- 1912 Commonwealth Bank opened. First payments of Maternity Bonus. First sod turned at Port Augusta of Trans-Australian Railway (Port Augusta to Kalgoorlie). Administrators to Northern and Federal Territories appointed. Gift of £1,000,000 to charities by Mrs. Walter Hall, Sydney, N.S.W.
- 1913 Arrival of battle cruiser *Australia*, and cruisers *Melbourne* and *Sydney*. Foundation stone of Commonwealth Building in London laid by the King. Federal Capital named Canberra and foundation stone laid. Appointment of Interstate Commission. Visit of Empire Trade Commission. Visit of Members of Empire Parliamentary Association.
- 1914 Visit of General Sir Ian Hamilton to report on military defence scheme. Double dissolution of Federal Parliament. Visit of British Association for the Advancement of Science. Serious drought affecting almost the whole of the Commonwealth.
- European War. Australian Navy transferred to Imperial Navy. Captured vessels added to Australian fleet. Submarine AE1 lost at sea whilst in service in the vicinity of New Britain. German Pacific possessions seized by Australian expeditionary force (military and naval). Australian troops offered to, and accepted by Imperial Government. By 31st December, 31,000 volunteers of all ranks had left Australia for service overseas. Portion of Australian army was also mobilised and kept under arms till the destruction of the German Pacific fleet. German Cruiser *Emden* destroyed at North Cocos Island by H.M.A.S. *Sydney*.
- 1915 Opening of Broken Hill Proprietary's Ironworks at Newcastle, N.S.W. Mr. Fisher appointed High Commissioner for the Commonwealth. Referendum for purpose of giving increased powers to the Commonwealth abandoned. Navy Department created. Formation of Australian Wheat Board.
- Australian troops landed at Dardanelles on 25th April. Loss of Submarine AE2 in operations at the Dardanelles. Census taken of Wealth and Income, and of Males in Australia between ages of 17 and 60. Australian troops withdrawn from Gallipoli on 19th December.
- 1916 Record wheat harvest (180,000,000 bushels). Special recruiting campaign instituted. Australian troops transferred to France. Acquisition of steamships by the Commonwealth. First Military Service Referendum—proposal rejected. Moratorium Regulations passed.
- 1917 National Ministry formed. Commonwealth elections. General strike. Kalgoorlie-Port Augusta railway completed. Second Military Service Referendum. Daylight Saving introduced and abandoned.
- 1918 Population of Australia reaches 5,000,000. Australian troops in France formed into an Army Corps, commanded by Lieut.-Gen. Sir John Monash. Cessation of hostilities and surrender of Germany. Sixth and seventh war loans floated; subscriptions to war loans raised in Australia up to end of 1918 totalled £188,132,690. Repatriation Department created. Australia House (Strand, London) opened by the King. Australian representative for United States appointed. Death of Sir G. H. Reid. Death of Lord Forrest of Bunbury.

OFFICIAL YEAR BOOK
OF THE
COMMONWEALTH OF AUSTRALIA, 1918,
AND EARLIER YEARS.

SECTION I.
STATISTICAL ORGANISATION AND SOURCES OF
INFORMATION.

§ 1. Introduction.

1. **Development of Australian Statistics.**—In the first issue of the Commonwealth Official Year Book (No. 1, 1901–1907), an account was given of the origin and development of Australian Statistics; *vide* pp. 1 to 16 therein. Owing to considerations of space, however, this matter was considerably curtailed in succeeding Year Books, and appears in No. 4 on pp. 1 to 4. In the following issues, a still further curtailment has been made in order to make room for new matter.

Briefly, it may be stated that to the “Blue Books” compiled in Australia for the Imperial authorities, there succeeded, under Responsible Government, the statistics which each of the departments prepared for itself. State statistical departments were organised later, principally as collecting agencies of official and general information.

Owing to absence of co-ordination in collection and compilation, due to the organisation, independently, of the various States bureaux, there were difficulties in so combining State statistics as to get a satisfactory statistic for Australia as a whole, and various conferences of State Statisticians did not completely rectify the divergencies that had arisen.

(i) *Creation of the Commonwealth Bureau of Census and Statistics.* Constitutionally, matters relating to “Census and Statistics” belong to the Commonwealth, and in 1906, under the authority of the Census and Statistics Act of 1905, providing for the taking of the Census and the collecting of general statistics, the Commonwealth Bureau of Census and Statistics was created. A conference of statistical representatives of Australian States and New Zealand, under the presidency of the Commonwealth Statistician, met in November and December, 1906. For a more or less complete presentation of the affairs of the Commonwealth and of its constituent parts, various desiderata were recognised, and a series of resolutions adopted by the conference. Identity of categories, simultaneity and identity in methods of collection, and uniformity in compilation, were the main features desired. A résumé of the resolutions of this conference is given in Year Book No. 1, pp. 12-16.

(ii) *Organisation of the Commonwealth Bureau of Census and Statistics.* In the organisation of the Bureau, while all classes of work may at any time be relegated to any officer, certain fields of activity are attended to mainly by the officers mentioned

hereunder, who, subject to the general direction of the Statistician, supervise the work of the different branches :—

JOHN STONHAM, M.A. (Sydney), Chief Compiler; and general administration.

CHARLES HENRY WICKENS, A.I.A. Supervisor of Census.

EDWARD TANNOCH MCPHEE. Trade and Customs Statistics and Commerce.

GERALD LIGHTFOOT, M.A. (Cambridge), Barrister at Law. Industrial and Social Statistics.

FREDERICK DALGLISH ROSSITER, M.A. (Melbourne), Defence; general control of Library, &c.

FREDERICK WILLIAM BARFORD, M.A. (Oxford), A.I.A. Financial and Vital Statistics.

2. **Sources of Information.**—Statistical information is furnished (i) by the State Statistical Bureaux, as a result of direct demand, or through the police and special collectors; (ii) by Commonwealth and State Departments (see lists of publications in § 2 *infra*); (iii) in respect of returns of Trade, Customs and Excise, by the Trade and Customs Department; (iv) by scientific and technical experts, specially requisitioned to write on particular subjects; (v) by State Statisticians, as officers duly constituted under the Commonwealth Census and Statistics Act; (vi) and by information supplied compulsorily, on the Commonwealth Statistician's demand.

3. **Maintenance of Secrecy.**—Under no circumstances can information supplied to a statistical office be used against the individual supplying it. All statistical enquiries are strictly impersonal, and the affairs of individuals or individual businesses are never disclosed. No other Government Department can make use of the Statistical Departments in order to acquire detailed information otherwise unavailable.

4. **Accuracy Essential.**—The importance of accurate statistical information is emphasised. The making of untrue statements is heavily penalised.

§ 2. Statistical Publications of Australia.

1. **Introductory.**—The official statistical publications of Australia may be divided bibliographically into two main divisions, viz. :—(1) Commonwealth publications dealing both individually and collectively with the several States of the Commonwealth, and (2) State publications dealing with individual States only. Besides these there are many other reports, etc., issued regularly, which though not wholly statistical, necessarily contain a considerable amount of statistical information. The principal of these published to August, 1919, are included in the lists given hereunder.

2. **Commonwealth Publications.**—Commonwealth publications may be grouped under two heads, viz. :—(i) Publications issued by the Commonwealth Statistician, and (ii) Parliamentary and Departmental Reports and Papers.

(i) *Publications issued by the Commonwealth Statistician.* The following is a list of statistical publications issued from the Commonwealth Bureau of Census and Statistics since its inauguration up to August, 1919. The Demography, Finance, Production, and Transport and Communication Bulletins cover statistics from 1901. The Year Book contains figures from earlier years.

Australian Life Tables, 1901–1910. Australian Joint Life Tables, 1901–1910.

Census Bulletins.—No. 1—Population of States and Territories; No. 2—Persons of Non-European Race; No. 3—Ages; No. 4—Population of Counties, Local Government Areas, &c.; No. 5—Population of Electoral Divisions, Provinces, and Districts; No. 6—Birthplaces; No. 7—Length of Residence in Australia; No. 8—Religions; No. 9—Education; No. 10—Blindness and Deafmutism; No. 11—Schooling; No. 12—Conjugal Condition; No. 13—Localities; No. 14—Mortality Investigation; No. 15—Families; No. 16—Occupations; No. 17—Occupied Dwellings.

Census Results.—Vol. I., Report, including Appendix A—Mathematical Theory of Population. Vol. II. (parts 1–8). Vol. III. (parts 9–14). Part 1—Ages; part 2—Birthplaces; part 3—Residence; part 4—Education; part 5—Schooling; part 6—Religions; part 7—Infirmities; part 8—Aliens; part 9—Conjugal; part 10—Families; part 11—Life Tables; part 12—Occupations, part 13—Dwellings; part 14—Summary.

Finance—Bulletins, annually, 1907 to 1915–16. (Hereafter to be published biennially.)

Inquiry into the Cost of Living in Australia, 1910–11.

Labour and Industrial Statistics—Explanatory Memorandum on the Proposed Scheme. Report No. 1—Prices, Price-Indexes and Cost of Living in Australia. No. 2—Trade Unionism, Unemployment, Wages, Prices, and Cost of Living in Australia, 1891 to 1912. No. 3—Manufacturing Industries in the Commonwealth, 1912. No. 4—Expenditure on Living in the Commonwealth, November, 1913; Price Indexes, their Nature and Limitations, &c. *Annual Reports*—Prices, Purchasing Power of Money, Wages, Trade Unions, Unemployment, and General Industrial Conditions: No. 5—1913–14; No. 6—1915; No. 7—1916; No. 8—1917; No. 9—1918.

Labour Bulletins—Quarterly, March, 1913 to June, 1917.*

Local Government in Australia—July, 1919.

Monthly Summary of Australian Statistics—Bulletins Nos. 1 to 69, from January, 1912 to September, 1917* (replacing the publication “Trade, Shipping, and Oversea Migration”).

Official Year Book of the Commonwealth of Australia—Annually, 1907 to present issue (1919).

Pocket Compendium of Australian Statistics, 1913, 1914, 1916 and 1918.†

Population and Vital Statistics Bulletins—Determination of the Population of Australia, 1901 to 1906. Commonwealth Demography, annually, 1906 to 1910. Vital Statistics, annually, 1907 to 1910. Commonwealth Demography (comprising matter previously included in two last-named Bulletins), annually, 1911 to 1918. Vital Statistics, Quarterly, 1907 to June, 1911.* The Nomenclature of Diseases and Causes of Death, 1907. New Edition, 1910.

Production—Bulletins, annually, 1906 to 1916–7.

Professional Papers—No. 1—The Classification of Diseases and Causes of Death, from the standpoint of the Statistician; Nos. 2 and 3—On the Influence of Infantile Mortality on Birthrate (2 papers); No. 4—On the Statistical Opportunities of the Medical Profession; No. 5—Tuberculosis: Duration Frequency Curves, and the number of existing cases ultimately fatal; No. 6—The Problems of Statistics; No. 7—The Evolution and Significance of the Census; No. 8—Census Taking‡; No. 9—Studies in Statistical Representation—On the nature of the curve

$$y = Axm_e^{nx^p};$$

No. 10—Studies in Statistical Representation—Statistical Application of the Fourier series; No. 11—Suicide in Australia; No. 12—An Extension of the Principle Underlying Woolhouse’s Method of Graduation‡; No. 13—The First Commonwealth Census; No. 14—Mathematical Analysis of Climatological Physiology; No. 15—The International Nosological Classification, &c.; No. 16—Secular Progress of Pulmonary Tuberculosis and Cancer, &c.; No. 17—The Improvement in Infantile Mortality, &c.; No. 18—Secular and Annual Fluctuations of Deaths from Several Diseases, &c. No. 19—Investigations Concerning a Law of Infant Mortality‡; No. 20—Labour and Industrial Statistics§; No. 21—A Study in Proportional Representation||; No. 22—Studies in Statistical Representation, III.—Curves, their Logarithmic Homologues and Antilogarithmic Generatrices.¶

* Discontinued. Information now included in *Quarterly Summary of Australian Statistics*.

† Published under the title of Commonwealth Statistical Digest, 1916.

‡ By C. H. Wickens, A.I.A. § By Gerald Lightfoot, M.A. ¶ By F. W. Barford, M.A., A.I.A.

¶ By G. H. Knibbs, C.M.G., F.S.S., F.R.A.S., and F. W. Barford, M.A., A.I.A.

- Quarterly Summary of Australian Statistics*—First issue, No. 70, December, 1917 (replacing *Monthly Summary of Australian Statistics*).
- Railway Statistics*—Report on the Desirability of Improved Statistics of Government Railways in Australia, February, 1909.
- Shipping*—Shipping and Oversea Migration, annually, 1906 to 1915-16. (Discontinued.)
- Social Insurance*—Report to the Hon. the Minister of Trade and Customs.
- Social Statistics*—Bulletins, annually, 1907 to 1915. (Hereafter to be published biennially.)
- Superannuation for the Commonwealth Public Service*—Report to the Hon. the Minister of Home Affairs;
- The Australian Commonwealth: Its Resources and Production*—Annually, 1908 to 1915.
- Trade and Customs*—Trade, and Customs and Excise Revenue, annually, 1906 to 1917-18.
- Trade, Shipping, and Oversea Migration—Monthly, January, 1907 to December, 1911.*
- Transport and Communication*—Bulletins, annually, 1906 to 1916. (Hereafter to be published biennially.)
- Wealth*—The Private Wealth of Australia and its Growth, as ascertained by various methods, together with a Report of the War Census in 1915.

(ii) *Commonwealth Parliamentary and Departmental Reports and Papers*. The following are the principal official reports and papers containing statistical matter which have been issued since the inauguration of the Commonwealth :—

- Advertising: Various publications issued by Department for External Affairs.
- Arbitration: Returns of Awards, Conferences, Agreements, &c., of Arbitration Court.
- Bank: Balance Sheets of Commonwealth Bank, and Reports of Auditor-General.
- Bounties: Returns relating to payments.
- Defence—Commonwealth Military Journal, issued quarterly, April, 1911 to June, 1916; Forces Lists; Military, Naval, Cadets; Staff and Gradation Lists, Australian Imperial Force; Journal of the Royal Military College; Manual of War Precautions, various editions; Memorandum by Admiral Sir Reginald Henderson on the Naval Defence of Australia; Memorandum on Australian Military Defence and its progress since Federation; Memorandum on the Defence of Australia, by Field-Marshal Lord Kitchener; Military and Naval Orders; Records of Australian Contingents to the War in South Africa, 1899-1902; Relative Strength of Navies in the Pacific; Report to Admiralty on H.M. Australian Fleet (extracts); Report on Navy Administration; Expenditure on Naval Bases; Reports on Camps, Canteens at Camps, Courts of Inquiry, Small Arms Factory, Royal Military College, Naval College, Rifle Clubs, Musketry, Universal Training, Cadets, Physical Training, Army Medical Corps, Organisation and Distribution, Troopships, Naval Bases, Dockyards, Recruiting, Administration, Repatriation, Mobilisation, Finance, &c.; Report of Director of Naval Forces for 1906; Reports of the Military Board, 1905 and 1906; Report on an Inspection of the Military Forces of the Commonwealth by General Sir Ian Hamilton; Synopsis of Report on the Business Branches of the Department by Mr. R. McC. Anderson; Proposals for the Home Defence of Australia; Tables of War and Peace Organisation and Establishments, Tables of Establishments, Australian Imperial Force.
- Electoral—Report of Royal Commission on the Commonwealth Electoral Law and Administration; Returns under Representation Act 1905; Commissioners' Special Reports; Statistics of Commonwealth Elections and Referenda; Statement by Commonwealth Statistician *re* Inflation of Electoral Rolls.

* Discontinued. Information since included in *Monthly Summary of Australian Statistics* to September 1917; thereafter in *Quarterly Summary of Australian Statistics*.

- Factories—Reports on Clothing, Cordite, Small Arms, Woollen Cloth, and Harness and Leather Factories.
- Federal Capital : Papers and Designs. Reports on Administration.
- Fisheries : Reports of the Director on Fishing Experiments carried out by the F.I.S. "Endeavour" ; Reports on Pearling Industry ; Zoological and Biological Results of Fishing Experiments ; Life and Work of H. C. Dannevig.
- Fruit Industry : Report of Royal Commission.
- High Commissioner of the Commonwealth : Reports, Annual, 1910 to 1914. Reports on Australian Butter Market in England. Visit to Canada and United States.
- Historical Records of Australia. Series I., vols. I.—XI.
- Home Affairs : Schedule of the Department—Nos. 1 to 25 (No. 26 issued by Department of Works and Railways). Report on the Business Branches of the Department by Mr. R. McC. Anderson.
- Immigrants and Immigration Restriction. Annual returns from 1902.
- Industry and Manufactures—Annual Return of Bounties Paid under Manufactures Encouragement Act ; Sugar Statistics, from 1901–2, *re* White and Black Labour, Production, Duties, Excise, Bounties, &c. ; Report of Royal Commission on Sugar Industry ; Reports on Industries (Wool, Apples, Wheat, &c.) ; Reports and Recommendations of Royal Commission on Pearl Shelling Industry.
- Inter-State Commission. Reports, Annual, from 1914–15 to 1917–18, and special. Prices Investigations (various.)
- Invalid and Old-Age Pensions : Statements and Reports.
- Lands and Surveys : Report of Conference of Commonwealth Director and States Surveyors-General.
- Law : Reports, various. Statutory Rules. Ordinances and Papers relating to administration in the various Territories.
- Lighthouses : Reports of Inspections, &c.
- Medical—Reports of Institute of Tropical Medicine ; Reports on Tropical Diseases ; Reports on Death and Invalidity ; Report on Secret Remedies ; Quarantine Reports.
- Meteorologist—Bulletins of Climate and Meteorology ; Rainfall Maps, Observations, &c. ; Professional Papers and Charts (various) ; Monthly Weather and Meteorological Reports, from January, 1910 ; The Australian Environment, especially as controlled by Rainfall, by T. Griffith Taylor.
- Naturalisation : Returns under Naturalisation Act of 1903.
- New Guinea (late German) : Statistics.
- Norfolk Island : Report of Administrator, 1915 to 1918.
- Northern Territory—Report of the Government Resident for 1910 ; Annual Reports of Administrator from 1911 ; Bulletins Nos. 1 to 17 ; Miscellaneous Reports ; Report of Royal Commission *re* Charges against Administrator, &c.
- Papua—Annual Reports from 1910–11 ; Handbooks, from 1904–5 ; Miscellaneous Reports ; Statistics of British Administration of (late) German New Guinea.
- Parliamentary Papers (miscellaneous). Reports of Committees, Commissions, Conferences, &c., *Hansards*.
- Patents and Trade Marks Statistics, 1904 to date.
- Postal : Report of Postal Services Royal Commission.
- Postmaster-General's Department—Statement of Business transacted and details of Receipts and Expenditure, 1907, 1908 and 1909 ; Annual Reports of Postmaster-General's Department from 1910 ; Report on the Business Management of Postmaster-General's Department, by Mr. Robert McC. Anderson.
- Privy Council : Reports of Judgments.
- Public Service Commissioner—Report, 1901–4 ; and Annual Reports from 1905 ; and Public Service Lists, Annual, from 1903.
- Public Works ; Reports of Parliamentary Standing Committee.

- Railways: Reports, various, *re* Gauges of Australian Railways, Unification of Gauges, Strategic Railways, &c.; Staff Lists; Reports of Engineer-in-Chief; Statements regarding Cost of Construction, Revenue, and Expenditure of Trans-Australian Railway.
- Repatriation; Report of Activities, &c.; Report of Trustees of Australian Soldier's Repatriation Fund. *Repatriation* (monthly).
- Science and Industry. Memo. on the Organisation of Scientific Research Institutions in U.S.A., by Mr. G. Lightfoot, M.A.; Reports of the Executive Council; Recent Developments in the Organisation of National Industrial Research Institutions; Bulletins, Nos. 1 to 11; Journal, Vol. I, Nos. 1 and 2.
- Shipping—Commonwealth Line of Steamships, Return of Voyages, &c.; Merchant Tonnage and the Submarine.
- Social Insurance: Report by the Hon. Sir John Cockburn on the Hague Conference of 1910.
- Tariff—Tariff Guide, Annual, from 1903; also Customs and Tariff Schedules; Reports on Tariff Investigation; Tariff Decisions, Customs Orders.
- Taxation and Land Tax—Annual Reports of Commissioner from 1910-11.
- Trade and Customs—Report of Royal Commission on Meat Export Trade; Trade and Customs Returns, 1903 to 1905 (by Government Statistician of New South Wales); Report of Royal Commission on Tasmanian Customs Leakage.
- Treasury—Correspondence relating to the Gold Reserve in respect to the issue of Australian Notes; Budget, Annual, from 1901-2; Estimates, Annual, from 1901-2; also Supplementary Estimates; Treasurer's Statements and Reports of Auditor-General, Annual, from 1901-2; Treasury Notes issued to the various Banks of the Commonwealth; Treasury Statements of Receipts and Expenditure (issued Quarterly in the *Commonwealth Gazette*); Reports of Joint Committee on Public Accounts; Statements and Reports regarding Maternity Allowances, Invalid and Old-Age Pensions, War Pensions, Dealings and Transactions under Commonwealth Inscribed Stock Act.
- Water: Report on Murray River Waters Act 1917-18.
- Wool: Reports of Central Wool Committee; Purchase of 1917-18 Wool Clip by Imperial Government.
- Works and Railways. Digest, No. 26 (Nos. 1 to 25 issued by the Department of Home Affairs).

3. State Publications.—The chief publications of each State are as follows:—

(i) **New South Wales.**—(a) *Publications by Government Statistician*:—

Statistical Register (annual); Official Year Book of New South Wales (annual); Statesman's Year Book (annual); Vital Statistics (monthly and annual); Statistical Bulletin (monthly); Six States of Australia and New Zealand (annual) to 1905; Reports on Rural and Manufacturing Industries, and on Value of Production (annual and special); Population of New South Wales (quarterly); Comparative Legislation relating to the Industrial Classes; Friendly Societies' Experience, 1900-1908.

(b) *Departmental Papers*:—

Annual Reports of Officials, and Departments, Boards, Bureaux, &c., relating to—

Aborigines; Accounts; Agriculture; Art Gallery; Auditor-General; Botanical Gardens; Brickworks; Budget; Disaster Relief; Education; Estimates; Explosives; Factories and Shops (Minimum Wage, Early Closing, Shearers' Accommodation); Finance; Fisheries; Forestry; Friendly Societies; Health; Immigration; Industrial Schools; Insane; Labour, and Labour Commission; Lands—Crown Lands, and Western Land Board; Leprosy; Local Government; Medical Officer; Microbiology; Miners' Accident Relief; Mines; Museum, and Technological Museum; National Park; Parliamentary Reports; Pharmacy; Police; Printing Office; Prisons; Public Library; Public Service; Public Works; Railways; Reformatories; Registrar-General; Savings Bank; State Children's Relief; State Clothing Factory; State Debt Commission; State Industrial Undertakings; Trade Unions; University; Water Conservation and Irrigation.

Reports of Parliamentary Committees, Commissions, Conferences, &c.; Agricultural Gazette (monthly); Industrial Gazette (monthly); Trade Reports; Records of the Geological Survey; Return of Gold Yields (quarterly); Statement of Assets and Liabilities of Public Companies (quarterly), and of Banks (quarterly); Railways and Tramways Report (quarterly); Observatory Reports and Bulletins; Report on Special War Expenditure; Synopsis of Voting at Elections.

(c) *Reports and Statements of Local Bodies as follows :—*

Fire Commissioners; Harbour Trusts; Hospitals; Municipalities; University; Water Supply and Sewerage Boards.

(ii) **Victoria.**—(a) *Publications by Government Statist :—*

Statistical Register (annual); Victorian Year Book (annual); Vital Statistics (annual and quarterly); Statistical Abstracts (quarterly); Returns of Oversea Imports and Exports (monthly); Reports on Rural and Manufacturing Industries, and on Value of Production (annual and special); Report on Friendly Societies (annual); Report on Trade Unions (annual).

(b) *Departmental Papers :—*

Annual Reports of Officials, and Departments, Boards, Bureaux, &c., relating to—Aborigines; Accident Insurance; Accounts; Agriculture, and Agricultural Colleges; Astronomer; Auditor-General; Budget; Charitable Institutions; Coal Miners' Accident Relief; Coal Mines; Council of Judges; Country Roads; Education; Estimates; Explosives; Factories (Workrooms, Shops, &c.); Finance; Forests; Friendly Societies; Health; Indeterminate Sentences; Inebriates' Institutions; Insane; Lands and Survey; Lands Purchase and Management; Licences Reduction; Marine; Mines; Neglected Children and Reformatory Schools; Observatory; Parliamentary Reports; Penal Establishments, Gaols, and Reformatory Prisons; Public Library, Museums, and National Gallery; Public Service; Railways (Railway Construction, Parliamentary Standing Committee, &c.); Rivers and Water Supply; Savings Banks; University.

Reports of Parliamentary Committees, Commissions, Conferences, &c.; Agricultural Journal (monthly); Trade Reports; Memoirs and Bulletins of the Geological Survey; Return of Yield of Goldfields (quarterly); Returns under Acts relating to Banks and Currency, Public Companies, Electric Light and Power, &c.; Bank Liabilities and Assets (quarterly); Determinations of Wages Boards and Courts of Industrial Appeal.

(c) *Reports and Statements of Local Bodies as follows :—*

Fire Brigades Boards; Harbour Trusts; Hospitals and Benevolent Asylums; Municipalities; University; Waterworks Trusts; Works (Melbourne and Metropolitan Board).

(iii) **Queensland.**—(a) *Publications by Government Statistician :—*

Statistical Register (annual); Official Year Book, 1901; A.B.C. of Queensland Statistics (annual); Vital Statistics (annual and monthly); Population of Queensland, 1916; Reports on Rural and Manufacturing Industries (annual and special).

(b) *Departmental Papers :—*

Annual Reports of Officials, and Departments, Boards, Bureaux, &c., relating to—Aborigines; Accounts; Advertising; Agent-General; Agricultural Bank; Agriculture and Stock; Analyst; Art Gallery; Auditor-General; Budget; Education; Estimates; Explosives; Finance; Forests; Friendly Societies; Government Relief; Harbours and Rivers; Health; Hospitals for Insane; Immigration; Industrial Undertakings; Insolvency; Intestate Estates; Labour (Factories, Shops, &c.); Lands; Life Insurance and Annuities; Machinery and Scaffolding; Marine; Medicine (Tropical Medicine, Inspection of Schools, &c.); Mines; Orphanages; Parliamentary Papers; Police; Prisons; Public Library; Public Service; Public Works; Railways; Savings Bank; State Children's Department; Sugar Experimental Stations and Central Sugar Mills; Taxation; Thursday Island; University; Water Supply, Workers' Dwellings.

Reports of Parliamentary Committees, Commissions, Conferences, &c.; Blue Book (annual); Agricultural Journal (monthly); Mining Journal (annual); Mining Reports (monthly); Reports of the Geological Survey; Reports on Sugar Industry; Industrial Gazette (monthly); Determinations of Wages Boards.

(c) *Reports and Statements of Local Bodies as follows* :—

Harbour Boards; Hospitals, Sanatoria, Asylums, &c.; Municipalities; University; Water Supply and Sewerage Boards.

(iv) **South Australia.**—(a) *Publications by the Under-Secretary and Government Statist* :—

Statistical Register (annual); Official Year Book, 1912 and 1913; Blue Book (annual); Statesman's Pocket Year Book (annual); Returns of Births and Deaths (monthly); Statistical Summary, 1836 to 1910; Reports on Rural and Manufacturing Industries (annual and special).

(b) *Departmental Papers* :—

Annual Reports of Officials, and Departments, Boards, Bureaux, &c., relating to—Accounts; Advances to Settlers; Agent-General; Agriculture; Astronomer; Audit-Commissioner; Budget; Destitution; Education; Estimates; Factories; Fisheries, and Oyster Fisheries; Gaols and Prisons; Hospitals for the Insane; Lands and Survey; Marine; Mines; National Park; Observatory; Parliamentary Papers; Police; Produce Department; Public Library, Museum and Art Gallery; Public Service; Public Works; Railways; Registrar-General; Savings Bank; State Children; Stock; Trade Unions; Woods and Forests.

Reports of Parliamentary Committees, Commissions, Conferences, &c.; Agricultural Journal (monthly); Bulletins of Department of Agriculture, and of Chemistry; Review of Mining Operations (half-yearly); Records and Reports of Geological Survey; Reports of Railway Commissioners (quarterly); Statements of Receipts and Disbursements (quarterly); Determinations of Wages Boards.

(c) *Reports and Statements of Local Bodies as follows* :—

Fire Brigades; Health Boards; Hospitals; Municipalities; Tramways Trust; University.

(v) **Western Australia.**—(a) *Publications by Government Statistician* :—

Statistical Register (annual); Year Book, 1900-03, 1902-4, 1905 (part); Blue Book (annual); Statistical Abstracts (quarterly, previously issued monthly to July, 1917); Population and Vital Statistics (annual and quarterly); Statistical View of Progress (annual); Reports on Rural and Manufacturing Industries, and on Trade and Shipping (annual and special).

(b) *Departmental Papers* :—

Annual Reports of Officials, and Departments, Boards, Bureaux, &c., relating to—Aborigines; Agent-General; Agricultural Bank; Agriculture; Analyst; Astronomer; Auditor-General; Budget; Charities and Industrial and Reformatory Schools; Education; Estimates; Explosives; Factories (Health, Medical, Early Closing, &c.); Finance; Fisheries; Friendly Societies (Industrial Conciliation, Arbitration, Trade Unions); Geological Survey; Harbours; Insane; Labour; Lands and Surveys, and Lands Titles; Machinery; Mines; Museum and Art Gallery; Parliamentary Papers, Police; Prisons; Public Library; Public Service; Public Works; Railways; Savings Bank; Stock; Taxation; Water Supply, Sewerage and Drainage; Woods and Forests.

Reports of Parliamentary Committees, Commissions, Conferences, &c. :—Agricultural Journal (monthly); Gold and Mineral Exports (monthly); Reports and Bulletins of the Geological Survey; Bulletins of the Department of State Medicine and Public Health; Government Savings Bank Return (monthly); Proceedings before Boards of Conciliation and Courts of Arbitration; Report on Principal Electoral Systems.

(c) *Reports and Statements of Local Bodies as follows* :—

Cemetery Boards; Fire Brigades; Harbour Trusts and Boards; Hospitals; Municipalities and Road Boards; University; Waterworks Boards.

- (vi) *Tasmania*.—(a) *Publications by Government Statistician*:—
 Statistical Register (annual); Statesman's Pocket Year Book, 1917; Statistical Summaries (annual); Vital Statistics and Migration (annual and monthly); Reports on Rural, &c., Production and Industries (annual and special).
- (b) *Departmental Papers*:—
 Annual Reports of Officials, and Departments, Boards, Bureaux, &c., relating to—Accounts; Agent-General; Agricultural Bank; Agriculture; Auditor-General; Budget; Charitable Grants; Education; Estimates; Explosives; Factories; Finance; Friendly Societies and Trade Unions; Gaols; Industrial; Health; Lands and Survey; Machinery; Mines; Museum and Botanical Gardens; Neglected Children; Parliamentary Papers; Police; Public Library; Public Service; Public Works; Railways; Savings Banks; Stock; Taxes; Titles; University.
 Reports of Parliamentary Committees, Commissions, Conferences, &c.:—Agricultural Gazette (monthly), Geological Survey Bulletins; Progress of the Mineral Industry (quarterly); Wages Boards Determinations; Statement of Public Debts Sinking Fund.
- (c) *Reports and Statements of Local Bodies as follows*:—
 Country Libraries; Drainage Board; Fire Brigade Board; Harbour Trusts; Hospitals; Industrial Schools; Marine Boards; Municipalities; University.

§ 3. Bibliography of Recent Works on Australia.

1. *General*.—It is hoped that the accompanying list of works dealing with Australia and Australian affairs generally, while not exhaustive, may prove of some service. The list refers to works published since the year 1901, and is additional to departmental official publications.

- ACKERMANN, J. *Australia*. London, 1913.
 AUSTRALIAN ANTARCTIC EXPEDITION. *Home of the Blizzard*. London, 1914.
 AUSTRALIAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. *Annual Reports of proceedings*.
 BERNAYS, C. A. *Queensland Politics during Sixty Years, 1859-1919*. Brisbane, 1919.
 BRADY, E. J. *Australia Unlimited*. Melbourne, 1918.
 BRITISH IMMIGRATION LEAGUE OF AUSTRALIA. *Annual Reports*.
 BUCHANAN, A. W. *The Real Australia*. London, 1907.
 BULLEN, FRANK T. *Advance Australia*. London, 1907.
 CLARK, A. T. *Australian Constitutional Law*. Melbourne, 1905.
 CLARK, VICTOR S. *The Labour Movement in Australasia*. London, 1906.
 COLLIER, JAMES. *Sir George Grey*. Christchurch, 1909.
 COLLINGRIDGE, GEORGE. *First Discovery of Australia and New Guinea*. Sydney, 1906.
 CRAMP, K. R. *State and Federal Constitutions of Australia*. Sydney, 1913.
 CREED, DR. J. M. *My Recollections of Australia and Elsewhere, 1842-1914*. London, 1916.
 D'AUNET, B. *L'Aurore Australe*. Melbourne, 1905; Paris, 1907.
 DUNCAN, N. *Australian Byways*. London, 1915.
 FAVENC, E. *Explorers of Australia*. Melbourne, 1908.
 FEDERAL HANDBOOK ON AUSTRALIA. Melbourne, 1914.
 FITCHETT, Rev. W. H. *The New World of the South: I. Australia in the Making; II. The Romance of Australian History*. London, 1913.
 FOX, FRANK. *Peeps at Many Lands. Australia*. London, 1911.
 FRASER, J. FOSTER. *Australia: The Making of a Nation*. London, 1910.
 GAY, FLORENCE. *In Praise of Australia*. London, 1912.
 GILLES, WM. *Stories in English History for Young Australians*. Melbourne, 1905.
 GLYNN, HON. P. MCM. *The Federal Constitution—The Proposed Amendments*. Adelaide, 1915.
 GREGORY, J. W. *The Dead Heart of Australia*. London, 1906. *Australia and New Zealand* (in Stanford's *Compendium of Geography and Travel*). London, 1907. *Australia*. Cambridge, 1916.
 GREY, J. G. *Australasia, Old and New*. London, 1901.
 GULLETT, H. S. *The Opportunity in Australia*. London, 1914.
 HARRIS, WALTER K. *Out back in Australia*. Second Edition, London, 1913; Berlin, 1914.
 HENDERSON, G. C. *Sir George Grey*. London, 1907.
 HOWITT, A. W. *The Native Tribes of South East Australia*. London, 1904.
 IMPERIAL FEDERATION LEAGUE. *Reprints of Lectures*.
 JACOMB, C. E. *God's Own Country*. London, 1914.
 JENKS, E. *History of the Australian Colonies*. 3rd Edition, London, 1912.
 JOHNS, FRED. *Notable Australians*. Adelaide, 1906 and 1908. *Australasia's Prominent People*, London, 1914. *Fred Johns' Annual, showing Who's Who in Australasia*. Adelaide, 1912, 1913, 1914.

- JOHNSTON, SIR H. *Pioneers in Australasia*. London, 1913.
- JOSE, A. W. *History of Australasia*. Sydney, 1909 and 1911.
- KEENAN, J. J. *Commonwealth of Australia Inaugural Celebrations*. Sydney, 1907.
- KNOWLES, G. S. *The Acts of the Parliament of the Commonwealth of Australia from 1901 to 1911, and in force on January 1, 1912*. London, 1914.
- LEE, IDA (Mrs. C. B. Marriott.) *The Coming of the British to Australia. 1788-1829*. London, 1906.
- LONG, C. R. *Stories of Australian Exploration*. Melbourne. Editions 1903, 1906, and 1913.
- MAIDEN, J. H. *Sir Joseph Banks, the Father of Australia*. Sydney, 1909.
- MANES, ALFRED. *Der Soziale Erdteil: Studienfahrt eines National-ökonomen durch Australasien*. Berlin, E. S. Mittler und Sohn.
- MANUAL OF EMERGENCY LEGISLATION. Commonwealth of Australia. Melbourne, 1916.
- MASSON, E. R. *An Untamed Territory—The Northern Territory of Australia*. London, 1915.
- METIN, A. *Le Socialisme sans doctrines: la question ouvrière et la question agraire en Australie et Nouvelle-Zélande*. Paris, 1901.
- MILLS, R. C. *The Colonization of Australia (1829-42)*. London, 1915.
- MOORE, W. H. *The Constitution of the Commonwealth of Australia*. London, 1902. Second Edition. Melbourne, 1910.
- MORGAN, B. H. *The Trade and Industry of Australia*. London, 1909.
- MURDOCH, WALTER. *The Australian Citizen*. Melbourne, 1912. *The Making of Australia*. Melbourne, 1917.
- MURPHY, H. M. *Labour and Wages in Australia*. Melbourne, 1917.
- NELSON, W. *Foster Fraser's Fallacies*. Sydney, 1910.
- OXFORD SURVEY OF EMPIRE (6 vols.). Vol. V. *Australasia*.
- PHILLIPS, MARION. *A Colonial Autocracy*. London, 1909.
- PRATT, E. A. *The State Railway Muddle in Australia*. London, 1912.
- PULSFORD, E. *Commerce and the Empire*. London, 1903.
- QUICK, HON. SIR J., AND GARRAN, R. R. *The Annotated Constitution of the Australian Commonwealth*. Sydney, 1901.
- QUICK, HON. SIR J., AND GROOM, HON. L. E. *The Judicial Power of the Commonwealth*. Melbourne, 1904.
- RALPH, EDITH. *Empire Builders in Australia*. London, 1911.
- RANKIN, M. T. *Arbitration and Conciliation in Australia*. London, 1916.
- REEVES, W. P. *State Experiments in Australia and New Zealand*. 2 vols. London, 1902.
- ROGERS, J. D. *Australia* (in Lucas's *Historical Geography of the British Colonies*). Oxford, 1907.
- ROWLAND, P. F. *The New Nation*. London, 1903.
- RUSDEN, G. W. *History of Australia*. 3 vols. Melbourne, 1908.
- SAPPER, KARL. *Australien und Ozeanien*. Leipzig, 1909.
- SARGENT, A. J. *Australasia: Eight Lectures* (Great Britain—Colonial Office). London, 1913.
- SCHACHNER, R. *Australien in Politik, Wirtschaft, Kultur*. Bd. I. Jena, 1909; do. Bd. II. Jena, 1911.
- SCOTT, ERNEST. *Terre Napoléon: A History of French Explorations and Projects in Australia*. London, 1919. *Lapérouse*. Sydney, 1912. *Life of Matthew Flinders, R.N.* Sydney, 1914. *A Short History of Australia*. Oxford, 1916.
- SCOTT, R. F. *The Voyage of the Discovery*. 2 vols. London, 1905.
- SCOTTISH AGRICULTURAL COMMISSION'S REPORT. *Australia: Its Land, Conditions, and Prospects*. Edinburgh, 1911.
- SEAKOY, A. In *Australian Tropics*. London, 1907. *By Flood and Field*. Melbourne, 1911.
- SPENCE, W. G. *Australia's Awakening*. Sydney, 1909.
- SPENCER, W. B., AND GILLEN, F. J. *The Northern Tribes of Central Australia*. London, 1904. *Across Australia*. 2 vols. London, 1912. *The Native Tribes of the Northern Territory of Australia*. London, 1911.
- SPURR, REV. F. C. *Five Years Under the Southern Cross*. London, 1915.
- ST. LEDGER, A. *Australian Socialism*. London, 1909.
- TAYLOR, T. G. *Australia. Physiographic and Economic*. Oxford, 1911. *A Geography of Australia*. Oxford, 1914. With Scott: *The Silver Lining*. London, 1916. *The Australian Environment, especially as controlled by Rainfall*. Melbourne, 1918.
- THOMAS, N. W. *Natives of Australia*. London, 1906. *Kinship Organisations and Group Marriages in Australia*. Cambridge, 1906.
- THOMSON, R. P. *A National History of Australia and New Zealand and the Adjacent Islands*. London, 1917.
- TILBEY, A. W. *Australasia*. London, 1912.
- TURNER, H. G. *First Decade of the Australian Commonwealth*. London, 1911.
- VOSSION, L. *L'Australie Nouvelle et son avenir*. Paris, 1902.
- WALTHAM, E. *Life and Labour in Australia*. London, 1909.
- WATSON, DR. F. *Historical Records of Australia*, vol. 1, series I-XI.
- WILKINSON, H. L. *The History of the Trust Movement in Australia*. Melbourne, 1914. *State Regulation of Prices in Australia*. Melbourne, 1917.
- WISE, HON. B. R. *Commonwealth of Australia*. London, 1909. 2nd Edition, London, 1913. *The Making of the Australian Commonwealth*. London, 1913.
- YEAR BOOK OF AUSTRALIA. Annual. Sydney.

2. *Works on Special Subjects.*—In addition to the works set out in the above bibliography dealing generally with the historical, industrial and personal aspects of the Australian people, there are a number of recent works upon special subjects, of which the following are amongst the more important :—

- BAKER, RICHARD T., AND SMITH, H. G. A Research on the Eucalypts. Sydney, 1902. A Research on the Pines of Australia. Sydney, 1910.
- BAKER, RICHARD T. Cabinet Timbers of Australia. Sydney, 1913. Australian Flora in Applied Art. Sydney, 1915.
- BURNELL, F. S. Australia versus Germany. The Taking of German New Guinea. London, 1915.
- CHAPMAN, F. Australian Fossils. Sydney, 1914.
- CHERRY, T. Victorian Agriculture. Melbourne, 1916.
- CLARK, DONALD. Australian Mining and Metallurgy. Melbourne, 1904. Gold Refining (with plates). London, 1909.
- COLLIER, JAMES. The Pastoral Age in Australasia. London, 1911.
- COLLINS, J. T., AND MEADEN, C. H. Local Government Law and Taxation. Melbourne, 1905.
- GILLIES, WM. First Studies in Insect Life in Australasia. Melbourne, 1904.
- GRASBY, W. C. Australian Agriculture. London, 1912.
- GUILFOYLE, W. R. Australian Plants. Melbourne, 1910.
- HALL, ROBERT, AND GILLIES, W. Nature Studies in Australia. Melbourne, 1903. Revised Edition. Melbourne, 1910.
- HALL, ROBERT. Useful Birds of Southern Australia. Melbourne, 1907.
- HAWKSWORTH, A. Australasian Sheep and Wool. 3rd Edition. Sydney, 1911.
- HUNT, H. A., TAYLOR, T. G., AND QUAYLE, F. T. Text Book on the Climate and Weather of Australia. Melbourne, 1914.
- INGLIS, GORDON. Sport and Pastime in Australia. London, 1912.
- LANE, C. G. Creature Life in Australian Wilds. London, 1913.
- LEACH, J. A. An Australian Bird Book. Melbourne, 1911.
- LE SOUEF, W. H. D. Wild Life in Australia. Melbourne, 1907.
- LUCAS, A. H. S., AND LE SOUEF, W. H. D. Animals of Australia. Melbourne, 1909. The Birds of Australia. Melbourne, 1911.
- MAIDEN, J. H. Critical Revision of the Genus Eucalyptus. Sydney, 1917. Forest Flora of New South Wales. 6 vols. and 2 parts of 7th vol. Sydney, 1904—
- MCALPINE, D. The Rusts of Australia: their Structure, Nature and Classification. Melbourne, 1910.
- PATERSON, J. W. Nature in Farming. Melbourne, 1916.
- POWER, F. DANVERS. Coalfields and Collieries of Australia. Melbourne, 1912.
- ROUGHLEY, T. C. Fishes of Australia and their Technology. Sydney, 1916.
- SCHULER, P. F. E. Australia in Arms. London, 1916.
- SMITH, H. B. The Sheep and Wool Industry of Australasia. London, 1914.
- STEAD, D. G. Fishes of Australia. Sydney, 1906.
- STRONG, A. T. Australia and the War. Melbourne, 1915.
- SUSSMILCH, C. Geology of New South Wales. Sydney, 1914.
- SUTHERLAND, A. The Australasian Live Stock Manual. 2nd Edition. Melbourne and Sydney, 1903.
- "WANDANDIAN." Travels in Australasia. Birmingham, 1912.
- WATERHOUSE, G. A., AND LYELE, G. Butterflies of Australia. Sydney, 1912.
- WHITE, CHARLES. History of Australian Bushranging. 2 vols. Sydney, 1906.

SECTION II.

DISCOVERY, COLONISATION, AND FEDERATION OF AUSTRALIA.

§ 1. Early Knowledge of Australia.

A brief, though fairly comprehensive, account of the discovery and early knowledge of Australia was given in Year Book No. 1 (pp. 44 to 51). This account appeared in a condensed form in Year Books Nos. 2, 3, and 4. Bibliographical references to the subject were also given in Year Book No. 1 (p. 49). Exigencies of space prevent the inclusion of any further reference to this subject in the present issue.

§ 2. The Taking Possession of Australia.

Reference was made to the more important facts relating to the taking possession and annexation of Australia in each of the first four issues of this book: see preferably Year Book No. 4 (pp. 15 and 16). In so far as the annexation of the eastern parts is concerned, a full historical account of the period may be found in the "Historical Records of New South Wales," Vol. I., parts 1 and 2. For an account of the annexation of Western Australia, reference may be made to the West Australian Year Book, 1905, Part I.

§ 3. The Creation of the Several Colonies.

1. **Introduction.**—A historical summary of the facts relating to the creation of the several colonies, the separation of Victoria and Queensland, and the changes in the boundaries of certain of the colonies has appeared in previous issues of this book: see Year Book No. 4 (pp. 16 to 23). The main facts in this connection may be traced by reference to the maps in preceding issues (see Year Book, No. 4, pp. 17 and 18).

2. **No further Creation of Colonies after 1859.**—Since the separation of Queensland in 1859 no other creation of colonies has taken place in Australia, though the boundaries of New South Wales, Queensland, and South Australia were altered later, and the control of the Northern Territory was transferred from South Australia to the Commonwealth in 1911. In 1914, the boundary between Victoria and South Australia, which had been in dispute, was determined by the High Court. The dates of foundation of the Australasian colonies, and their areas at the close of 1859, were as shewn in the following table:—

DATES OF FOUNDATION OF AUSTRALASIAN COLONIES AND AREAS AS AT END OF 1859.

Colony.	Date of Annexation.	Date of Creation.	Date of First Permanent Settlement.	Area. Square Miles.
New South Wales	1770	1786	1788	1,020,412
Tasmania	1788	1825	1803	26,215
South Australia	1788	1834	1836	309,850
Victoria	1770	1851	1834	87,884
Queensland	1770	1859	1824	554,300
Western Australia	1829	1829	1829	975,920
New Zealand	1840	1841	1814	104,471 ¹

1. By proclamation dated 10th June, 1901, the area of the Dominion was increased by 280 square miles, making it now 104,751 square miles, by the inclusion of the Cook Group and other islands.

3. **Australasia, 1863 to 1900.**—The immense area generally known as Australasia had, by 1863, been divided into seven distinct colonies, the areas of which are shewn below. The areas of the Northern Territory and the Federal Capital Territory, which are now under the exclusive jurisdiction of the Commonwealth, are given separately.

On the 1st January, 1901, the colonies mentioned above, with the exception of New Zealand, were federated under the name of the "Commonwealth of Australia," the designation of "Colonies" being at the same time changed into that of "States." The total area of the Commonwealth is, therefore, 2,974,581 square miles; the dates of creation and the areas of the separate colonies and territories, as determined on the final adjustment of their boundaries, are shewn in the following table:—

DATES OF CREATION AND AREAS OF THE SEVERAL COLONIES AND TERRITORIES.

Colony.	Year of Formation into Separate Colony.	Present Area in Square Miles.	Colony.	Year of Formation into Separate Colony.	Present Area in Square Miles.
New South Wales	1786	309,432 ¹	New Zealand ..	1841	104,751
Tasmania ..	1825	26,215	Victoria ..	1851	87,884
Western Australia	1829	975,920	Queensland ..	1859	670,500
South Australia (proper)	1834	380,070	Northern Territory	1863	523,620
			Federal Capital Territory ..	1911	940 ²
			Commonwealth		2,974,581 square miles.
			Australasia		3,079,332 square miles.

1. Exclusive of Federal Capital Territory (Canberra and Jervis Bay).
2. Prior to 1911 included with New South Wales.

4. **British New Guinea or Papua.**—Under the administration of the Commonwealth, but not included in it, is British New Guinea or *Papua*, finally annexed by the British Government in 1884. This Territory was for a number of years administered by the Queensland Government, but was transferred to the Commonwealth by proclamation on the 1st September, 1906, under the authority of the Papua Act (Commonwealth) of 16th November, 1905. The area of Papua is about 90,540 square miles. More extended reference to this dependency of the Commonwealth will be found in Section XXIX.

5. **Transfer of the Northern Territory to the Commonwealth.**—On the 7th December, 1907, the Commonwealth and the State of South Australia entered into an agreement for the surrender to and acceptance by the Commonwealth of the Northern Territory, subject to approval by the Parliaments of the Commonwealth and the State. This approval was given by the South Australian Parliament under the Northern Territory Surrender Act 1907 (assented to on the 14th May, 1908), and by the Commonwealth Parliament under the Northern Territory Acceptance Act 1910 (assented to on the 16th November, 1910). The Territory accordingly was transferred by proclamation to the Commonwealth on the 1st January, 1911. Further information may be found in the section of this book (xxxii.) on "*The Northern Territory.*"

6. **Norfolk Island.**—Although administered for many years by the Government of New South Wales, this island was, until 1st July, 1914, a separate Crown colony. On that date it was taken over by the Federal Parliament as a territory of the Commonwealth. Further reference to the island will be found in the latter part of Section XXXIV.

§ 4. Transfer of the Federal Capital Territory to the Commonwealth.

On the 18th October, 1909, the Commonwealth and the State of New South Wales entered into an agreement for the surrender to and acceptance by the Commonwealth of an area of 912 square miles as the seat of Government of the Commonwealth. In December, 1909, Acts were passed by the Commonwealth and New South Wales Parliaments, approving the agreement, and on the 5th December, 1910, a proclamation was issued vesting the Territory in the Commonwealth on and from the 1st January, 1911. By the Jervis Bay Territory Acceptance Act 1915, an area of 28 square miles at Jervis Bay, surrendered by New South Wales according to an agreement made in 1913, was accepted by the Commonwealth. Further reference to the Territory will be found in Section XXXI. of this book.

§ 5. The Exploration of Australia.

A fairly complete, though brief, account of the Exploration of Australia was given in Year Book No. 2 (pp. 20 to 39). A brief summary of the more important facts relating to the subject was given in Year Books Nos. 3 and 4. Maps shewing the progress of Australian exploration may also be found in previous issues (see No. 8, p. 35).

§ 6. The Constitution of the States.

A brief and condensed statement of the constitutional history of the several States, shewing how their present Constitutions have been built up, may be found in Section II. of the second, third, and fourth issues of the Year Book. (See No. 4, pp. 27 to 32.)

§ 7. The Federal Movement in Australia.

A summary was given in Year Book No. 1 (pp. 17 to 21) of the "Federal Movement in Australia" from its inception to its consummation; a synopsis thereof was given in Year Books Nos. 2, 3, and 4. (See No. 4, pp. 32 to 37.)

§ 8. Creation of the Commonwealth.

1. **The Act.**—The Commonwealth of Australia Constitution Act, 63 and 64 Vic., Chapter 12, namely, an Act to constitute the Commonwealth of Australia, was shewn *in extenso* in Year Book No. 1. In the Year Books Nos. 2, 3, and 4, a summary of the Act was given. As two amending Acts, namely, the Constitution Alteration (Senate Elections) Act 1906, and the Constitution Alteration (State Debts) Act 1909 have been passed, it was thought desirable to insert the Act, as amended, in full in Year Book No. 5 and subsequent issues.

THE COMMONWEALTH OF AUSTRALIA CONSTITUTION ACT, 63 & 64 VICT., CHAPTER 12.

An Act to constitute the Commonwealth of Australia. [9th July, 1900.]

WHEREAS the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, humbly relying on the blessing of Almighty God, have agreed to unite in one indissoluble Federal Commonwealth under the Crown of the United Kingdom of Great Britain and Ireland, and under the Constitution hereby established.

And whereas it is expedient to provide for the admission in to the Commonwealth of other Australasian Colonies and possessions of the Queen :

Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows :—

1. This Act may be cited as the Commonwealth of Australia Constitution Act.
2. The provisions of this Act referring to the Queen shall extend to Her Majesty's heirs and successors in the sovereignty of the United Kingdom.
3. It shall be lawful for the Queen, with the advice of the Privy Council, to declare by proclamation that, on and after a day therein appointed, not being later than one year after the passing of this Act, the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, and also, if Her Majesty is satisfied that the people of Western Australia have agreed thereto, of Western Australia, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia. But the Queen may, at any time after the proclamation, appoint a Governor-General for the Commonwealth.
4. The Commonwealth shall be established, and the Constitution of the Commonwealth shall take effect, on and after the day so appointed. But the Parliaments of the several colonies may at any time after the passing of this Act make any such laws, to come into operation on the day so appointed, as they might have made if the Constitution had taken effect at the passing of this Act.

5. This Act, and all laws made by the Parliament of the Commonwealth under the Constitution, shall be binding on the courts, judges, and people of every State and of every part of the Commonwealth, notwithstanding anything in the laws of any State; and the laws of the Commonwealth shall be in force on all British ships, the Queen's ships of war excepted, whose first port of clearance and whose port of destination are in the Commonwealth.

6. "The Commonwealth" shall mean the Commonwealth of Australia as established under this Act.

"The States" shall mean such of the colonies of New South Wales, New Zealand, Queensland, Tasmania, Victoria, Western Australia and South Australia, including the northern territory of South Australia, as for the time being are parts of the Commonwealth, and such colonies or territories as may be admitted into or established by the Commonwealth as States: and each of such parts of the Commonwealth shall be called "a State."

"Original States" shall mean such States as are part of the Commonwealth at its establishment.

7. The Federal Council of Australasia Act 1885 is hereby repealed, but so as not to affect any laws passed by the Federal Council of Australasia and in force at the establishment of the Commonwealth.

Any such law may be repealed as to any State by the Parliament of the Commonwealth, or as to any colony not being a State by the Parliament thereof.

8. After the passing of this Act the Colonial Boundaries Act 1895 shall not apply to any colony which becomes a State of the Commonwealth: but the Commonwealth shall be taken to be a self-governing colony for the purposes of that Act.

9. The Constitution of the Commonwealth shall be as follows:—

THE CONSTITUTION.

This Constitution is divided as follows:—

Chapter I.—The Parliament:—	Chapter III.—The Judicature.
Part I.—General.	Chapter IV.—Finance and Trade.
Part II.—The Senate.	Chapter V.—The States.
Part III.—The House of Representatives.	Chapter VI.—New States.
Part IV.—Both Houses of Parliament.	Chapter VII.—Miscellaneous.
Part V.—Powers of the Parliament.	Chapter VIII.—Alteration of the Constitution.
Chapter II.—The Executive Government.	

The Schedule.

CHAPTER I.—THE PARLIAMENT.

PART I.—GENERAL.

1. The legislative power of the Commonwealth shall be vested in a Federal Parliament, which shall consist of the Queen, a Senate, and a House of Representatives, and which is hereinafter called "The Parliament," or "The Parliament of the Commonwealth."

2. A Governor-General appointed by the Queen shall be Her Majesty's representative in the Commonwealth, and shall have and may exercise in the Commonwealth during the Queen's pleasure, but subject to this Constitution, such powers and functions of the Queen as Her Majesty may be pleased to assign to him.

3. There shall be payable to the Queen out of the Consolidated Revenue Fund of the Commonwealth, for the salary of the Governor-General, an annual sum which, until the Parliament otherwise provides, shall be ten thousand pounds.

The salary of a Governor-General shall not be altered during his continuance in office.

4. The provisions of this Constitution relating to the Governor-General extend and apply to the Governor-General, for the time being, or such person as the Queen may appoint to administer the Government of the Commonwealth: but no such person shall be entitled to receive any salary from the Commonwealth in respect of any other office during his administration of the Government of the Commonwealth.

5. The Governor-General may appoint such times for holding the sessions of the Parliament as he thinks fit, and may also from time to time, by Proclamation or otherwise, prorogue the Parliament, and may in like manner dissolve the House of Representatives.

After any general election the Parliament shall be summoned to meet not later than thirty days after the day appointed for the return of the writs.

The Parliament shall be summoned to meet not later than six months after the establishment of the Commonwealth.

6. There shall be a session of the Parliament once at least in every year, so that twelve months shall not intervene between the last sitting of the Parliament in one session and its first sitting in the next session.

PART II.—THE SENATE.

7. The Senate shall be composed of senators for each State, directly chosen by the people of the State, voting, until the Parliament otherwise provides, as one electorate.

But until the Parliament of the Commonwealth otherwise provides, the Parliament of the State of Queensland, if that State be an Original State, may make laws dividing the State into divisions and determining the number of senators to be chosen for each division, and in the absence of such provision the State shall be one electorate.

Until the Parliament otherwise provides there shall be six senators for each Original State. The Parliament may make laws increasing or diminishing the number of senators for each State, but so that equal representation of the several Original States shall be maintained and that no Original State shall have less than six senators.

The senators shall be chosen for a term of six years, and the names of the senators chosen for each State shall be certified by the Governor to the Governor-General.

8. The qualification of electors of senators shall be in each State that which is prescribed by this Constitution, or by the Parliament, as the qualification for electors of members of the House of Representatives; but in the choosing of senators each elector shall vote only once.

9. The Parliament of the Commonwealth may make laws prescribing the method of choosing senators, but so that the method shall be uniform for all the States. Subject to any such law, the Parliament of each State may make laws prescribing the method of choosing the senators for that State.

The Parliament of a State may make laws for determining the times and places of elections of senators for that State.

10. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State, for the time being, relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections of senators for the State.

11. The Senate may proceed to the despatch of business, notwithstanding the failure of any State to provide for its representation in the Senate.

12. The Governor of any State may cause writs to be issued for elections of senators for the State. In case of the dissolution of the Senate the writs shall be issued within ten days from the proclamation of such dissolution.

13. As soon as may be after the Senate first meets, and after each first meeting of the Senate following a dissolution thereof, the Senate shall divide the senators chosen for each State into two classes, as nearly equal in number as practicable; and the places of the senators of the first class shall become vacant at the expiration of [the third year] *three years*,¹ and the places of those of the second class at the expiration of [the sixth year] *six years*¹ from the beginning of their term of service; and afterwards the places of senators shall become vacant at the expiration of six years from the beginning of their term of service.³

The election to fill vacant places shall be made [in the year at the expiration of which] *within one year before*¹ the places are to become vacant.

For the purpose of this section the term of service of a senator shall be taken to begin on the first day of [January] *July*¹ following the day of his election, except in the cases of the first election and of the election next after any dissolution of the Senate, when it shall be taken to begin on the first day of [January] *July*¹ preceding the day of his election.²⁻⁴

14. Whenever the number of senators for a State is increased or diminished, the Parliament of the Commonwealth may make such provision for the vacating of the places of senators for the State as it deems necessary to maintain regularity in the rotation.

15. If the place of a senator becomes vacant before the expiration of his term of service, the Houses of Parliament of the State for which he was chosen shall, sitting and voting together, choose a person to hold the place until the expiration of the term, or until the election of a successor as hereinafter provided, whichever first happens. But if the Houses of Parliament of the State are not in session at the time when the vacancy is notified, the Governor of the State, with the advice of the Executive Council thereof, may appoint a person to hold the place until the expiration of fourteen days after the beginning of the next session of the Parliament of the State, or until the election of a successor, whichever first happens.

At the next general election of members of the House of Representatives, or at the next election of senators for the State, whichever first happens, a successor shall, if the term has not then expired, be chosen to hold the place from the date of his election until the expiration of the term.

The name of any senator so chosen or appointed shall be certified by the Governor of the State to the Governor-General.

16. The qualifications of a senator shall be the same as those of a member of the House of Representatives.

17. The Senate shall, before proceeding to the despatch of any other business, choose a Senator to be the President of the Senate; and as often as the office of President becomes vacant the Senate shall again choose a senator to be the President.

The President shall cease to hold his office if he ceases to be a senator. He may be removed from office by a vote of the Senate, or he may resign his office or his seat by writing addressed to the Governor-General.

18. Before or during any absence of the President, the Senate may choose a senator to perform his duties in his absence.

19. A senator may, by writing addressed to the President, or to the Governor-General if there is no President, or if the President is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

20. The place of a senator shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the Senate, fails to attend the Senate.

1. As amended by section 2 of the Constitution Alteration (Senate Elections) 1906. The words in square brackets have been repealed; amendments are shown in italics.

2. Under sections 3 and 4, the Constitution Alteration (Senate Elections) 1906, it was also provided that—

(a) The terms of service of the senators whose places would, but for this Act, become vacant at the expiration of the year One thousand nine hundred and nine are extended until the thirtieth day of June One thousand nine hundred and ten.

(b) The terms of service of the senators whose places would, but for this Act, become vacant at the expiration of the year One thousand nine hundred and twelve are extended until the thirtieth day of June One thousand nine hundred and thirteen.

(c) This Act shall not be taken to alter the time of beginning of the term of service of any senator elected in the year One thousand nine hundred and six.

3. A bill was passed by the Commonwealth Parliament on the 2nd September, 1915, for the submission to the electors of a proposed law to alter section 13 by inserting after *three years* the words *and two months*, and after *six years* where mentioned the words *and four months*.

4. It was also proposed by the bill alluded to above to alter the foregoing paragraph so as to read thus:—For the purposes of this section the term of service of the senators elected in the year One thousand nine hundred and fourteen shall be taken to have begun on the first day of October, One thousand nine hundred and fourteen, and the term of service of a senator elected to fill a vacancy thereafter occurring in rotation shall be taken to begin on the day on which the place he is to fill becomes vacant, and the term of service of senators elected at an election next after a dissolution of the Senate shall be taken to begin on the day of the first meeting of the House of Representatives after dissolution. A writ was issued for a referendum (to be taken on the 11th December, 1915, at the same time as referendums for the alteration of the legislative powers of the Commonwealth), but the writs were withdrawn under authority of Act 51 of 1915. See also note to section 51.

21. Whenever a vacancy happens in the Senate, the President, or if there is no President or if the President is absent from the Commonwealth, the Governor-General shall notify the same to the Governor of the State in the representation of which the vacancy has happened.

22. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the senators shall be necessary to constitute a meeting of the Senate for the exercise of its powers.

23. Questions arising in the Senate shall be determined by a majority of votes, and each senator shall have one vote. The President shall in all cases be entitled to a vote; and when the votes are equal the question shall pass in the negative.

PART III.—THE HOUSE OF REPRESENTATIVES.

24. The House of Representatives shall be composed of members directly chosen by the people of the Commonwealth, and the number of such members shall be, as nearly as practicable, twice the number of the senators.

The number of members chosen in the several States shall be in proportion to the respective numbers of their people, and shall, until the Parliament otherwise provides, be determined, whenever necessary, in the following manner:—

- (i) A quota shall be ascertained by dividing the number of the people of the Commonwealth, as shewn by the latest statistics of the Commonwealth, by twice the number of the senators:
- (ii) The number of members to be chosen in each State shall be determined by dividing the number of the people of the State, as shewn by the latest statistics of the Commonwealth, by the quota; and if on such division there is a remainder greater than one-half of the quota, one more member shall be chosen in the State.

But notwithstanding anything in this section, five members at least shall be chosen in each Original State.

25. For the purposes of the last section, if by the law of any State all persons of any race are disqualified from voting at elections for the more numerous House of the Parliament of the State, then, in reckoning the number of the people of the State or of the Commonwealth, persons of that race resident in that State shall not be counted.

26. Notwithstanding anything in section twenty-four, the number of members to be chosen in each State at the first election shall be as follows:—

New South Wales	.. 23	South Australia	.. 6
Victoria	.. 20	Tasmania	.. 5
Queensland	.. 8		

Provided that if Western Australia is an Original State, the number shall be as follows:—

New South Wales	.. 26	South Australia	.. 7
Victoria	.. 23	Western Australia	.. 5
Queensland	.. 9	Tasmania	.. 5

27. Subject to this Constitution the Parliament may make laws for increasing or diminishing the number of the members of the House of Representatives.

28. Every House of Representatives shall continue for three years from the first meeting of the House, and no longer, but may be sooner dissolved by the Governor-General.

29. Until the Parliament of the Commonwealth otherwise provides, the Parliament of any State may make laws for determining the divisions in each State for which members of the House of Representatives may be chosen, and the number of members to be chosen for each division. A division shall not be formed out of parts of different States.

In the absence of other provision, each State shall be one electorate.

30. Until the Parliament otherwise provides, the qualification of electors of members of the House of Representatives shall be in each State that which is prescribed by the law of the State as the qualification of electors of the more numerous House of Parliament of the State; but in the choosing of members each elector shall vote only once.¹

¹ The franchise qualification was determined by the Commonwealth Franchise Act 1902.

31. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State for the time being relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections in the State of members of the House of Representatives.

32. The Governor-General in Council may cause writs to be issued for general elections of members of the House of Representatives.

After the first general election, the writs shall be issued within ten days from the expiry of a House of Representatives or from the proclamation of a dissolution thereof.

33. Whenever a vacancy happens in the House of Representatives, the Speaker shall issue his writ for the election of a new member, or if there is no Speaker, or if he is absent from the Commonwealth, the Governor-General in Council may issue the writ.

34. Until the Parliament otherwise provides, the qualifications of a member of the House of Representatives shall be as follows :—

(i) He must be of the full age of twenty-one years, and must be an elector entitled to vote at the election of members of the House of Representatives, or a person qualified to become such elector, and must have been for three years at the least a resident within the limits of the Commonwealth as existing at the time when he is chosen :

(ii) He must be a subject of the Queen, either natural-born or for at least five years naturalised under a law of the United Kingdom, or of a Colony which has become or becomes a State, or of the Commonwealth, or of a State.

35. The House of Representatives shall, before proceeding to the despatch of any other business, choose a member to be the Speaker of the House, and as often as the office of Speaker becomes vacant the House shall again choose a member to be the Speaker.

The Speaker shall cease to hold his office if he ceases to be a member. He may be removed from office by a vote of the House, or he may resign his office or his seat by writing addressed to the Governor-General.

36. Before or during any absence of the Speaker, the House of Representatives may choose a member to perform his duties in his absence.

37. A member may by writing addressed to the Speaker, or to the Governor-General if there is no Speaker or if the speaker is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

38. The place of a member shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the House, fails to attend the House.

39. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the members of the House of Representatives shall be necessary to constitute a meeting of the House for the exercise of its powers.

40. Questions arising in the House of Representatives shall be determined by a majority of votes other than that of the Speaker. The Speaker shall not vote unless the numbers are equal, and then he shall have a casting vote.

PART IV.—BOTH HOUSES OF THE PARLIAMENT.

41. No adult person who has or acquires a right to vote at elections for the more numerous House of the Parliament of a State shall, while the right continues, be prevented by any law of the Commonwealth from voting at elections for either House of the Parliament of the Commonwealth.

42. Every senator and every member of the House of Representatives shall before taking his seat make and subscribe before the Governor-General, or some person authorised by him, an oath or affirmation of allegiance in the form set forth in the schedule to this Constitution.

43. A member of either House of the Parliament shall be incapable of being chosen or of sitting as a member of the other House.

44. Any person who—

- (i) Is under any acknowledgment of allegiance, obedience, or adherence to a foreign power, or is a subject or a citizen or entitled to the rights or privileges of a subject or a citizen of a foreign power : or
- (ii) Is attainted of treason, or has been convicted and is under sentence, or subject to be sentenced, for any offence punishable under the law of the Commonwealth or of the State by imprisonment for one year or longer : or
- (iii) Is an undischarged bankrupt or insolvent : or
- (iv) Holds any office of profit under the Crown, or any pension payable during the pleasure of the Crown out of any of the revenues of the Commonwealth : or
- (v) Has any direct or indirect pecuniary interest in any agreement with the Public Service of the Commonwealth otherwise than as a member and in common with the other members of an incorporated company consisting of more than twenty-five persons :

shall be incapable of being chosen or of sitting as a senator or a member of the House of Representatives.

But sub-section (iv) does not apply to the office of any of the Queen's Ministers of State for the Commonwealth, or of any of the Queen's Ministers for a State, or to the receipt of pay, half-pay, or a pension by any person as an officer or member of the Queen's navy or army, or to the receipt of pay as an officer or member of the naval or military forces of the Commonwealth by any person whose services are not wholly employed by the Commonwealth.

45. If a senator or member of the House of Representatives—

- (i) Becomes subject to any of the disabilities mentioned in the last preceding section : or
- (ii) Takes the benefit, whether by assignment, composition, or otherwise, of any law relating to bankrupt or insolvent debtors : or
- (iii) Directly or indirectly takes or agrees to take any fee or honorarium for services rendered to the Commonwealth, or for services rendered in the Parliament to any person or State :

his place shall thereupon become vacant.

46. Until the Parliament otherwise provides, any person declared by this Constitution to be incapable of sitting as a senator or as a member of the House of Representatives shall, for every day on which he so sits, be liable to pay the sum of one hundred pounds to any person who sues for it in any court of competent jurisdiction.

47. Until the Parliament otherwise provides, any question respecting the qualification of a senator or of a member of the House of Representatives, or respecting a vacancy in either House of the Parliament, and any question of a disputed election to either House, shall be determined by the House in which the question arises.

48. Until the Parliament otherwise provides, each senator and each member of the House of Representatives shall receive an allowance of four hundred pounds a year to be reckoned from the day on which he takes his seat.¹

49. The powers, privileges, and immunities of the Senate and of the House of Representatives, and of the members and the committee of each House, shall be such as are declared by the Parliament, and until declared shall be those of the Commons House of Parliament of the United Kingdom, and of its members and committees, at the establishment of the Commonwealth.

50. Each House of the Parliament may make rules and orders with respect to—

- (i) The mode in which its powers, privileges, and immunities may be exercised and upheld ;
- (ii) The order and conduct of its business and proceedings either separately or jointly with the other House.

1. By the Parliamentary Allowances Act 1907, assented to on the 28th August, the amount of the allowance was increased to £600 a year.

PART V.—POWERS OF THE PARLIAMENT.¹

51. The Parliament shall, subject to this Constitution, have power to make laws for the peace, order, and good government of the Commonwealth with respect to—

- (i) Trade and commerce with other countries, and among the States :²
- (ii) Taxation ; but so as not to discriminate between States or parts of States :
- (iii) Bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth :
- (iv) Borrowing money on the public credit of the Commonwealth :
- (v) Postal, telegraphic, telephonic, and other like services :
- (vi) The naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and maintain the laws of the Commonwealth :
- (vii) Lighthouses, lightships, beacons and buoys :
- (viii) Astronomical and meteorological observations :
- (ix) Quarantine :
- (x) Fisheries in Australian waters beyond territorial limits :
- (xi) Census and statistics :
- (xii) Currency, coinage, and legal tender :
- (xiii) Banking, other than State banking ; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money :

1. Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (A) The Constitution Alteration (Legislative Powers) 1910, and (B) the Constitution Alteration (Monopolies) 1910.

(A) *Constitution Alteration (Legislative Powers) 1910.* The object of this proposed law was to extend the powers of the Commonwealth Government (under section 51 of the Constitution) in four directions, viz.—(a) Trade and Commerce, (b) Corporations, (c) Industrial matters, and (d) Trusts and monopolies.

(a) *Trade and Commerce.* In Section 51, para. (1) of the Constitution, it was proposed to omit the words "with other countries, and among the States," so as to give the Commonwealth Parliament power to legislate with respect to trade and commerce, without limitation.

(b) *Corporations.* It was proposed to omit the words (para. xxv.) "Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth," and to insert in lieu thereof the words—"Corporations including (a) the creation, dissolution, regulation, and control of corporations ; (b) corporations formed under the law of a State (except any corporation formed solely for religious, charitable, scientific or artistic purposes, and not for the acquisition of gain by the corporation or its members), including their dissolution, regulation, and control ; and (c) foreign corporations, including their regulation and control."

(c) *Industrial Matters.* In para. xxxv. it was proposed to omit the words "Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State," and to insert in lieu thereof the words "labour and employment, including (a) the wages and conditions of labour and employment in any trade, industry, or calling ; and (b) the prevention and settlement of industrial disputes, including disputes in relation to employment on or about railways, the property of any State."

(d) *Trusts and Monopolies.* It was proposed to amend Section 51 of the Constitution by adding at the end thereof the following paragraph :—" (xl.) Combinations and monopolies in relation to the production, manufacture, or supply of goods or services."

(B) *Constitution Alteration (Monopolies) 1910.* The object of this proposed law was to alter the Constitution by inserting, after Section 51 thereof, the following section :—" 51A. When each House of Parliament, in the same session, has by resolution declared that the industry or business of producing manufacturing, or supplying goods, or of supplying any specified services, is the subject of any monopoly the Parliament shall have power to make laws for carrying on the industry or business by or under the control of the Commonwealth, and acquiring for that purpose on just terms any property used in connection with the industry or business."

Neither of the proposed laws was approved by the people.

On the 31st May, 1913, the date of the Parliamentary elections, the same proposed alterations were again submitted to the people as five distinct laws, with an additional one whereby the conditions of employment and the settlement of disputes relating thereto in the several State railway services might be brought within the jurisdiction of the Commonwealth. All six proposed laws were negatived by the people.—See section XXV. §2.

2. On the 15th July, 1915, the Commonwealth Parliament passed a bill for the submission to the electors of proposed laws to amend the Constitution in regard to the legislative powers of the Commonwealth Parliament. The proposed amendments differed somewhat from those submitted to the electors in the years 1911 and 1913.

Thus in regard to (A) (b) *Corporations* (see 1 above) it was proposed to specifically exclude municipal and governmental corporations. (A) (c) was modified to read thus after "to insert in lieu (in their stead) the words"—Including (a) Labour, (b) Employment and unemployment, (c) The terms and conditions of labour and employment in any trade, industry, occupation, or calling, (d) The rights and obligations of employers and employees, (e) Strikes and lockouts, (f) The maintenance of industrial peace, (g) The settlement of industrial disputes. With regard to railway disputes it was proposed to insert after paragraph (xxxv.) and section 51 the following paragraph :—" (xxxv. A.) Conciliation and arbitration for the prevention and settlement of industrial disputes in relation to employment in the railway service of a State. (A) (7) was modified to read (xl.) Trusts, combinations, monopolies, and arrangements in relation to (a) the production, manufacture, or supply of goods, or the supply of services, or (b) the ownership of the means of production, manufacture, or supply of goods, or supply of services. (B) (see 1 above) was modified as follows :—After "has by resolution" the words "passed by an absolute majority of its members" were added, and an additional subsection was inserted to the effect that the section was not to apply to any industry or business conducted or carried on by the Government of a State, or any public authority constituted under a State. Writs were issued for referendums to be held on the 11th December, 1915, but they were withdrawn under Act 51 of 1915.

- (xiv) Insurance, other than State insurance ; also State insurance extending beyond the limits of the State concerned :
- (xv) Weights and measures :
- (xvi) Bills of exchange and promissory notes :
- (xvii) Bankruptcy and insolvency :
- (xviii) Copyrights, patents of inventions and designs, and trade marks :
- (xix) Naturalisation and aliens :
- (xx) Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth :¹
- (xxi) Marriage :
- (xxii) Divorce and matrimonial causes ; and in relation thereto, parental rights, and the custody and guardianship of infants :
- (xxiii) Invalid and old-age pensions :
- (xxiv) The service and execution throughout the Commonwealth of the civil and criminal process and the judgments of the Courts of the States :
- (xxv) The recognition throughout the Commonwealth of the laws, the public Acts and records, and the judicial proceedings of the States :
- (xxvi) The people of any race, other than the aboriginal race in any State, for whom it is deemed necessary to make special laws :
- (xxvii) Immigration and emigration :
- (xxviii) The influx of criminals :
- (xxix) External affairs :
- (xxx) The relations of the Commonwealth with the islands of the Pacific :
- (xxxi) The acquisition of property on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws :
- (xxxii) The control of railways with respect to transport for the naval and military purposes of the Commonwealth :
- (xxxiii) The acquisition, with the consent of a State, of any railways of the State on terms arranged between the Commonwealth and the State :
- (xxxiv) Railway construction and extension in any State with the consent of that State :
- (xxxv) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State :¹
- (xxxvi) Matters in respect of which this Constitution makes provision until the Parliament otherwise provides :
- (xxxvii) Matters referred to the Parliament of the Commonwealth by the Parliament or Parliaments of any State or States, but so that the law shall extend only to States by whose Parliaments the matter is referred, or which afterwards adopt the law :
- (xxxviii) The exercise within the Commonwealth, at the request or with the concurrence of the Parliaments of all the States directly concerned, of any power which can at the establishment of this Constitution be exercised only by the Parliament of the United Kingdom or by the Federal Council of Australasia :
- (xxxix) Matters incidental to the execution of any power vested by this Constitution in the Parliament or in either House thereof, or in the Government of the Commonwealth, or in the Federal Judicature, or in any department or officer of the Commonwealth.

52. The Parliament shall, subject to this Constitution, have exclusive power to make laws for the peace, order and good government of the Commonwealth, with respect to—

- (i) The seat of Government of the Commonwealth, and all places acquired by the Commonwealth for public purposes :
- (ii) Matters relating to any department of the public service the control of which is by this Constitution transferred to the Executive Government of the Commonwealth :
- (iii) Other matters declared by this Constitution to be within the exclusive power of the Parliament.

1. See footnotes 1 and 2 on previous page.

53. Proposed laws appropriating revenue or moneys, or imposing taxation, shall not originate in the Senate. But a proposed law shall not be taken to appropriate revenue or moneys, or to impose taxation, by reason only of its containing provisions for the imposition or appropriation of fines or other pecuniary penalties, or for the demand or payment or appropriation of fees for licenses, or fees for services under the proposed law.

The Senate may not amend proposed laws imposing taxation, or proposed laws appropriating revenue or moneys for the ordinary annual services of the Government.

The Senate may not amend any proposed laws so as to increase any proposed charge or burden on the people.

The Senate may at any stage return to the House of Representatives any proposed law which the Senate may not amend, requesting, by message, the omission or amendment of any items or provisions therein. And the House of Representatives may, if it thinks fit, make any of such omissions or amendments, with or without modifications.

Except as provided in this section, the Senate shall have equal power with the House of Representatives in respect of all proposed laws.

54. The proposed law which appropriates revenue or moneys for the ordinary annual services of the Government shall deal only with such appropriations.

55. Laws imposing taxation shall deal only with the imposition of taxation, and any provisions therein dealing with any other matter shall be of no effect.

Laws imposing taxation, except laws imposing duties of customs or of excise, shall deal with one subject of taxation only; but laws imposing duties of customs shall deal with duties of customs only, and laws imposing duties of excise shall deal with duties of excise only.

56. A vote, resolution, or proposed law for the appropriation of revenue or moneys shall not be passed unless the purpose of the appropriation has in the same session been recommended by message of the Governor-General to the house in which the proposal originated.

57. If the House of Representatives passes any proposed law, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, and if after an interval of three months the House of Representatives, in the same or the next session, again passes the proposed law with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may dissolve the Senate and the House of Representatives simultaneously. But such dissolution shall not take place within six months before the date of the expiry of the House of Representatives by effluxion of time.

If after such dissolution the House of Representatives again passes the proposed law, with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may convene a joint sitting of the members of the Senate and the House of Representatives.

The members present at the joint sitting may deliberate and shall vote together upon the proposed law as last proposed by the House of Representatives, and upon amendments, if any, which have been made therein by one House and not agreed to by the other, and any such amendments which are affirmed by an absolute majority of the total number of the members of the Senate and House of Representatives shall be taken to have been carried, and if the proposed law, with the amendments, if any, so carried is affirmed by an absolute majority of the total number of members of the Senate and House of Representatives, it shall be taken to have been duly passed by both Houses of the Parliament, and shall be presented to the Governor-General for the Queen's assent.

58. When a proposed law passed by both Houses of the Parliament is presented to the Governor-General for the Queen's assent, he shall declare, according to his discretion but subject to this Constitution, that he assents in the Queen's name, or that he withholds assent, or that he reserves the law for the Queen's pleasure. ♪

The Governor-General may return to the House in which it originated any proposed law so presented to him, and may transmit therewith any amendments which he may recommend, and the Houses may deal with the recommendation.

59. The Queen may disallow any law within one year from the Governor-General's assent, and such disallowance on being made known by the Governor-General by speech or message to each of the Houses of the Parliament, or by Proclamation, shall annul the law from the day when the disallowance is so made known.

60. A proposed law reserved for the Queen's pleasure shall not have any force unless and until within two years from the day on which it was presented to the Governor-General for the Queen's assent the Governor-General makes known, by speech or message to each of the Houses of Parliament, or by Proclamation, that it has received the Queen's assent.

CHAPTER II.—THE EXECUTIVE GOVERNMENT.

61. The executive power of the Commonwealth is vested in the Queen and is exercisable by the Governor-General as the Queen's representative, and extends to the execution and maintenance of this Constitution, and of the laws of the Commonwealth.

62. There shall be a Federal Executive Council to advise the Governor-General in the government of the Commonwealth, and the members of the Council shall be chosen and summoned by the Governor-General and sworn as Executive Councillors, and shall hold office during his pleasure.

63. The provisions of this Constitution referring to the Governor-General in Council shall be construed as referring to the Governor-General acting with the advice of the Federal Executive Council.

64. The Governor-General may appoint officers to administer such departments of State of the Commonwealth as the Governor-General in Council may establish.

Such officers shall hold office during the pleasure of the Governor-General. They shall be members of the Federal Executive Council, and shall be the Queen's Ministers of State for the Commonwealth.

After the first general election no Minister of State shall hold office for a longer period than three months unless he is or becomes a senator or a member of the House of Representatives.

65. Until the Parliament otherwise provides, the Ministers of State shall not exceed seven in number, and shall hold such offices as the Parliament prescribes, or, in the absence of provision, as the Governor-General directs.¹

66. There shall be payable to the Queen, out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of the Ministers of State, an annual sum which until the Parliament otherwise provides, shall not exceed twelve thousand pounds a year.¹

67. Until the Parliament otherwise provides, the appointment and removal of all other officers of the Executive Government of the Commonwealth shall be vested in the Governor-General in Council, unless the appointment is delegated by the Governor-General in Council or by a law of the Commonwealth to some other authority.

68. The command in chief of the naval and military forces of the Commonwealth is vested in the Governor-General as the Queen's representative.

69. On a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments of the public service in each State shall be transferred to the Commonwealth :—²

Posts, telegraphs, and telephones :	|	Lighthouses, lightships, beacons, and buoys :
Naval and military defence :		Quarantine.

But the departments of customs and of excise in each State shall become transferred to the Commonwealth on its establishment.

70. In respect of matters which, under this Constitution, pass to the Executive Government of the Commonwealth, all powers and functions which at the establishment of the Commonwealth are vested in the Governor of a Colony, or in the Governor of a Colony with the advice of his Executive Council, or in any authority of a Colony, shall vest in the Governor-General, or in the Governor-General in Council, or in the authority exercising similar powers under the Commonwealth, as the case requires.

1. By the Ministers of State Acts 1915 and 1917, the Ministers of State may exceed seven, but shall not exceed nine; and for their salaries the annual sum payable is up to but not exceeding £15,300.

2. As to departments and dates of transfer see Section XIX.—COMMONWEALTH FINANCE, § 1 hereinafter.

CHAPTER III.—THE JUDICATURE.

71. The Judicial power of the Commonwealth shall be vested in a Federal Supreme Court, to be called the High Court of Australia, and in such other federal courts as the Parliament creates, and in such other courts as it invests with federal jurisdiction. The High Court shall consist of a Chief Justice and so many other Justices, not less than two, as the Parliament prescribes.

72. The Justices of the High Court and of the other courts created by the Parliament—

- (i) Shall be appointed by the Governor-General in Council :
- (ii) Shall not be removed except by the Governor-General in Council, on an address from both Houses of the Parliament in the same session, praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii) Shall receive such remuneration as the Parliament may fix : but the remuneration shall not be diminished during their continuance in office.

73. The High Court shall have jurisdiction, with such exceptions and subject to such regulations as the Parliament prescribes, to hear and determine appeals from all judgments, decrees, orders, and sentences—

- (i) Of any Justice or Justices exercising the original jurisdiction of the High Court :
 - (ii) Of any other federal court or court exercising federal jurisdiction ; or of the Supreme Court of any State, or of any other Court of any State from which at the establishment of the Commonwealth an appeal lies to the Queen in Council :
 - (iii) Of the Inter-State Commission, but as to questions of law only :
- and the judgment of the High Court in all such cases shall be final and conclusive.

But no exception or regulation prescribed by the Parliament shall prevent the High Court from hearing and determining any appeal from the Supreme Court of a State in any matter in which at the establishment of the Commonwealth an appeal lies from such Supreme Court to the Queen in Council.

Until the Parliament otherwise provides, the conditions of and restrictions on appeals to the Queen in Council from the Supreme Courts of the several States shall be applicable to appeals from them to the High Court.

74. No appeal shall be permitted to the Queen in Council from a decision of the High Court upon any question, howsoever arising, as to the limits *inter se* of the Constitutional powers of the Commonwealth and those of any State or States, or as to the limits *inter se* of the Constitutional powers of any two or more States, unless the High Court shall certify that the question is one which ought to be determined by Her Majesty in Council.

The High Court may so certify if satisfied that for any special reason the certificate should be granted, and thereupon an appeal shall lie to Her Majesty in Council on the question without further leave.

Except as provided in this section, this Constitution shall not impair any right which the Queen may be pleased to exercise by virtue of Her Royal prerogative to grant special leave of appeal from the High Court to Her Majesty in Council. The Parliament may make laws limiting the matters in which such leave may be asked, but proposed laws containing any such limitation shall be reserved by the Governor-General for Her Majesty's pleasure.

75. In all matters—

- (i) Arising under any treaty ;
- (ii) Affecting consuls or other representatives of other countries ;
- (iii) In which the Commonwealth, or a person suing or being sued on behalf of the Commonwealth, is a party ;
- (iv) Between States, or between residents of different States, or between a State and a resident of another State ;
- (v) In which a writ of Mandamus or prohibition or an injunction is sought against an officer of the Commonwealth ;

the High Court shall have original jurisdiction.

76. The Parliament may make laws conferring original jurisdiction on the High Court in any matter—

- (i) Arising under this Constitution, or involving its interpretation ;
- (ii) Arising under any laws made by the Parliament ;
- (iii) Of Admiralty and maritime jurisdiction ;
- (iv) Relating to the same subject-matter claimed under the laws of different States.

77. With respect to any of the matters mentioned in the last two sections the Parliament may make laws—

- (i) Defining the jurisdiction of any federal court other than the High Court ;
- (ii) Defining the extent to which the jurisdiction of any federal court shall be exclusive of that which belongs to or is invested in the courts of the States ;
- (iii) Investing any court of a State with federal jurisdiction.

78. The Parliament may make laws conferring rights to proceed against the Commonwealth or a State in respect of matters within the limits of the judicial power.

79. The federal jurisdiction of any court may be exercised by such number of judges as the Parliament prescribes.

80. The trial on indictment of any offence against any law of the Commonwealth shall be by jury, and every such trial shall be held in the State where the offence was committed, and if the offence was not committed within any State the trial shall be held at such place or places as the Parliament prescribes.

CHAPTER IV.—FINANCE AND TRADE.

81. All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution.

82. The costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund shall form the first charge thereon ; and the revenue of the Commonwealth shall in the first instance be applied to the payment of the expenditure of the Commonwealth.

83. No money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law.

But until the expiration of one month after the first meeting of the Parliament the Governor-General in Council may draw from the Treasury and expend such moneys as may be necessary for the maintenance of any department transferred to the Commonwealth and for the holding of the first elections for the Parliament.

84. When any department of the public service of a State becomes transferred to the Commonwealth, all officers of the department shall become subject to the control of the Executive Government of the Commonwealth.

Any such officer who is not retained in the service of the Commonwealth shall, unless he is appointed to some other office of equal emolument in the public service of the State, be entitled to receive from the State any pension, gratuity, or other compensation, payable under the law of the State on the abolition of his office.

Any such officer who is retained in the service of the Commonwealth shall preserve all his existing and accruing rights, and shall be entitled to retire from office at the time, and on the pension or retiring allowance, which would be permitted by the law of the State if his service with the Commonwealth were a continuation of his service with the State. Such pension or retiring allowance shall be paid to him by the Commonwealth ; but the State shall pay to the Commonwealth a part thereof, to be calculated on the proportion which his term of service with the State bears to his whole term of service, and for the purpose of the calculation his salary shall be taken to be that paid to him by the State at the time of transfer.

Any officer who is, at the establishment of the Commonwealth, in the public service of a State, and who is, by consent of the Governor of the State with the advice of the Executive Council thereof, transferred to the public service of the Commonwealth, shall have the same rights as if he had been an officer of a department transferred to the Commonwealth and were retained in the service of the Commonwealth.

85. When any department of the public service of a State is transferred to the Commonwealth—

- (i) All property of the State of any kind, used exclusively in connexion with the department, shall become vested in the Commonwealth; but, in the case of the departments controlling customs and excise and bounties, for such time only as the Governor-General in Council may declare to be necessary;
- (ii) The Commonwealth may acquire any property of the State, of any kind used, but not exclusively used in connexion with the department; the value thereof shall, if no agreement can be made, be ascertained in, as nearly as may be, the manner in which the value of land, or of an interest in land, taken by the State for public purposes is ascertained under the law of the State in force at the establishment of the Commonwealth;
- (iii) The Commonwealth shall compensate the State for the value of any property passing to the Commonwealth under this section: if no agreement can be made as to the mode of compensation, it shall be determined under laws to be made by the Parliament;
- (iv) The Commonwealth shall, at the date of the transfer, assume the current obligations of the State in respect of the department transferred.

86. On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth.

87. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth shall be applied annually by the Commonwealth towards its expenditure.

The balance shall, in accordance with this Constitution, be paid to the several States, or applied to the payment of interest on debts of the several States taken over by the Commonwealth.¹

88. Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth.²

89. Until the imposition of uniform duties of customs—

- (i) The Commonwealth shall credit to each State the revenues collected therein by the Commonwealth.
- (ii) The Commonwealth shall debit to each State—
 - (a) The expenditure therein of the Commonwealth incurred solely for the maintenance or continuance, as at the time of transfer, of any department transferred from the State to the Commonwealth;
 - (b) The proportion of the State, according to the number of its people, in the other expenditure of the Commonwealth.
- (iii) The Commonwealth shall pay to each State month by month the balance (if any) in favour of the State.

90. On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise.

91. Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods.

1. This has been known as the Braddon clause. The Surplus Revenue Act 1910 provides for the termination of this clause as from the 31st December, 1910, and for the payment to the States of twenty-five shillings per head of population until the 30th June, 1920, or thereafter, until Parliament otherwise provides, subject to certain adjustments for the year ended 30th June, 1911. For further information see Section XIX. hereinafter.

2. Uniform customs duties were imposed by the Customs Tariff 1902, as from 8th October, 1901.

92. On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free.

But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any Colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation.

93. During the first five years after the imposition of uniform duties of customs and thereafter until the Parliament otherwise provides—

- (i) The duties of customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State :
- (ii) Subject to the last sub-section, the Commonwealth shall credit revenue, debit expenditure, and pay balances to the several States as prescribed by the period preceding the imposition of uniform duties of customs.¹

94. After five years from the imposition of uniform duties of customs, the Parliament may provide, on such basis as it deems fair, for the monthly payment to the several States of all surplus revenue of the Commonwealth.

95. Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth ; and such duties shall be collected by the Commonwealth.

But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth.

96. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit.

97. Until the Parliament otherwise provides, the laws in force in any Colony which has become or becomes a State with respect to the receipt of revenue and the expenditure of money on account of the Government of the Colony, and the review and audit of such receipt and expenditure, shall apply to the receipt of revenue and the expenditure of money on account of the Commonwealth in the State in the same manner as if the Commonwealth, or the Government or an officer of the Commonwealth, were mentioned, whenever the Colony, or the Government or an officer of the Colony is mentioned.

98. The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State.

99. The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof.

100. The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.

1. The Surplus Revenue Act 1908, which was amended by the Surplus Revenue Act 1910, states that the provisions of Section 93 of the Constitution shall expire on the date of the commencement of the Surplus Revenue Act 1908, that is, on 13th June, 1908, and also makes provisions in lieu of the expired provisions. The Surplus Revenue Act 1910 repeals the greater part of the provisions of the Act of 1908. See footnote to Section 87 of this Act.

101. There shall be an Inter-State Commission, with such powers of adjudication and administration as the Parliament deems necessary for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder.¹

102. The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable, or unjust to any State, due regard being had to the financial responsibilities incurred by any State in connection with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Inter-State Commission.

103. The members of the Inter-State Commission—

- (i) Shall be appointed by the Governor-General in Council :
- (ii) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii) Shall receive such remuneration as the Parliament may fix ; but such remuneration shall not be diminished during their continuance in office.

104. Nothing in this Constitution shall render unlawful any rate for carriage of goods upon a railway, the property of a State, if the rate is deemed by the Inter-State Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States.

105. The Parliament may take over from the States their public debts [as existing at the establishment of the Commonwealth],² or a proportion thereof according to the respective numbers of their people as shewn by the latest statistics of the Commonwealth, and may convert, renew, or consolidate such debts, or any part thereof ; and the State shall indemnify the Commonwealth in respect of the debts taken over, and thereafter the interest payable in respect of the debts shall be deducted and retained from the portions of the surplus revenue of the Commonwealth payable to the several States, or if such surplus is insufficient, or if there is no surplus, then the deficiency or the whole amount shall be paid by the several States.

CHAPTER V.—THE STATES.

106. The Constitution of each State of the Commonwealth shall, subject to this Constitution, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, until altered in accordance with the Constitution of the State.

107. Every power of the Parliament of a Colony which has become or becomes a State, shall, unless it is by this Constitution exclusively vested in the Parliament of the Commonwealth or withdrawn from the Parliament of the State, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be.

108. Every law in force in a Colony which has become or becomes a State, and relating to any matter within the powers of the Parliament of the Commonwealth, shall, subject to this Constitution, continue in force in the State ; and, until provision is made in that behalf by the Parliament of the Commonwealth, the Parliament of the State shall have such powers of alteration and of repeal in respect of any such law as the Parliament of the Colony had until the Colony became a State.

109. When a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid.

110. The provisions of this Constitution relating to the Governor of a State extend and apply to the Governor for the time being of the State, or other chief executive officer or administrator of the Government of the State.

1. The Commission was brought into existence in 1913, under Act No. 33 of 1912.

2. Under Section 2 of the Constitution Alteration (State Debts) 1909, the words in square brackets are omitted.

111. The Parliament of a State may surrender any part of the State to the Commonwealth; and upon such surrender, and the acceptance thereof by the Commonwealth, such part of the State shall become subject to the exclusive jurisdiction of the Commonwealth.

112. After uniform duties of customs have been imposed, a State may levy on imports or exports, or on goods passing into or out of the State, such charges as may be necessary for executing the inspection laws of the State; but the net produce of all charges so levied shall be for the use of the Commonwealth; and any such inspection laws may be annulled by the Parliament of the Commonwealth.

113. All fermented, distilled, or other intoxicating liquids passing into any State or remaining therein for use, consumption, sale, or storage, shall be subject to the laws of the State as if such liquids had been produced in the State.

114. A State shall not, without the consent of the Parliament of the Commonwealth, raise or maintain any naval or military force, or impose any tax on property of any kind belonging to the Commonwealth, nor shall the Commonwealth impose any tax on property of any kind belonging to a State.

115. A State shall not coin money, nor make anything but gold and silver coin a legal tender in payment of debts.

116. The Commonwealth shall not make any laws for establishing any religion, or for imposing any religious observance, or for prohibiting the free exercise of any religion, and no religious test shall be required as a qualification for any office or public trust under the Commonwealth.

117. A subject of the Queen, resident in any State, shall not be subject in any other State to any disability or discrimination which would not be equally applicable to him if he were a subject of the Queen resident in such other State.

118. Full faith and credit shall be given, throughout the Commonwealth, to the laws, the public Acts and records, and the judicial proceedings of every State.

119. The Commonwealth shall protect every State against invasion, and, on the application of the Executive Government of the State, against domestic violence.

120. Every State shall make provision for the detention in its prisons of persons accused or convicted of offences against the laws of the Commonwealth, and for the punishment of persons convicted of such offences, and the Parliament of the Commonwealth may make laws to give effect to this provision.

CHAPTER VI.—NEW STATES.

121. The Parliament may admit to the Commonwealth or establish new States, and may upon such admission or establishment make or impose such terms and conditions, including the extent of representation in either House of the Parliament, as it thinks fit.

122. The Parliament may make laws for the government of any territory surrendered by any State to and accepted by the Commonwealth, or of any territory placed by the Queen under the authority of and accepted by the Commonwealth, or otherwise acquired by the Commonwealth, and may allow the representation of such territory in either House of the Parliament to the extent and on the terms which it thinks fit.

123. The Parliament of the Commonwealth may, with the consent of the Parliament of a State, and the approval of the majority of the electors of the State voting upon the question, increase, diminish, or otherwise alter the limits of the State, upon such terms and conditions as may be agreed on, and may, with the like consent, make provision respecting the effect and operation of any increase or diminution or alteration of territory in relation to any State affected.

124. A new State may be formed by separation of territory from a State, but only with consent of the Parliament thereof, and a new State may be formed by the union of two or more States or parts of States, but only with the consent of the Parliaments of the States affected.

CHAPTER VII.—MISCELLANEOUS.

125. The seat of Government of the Commonwealth shall be determined by the Parliament, and shall be within territory which shall have been granted to or acquired by the Commonwealth, and shall be vested in and belong to the Commonwealth, and shall be in the State of New South Wales, and be distant not less than one hundred miles from Sydney.

Such territory shall contain an area of not less than one hundred square miles, and such portion thereof as shall consist of Crown lands shall be granted to the Commonwealth without any payment therefor.

The Parliament shall sit at Melbourne until it meet at the seat of Government.

126. The Queen may authorise the Governor-General to appoint any person, or any persons jointly or severally, to be his deputy or deputies within any part of the Commonwealth, and in that capacity to exercise during the pleasure of the Governor-General such powers and functions of the Governor-General as he thinks fit to assign to such deputy or deputies, subject to any limitations expressed or directions given by the Queen : but the appointment of such deputy or deputies shall not affect the exercise by the Governor-General himself of any power or function.

127. In reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted.

CHAPTER VIII.—ALTERATION OF THE CONSTITUTION.¹

128. This Constitution shall not be altered except in the following manner :—

The proposed law for the alteration thereof must be passed by an absolute majority of each House of the Parliament, and not less than two nor more than six months after its passage through both Houses the proposed law shall be submitted in each State to the electors qualified to vote for the election of members of the House of Representatives.²

But if either House passes any such proposed law by an absolute majority, and the other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, and if after an interval of three months the first-mentioned House in the same or the next session again passes the proposed law by an absolute majority with or without any amendment which has been made or agreed to by the other House, and such other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, the Governor-General may submit the proposed law as last proposed by the first-mentioned House, and either with or without any amendments subsequently agreed to by both Houses, to the electors in each State qualified to vote for the election of the House of Representatives.

When a proposed law is submitted to the electors the vote shall be taken in such manner as the Parliament prescribes. But until the qualification of electors of members of the House of Representatives becomes uniform throughout the Commonwealth, only one-half the electors voting for and against the proposed law shall be counted in any State in which adult suffrage prevails.

And if in a majority of the States a majority of the electors voting approve the proposed law, and if a majority of all the electors voting also approve the proposed law, it shall be presented to the Governor-General for the Queen's assent.

No alteration diminishing the proportionate representation of any State in either House of the Parliament, or the minimum number of representatives of a State in the House of Representatives, or increasing, diminishing, or otherwise altering the limits of the State, or in any manner affecting the provisions of the Constitution in relation thereto, shall become law unless the majority of the electors voting in that State approve the proposed law.

1. The Constitution has been altered by the following Acts :—The Constitution Alteration (Senate Elections) 1906 (No. 1 of 1907) ; and the Constitution Alteration (State Debts) 1909 (No. 3 of 1910).

2. The Referendum (Constitution Alteration) Act, 1906–1910, provides the necessary machinery for the submission to the electors of any proposed law for the alteration of the Constitution.

SCHEDULE.

OATH.

I, *A.B.*, do swear that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law. SO HELP ME GOD !

AFFIRMATION.

I, *A.B.*, do solemnly and sincerely affirm and declare that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law.

(NOTE.—*The name of the King or Queen of the United Kingdom of Great Britain and Ireland for the time being is to be substituted from time to time.*)

2. **The Royal Proclamation.**—The preceding Act received the Royal assent on the 9th July, 1900. This made it lawful (see Sec. 3) to declare that the people of Australia should be united in a Federal Commonwealth. This proclamation, made on the 17th September, 1900, constituted the Commonwealth as from the 1st January, 1901 : it reads as follows :—

BY THE QUEEN.

A PROCLAMATION.

(Signed) VICTORIA R.

WHEREAS by an Act of Parliament passed in the Sixty-third and Sixty-fourth Years of Our Reign, intituled “ An Act to constitute the Commonwealth of *Australia*,” it is enacted that it shall be lawful for the Queen, with the advice of the Privy Council, to declare by Proclamation, that, on and after a day therein appointed, not being later than One Year after the passing of this Act, the people of *New South Wales*, *Victoria*, *South Australia*, *Queensland*, and *Tasmania*, and also, if Her Majesty is satisfied that the people of *Western Australia* have agreed thereto, of *Western Australia*, shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

And whereas We are satisfied that the people of *Western Australia* have agreed thereto accordingly.

We therefore, by and with the advice of Our Privy Council, have thought fit to issue this Our Royal Proclamation, and We do hereby declare that on and after the First day of *January* One thousand nine hundred and one, the people of *New South Wales*, *Victoria*, *South Australia*, *Queensland*, *Tasmania*, and *Western Australia* shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

Given at Our Court at *Balmoral* this Seventeenth day of *September*, in the Year of Our Lord One thousand nine hundred, and in the Sixty-fourth Year of Our Reign.

GOD SAVE THE QUEEN.

§ 9. Commonwealth Legislation.

1. **The Commonwealth Parliaments.**—The first Parliament of the Commonwealth was convened by proclamation dated 29th April, 1901, by His Excellency the late Marquis of Linlithgow, then Earl of Hopetoun, Governor-General. It was opened on the 9th May following by H.R.H. the Duke of Cornwall and York, who had been sent to Australia for that purpose by His Majesty the King ; the Rt. Hon. Sir Edmund Barton, P.C., G.C.M.G., K.C., being Prime Minister.

The following table gives the number and duration of Parliaments since Federation :—

COMMONWEALTH PARLIAMENTS, 1901 TO 1919.

	Date of Opening.	Date of Dissolution.
First Parliament	29th April, 1901	23rd November, 1903
Second „	2nd March, 1904	12th October, 1906
Third „	20th February, 1907	19th February, 1910
Fourth „	1st July, 1910	23rd April, 1913
Fifth „	9th July, 1913	30th July, 1914*
Sixth „	8th October, 1914	26th March, 1917
Seventh „	14th June, 1917	—

* On this occasion, the Governor-General, acting on the advice of the Ministry, and under section 57 of the Constitution, granted a dissolution of both the Senate and the House of Representatives, this being the first occasion since Federation on which a dissolution of both Houses had occurred.

The Debates of these Parliaments will be found in Volumes I. to LXXXI. of the Parliamentary Debates, as follows :—

Parliament	Session	Vols.	I. to	XII., pp.	1 to
First Parliament,	1st Session,		I. to	XII., pp.	1 to 16,744
" "	2nd " "		XIII. "	XVII., "	1 " 6,440.
Second Parliament,	1st " "		XVIII. "	XXIV., "	1 " 8,618
" "	2nd " "		XXV. "	XXX., "	1 " 7,461
" "	3rd " "		XXXI. "	XXXV., "	1 " 6,491.
Third Parliament,	1st " "		XXXVI. 1ST PART	" "	1 " 141
" "	2nd " "		XXXVI. 2ND PART to	XLVI., "	1 " -12,203
" "	3rd " "		XLVII. to	XLVIII., "	1 " 3,180
" "	4th " "		XLIX. "	LIV., "	1 " 7,296
Fourth Parliament,	1st " "		LV. "	LIX., "	1 " 6,893
" "	2nd " "		LX. "	LXIII., "	1 " 4,983
" "	3rd " "		LXIV. "	LXIX., "	1 " 7,568
Fifth Parliament,	1st " "		LXX. "	LXXII., "	1 " 4,798
" "	2nd " "		LXXIII. "	LXXIV., "	1 " 2,658
Sixth Parliament,	1st " "		LXXV. "	LXXXI., "	1 " 11,708
Seventh Parliament,					incomplete

2. The Several Administrations.—The following tabular statements shew the names of the several Governors-General, and the constitution of the Ministries which have directed the administration of the affairs of the Commonwealth since its creation :—

(a) GOVERNORS-GENERAL.

Rt. Hon. EARL OF HOPETOUN (afterwards MARQUIS OF LINLITHGOW), P.C., K.T., G.C.M.G., G.C.V.O. Sworn 1st January, 1901; recalled 9th May, 1902.
Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Act. Governor-General). Sworn 17th July, 1902.
Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Governor-General). Sworn 9th January, 1903; recalled 21st January, 1904.
Rt. Hon. HENRY STAFFORD BARON NORTHCOTE, P.C., G.C.M.G., G.C.I.E., C.B. Sworn 21st January, 1904; recalled 8th September, 1908.
Rt. Hon. WILLIAM HUMBLE EARL OF DUDLEY, P.C., G.C.M.G., G.C.V.O., etc. Sworn 9th Septem- ber, 1908; recalled 31st July, 1911.
Rt. Hon. THOMAS BARON DENMAN, P.C., G.C.M.G., K.C.V.O. Sworn 31st July, 1911; recalled 16th May, 1914.
Rt. Hon. SIR RONALD CRAUFURD MUNRO FERGUSON, P.C., G.C.M.G. Sworn 18th May, 1914.

(b) BARTON ADMINISTRATION, 1st January, 1901, to 23rd September, 1903.

DEPARTMENTS.	MINISTERS.
External Affairs	Rt. Hon. SIR EDMUND BARTON, P.C., G.C.M.G., K.C.
Attorney-General	Hon. ALFRED DEAKIN.
Home Affairs	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 7/8/'03).
Treasurer	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (from 7/8/'03).*
Trade and Customs	{ Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Defence	{ Rt. Hon. CHARLES CAMERON KINGSTON, P.C., K.C. (resigned 24/7/'03).
Postmaster-General	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (from 7/8/'03).
Vice-President Executive Council	{ Hon. SIR JAMES ROBERT DICKSON, K.C.M.G. (died 10/1/'01).
Without Portfolio	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (17/1/'01 to 7/8/'03).*
	{ Hon. JAMES GEORGE DRAKE (from 7/3/'03).
	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 17/1/'01).*
	{ Hon. JAMES GEORGE DRAKE (5/2/'01 to 7/8/'03).
	{ Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (from 7/8/'03).
	{ Hon. RICHARD EDWARD O'CONNOR, K.C.
	{ Hon. N. E. LEWIS (to 23/4/'01).†
	{ Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (26/4/'01 to 7/8/'03).

* Created Lord Forrest of Bunbury, 1918.

† K.C.M.G., 1902.

(c) FIRST DEAKIN ADMINISTRATION, 23rd September, 1903, to 26th April, 1904.

DEPARTMENTS.	MINISTERS.
External Affairs	Hon. ALFRED DEAKIN.
Trade and Customs	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G.
Treasurer	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.*
Attorney-General	Hon. JAMES GEORGE DRAKE.
Postmaster-General	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G.
Defence	Hon. AUSTIN CHAPMAN.
Vice-President Executive Council	Hon. THOMAS PLAYFORD.

(d) WATSON ADMINISTRATION, 26th April to 17th August, 1904.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. JOHN CHRISTIAN WATSON.
External Affairs	Hon. WILLIAM MORRIS HUGHES.†
Attorney-General	Hon. HENRY BOURNES HIGGINS, K.C.
Home Affairs	Hon. EGERTON LEE BATCHELOR.
Trade and Customs	Hon. ANDREW FISHER.‡
Defence	Hon. ANDERSON DAWSON.
Postmaster-General	Hon. HUGH MAHON.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.

(e) REID-MCLEAN ADMINISTRATION, 17th August, 1904, to 4th July, 1905.

DEPARTMENTS.	MINISTERS.
External Affairs	Rt. Hon. GEORGE HOUSTOUN REID, P.C., K.C.§
Trade and Customs	Hon. ALLAN MCLEAN.
Attorney-General	Hon. SIR JOSIAH HENRY SYMON, K.C.M.G., K.C.
Treasurer	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Hon. DUGALD THOMSON.
Defence	Hon. JAMES WHITESIDE MCCAY.||
Postmaster-General	Hon. SYDNEY SMITH.
Vice-President Executive Council	Hon. JAMES GEORGE DRAKE.

(f) SECOND DEAKIN ADMINISTRATION, 4th July, 1905, to 12th November, 1908.

DEPARTMENTS.	MINISTERS.
External Affairs	Hon. ALFRED DEAKIN.
Attorney-General	{ Hon. ISAAC ALFRED ISAACS, K.C. (to 12/10/'06). Hon. LITTLETON ERNEST GROOM (to 12/10/'06).
Trade and Customs	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 30/7/'07). Hon. AUSTIN CHAPMAN (from 30/7/'07).
Treasurer	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 30/7/'07).* Hon. SIR WILLIAM JOHN LYNE (from 30/7/'07).
Postmaster-General	{ Hon. AUSTIN CHAPMAN (to 30/7/'07). Hon. SAMUEL MAUGER (from 30/7/'07).
Defence	{ Hon. THOMAS PLAYFORD (to 24/1/'07). Hon. THOMAS THOMSON EWING (from 24/1/'07).¶
Home Affairs	{ Hon. LITTLETON ERNEST GROOM (to 12/10/'06). Hon. THOMAS THOMSON EWING (from 12/10/'06 to 24/1/'07).¶ Hon. JOHN HENRY KEATING (from 24/1/'07).
Vice-President Executive Council	{ Hon. THOMAS THOMSON EWING (to 12/10/'06).¶ Hon. JOHN HENRY KEATING (from 12/10/'06 to 20/2/'07). Hon. ROBERT WALLACE BEST (from 20/2/'07).¶
Honorary Ministers	{ Hon. J. H. KEATING (from 5/7/'05 to 12/10/'06). Hon. S. MAUGER (from 12/10/'06 to 30/7/'07). Hon. J. HUME COOK (from 28/1/'08).

* Created Lord Forrest of Bunbury, 1918. † P.C., 1916. ‡ P.C., 1911. § K.C.M.G., 1909; G.C.M.G., 1911; G.C.B., 1916. || K.C.M.G., 1918. ¶ K.C.M.G., 1908.

(g) FIRST FISHER ADMINISTRATION, 12th November, 1908, to 2nd June, 1909.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. ANDREW FISHER.*
Attorney-General	Hon. WILLIAM MORRIS HUGHES.†
External Affairs	Hon. EGERTON LEE BATCHELOR.
Home Affairs	Hon. HUGH MAHON.
Postmaster-General	Hon. JOSIAH THOMAS.
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.
Honorary Minister	Hon. JAMES HUTCHISON.

(h) THIRD DEAKIN ADMINISTRATION, 2nd June, 1909, to 29th April, 1910.

DEPARTMENTS.	MINISTERS.
Prime Minister (without Portfolio)	Hon. ALFRED DEAKIN.
Defence	Hon. JOSEPH COOK.‡
Treasurer	Rt. Hon. SIR JOHN FORREST. P.C., G.C.M.G.§
Trade and Customs	Hon. SIR ROBERT WALLACE REST, K.C.M.G.
External Affairs	Hon. LITTLETON ERNEST GROOM.
Attorney-General	Hon. PATRICK McMAHON GLYNN.
Postmaster-General	Hon. SIR JOHN QUICK.
Home Affairs	Hon. GEORGE WARBURTON FULLER.
Vice-President Executive Council	Hon. EDWARD DAVIS MILLEN.
Honorary Minister	Colonel The Hon. JUSTIN FOX GREENLAW FOXTON, C.M.G.

(i) SECOND FISHER ADMINISTRATION, 29th April, 1910, to 24th June, 1913.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. ANDREW FISHER.*
Attorney-General	Hon. WILLIAM MORRIS HUGHES.†
External Affairs	{ Hon. EGERTON LEE BATCHELOR (died Oct., 1911). Hon. JOSIAH THOMAS (from 14/10/11).
Postmaster-General	{ Hon. JOSIAH THOMAS (to 14/10/11). Hon. CHARLES EDWARD FRAZER (from 14/10/11).
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
Home Affairs	Hon. KING O'MALLEY.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.
Honorary Ministers	{ Hon. EDWARD FINDLEY. Hon. CHARLES EDWARD FRAZER (to 14/10/11). Hon. ERNEST ALFRED ROBERTS (from 23/10/11).

(j) COOK ADMINISTRATION, 24th June, 1913, to 17th September, 1914.

DEPARTMENTS.	MINISTERS.
Home Affairs	Hon. JOSEPH COOK.‡
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.§
Attorney-General	Hon. WILLIAM HILL IRVINE, K.C.||
Defence	Hon. EDWARD DAVIS MILLEN.
External Affairs	Hon. PATRICK McMAHON GLYNN, K.C.
Trade and Customs	Hon. LITTLETON ERNEST GROOM.
Postmaster-General	Hon. AGAR WYNNE.
Vice-President Executive Council	Hon. JAMES HIERS MCCOLL.
Honorary Ministers	{ Hon. JOHN SINGLETON CLEMONS. Hon. WILLIAM HENRY KELLY.

* P.C., 1911. † P.C., 1916. ‡ P.C., 1914; G.C.M.G., 1918. § Created Lord Forrest of Bunbury, 1918. || K.C.M.G., 1914.

(k) THIRD FISHER ADMINISTRATION, 17th September, 1914, to 27th October, 1915.

DEPARTMENTS.	MINISTERS.
Treasurer	Rt. Hon. ANDREW FISHER, P.C.
Attorney-General	Hon. WILLIAM MORRIS HUGHES.*
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
External Affairs	{ Hon. JOHN ANDREW ARTHUR (died December, 1914). Hon. HUGH MAHON (from 14/12/14).
Home Affairs	Hon. WILLIAM OLIVER ARCHIBALD.
Postmaster-General	Hon. WILLIAM GUTHRIE SPENCE.
Minister for the Navy	Hon. JENS AUGUST JENSEN (from 12/7/15).
Vice-President Executive Council	Hon. ALBERT GARDINER.
Assistant Ministers	{ Hon. HUGH MAHON (to 14/12/14). Hon. JENS AUGUST JENSEN (to 12/7/15). Hon. EDWARD JOHN RUSSELL.

(l) FIRST HUGHES ADMINISTRATION from 27th October, 1915, to 14th Nov., 1916.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General	Hon. WILLIAM MORRIS HUGHES.*
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	{ Hon. FRANK GWYNNE TUDOR (to 14/9/16). Hon. WILLIAM MORRIS HUGHES (from 29/9/16).*
Treasurer	Hon. WILLIAM GUY HIGGS.†
Minister for the Navy	Hon. JENS AUGUST JENSEN.
Home Affairs	Hon. KING O'MALLEY.
External Affairs	Hon. HUGH MAHON.
Postmaster-General	Hon. WILLIAM WEBSTER.
Vice-President Executive Council	Hon. ALBERT GARDINER.†
Assistant Minister	Hon. EDWARD JOHN RUSSELL.†

(m) SECOND HUGHES ADMINISTRATION from 14th Nov., 1916, to 17th Feb., 1917.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General	Rt. Hon. WILLIAM MORRIS HUGHES, P.C.
Minister for Defence	Hon. GEORGE FOSTER PEARCE.
Minister for the Navy	Hon. JENS AUGUST JENSEN.
Postmaster-General	Hon. WILLIAM WEBSTER.
Treasurer	Hon. ALEXANDER POYNTON.
Minister for Trade and Customs	Hon. WILLIAM OLIVER ARCHIBALD.
Minister for Home Affairs	Hon. FREDERICK WILLIAM BAMFORD.
Minister for Works	Hon. PATRICK JOSEPH LYNCH.
Vice-President Executive Council	Hon. WILLIAM GUTHRIE SPENCE.
Assistant Ministers	{ Hon. EDWARD JOHN RUSSELL. Hon. WILLIAM HENRY LAIRD SMITH.

(n) AUSTRALIAN NATIONAL WAR GOVERNMENT from 17th February, 1917, to 8th January, 1918.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General	Rt. Hon. WILLIAM MORRIS HUGHES, P.C.
Minister for the Navy	Rt. Hon. JOSEPH COOK, P.C.‡
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.§
Minister for Defence	Hon. GEORGE FOSTER PEARCE.
Vice-President Executive Council	{ Hon. EDWARD DAVIS MILLEN. Hon. LITTLETON ERNEST GROOM (from 16/11/17).
Minister for Repatriation	Hon. EDWARD DAVIS MILLEN (from 23/9/17).
Minister for Works and Railways	Hon. WILLIAM ALEXANDER WATT.
Minister for Home and Territories	Hon. PATRICK MCMAHON GLYNN, K.C.
Minister for Trade and Customs	Hon. JENS AUGUST JENSEN.
Postmaster-General	Hon. WILLIAM WEBSTER.
Honorary Ministers	{ Hon. LITTLETON ERNEST GROOM. Hon. EDWARD JOHN RUSSELL.

* P.C., 1916. † Resigned 27/10/16. ‡ G.C.M.G., 1918. § Created Lord Forrest of Bunbury, 1918.

(o) AUSTRALIAN NATIONAL WAR GOVERNMENT from 10th January, 1918.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General	Rt. Hon. WILLIAM MORRIS HUGHES, P.C., K.C.
Minister for the Navy	Rt. Hon. JOSEPH COOK, P.C.*
Treasurer	Rt. Hon. LORD FORREST, P.C., G.C.M.G. (to 27/3/18; died 4th September, 1918).
Minister for Defence	Hon. WILLIAM ALEXANDER WATT (from 27/3/18).
Minister for Repatriation	Hon. GEORGE FOSTER PEARCE.
Minister for Works and Railways {	Hon. EDWARD DAVIS MILLEN.
Minister for Home and Territories {	Hon. WILLIAM ALEXANDER WATT.
Minister for Trade and Customs .. {	Hon. LITTLETON ERNEST GROOM (from 27/3/18).
Postmaster-General	Hon. PATRICK MCMAHON GLYNN, K.C.
Vice-President Executive Council {	Hon. JENS AUGUST JENSEN (to 13/12/18).
Honorary Ministers	Hon. WILLIAM ALEXANDER WATT (from 13/12/18).
	Hon. WALTER MASSY GREENE (from 17/1/19).
	Hon. WILLIAM WEBSTER.
	Hon. LITTLETON ERNEST GROOM.
	Hon. EDWARD JOHN RUSSELL (from 27/3/18).
	Hon. EDWARD JOHN RUSSELL (to 27/3/18).
	Hon. ALEXANDER POYNTON (from 26/3/18).
	Hon. GEORGE HENRY WISE (from 26/3/18).
	Hon. WALTER MASSY GREENE (from 26/3/18 to 17/1/19).
	Hon. RICHARD BEAUMONT ORCHARD (from 26/3/18 to 31/1/19).

* G.C.M.G., 1918.

A further list of the Ministers of State for the Commonwealth, arranged according to the respective offices occupied, is given in the section of this book dealing with the subject of General Government (see Section XXV.).

3. The Course of Legislation.—The actual legislation by the Commonwealth Parliament up to the end of the 1918 session is indicated in alphabetical order in "Vol. XVI. of the Acts of the Parliament of the Commonwealth of Australia, passed in the session of 1918, with Tables, Appendix and Indexes." A "Chronological Table of Acts passed from 1901 to 1918, shewing how they are affected by subsequent legislation or lapse of time" is also given, and further "A Table of Commonwealth Legislation," for the same period, "in relation to the several provisions of the Constitution," is furnished. Reference may be made to these for complete information. The nature of Commonwealth legislation, up to December, 1918, and its relation to the several provisions of the Constitution, are set forth in the following tabular statement:—

**ANALYTIC TABLE OF COMMONWEALTH LEGISLATION
FROM 1901 to DECEMBER, 1918, IN RELATION TO THE SEVERAL PROVISIONS
OF THE CONSTITUTION.†**

Section of Constitution.	Short Title of Commonwealth Act.*
	AMENDMENT OF THE CONSTITUTION.
	Constitution Alteration (Senate Elections) 1906.
	Constitution Alteration (State Debts) 1909.
	PARLIAMENTARY AND ELECTORAL LAW.
8—30	PARLIAMENTARY FRANCHISE—
	<i>Commonwealth Franchise Act 1902.*</i>
	Commonwealth Electoral (War-time) Act 1917.
	Commonwealth Electoral Act 1918.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

† This table has been prepared by Sir Robert Garran, Solicitor-General to the Commonwealth.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
	PARLIAMENTARY AND ELECTORAL LAW—<i>continued.</i>
9—34	ELECTIONS— Commonwealth Electoral Act 1902–1911.† Senate Elections Act 1903. Commonwealth Electoral (War-time) Act 1917. Commonwealth Electoral Act 1918.
24	DETERMINATION OF NUMBER OF MEMBERS OF HOUSE OF REPRESENTATIVES— Representation Act 1905. Representation Act 1916.
47	DISPUTED ELECTIONS AND QUALIFICATIONS— Commonwealth Electoral Act 1902–1911, Part XVI.† <i>Disputed Elections and Qualifications Act 1907.*</i> Commonwealth Electoral Act 1918, ss. 183–201.
48	ALLOWANCES TO MEMBERS— <i>Parliamentary Allowances Act 1902.*</i> Parliamentary Allowances Act 1907.
49	PRIVILEGES OF PARLIAMENT— Parliamentary Papers Act 1908.
	GENERAL LEGISLATION.
51—(i)	TRADE AND COMMERCE—EXTERNAL AND INTERSTATE— Sea Carriage of Goods Act 1904 [<i>Bills of Lading</i>]. Secret Commissions Act 1905. Commerce (Trade Descriptions) Act 1905 [<i>Merchandise Marks</i>]. Australian Industries Preservation Act 1906–1910 [<i>Trusts and Dumping</i>]. Spirits Act 1906–1918. <i>Seamen's Compensation Act 1909.*</i> Customs (Inter-State Accounts) Act 1910. Northern Territory Acceptance Act 1910 (s. 13). Seamen's Compensation Act 1911. Navigation Act 1912. Norfolk Island Act 1913 (s. 15). Trading with the Enemy Act 1914–1916. Meat Export Trade Commission Act 1914. Enemy Contracts Annulment Act 1915. Freight Arrangements Act 1915–1917. River Murray Waters Act 1915. Sugar Purchase Act 1915–1917.
(ii)	TAXATION— <i>Machinery Acts—</i> Customs Act 1901–1916. Beer Excise Act 1901–1918. Distillation Act 1901–1918. Excise Act 1901–1918. Spirits Act 1906–1918. Excise Procedure Act 1907. Australian Notes Act 1910–1914 (s. 12). Land Tax Assessment Act 1910–1916. Estate Duty Assessment Act 1914–1916. Income Tax Assessment Act 1915–1918. Entertainments Tax Assessment Act 1916. War-time Profits Tax Assessment Act 1917–1918.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

† With the exception of s. 210 of the *Commonwealth Electoral Act 1902*, and s. 18 of the *Commonwealth Electoral Act 1905*, the *Commonwealth Electoral Act 1902–1911* has now (1st May, 1919) been repealed by the *Commonwealth Electoral Act 1918*. See *Gazette*, 25th November, 1918, p. 2257, and *Gazette*, 21st March, 1919, p. 401.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
	GENERAL LEGISLATION— <i>continued.</i>
51 (ii)	<p>TAXATION—<i>continued.</i></p> <p><i>Taxing Acts—</i></p> <p>Customs Tariff 1902. <i>Customs Tariff 1906 [Agricultural Machinery].*</i> Customs Tariff (South African Preference) 1906; <i>amended by</i> <i>Customs Tariff 1908 (s. 9).</i> Customs Tariff 1908; <i>amended by</i> Customs Tariff Amendment 1908, and Customs Tariff 1910, and Customs Tariff 1911. Excise Tariff 1902; <i>amended by</i> Sugar Rebate Abolition Act 1903, <i>Excise Tariff 1905,* Excise Tariff (Amendment) 1906,* Excise</i> <i>Tariff 1908; and Excise (Sugar) Act 1910.*</i> Excise Tariff 1906 [<i>Agricultural Machinery</i>]; 1906 [<i>Spirits</i>]. Excise Tariff 1908; <i>amended by</i> Excise Tariff (Starch) 1908. Bank Notes Tax Act 1910. Land Tax Act 1910–1914. Sugar Excise Repeal Act 1912. <i>Excise Tariff 1913.*</i> Estate Duty Act 1914. Income Tax Acts 1915. Income Tax Act 1916. Entertainments Tax Act 1916. Customs Tariff Validation Act 1917 Excise Tariff Validation Act 1917. War-time Profits Tax Act 1917. Income Tax Act 1917. Entertainments Tax Act 1918. Income Tax Act 1918.</p>
(iii)	<p>BOUNTIES ON PRODUCTION OR EXPORT—</p> <p><i>Sugar Bounty Acts 1903,* 1905,* 1910,* 1912.*</i> Bounties Act 1907–1912. <i>Manufactures Encouragement Act 1908–1914.*</i> <i>Shale Oil Bounties Act 1910.*</i> Sugar Bounty Abolition Act 1912. Wood Pulp and Rock Phosphate Bounties Act 1912–1917. <i>Sugar Bounty Act 1913.*</i> <i>Iron Bounty Act 1914–1915.*</i> Shale Oil Bounty Act 1917. Apple Bounty Act 1918. Iron and Steel Bounty Act 1918.</p>
(iv)	<p>BORROWING MONEY ON THE PUBLIC CREDIT OF THE COMMONWEALTH—</p> <p>Commonwealth Inscribed Stock Act 1911–1918. Loan Act 1911–1914, 1912–1914, 1913–1914, 1914, 1915, 1918. <i>Naval Loan Act 1909.*</i> Naval Loan Repeal Act 1910. Treasury Bills Act 1914–1915. War Loan (United Kingdom) Act 1914–1917. War Loan Act (No. 1) 1915. War Loan (United Kingdom) Act 1915–1917. War Loan Act (No. 3) 1915. Sugar Purchase Act 1915–1917. Freight Arrangements Act 1915–1917. States Loan Act 1916. War Loan Act (No. 1) 1916. War Loan Act (United Kingdom, No. 2) 1916. States Loan Act 1917. War Loan Act 1917. Loans Sinking Fund Act 1918. War Loan Act 1918. War Loan Securities Repurchase Act 1918.</p>

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
	GENERAL LEGISLATION—<i>continued.</i>
51 (v)	POSTAL, TELEGRAPHIC, AND TELEPHONIC SERVICES— Post and Telegraph Act 1901–1916. Post and Telegraph Rates Act 1902–1918. Wireless Telegraphy Act 1905–1915. Tasmanian Cable Rates Act 1906. Telegraph Act 1909. Postal Rates Act 1910. Purchase Telephone Lines Acquisition Act 1911. Pacific Cable Act 1911.
(vi)	NAVAL AND MILITARY DEFENCE— <i>General—</i> Naval Agreement Act 1903–1912. <i>Naval Loan Act 1909.*</i> Naval Loan Repeal Act 1910. Defence Act 1903–1918. Telegraph Act 1909. Naval Defence Act 1910–1912. Defence Lands Purchase Act 1913. Control of Naval Waters Act 1918. Deceased Soldiers' Estates Act 1918. <i>War Legislation—</i> Patents, Trade Marks and Designs Act 1914–1915. Trading with the Enemy Act 1914–1916. War Precautions Act 1914–1918. War Census Act 1915–1916. Enemy Contracts Annulment Act 1915. War Pensions Act 1914–1916. <i>Australian Soldiers' Repatriation Fund Act 1916.*</i> Military Service Referendum Act 1916. <i>Daylight Saving Act 1916.*</i> Patents Act (Partial Suspension) Act 1916. Unlawful Association Act 1916–1917. Wheat Storage Act 1917. Daylight Saving Repeal Act 1917. Australian Soldiers' Repatriation Act 1917–1918. Defence (Civil Employment) Act 1918. War Service Homes Act 1918.
(vii)	LIGHTHOUSES, LIGHTSHIPS, BEACONS AND BUOYS— Lighthouses Act 1911–1915.
(viii)	ASTRONOMICAL AND METEOROLOGICAL OBSERVATIONS— Meteorology Act 1906.
(ix)	QUARANTINE— Quarantine Act 1908–1915.
(xi)	CENSUS AND STATISTICS— Census and Statistics Act 1905. War Census Act 1915–1916.
(xii)	CURRENCY, COINAGE, AND LEGAL TENDER— Coinage Act 1909. Australian Notes Act 1910–1914.
(xiii)	BANKING, OTHER THAN STATE BANKING, ETC.— Commonwealth Bank Act 1911–1914.
(xiv)	INSURANCE— Life Assurance Companies Act 1905. Marine Insurance Act 1909.
(xvi)	BILLS OF EXCHANGE AND PROMISSORY NOTES— Bills of Exchange Act 1909–1912.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
GENERAL LEGISLATION— <i>continued.</i>	
51 (xviii)	COPYRIGHT, PATENTS, DESIGNS, AND TRADE MARKS— Customs Act 1901–1916 (s. 52 (a), 57). Patents Act 1903–1909. Trade Marks Act 1905–1912. <i>Copyright Act 1905.*</i> Copyright Act 1912. Designs Act 1906–1912. Patents, Trade Marks and Designs Act 1910. Patents, Trade Marks and Designs Act 1914–1915. Patents Act (Partial Suspension) Act 1916.
(xix)	NATURALIZATION AND ALIENS— Naturalization Act 1903–1917.
(xxiii)	INVALID AND OLD-AGE PENSIONS— Invalid and Old-age Pensions Act 1908–1917.
(xxiv)	SERVICE AND EXECUTION THROUGHOUT COMMONWEALTH OF PROCESS AND JUDGMENTS OF STATE COURTS— <i>Service and Execution of Process Act 1905.*</i> Service and Execution of Process Act 1901–1918.
(xxv)	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
(xxvi)	PEOPLE OF ANY RACE, OTHER THAN ABORIGINAL—SPECIAL LAWS— Pacific Island Labourers Act 1901–1906. <i>Commonwealth Franchise Act 1902* (s. 4).</i> Naturalization Act 1903–1917 (s. 5). Commonwealth Electoral Act 1918 (s. 39).
(xxvii)	IMMIGRATION AND EMIGRATION— Immigration Act 1901–1912. Pacific Island Labourers Act 1901–1906. Contract Immigrants Act 1905. Emigration Act 1910.
(xxviii)	INFUX OF CRIMINALS— Immigration Act 1901–1912 (s. 3 (ga), (gb)).
(xxix)	EXTERNAL AFFAIRS— Extradition Act 1903. High Commissioner Act 1909.
(xxx)	RELATIONS WITH PACIFIC ISLANDS— Pacific Island Labourers Act 1901–1906.
(xxxi)	ACQUISITION OF PROPERTY FOR PUBLIC PURPOSES— <i>Property for Public Purposes Acquisition Act 1901.*</i> <i>Seat of Government Act 1904.*</i> Lands Acquisition Act 1906–1916. Lands Acquisition Act 1912. Seat of Government Act 1908. Seat of Government Acceptance Act 1909. Seat of Government (Administration) Act 1910 (s. 10). Northern Territory (Administration) Act 1910. Defence Lands Purchase Act 1913. Purchase Telephone Lines Acquisition Act 1911. Kalgoorlie to Port Augusta Railway Lands Act 1918. Lands Acquisition (Defence) Act 1918.
(xxxii)	CONTROL OF RAILWAYS FOR DEFENCE PURPOSES— Defence Act 1903–1917 (ss. 64–66, 80, 124). War Precautions Act 1914–1916 (s. 4 (1) (c)). Kalgoorlie to Port Augusta Railway Survey Act 1907. Commonwealth Railways Act 1917.
(xxxiv)	RAILWAY CONSTRUCTION AND EXTENSION IN ANY STATE WITH THE CONSENT OF THAT STATE— Kalgoorlie to Port Augusta Railway Act 1911–1912. Commonwealth Railways Act 1917.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
	GENERAL LEGISLATION— <i>continued.</i>
51 (xxxv)	CONCILIATION AND ARBITRATION FOR THE PREVENTION AND SETTLEMENT OF INDUSTRIAL DISPUTES EXTENDING BEYOND THE LIMITS OF ANY ONE STATE— Commonwealth Conciliation and Arbitration Act 1904-1918.
(xxxix)	MATTERS INCIDENTAL TO THE EXECUTION OF POWERS— Acts Interpretation Act 1901-1918. <i>Punishment of Offences Act 1901.*</i> Acts Interpretation Act 1904-1916. Amendments Incorporation Act 1905-1918. Rules Publication Act 1903-1916. Commonwealth Public Service Act 1902-1918. Jury Exemption Act 1905. Royal Commissions Act 1902-1912. Evidence Act 1905. Commonwealth Salaries Act 1907. Excise Procedure Act 1907. Statutory Declarations Act 1911. Arbitration (Public Service) Act 1911. Commonwealth Inscribed Stock Act 1911-1918. Maternity Allowance Act 1912. Commonwealth Workmen's Compensation Act 1912. Committee of Public Accounts Act 1913. Commonwealth Public Works Committee Act 1913. Meat Export Trade Commission Act 1914. Crimes Act 1914-1915. Commonwealth Public Service (Acting Commissioner) Act 1916. Solicitor-General Act 1916. Commonwealth Public Works Committee Act 1917. Committee of Public Accounts Act 1917. Australian Soldiers' Repatriation Act 1917-1918.
	EXECUTIVE GOVERNMENT.
65	NUMBER OF MINISTERS— <i>Ministers of State Act 1915.*</i> Ministers of State Act 1917.
67	APPOINTMENT AND REMOVAL OF OFFICERS— Commonwealth Public Service Act 1902-1918. Papua Act 1905 (s. 19). Defence Act 1903-1918 (s. 63). High Commissioner Act 1909 (ss. 8, 9). Northern Territory Acceptance Act 1910 (ss. 11, 12). Norfolk Island Act 1913 (ss. 7, 9). Commonwealth Public Service (Acting Commissioner) Act 1916. Solicitor-General Act 1916. Commonwealth Railways Act 1917 (ss. 5-15, 46-54). Defence (Civil Employment) Act 1918. War Service Homes Act 1918, ss. 5-15.
	THE JUDICATURE.
71-80	CONSTITUTION AND PROCEDURE OF THE HIGH COURT— Judiciary Act 1903-1915. High Court Procedure Act 1903-1915.
73	APPELLATE JURISDICTION OF THE HIGH COURT— Judiciary Act 1903-1915. Papua Act 1905 (s. 43). Inter State Commission Act 1912 (s. 42). Land Tax Assessment Act 1910-1916 (s. 46). Norfolk Island Act 1913 (s. 11). Estate Duty Assessment Act 1914-1916 (s. 28). Income Tax Assessment Act 1915-1918 (s. 37). War-time Profits Tax Assessment Act 1917-1918 (s. 29).

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
	THE JUDICATURE—<i>continued.</i>
76	ORIGINAL JURISDICTION OF HIGH COURT—
(i)	(1) <i>In matters arising under the Constitution or involving its interpretation—</i> Judiciary Act 1903–1915 (ss. 23, 30).
(ii)	(2) <i>In matters arising under Laws made by the Parliament—</i> Customs Act 1901–1916 (ss. 221, 227, 245). Excise Act 1901–1918 (ss. 109, 115, 134). Post and Telegraph Act 1901–1916 (ss. 29, 43). <i>Property for Public Purposes Acquisition Act 1901*</i> (ss. 12–17, 25, 52, 55 (b), 58). Commonwealth Electoral Act 1902–1911† (ss. 193, 206AA). Judiciary Act 1903–1915. Defence Act 1903–1918 (s. 91). Patents Act 1903–1909 (ss. 47, 58, 67, 75–77, 84–87A, 111). Commonwealth Conciliation and Arbitration Act 1904–1918 (s. 31). Trade Marks Act 1905–1912 (ss. 34, 35, 44, 45, 70–72, 95). <i>Copyright Act 1905*</i> (s. 73 (2)). Copyright Act 1912 (s. 37 (2)). Australian Industries Preservation Act 1906–1910 (ss. 10, 11, 13, 21, 22, 26). Referendum (Constitution Alteration) Act 1906–1915 (ss. 27, 31). Lands Acquisition Act 1906–1916 (ss. 10, 11, 24, 36–39, 45, 46, 50, 54, 56, 59). <i>Disputed Elections and Qualifications Act 1907*</i> (ss. 2, 6). Navigation Act 1912 (ss. 383, 385). Trading with the Enemy Act 1914–1916 (ss. 9c, 9p). Commonwealth Electoral Act 1918 (ss. 183, 202).
(iii)	(3) <i>In matters of Admiralty and Maritime Jurisdiction—</i> Judiciary Act 1903–1915 (ss. 30, 30A).
77—(ii)	EXCLUDING JURISDICTION OF STATE COURTS— Judiciary Act 1903–1915 (ss. 38, 38A, 39, 57, 59).
(iii)	INVESTING STATE COURTS WITH FEDERAL JURISDICTION— Customs Act 1901–1916 (ss. 221, 227, 245). Excise Act 1901–1918 (ss. 109, 115, 134). Post and Telegraph Act 1901–1916 (ss. 29, 43). <i>Punishment of Offences Act 1901.*</i> Commonwealth Electoral Act 1902–1911† (s. 193). <i>Claims against the Commonwealth Act 1902.*</i> Defence Act 1903–1918 (s. 91). Judiciary Act 1903–1915 (ss. 17, 39, 68). Patents Act 1903–1909 (ss. 30, 47, 58, 67, 75–77, 84–87A, 111). Commonwealth Conciliation and Arbitration Act 1904–1918 (ss. 44–46, 48). Trade Marks Act 1905 (ss. 34, 35, 44, 45). <i>Copyright Act 1905*</i> (s. 60, 73). Designs Act 1906–1912 (s. 25, 39). Copyright Act 1912 (ss. 14–17). Land Tax Assessment Act 1910–1916 (s. 44). Navigation Act 1912 (ss. 91, 92, 318–20, 380–3, 385, 395). Estate Duty Assessment Act 1914–1916 (s. 24). Income Tax Assessment Act 1915–1918 (s. 37). War-time Profits Tax Assessment Act 1917–1918 (s. 28).
78	RIGHT TO PROCEED AGAINST COMMONWEALTH OR STATE— Judiciary Act 1903–1915 (ss. 56–67).

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

† See footnote † at p. 38 *supra*.

SECTION III.

PHYSIOGRAPHY.

§ 1. General Description of Australia.

1. *Geographical Position.*—The Australian Commonwealth, which includes the island continent of Australia proper and the island of Tasmania, is situated in the Southern Hemisphere, and comprises in all an area of about 2,974,581 square miles, the mainland alone containing about 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes 113° 9' E. and 153° 39' E., while its northern and southern limits are the parallels of latitude 10° 41' S. and 39° 8' S., or, including Tasmania, 43° 39' S. On its north are the Timor and Arafura Seas and Torres Strait, on its south the Southern Ocean and Bass Strait.¹

Tropical and Temperate Regions. Of the total area of Australia the lesser portion lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is 23° 30' S.,² the areas within the tropical and temperate zones are approximately as follows:—

AREAS OF TROPICAL AND TEMPERATE REGIONS
OF STATES AND TERRITORY WITHIN TROPICS.

Areas.	Queensland.	Western Australia.	Northern Territory.	Total.
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Within Tropical Zone	359,000	364,000	426,320	1,149,320
Within Temperate Zone	311,500	611,920	97,300	1,020,720
Ratio of Tropical part to whole State ..	0.535	0.373	0.814	0.530
Ratio of Temperate part to whole State	0.465	0.627	0.186	0.470

Thus the tropical part is roughly about one-half (0.530) of the three territories mentioned above, or about five-thirteenths of the whole Commonwealth (0.386). See hereafter *Meteorology*—page 55.

2. *Area of Australia compared with that of other Countries.*—That the area of Australia is greater than that of the United States of America, that it is four-fifths of that of Canada, that it is nearly one-fourth of the area of the whole of the British Empire, that it is nearly three-fourths of the whole area of Europe, that it is more than 25 times as large as any one of the following, viz., the United Kingdom, Hungary, Italy, the Transvaal, and Ecuador, are facts which are not always adequately realised. It is this great size, taken together with the fact of the limited population, that gives to the problems of Australian development their unique character, and its clear comprehension is essential in any attempt to understand those problems.

The relative magnitudes may be appreciated by a reference to the following table, which shows how large Australia is compared with the countries referred to, or *vice versa*. Thus, to take line 1, we see that Europe is about $1\frac{1}{10}$ times (1.29828) as large as Australia, or that Australia is about three-quarters (more accurately 0.77) of the area of Europe.

1. The extreme points are "Steep Point" on the west, "Cape Byron" on the east, "Cape York" on the north, "Wilson's Promontory" on the south, or, if Tasmania be included, "South East Cape." The limits, according to the 1903-4 edition of "A Statistical Account of Australia and New Zealand," p. 2, and, according to Volume XXV. of the *Encyclopædia Britannica*, tenth edition, p. 787, are respectively 113° 5' E., 153° 16' E., 10° 39' S., and 39° 11' S., but these figures are obviously defective. A similar inaccuracy appears in the XI. edition of the *Encyclopædia*.

2. Its correct value for 1919 is 23° 26' 59.36", and it decreases about 0°.47 per annum.

SIZE OF AUSTRALIA IN COMPARISON WITH THAT OF OTHER COUNTRIES.

Commonwealth of Australia		2,974,581 square miles.	
Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C'wealth.
	Sq. miles.		
Continents—			
Europe	3,861,856	0.77	1.29828
Asia	16,838,571	0.18	5.66082
Africa	12,373,563	0.24	4.15977
North and Central America and West Indies..	8,547,640	0.35	2.87356
South America	7,370,141	0.40	2.47771
Australasia and Polynesia	3,462,029	0.86	1.16387
Total, exclusive of Arctic and Antarctic Confs.	52,453,800	0.06	17.63401
Europe—			
Russia (inclusive of Poland, Ciscaucasia & Finland)	2,122,998	1.40	0.71371
Austria-Hungary (inclusive of Bosnia & Herzegovina)	261,259	11.39	0.08783
Germany	208,780	14.25	0.07019
France	207,054	14.37	0.06961
Spain	194,778	15.27	0.06548
Sweden	173,035	17.19	0.05817
Norway	124,643	23.86	0.04190
United Kingdom	121,633	24.46	0.04089
Italy	110,632	26.89	0.03719
Denmark (inclusive of Iceland)	55,338	53.75	0.01860
Rumania	53,489	55.61	0.01798
Bulgaria	47,750	62.29	0.01605
Greece	41,933	70.94	0.01410
Portugal	35,490	83.81	0.01193
Serbia	33,891	87.77	0.01139
Switzerland	15,976	186.19	0.00537
Netherlands	12,582	236.42	0.00423
Belgium	11,373	261.55	0.00382
Albania	11,317	262.84	0.00380
Turkey	10,882	273.35	0.00366
Montenegro	5,603	530.89	0.00188
Luxemburg	998	2980.54	0.00034
Andorra	191	15573.72	0.00006
Malta	118	25208.31	0.00004
Liechtenstein	65	45762.78	0.00002
San Marino	38	78278.45	0.00001
Monaco	8	371822.63	..
Gibraltar	2	1487290.50	..
Total, Europe	3,861,856	0.77	1.29828
Asia—			
Russia (inclusive of Transcaucasia, Siberia, Steppes, Transcaspia, Turkestan and inland waters)	6,641,587	0.45	2.23278
China and Dependencies	3,913,560	0.76	1.31567
British India	1,093,074	2.72	0.36747
Independent Arabia	1,000,000	2.97	0.33618
Feudatory Indian States	709,555	4.19	0.23854
Turkey	699,342	4.25	0.23511
Persia	628,000	4.74	0.21112
Dutch East Indies	583,210	5.10	0.19606
Japan (and Dependencies).. .. .	261,069	11.39	0.08777

SIZE OF AUSTRALIA IN COMPARISON WITH THAT OF OTHER COUNTRIES.

Commonwealth of Australia		2,974,581 square miles.	
Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C ^w wealth.
	Sq. miles.		
Continents—			
Europe	3,861,856	0.77	1.29828
Asia	16,838,571	0.18	5.66082
Africa	12,373,563	0.24	4.15977
North and Central America and West Indies ..	8,547,640	0.35	2.87356
South America	7,370,141	0.40	2.47771
Australasia and Polynesia	3,462,029	0.86	1.16387
Total, exclusive of Arctic and Antarctic Conts.	52,453,800	0.06	17.63401
Europe—			
Russia (inclusive of Poland, Ciscaucasia & Finland)	2,122,998	1.40	0.71371
Austria-Hungary (inclusive of Bosnia & Herzegovina)	261,259	11.39	0.08783
Germany	208,780	14.25	0.07019
France	207,054	14.37	0.06961
Spain	194,778	15.27	0.06548
Sweden	173,035	17.19	0.05817
Norway	124,643	23.86	0.04190
United Kingdom	121,633	24.46	0.04089
Italy	110,632	26.89	0.03719
Denmark (inclusive of Iceland)	55,338	53.75	0.01860
Rumania	53,489	55.61	0.01798
Bulgaria	47,750	62.29	0.01605
Greece	41,933	70.94	0.01410
Portugal	35,490	83.81	0.01193
Serbia	33,891	87.77	0.01139
Switzerland	15,976	186.19	0.00537
Netherlands	12,582	236.42	0.00423
Belgium	11,373	261.55	0.00382
Albania	11,317	262.84	0.00380
Turkey	10,882	273.35	0.00366
Montenegro	5,603	530.89	0.00188
Luxemburg	998	2980.54	0.00034
Andorra	191	15573.72	0.00006
Malta	118	25208.31	0.00004
Liechtenstein	65	45762.78	0.00002
San Marino	38	78278.45	0.00001
Monaco	8	371822.63	..
Gibraltar	2	1487290.50	..
Total, Europe	3,861,856	0.77	1.29828
Asia—			
Russia (inclusive of Transcaucasia, Siberia, Steppes, Transcaspia, Turkestan and inland waters)	6,641,587	0.45	2.23278
China and Dependencies	3,913,560	0.76	1.31567
British India	1,093,074	2.72	0.36747
Independent Arabia	1,000,000	2.97	0.33618
Feudatory Indian States	709,555	4.19	0.23854
Turkey	699,342	4.25	0.23511
Persia	628,000	4.74	0.21112
Dutch East Indies	583,210	5.10	0.19606
Japan (and Dependencies)	261,069	11.39	0.08777

SIZE OF AUSTRALIA IN COMPARISON WITH OTHER COUNTRIES—*continued.*

Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C'wealth.
<i>ASIA—continued—</i>	Sq. miles.		
Afghanistan	245,000	12.14	0.08236
Siam	195,000	15.25	0.06556
Philippine Islands (incls. of Sulu Archipelago)	114,400	26.00	0.03846
Laos	111,940	26.57	0.03763
Bokhara	83,000	35.84	0.02790
Omán	82,000	36.28	0.02757
British Borneo and Sarawak	73,106	40.69	0.02458
Cambodia	67,724	43.92	0.02277
Annam	61,718	48.20	0.02075
Nepál	54,000	55.08	0.01815
Tonking	46,223	64.35	0.01554
Federated Malay States	27,506	108.14	0.00925
Ceylon	25,332	117.42	0.00852
Khiva	24,000	123.94	0.00807
Malay Protectorate (including Johore)	23,486	126.65	0.00790
Cochin China	21,988	135.28	0.00739
Bhutan	20,000	148.73	0.00672
Aden and Dependencies	9,005	330.33	0.00303
Timor, &c. (Portuguese Indian Archipelago)	7,330	405.81	0.00246
Brunei	4,000	743.64	0.00134
Cyprus	3,584	829.96	0.00120
Kiauchau (Neutral Zone)	2,500	1189.83	0.00084
Goa, Damaõ, and Diu	1,638	1815.98	0.00055
Straits Settlements	1,600	1859.11	0.00054
Sokotra	1,382	2152.37	0.00046
Hong Kong and Dependencies	391	7607.62	0.00013
Kwang Chau Wan	386	7706.17	0.00013
Wei-hai-wei	285	10437.13	0.00010
Bahrein Islands	250	11898.32	0.00008
Kiauchau (German)	200	14872.91	0.00007
French India (Pondicherry, &c)	196	15176.43	0.00007
Macao, &c.	4	743645.25	..
Total, Asia	16,838,571	0.18	5.66082
<i>Africa—</i>			
French Sahara	1,544,000	1.93	0.51906
Sudan	1,014,400	2.93	0.34102
French Equatorial Africa	1,003,600	2.96	0.33739
Belgian Congo	909,654	3.27	0.30581
French Military District of the Niger	534,124	5.57	0.17956
Angola	517,000	5.75	0.17381
Union of South Africa	473,075	6.29	0.15904
Rhodesia	440,000	6.76	0.14792
Portuguese East Africa	426,712	6.97	0.14345
Tripoli and Benghazi	406,000	7.33	0.13649
Abyssinia	400,000	7.44	0.13447
German East Africa	384,000	7.75	0.12909
Egypt	350,000	8.50	0.11766
Mauretania	344,967	8.62	0.11597
Algeria (including Algerian Sahara)	343,500	8.66	0.11548
Nigeria and Protectorate	336,000	8.85	0.11296
German South-west Africa	322,200	9.23	0.10832
Senegambia and Niger	302,136	9.85	0.10157
Bechuanaland Protectorate	275,000	10.82	0.09245
British East Africa Protectorate	246,822	12.05	0.08298
Morocco	231,500	12.85	0.07783
Madagascar	226,016	13.16	0.07598
Kamerun	191,130	15.56	0.06425

SIZE OF AUSTRALIA IN COMPARISON WITH OTHER COUNTRIES—*continued.*

Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C'wealth.
<i>AFRICA—continued—</i>			
	Sq. miles.		
Italian Somaliland	139,430	21.33	0.04687
Ivory Coast	125,538	23.69	0.04220
Uganda Protectorate	109,119	27.26	0.03668
French Guinea	92,249	32.25	0.03101
Gold Coast Protectorate (with Nth. Territories)	80,000	37.18	0.02689
Senegal	74,012	40.19	0.02488
Rio de Oro, &c.	73,000	40.75	0.02454
British Somaliland	68,000	43.74	0.02286
Tunis	50,000	59.49	0.01681
French Somali Coast	46,320	64.22	0.01557
Eritrea	45,800	64.95	0.01540
Liberia	40,000	74.36	0.01345
Nyassaland Protectorate	39,573	75.17	0.01330
Dahomey	37,527	79.27	0.01262
Togoland	33,700	88.27	0.01133
Sierra Leone and Protectorate	31,000	95.95	0.01042
Portuguese Guinea	25,000	118.98	0.00840
Spanish Guinea (Rio Muni, &c.)	12,000	247.88	0.00403
Basutoland	11,716	253.89	0.00394
Swaziland	6,536	455.11	0.00220
Gambia and Protectorate	4,504	660.43	0.00151
Cape Verde Islands	1,480	2009.83	0.00050
Zanzibar	1,020	2916.26	0.00034
Réunion	965	3082.47	0.00032
Fernando Po, &c.	814	3654.28	0.00027
Mauritius and Dependencies	809	3676.86	0.00027
Comoro Islands	694	4286.14	0.00023
St. Thomas and Principe Islands	454	6551.94	0.00015
Seychelles	156	19067.83	0.00005
Mayotte, &c.	143	20801.27	0.00005
Spanish North and West Africa	87	34190.59	0.00003
St. Helena	47	63288.96	0.00002
Ascension	34	87487.68	0.00001
Total, Africa	12,373,563	0.24	4.15977
<i>North and Central America and West Indies—</i>			
Canada	3,729,665	0.80	1.25385
United States (exclusive of Alaska, &c.)	2,973,890	1.00	0.99977
Mexico	767,198	3.88	0.25792
Alaska	590,884	5.03	0.19864
Newfoundland and Labrador	162,734	18.28	0.05471
Nicaragua	49,200	60.46	0.01654
Guatemala	48,290	61.60	0.01623
*Greenland	46,740	63.64	0.01571
Honduras	44,275	67.18	0.01488
Cuba	44,215	67.28	0.01486
Costa Rica	23,000	129.33	0.00773
San Domingo	18,045	164.84	0.00607
Salvador	13,176	225.76	0.00443
Haiti	10,204	291.51	0.00343
British Honduras	8,598	345.96	0.00289
Bahamas	4,404	675.43	0.00148
Jamaica	4,207	707.05	0.00141
Porto Rico	3,606	824.90	0.00121
Trinidad and Tobago	1,868	1592.39	0.00063
Leeward Islands	715	4160.25	0.00024
Guadeloupe and Dependencies	688	4323.52	0.00023
Windward Islands	527	5644.37	0.00018

* Danish colony only. Total area has been estimated as between 827,000 and 850,000 square miles.

SIZE OF AUSTRALIA IN COMPARISON WITH OTHER COUNTRIES—*continued.*

Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C'wealth.
N. & C. AMERICA & W. INDIES—<i>continued.</i>			
	Sq. miles.		
Curaçao and Dependencies	403	7381.09	0.00014
Martinique	385	7726.18	0.00013
Turks and Caicos Islands	224	13279.38	0.00008
Barbados	166	17919.16	0.00006
Virgin Islands of U.S.A., late Danish West Indies	132	22534.70	0.00004
St. Pierre and Miquelon	93	31984.74	0.00003
Cayman Islands	89	33422.26	0.00003
Bermudas	19	156556.89	..
Total, N. and C. America and W. Indies ..	8,547,640	0.35	2.87356
South America—			
Brazil	3,290,564	0.90	1.10623
Argentine Republic	1,153,119	2.58	0.38766
Peru	722,461	4.12	0.24288
Bolivia	514,155	5.79	0.17285
Colombia (exclusive of Panama)	440,846	6.75	0.14820
Venezuela	398,594	7.46	0.13400
Chile	289,829	10.26	0.09744
Paraguay	165,000	18.03	0.05547
Ecuador	116,000	25.64	0.03900
British Guiana	89,480	33.24	0.03008
Uruguay	72,153	41.23	0.02426
Dutch Guiana	46,060	64.58	0.01548
Panama	32,380	91.86	0.01089
French Guiana	32,000	92.96	0.01076
Falkland Islands	6,500	457.63	0.00219
South Georgia	1,000	2974.58	0.00034
Total, South America	7,370,141	0.40	2.47771
Australasia and Polynesia—			
Commonwealth of Australia	2,974,581	1.00	1.00000
Dutch New Guinea	151,789	19.60	0.05103
New Zealand and Dependencies	104,751	28.40	0.03522
Papua	90,540	32.85	0.03044
Kaiser Wilhelm Land	70,000	42.49	0.02353
Bismarck Archipelago	20,000	148.73	0.00672
British Solomon Islands	14,573	204.12	0.00490
New Caledonia and Dependencies	8,548	347.99	0.00287
Fiji	7,083	419.96	0.00238
Hawaii	6,449	461.25	0.00217
German Solomon Islands, &c.	5,160	576.47	0.00173
New Hebrides	5,100	583.25	0.00171
French Establishments in Oceania	1,520	1956.96	0.00051
German Samoa	1,000	2974.58	0.00034
Tonga	390	7627.13	0.00013
Guam	225	13220.36	0.00008
Gilbert and Ellice Islands	208	14300.87	0.00007
Samoa (U.S.A. part)	102	29162.56	0.00003
Norfolk Island	10	297458.10	..
Total, Australasia and Polynesia	3,462,029	0.86	1.16387
British Empire	12,784,755	0.23	4.29800

It should be noted that in the table above the figures quoted for areas refer to conditions prevailing prior to the outbreak of war.

3. **Relative Size of Political Subdivisions.**—As already stated, Australia consists of six States and the Northern and Federal Territories. The areas of these, in relation to one another and to the total of Australia, are shewn in the following table :—

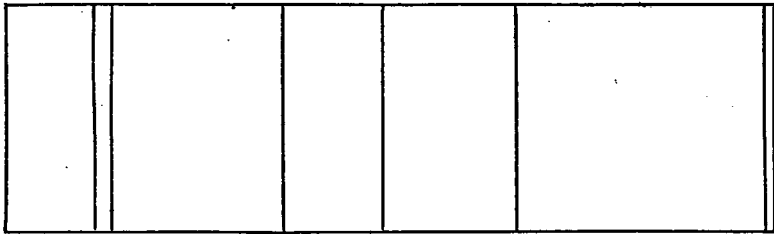
RELATIVE SIZE OF STATES, TERRITORIES, AND COMMONWEALTH.

State or Territory.	Area.	Ratio which the Area of each State and Territory bears to that of other States, Territories, and Commonwealth.							
		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N. Ter.	C'wth.
	Sq. miles.								
New South Wales	309,432	1.000	3.521	0.461	0.814	0.317	11.804	0.591	0.104
Victoria ..	87,884	0.284	1.000	0.131	0.231	0.090	3.352	0.168	0.030
Queensland ..	670,500	2.167	7.629	1.000	1.764	0.687	25.577	1.280	0.225
South Australia	380,070	1.228	4.325	0.567	1.000	0.389	14.498	0.726	0.128
West. Australia	975,920	3.154	11.105	1.456	2.568	1.000	37.228	1.864	0.328
Tasmania ..	26,215	0.085	0.298	0.039	0.069	0.027	1.000	0.050	0.009
North. Territory	523,620	1.692	5.958	0.781	1.378	0.537	19.974	1.000	0.176
Federal Territory	940	0.003	0.011	0.001	0.002	0.001	0.036	0.002	0.000 ¹
Commonwealth	2,974,581	9.613	33.847	4.436	7.826	3.048	113.469	5.681	1.000

1. The correct decimal is 0.0003.

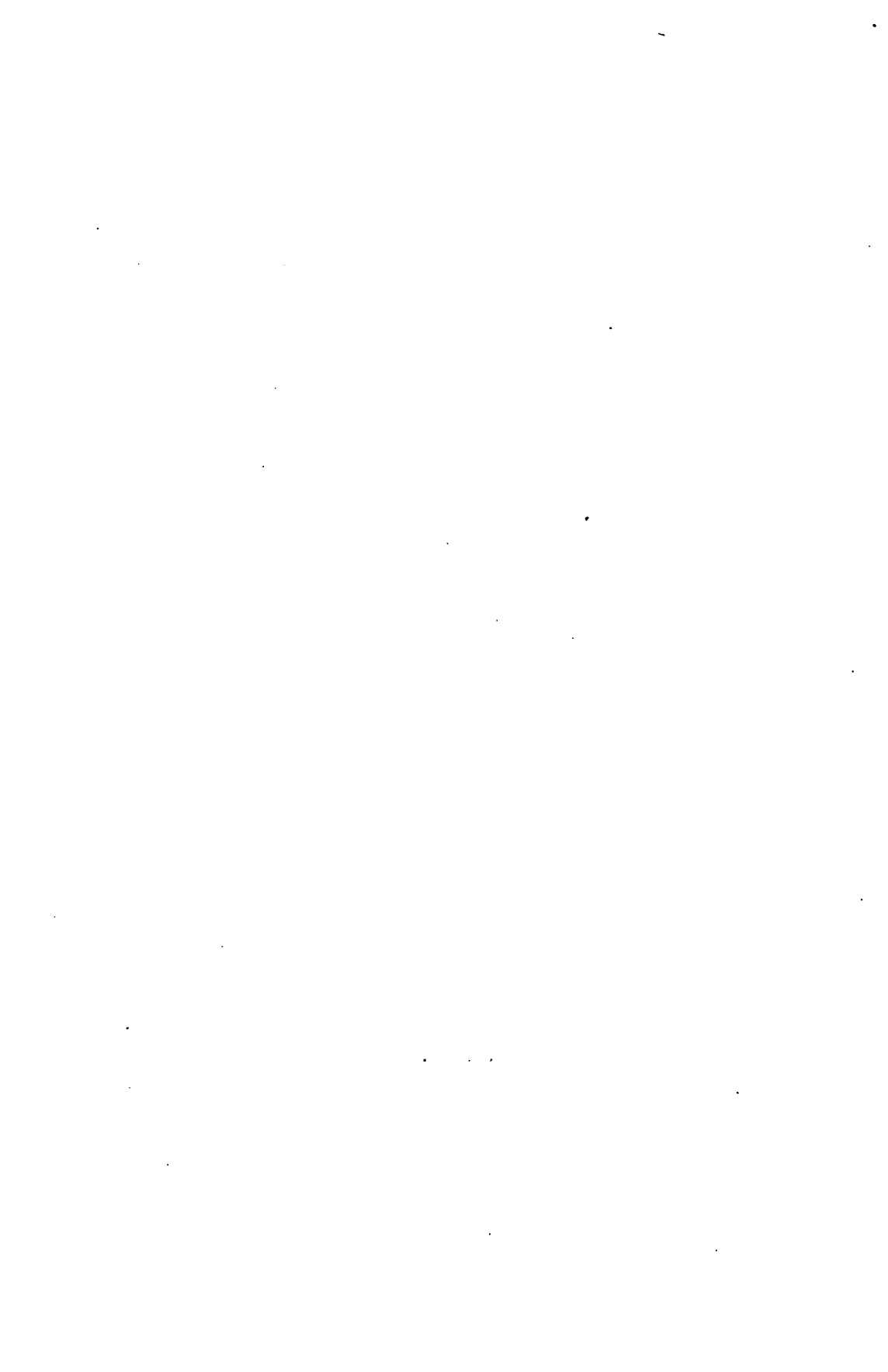
Thus, looking at the top line, New South Wales is seen to be over three-and-a-half times as large as Victoria (3.521) and less than one-half the size of Queensland (0.461); or again, looking at the bottom line, the Commonwealth is shewn to be more than nine-and-a-half times as large as New South Wales (9.613), and nearly thirty-four times as large as Victoria (33.847).

These relative magnitudes are shewn in the small diagram below. It may be added that Papua (or British New Guinea), with its area of 90,540 square miles, is 0.030 of the area of the Commonwealth. The comparatively small size of the Federal Territory prevents its being shewn in this diagram.



% on total	N.S.W.	V.	Qld.	S.A.	N.T.	W.A.	Tas.
..	10	3	22	13	18	33	1

4. **Coastal Configuration.**—There are no striking features in the configuration of the coast; the most remarkable indentations are the Gulf of Carpentaria on the north and the Great Australian Bight on the south. The York Peninsula on the extreme north is the only other remarkable feature in the outline. In Year Book No. 1, an enumeration of the features of the coast-line of Australia was given (see pp. 60 to 68).



(i) *Coast-line.* The lengths of coast-line, exclusive of minor indentations, both of each State and of the whole continent, are shewn in the following table:—

SQUARE MILES OF TERRITORY PER MILE OF COAST LINE.

STATES, TERRITORY, AND CONTINENT.

State.	Coast-line.	Area ÷ Coast-line.	State.	Coast-line.	Area ÷ Coast-line.
	Miles.	Sq. miles.		Miles.	Sq. miles.
New South Wales ¹	700.	443	South Australia	1,540	247
Victoria ..	680	129	Western Australia	4,350	224
Queensland ..	3,000	223	Continent ² ..	11,310	261
Northern Territory	1,040	503	Tasmania ..	900	29

1. Including Federal Territory.

2. Area 2,948,366 square miles.

For the entire Commonwealth this gives a coast-line of 12,210 miles, and an average of 244 square miles for one mile of coast-line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast-line, and, according to recent figurés, England and Wales have only one-third of this, viz., 25 square miles.

(ii) *Historical Significance of Coastal Names.* It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyt's Archipelago, in the Northern Territory and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognised from Sydney southwards, as far as Cape Catastrophe, by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the eighteenth and the beginning of the nineteenth century have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. *Geographical Features of Australia.*—In the earlier issues of this Year Book fairly complete information has been given concerning some special geographical element. Thus No. 1 Year Book, pp. 60–68, contains an enumeration of Coastal features; No. 2, pp. 66–67, deals with Hydrology; No. 3, pp. 59–72, with Orography; No. 4, pp. 59–82, with the Lakes of Australia; No. 5, pp. 51–80, with the Islands of Australia; No. 6, pp. 55–66, with the Mineral Springs of Australia; and No. 7, pp. 56–58, with the Salient Features in the Geological History of Australia, with special reference to changes of climate. A special article dealing with the plains and penneplains of Australia will be found in § 8 of this section. This practically completes the description of the ordinary physical features. An orographical or vertical relief map of Australia will be found at the end of this volume.

§ 2. The Fauna of Australia.

An authoritative article describing in some detail the principal features of the Fauna of Australia was given in Year Books No. 1 (see pp. 103 to 109) and No. 2 (see pp. 111 to 117), while a synoptical statement appeared in No. 3 (see pp. 73 to 76). Considerations of space will, however, preclude the inclusion in this issue of more than a passing reference to the subject.

§ 3. The Flora of Australia.

In Year Books No. 1 (see pp. 109 to 114) and No. 2 (see pp. 117 to 122) a fairly complete though brief account was given of the Flora of Australia, and in Year Book No. 3 similar information in a greatly condensed form will be found on pp. 76 to 78. Space in this issue will not permit of more than a mere reference to preceding volumes.

A special article dealing with Australian fodder plants, contributed by J. H. Maiden, Esq., F.L.S., Government Botanist of New South Wales, and Director of the Botanic Gardens, Sydney, appeared in Official Year Book No. VI, pp. 1190–6. A special article on the grasses and saltbushes of Australia, contributed by E. Breakwell, B.A., B.Sc., Agrostologist at the Botanic Gardens, Sydney, appeared in Year Book No. 9,

pp. 84-90. Year Book No 10 contained two special articles; one dealing with Australian eucalyptus timbers, contributed by R. T. Baker, F.L.S., appeared on pp. 85 to 92, and one by H. G. Smith, F.C.S., dealing with the chemical products of Australian eucalypts, appeared on pp. 92-8.

§ 4. Seismology in Australia.

A brief statement regarding the position of seismology and seismological record in Australia appeared in Year Book No. 4, pp. 82 and 83.

§ 5. The Geology of Australia.

1. **General.**—Independent and authoritative sketches of the geology of each State were given in Year Books No. 1 (see pp. 73 to 103) and No. 2 (see pp. 78 to 111). Want of space has precluded the insertion of these sketches in the present issue of the Year Book, and it has not been considered possible to give anything like a sufficient account of the geology of Australia by presenting here a mere condensation of these sketches. Reference must, therefore, be made to either Year Book No. 1 or No. 2, *ut supra*.

A special article dealing with "The Plains and Peneplains of Australia" will be found in § 8 of this section.

2. **Geological Map of Australia.**—The map of the Geology of Australia on page 51, shews the geographical distribution of the more important geological systems and formations.

3. **The Building Stones of Australia.**—Independent and authoritative descriptions of the building stones of each State (with the exception of Queensland) will be found in Official Year Book No. 9, pp. 446-466.

A special article dealing with "The Building Stones of Queensland" will be found in § 9 of this section.

§ 6. Climate and Meteorology of Australia.¹

1. **Introductory.**—In preceding Year Books some account was given of the history of Australian meteorology, including reference to the development of magnetic observations and the equipment for the determination of various climatological records. (See Year Book No. 3, pp. 79, 80.) In Year Book No. 4, pp. 84 and 87, will be found a short sketch of the creation and organisation of the Commonwealth Bureau of Meteorology and a résumé of the subjects dealt with at the Meteorological Conference of 1907. Space will not permit of the inclusion of this matter in the present issue.

2. **Meteorological Publications.**—The following publications are issued daily from the Central Meteorological Bureau, viz. :—(i) Weather charts. (ii) Rainfall maps. (iii) Bulletins, Victorian and Interstate, shewing pressure, temperature, wind, rain, cloud extent, and weather. Similar publications are also issued from the divisional offices in each of the State Capitals.

The Bulletins of Climatology are as follow :—No. 1.—A general discussion of the climate and meteorology of Australia, illustrated by one map and diagrams. No. 2.—A discussion of the rainfall over Australia during the ten years (1897-1906) compared with the normal, illustrated by one map. No. 3.—Notes and statistics of the remarkable flood rains over south-eastern Australia during the winter of 1909, illustrated by five maps and diagrams. No. 4.—A discussion of the monthly and seasonal rainfall over Australia, illustrated by one map and diagram. No. 5.—An investigation into the possibility of forecasting the approximate winter rainfall for Northern Victoria, illustrated by two diagrams. No. 6.—The physiography of the Federal Territory at Canberra, illustrated by a relief map and 21 plates. No. 7.—On the climate of the Yass-Canberra district, illustrated by one map. No. 8.—Physiography of Eastern

¹ Prepared from data supplied by the Commonwealth Meteorologist, H. A. Hunt, Esquire, F.R. Met. Soc.

Australia, with 28 text illustrations. No. 9.—The climate of Australia, with charts and diagrams, prepared for the Federal Handbook of Australia. No. 10.—Relation between cirrus directions as observed in Melbourne and the approach of the various storm systems affecting Victoria, illustrated by a number of charts. No. 11.—The climatic control of Australian production, with 43 illustrations. No. 12.—A graphical method of shewing the daily weather, and especially cloud types, with two graphs. No. 13.—Initial investigations in the upper air of Australia, with 35 illustrations. No. 14.—The control of settlement by humidity and temperature, with 21 charts and diagrams.

Commencing with January, 1910, the "Australian Monthly Weather Report," containing statistical records from representative selected stations, with rain maps and diagrams, &c., is being published. Complete rainfall and other climatological data are published in annual volumes of meteorological statistics for each State separately.

The first text book of Australian meteorology, "Climate and Weather of Australia," was published in 1913.

3. General Description of Australia.—In the general description of Australia, page 45, it is pointed out that a considerable portion (0.530) of three divisions of the Australian Commonwealth is north of the tropic of Capricorn, that is to say, within the States of Queensland and Western Australia, and the Northern Territory, no less than 1,149,320¹ square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of the Commonwealth within the temperate zone, however, is 1,825,261² square miles, thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the "temperate" region is half as large again as the "tropical" (more accurately 1.591). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe; and latitude for latitude Australia is, on the whole, more temperate.

The altitudes of the surface of Australia range up to a little over 7,300 feet, hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name Australian Alps given to the southern portion of the great Dividing Range.

While on the coast the rainfall is often abundant and the atmosphere moist, in some portions of the interior the rainfall is very limited, and the atmosphere dry. The distribution of forest, as might be expected, and its climatic influence, is consequently very variable. In the interior there are on the one hand fine belts of trees, on the other there are large areas which are treeless, and where the air is hot and parched in summer. Again, on the coast, even as far south as latitude 35°, the vegetation is tropical in its luxuriance, and also somewhat so in character. Climatologically, therefore, Australia may be said to present a great variety of features. The various climatological characteristics will be referred to in detail.

4. Meteorological Divisions.—The Commonwealth Meteorologist has divided Australia, for climatological and meteorological purposes, into five divisions. The boundaries between these may be thus defined:—(a) Between divisions I. and II., the boundary between South and Western Australia, viz., the 129th meridian of east longitude; (b) between divisions II. and III., starting at the Gulf of Carpentaria, along the Norman River to Normanton, thence a straight line to Wilcannia on the Darling River, New South Wales; (c) between divisions II. and IV., from Wilcannia along the Darling River to its junction with the Murray; (d) between divisions II. and V., from the junction of the Darling and Murray Rivers, along the latter to Encounter Bay; (e) between divisions III. and IV., starting at Wilcannia, along the Darling, Barwon, and Dumaresq Rivers to the Great Dividing Range, and along that range and along the watershed between the Clarence and Richmond Rivers to Evans Head on the east coast of Australia; (f) between divisions IV. and V., from the junction of the Darling and Murray Rivers along the latter to its junction with the Murrumbidgee, along the Murrumbidgee to the Tumut River, and along the Tumut River to Tumut, thence a straight line to Cape Howe; (g) division V. includes Tasmania.

1. In the article "Australia" in the Encyclopædia Britannica, Vol. II., p. 946 (XI. edition), this area is given as 1,145,000 square miles.

2. Given as 1,801,700 square miles in the work above quoted, where, however, the statistics are said "to refer only to the continental States of the Federation, not to Tasmania."

The population included within these boundaries at the Census of the 3rd April, 1911, was approximately as follows :—

Division	I.	II.	III.	IV.	V.
Population	282,000	429,000	607,000	1,540,000	1,597,000

In these divisions the order in which the capitals occur is as follows :—(i) Perth, (ii) Adelaide, (iii) Brisbane, (iv) Sydney, (v) Melbourne, (vi) Hobart; and for that reason the climatological and meteorological statistics will be set forth in the indicated order in this publication.

Special Climatological Stations. The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented hereinafter, are as follows :—

SPECIAL CLIMATOLOGICAL STATIONS.

Locality.	Height above Sea Level.	Latitude.		Longitude.		Locality.	Height above Sea Level.	Latitude.		Longitude.	
		S.	E.	S.	E.			S.	E.		
Perth ..	Feet. 197	deg. min. 31	deg. min. 57	deg. min. 115	deg. min. 50	Darwin ..	Feet. 97	deg. min. 12	deg. min. 28	deg. min. 130	deg. min. 51
Adelaide ..	140	34	56	138	35	Daly Waters	691	16	16	133	23
Brisbane ..	137	27	28	153	2	Alice Springs	1,926	23	38	133	37
Sydney ..	133	33	52	151	12	Pubbo ..	870	32	18	148	35
Melbourne ..	115	37	49	144	58	Laverton, W.A.	1,530	28	40	122	23
Hobart ..	177	42	53	147	20	Coolgardie ..	1,402	30	57	121	10

5. **Temperatures.**—In respect of Australian temperatures generally it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa as far south as latitude 33°, while in Australia it reaches only as far south as latitude 30°, thus showing that, on the whole, Australia has a more temperate climate when compared latitude for latitude with other places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included therein, for in the United States the 70° isotherm extends in several of the western States as far north as latitude 41°. In Europe the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia nearly the whole of the land area south of latitude 40° N. has a higher isothermal value than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or approximately double the Australian range.

Along the northern shores of the Australian continent the temperatures are very equable. At Darwin, for example, the difference in the means for the hottest and coldest months is only 8.3°, and the extreme readings for the year, that is, the highest maximum in the hottest month and the lowest reading in the coldest month, shew a difference of under 50°.

Coming southward the extreme range of temperature increases gradually on the coast, and in a more pronounced way inland.

The detailed temperature results for the several capitals of the States of Australia are shewn in the Climatological Tables hereinafter.

(i) *Hottest and Coldest Parts.* A comparison of the temperatures recorded at coast and inland stations shews that, in Australia as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds 120° in the shade, and during the dry winters the major portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable it would appear that the hottest area of the continent is situated in the northern part of Western Australia about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer sometimes exceeds 100° for days, and even weeks, continuously. The coldest part of the Commonwealth is the extreme south-east of New South Wales and extreme east of Victoria, namely, the region of the Australian Alps. Here the temperature seldom, if ever, reaches 100°, even in the hottest of seasons.

In Tasmania, although occasionally hot winds may cross the Straits and cause the temperature to rise to 100° in the low-lying parts, the island as a whole enjoys a most moderate and equable range of temperature throughout the year.

(ii) *Monthly Maximum and Minimum Temperatures.* The mean monthly maximum and minimum temperatures can be best shewn by means of graphs, which exhibit the nature of the fluctuation of each for the entire year. In the diagram (on page 67) for nine representative places in Australia, the upper heavy curves shew the mean maximum, the lower heavy curves the mean minimum temperatures based upon daily observations. On the same diagram the thin curves shew the relative humidities (see next paragraph).

6. *Relative Humidity.*—Next after temperature the degree of humidity may be regarded as of great importance as an element of climate; and the characteristic differences of relative humidity between the various capitals of Australia call for special remark. For six representative places the variations of humidity are shewn on the graph on page 67, which gives results based upon daily observations of the dry and wet bulb thermometers. Hitherto difficulties have been experienced in many parts of Australia in obtaining satisfactory observations for a continuous period of any length. For this reason it has been thought expedient to refer to the record of humidity at first order stations only, where the results are thoroughly reliable. Throughout, the degree of humidity given will be what is known as *relative humidity*, that is, the percentage of aqueous vapour actually existing to the total possible if the atmosphere were saturated.

The detailed humidity results for the several State capitals are given in the Climatological Tables hereinafter. From these, it is seen that, in respect of relative humidity, Sydney and Hobart have the first place, while Brisbane, Melbourne, Perth, and Adelaide follow in the order stated, Adelaide being the driest. The graphs on page 67 shew the annual variations in humidity. It will be observed that the *relative humidity* is ordinarily but not invariably great when the temperature is low.

7. *Evaporation.*—The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and by atmospheric humidity, pressure and movement. In Australia the question is of perhaps more than ordinary importance, since in its drier regions water has often to be conserved in "tanks"¹ and dams. The magnitude of the economic loss by evaporation will be appreciated from the records on pages 69 and 76 to 81, which shew that the yearly amount varies from about 33 inches at Hobart to 95 inches at Alice Springs in the centre of the Continent.

(i) *Monthly Evaporation Curves.* The curves shewing the mean monthly evaporation in various parts of the Commonwealth will disclose how characteristically different

1. In Australia artificial storage ponds or reservoirs are called "tanks."

are the amounts for the several months in different localities. The evaporation for characteristic places is shewn on the diagram shewing also rainfalls (see page 68).

(ii) *Loss by Evaporation.* In the interior of Australia the possible evaporation is greater than the actual rainfall. Since, therefore, the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Similarly, the more protected from the direct rays of the sun and from winds, by means of suitable tree planting, the less will be the loss by evaporation: these matters are of more than ordinary concern in the drier districts of Australia.

8. Rainfall.—As even a casual reference to climatological maps, indicating the distribution of rainfall and prevailing direction of wind, would clearly shew, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth's surface over which they blow, and by the physiographical features generally.

Australia lies within the zone of the south-east trade and prevailing westerly winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude. Hence, we find that, with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains, upon which the rain-laden winds blow, from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast of Western Australia from the summer south-east trade winds. Here the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

The westerly winds, which skirt the southern shores, are responsible for the very reliable, although generally light, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

(i) *Factors determining Distribution and Intensity of Rainfall.*

(ii) *Time of Rainfall.*

In Year Book No. 6 (see pp. 72 to 74) some notes were given of the various factors governing the distribution, intensity and period of Australian rainfall.

(iii) *Wettest and Driest Regions.* The wettest known part of Australia is on the north-east coast of Queensland, between Port Douglas and Cardwell, where three stations situated on, or adjacent to, the Johnstone and Russell Rivers have an average annual rainfall of between 148 and 166 inches. The maximum and minimum falls there are:—Goondi, 241.53 in 1894 and 67.88 inches in 1915, or a range of 173.65 inches; Innisfail, 211.24 in 1894 and 69.87 inches in 1902, or a range of 141.37 inches; Harvey's Creek, 238.45 in 1901 and 80.47 inches in 1902, or a range of 157.98 inches.

On four occasions more than 200 inches have been recorded at Goondi, the last of these being in 1910, when 204.82 inches were registered. The record at this station covers a period of 30 years.

Harvey's Creek in the shorter period of 20 years has twice exceeded 200 inches, the total for 1910 being 201.28 inches.

The driest known part of the continent is about the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is but 5 inches, and where the fall rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia have until recent years been regarded as the driest part of Australia, but authentic observations taken during the past decade at settled districts in the east of that State shew that the annual average is from 10 to 12 inches.

(iv) *Quantities and Distribution of Rainfall generally.* The departure from the normal rainfall increases greatly and progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent subject to capricious

monsoonal rains, as the comparisons hereunder will shew. The general distribution is best seen from the map on page 74, shewing the areas subject to average annual rainfalls lying between certain limits. The areas enjoying varying quantities of rainfall determined from the latest available information are shewn in the following table :—

DISTRIBUTION OF AVERAGE RAINFALL.

Average Annual Rainfall.	N.S.W.	Victoria.	Queensland.	South Australia.	Northern Territory	Western Australia.	Tasmania.	Commonwealth.
	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.
Under 10 inches	44,997	nil	91,012	317,600	138,190	513,653	nil	1,105,452
10—15 "	77,268	19,912	87,489	33,405	141,570	232,815	nil	592,459
15—20 "	57,639	12,626	112,738	14,190	62,920	89,922	937	350,972
20—30 "	77,202	29,317	213,779	13,827	93,470	95,404	7,559	530,558
30—40 "	30,700	14,029	69,880	984	40,690	40,750	4,588	201,621
Over 40 "	22,566	12,000	95,602	64	46,780	3,376	10,101	190,489
Total area ..	310,372	87,884	670,500	380,070	523,620	975,920	26,215	2,974,581

* Over an area of 3,030 square miles no records are available.

Referring first to the capital cities, the complete records of which are given on the following page, it is seen that Sydney with a normal rainfall of 48.27 inches occupies the chief place, Brisbane, Perth, Melbourne, Hobart and Adelaide following in that order, Adelaide with 21.01 inches being the driest. The extreme range from the wettest to the driest year is greatest at Brisbane (72.09 inches) and least at Adelaide (19.48 inches).

In order to shew how the rainfall is distributed throughout the year in various parts of the continent, the figures of representative towns have been selected. (See map on page 73.) Darwin, typical of the Northern Territory, shews that in that region nearly the whole of the rainfall occurs in the summer months, while little or nothing falls in the middle of the year. The figures for Perth, as representing the south-western part of the continent, are the reverse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October in the former, and in November in the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with slight excesses in April and July; the averages during the last six months are fair and moderately uniform. In general it may be said that one-third of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 or more inches, the remaining two-thirds receiving generally from about 10 to 20 inches.

(v) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are best seen by referring to the graphs for a number of characteristic places. (See page 68.) It will be recognised at once how large is the evaporation when water is fully exposed to the direct rays of the sun, and to wind.

(vi) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals affords information as to the variability of the fall in successive years, and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions.

RAINFALL AT THE AUSTRALIAN CAPITALS, 1840 TO 1918.

Year.	PERTH.			ADELAIDE.			BRISBANE.			SYDNEY.			MELBOURNE.			HOBART.			
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
1840	24.23	99	29.32	21.23	99	29.32	24.23	99	29.32	58.52	150	22.57	24.23	99	29.32	24.23	99	29.32	24.23
1	17.96	93	49.31	20.32	122	28.81	17.96	93	49.31	76.31	142	30.18	17.96	93	49.31	17.96	93	49.31	17.96
2	20.32	122	28.81	17.19	104	51.67	20.32	122	28.81	48.32	138	31.16	20.32	122	28.81	20.32	122	28.81	20.32
3	16.88	136	63.20	16.88	136	63.20	16.88	136	63.20	70.66	156	30.74	16.88	136	63.20	16.88	136	63.20	16.88
4	18.83	125	39.09	18.83	125	39.09	18.83	125	39.09	62.78	168	21.54	18.83	125	39.09	18.83	125	39.09	18.83
5	26.89	114	31.41	26.89	114	31.41	26.89	114	31.41	70.66	156	30.74	26.89	114	31.41	26.89	114	31.41	26.89
6	27.61	109	41.83	27.61	109	41.83	27.61	109	41.83	62.01	133	23.93	27.61	109	41.83	27.61	109	41.83	27.61
7	19.74	114	42.59	19.74	114	42.59	19.74	114	42.59	43.83	139	30.53	19.74	114	42.59	19.74	114	42.59	19.74
8	25.44	110	(9 yr.)	25.44	110	(9 yr.)	25.44	110	(9 yr.)	42.81	142	30.18	25.44	110	(9 yr.)	25.44	110	(9 yr.)	25.44
9	19.56	84	41.83	19.56	84	41.83	19.56	84	41.83	59.17	155	33.15	19.56	84	41.83	19.56	84	41.83	19.56
1850	30.86	123	26.98	30.86	123	26.98	30.86	123	26.98	68.27	142	26.98	30.86	123	26.98	30.86	123	26.98	30.86
1	27.44	118	43.79	27.44	118	43.79	27.44	118	43.79	44.88	157	26.98	27.44	118	43.79	27.44	118	43.79	27.44
2	27.08	123	46.12	27.08	123	46.12	27.08	123	46.12	35.14	142	26.98	27.08	123	46.12	27.08	123	46.12	27.08
3	15.35	105	20.29	15.35	105	20.29	15.35	105	20.29	48.32	138	31.16	15.35	105	20.29	15.35	105	20.29	15.35
4	23.15	124	52.86	23.15	124	52.86	23.15	124	52.86	46.12	130	26.98	23.15	124	52.86	23.15	124	52.86	23.15
5	24.93	118	43.31	24.93	118	43.31	24.93	118	43.31	20.29	136	26.98	24.93	118	43.31	24.93	118	43.31	24.93
6	22.15	105	50.95	22.15	105	50.95	22.15	105	50.95	52.86	138	28.21	22.15	105	50.95	22.15	105	50.95	22.15
7	21.55	107	39.60	21.55	107	39.60	21.55	107	39.60	43.31	116	29.76	21.55	107	39.60	21.55	107	39.60	21.55
8	14.85	95	50.95	14.85	95	50.95	14.85	95	50.95	50.95	135	28.90	14.85	95	50.95	14.85	95	50.95	14.85
9	19.67	119	39.60	19.67	119	39.60	19.67	119	39.60	43.31	129	40.75	19.67	119	39.60	19.67	119	39.60	19.67
1860	14.85	95	35.00	14.85	95	35.00	14.85	95	35.00	42.01	137	21.82	14.85	95	35.00	14.85	95	35.00	14.85
1	19.67	119	54.63	19.67	119	54.63	19.67	119	54.63	82.76	180	25.38	19.67	119	54.63	19.67	119	54.63	19.67
2	24.04	147	69.45	24.04	147	69.45	24.04	147	69.45	59.36	157	29.16	24.04	147	69.45	24.04	147	69.45	24.04
3	21.85	119	28.27	21.85	119	28.27	21.85	119	28.27	23.99	108	22.08	21.85	119	28.27	21.85	119	28.27	21.85
4	23.68	145	68.83	23.68	145	68.83	23.68	145	68.83	47.08	152	36.42	23.68	145	68.83	23.68	145	68.83	23.68
5	19.75	121	47.00	19.75	121	47.00	19.75	121	47.00	69.12	185	27.40	19.75	121	47.00	19.75	121	47.00	19.75
6	15.51	108	24.11	15.51	108	24.11	15.51	108	24.11	36.15	140	15.94	15.51	108	24.11	15.51	108	24.11	15.51
7	20.11	116	51.18	20.11	116	51.18	20.11	116	51.18	36.91	156	22.41	20.11	116	51.18	20.11	116	51.18	20.11
8	19.05	112	61.04	19.05	112	61.04	19.05	112	61.04	59.56	140	25.79	19.05	112	61.04	19.05	112	61.04	19.05
9	19.99	113	35.98	19.99	113	35.98	19.99	113	35.98	42.98	161	49.99	19.99	113	35.98	19.99	113	35.98	19.99
1870	14.74	117	54.39	14.74	117	54.39	14.74	117	54.39	48.00	150	24.58	14.74	117	54.39	14.74	117	54.39	14.74
1	23.84	119	79.06	23.84	119	79.06	23.84	119	79.06	64.47	179	33.77	23.84	119	79.06	23.84	119	79.06	23.84
2	23.25	137	45.45	23.25	137	45.45	23.25	137	45.45	52.27	141	30.17	23.25	137	45.45	23.25	137	45.45	23.25
3	22.66	146	40.22	22.66	146	40.22	22.66	146	40.22	37.12	161	32.52	22.66	146	40.22	22.66	146	40.22	22.66
4	21.00	139	62.02	21.00	139	62.02	21.00	139	62.02	73.40	176	25.61	21.00	139	62.02	21.00	139	62.02	21.00
5	17.23	127	38.71	17.23	127	38.71	17.23	127	38.71	63.60	173	28.10	17.23	127	38.71	17.23	127	38.71	17.23
6	29.21	157	67.03	29.21	157	67.03	29.21	157	67.03	46.25	153	32.87	29.21	157	67.03	29.21	157	67.03	29.21
7	13.43	110	53.42	13.43	110	53.42	13.43	110	53.42	45.69	156	24.04	13.43	110	53.42	13.43	110	53.42	13.43
8	24.95	135	30.28	24.95	135	30.28	24.95	135	30.28	59.66	147	24.10	24.95	135	30.28	24.95	135	30.28	24.95
9	22.08	112	56.33	22.08	112	56.33	22.08	112	56.33	49.77	129	54.03	22.08	112	56.33	22.08	112	56.33	22.08
1880	17.19	106	67.30	17.19	106	67.30	17.19	106	67.30	63.19	167	19.28	17.19	106	67.30	17.19	106	67.30	17.19
1	31.79	116	49.12	31.79	116	49.12	31.79	116	49.12	29.51	142	28.48	31.79	116	49.12	31.79	116	49.12	31.79
2	24.78	101	29.39	24.78	101	29.39	24.78	101	29.39	40.99	163	24.08	24.78	101	29.39	24.78	101	29.39	24.78
3	35.68	109	42.28	35.68	109	42.28	35.68	109	42.28	42.28	112	22.40	35.68	109	42.28	35.68	109	42.28	35.68
4	39.65	122	32.22	39.65	122	32.22	39.65	122	32.22	46.92	157	23.71	39.65	122	32.22	39.65	122	32.22	39.65
5	31.96	92	43.49	31.96	92	43.49	31.96	92	43.49	44.04	159	25.85	31.96	92	43.49	31.96	92	43.49	31.96
6	33.44	110	26.85	33.44	110	26.85	33.44	110	26.85	39.91	145	26.94	33.44	110	26.85	33.44	110	26.85	33.44
7	28.90	89	53.66	28.90	89	53.66	28.90	89	53.66	39.43	152	24.00	28.90	89	53.66	28.90	89	53.66	28.90
8	37.52	105	81.54	37.52	105	81.54	37.52	105	81.54	60.16	190	32.39	37.52	105	81.54	37.52	105	81.54	37.52
9	27.83	117	33.08	27.83	117	33.08	27.83	117	33.08	23.01	132	42.94	27.83	117	33.08	27.83	117	33.08	27.83
1890	39.96	123	49.36	39.96	123	49.36	39.96	123	49.36	57.16	186	27.14	39.96	123	49.36	39.96	123	49.36	39.96
1	46.73	126	73.02	46.73	126	73.02	46.73	126	73.02	81.42	184	24.24	46.73	126	73.02	46.73	126	73.02	46.73
2	30.33	93	41.68	30.33	93	41.68	30.33	93	41.68	55.30	200	26.73	30.33	93	41.68	30.33	93	41.68	30.33
3	31.23	122	64.98	31.23	122	64.98	31.23	122	64.98	60.26	189	24.96	31.23	122	64.98	31.23	122	64.98	31.23
4	40.12	145	88.26	40.12	145	88.26	40.12	145	88.26	49.90	209	26.80	40.12	145	88.26	40.12	145	88.26	40.12
5	23.72	103	44.02	23.72	103	44.02	23.72	103	44.02	38.22	188	22.60	23.72	103	44.02	23.72	103	44.02	23.72
6																			

9. Remarkable Falls of Rain.—The following are the more remarkable falls of rain in the States of New South Wales, Queensland, Western Australia, Victoria, and Tasmania, and in the Northern Territory, which have occurred within a period of twenty-four hours:—

HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1918, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Anthony ..	28 Mar., 1887	17.14	Maitland W. ..	9 Mar., 1893	14.79
" ..	15 Jan., 1890	13.13	Major's Creek ..	14 Feb., 1898	12.32
Araluen ..	15 Feb., 1898	13.36	Marrickville ..	9 Mar., 1913	10.40
Berry ..	13 Jan., 1911	12.05	Morpeth ..	9 " 1893	21.52
Billambil ..	14 Mar., 1894	12.94	Mount Kembla ..	13 Jan., 1911	18.25
Bomaderry ..	13 Jan., 1911	13.03	Mt. Pleasant ..	24 Mar., 1914	10.30
Broger's Creek ..	14 Feb., 1898	20.05	Nepean Tunnel ..	14 Feb., 1898	12.30
" ..	19 July, 1910	12.22	Nowra ..	13 Jan., 1911	13.00
" ..	13 Jan., 1911	20.83	Padstow Park ..	9 Mar., 1913	10.64
" ..	24 July, 1918	10.30	Prospect ..	28 May, 1889	12.37
Bulli Mountain ..	13 Feb., 1898	17.14	Raleigh Central ..	10 Nov., 1917	13.20
Camden Haven ..	22 Jan., 1895	12.23	Richmond ..	28 May, 1889	12.18
Castle Hill ..	28 May, 1889	13.49	Rosemount ..	23 Mar., 1914	12.62
Colombo Lyttleton ..	5 Mar., 1893	12.17	Rooty Hill ..	27 May, 1889	11.85
Comboyne ..	18 May, 1914	10.68	Taree ..	28 Feb., 1892	12.24
Condong ..	27 Mar., 1887	18.66	Terara ..	26 " 1873	12.57
Cordeaux River ..	14 Feb., 1898	22.58	The Hill(Shell Harb.)	24 Mar., 1914	12.00
" ..	13 Jan., 1911	14.52	Tomago ..	9 " 1893	13.76
Dapto West ..	14 Feb., 1898	12.05	Tongarra Farm ..	14 Feb., 1898	15.12
Dunheved ..	28 May, 1889	12.40	Towamba ..	5 Mar., 1893	20.00
Dunoon ..	9 Nov., 1917	10.02	Tweed River Heads	9 Nov., 1917	13.50
Holy Flat ..	12 Mar., 1887	12.00	Sherwood ..	17 June, 1914	10.00
" ..	28 Feb., 1892	12.24	Stockyard Mt. ..	24 Mar., "	10.72
Jamberoo ..	23 Mar., 1914	10.22	South Head (near		
" ..	24 " "	11.28	Sydney) ..	29 Apr., 1841	20.12
Katoomba ..	7 Apr., 1913	10.50	" ..	16 Oct., 1844	20.41
Kembla Heights ..	13 Jan., 1911	17.46	Unanderra ..	24 Mar., 1914	11.63
Leconfield ..	9 Mar., 1893	14.53	Urunga ..	9 Nov., 1917	10.29
Madden's Creek ..	13 Jan., 1911	18.68	Wollongong ..	24 Mar., 1914	12.50

HEAVY RAINFALLS, QUEENSLAND, UP TO 1918, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Allomba (Cairns) ..	30 Jan., 1913	13.50	Burnett Head		
Anglesey ..	26 Dec., 1909	18.20	(Bundaberg) ..	16 Jan., 1913	15.22
" ..	10 Feb., 1915	12.00	Burpengary ..	10 Feb., 1915	11.11
Atherton (Cairns) ..	31 Jan., 1913	16.69	Bustard Head ..	17 Jan., 1913	14.93
Ayr ..	20 Sep., 1890	14.58	Cairns ..	11 Feb., 1889	14.74
Babinda (Cairns) ..	31 Jan., 1913	12.79	" ..	21 Apr., "	12.40
" ..	1 Feb., "	20.51	" ..	5 " 1891	14.08
" ..	24 Jan., 1916	22.30	" ..	11 Feb., 1911	15.17
" ..	25 " "	13.45	" ..	2 Apr., "	20.16
Banyan (Cardwell) ..	31 " 1913	13.79	" ..	31 Jan., 1913	13.94
Barrine (Cairns) ..	31 " "	13.34	" ..	24 " 1916	12.28
Batheaston ..	27 Dec., 1916	10.00	Calliope ..	9 Feb., 1915	12.09
Bloomsbury ..	14 Feb., 1893	17.40	Cape Grafton ..	5 Mar., 1896	13.37
" ..	10 Jan., 1901	16.62	Cardwell ..	30 Dec., 1889	12.00
Bowen ..	13 Feb., 1893	14.65	" ..	23 Mar., 1890	12.00
Boynedale ..	9 " 1915	11.20	" ..	18 " 1904	18.24
Bracewell ..	9 " "	11.59	" ..	3 Apr., 1911	12.84
Brisbane ..	21 Jan., 1887	18.31	Clare ..	26 Jan., 1896	15.30
Bromby Park(Bowen)	14 Feb., 1893	13.28	Clermont ..	28 Dec., 1916	12.28
Brookfield ..	14 Mar., 1908	14.95	Coen ..	17 Feb., 1914	12.03
Buderim Mountain	11 Jan., 1898	26.20	Collaroy ..	30 Jan., 1896	14.25
Bundaberg ..	16 " 1913	16.94	" ..	28 Dec., 1916	12.79
Burketown ..	15 " 1891	13.58	Cooktown ..	22 Jan., 1903	12.49
" ..	12 Mar., 1903	14.52	" ..	23 " 1914	13.98

HEAVY RAINFALLS, QUEENSLAND—*continued.*

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Cooran	1 Feb., 1893	13.62	Halifax	6 Jan., 1901	15.68
"	26 Dec., 1908	14.08	"	8 Apr., 1912	12.75
Cooroy	9 June, 1893	13.60	Hambledon Mill ..	13 Jan., 1909	13.80
"	10 Jan., 1898	13.50	"	2 .. 1911	18.61
Crohamhurst (Blackall Range)	2 Feb., 1893	35.71	"	10 Feb., ..	13.97
"	9 June, ..	13.31	"	30 Mar., ..	13.04
"	9 Jan., 1898	19.55	"	31	14.95
"	6 Mar., ..	16.01	"	1 Apr., ..	19.62
"	26 Dec., 1909	13.85	"	30 Jan., 1913	17.32
"	10 Feb., 1915	12.98	Harvey Creek	8 Mar., 1899	17.52
Crow's Nest ..	2 Aug., 1908	11.17	"	25 Jan., 1900	12.73
Croydon	29 Jan., ..	15.00	"	25 May, 1901	14.00
Cryna (Beaudesert)	21 .. 1887	14.00	"	14 Mar., 1903	12.10
Dungeness ..	16 Mar., 1893	22.17	"	11 Jan., 1905	16.96
"	17 Apr., 1894	14.00	"	28 .. 1906	12.29
Dunira	9 Jan., 1898	18.45	"	14 .. 1909	14.40
"	6 Mar., ..	15.95	"	3 .. 1911	27.75
Eddington(Cloncurry)	23 Jan., 1891	10.33	"	11 Feb., ..	12.88
Emscote Farm ..	10 Feb., 1915	13.22	"	1 Apr., ..	13.61
Emu Park	18 Jan., 1913	12.75	"	2	16.46
Enoggera Railway ..	14 Mar., 1908	12.14	"	31 Jan., 1913	24.72
Ernest Junction ..	14	13.00	"	24 .. 1916	13.17
Fairymead Plantation (Bundaberg) ..	16 Jan., 1913	15.32	Haughton Valley ..	26 .. 1896	18.10
Flat Top Island ..	22 Dec., 1909	12.96	Herberton	31 .. 1913	14.00
Floraville	6 Jan., 1897	10.79	Hillcrest (Mooloolah)	26 Dec., 1909	13.35
"	11 Mar., 1903	12.86	Holmwood (Woodf'd)	2 Feb., 1893	16.19
Flying Fish Point ..	7 Apr., 1912	16.06	"	10 Jan., 1898	12.40
"	31 Jan., 1913	16.10	Homebush	3 Feb., ..	12.04
Gatcombe Head (Gladstone) ..	18	12.88	Howard	15 Jan., 1905	19.55
Gin Gin	16 .. 1905	13.61	Huntley	27 Dec., 1916	18.94
"	16 .. 1913	12.27	Ingham	18 Jan., 1894	12.60
Gladstone	18 Feb., 1888	12.37	"	6 .. 1901	13.59
"	31 Jan., 1893	14.62	Inkerman	25 Dec., 1903	12.30
"	4 Feb., 1911	18.83	Inneshoven	21 Sep., 1890	12.93
"	9 .. 1915	10.10	(Johnstone River)	30 Dec., 1889	14.01
Glen Boughton ..	5 Apr., 1894	18.50	Innisfail (formerly Geraldton)	11 Feb., ..	17.13
"	31 Jan., 1913	14.92	"	31 Dec., ..	12.45
"	24 .. 1916	14.02	"	6 Apr., 1894	16.02
Glen Prairie ..	18 Apr., 1904	12.18	"	18 .. 1899	13.20
Gold Creek Reservoir	14 Mar., 1908	12.50	"	24 Jan., 1900	15.22
Goldsborough(Cairns)	31 Jan., 1913	19.92	"	29 Dec., 1903	21.22
"	1 Feb., ..	12.22	"	11 Feb., 1911	14.48
Goodwood(Bund'b'g)	16 Jan., ..	13.07	"	1 Apr., ..	12.35
Goondi Mill(Innisfail)	6 Apr., 1894	15.69	"	2	15.00
"	18 .. 1899	14.78	"	7 .. 1912	20.50
"	24 Jan., 1900	13.30	"	8	12.15
"	29 Dec., 1903	17.83	"	31 Jan., 1913	20.91
"	10 Feb., 1911	17.68	Invicta (Kolan R.)	16	14.58
"	31 Mar., ..	12.38	Isis Junction	6 Mar., 1898	13.60
"	1 Apr., ..	13.60	Kamerunga (Cairns)	20 Jan., 1892	13.61
"	6 .. 1912	15.55	"	6 Apr., 1894	14.04
Goondi	30 Jan., 1913	24.10	"	5 .. 1895	12.31
Granada (formerly Donaldson) ..	27 .. 1891	11.29	"	11 Feb., 1911	13.07
"	8 .. 1911	13.50	"	1 Apr., ..	14.20
"	9	14.30	"	2	21.00
Halifax	5 Feb., 1899	15.37	"	31 Jan., 1913	16.00
			Kulara (Cairns) ..	31	12.69
			Kuranda (Cairns) ..	6 Mar., 1899	14.12

HEAVY RAINFALLS, QUEENSLAND—*continued.*

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Kuranda (Cairns) ..	20 Apr., 1903	14.16	North Kolan	6 Jan., 1913	12.90
" " ..	14 Jan., 1909	12.37	(Bundaberg) ..	16 Feb., 1893	14.97
" " ..	11 Feb., 1911	16.30	North Pine	14 Mar., 1908	12.00
" " ..	17 Mar., "	15.10	Nundah	14 " "	15.65
" " ..	31 " "	18.60	Oxenford	4 Feb., 1893	12.30
" " ..	1 Apr., "	24.30	Palmwoods	10 Jan., 1898	15.85
" " ..	2 " "	28.80	" "	7 Mar., "	13.02
" " ..	31 Jan., 1913	16.34	" "	25 Dec., 1909	17.75
Lake Nash	10 " 1895	10.25	" "	26 " "	14.91
" "	20 Mar., 1901	10.02	Peacheater	16 Jan., 1913	17.22
Landsborough	2 Feb., 1893	15.15	Pialba(Marybor'gh)	11 Mar., 1890	14.68
" "	9 June, "	12.80	Pittsworth	26 Feb., 1913	27.73
" "	26 Dec., 1909	14.00	Plane Creek (Mackay)	23 Jan., 1914	13.47
Low Island	10 Mar., 1904	15.07	Point Archer	5 Mar., 1887	13.00
" "	31 " 1911	14.70	Port Douglas	10 " 1904	16.34
" "	1 Apr., "	15.30	" "	11 Jan., 1905	14.68
Lucinda ..	17 Feb., 1906	13.35	" "	17 Mar., 1911	16.10
" "	10 Mar., 1906	14.60	" "	1 Apr., "	31.53
Lyndon (<i>via</i> Brixton)	3 " 1917	17.00*	" "	24 Mar., 1890	17.00
Lytton ..	21 Jan., 1887	12.85	Ravenswood	21 Jan., 1887	14.00
Mackay ..	23 Dec., 1909	13.96	Redcliffe	16 Feb., 1893	17.35
Sugar Experimental			" "	2 " 1917	11.15
Farm, Mackay ..	23 " "	12.00	Reid River	6 Mar., 1898	12.60
Macnade Mill	18 Jan., 1894	12.56	Rosedale	16 Jan., 1913	18.90
" "	17 Apr., "	14.26	" "	16 Feb., 1893	14.03
" "	5 Feb., 1899	15.20	Sandgate	28 Jan., 1903	12.02
" "	6 Jan., 1901	23.33	Somerset	24 Feb., 1888	12.00
" "	7 Mar., 1914	12.44	St. Helens (Mackay)	17 " "	12.10
" "	4 " 1915	22.00	St. Lawrence	30 Jan., 1896	15.00
Maleny ..	26 Dec., 1909	14.76	" "	30 Mar., 1904	12.30
Mapleton	14 Mar., 1908	14.29	Tewantin	23 Feb., 1888	15.12
" "	26 Dec., 1909	15.72	The Hollow(Mackay)	20 Apr., 1903	18.07
" "	10 Feb., 1915	12.75	Thornborough	24 Jan., 1892	19.20
Mariborough	17 " 1888	14.24	Townsville	28 Dec., 1903	15.00
Milton ..	14 Mar., 1908	12.24	" "	6 Jan., 1901	16.67
" "	9 Feb., 1915	10.15	Victoria Mill	1 Apr., 1911	13.70
Mirani ..	12 Jan., 1901	16.59	Walsh River	2 Feb., 1893	14.93
Miriam Vale (B'berg)	17 " 1913	15.80	Woodford	25 Mar., 1890	14.25
" "	9 Feb., 1915	10.22	Woodlands (Yepp'n)	31 Jan., 1893	23.07
Mooloolah	13 Mar., 1892	21.53	" "	9 Feb., 1896	13.97
" "	2 Feb., 1893	19.11	" "	7 Jan., 1898	14.50
" "	6 Mar., 1898	14.43	" "	16 " 1913	12.66
Mount Crosby	14 " 1908	14.00	Woody Island	26 Dec., 1909	13.42
Mount Cuthbert	8 Jan., 1911	18.00	Woombye	10 Feb., 1915	15.93
Mount Molloy	31 Mar., "	20.00	Wootha ..	1 " 1893	20.08
" "	1 Apr., "	20.00	Yandina	9 June, "	12.70
" "	2 " "	20.00	" "	9 Jan., 1898	19.25
Mount Mee	10 Feb., 1915	12.00	" "	7 Mar., "	13.52
Mourilyan	14 Jan., 1909	13.00	" "	28 Dec., 1909	15.80
" "	3 " 1911	12.70	Yarrabah	11 Feb., 1911	12.00
" "	11 Feb., "	17.40	" "	2 Apr., "	30.65
" "	1 Apr., "	13.20	" "	24 Jan., 1916	27.20
" "	7 " 1912	18.97	" "	25 " "	18.60
" "	31 Jan., 1913	15.05	" "	31 " 1893	20.05
Mundoolun	21 " 1887	17.95	Yeppoon	8 " 1898	18.05
Musgrave	6 Apr., 1894	13.71	" "	3 Feb., 1906	14.90
Nambour	9 Jan., 1898	21.00	" "	3 " 1911	14.92
" "	7 Mar., "	13.28	" "	18 Jan., 1913	13.00
" "	27 Dec., 1909	16.80	" "	8 Oct., 1914	21.70
Nerang ..	15 June, 1892	12.35	" "		

* Mr. Jas. Laidlaw, of Lyndon, states that this fell in 4 hours.

NOTE.—In Queensland falls of 12 or more inches on coast or 10 or more inches inland are taken.

HEAVY RAINFALLS, WESTERN AUSTRALIA, UP TO 1918, INCLUSIVE.

Name of Town or Locality.	Date.	Amtt.	Name of Town or Locality.	Date.	Amtt.
		ins.			ins.
Alice Downs ..	20 Jan., 1914	8.12	Obagama ..	28 Feb., 1910	12.00
" ..	21 " "	5.33	Point Torment ..	17 Dec., 1906	11.86
" ..	22 " "	4.04	Port George, W. ..	17 Jan., 1915	11.24
Balla Balla ..	21 Mar., 1899	14.40	Roebuck Plains ..	5 Jan., 1917	14.01
Boodarie ..	21 " "	14.53	" ..	6 " "	22.36
Broome ..	6 Jan., 1917	14.00	Thangoo ..	17-19 Feb.'96	24.18
" ..	7 " 1917	6.20	Whim Creek ..	2 Apr., 1898	7.08
Cossack ..	3 Apr., 1898	12.82	" ..	3 " "	29.41
" ..	16 " 1900	13.23	" ..	20 Mar., 1899	8.89
Croydon ..	3 Mar., 1903	12.00	" ..	21 " "	18.17
Cocos Island ..	29 Nov., "	14.38	Woodstock ..	21 " 1912	13.00
Derby ..	29 Dec., 1898	13.09	Wyndham ..	27 Jan., 1890	11.60
" ..	30 " "	7.14	" ..	11 " 1903	9.98
" ..	6 Jan., 1917	5.97	" ..	12 " "	6.64
" ..	7 " "	16.47	" ..	13 " "	4.20
Fortescue ..	3 May, 1890	23.36	Yeeda ..	28 Dec., 1898	8.42
Frazier Downs ..	3 Mar., 1916	11.25	" ..	29 " "	6.88
Kerdiadary ..	7 Feb., 1901	12.00	" ..	30 " "	6.12
Meda ..	9 Jan., 1914	2.87	" ..	2 Mar., 1916	10.70
" ..	10 " "	8.72	" ..	3 " "	4.80
" ..	2 Mar., 1916	10.55	" ..	5 Jan., 1917	2.06
Mt. Anderson ..	6 Jan., 1917	2.16	" ..	6 " "	10.20
" ..	7 " "	8.60	" ..	7 " "	11.75
" ..	8 " "	1.17			

HEAVY RAINFALLS, NORTHERN TERRITORY, UP TO 1918, INCLUSIVE.

Name of Town or Locality.	Date.	Amtt.	Name of Town or Locality.	Date.	Amtt.
		ins.			ins.
Bonrook ..	24 Dec., 1915	10.60	Cosmopolitan Gold		
Borroloola ..	14 Mar., 1899	14.00	Mine ..	24 Dec., 1915	10.60
Brock's Creek ..	4 Jan., 1914	10.68	Lake Nash ..	21 Mar., 1901	10.25
" ..	24 Dec., 1915	14.33	Pine Creek ..	8 Jan., 1897	10.35
Burrundie ..	4 Jan., 1914	11.61	Darwin ..	7 Jan., 1897	11.67

HEAVY RAINFALLS, VICTORIA, UP TO 1918, INCLUSIVE.

Name of Town or Locality.	Date.	Amtt.	Name of Town or Locality.	Date.	Amtt.
		ins.			ins.
Balook ..	26 Sept., 1917	5.32	Mt. Buffalo ..	6 June, 1917	8.53
" ..	27 " "	7.23	" ..	7 " "	6.56
" ..	28 " "	2.08			

HEAVY RAINFALLS, TASMANIA, UP TO 1918, INCLUSIVE.

Name of Town or Locality.	Date.	Amtt.	Name of Town or Locality.	Date.	Amtt.
		ins.			ins.
The Springs ..	30 Jan., 1916	9.72	The Springs ..	31 Jan., 1916	1.03

10. **Snowfall.**—Light snow has been known to fall even as far north, occasionally, as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria as far north as Toowoomba in Queensland. During the winter snow covers the ground to a great extent on the Australian Alps for several months, where also the temperature falls below zero Fahrenheit during the night, and in the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

11. **Hail.**—Hail falls throughout Australia most frequently along the southern shores of the continent in the winter, and over south-eastern Australia during the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. Rarely does a summer pass without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanised iron bear evidence of the weight and penetrating power of the stones.

Hail storms occur most frequently in Australia when the barometric readings indicate a flat and unstable condition of pressure. They are almost invariably associated with tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

12. **Barometric Pressures.**—The mean annual barometric pressure (corrected to sea-level and standard gravity) in Australia varies from 29.80 inches on the north coast to 29.92 inches over the central and 30.03 inches in the southern parts of the continent. In January the mean pressure ranges from 29.70 inches in the northern and central areas to 29.95 inches in the southern. The July mean pressure ranges from 29.90 inches at Darwin to 30.12 inches at Alice Springs. Barometer readings, corrected to mean sea-level and standard gravity, have, under anticyclonic conditions in the interior of the continent, ranged as high as 30.77 inches (at Kalgoorlie on the 28th July, 1901) and have fallen as low as 27.55 inches. This lowest record was registered at Mackay during a tropical hurricane on the 21st January, 1918. An almost equally abnormal reading of 27.88 inches was recorded at Innisfail during a similar storm on the 10th March, 1918. The mean annual fluctuations of barometric pressure for the capitals of Australia are shewn on page 69.

13. **Wind.**—Notes on the distinctive wind currents in Australia were given in preceding Year Books (see No. 6, page 83) and are here omitted to save space.

14. **Cyclones and Storms.**—The "elements" in Australia are ordinarily peaceful, and although severe cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, that is, in that part of them which has a north westerly to a south-westerly circulation.

Occasionally the north-east coast of Queensland is visited by hurricanes from the north-east tropics. During the first four months of the year these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurring in their path to the east of New Caledonia.

Very severe cyclones, popularly known as "Willy Willies," are peculiar to the north-west coast of Western Australia from the months of November to April inclusive. They apparently originate in the ocean, in the vicinity of Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these storms, like those from the north-east tropics, are very violent and destructive,

causing great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coast-line, or cross the continent to the Great Australian Bight. When they take the latter course their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded in 24 hours at Whim Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the northern interior of Western Australia from similar storms.

Some further notes on severe cyclones and on "Southerly Bursters," a characteristic feature of the eastern part of Australia, will be found in previous issues of the Year Book (see No. 6, pp. 84, 85, 86).

15. **Influences affecting Australian Climate.**—Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes therein, however, have taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shows a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great growth of residential and manufacturing buildings within the city and in the surrounding suburbs during that period. Again, low-lying lands on the north coast of New South Wales, that originally were seldom subject to frosts, have, with the denudation of the surrounding hills from forests, experienced annual visitations, the probable explanation being that, through the absence of trees, the cold air of the high lands now flows, unchecked and untempered, down the sides of the hills to the valleys and lower lands.

(i) *Influences of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalising one; thus, especially in equatorial regions and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of their shade temperatures by altering the extent of radiating surface, by evaporation, and by checking the movement of air. While decreasing evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain and the washing away of surface soil. Thus, when a region is protected by trees, steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies," watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the inland rivers. Thus, the River Murray, which has never been known to run dry, derives its steadiness of flow mainly through the causes above indicated.

(ii) *Direct Influences of Forests on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others contend the opposite.

Sufficient evidence exists, however, to establish that, even if the rainfall has not increased, the beneficial effect of forest lands in tempering the effects of the climate is more than sufficient to disclose the importance of their protection and extension.

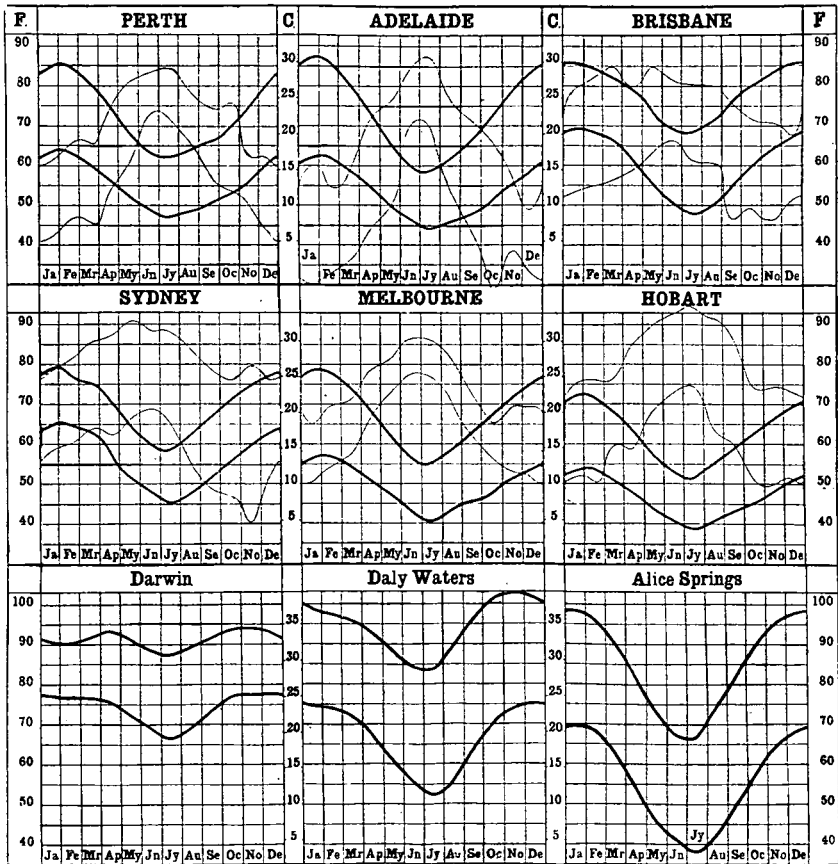
It is the rapid rate of evaporation, induced by both hot and cold winds, which injures crops and makes life uncomfortable on the plains. Whether the forest aids in increasing precipitation there may be doubt, but nobody can say that it does not check the winds and the rapid evaporation due to them.

Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of our treeless interior. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.

In previous issues some notes on observations made in other countries were added (see Year Book No. 6, pp. 86 and 95).

16. **Comparison of Rainfalls and Temperatures.**—For the purpose of comparison the following lists of rainfalls and temperatures are given for various important cities throughout the world, for the site of the Federal capital, and for the capitals of the Australian States.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF TEMPERATURE AND HUMIDITY.—In the above graphs in which the heavy lines denote "temperature" and the thin lines "humidity," the fluctuations of mean temperature and mean humidity are shown throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shown in degrees Fahrenheit, the inner columns giving the corresponding values in Centigrade degrees. Humidities have not been obtained for Darwin, Daly Waters, and Alice Springs.

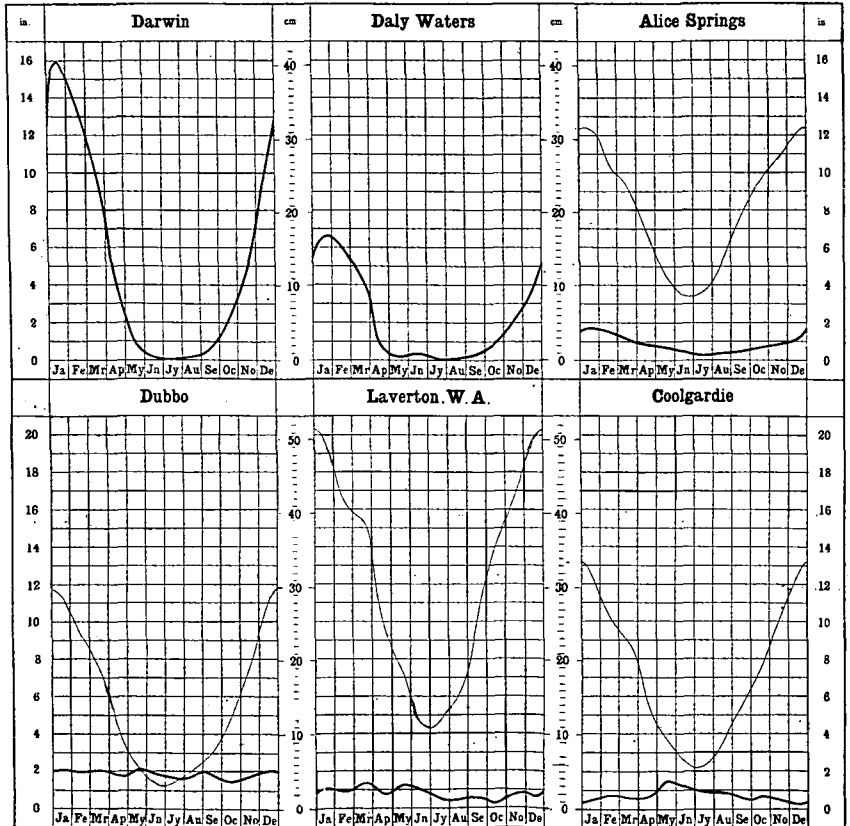
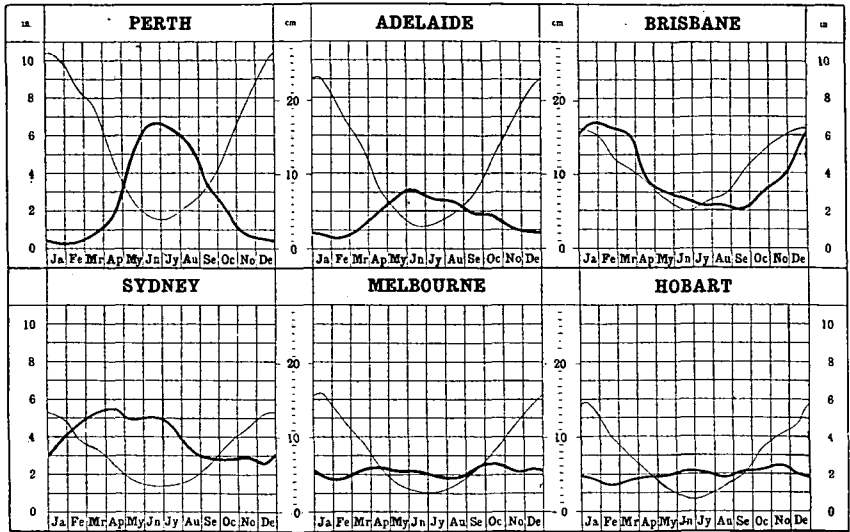
For the thin lines the degree numbers represent relative humidities, or the percentages of actual saturation (absolute saturation = 100).

The upper temperature line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also show the progression of the range between maximum and minimum temperatures throughout the year. The humidity curves show the highest and lowest values of the mean monthly humidity at 9 a.m. recorded during a series of years.

INTERPRETATION OF THE GRAPHS.—The curves denote mean monthly values. Thus, taking for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years on 1st January would give respectively about 83° Fahr. and 62° Fahr. Thus the mean range of temperature on that date is the difference, viz., 21°. Similarly, observations about 1st June would give respectively about 66° Fahr. and 51° Fahr., or a range of 15°.

In a similar manner it will be seen that the greatest mean humidity, say for March, is about 66° and the least mean humidity for the month 46°; in other words, at Perth the degree of saturation of the atmosphere by aqueous vapour for the month of March ranges between 66% and 46%.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN RAINFALL AND MEAN EVAPORATION IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF RAINFALL AND EVAPORATION.—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter, are shown in inches (see the outer columns), and the corresponding metric scale (centimetres) is shown in the two inner columns. The evaporation is not given for Darwin and Daly Waters.

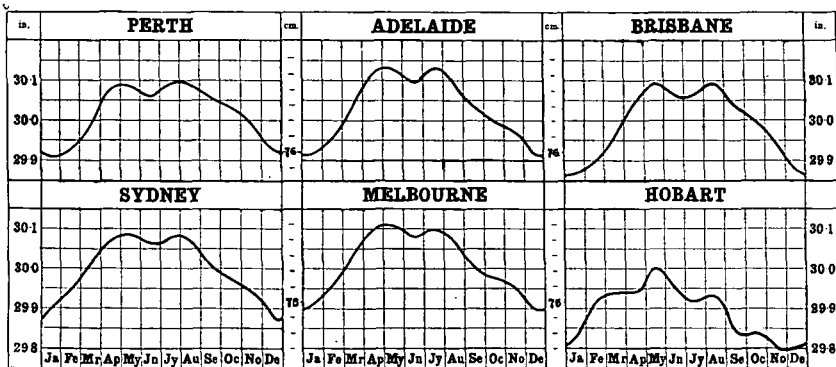
At Perth, Adelaide, Brisbane, Melbourne, Hobart, Alice Springs, and Coolgardie the results have been obtained from jacketed tanks sunk in the ground. At Sydney and Dubbo sunken tanks without water jackets are used, whilst at Laverton (W.A.) the records are taken from a small portable jacketed evaporation dish of 8 inches in diameter.

INTERPRETATION OF THE GRAPHS.—The distance for any date from the zero line to the curve represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, on the 1st January the rain falls on the average at the rate of about four-fifths of an inch per month, or, say, at the rate of about $9\frac{1}{2}$ inches per year. In the middle of June it falls at the rate of nearly 3 inches per month, or, say, at the rate of about 36 inches per year. At Dubbo the evaporation is at the rate of nearly $11\frac{1}{2}$ inches per month about the middle of January, and only about $1\frac{1}{2}$ inches at the middle of June.

TABLE SHEWING MEAN ANNUAL RAINFALL AND EVAPORATION IN INCHES AT THE PLACES SHEWN ON PRECEDING PAGE, AND REPRESENTED BY THE GRAPHS.

	Rainfall.	Evapora- tion.		Rainfall.	Evapora- tion.
Perth ..	33.67	65.98	Darwin ..	61.85	—
Adelaide ..	21.01	54.42	Daly Waters ..	26.35	—
Brisbane ..	46.02	50.10	Alice Springs ..	10.59	95.36
Sydney ..	48.02	37.59	Dubbo ..	22.20	66.37
Melbourne ..	25.56	38.68	Laverton, W.A.	9.65	143.96
Hobart ..	23.75	32.51	Coolgardie ..	9.86	87.72

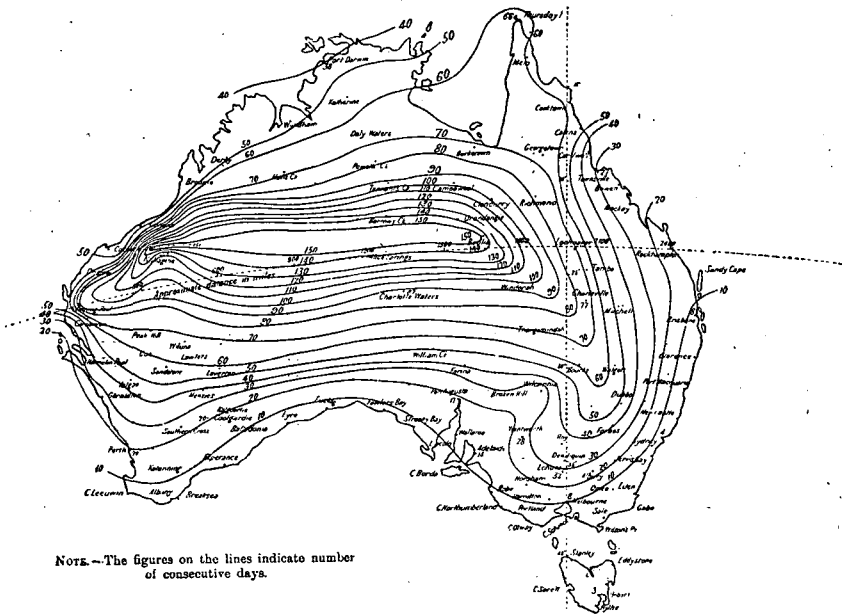
GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN BAROMETRIC PRESSURE FOR THE CAPITALS OF THE SEVERAL STATES OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF BAROMETRIC PRESSURE.—On the above graphs the lines representing the yearly fluctuation of barometric pressure at the State capital cities are means for long periods, and are plotted from the Climatological Tables given hereinafter. The pressures are shown in inches on about $2\frac{1}{2}$ times the natural scale, and the corresponding pressures in centimetres are also shown in the two inner columns, in which each division represents one millimetre.

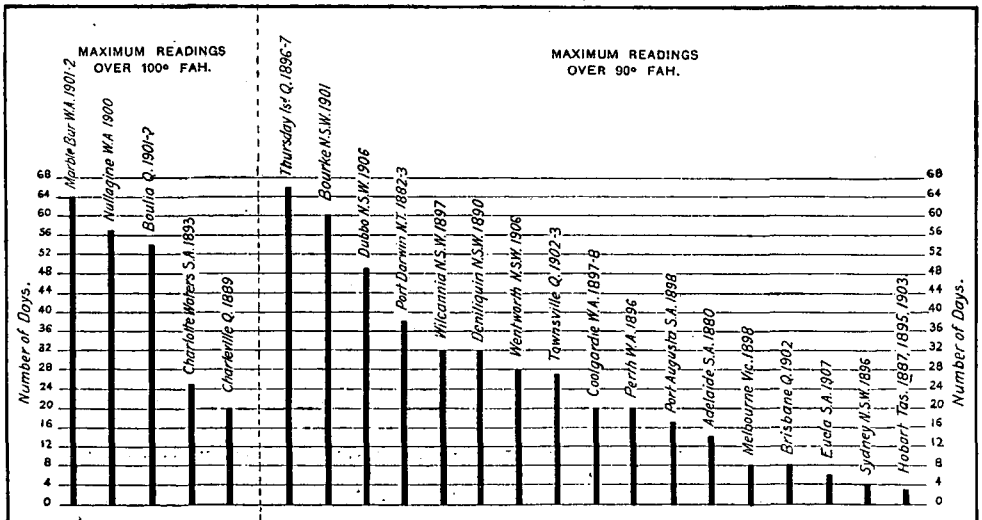
INTERPRETATION OF THE BAROMETRIC GRAPHS.—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure on 1st January is about 29.57 inches, and there are maxima in the middle of May and August of about 30.09 inches.

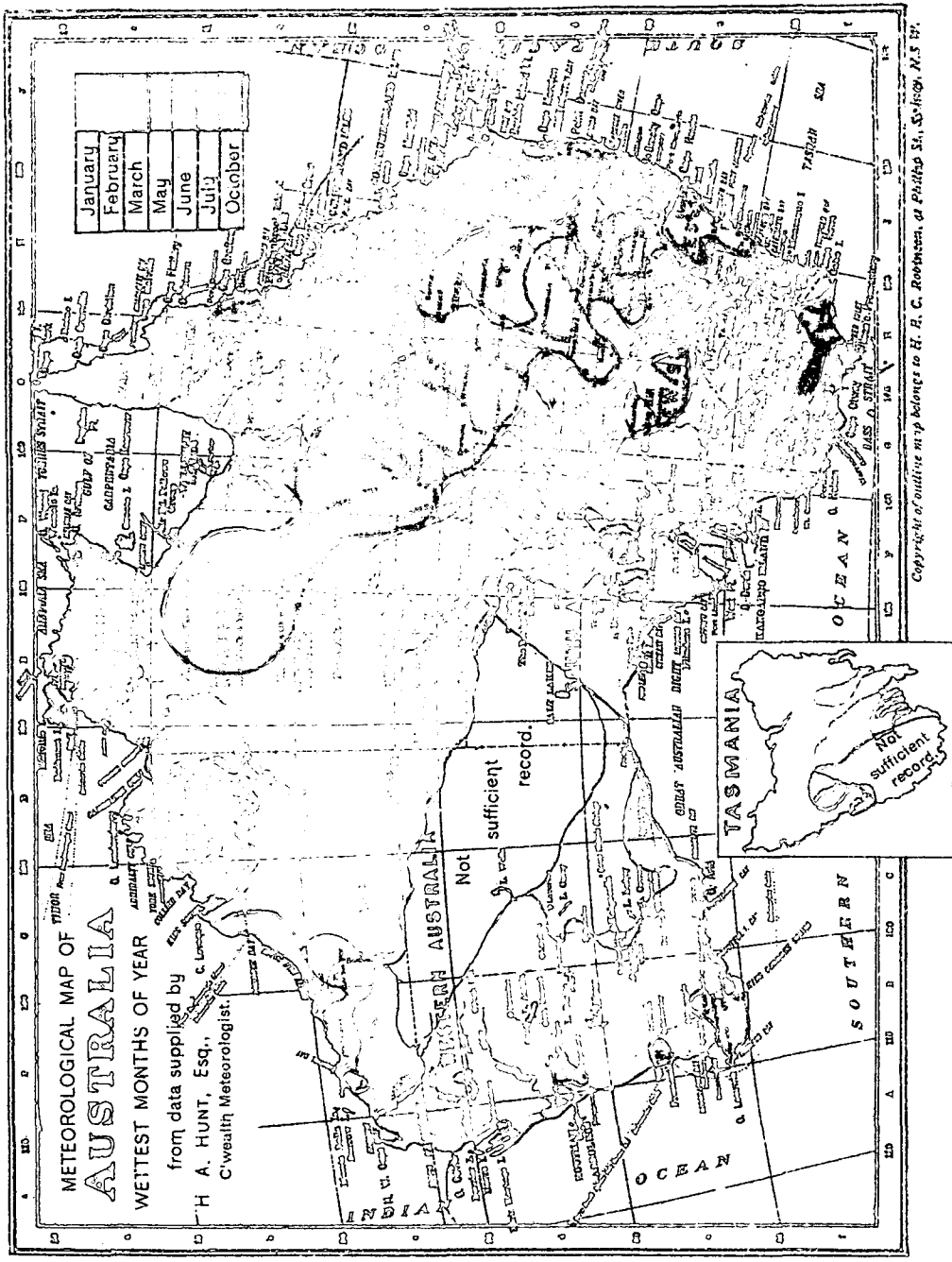
Chart indicating the area affected and period of duration of the Longest Heat Waves when the Maximum Temperature for consecutive 24 hours reached or exceeded 90° Fah.



NOTE.—The figures on the lines indicate number of consecutive days.

Diagram showing the greatest number of consecutive days on which the Temperature in the shade was over 100° and also over 90° at the places indicated.





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METEOROLOGICAL MAP OF AUSTRALIA
WETTEST MONTHS OF YEAR
 from data supplied by
H. A. HUNT, Esq.,
 C'wealth Meteorologist.

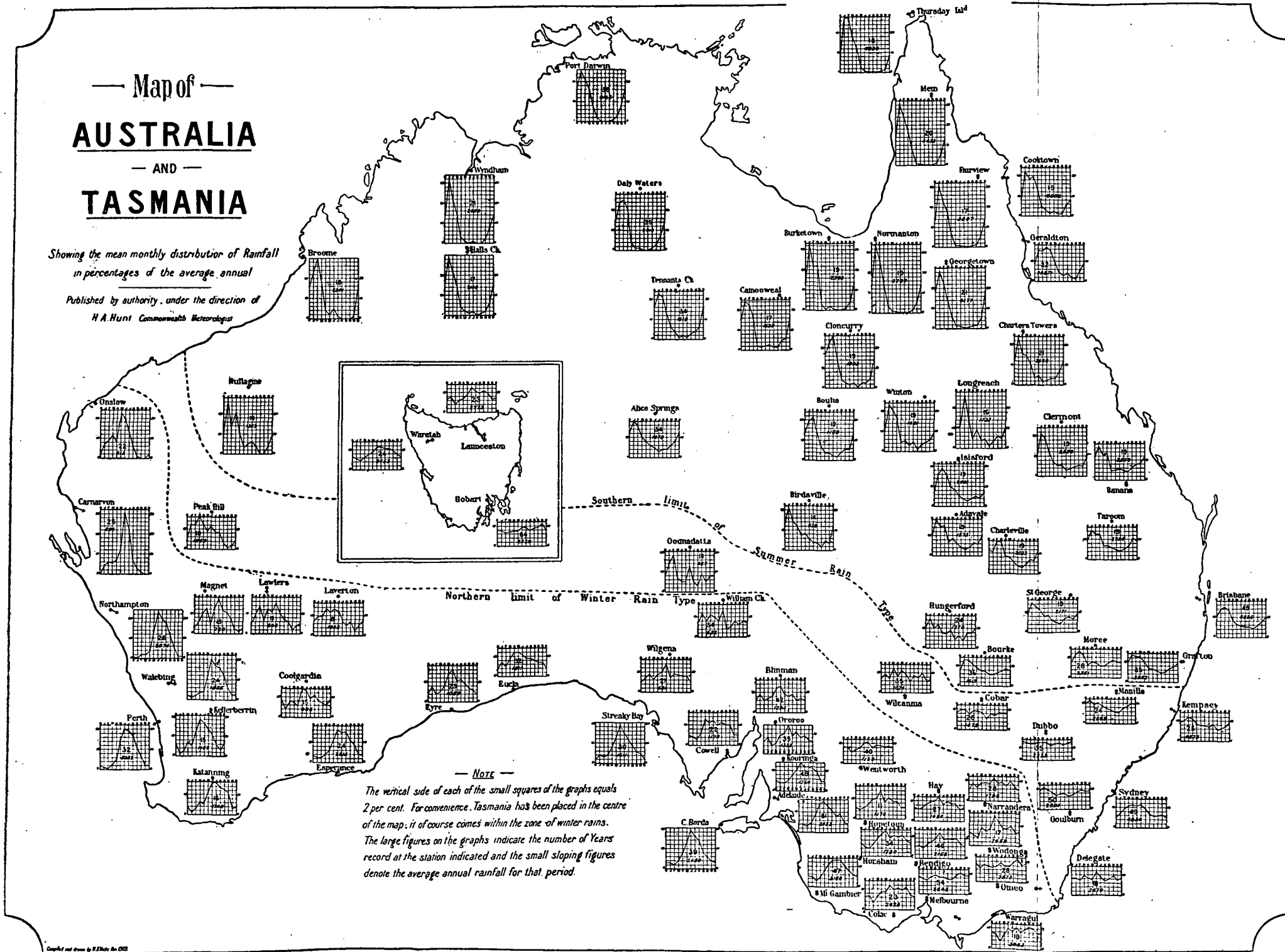
METEOROLOGICAL SUB-DIVISIONS.

- | | | | | |
|---|---|--|---|---|
| <p>WEST AUSTRALIA.</p> <p>No. 1. East Kimberley.
 2. West Kimberley.
 3. North-West.
 4. Gascoyne.
 5. South-West.
 6. Eucla.
 7. Eastern.</p> | <p>QUEENSLAND.</p> <p>No. 11. Upper North.
 12. North-East.
 13. Lower North.
 14. Central.
 15. Murray Valley.
 16. South-East.</p> | <p>NEW SOUTH WALES.</p> <p>No. 22. Central Coast.
 23. South-East Coast.
 24. Darling Downs.
 25. Maranoa.
 26. South-West.</p> | <p>VICTORIA.</p> <p>No. 33. Central Tableland.
 33a. Metropolitan.
 34. Cent. Westn. Slope.
 35. Cent. Westn. Plain.
 36. Riverine.
 37. South-West Slope.
 38. Southern Tableland
 39. South Coast.</p> | <p>TASMANIA.</p> <p>No. 43. North Central.
 44. Northern Country.
 45. Mallee.
 46. Wimmera.
 47. Western.</p> |
|---|---|--|---|---|

The above are the meteorological sub-divisions adopted by H. A. HUNT Esq., C'wealth Meteorologist.

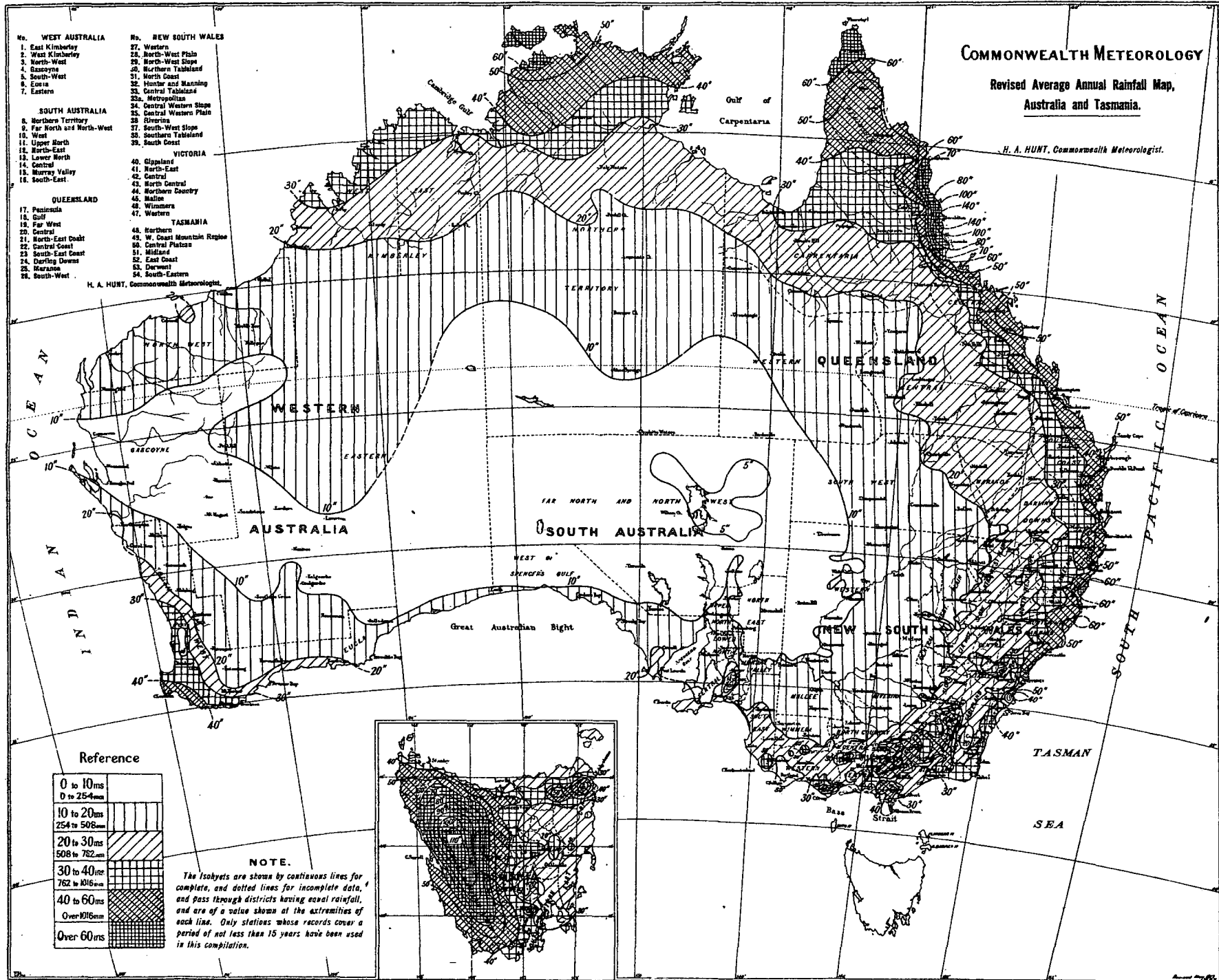
Map of AUSTRALIA AND TASMANIA

Showing the mean monthly distribution of Rainfall in percentages of the average annual
Published by authority, under the direction of H.A. Hunt Commonwealth Meteorologist



NOTE

The vertical side of each of the small squares of the graphs equals 2 per cent. For convenience, Tasmania has been placed in the centre of the map, it of course comes within the zone of winter rains. The large figures on the graphs indicate the number of Years record at the station indicated and the small sloping figures denote the average annual rainfall for that period.



- | | |
|--|--|
| <p>No. WEST AUSTRALIA</p> <ol style="list-style-type: none"> 1. East Kimberley 2. West Kimberley 3. North-West 4. Gascoyne 5. South-West 6. Coasa 7. Eastern <p>SOUTH AUSTRALIA</p> <ol style="list-style-type: none"> 8. Northern Territory 9. Far North and North-West 10. West 11. Upper North 12. North-East 13. Lower North 14. Central 15. Murray Valley 16. South-East <p>QUEENSLAND</p> <ol style="list-style-type: none"> 17. Peninsula 18. Gulf 19. Far West 20. Central 21. North-East Coast 22. Central Coast 23. South-East Coast 24. Darling Downs 25. Maranoa 26. South-West | <p>No. NEW SOUTH WALES</p> <ol style="list-style-type: none"> 27. Western 28. North-West Plains 29. North-West Slopes 30. Northern Tableland 31. North Coast 32. Hunter and Manning 33. Central Tableland 34. Metropolitan 35. Central Western Slopes 36. Central Western Plain 37. Riverina 38. South-West Slopes 39. Southern Tableland 40. South Coast <p>VICTORIA</p> <ol style="list-style-type: none"> 40. Gippsland 41. North-East 42. Central 43. North Central 44. Northern Country 45. Wimmera 46. Western <p>TASMANIA</p> <ol style="list-style-type: none"> 48. Northern 49. W. Coast Mountain Region 50. Central Plateau 51. Hillland 52. East Coast 53. Derwent 54. South-Eastern |
|--|--|

Reference

0 to 10ms	0 to 25mm
10 to 20ms	25 to 50mm
20 to 30ms	50 to 75mm
30 to 40ms	75 to 100mm
40 to 60ms	Over 100mm
Over 60ms	

NOTE.

The isohyets are shown by continuous lines for complete, and dotted lines for incomplete data, and pass through districts having equal rainfall, and are of a value shown at the extremities of each line. Only stations whose records cover a period of not less than 15 years have been used in this compilation.

COMMONWEALTH METEOROLOGY

Revised Average Annual Rainfall Map,
Australia and Tasmania.

H. A. HUNT, Commonwealth Meteorologist.

COMPARISONS OF RAINFALLS AND TEMPERATURES OF CITIES OF THE WORLD WITH THOSE OF AUSTRALIA.

Place.	Height above M.S.L.	Annual Rainfall.			Temperature.					
		Average.	Highest.	Lowest.	*Mean Summer.	†Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
	Ft.	Ins.	Ins.	Ins.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.
Amsterdam ..	6	27.29	40.59	17.60	63.2	36.8	90.0	4.1	64.4	35.4
Auckland ..	125	43.31	63.72	26.32	66.1	52.5	91.0	31.9	67.2	51.8
Athens ..	351	15.48	33.32	4.55	79.2	49.1	106.5	19.6	81.1	47.5
Bergen ..	146	89.10	102.80	73.50	56.8	34.5	88.5	4.8	57.9	33.6
Berlin ..	115	22.95	30.04	14.25	64.7	32.2	98.6	-13.0	66.0	30.0
Berne ..	1,877	36.30	58.23	24.69	62.2	30.1	91.4	-3.6	64.4	28.0
Bombay ..	37	71.15	114.89	33.41	83.5	75.1	100.0	55.9	84.8	74.2
Breslau ..	482	22.00	23.01	16.45	63.9	30.0	100.0	-23.4	65.5	29.3
Brussels ..	328	28.35	41.18	17.73	62.6	36.0	95.5	-4.4	63.7	34.5
Budapest ..	500	25.20	35.28	16.79	68.6	30.2	98.6	-5.1	70.4	28.2
Buenos Ayres ..	72	36.82	80.73	21.53	73.2	51.5	103.1	25.9	74.2	50.5
Calcutta ..	21	61.98	89.32	39.38	84.9	67.1	108.2	44.2	85.4	65.5
Capetown ..	40	25.50	36.72	17.71	68.1	54.7	102.0	34.0	68.8	53.9
Caracas ..	3,420	30.03	47.36	23.70	68.3	65.3	87.8	48.2	69.2	63.7
Chicago ..	823	33.54	45.86	24.52	69.2	25.4	103.0	-23.0	72.3	24.0
Christchurch ..	25	25.45	35.30	13.54	61.1	43.4	95.7	21.3	61.6	42.4
Christiania ..	82	22.52	31.73	16.26	61.0	24.4	95.0	-21.1	62.6	23.9
Colombo ..	40	83.83	139.70	51.60	81.5	79.9	95.8	65.0	82.6	79.1
Constantinople ..	245	28.75	42.74	14.78	74.0	43.5	103.6	13.0	75.7	42.0
Copenhagen ..	46	22.33	23.78	13.94	60.7	32.1	90.5	-13.0	62.2	31.4
Dresden ..	115	26.80	34.49	17.72	62.9	32.4	93.4	-15.3	64.4	31.6
Dublin ..	47	27.66	35.56	16.60	59.4	42.0	87.2	13.3	60.5	41.7
Dunedin ..	300	37.06	53.90	22.15	57.3	43.1	94.0	23.0	57.9	42.0
Durban ..	260	40.79	71.27	27.24	75.6	64.4	110.6	41.1	76.7	63.8
Edinburgh ..	441	25.21	32.05	16.44	55.8	38.8	87.7	5.0	57.2	38.3
Geneva ..	1,328	33.48	46.89	21.14	64.4	33.7			66.2	32.2
Genoa ..	157	51.29	108.22	28.21	73.8	46.8	94.5	16.7	75.4	45.5
Glasgow ..	184	38.49	56.18	29.05	52.7	41.0	84.9	6.6	58.0	38.4
Greenwich ..	159	24.12	35.54	16.38	61.3	39.3	100.0	4.0	62.7	38.6
Hong Kong ..	110	84.10	119.72	45.83	81.3	60.3	97.0	32.0	81.8	58.1
Johannesburg ..	5,750	31.63	50.00	21.66	65.4	54.4	94.0	23.3	68.2	48.9
Leipzig ..	384	24.69	31.37	17.10	63.1	31.5	97.3	-14.8	64.8	30.6
Lisbon ..	312	29.18	52.79	17.32	69.6	51.3	94.1	32.5	70.2	49.3
London ..	18	24.04	38.20	18.23	61.2	39.3	100.0	9.4	62.8	38.7
Madras ..	22	49.06	88.41	18.45	86.7	76.0	113.0	57.5	87.6	75.3
Madrid ..	2,149	16.23	27.48	9.13	73.0	41.2	107.1	10.5	75.7	39.7
Marseilles ..	246	21.88	43.04	12.28	70.3	45.3	100.4	11.5	72.1	43.3
Moscow ..	526	18.94	29.28	12.07	63.4	14.7	99.5	-44.5	66.1	11.9
Naples ..	489	34.00	56.58	21.75	73.6	48.0	99.1	23.9	75.4	46.8
New York ..	314	42.47	59.68	23.78	72.1	31.7	100.0	-6.0	74.5	30.3
Ottawa ..	294	33.40	44.44	26.36	67.2	14.1	98.5	-33.0	69.7	12.0
Paris ..	165	21.92	29.56	16.44	63.5	37.1	101.1	-14.1	65.8	36.1
Pekin ..	143	24.40	36.00	18.00	77.7	26.6	114.0	-5.0	79.2	23.6
Quebec ..	296	40.46	47.57	32.12	63.5	12.4	95.5	-34.3	66.3	10.1
Rome ..	166	32.57	57.89	12.72	74.3	46.0	104.2	17.2	76.1	44.6
San Francisco ..	155	22.83	38.82	9.31	59.0	51.0	101.0	29.0	61.0	50.0
Shanghai ..	14	44.13	62.52	27.91	77.4	39.4	102.9	10.2	79.7	37.4
Singapore ..	8	91.99	158.68	32.71	81.2	78.6	94.2	63.4	81.5	78.3
Stockholm ..	146	18.31	25.46	11.78	59.7	27.0	91.8	-22.0	62.1	25.7
Petrograd ..	16	21.30	29.52	13.75	61.1	17.4	97.0	-38.2	63.7	15.2
Tokio ..	70	59.17	77.10	45.72	73.9	38.9	97.9	15.4	77.7	37.1
Trieste ..	85	42.94	63.14	26.57	73.9	41.3	99.5	14.0	76.3	39.9
Vienna ..	663	24.50	33.90	16.50	65.7	30.4	97.7	-8.0	67.1	28.0
Vladivostock ..	55	19.54	33.60	9.39	63.9	11.0	95.7	-21.8	69.4	6.1
Washington ..	75	43.80	61.33	18.79	74.7	34.5	104.0	-15.0	76.8	32.9
Wellington (N.Z.) ..	110	49.70	67.68	30.02	61.7	48.4	88.0	30.0	62.4	47.5
Zurich ..	1,542	45.15	78.27	29.02	63.3	31.3	94.1	-0.8	65.1	29.5

FEDERAL CAPITAL SITE.

Canberra (Dist.)	{ 2,000 to 2,900 }	22.37	41.29	10.45	68.4	43.9	101.0	20.0	69.7	43.0
Queanbeyan										

THE STATE CAPITALS.

Perth ..	197	33.67	46.73	20.21	72.9	55.9	107.9	34.2	74.0	55.0
Adelaide ..	140	21.01	30.87	11.39	73.1	53.0	116.3	32.0	74.1	51.6
Brisbane ..	137	46.02	88.26	16.17	76.7	59.6	108.9	36.1	77.2	58.3
Sydney ..	133	48.02	82.76	21.49	71.0	53.6	108.5	35.9	71.7	52.5
Melbourne ..	115	25.56	44.25	15.61	66.5	50.0	111.2	27.0	67.5	48.6
Hobart ..	177	23.75	43.39	13.43	61.7	46.7	105.2	27.0	62.4	45.4

* Mean of the three hottest months. † Mean of the three coldest months.

17. Climatological Tables.—The means, averages, extremes, totals, &c., for a number of climatological elements have been determined from long series of observations at the Australian capitals up to and including the year 1918. These are given in the tables following.

CLIMATOLOGICAL DATA FOR PERTH, W.A.

LAT. 31° 57' S., LONG. 115° 50' E. HEIGHT ABOVE M.S.L. 197 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea-level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.	
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.					
No. of yrs. over which observation extends	34	21	21	21	21	20	21	22	22	
January	29.906	797	27.98	0.70	11,370	S S E	10.42	1.8	2.8	14.2
February	29.924	650	6/08	0.64	9,942	S S E	8.63	1.3	3.1	11.1
March	29.989	651	6/13	0.55	10,115	S S E	7.62	1.3	3.5	11.5
April	30.074	955	25/00	0.42	8,537	S E	4.74	1.2	4.6	7.3
May	30.082	768	5/12	0.35	8,091	E N E	2.75	1.9	5.4	5.3
June	30.060	861	27/10	0.38	8,079	N N E	1.74	2.1	6.2	3.0
July	30.092	949	11/99	0.39	8,476	N N E	1.68	2.6	5.6	5.1
August	30.084	966	15/03	0.42	8,880	N W	2.37	1.6	5.6	4.8
September	30.056	864	11/05	0.49	9,258	S S W	3.31	1.6	5.4	5.5
October	30.030	809	6/16	0.54	9,946	S S W	5.24	1.2	5.2	5.7
November	29.989	777	18/97	0.60	10,230	S	7.68	1.3	4.0	7.8
December	29.928	672	31/98	0.66	11,001	S	9.80	1.5	3.2	12.0
Year { Totals	—	—	—	—	113,925	—	65.98	19.4	—	93.3
Year { Averages	30.018	—	—	0.51	9,494	S	—	—	4.6	—
Year { Extremes	—	966	15/8/03	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Extreme Range.	Extreme Temperature.		Mean Hours of Sunshine.				
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.					
No. of yrs. over which observation extends	22	22	22	22	22	22	21	20	21				
January	84.5	63.6	74.0	107.0	16/97	50.6	25/01	56.4	177.3	22/14	42.4	25/02	324.1
February	84.6	63.4	74.0	107.3	12/15	47.7	1/02	59.6	169.0	4/99	39.8	1/13	273.1
March	81.0	60.6	70.8	106.1	6/14	45.8	8/03	60.3	167.0	19/18	36.7	8/03	268.3
April	75.8	57.0	66.4	99.7	9/10	39.3	20/14	60.4	157.0	8/16	31.0	20/14	215.8
May	68.6	52.4	60.5	90.4	2/07	34.3	11/14	56.1	139.1	7/14	25.3	11/14	180.4
June	63.8	49.4	56.6	81.7	2/14	36.3	29/14	45.4	135.5	9/14	29.0	20/16	144.5
July	62.5	47.5	55.0	73.8	24/99	34.2	7/16	39.6	133.2	13/15	25.2	6, 7/16	169.0
August	63.8	48.1	56.0	81.0	12/14	35.3	31/08	45.7	143.2	23/18	27.9	10/11	185.9
September	66.1	50.4	58.2	90.9	30/18	38.9	17/13	52.0	153.6	29/16	29.2	21/16	202.8
October	69.3	52.7	61.0	93.4	17/06	40.9	4/17	52.5	154.0	29/14	30.5	4/17	236.8
November	75.2	56.5	65.8	104.6	24/13	42.0	1/04	62.6	166.6	23/15	35.5	—	291.3
December	80.8	60.6	70.7	107.9	20/04	48.0	2/10	59.9	168.7	25/15	39.1	2/10	326.6
Year { Averages	73.0	55.1	64.0	—	—	—	—	—	—	—	—	—	2818.6†
Year { Extremes	—	—	—	107.9	20/12/04	34.2	7/7/16	73.7	177.3	22/1/14	25.2	6, 7/7/16	—

* 6/1910 and 14/1912.

† Total for Year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.				
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly	Greatest in One Day.	Mean Amount of Dew.	Mean No. of Days Dew.		
No. of yrs. over which observation extends	22	21	22	43	43	43	43	43	—	22		
January	53	61	42	0.34	3	2.17	1879	nil	1.74	28/79	2.8	
February	54	65	46	0.45	3	2.98	1915	nil	1.63	26/15	2.3	
March	58	66	46	0.73	4	4.50	1896	nil	1.53	17/76	5.7	
April	64	72	53	1.61	7	4.97	1882	0.05	2.62	30/04	9.4	
May	72	81	61	4.77	14	12.13	1879	0.98	2.80	20/79	12.6	
June	79	83	72	6.78	17	12.11	1890	2.16	2.65	16/00	11.7	
July	75	84	72	6.50	17	11.29	1917	2.42	3.00	4/91	13.2	
August	74	79	67	5.63	18	10.33	1882	0.46	1902	2.79	7/03	11.2
September	68	75	58	3.35	15	7.72	1903	0.34	1916	1.73	23/09	9.9
October	62	75	54	2.13	12	7.97	1890	0.49	1892	1.38	15/10	5.7
November	55	63	50	0.80	6	2.78	1916	nil	1.11	30/03	4.2	
December	52	62	44	0.58	4	3.05	1888	nil	1.72	1/88	3.0	
Year { Totals	—	—	—	33.67	120	—	—	—	—	—	—	91.2
Year { Averages	62	—	—	—	—	—	—	—	—	—	—	—
Year { Extremes	—	84	42	—	—	12.13	5/79	nil.	§	3.00	4/7/91	—

* 1888, 1894, 1897, and 1911. † 1885, 1891, 1896, 1903, and 1913. ‡ 1877, 1884, and 1886. § 1890 and 1894. § January, February, March, November, and December, various years.

CLIMATOLOGICAL DATA FOR ADELAIDE, S.A.

LAT. 34° 56' S., LONG. 138° 35' E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mph Sea level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.	
		Greatest Number of Miles in One Day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.					
No. of yrs. over which observation extends	62	41	41	41	41	49	47	51	37	
January ..	29.916	758	19/99	0.34	7,938	S x W	8.97	2.4	3.5	8.1
February ..	29.952	691	22/96	0.30	6,844	S	7.32	2.0	3.4	7.0
March ..	30.035	628	9/12	0.25	6,773	S x W	5.80	2.2	4.0	6.7
April ..	30.119	773	10/96	0.22	6,206	S W x S	3.38	1.7	5.0	3.9
May ..	30.124	780	9/80	0.21	6,254	N N E	2.01	1.8	5.8	1.7
June ..	30.097	750	12/78	0.25	6,642	N x E	1.23	2.1	6.2	1.4
July ..	30.130	674	25/82	0.25	6,811	N x W	1.29	1.7	5.8	1.7
August ..	30.097	773	31/97	0.28	7,222	N N W	1.86	2.2	5.6	2.2
September ..	30.010	720	2/87	0.32	7,386	W S W	2.85	2.4	5.2	3.0
October ..	29.999	768	28/98	0.34	7,991	S W x W	4.76	3.5	4.9	3.8
November ..	29.973	677	2/04	0.34	7,632	S S W	6.51	3.7	4.5	5.2
December ..	29.919	675	12/91	0.34	7,989	S S W	8.44	2.8	3.8	7.2
Year { Totals ..	—	—	—	—	—	—	54.42	23.5	—	51.9
Year { Averages ..	30.033	—	—	0.29	7,141	S W x S	—	—	4.8	—
Year { Extremes ..	—	773*	—	—	—	—	—	—	—	—

* 10/4/96 and 31/8/97.

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Extreme Range.	Extreme Temperature.		No. of Hours of Sunshine.				
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.					
No. of yrs. over which observation extends	62	62	62	62	62	62	41	58	37				
January ..	86.5	61.7	74.1	116.3	26/58	45.1	21/84	71.2	180.0	18/82	36.5	14/79	308.7
February ..	86.1	62.0	74.1	113.6	12/99	45.5	23/18	68.1	170.5	10/00	36.7	21/78	263.3
March ..	80.8	58.9	69.9	108.0	12/61	44.8	-/57	63.2	174.0	17/83	33.8	27/80	237.3
April ..	73.1	54.5	63.8	98.0	10/66	39.6	15/59	58.4	155.0	1/83	30.2	16/17	176.9
May ..	65.5	50.1	57.8	88.3	5/66	36.9	*	51.4	148.2	12/79	25.9	10/91	148.9
June ..	60.2	46.6	53.4	76.0	23/65	32.5	27/76	43.5	138.8	18/79	22.9	12/13	120.4
July ..	58.7	44.5	51.6	74.0	11/06	32.0	21/08	42.0	134.5	26/90	25.3	25/11	137.1
August ..	62.0	45.9	53.9	85.0	31/11	32.3	17/59	52.7	140.0	31/92	23.5	7/88	161.6
September ..	66.3	47.8	57.0	90.7	23/82	32.7	4/58	58.0	160.5	23/82	26.2	15/08	184.1
October ..	72.4	51.4	61.9	102.2	24/14	36.0	-/57	66.2	158.8	19/82	27.8	2/18	228.1
November ..	78.6	55.3	66.9	113.5	21/65	40.8	2/09	72.7	166.9	20/78	31.5	2/09	262.7
December ..	83.4	58.9	71.2	114.2	14/76	43.0	†	71.2	175.7	7/99	32.5	4/84	303.2
Year { Averages ..	72.8	53.1	63.0	—	—	—	—	—	—	—	—	—	2,532.3†
Year { Extremes ..	—	—	—	116.3	26/1/58	32.0	24/7/08	84.3	180.0	18/1/82	22.9	12/6/13	—

* 26/1895 and 24/1904.

† 16/1861 and 4/1906.

‡ Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.					
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew.			
No. of yrs. over which observation extends	51	51	51	80	80	80	80	80	—	47			
January ..	38	59	30	0.72	4	4.00	1850	nil	*	2.30	2/89	—	4
February ..	41	56	33	0.63	4	2.67	1858	nil	†	2.24	14/13	—	5
March ..	47	58	36	1.06	6	4.60	1878	nil	‡	3.50	5/78	—	11
April ..	57	72	44	1.83	9	6.78	1853	0.06	1910	3.15	5/60	—	14
May ..	68	76	49	2.72	14	7.75	1875	0.20	1891	2.75	1/53	—	16
June ..	77	84	69	3.10	16	8.58	1916	0.42	1886	1.97	26/16	—	16
July ..	75	87	69	2.65	16	5.38	1865	0.36	1899	1.75	10/65	—	17
August ..	69	77	54	2.50	16	6.24	1852	0.35	1914	2.23	19/51	—	16
September ..	61	72	44	1.96	14	4.64	1810	0.45	1896	1.42	25/93	—	16
October ..	51	67	29	1.73	11	3.83	1870	0.17	1914	2.24	16/08	—	12
November ..	43	57	37	1.16	8	3.55	1851	0.04	1885	1.88	28/58	—	7
December ..	39	50	33	0.95	6	3.98	1861	nil	1904	2.42	23/13	—	5
Year { Totals ..	—	—	—	21.01	124	—	—	—	—	—	—	—	139
Year { Averages ..	53	—	—	—	—	8.58	6/16	nil	§	3.50	5/3/78	—	—
Year { Extremes ..	—	87	29	—	—	—	—	—	—	—	—	—	—

* 1848, 1849, 1878, and 1906.

† 1848, 1860, &c.

‡ 1859, &c.

§ January, February, March, and December, various years.

CLIMATOLOGICAL DATA FOR BRISBANE, QUEENSLAND.

LAT. 27° 28' S., LONG. 153° 2' E. HEIGHT ABOVE M.S.L. 137 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. M.S. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	32	8	8	8	8	10	32	32	10
January ..	29.869	815 24/14	0.08	3,814	S.Easterly	63.55	5.3	6.1	2.9
February ..	29.891	340 10/15	0.13	4,461	E. & S.E.	50.01	5.0	6.2	1.9
March ..	29.949	305 29/16	0.08	3,934	S.E. & S.	44.95	4.0	5.9	4.0
April ..	30.041	215 8/16	0.07	3,476	S W—E	36.06	3.2	5.0	8.6
May ..	30.088	200 6/18	0.07	3,516	S W—S	28.04	2.8	4.8	8.3
June ..	30.058	307 23/16	0.07	3,428	S W & W	20.83	2.1	4.4	8.5
July ..	30.066	279 19/17	0.06	3,481	S & W	22.59	2.3	3.9	11.7
August ..	30.088	250 22/17	0.08	3,790	S W	27.09	3.5	4.0	10.5
September ..	30.028	239 25/17	0.07	3,580	S.Easterly	36.16	5.8	3.9	11.6
October ..	30.002	325 25/18	0.09	4,016	Easterly*	50.13	7.0	4.5	7.4
November ..	29.948	265 27/14	0.11	4,288	N E—S E	57.98	8.2	5.1	5.9
December ..	29.883	295 21/13	0.11	4,509	N E—N	63.66	8.3	5.7	2.9
Year { Totals ..	—	—	—	—	Between S E & S W	501.05	57.5	—	84.2
Averages ..	29.993	340 10/2/15	0.09	3,858	—	—	—	5.0	—
Extremes ..	—	—	—	—	—	—	—	—	—

* N.Easterly and many W.

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Extreme Range.	Extreme Temperature.		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	32	32	32	32	32	32	32	32	10
January ..	85.5	68.8	77.2	108.9 14/02	58.8 4/93	50.1	166.4 10/17	49.9 4/93	214.4
February ..	84.5	68.4	76.5	101.0 11/04	58.7 *	43.2	165.2 6/10	49.3 9/89	198.0
March ..	82.3	66.3	74.3	96.8 16/88	52.4 29/13	44.4	160.0 1/87	45.4 29/13	194.0
April ..	79.1	61.5	70.3	95.2 †	48.6 17/00	46.6	153.8 11/16	37.0 17/00	207.0
May ..	73.5	55.2	64.4	88.8 18/97	41.3 24/99	47.5	147.0 1/10	29.8 8/97	193.8
June ..	69.3	50.7	60.0	88.9 19/18	36.3 29/08	52.6	136.0 3/18	25.4 23/88	161.0
July ..	68.4	48.1	58.3	83.4 28/98	36.1 †	47.3	146.1 20/15	23.9 11/90	188.2
August ..	71.3	49.8	60.6	87.5 28/07	37.4 6/87	50.1	141.9 20/17	27.1 9/99	215.2
September ..	75.9	54.7	65.3	95.2 16/12	40.7 1/96	54.5	155.5 26/93	30.4 1/89	228.7
October ..	79.9	59.9	69.9	101.4 18/93	43.3 3/99	58.1	157.4 31/18	34.9 8/89	244.3
November ..	83.0	64.1	73.6	106.1 18/13	48.5 2/05	57.6	162.3 7/89	38.8 1/05	233.9
December ..	85.3	67.4	76.4	105.9 26/93	56.4 13/12	49.5	160.4 7/14	49.1 3/94	238.9
Year { Averages ..	78.2	59.6	68.9	—	36.1	72.8	—	—	2517.4§
Extremes ..	—	—	—	108.9 14/1/02	— ‡	—	166.4 10/1/17	23.9 11/7/90	—

° 10/11/04. † 9/96 and 5/03. ‡ 12/94 and 2/96. § Annual mean.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.		
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. Days Dew.
No. of yrs. over which observation extends	32	32	32	67	59	67	67	—	—	32
January ..	67	79	53	6.51	14	27.72 1895	0.61 1882	18.31 21/87	—	4.2
February ..	69	82	55	6.57	14	40.39 1893	0.77 1904	8.36 16/93	—	4.5
March ..	73	85	56	5.92	16	34.04 1870	0.11 1915	11.18 14/08	—	7.4
April ..	74	79	60	3.62	12	15.28 1867	0.4 1897	4.47 13/16	—	10.7
May ..	74	85	64	2.90	10	13.85 1876	nil 1846	5.62 9/79	—	11.4
June ..	74	82	67	2.59	8	14.03 1873	nil 1847	6.01 9/93	—	9.1
July ..	74	81	61	2.25	8	8.46 1889	nil 1841	3.54 †	—	10.5
August ..	71	80	61	2.23	8	14.67 1879	nil *	4.89 12/87	—	8.2
September ..	64	76	47	2.09	8	5.43 1886	0.10 1907	2.46 2/94	—	8.1
October ..	61	72	49	2.67	9	9.99 1882	0.14 1900	1.95 20/89	—	6.1
November ..	60	72	46	3.71	10	12.40 1917	nil. 1842	4.46 16/86	—	3.1
December ..	63	67	52	4.96	12	13.99 1910	0.35 1865	6.60 28/71	—	2.5
Year { Totals ..	—	—	—	46.02	129	—	—	—	—	85.8
Averages ..	69	—	—	—	—	—	—	—	—	—
Extremes ..	—	85	46	—	—	40.39 2/1893	nil See above	18.31 21/1/87	—	—

* 1862, 13/69, 18/80. † 15/76, 16/89.

CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

LAT. 33° 52' S., LONG. 151° 12' E. HEIGHT ABOVE M.S.L. 133 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea Level and Standard Gravity from 24 hourly readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. to 9 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	59	52	52	52	52	39	59	57	55
January ..	29.901	721 1/71	0.36	8,187	N E	5.192	4.7	5.8	1.9
February ..	29.943	871 12/69	0.33	7,034	N E	4.025	4.3	6.1	1.3
March ..	30.011	943 20/70	0.25	6,802	N E	3.454	4.2	5.6	1.9
April ..	30.072	803 6/82	0.22	6,194	N E	2.457	4.0	5.0	2.2
May ..	30.081	758 6/98	0.22	6,394	W	1.688	3.4	4.8	2.5
June ..	30.059	712 7/00	0.28	7,011	W	1.869	2.8	4.8	3.2
July ..	30.077	930 17/79	0.28	7,163	W	1.472	2.5	4.4	4.3
August ..	30.069	756 22/72	0.26	6,903	W	1.790	3.3	4.1	4.4
September ..	30.005	964 6/74	0.30	7,168	W	2.601	4.1	4.3	4.1
October ..	29.970	926 4/72	0.33	7,786	N E	3.734	4.9	5.0	2.4
November ..	29.937	720 13/68	0.34	7,642	N E	4.491	5.5	5.6	1.6
December ..	29.883	938 3/84	0.36	8,071	N E	5.315	5.7	5.6	1.9
Year { Totals ..	30.001	—	0.29	7,196	N E	37.591	48.8	—	33.1
{ Averages ..	—	—	—	—	—	—	—	5.1	—
{ Extremes ..	—	964 6/9/74	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Extreme Range.	Extreme Temperature.		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	60	60	60	60	60	60	60	60	8
January ..	78.4	64.9	71.7	108.5 13/96	51.2 14/65	57.3	161.3 26/16	44.2 18/97	199.3
February ..	77.4	64.9	71.2	101.0 19/66	49.3 28/63	51.7	162.1 16/98	43.4 25/91	170.5
March ..	75.5	63.0	69.3	102.6 3/69	48.8 14/86	53.3	150.3 4/89	39.9 17/13	184.6
April ..	71.0	58.1	64.6	89.0 4/09	44.6 27/61	44.4	144.1 10/77	33.3 21/09	141.1
May ..	65.1	52.0	58.6	83.5 1/59	40.2 22/59	43.3	129.7 1/96	29.3 25/17	122.3
June ..	60.8	48.2	54.4	74.7 21/72	38.1 29/62	36.6	123.0 14/78	28.1 21/11	98.3
July ..	59.0	45.8	52.5	74.9 17/71	35.9 12/90	39.0	124.7 19/77	24.0 4/93	115.7
August ..	62.4	47.6	54.0	82.0 31/84	36.8 3/72	45.2	149.0 30/78	26.1 4/09	163.6
September ..	66.6	51.4	59.1	91.1 21/07	40.8 18/61	50.3	142.2 12/78	30.1 17/05	177.2
October ..	71.1	55.8	63.5	99.7 19/98	43.3 2/99	56.4	151.9 *	32.7 9/05	195.7
November ..	74.7	59.6	67.0	102.7 21/78	45.8 1/05	56.9	158.5 28/99	36.0 6/06	183.4
December ..	77.3	62.9	70.1	107.5 21/04	49.3 2/59	58.2	171.5 4/88	41.5 6/09	198.4
Year { Averages ..	69.9	56.2	63.0	—	35.9	—	—	—	1950.6†
{ Extremes ..	—	—	—	108.5 13/1/96	35.9 12/7/90	72.6	171.5 4/12/88	24.0 4/7/93	—

* 30 and 31/14. † Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.				Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. of Days Dew.
No. of yrs. over which observation extends	60	60	60	60	60	60	60	60	59	59
January ..	69	78	58	3.60	14.0	15.28 1911	0.42 1888	7.08 13/11	0.002	1.2
February ..	72	81	59	4.54	14.2	18.56 1873	0.34 1902	8.90 25/73	0.004	2.0
March ..	74	85	63	5.11	15.0	18.70 1870	0.42 1876	6.52 9/13	0.008	3.3
April ..	77	87	66	5.47	13.4	24.49 1861	0.06 1868	7.52 29/60	0.016	5.5
May ..	76	80	63	4.91	15.0	20.87 1859	0.18 1860	8.36 28/89	0.022	6.3
June ..	78	89	68	5.05	12.7	16.30 1885	0.19 1902	5.17 16/84	0.018	5.3
July ..	77	88	65	4.87	12.5	13.21 1900	0.12 1862	5.72 28/08	0.014	4.9
August ..	73	84	56	3.13	11.4	14.89 1899	0.04 1885	5.33 2/60	0.016	5.3
September ..	69	79	49	2.91	12.0	14.05 1879	0.08 1882	5.69 10/79	0.008	3.4
October ..	67	77	47	2.94	12.7	11.14 1916	0.21 1867	6.37 13/02	0.007	2.1
November ..	66	79	42	2.88	12.5	9.88 1865	0.07 1915	4.23 19/00	0.004	2.1
December ..	67	77	52	2.61	12.8	8.47 1910	0.23 1913	4.75 13/10	0.003	1.5
Year { Totals ..	72	—	—	48.02	158.2	—	—	—	0.122	43.9
{ Averages ..	—	—	—	—	—	—	—	—	—	—
{ Extremes ..	—	90	42	—	—	24.49 April/61	0.04 Aug./85	8.90 25/2/73	—	—

CLIMATOLOGICAL DATA FOR MELBOURNE, VICTORIA.

LAT. 37° 49' S., LONG. 144° 58' E. HEIGHT ABOVE M.S.L. 115 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea level and Standard Gravity from 9 a.m. 3 & 9 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.	
		Greatest Number of Miles in One Day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.					
No. of yrs. over which observation extends	61	48	48	48	48	46	11	61	11	
January ..	29.913	583	10/97	0.29	7,301	S W, S E	6.39	2.0	5.1	7.9
February ..	29.961	566	8/68	0.27	6,347	S W, S E	5.03	2.3	5.1	6.8
March ..	30.032	677	9/81	0.22	6,313	S W, S E	2.93	2.0	5.5	5.2
April ..	30.101	597	7/68	0.19	5,697	S W, N W	2.35	0.5	5.9	4.3
May ..	30.103	693	12/65	0.19	5,894	N W, N E	1.47	0.5	6.5	2.7
June ..	30.076	761	13/76	0.24	6,387	N W, N E	1.10	1.0	6.7	1.8
July ..	30.095	755	8/74	0.22	6,350	N W, N E	1.05	0.9	6.3	3.0
August ..	30.065	637	14/75	0.25	6,813	N W, N E	1.47	0.9	6.3	3.3
September ..	29.998	617	11/72	0.28	6,993	N W, S W	2.29	1.9	6.1	3.4
October ..	29.907	899	5/66	0.29	7,277	S W, S E	3.32	2.3	5.9	3.5
November ..	29.948	734	13/66	0.28	7,000	S W, S E	4.52	2.4	5.9	3.5
December ..	29.897	655	1/75	0.30	7,439	S W, S E	5.76	2.0	5.5	4.5
Year { Totals ..	—	—	—	—	—	—	38.68	19.0	—	49.8
Year { Averages ..	30.013	—	—	0.25	6,651	S W, N W	—	—	5.9	—
Year { Extremes ..	—	899	5/10/66	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Extreme Range.	Extreme Temperature.		Mean Hours of Sunshine.				
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.					
No. of yrs. over which observation extends	63	63	63	63	63	63	59	59	37				
January ..	78.2	56.8	67.5	111.2	14/62	42.0	28/85	69.2	178.5	14/62	30.2	28/85	246.1
February ..	77.3	56.9	67.4	109.5	7/01	40.3	9/65	69.2	167.5	15/70	30.9	6/91	207.7
March ..	74.4	54.7	64.5	105.5	2/93	37.1	17/84	68.4	164.5	1/68	28.9	—	173.1
April ..	68.3	50.7	59.5	94.0	6/65	34.8	24/88	59.2	152.0	8/61	25.0	23/97	135.5
May ..	61.4	46.7	54.1	83.7	7/05	29.9	29/16	53.8	142.6	2/59	21.1	26/16	107.5
June ..	56.8	44.0	50.4	72.2	1/07	23.0	11/68	44.2	129.0	11/61	20.4	17/95	83.6
July ..	55.5	41.6	48.6	68.4	24/78	27.0	21/69	41.4	125.8	27/80	20.5	12/03	99.1
August ..	53.8	43.4	51.1	77.0	20/85	23.3	11/63	48.7	137.4	29/69	21.3	14/02	123.5
September ..	62.5	45.6	54.0	82.3	30/07	31.1	16/08	51.2	142.1	20/67	22.8	3/18	145.1
October ..	67.0	48.1	57.6	98.4	21/14	32.1	3/71	66.3	154.3	28/68	24.8	22/18	176.6
November ..	71.2	51.1	61.2	105.7	27/94	36.5	2/96	69.2	159.6	29/65	24.6	2/96	208.3
December ..	75.3	54.1	64.7	110.7	15/76	40.0	4/70	70.7	170.3	20/69	33.2	1/04	232.9
Year { Averages ..	67.3	49.5	58.4	—	—	—	—	—	—	—	—	—	1939.0†
Year { Extremes ..	—	—	—	111.2	14/1/62	27.0	21/7/69	84.2	178.5	14/1/62	20.4	17/6/95	—

* 17/1884 and 20/1897. † Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.					
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. of Days Dew.			
No. of yrs. over which observation extends	11	11	11	63	63	63	63	60	—	11			
January ..	58	65	50	1.86	7	5.68	1904	0.04	1878	2.97	9/97	—	2.3
February ..	61	69	53	1.69	7	6.24	1904	0.03	1870	2.14	7/04	—	3.3
March ..	64	71	57	2.20	9	7.50	1911	0.18	1859	3.05	15/78	—	7.8
April ..	71	78	66	2.27	11	6.71	1901	0.33	1908	2.28	22/01	—	8.7
May ..	77	81	73	2.19	13	4.31	1882	0.45	1901	1.85	7/91	—	7.6
June ..	83	87	77	2.10	14	4.51	1859	0.73	1877	1.74	21/04	—	9.3
July ..	83	86	78	1.82	14	7.02	1891	0.57	1902	2.71	12/91	—	11.6
August ..	76	82	71	1.83	14	3.59	1909	0.48	1903	1.87	17/81	—	8.4
September ..	69	73	62	2.44	14	7.93	1916	0.52	1907	2.62	12/80	—	6.9
October ..	62	65	56	2.61	13	7.61	1889	0.29	1914	3.00	17/69	—	7.3
November ..	59	69	52	2.24	10	6.71	1916	0.25	1895	2.57	16/76	—	2.1
December ..	57	69	51	2.31	9	7.18	1863	0.11	1904	2.62	28/07	—	1.6
Year { Totals ..	—	—	—	25.56	135	—	—	—	—	—	—	—	76.9
Year { Averages ..	68	—	—	—	—	7.93	9/16	0.03	2/70	3.05	15/3/78	—	—
Year { Extremes ..	—	87	50	—	—	—	—	—	—	—	—	—	—

* 17/1884, 20/1897.

CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

LAT. 42° 53' S., LONG. 147° 20' E. HEIGHT ABOVE M.S.L. 177 Ft.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Min. Sea level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds 9 a.m. 3 p.m., & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	34	8	8	8	14	8	11	56	12
January ..	29.830	500 30/16	0.19	5,912	NW & SE	5.56	0.7	5.9	3.3
February ..	29.919	393 19/13	0.12	4,372	SE & N	3.96	1.4	5.9	2.7
March ..	29.941	406 8/15	0.11	4,533	N & SE	3.05	1.4	5.9	1.8
April ..	29.953	432 7/17	0.13	4,738	NW & SE	2.01	0.8	6.0	1.8
May ..	29.983	411 3/16	0.12	4,740	N & NW	1.34	0.6	6.0	1.8
June ..	29.949	415 17/12	0.11	4,413	N & NW	0.77	0.7	6.0	1.8
July ..	29.930	396 17/11	0.11	4,569	N & NW	0.87	0.5	5.7	2.7
August ..	29.928	459 30/11	0.13	4,906	N & NW	1.22	0.8	5.9	2.4
September ..	29.813	516 26/15	0.19	5,690	N & NW	1.99	0.8	6.1	1.9
October ..	29.838	461 8/12	0.18	5,813	NW & SE	3.20	1.0	6.3	1.6
November ..	29.796	508 18/15	0.19	5,724	NW & SE	3.90	1.0	6.3	1.8
December ..	29.808	375 21/16	0.18	5,701	NW & SE	4.64	1.5	6.2	1.1
Year { Totals ..	—	—	—	61,111	—	32.51	11.2	—	24.7
Year { Averages ..	29.893	—	0.15	—	N	—	—	6.0	—
Year { Extremes ..	—	516 26/9/15	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Extreme Range.	Extreme Temperature.		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	48	48	48	72	72	72	31	51	24
January ..	71.5	53.0	62.2	105.0 1/00	40.3 *	64.7	160.0 †	30.6 19/97	209.4
February ..	71.5	53.2	62.4	104.4 12/99	39.0 20/87	65.4	165.0 24/98	28.3 -/87	178.0
March ..	68.0	50.8	59.4	98.8 5/46	38.0 31/05	62.8	150.0 3/05	27.5 30/02	167.7
April ..	62.6	47.6	55.1	90.0 2/56	30.0 25/56	60.0	142.0 18/93	25.0 -/86	134.9
May ..	57.3	43.6	50.4	77.5 1/41	29.2 20/02	48.3	128.0 ‡	20.0 19/02	127.3
June ..	52.7	40.9	46.8	75.0 7/74	28.0 22/79	47.0	122.0 12/94	21.0 6/87	99.4
July ..	51.8	39.1	45.4	72.0 22/77	27.0 18/66	45.0	118.7 19/96	18.7 16/86	122.0
August ..	54.9	41.0	48.0	77.0 3/76	30.0 10/73	47.0	129.0 -/87	20.1 7/09	140.0
September ..	58.6	43.0	50.8	80.0 9/72	30.0 12/41	50.0	138.0 23/93	22.7 -/86	139.1
October ..	62.7	45.3	54.0	92.0 24/14	32.0 12/89	60.0	156.0 9/93	23.8 §	163.2
November ..	66.1	48.2	57.2	98.0 20/88	35.2 5/13	62.8	154.0 19/92	26.0 1/08	191.4
December ..	69.5	51.2	60.4	105.2 13/06	38.0 18/06	67.2	157.0 30/18	27.2 -/86	189.0
Year { Averages ..	62.3	46.4	54.3	—	—	—	—	—	1,861.4||
Year { Extremes ..	—	—	—	105.2 30/12/97	27.0 18/7/66	78.2	165.0 24/2/98	18.7 16/7/86	—

* 3/72 and 2/06. † 5/86 and 13/05. ‡ -/88 and -/92. § 1/86 and -/99 || Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.		
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. of days Dew.
No. of yrs. over which observation extends	38	38	38	76	75	76	76	52	—	9
January ..	64	75	51	1.79	9	5.91 1893	0.03 1841	2.96 30/16	—	1.2
February ..	65	76	51	1.45	8	9.15 1854	0.07 1847	4.50* 25/54	—	2.3
March ..	70	76	59	1.64	10	7.60 1854	0.02 1843	2.06 14/11	—	4.8
April ..	74	85	60	1.90	11	6.50 1909	0.07 1904	5.02 20/09	—	10.2
May ..	79	90	68	1.88	13	6.37 1905	0.10 1843	3.22 14/58	—	12.1
June ..	83	94	73	2.19	14	8.15 1889	0.22 1852	4.11 14/89	—	7.2
July ..	81	97	74	2.13	14	5.98 1849	0.30 1850	2.00 27/78	—	8.3
August ..	78	92	64	1.85	13	10.16 1858	0.23 1854	4.35 12/58	—	7.1
September ..	72	87	60	2.15	14	7.14 1844	0.39 1847	3.50 29/44	—	3.8
October ..	67	75	51	2.25	15	6.87 1906	0.26 1850	2.58 4/06	—	3.3
November ..	64	74	50	2.55	14	8.92 1849	0.16 1868	3.97 6/49	—	1.7
December ..	62	73	51	1.97	11	9.00 1875	0.11 1842	2.48 13/16	—	1.2
Year { Totals ..	—	—	—	23.75	146	—	—	—	—	63.2
Year { Averages ..	72	—	—	—	—	—	—	—	—	—
Year { Extremes ..	—	97	50	—	—	10.16 8/1858	0.02 3/1843	5.02 20/4/09	—	—

* 4.18, 26/54 also.

§ 7. The Climatic Factors Influencing Settlement in Australia.

A specially contributed article dealing with this subject appears in *Official Year Book No. 11*, pp. 84 to 101.

§ 8. The Plains and Peneplains of Australia.¹

1. Definition of Terms.—In order to obtain a clearer idea of the geographical features here dealt with, it is necessary in the first place to consider the generally accepted definitions of plain and peneplain, and to compare them with the Australian conception of those terms. For the different continents have different characteristics, and definitions applicable, say, to European conditions will not fit exactly in the case of Australia.

A "plain" has been defined as an extensive stretch of land with a few inequalities of surface only, and a "peneplain" as an area which has been worn by streams and wind action almost to the level of the ocean, sea, or lake into which the streams of the area discharge. Hence a peneplain may be a high plateau, or it may be a surface near sea level, but it is almost a "plain."

In Australia, connotation of the term "plain" is somewhat elastic. It may have reference to an area of great size, level almost to the point of monotony, and covered in many places with growths of timber so dense as to cause travellers to mistake their way. Here and there open spaces of variable size and covered with grass, or herbs, stand out in striking contrast to the areas of dense timber surrounding them. The great North-western Plains of New South Wales, for example, extend from the foothills of New England to the Darling or Barwon River, with practically negligible irregularities in their topography. For many miles the traveller may pass through dense and high growths of *belah* (*Casuarina Cambagei*) or brigalow (*Acacia harpophylla*). Here and there open grass or herb lands occur, varying from 100 yards to 10 or 20 miles in diameter. These open spaces are known also as "plains." Fine examples are the Old Man, Tycannah, and Edgeroi Plains.

The great "Riverina," and the North-western district of Victoria furnish other fine examples, as also the country west of the plateaus in southern and central Queensland.

In the plateau country of Eastern Australia a rolling surface, either treeless, or with comparatively few trees, is known as a plain. Good examples are the Darling Downs, the plains of New England, the Bathurst, Goulburn, Yass, Monaro, and Omeo Plains. Small open spaces in areas of heavy forest or jungle are also called plains, such as the Paddy's and Little Plain in the Dorrigo jungle, The Little Manning Plain, and so on. Basaltic and slate areas in the high plateaus sparsely covered with trees, and clothed with dense coarse grass growths, are also known as plains, such as Kelly's Plains, in New England (Tantangra, Twelve Mile and others), The Flour Bag, Cobungra, Dargo, and the Bogong High Plains in Victoria.

These plains, so called, are plateaus, and the Bathurst, Goulburn, and allied types, have the appearance of wide valley floors with undulating surfaces, hemmed in on two sides, at least, by plateau remnants, and such upland "plains" or plateaus pass into areas of forest without losing their main topographic features. If followed far enough downstream they merge either into the inland plains of denudation or accumulation or they terminate in wild ravines, separated by ridges rising, generally, to similar heights.

1. Contributed by E. C. Andrews, B.A., F.G.S., Geological Surveyor, Mines Department, Sydney.

To the Riverina, the North-western Plains of Victoria and New South Wales, and similar areas elsewhere in Australia, it is proposed to apply the term "plain." To the mountain or foothill type it is proposed to apply the term "peneplain" or "upland plain."

In this article, therefore, a plain is taken to be an extensive area, approximately level, not raised much above sea-level, forming open land in places, but covered with forest or "scrub" over large areas.

A "peneplain" is defined as an extensive area of plateau or low land with undulating surface, bounded by plateaus or plateau remnants, the latter rarely rising as much as 2,000 feet above the "peneplain" at its base.

The peneplains of Australia have no exact counterpart in any other country.

2. Geographical Distribution of Plains and Peneplains in Australia.—Broadly considered, Australia may be said to have a plateau periphery, varying both in width and height, but broken at the place where the drainage of the Murray basin passes to the sea.

This plateau periphery is widest in Western Australia and narrowest round the East Australian coast from Thursday Island to the neighbourhood of Stawell in Victoria. Its greatest heights are to be found along the relatively narrow eastern and south-eastern portions, while the great plateau of Western Australia has only a low average height. The explanation of this feature is suggested later.

Australia, however, may be regarded in another way, namely, as consisting of three portions—Eastern Australia with a peripheral ring of high and relatively narrow plateaus; Western Australia consisting mainly of a low broad plateau; and a third portion relatively low in height, separating Eastern from Western Australia. This central zone is bordered on the north by plateaus or rising ground from which the Diamantina and associated streams in part take their rise.

North and East of Australia lies a zone of sea or sunken land subparallel to the trend of the associated coast of Australia. Thus the Tasman, Coral, and Javan, seas, on the side distant from Australia are bordered by belts of narrow and very high plateaus, now in part dissected by streams. Good examples of these plateaus are the Alps of New Zealand, the snow-clad ranges of northern New Guinea, and the Javan plateaus.

A fivefold arrangement of plateau and sunken area may therefore be made.

1. A low broad plateau forming the south-western and western portion of the Australian continent.
2. A sunken centre, drained by the Diamantina and Murray river systems.
3. A narrow ring of high plateau, discontinuous in places, from Thursday Island through New England, Monaro, and the Victorian Alps, to the Grampians.
4. A deep sunken area occupied by the Tasman, Coral, Arafura, and other seas and islands.
5. A series of rings of *very high* plateaus associated with active volcanoes, from New Zealand to Java.

This fivefold division may be reduced by future observers to threefold, the sunken area of Australia being taken as one feature and the peripheral plateaus as one feature also.

It may here be noted that the easterly rings of plateaus have suffered much from denudation, and the waste so derived has been deposited partly in the central area of drainage and the peneplains or plateaus. Traced backward the gorges may be seen to head in the plateaus separated therefrom by high waterfalls or successions of cascades, while the narrow ridges bounding the ravines merge on both sides into the massive plateau itself.

Inland again lie the great plateau remnants, such as those traversed by the railway at Mt. Lofty, Petersburg, Ballarat, The Kilmore Gap, Monaro, Hilltop to Yass, the Blue Mountains to Orange, New England, the Darling Downs and Barron Falls to Mareeba.

The High Plains of Victoria, the Kosciusko Plateau, Kiandra, and Guy Fawkes, are magnificent examples also of the plateaus or peneplains in Eastern Australia.

The plateau surface, so far from being level, consists of a series of very broad valleys surrounded by other plateau masses. These valley surfaces are undulating and occur at heights above sea-level varying from 100 to 6,500 or 7,000 feet. They appear to have been excavated within a former plateau of variable but low altitude. Instead of forming a vast unbroken surface like the Riverina they are composed of many independent but branching valley systems, the valleys being of great width and separated by low divides varying in height. The whole area has the appearance of a series of plains in the initial stage which have been near sea-level and which have been pushed gently upward so as to maintain their continuity with the old inland surface.

The inland drainage has cut deeply into this plateau surface also.

The larger portion of the inland area of both Eastern and South Australia is a low peneplain rarely exceeding 500 feet in height above sea-level, but it has the appearance of a plain more than the raised peneplain of Eastern Australia. The explanation is supplied in 4 *infra*.

In this description much of the central peneplain is included with the Inland Plain of denudation. Fine examples of these peneplains occur within, and in the neighbourhood of, the Great Australian Artesian Basin, the Nullarbor Plains, the South-east of South Australia, the North-west of Victoria and the district to the South and South-east of Darwin.

These lowland peneplains of the inland areas may be covered with pebbles, either of residual or later concretionary origin, long parallel ridges of sand 200 to 1,000 yards apart and 10-50 feet high, or with clay pans, blown dust, or alluvium.

Within the great peneplain areas of the central and southern portions of Australia which have not been raised much above sea-level, the Diamantina, Murray, and Darling River systems have formed enormous plains of accumulation, in places monotonously level. They are frequently composed of deep rich black, reddish, or grey soil, as, for example, along the great Diamantina, Murray, and Darling streams.

Plateaus or faulted and warped peneplains raise their heads abruptly from some of the central plains. Examples of these are the Barrier Ranges of Broken Hill (mentioned by Benson) and the Mt. Lofty and other ranges in South Australia.

Splendid examples of plains of accumulation are the Riverina, the Black and Red Soil Plains along the great rivers, the North-western plains of New South Wales, the plains of central and southern Queensland, the plains (Mundi Mundi, Willangee and so on) stretching north-westerly from Broken Hill into South Australia, the Adelaide Plains, the Spencer's Gulf Plains, the Willochra Plains and the plains southerly and easterly from Darwin.

Sandy and calcareous plains occur also in the more southern and eastern portions of South Australia, while the Adelaide Plains and the Port Pirie Plains are good examples of the coastal plains type.

In the central area it may be stated broadly that the plains coincide more or less with the area occupied by the artesian and sub-artesian basins, such as the Great Artesian Basin, the Murray River Basin, the Nullarbor Plains, the Adelaide Plains, and the plains bordering Spencer's Gulf.

The large sub-continent of Western Australia consists mainly of a low plateau, especially in the central and south-western portions, bordered with coastal plains. The Nullarbor Plains extend also from South Australia into Western Australia.

3. **Principal Plains and Peneplains of Australia.**—A list of some of the well-known plains and peneplains in Australia is given hereunder :—

A. *Peneplains.*

1. The *Eastralian Peneplain* (figures supplied herewith are approximate average heights above sea-level)—
 - (a) The Bellenden Ker or Stannary Peneplain (1,500–2,800 feet).
 - (b) The Charters Towers Peneplain (1,000–1,200 feet).
 - (c) The Mount Morgan Peneplain (1,000–1,400 feet).
 - (d) The Darling Downs (1,000–2,000 feet).
 - (e) *New England* (including Tenterfield (2,800–3,000 feet), Ben Lomond (4,300–4,500 feet) or Guyra, Glen Innes (3,500–3,700 feet), Guy Fawkes (4,200–4,600 feet), Armidale (3,200–3,500 feet), Walcha (3,500–3,700 feet), Tomalla (4,000–4,500 feet), and Barrington (4,000–4,500 feet) peneplains.
 - (f) *Central Tableland*, including Blue Mountains (600–4,000 feet), Sunny Corner (3,500–4,000 feet), Hill End (3,000–3,300 feet), Bathurst (2,100–2,700 feet), Orange (2,800–3,200 feet), Goulburn (2,100–2,500 feet), Yass (1,600–2,000 feet), Moss Vale (2,200–2,400 feet), Braidwood (2,200–2,400 feet), Breadalbane (2,200 feet), Crookwell (3,000 feet), and Tomago (2,200 feet) peneplains.
 - (g) *Monaro*, including Cooma (2,700–2,800 feet), Kiandra (4,500–5,000 feet), Kosciusko (5,000–6,500 feet), Bombala (2,500 feet), Nimitabel (3,500–3,700 feet), and other peneplains.
 - (h) *Victorian High Plains*, including Omeo (2,100–2,400 feet), Dargo (4,500–5,000 feet), Cobungra (5,000–5,500 feet), Bogong (6,000 feet), Ballarat (1,500–1,800 feet), and other peneplains.
2. Barrier Ranges of Broken Hill (1,000–1,400 feet).
3. *Great Lowland Peneplain* of the more central portion of Australia (250–1,000 feet).
4. *South Australian Highlands*, of which the Mt. Lofty (1,000–1,500 feet) and Petersburg peneplains (1,000–2,000 feet) are types.
5. *Northern Territory Tablelands*. Barkly Tableland may be taken as a type. A lower peneplain appears to be associated with these low tablelands.
6. *Westralian Peneplain*. The Darling, Kalgoorlie, and other peneplains, mentioned by Jutson, may be taken as types. Most of these peneplains have co-extensive surfaces. According to Jutson they vary mainly between 1,000 to 2,000 feet above sea-level with an average of 1,250 to 1,500 feet.

B. *Plains.*

1. *Coastal Plains* less than 200 feet above sea-level from Thursday Island to Camperdown in Victoria. These are small and scarcely deserve specific rank. Most of them, as the Hunter Plain between Newcastle and Maitland, are areas which have been recently submerged, then silted to, or near to, sea-level, and which now lie a few feet above sea-level by reason of recent land emergence.

The Emu Plain is a small type of the plain of accumulation along the Nepean River near Penrith which has been deposited by the Nepean River, under the shelter of the monoclinical fault of the Blue Mountains.

The coastal plains of Western Australia and of South Australia, such as The Swan, Spencer's Gulf, and Adelaide plains are types of plains of accumulation lying at the feet of fault, or warp, scarps of late geological age.

The large coastal plains of Northern Australia appear to be similar to those of Eastern Australia, only on a much greater scale.

2. *Interior Plains* (less than 800 feet above sea-level)—

- (a) Great Central and Southern Queensland plains. These are partly plains of accumulation and partly peneplains.
- (b) Plains of the Bulloo, Cooper and Diamantina.
- (c) Great North-western plains of New South Wales. These also in the north-eastern portion merge into peneplains.
- (d) Great Central plains of New South Wales (300–800 feet).
- (e) Riverina (less than 600 feet above sea-level).
- (f) Darling River plains (less than 400 feet above sea-level).
- (g) Murray Basin plains in south-eastern corner of South Australia. This is in great measure a peneplain formed from an old plain of accumulation.
- (h) Broken Hill plains, including Mundi Mundi, Willangee, and other plains.
- (i) Nullarbor plains (these might be classed as a lowland peneplain or plain of denudation).

4. **Origin of Plains and Peneplains.**—For a long period of time Australia has been isolated from the other great land blocks of the world, and there are strong indications that this isolation was effected about the time when the chalk of England was deposited. The great ocean basins then became overfull and spilled over the lower portions of the continents, thus forming enormous continental seas. The sea which crept into Australia occupied much of the area now known as Queensland and New South Wales, as well as portions of South Australia and the Northern Territory. There is reason to believe, also, that this great sea extended from the Malay Archipelago to the Southern Ocean, thus cutting Australia into an eastern and a western portion.

Both before, and during, the period of encroachment of the land by the ocean, the continents were being worn down slowly towards sea-level by the weather and by streams. In this way the Eastern and Western Australian land surfaces were converted into peneplains raised but very little above sea-level. A similar condition of affairs obtained in New Zealand, New Guinea, and other lands to the north of Australia.

This period of sea extension and of peneplanation was closed by a period of mountain-making along the zones indicated by the rings of islands surrounding Australia to the north and east. The effect produced was as if a gigantic force had been directed against Australia from the south-east, the east and the north, but a force which had met a buffer of great strength interposed between it and its objective. High plateaus and fold mountains were formed in rings around the buffer. The force appeared to travel in wave fashion, and Hedley suggests that the Tasman and Coral seas mark a trough of the movement. The next crest of the movement is indicated by the eastern periphery of Australia. This, however, was a much-diminished crest. Central Australia marks the next trough, while the Westralian Plateau marks some movement still weaker, but wider and more general.

The plateaus and ranges under consideration did not grow at once to their present heights. The earlier types were low in altitude, and long periods of still-stand of the land and subpeneplanation occurred between the periods of *revival* of uplift. In this way the present peneplains were formed.

Finally came a great period of mountain making, or rather, a revival of the old mountain making on a gigantic scale. The great Alps of New Zealand and New Guinea were formed, and the younger Eastralian peneplain was raised in sympathy, but variably, so as to form the present Blue Mountains and all the Eastern Highlands. The Westralian peneplains of much less altitude were also hoisted at this time to form the present plateau.

During the same period the central area of Australia had been sinking. Far below sea-level, the old land surface sank unequally, forming the famous Artesian basins of Australia. As the land sank the old basins were filled gradually by the outwash from the

surrounding plateaus. In this way were laid the foundations of the great central plains of the present time. In the north, however, these old plains had been raised well above sea-level at least once.

After the time of the great elevation, now known as the Kosciusko Period, the streams ran much more swiftly than heretofore because of the steepening of their channel slopes, and the great river systems had therefore gnawed their way backward quickly into the high peneplains or plateaus. Deep and even profound ravines were formed in this way. A visit to the Buffalo, Bogong, or Blue Mountains, or to the ravines of New England would impress the geographer with the power of streams to cut the plateaus to pieces. Similar fine examples of erosive action may be noted between Omeo and the summit of the Bogong Mountain, at Kosciusko, on the Blue Mountains, or at Guy Fawkes and the Macleay gorges, and on the plateaus around Cairns. The material which once filled these wonderful gorges and ravines has been deposited in part by the streams in the interior, thus forming the great plains of the *Artesian, Murray, Darling, and other areas.*

While the plains of accumulation extend in the central region, the grand peneplains, once with co-extensive surface from south to north of eastern Australia, are in places dissected beyond recognition. Thus the plains are built up from the destruction of the raised peneplains. The death of the one is the life of the other. To decipher the story of the peneplains one must go into the central plateaus, for the intermediate areas tell very little.

5. *Some Characteristics of the Plains and Peneplains.*—(a) *Soils.* (i) *Plains.* The deep soil of the plains of accumulation is black in those places where it is periodically flooded, and reddish or greyish where it is not subject to periodical and sustained flooding. Hence the deep alluvium of the river banks near the eastern plateaus is black, but the Riverina and the higher alluviums of the more arid west are reddish and greyish.

The soils of the plains of erosion may be of reddish sand arranged in long crests and troughs, as in the country extending far to the north of Broken Hill; they may be reddish or greyish as in the mallee and saltbush country of south-central Australia.

The red soil may exist in areas of aridity, semiaridity, or of heavy precipitation. Long spells of hot dry weather are sufficient to develop the colour, which is due to a form of iron oxide.

Greyish concretionary masses of travertine or impure limestone occur in the southern portion of South Australia, and elsewhere. This type, however, may be mainly referred to the soils of lowland peneplains.

(ii) *Peneplains.* Immense stretches of sandy or clay soil occur within the great plains of erosion or lowland peneplains of the centre which overlie or are in the vicinity of the Great Artesian Basin. Over extensive areas these are littered with pebbles, large and small, either formed as concretions in place or scattered as remnants of older conglomerates.

The soils of the plateaus have, in the main, been derived in place, and they indicate, generally, the nature of the surrounding rocks. Thus the extensive deep black and red soils of the high plateaus arise chiefly from the decay of basalts, andesites, some slate and allied rock types; the black soils occupying the areas subject to flooding, and the red and chocolate soils forming the drained hillsides. The hungry sandy soils originate from the decomposition of the Sydney sandstones and allied types and the sandy granites and quartzites, forming the older plateaus. The cold, hungry, and acid clays owe their existence to the decomposition in place of felsites, certain porphyries, and many Palæozoic slates, while the light loams arise from the decomposition of the darker granites, and from an intermingling of soils by stream action on dark and sandy rocks associated in the same district.

(b) *Vegetation.* The flowering plants of Australia have caused more discussion among students of plant distribution, perhaps, than those of any other area of equal size. One hundred years ago travellers to Australia were besought to bring "home" seeds of the plants peculiar to Australia. To the botanists of that period the strange appearance of the Australian types was referred to a special creation, but the explanation thereof is simple enough if studied in connection with the remarks in the preceding section.

When Australia became isolated, as stated above, the great families of the flowering plants of the world were all represented within the island continent. These included the myrtle, the daisy, heath, geebung, pea and bean, acacia, euphorbia, citrus, cassia, labiate, umbellate, and many other families, but once cut off from intercourse with the same types in the other continents they became modified in Australia to meet the climatic changes which were being ushered in about the time of isolation. These climatic changes were in the nature of recurrent and increasing dryness, and hence arose in Australia a dominant type of xerophytic plant, one which had to contend either with a drying atmosphere or with conditions which do not yield a generous supply of moisture to the plant.

Hence arose the eucalypts, the leafless type of acacia, the geebungs, the waratah, the needle wood, the oak, the quandong, the Christmas bush, the wild currant, the five corner, the native pear, the porcupine grass, and many others.

Strange as it may seem, it was not the deep black and red soils of the plains which the plants found most suited for their preservation. After much experiment they reached their maximum development as individuals, species, genera, and families on the hungry sandy soils of the peneplains and dissected peneplains. Splendid examples of this development are to be found around Sydney, the Blue Mountains, the lower Clarence hills, and the country from Perth to Albany.

These soils were light and porous, and were not subject to hard baking in drought time.

Herbs were not in such great abundance in those days of development as they are now, and most of the flowering plants of the period prior to the Australian isolation were handsome, luxuriant shrub and tree growths. Even the aster, the groundsel, the veronica, the bignonia, and other types were small woody shrubs or large trees.

Thus the great groups of the myrtles, the tree legumes, the rues, the proteads, the euphorbias, the labiates, the heaths, the lilies, the saxifrages, and others developed the wonderful assemblage of plants peculiar to Australia on the sandy peneplains of eastern and western Australia. In vain does one search for other than traces of these strange assemblages on the deep alluvium of the plains.

There were *some* herbaceous types in those days, and from them sprang the wonderful and peculiar terrestrial orchids, the lily-like types, the iris, amaryll, grass, reed, and rush types of the sandy plateaus and coastal plains.

The vegetation of the inland peneplains and plains differs materially from that of the well watered plateaus and coastal areas.

The tree types survived in great measure even on the subarid to arid centre, especially types such as the leafless *Acacia*, the dog or sandal wood, needle wood, quandong, oaks, and a few eucalypts, but the herbaceous and undershrub types became dominant.

Thus the family of the beets and docks (saltbush, blue bush, Kochias, Bassias, *Enchylænas*), that of the Myoporaceæ (teaplant of the west, the Buddha, turpentine, kangaroo bush, sandalwood, and so on), allied to the verbenas, the herbaceous legumes (Darling pea, gilgai pea, desert pea, the *Swainsonas*), the crucifers, the composites (ever-lasting, sifting bushes, asters, and so on), the *Zygophyllums*, and certain grasses became the dominant types.

The myrtles, heaths, the proteads, the rues, and the woody pea plants, which are the glory and marvel of the sandy peneplains and coastal plains, are conspicuous by their absence on the great inland plains, save for a few hardy eucalypts along the plain water-courses and the deep sheltered valleys, a couple of oaks, a needle wood, a beef wood, and a leopard wood.

On the great north-western plains in the spring of 1903 the marsh-mallows and the variegated thistles were as much as 10 to 12 feet high in places, and the trefoil and other edible herbs made a tangle over knee deep to the limit of vision. Flowers of all shades sprang into being by hundreds of millions, making the plains like a gigantic carpet, beautiful as the finest heath-covered wolds. One week the blue flowers predominated, later it was a mosaic of yellow, red, and white. In the great plains beyond Broken Hill in 1918 the gentle slopes were covered with flower associations of indescribable beauty. White and yellow everlasting flowers in countless millions formed the general setting, while amid these shone the red tips of the spiked bassias and the quaint grey of the small saltbush types.

(c) *Animals.* Both peneplains and plains abound with animal life. As with the plants, so also the fauna of these regions is specially adapted to its environment. Even the arid plains, so called, teem with life.

§ 9. The Building Stones of Queensland.*

1. **Bibliography.**—While little has been done in regard to the utilisation of the ornamental and building stones of Queensland, large quantities of good material are readily available in many areas.

The literature on the subject is scant, and the following list comprises the more important contributions:—"The Sandstone Quarries of the Southern District," Votes and Proceedings III., Queensland Parliament 1888, pp. 1021, 1044; "Queensland Stones for Architectural and Monumental Purposes," by L. C. Ball, B.E., Government Mining Journal 1905, p. 457; "Limestones in the Central and Southern Districts," by L. C. Ball, B.E., Pub. 194, Queensland Geological Survey, 1904; "Building Stones of Queensland," by H. C. Richards, D.Sc., Proc. Roy. Soc. Qld., 1918, pp. 97-157; also a small paper by the same author on the "Building Stones of St. John's Cathedral, Brisbane," Proc. Roy. Soc. Qld., 1911.

2. **Distribution.**—(i) (a) *General-Granites* occur in many widespread areas throughout the State and frequently in close association with the more important centres of population. Only in Brisbane, however, have granites been used to any extent, and while the local stone from Enoggera has been largely employed, it will probably be supplanted by other granites, e.g., from Greymare, unless the objections to the pyrites can be overcome.

(b) *Trachytes and Rhyolites* are abundant in the south-east portion of the State, and are found close to Brisbane. These rocks have not yet been used, but they will undoubtedly be drawn upon in the future. At the Glass House Mountains, the Flinders Range near Ipswich, and near Esk, excellent material occurs of good appearance, free working qualities, and in close proximity to the railway line.

(c) *Sandstones* of Triassic and Jurassic Age are distributed throughout large areas in Queensland, and material from many localities has been tried. The sandstones are freshwater lacustrine deposits, and considerable variation occurs in the beds. In the south-eastern portion of the State several good sandstones have been worked, but some of the best weathering material, e.g., from Goodna and Murphy's Creek, has been worked out.

At the present time warm brown sandstones in large quantities are available at Helidon, and at Yan Gan, near Warwick. Both these stones give very good results in the Southern Queensland climate if kept free from moisture; they wear cleanly and give a sharp arris.

In the central district at Stanwell, 20 miles west of Rockhampton, abundant quantities of a very serviceable light-brown easy-working sandstone occur. This stone is also one of the Mesozoic lake deposits.

In Northern Queensland a sandstone is found between Pentland and Torrens Creek to the west of Charters Towers. This stone has given good results when used for monumental purposes at Charters Towers and Townsville.

It will be seen, therefore, that in Southern, Central, and Northern Queensland good serviceable sandstones are available.

(d) *Marbles and Limestones.* It is within recent years only that Queensland has commenced to exploit local deposits of marble and limestone for monumental purposes. Hitherto the limestones have been used for fluxing and lime-producing purposes only.

(e) *Serpentine.* Queensland serpentine has not so far been used, although there are large deposits in different parts of the State. The value for ornamental work has not yet been determined, but near Kilkivan a dark-green serpentine of good quality occurs over a considerable area. At Cawarral there is a large belt running north-west from the mouth of the Fitzroy River. At Broken River, 130 miles west of Townsville, specimens taking a good polish have been obtained. At Pine Mountain, near Ipswich, and in other localities in the Brisbane Valley, deposits of serpentine have also been found.

(ii) *Tabular Statement of Distribution, &c.* Tables A, B, and C hereunder give detailed information in regard to name, locality, character, approximate quantities available, and extent of use of the igneous, sedimentary, and metamorphic building stones of Queensland.

* Contributed by H. C. Richards, D.Sc., Professor of Geology, University of Queensland, Brisbane.

(A) IGNEOUS

Building Stone.	Locality.	Quantity.
Granite (light gray)	Enoggera, 3 miles west of Brisbane	Unlimited quantity, abounding over an area of about 12 square miles
Granite (dark gray)	Mount Crosby, 30 miles west of Brisbane, near Brisbane River	Unknown, but probably fairly extensive ..
Granite (gray) ..	Greymare, 20 miles west of Warwick and 180 miles from Brisbane	Unlimited quantity, but no proper quarries yet opened up. Only large surface boulders have been worked, these being remarkable for their freshness
Granite (pale pink)	Magnetic Island	Unknown
Granite (pink to gray)	Mackay, near the mouth of the Pioneer River	About 1 mile in diameter
Granite (red) ..	Townsville	About 1 mile in diameter near the town, but a much larger area to the east of Townsville
Granite (light gray)	Cooktown	Area 3 miles in diameter
Granite (pale red) ..	Stanthorpe	A very extensive area
Granite (dark gray)	Wallangarra	Abundant
Rhyolite and Trachyte (light gray)	Glass House Mountains, 40 miles north of Brisbane (several peaks)	Unlimited
Rhyolite (light yellow-brown)	Glen Rock, Esk, 70 miles from Brisbane	Abundant

* Dates in brackets as above indicate

(B) SEDIMENTARY

Building Stone.	Locality.	Quantity.
Sandstone (light brown), Triassic Age	Breakfast Creek, Brisbane ..	Quarries which have been opened up are now worked out

STONES.

Character.	Examples.
Light-coloured, fine-grained granite of pepper-and-salt appearance, composed of clear quartz, cloudy feldspar, and black mica, and, in some cases, hornblende. Abundant small crystals of pyrites which, on exposure, oxidise to limonite. Average grain size, 1.5 to 2 mm.; density, 2.59. The stone shows considerable variation, and certain portions of the granitic area are comparatively free from pyrites. Free from acid and basic segregations	Base of the Executive Building, Brisbane (1901-5)*; Shaw and Sons' building, Brisbane (1904); steps of Central Technical College, Brisbane (1912-14); kerbing stones along tram lines in city of Brisbane (1916)
Dark-gray rock of medium grain, average grain size being 2 mm., composed of plagioclase, feldspar, augite, and biotite. It is a very handsome stone, and works well	Three courses in the base of the Executive Building, Brisbane (1901-5); base of the Royal Insurance Building, Brisbane (1906); cutwater in the Albert Bridge, Indooroopilly (1893-5)
A light-gray granite made up of quartz, feldspar, and black mica. The rock exhibits a slight gneissose character. It is an even-grained rock of medium grain size, quartz and feldspar crystals averaging 2 mm. in length, and the biotite flakes 1 mm. The most suitable gray granite yet used in Brisbane; works freely; density, 2.66	Base and kerbing of the Technical College, Warwick; base of the Government Savings Bank, Brisbane (1914)
Very light-coloured pink granite of medium grain, composed of quartz, feldspar, biotite, hornblende, and magnetite; the dark minerals very much in the minority	Base course and steps of the Customs House, Townsville
Pink to gray rock of very variable composition and appearance ..	Breakwater at the mouth of the Pioneer River
Medium to coarse-grained red granite composed of clear quartz, feldspar both pink and white,—the former predominates—and small patches of chlorite	Used in breakwater
Light-gray porphyritic stone	Base of Captain Cook's Monument
Pale-red granite composed of quartz, orthoclase, and biotite. Average grain size, 3-4 mm.	Limited use for monumental purposes
Dark-gray porphyritic granite; coarse-grained, with large crystals of light-pink orthoclase up to 1½ inches long set in a ground mass of quartz, orthoclase, plagioclase, hornblende, augite, and sphene; dark minerals much more abundant	..
Light-gray fine-grained rocks, sometimes distinct bluish-gray, composed of sanidine, feldspar, and augite. Many of the stones are of extremely handsome appearance, and show very pretty markings owing to the distribution of the dark minerals throughout the rocks. They are free working stones and occur in easy conditions for quarrying and handling. Density, 2.47-2.71	..
A very fine-grained rock composed of quartz and feldspar; works easily and takes a sharp arris. Density, 2.43	Not used to date, except for road metal

years of erection of building.

STONES.

Character.	Examples.
Very friable coarse sandstone; average grain size, .5 mm.; felspathic cement forming more than 50 per cent. of the stone. Rather variable, and not a good weathering stone	Upper story, Commercial Banking Co. (1866); old portion of G.P.O., Brisbane (1871-4); facings of St. Stephen's Cathedral (1874); base course, Roma-street Railway Station (1875); Australian Bank of Commerce; &c.

(B) SEDIMENTARY

Building Stone.	Locality.	Quantity.
Sandstone (light brown), Triassic Age	Goodna, 15 miles west of Brisbane	The best stone which occurred in Jeay's Quarry was worked out, but will probably be picked up again in adjacent areas if required
Sandstone (dark brown), Triassic Age	Calvert, 41 miles west of Brisbane	Fairly abundant
Sandstone (gray), Triassic Age	Lockyer Creek, 76 miles west of Brisbane	Fairly abundant
Sandstone (brown, white, pink), Jurassic Age	Helidon, 72 miles west of Brisbane	Large quantities available, but rather scattered; good quarries not usual
Sandstone (white), Triassic Age	Murphy's Creek, 82 miles from Brisbane	Has not been worked of recent years, as the best quarries have been worked out; amount available unknown
Sandstone (white), Jurassic Age	Highfields, 90 miles from Brisbane	A large amount available
Sandstone (brown), Jurassic Age	Yangan, 13 miles from Warwick and 172 miles from Brisbane	Large quantities readily available
Sandstone (brown), Triassic Age	Swan Creek (Mount Sturt), 9 miles from Warwick	A moderate amount available
Sandstone (brown), Triassic Age	Warwick, 150 miles from Brisbane	A large quantity still available
Sandstone (light brown)	Stanwell, 20 miles west of Rockhampton	Abundant
Tuff (white, brown, pink, and gray)	Brisbane	Unlimited

STONES—*continued.*

Character.	Examples.
<p>Medium-grained sandstone, with a clayey cement, average grain size being .25 mm. Colour, light brown or light pink, frequently with well-marked concentric bandings. The stone has a warm appearance, wears cleanly, and has excellent weathering properties. The stone obtained from Jeay's Quarry has weathered excellently; that obtained from Geary's Quarry and used in St. Stephen's Church, Brisbane, has weathered very poorly</p>	<p>Jeay's Quarry supplied the stone for the old Government House (University) (1862); Brisbane Town Hall (1864); Parliament House (1865-7)</p>
<p>Very friable, soft, dark-brown sandstone: fine-grained, with an average grain size of .20 mm.; particles angular to sub-angular set in clayey cement stained with limonite</p>	<p>In railway tunnels and culverts between Grandchester and Helidon; stone facings in Perkins' Brewery, Brisbane</p>
<p>Gray sandstone, of medium grain size °</p>	<p>Used for kerbings in the Dry Dock, South Brisbane (1867-71)</p>
<p>There are several varieties of this sandstone, and the following have been used:—White, brown, buff, and pink. The pink stone has the best weathering properties, while the brown stone has a very warm appearance and has given excellent results. A large number of quarries have been opened up, but most of them are of a shallow nature. The stone has rather a high percentage of clayey cement, which may be stained with iron oxide or with iron and manganese oxides. It has an average grain size of .25, the grains being angular to sub-angular. Concentric iron banding is very common. The stone works freely, giving a good arris, and weathering cleanly</p>	<p><i>Brown Stone.</i>—Executive Building, Brisbane (1901); Anglican Cathedral, Brisbane (1909); Government Savings Bank, Brisbane (1915) <i>White Stone.</i>—Central Railway Station (1901); second wing of Treasury Building (1890) <i>Pink Stone.</i>—Central Railway Station (1901); South Brisbane Town Hall (1891)</p>
<p>A coarse-grained white stone, rather irregular; average grain size, .4 mm.; cementing medium clayey and abundant. It is a very good weathering stone, and one of the best used in Brisbane</p>	<p>Portion of G.P.O. (1871); Public Library (1877); Queensland National Bank, Brisbane (1882); colonnades of Parliament House</p>
<p>A soft white stone, even grained; average grain size, 4 mm.; cementing clay material very abundant; bedding pronounced. Stone very variable in quality</p>	<p>First wing of Treasury Building, Brisbane (1887)</p>
<p>Fine-grained stone, warm brown in colour, frequently presenting concentric iron staining; average grain size, .20 mm. Works freely, takes a very sharp arris; thick beds in good position for working; excellent weathering stone</p>	<p>Executive Building, Brisbane (1901); Royal Insurance Company's Building, Brisbane (1906); in Warwick—in the Police Building, Post Office, and Technical College</p>
<p>Brown sandstone, of a somewhat similar character to the Yangan sandstone, but rather more cement, and considerably inferior in quality</p>	<p>Warwick Town Hall fronts and old Railway Station, Warwick (1888)</p>
<p>Several quarries have been worked. The stone is rather coarse-grained, and shows frequent current bedding, brown in colour, and with abundant clay cement. Only used in Warwick</p>	<p><i>Mount Tabor Quarry.</i>—Police Building (1885); rear portion of Town Hall; Queensland National Bank (1880) <i>Sidling Quarry.</i>—Anglican Church (1867); R.C. Church; Methodist Church; and Masonic Hall <i>Mitchell's Quarry.</i>—Convent (1892)</p>
<p>Medium-grained, light-brown sandstone, which works well; takes a fair arris, and weathers very cleanly; average grain size, .5 mm.; stone needs careful selection. Used in Rockhampton very largely</p>	<p>The following Rockhampton structures:—Anglican Cathedral, Commonwealth Bank, Bank of Australasia, Post Office, R.C. Cathedral, and Customs House</p>
<p>Pyroclastic of a Rhyolitic character, which has been much silicified. Colours—white, brown, pink, and green, occurring with iron and manganese staining. Stone composed of quartz, orthoclase, and plagioclase set in a devitrified felspathic ground mass. Needs very careful selection, as there is great variability in its weathering properties</p>	<p>Normal School (1863); St. Stephen's Cathedral (1874); St. Paul's Presbyterian Church (1887); St. John's Cathedral (1909); very largely used for base courses of several Brisbane buildings; also for kerbing, and for road metal subject to light traffic</p>

(C) METAMORPHIC

Building Stone.	Locality.	Quantity.
Marble	Ulam, 25 miles south of Rockhampton	Unknown, but believed to be considerable ..
Marble	Gladstone .. ..	.. ..
Marble	Raglan, 10 miles above the mouth of the Fitzroy River	Considerable deposits occur
Marble	Rockhampton District ..	.. ..
Marble	Northumberland Island, 14 miles from the mainland, midway between Rockhampton and Mackay	.. ..
Marble	Broken River, 130 miles west of Townsville	.. ..

TESTS ON

3. Tests of Queensland Sandstones.—The following table shows the results of tests of

Stone.	Quarry.	Colour.	Specific Gravity.	Weight in lbs. per cubic foot.	Absorption in per cent. of dry weight.
Helidon Sandstone	Wright	Brown ..	{ 2.42	151	4.80
			{ 2.42	151	4.80
Helidon Sandstone	Wright	Brown ..	{ 2.26	141	..
			{ 2.26	141	2.8
Helidon Sandstone	Wright	Brown ..	{ 2.30	143	..
			{ 2.30	143	3.55
Helidon Sandstone	Miller	Brown ..	{ 2.31	144	4.36
			{ ..	148	..
			{ ..	148	..
Helidon Sandstone	Pearson	White ..	{ 2.21	138	..
			{ 2.21	138	3.66
Helidon Sandstone	Pearson	Pink ..	{ 2.37	148	..
			{ 2.37	148	3.35
Helidon Sandstone	Pearson	Brown ..	{ 2.26	141	..
			{ 2.26	141	4.20
Helidon Sandstone	Phippard	White ..	{ 2.33	145	..
			{ 2.33	145	2.73
Yangan Sandstone	Midson	Brown ..	{ 2.18	136	..
			{ 2.18	136	8.7
			{ 2.18	136	..
Murphy's Creek Sandstone ..	.. ..	Brown ..	{ 2.41	150	..
			{ 2.41	150	..
			{ 2.41	150	5.0
Calvert Sandstone	Beatty and Walsh ..	Brown ..	{ 2.39	149	4.47
			{
Murphy's Creek Sandstone ..	.. ..	White ..	{ 2.18	136	5.1
			{ 2.30	144	3.7
Highfields Sandstone .. ..	.. ..	White ..	{ ..	..	4.8
			{ ..	..	7.0
Moggill Sandstone	Lyons .. ..	.. ..	{ 2.40	150	3.04
			{ 2.39	149.4	3.0
Lockyer Creek Sandstone ..	.. ..	.. ..	2.45	153	3.7

STONES.

Character.	Examples.
A coarse white marble, which is now being opened up, and is of considerable promise for mural and staircase purposes	..
Several deposits of white to fine-grained pink, blue, and red marble, much of which is fit for monumental purposes. The most conveniently situated deposits are at Calliope	..
..	..
Large areas of pink to blue limestone to the north of the Fitzroy River at 4 and at 20 miles above Rockhampton. At Marmor, 28 miles south of Rockhampton, there are large deposits of marbles of different colours, particularly dark-blue marble, with large en-crinites	Hitherto used mostly as a flux at Mount Morgan
White, pink, and blue marbles, uniform in colour, also variegated and mottled varieties, occur on Marble, Hunter, and Iron islands	..
Fine marbles, taking a good polish

QUEENSLAND SANDSTONES.

various Queensland sandstones :—

Resistance to Crushing.					Reference Authority.	Remarks as to object of Tests and Character.
Size of Specimen in inches.	Cracking Pressure in lbs.	Crushing Pressure in lbs.	Crushing Resistance in tons per sq. foot.	Crushing Resistance in lbs. per sq. inch.		
4 x 4 x 4 4 x 4 x 4	36,000 42,500	39,590 49,690	159.10 201.20	2,475 } 3,130 }	P.W.D.* ..	Executive Building tests, 1901
4 x 4 x 4 4 x 4 x 4	81,900 58,940	326.00 233.00	5,076 } 3,634 }	P.W.D. ..	{ Cent. Tech. Col., 1911, cr. dry on bed { Cent. Tech. Col., 1911, cr. wet on bed
6 x 3 x 3 6 x 3 x 3	43,680 33,720	310.13 238.55	4,824 } 3,710 }	Rly. Dept. ..	{ Crushed dry on bed, C.R.S., † 1900 { Crushed wet on bed, C.R.S., 1900
4 x 4 x 4 4 x 4 x 4	42,560 41,440	51,744 41,440	.. ..	328.50 } 5,110 } 3,234 } 2,590 }	P.W.D. ..	{ Govt. Printing Office tests, 1911 { Govt. Savings Bank tests, 1915
6 x 3 x 3 6 x 3 x 3	53,570 37,470	388.7 268.5	6,047 } 4,176 }	Rly. Dept. ..	{ Crushed dry on bed } { Crushed wet on bed }
6 x 3 x 3 6 x 3 x 3	79,050 63,480	558.1 450.4	8,682 } 7,007 }	Rly. Dept. ..	{ Crushed dry on bed } { Crushed wet on bed }
6 x 3 x 3 6 x 3 x 3	46,760 27,210	332.2 197.7	5,168 } 2,997 }	Rly. Dept. ..	{ Crushed dry on bed } { Crushed wet on bed }
6 x 3 x 3 6 x 3 x 3	50,760 32,780	360.7 231.8	5,612 } 3,606 }	Rly. Dept. ..	{ Crushed dry on bed } { Crushed wet on bed }
4 x 4 x 4 4 x 4 x 4 4 x 4 x 4	40,560 43,120 50,610	163.0 173.2 203.3	2,535 } 2,695 } 3,163 }	P.W.D. ..	Executive Building tests, 1901
4 x 4 x 4 4 x 4 x 4 4 x 4 x 4	52,470 57,670 59,400	210.9 231.8 238.7	3,280 } 3,605 } 3,712 }	P.W.D. ..	Executive Building tests, 1901
..	240.6 288.3	3,733 } 4,485 }	Rly. Dept. ..	Bremer Bridge test, 1896
.. } .. }	Rly. Dept. ..	Brisbane Dry Dock tests, 1875
.. } .. }	W. Hamlet W. H. Dixon	Treasury Building tests, 1888 1886
.. } .. }	Rly. Dept. ..	Brisbane Dry Dock tests, 1875
..	Rly. Dept. ..	Brisbane Dry Dock tests, 1875

* P.W.D.—Public Works Department.

† C.R.S.—Central Railway Station.

SECTION IV. POPULATION.

§ 1. Commonwealth Population—Its Distribution and Fluctuation.

1. **Present Population.**—The estimated population of the several States of the Commonwealth at the end of 1901 and of each of the five years 1914–18 is shown in the following table :—

POPULATION OF COMMONWEALTH, ON 31st DECEMBER, 1901 AND 1914-18.

Year.	States.						Territories.		Commonwealth.
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	North-ern.	Federal. (a)	
MALES.									
1901	720,840	608,436	282,291	180,440	117,885	90,945	3,999	..	2,004,836
1914	966,675	712,594	364,526	220,550	179,188	103,590	3,252	1,056	2,551,431
1915	953,160	693,650	359,541	212,080	171,304	101,761	3,687	957	2,496,140
1916	923,603	666,036	344,557	201,998	159,998	99,839	3,839	1,194	2,401,064
1917	935,384	671,382	345,615	201,433	158,701	101,520	3,886	1,080	2,419,001
1918	957,723	684,906	353,091	205,823	161,464	105,434	3,677	1,179	2,473,297
FEMALES.									
1901	654,615	601,464	224,430	178,890	75,716	84,288	674	..	1,820,077
1914	894,847	718,073	312,181	221,140	143,830	97,826	721	903	2,389,521
1915	917,259	725,526	319,134	226,205	146,712	99,264	876	872	2,435,848
1916	934,941	732,848	324,910	230,711	148,808	100,086	928	1,029	2,474,261
1917	955,270	739,622	332,212	234,781	150,722	101,657	1,022	1,024	2,516,310
1918	972,517	745,852	341,349	239,885	151,983	103,439	1,104	1,053	2,557,182
TOTAL.									
1901	1,375,455	1,209,900	506,721	359,330	193,601	175,233	4,673	..	3,824,913
1914	1,861,522	1,430,667	676,707	441,690	323,018	201,416	3,973	1,959	4,940,952
1915	1,870,419	1,419,176	678,675	438,285	318,016	201,025	4,563	1,829	4,931,988
1916	1,858,544	1,398,884	669,467	432,709	308,806	199,925	4,767	2,223	4,875,325
1917	1,890,654	1,411,004	677,827	436,214	309,423	203,177	4,908	2,104	4,935,311
1918	1,930,240	1,430,758	694,440	445,708	313,447	208,873	4,781	2,232	5,030,479

(a) Part of New South Wales prior to 1911.

2. **Growth of Population.**—(i) *1788 to 1824.* From 1788, when settlement first took place in Australia, until December, 1825, when Van Diemen's Land (now Tasmania) became a separate colony, the whole of the British Possessions in Australia were regarded as one colony, viz., that of New South Wales. The population during this period increased very slowly, and at the end of 1824 had reached only 48,072.

COMMONWEALTH POPULATION—ITS DISTRIBUTION AND FLUCTUATION. 97

The population with which settlement in Australia was inaugurated, and that at the end of each year until 1824, are as follows :—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1788 TO 1824.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1788 ^a	..	..	1,035	1806	5,389	2,521	7,910
1788	..	..	859	1807	5,939	2,855	8,794
1789	..	..	645	1808	6,822	3,441	10,263
1790	..	..	2,056	1809	7,618	3,942	11,560
1791	..	..	2,873	1810	7,585	3,981	11,566
1792	..	..	3,264	1811	7,697	4,178	11,875
1793	..	..	3,514	1812	8,132	4,498	12,630
1794	..	..	3,579	1813	9,102	4,855	13,957
1795	..	..	3,466	1814	9,295	4,791	14,086
1796	2,953	1,147	4,100	1815	9,848	5,215	15,063
1797	3,160	1,184	4,344	1816	11,690	5,863	17,553
1798	3,367	1,221	4,588	1817	14,178	7,014	21,192
1799	3,804	1,284	5,088	1818	17,286	8,573	25,859
1800	3,780	1,437	5,217	1819	21,366	10,106	31,472
1801	4,372	1,573	5,945	1820	23,784	9,759	33,543
1802	5,208	1,806	7,014	1821	26,179	9,313	35,492
1803	5,185	2,053	7,238	1822	27,915	9,449	37,364
1804	5,313	2,285	7,598	1823	30,206	10,426	40,632
1805	5,395	2,312	7,707	1824	36,871	11,201	48,072

^a On 26th January. Recent research by Dr. J. F. Watson, now Editor of the Historical Records of Australia, goes to shew that the original nucleus was 1,024 persons.

(ii) 1825 to 1858. The period extending from 1825 to 1859 witnessed the birth of the colonies of Tasmania (then known as Van Diemen's Land), Western Australia, South Australia, Victoria, and Queensland. The years in which these came into existence as separate colonies were as follows :—Tasmania, 1825 ; Western Australia, 1829 ; South Australia, 1834 ; Victoria, 1851 ; Queensland, 1859.

The estimated population of the Commonwealth at the end of each year of this transition period is as follows :—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1825 TO 1858.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1825	40,288	12,217	52,505	1842	153,758	87,226	240,984
1826	41,289	12,593	53,882	1843	158,846	92,002	250,848
1827	43,053	13,247	56,300	1844	165,034	99,253	264,287
1828	44,778	13,419	58,197	1845	173,159	105,989	279,148
1829	46,946	14,988	61,934	1846	181,342	111,907	293,249
1830	52,885	17,154	70,039	1847	190,265	118,532	308,797
1831	57,037	18,944	75,981	1848	201,612	130,716	332,328
1832	62,254	21,683	83,937	1849	221,978	151,384	373,362
1833	71,669	26,426	98,095	1850	238,683	166,673	405,356
1834	76,259	29,297	105,556	1851	256,975	180,690	437,665
1835	81,929	31,425	113,354	1852	304,126	209,670	513,796
1836	89,417	35,703	125,120	1853	358,203	242,789	600,992
1837	94,881	39,607	134,488	1854	414,337	280,580	694,917
1838	105,271	46,597	151,868	1855	470,118	323,142	793,260
1839	115,480	54,459	169,939	1856	522,144	354,585	876,729
1840	127,306	63,102	190,408	1857	574,800	395,487	970,287
1841	144,114	76,854	220,968	1858	624,380	426,448	1,050,828

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(iii) 1859 to 1918. From 1859, the year in which Queensland came into existence as a separate colony, until the beginning of 1901, when the Commonwealth of Australia was inaugurated under the provisions of the Commonwealth Constitution Act, Australia consisted of six States, practically independent of each other in all matters of government. During this period, the population of the Commonwealth increased from 1,050,828 at the end of 1858 to 3,765,339 on the 31st December, 1900. The particulars for this period are given in the table hereunder.

During the eighteen years that have elapsed since the federation of the States was effected the population of the Commonwealth has increased by 1,265,140, from 3,765,339 on 31st December, 1900, to 5,030,479 on 31st December, 1918. See table hereunder :—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1859 TO 1918.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1859	644,376	452,929	1,097,305	1889	1,649,094	1,413,383	3,062,477
1860	668,560	477,025	1,145,585	1890	1,692,831	1,458,524	3,151,355
1861	669,373	498,776	1,168,149	1891	1,736,617	1,504,368	3,240,985
1862	683,650	523,268	1,206,918	1892	1,766,772	1,538,981	3,305,753
1863	704,259	555,033	1,259,292	1893	1,791,815	1,570,080	3,361,895
1864	740,433	584,750	1,325,183	1894	1,824,217	1,602,543	3,426,760
1865	773,278	616,765	1,390,043	1895	1,855,539	1,636,082	3,491,621
1866	800,648	643,307	1,443,955	1896	1,887,174	1,665,924	3,553,098
1867	819,127	664,721	1,483,848	1897	1,917,460	1,700,323	3,617,783
1868	849,272	690,280	1,539,552	1898	1,937,629	1,727,086	3,664,715
1869	875,139	717,018	1,592,157	1899	1,959,074	1,756,914	3,715,988
1870	902,494	745,262	1,647,756	1900	1,976,992	1,788,347	3,765,339
1871	928,918	771,970	1,700,888	1901	2,004,836	1,820,077	3,824,913
1872	947,422	795,425	1,742,847	1902	2,028,008	1,847,310	3,875,318
1873	972,907	821,613	1,794,520	1903	2,045,144	1,871,448	3,916,592
1874	1,001,096	848,296	1,849,392	1904	2,072,783	1,901,367	3,974,150
1875	1,028,489	869,734	1,898,223	1905	2,100,118	1,932,859	4,032,977
1876	1,061,477	897,202	1,958,679	1906	2,126,730	1,964,755	4,091,485
1877	1,102,340	928,790	2,031,130	1907	2,160,213	2,001,509	4,161,722
1878	1,132,573	959,591	2,092,164	1908	2,193,981	2,038,297	4,232,278
1879	1,168,781	993,562	2,162,343	1909	2,242,215	2,081,745	4,323,960
1880	1,204,514	1,027,017	2,231,531	1910	2,296,308	2,128,775	4,425,083
1881	1,247,059	1,059,677	2,306,736	1911	2,377,920	2,190,787	4,568,707
1882	1,289,892	1,098,190	2,388,082	1912	2,466,968	2,266,391	4,733,359
1883	1,357,423	1,148,313	2,505,736	1913	2,536,530	2,335,529	4,872,059
1884	1,411,996	1,193,729	2,605,725	1914	2,551,431	2,389,521	4,940,952
1885	1,460,394	1,234,124	2,694,518	1915	2,496,140	2,435,848	4,931,988
1886	1,510,954	1,277,096	2,788,050	1916	2,401,064	2,474,261	4,875,325
1887	1,559,118	1,322,244	2,881,362	1917	2,419,001	2,516,310	4,935,311
1888	1,610,548	1,371,129	2,981,677	1918	2,473,297	2,557,182	5,030,479

It will be seen from the foregoing tables that the population of Australia attained its first million in 1858, seventy years after settlement was first effected; its second million nineteen years later, in 1877; its third million twelve years later, in 1889; its fourth million sixteen years later, in 1905; and its fifth million thirteen years later, in 1918. The fifth million was expected in 1915, but owing to the war and the consequent dispatch of men out of Australia this result was not attained. As a matter of fact, through the retardation of immigration and the departure of troops consequent upon the war, the total population of Australia diminished during 1915 by 8,964 persons. Taking the sexes separately, there was a decrease of 55,291 males and an increase of 46,327 females during the year. In 1916 there was a further decrease of 56,663, the males decreasing by 95,076, and the females increasing by 38,413. In 1917 there was a recovery of 59,986 in the total population, made up of 17,937 males and 42,049 females. In 1918 there was an increase of 95,168 in the total population, made up of 54,296 males and 40,872 females.

The growth of the total population of the Commonwealth generally, and of each State therein, is graphically shown on page 139, and of each sex considered separately on pages 140 and 141.

§ 2. Influences affecting Growth and Distribution of Population.

1. **Mineral Discoveries.**—The discovery of gold in Australia in 1851 was undoubtedly one of the most influential factors in bringing about a rapid settlement of the country. Its effect may be gauged by a comparison of the increase during the ten years preceding, with that during the ten years succeeding the discovery. From 31st December, 1840, to 31st December, 1850, the increase was only 214,948 (viz., from 190,408 to 405,356). The rush of people to the newly-discovered goldfields during the succeeding decennium caused an increase of no less than 740,229, the population advancing to 1,145,585 on 31st December, 1860. In 1861, owing to the opening up in that year of the New Zealand goldfields, a rush of population from Australia set in, the result being that the net increase of population of the Commonwealth, which in 1855 amounted to 98,343, and even in 1860 was as much as 48,280, fell in 1861 to 22,564. In fact, during the year 1861 the departures from Australia exceeded the arrivals by 6,283, the gain of 22,564 being due to the births exceeding the deaths by 28,847.

In more recent years the gold discoveries of Western Australia, in 1886 and subsequent years, led to such extensive migration to that State that its population, which on 31st December, 1885, amounted to only 35,959, increased in 33 years by no less than 277,488, totalling 313,447 on 31st December, 1918. In this case, however, the additions to the population of the western State were largely drawn for some years from those of the eastern States, so that the actual gain of population to the Commonwealth was relatively slight.

2. **Pastoral Development.**—Very early in the colonisation of Australia it was recognised that many portions were well adapted for pastoral pursuits, and pastoral developments have led to a considerable distribution of population in various directions. As the numbers engaged in connection therewith, compared with the value of the interests involved, are relatively small, and as pastoral occupancy tends to segregation rather than aggregation of population, the growth of the pastoral industry is but slightly reflected in the population statistics of the Commonwealth.

3. **Agricultural Expansion.**—At the present time the area annually devoted to crops in the Commonwealth is over 14½ millions of acres. Although considerable in itself, this area, viewed in relation to the total area of the Commonwealth, is relatively small, and represents considerably less than 1 per cent. of the total area. Per head of population of the Commonwealth the area under crop, however, is nearly 3 acres, a fairly high amount when allowance is made for the recency of Australian settlement. About 84 per cent. of the area under crop in 1917-18 was devoted to the production of wheat and hay, both of which for profitable production in Australia require a considerable area in the one holding. Thus, on the whole, the agricultural districts of Australia are somewhat sparsely populated, though in a less marked degree than is the case in the pastoral areas.

4. **Progress of Manufacturing Industries.**—One direct effect of the development of manufacturing industries is the concentration of population in places offering the greatest facilities for the production of the particular commodities. In Australia, where manufacturing industries are as yet in their infancy, the tendency throughout has been to concentrate the manufacturing establishments in each metropolis. This has accentuated the growth of the capital cities, which growth, when compared with that of the rest of the country, appears somewhat abnormal.

5. **Influence of Droughts.**—The droughts, which at times so seriously affect the agricultural and pastoral prospects of Australia, have a marked influence on the distribution of population. Districts, which in favourable seasons are fairly populous, occasionally in times of drought become more or less depopulated until the return of better conditions. This movement, however, ordinarily affects only the internal distribution of the population and not the total, but severe drought may even make its influence felt in the statistics of the total population of Australia. Thus in the case of the drought of 1902-3, the departures from the Commonwealth exceeded the arrivals for the two years 1903 and 1904 by 12,859. It may be noted also, that for the former of these years, the natural increase of population by excess of births over deaths was

abnormally low, being only 51,150, as compared with 54,698 in the preceding and 60,541 in the succeeding year. As the solution of the problem of dealing with droughts is advanced, their influence will be less marked.

6. Other Influences.—(i) *Commercial Crises.* The effect on population of a commercial crisis, such as that which occurred in Australia in the early years of the final decade of the last century, is clearly indicated on comparing the migration statistics of the Commonwealth for the five years 1887-91 with those for the five years 1892-96. During the former period, the arrivals in the Commonwealth exceeded the departures by no less than 146,872. In the latter period, the corresponding excess amounted to only 2,064.

(ii) *War.* The war in South Africa has left its impress on the population statistics of the Commonwealth, the departures during 1899 and 1900 exceeding the arrivals for the same period by 10,546. A similar but much more marked result is being shown in connection with the European war. Thus, for the four years 1914, 1915, 1916 and 1917 taken together, the departures exceeded the arrivals by a total of no less than 264,265. In 1918, however, the arrivals exceeded the departures by 19,678. In this connection it may be mentioned that during the year the arrivals of members of the Expeditionary Forces exceeded the departures of such members by 20,646.

A reference to the graphs of population on pages 139 to 144 will illustrate the preceding observations.

§ 3. Special Characteristics of Commonwealth Population.

1. Sex Distribution.—In respect of the relative proportions of the sexes in its population, Australia has, since the first settlement of the continent in 1788, differed materially from the older countries of the world. In the latter, the populations have, in general, grown by natural increase, and their composition usually reflects that fact, the numbers of males and females being in most countries approximately equal, with a more or less marked tendency, however, for the females to slightly exceed the males. The excess of females arises from a variety of causes, amongst which may be mentioned—(a) higher rate of mortality amongst males; (b) greater propensity on the part of males to travel; (c) the effects of war; (d) employment of males in the army, navy, and mercantile marine; (e) preponderance of males amongst emigrants. On the other hand, the last-mentioned cause has tended naturally to produce an excess of males in Australia, since the majority of those emigrating to Australia have been males. The circumstances under which the colonisation of Australia was first undertaken, and the remoteness of this country from Europe, have combined to accentuate this feature.

There is little doubt that the continent presented few attractions to the explorers who visited its shores, mainly on the west and north, during the sixteenth, seventeenth, and early part of the eighteenth centuries, and it was only when the Declaration of Independence of the United States, in 1776, closed to the British prison authorities the North American plantations, which had previously been used as receptacles for the deportation of convicts, that the overcrowding of the gaols caused them to consider the advisability of converting the great southern continent into a convict settlement. This idea was put into practice in 1787, when the first consignment left England, arriving in Sydney Cove on the 26th January, 1788. Reports concerning the number of persons actually landed are conflicting, but it appears that the total may be set down approximately at 1,035, including the military. Details as to the sexes are not available, but the males must have largely preponderated. Indeed, nearly nine years later, on the 31st December, 1796, in a total population of 4,100, there was an excess of 44 males in every 100 of the population.

The subsequent progress of Australia resulting from extensive mineral discoveries and the development of its great natural resources, pastoral, agricultural, forestal, &c., have tended to attract male rather than female immigrants, particularly in view of the distance from the principal centres of European population. Even at the Census of 3rd April, 1911, after more than 123 years of settlement, there was an excess of 3.84 males in every 100 of the population, and this notwithstanding the equalising tendency due to additions to the population by means of births and to deductions therefrom by the deaths of immigrants.

In the second issue of this publication, on pages 163 to 165, an extended table was published showing the masculinity of the population of each of the States for each year from 1796 to 1907. In the fifth issue, on page 123, the figures in this table for the years 1901-7 were modified to agree with the corrected estimates of the population, consequent on the Census of 3rd April, 1911. The figures given in the tables mentioned represent the number of males to each 100 females.

A more scientific determination of masculinity, however, may be obtained by computing the ratio of the excess of males over females to the total population. This ratio expressed as a percentage has now been adopted by the Commonwealth Bureau of Census and Statistics as the "masculinity" of the population, and the ratios so computed are given hereunder for intervals of 5 years from 1800 to 1915 and for the three years 1916, 1917 and 1918 for the Commonwealth and each of its component States and Territories :—

MASCULINITY OF THE POPULATION, 1800 TO 1918.
(EXCESS OF MALES OVER FEMALES PER 100 OF POPULATION.)

Year.	States.						Territories.		C'wealth.
	N.S.W.(a)	Victoria.	Q'land.	S.A.(b)	W. Aust.	Tasmania.	North'n (c)	Federal. (d)	
1800	44.91	..	..	..	..	..	..	..	44.91
1805	40.00	..	..	..	..	..	..	..	40.00
1810	31.16	..	..	..	..	..	..	..	31.16
1815	30.76	..	..	..	..	..	..	..	30.76
1820	41.81	..	..	..	..	..	..	..	41.81
1825	53.00	..	..	..	..	54.72	..	..	53.46
1830	52.06	..	..	..	49.66	49.17	..	..	51.02
1835	45.71	..	..	..	31.10	43.13	..	..	44.55
1840	34.25	..	..	13.08	24.10	39.31	..	..	33.72
1845	21.05	..	..	14.07	20.07	36.63	..	..	24.06
1850	16.13	..	..	12.72	21.51	28.44	..	..	17.76
1855	11.14	30.41	..	0.31	31.87	10.57	..	..	18.53
1860	13.53	22.74	19.88	2.47	25.07	10.56	..	..	16.72
1865	9.12	12.89	22.62	4.36	26.98	7.59	..	..	11.26
1870	9.29	9.74	20.10	2.84	23.42	6.09	..	..	9.54
1875	8.71	6.74	20.83	3.49	19.55	5.41	..	..	8.36
1880	9.28	4.95	17.53	6.69	14.92	5.53	..	..	7.95
1885	9.89	5.04	18.02	5.02	15.06	5.09	..	..	8.40
1890	8.28	5.06	13.87	4.12	18.98	5.61	..	..	7.43
1895	6.45	2.55	12.34	2.46	11.72	3.92	..	..	6.28
1900	5.28	0.61	11.24	1.98	22.34	3.83	76.57	..	5.01
1905	5.24	-1.17	9.81	0.08	17.13	2.96	66.49	..	4.15
1910	4.41	-0.65	8.69	1.54	14.13	2.03	65.89	..	3.79
1915	1.92	-2.26	5.95	-3.19	7.73	1.24	61.60	4.65	1.22
1916	-0.61	-4.71	2.93	-6.86	3.62	-0.12	61.06	7.42	-1.50
1917	-1.05	-4.84	1.98	-7.64	2.58	-0.07	58.35	2.66	-1.97
1918	-0.77	-4.26	1.69	-7.64	3.02	0.96	53.82	5.65	-1.67

(a) Including Federal Territory prior to 1911. (b) Including Northern Territory prior to 1900.
(c) Included with South Australia prior to 1900. (d) Part of New South Wales prior to 1911.

NOTE.—The sign — denotes excess of females over males per 100 of population.

The influence of the war will be observed in the decline of the masculinity for each of the States and the Commonwealth, and the introduction of negative results in the cases of South Australia, New South Wales, Tasmania and the Commonwealth indicating an excess of females there, as well as in Victoria, where this phenomenon was in evidence as far back as 1905.

The curious inequalities of the increases in the number of males and in the number of females for the Commonwealth as a whole, and for the individual States respectively, will be seen by referring to the graphs on pages 140 and 141.

The significance of the rates of masculinity shewn in the above table will perhaps be better understood by a comparison with the corresponding information for other countries. This has been made in the next table, which shews, for some of the principal countries of the world for which such particulars are available, the masculinity of the population according to the most recent statistics :—

MASCULINITY OF THE POPULATION OF VARIOUS COUNTRIES.

Country.	Year.	Excess of Males over Females in each 100 of Population.	Country.	Year.	Excess of Males over Females in each 100 of Population.
Canada	1911	6.07	German Empire ..	1910	—1.30
Serbia	1910	3.27	Ireland	1915	—1.36
United States of America	1910	2.93	Switzerland	1910	—1.66
India (Feudatory States)	1911	2.88	Australia	1918	—1.67
British India	1911	2.24	France	1911	—1.74
Bulgaria	1910	1.75	Italy	1911	—1.81
Japan	1917	1.06	Austria	1912	—1.85
Rumania	1913	1.05	Sweden	1916	—2.11
Greece	1907	0.68	New Zealand	1918	—2.19
Poland (Russian)	1914	0.41	Spain	1910	—2.84
Netherlands	1916	—0.63	Scotland	1916	—3.01
Belgium	1912	—0.76	Denmark	1916	—3.07
Hungary	1910	—0.94	Norway	1910	—3.36
Russia (European)	1914	—1.05	Portugal	1911	—5.08
Prussia	1910	—1.17	England and Wales ..	1916	—13.04

NOTE.—The sign — denotes excess of females over males in each 100 of population.

2. Age Distribution.—The causes which operated to bring about an excess of males in the population of the Commonwealth were equally effective in rendering the age distribution essentially different for many years from that of older countries. The majority of the immigrants, whether male or female, were in the prime of life, and as the Australian birth-rate in earlier years was a comparatively high one, the effect produced was a population in which the proportion of young and middle-aged persons was somewhat above, and the proportion for advanced ages somewhat below the normal. With the progress of time, however, the age distribution for Australia has fallen more and more into line with that for the older countries, and now, except in shewing a somewhat lower proportion at old age and a slightly higher at young ages, does not differ essentially therefrom.

Thus in the Commonwealth at the Census of 3rd April, 1911, the age distribution of the population was as shewn in the table hereunder ; that for England and Wales for the same Census is given also for the sake of comparison :—

AGE DISTRIBUTION OF POPULATION.

COMMONWEALTH, AND ENGLAND AND WALES IN 1911.

Age Group.	Population of COMMONWEALTH, 3rd April, 1911.	Percentage on Total Population.	Population of ENGLAND and WALES, 3rd April, 1911.	Percentage on Total Population.
Under 15	1,409,823	31.65	11,050,867	30.63
15 and under 65	2,854,753	64.08	23,141,109	64.16
65 and upwards	190,429	4.27	1,878,516	5.21
Total	4,455,005	100.00	36,070,492	100.00

During the past 50 years, the age distribution of the Australian population has varied considerably, as will be seen from the following table, which gives for each sex the proportion per cent. of the total population in the age groups "under 15," "15 and under 65," and "65 and over." The figures upon which these percentages have been computed are those furnished by the Censuses of the several States and the Commonwealth Census of 1911. Those for 1861 include the results of the Western Australian Census of 1859, while those for 1871 include the results of the Western Australian and Tasmanian Censuses of 1870 :—

AGE DISTRIBUTION OF COMMONWEALTH POPULATION, 1861 TO 1911.

Census Year.	Males.				Females.				Persons.			
	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.
	%	%	%	%	%	%	%	%	%	%	%	%
1861..	31.41	67.42	1.17	100	43.03	56.20	0.77	100	36.28	62.72	1.00	100
1871..	38.84	59.11	2.05	100	46.02	52.60	1.38	100	42.09	56.17	1.74	100
1881..	36.37	60.85	2.78	100	41.89	56.07	2.04	100	38.91	58.65	2.44	100
1891..	34.77	62.02	3.21	100	39.36	58.08	2.56	100	36.90	60.20	2.90	100
1901..	33.87	61.82	4.31	100	36.50	59.85	3.65	100	35.12	60.88	4.00	100
1911..	30.84	64.82	4.34	100	32.52	63.28	4.20	100	31.65	64.08	4.27	100

The excess of males over females, which existed prior to the war, was found mainly in ages of 21 and upwards. In the total population under the age of 21 there was, at the date of the last Census, an excess of males over females amounting to less than 1.3 in each 100 of population, while in that aged 21 and upwards the excess of males over females was more than 5.8 in each 100 of population.

3. Race and Nationality.—(i) *Constitution of Australia's Population.* As regards race, the population of the Commonwealth may be conveniently divided into two main groups, one comprising the aboriginal natives of Australia, and the other the various immigrant races which, since the foundation of settlement in 1788, have made the Commonwealth their home. Under the head of "immigrant races" would, of course, be included not only those residents of Australia who had been born in other countries, but also their descendants born in Australia.

(a) *Aboriginals.* It would appear that the aboriginal population of Australia was never large, and that the life led by them was, in many parts of the country, a most precarious one. With the continued advance of settlement the numbers have shrunk to such an extent that in the more densely populated States they are practically negligible. Thus, at the Census of 1911 the number of full-blooded aboriginals who were employed by whites or were living in proximity to settlements of whites was stated to be only 19,939. In some cases, however, more particularly in Queensland, Western Australia, and the Northern Territory, there are, in addition, considerable numbers of natives still in the "savage" state, numerical information concerning whom is of a most unreliable nature, and can be regarded as little more than the result of mere guessing.

Ethnologically interesting as is this remarkable and rapidly-disappearing race, practically all that has been done to increase our knowledge of them, their laws, habits, customs, and languages, has been the result of more or less spasmodic and intermittent effort on the part of enthusiasts either in private life or in the public service. An enumeration of them has never been seriously undertaken in connection with any Australian Census, though a record of the numbers who were in the employ of whites, or living in contiguity to the settlements of whites, has on the occasion of the recent Censuses usually been made. As stated above, various guesses at the number of aboriginal natives at present in Australia have been made, and the general opinion appears to have prevailed that 150,000 might be taken as a rough approximation to the total. More recent estimates, however, have given results considerably below this figure. Thus, in his report of April 30, 1915, the Queensland Chief Protector of Aborigines estimates the total at 61,705, distributed as follows :—New South Wales, 6,580 ; Victoria,

283; Queensland, 15,000; South Australia, 4,842; Western Australia, 32,000; Northern Territory, 3,000. In his report of April 20, 1917, the Chief Protector of Aborigines in Queensland estimated their number in that State to be 16,600 in 1916. A somewhat similar estimate made at an earlier date by Dr. Roth, formerly Chief Protector of Aborigines in Queensland, gave Queensland at least 18,000; Western Australia at least 24,000, and the Northern Territory from 20,000 to 22,000. In view of these figures it would appear that the number of aboriginal natives in Australia may be said to be less than 100,000. The whole matter, however, is involved in considerable doubt.

The number of aboriginal natives enumerated in the several States and Territories of the Commonwealth at the Census of 1911 was as shewn hereunder, the figures given relating as before stated only to those in a civilised or semi-civilised condition.

ABORIGINAL NATIVES ENUMERATED AT CENSUS OF 1911.

Particulars.	N.S.W.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Federal Territory.	C'wth.
Males ..	1,152	103	5,145	802	3,433	2	743	5	11,385
Females ..	860	93	3,542	637	2,936	1	480	5	8,554
Total ..	2,012	196	8,687	1,439	6,369	3	1,223	10	19,939
Masculinity (a)	14.51	5.10	18.45	11.47	7.80	33.33	21.50	0.00	14.20

(a) Excess of males over females per 100 of the sexes combined.

These figures, as noted above, refer only to those natives who were, at the date of the Census, in the employ of whites or were living in contiguity to the settlements of whites.

In the Commonwealth Constitution Act provision is made for aboriginal natives to be excluded for all purposes for which statistics of population are made use of under the Act, but the opinion has been given by the Commonwealth Attorney-General that "in reckoning the population of the Commonwealth half-castes are not aboriginal natives within the meaning of section 127 of the Commonwealth of Australia Constitution Act, and should therefore be included." It may be added, however, that as "half-castes," living in the nomadic state, are practically indistinguishable from aboriginals, it has not always been found practicable to make the distinction, and further, that no authoritative definition of "half-caste" has yet been given.¹

(b) *Immigrant Races.* As regards the immigrant races, it may be said that they consist mainly of natives of the three divisions of the United Kingdom and their descendants. The proportion of Australian-born contained in the population of the Commonwealth has, in recent years, increased rapidly, and at the Census of 3rd April, 1911, out of a total population of 4,424,535 persons whose birthplaces were specified, no fewer than 3,667,670, or 82.90 per cent., were Australian born, while of the remainder, 590,722, or 13.35 per cent., were natives of the United Kingdom, and 31,868, or 0.72 per cent., were natives of New Zealand, that is, 96.97 per cent. of the total population at the date of the Census had been born in either Australasia or the United Kingdom. The other birthplaces most largely represented in the Commonwealth were Germany, 32,990 (0.75 per cent.); China, 20,775 (0.47 per cent.); Scandinavia (comprising Sweden, Norway and Denmark), 14,700 (0.33 per cent.); Polynesia, 3,410 (0.08 per cent.); British India, 6,644 (0.15 per cent.); United States of America, 6,642 (0.15 per cent.); and Italy, 6,719 (0.15 per cent.). The total population of Asiatic birth was 36,442 (0.82 per cent.), of whom 3,474 were born in Japan.

(c) *Non-European Races.* The Census taken on the 3rd April, 1911, was the first occasion on which a systematic attempt had been made to ascertain the number of persons of non-European races in Australia. On former occasions the inquiry did not usually extend further than a request that in all cases in which the person enumerated

1. An article on the Aborigines of Australia, specially written for the Year Book by W. Ramsay Smith, D.Sc., M.B., C.M., F.R.S.E., Permanent Head of the Department of Public Health of South Australia, will be found in Year Book No. 3, Section IV., § 12, page 158.

was an Aboriginal or a Chinese, whether of the full blood or of the half-blood, the fact should be specially noted in the column on the Census schedule relating to birthplace. At the last Census the inquiry as to race was made one of the leading items, and all persons of non-European race were required to have their race specified. From the figures so obtained the following table has been compiled :—

PERSONS OF NON-EUROPEAN RACE IN THE COMMONWEALTH, 3rd APRIL, 1911.
(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

States and Territories.	Australian.	Asiatic.		African.		American.		Polynesian.		Indefinite.		Total.	
	Half-caste Aborigines.	Full-blood.	Half-caste.	Full-blood.	Half-caste.	Full-blood.	Half-caste.	Full-blood.	Half-caste.	Full-blood.	Half-caste.	Full-blood.	Half-caste.
States—													
N. S. Wales ..	4,512	10,983	1,390	169	166	10	7	343	70	2	..	11,507	6,145
Victoria ..	447	5,972	1,056	58	63	6	9	12	5	1	2	6,049	1,582
Queensland ..	2,508	9,123	940	53	65	37	5	2,123	142	..	..	11,336	3,660
S. Australia ..	692	1,049	175	18	21	5	1	5	4	2	..	1,079	893
W. Australia ..	1,475	5,578	129	48	15	7	2	25	3	..	..	5,658	1,624
Tasmania ..	227	532	127	4	6	..	..	5	2	..	..	541	362
Territories—													
Northern ..	244	1,594	35	7	..	..	..	11	1	..	..	1,612	280
Federal ..	8	7	..	..	..	..	..	..	..	..	..	7	8
Total ..	10,113	34,838	3,852	357	336	65	24	2,524	227	5	2	37,789	14,554

The proportion of population of non-European race (exclusive of full-blooded aborigines) in each State is shewn in the following table, full-blood and half-caste non-Europeans being shewn separately :—

PROPORTION OF NON-EUROPEAN RACES IN THE COMMONWEALTH, 3rd APRIL, 1911.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

States and Territories.	Total Population.	Non-European Race.					
		Full-blood.		Half-caste.		Total.	
		Number.	Number per 1000 of Total Population.	Number.	Number per 1000 of Total Population.	Number.	Number per 1000 of Total Population.
States—							
N. S. Wales ..	1,646,734	11,507	6.99	6,145	3.73	17,652	10.72
Victoria ..	1,315,551	6,049	4.60	1,582	1.20	7,631	5.80
Queensland ..	605,813	11,336	18.71	3,660	6.04	14,996	24.75
S. Australia ..	408,558	1,079	2.64	893	2.19	1,972	4.83
W. Australia ..	282,114	5,658	20.05	1,624	5.76	7,282	25.81
Tasmania ..	191,211	541	2.83	362	1.89	903	4.72
Territories—							
Northern ..	3,310	1,612	487.01	280	84.59	1,892	571.60
Federal ..	1,714	7	4.08	8	4.67	15	8.75
Total C'wealth..	4,455,005	37,789	8.48	14,554	3.27	52,343	11.75

(ii) *Biological and Sociological Significance.* As regards race and nationality, therefore, the population of Australia is fundamentally British, and thus furnishes an example of the transplanting of a race into conditions greatly differing from those in which it had been developed. The biological and sociological significance of this will ultimately appear in the effects on the physical and moral constitution produced by the complete change of climatic and social environment, for the new conditions are likely to considerably modify both the physical characteristics and the social instincts of the constituents of the population. At present, the characteristics of the Australian population, whether physical, mental, moral, or social, are only in the making, and probably it will not be possible to point to a distinct Australian type until three or four generations more have passed. Even then, it is hardly likely that, with the great extent of

territory and varying conditions presented by the Commonwealth there will be but one type; on the contrary, a variety of types may be expected. The Australian, at present, is little other than a transplanted Briton, with the essential characteristics of his British forbears, the desire for freedom from restraint, however, being perhaps somewhat accentuated. The greater opportunity for an open-air existence, and the absence of the restrictions of older civilisations, may be held to be in the main responsible for this.

4. *Differences among the States and Territories.*—(i) *Sex Distribution.* The varying circumstances under which the settlement of the several States has been effected, and the essentially different conditions experienced in the due development of their respective resources have naturally led to somewhat marked differences in the constitution of their populations. In the matter of sex distribution, the States in which the normal condition of older countries is most nearly represented are those of Victoria, South Australia, and Tasmania, in the first-mentioned of which, the females have, for some years past, with the exception of the year 1913, exceeded the males. This was also the case in South Australia in the years 1914 to 1918. In Western Australia and Queensland, on the other hand, the position of affairs has been somewhat abnormal, the excess of males over females in each 100 of population in 1915 being respectively 7.73 and 5.95. In 1916 and subsequent years, these rates were much reduced, having fallen in 1918 to 3.02 and 1.69 respectively. In 1916 there was an excess of females over males for the first time in New South Wales to the extent of 0.61 in each 100 of the population, followed in 1917 by an excess of 1.05, and an excess of 0.77 in 1918.

In the Northern Territory, owing to lack of settlement, the masculinity has always been large, the figures for 1918 giving an excess of males over females in each 100 of population of nearly 54.

The variation in the masculinity of the estimated population of the several States and Territories and of the Commonwealth as a whole will be seen in the table on page 101.

(ii) *Age Distribution.* The disparity in sex distribution exhibited by the several States is accompanied by a corresponding inequality in the matter of age distribution. For the purpose of convenient comparison in this respect the several populations may each be divided into three groups, indicative of dependence on the one hand, and ability to support on the other. The usual division for this purpose is into an initial group of "under 15" classed as "dependent age," a second group of "15 and under 65" classed as "supporting age," and a final group of "65 and upwards" classed "old age." From certain points of view the division might be into two classes, the "supporting" and the "dependent," as the majority of those aged "65 and upwards" strictly belong to the dependent class. The number of persons in each State at the Census, 3rd April, 1911, in each of the three groups mentioned, and the proportion of same to the total for each State and the Commonwealth, were as follows:—

**NUMBER AND PROPORTION OF PERSONS IN THE COMMONWEALTH OF
DEPENDENT, SUPPORTING, AND OLD AGE, ON 3rd APRIL, 1911.**

State or Territory.	Number of Persons of—				Proportion of Population of—		
	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).	All ages.	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).
States—					%	%	%
New South Wales	526,625	1,053,400	66,709	1,646,734	31.98	63.97	4.05
Victoria ..	400,260	847,700	67,591	1,315,551	30.42	64.44	5.14
Queensland ..	200,020	383,330	22,463	605,813	33.01	63.28	3.71
South Australia	127,290	262,356	18,912	408,558	31.15	64.22	4.63
Western Australia	87,884	187,574	6,656	282,114	31.15	66.49	2.36
Tasmania ..	66,708	116,604	7,899	191,211	34.89	60.98	4.13
Territories—							
Northern ..	485	2,708	117	3,310	14.65	81.81	3.54
Federal ..	551	1,081	82	1,714	32.15	63.07	4.78
Commonwealth ..	1,409,823	2,854,753	190,429	4,455,005	31.65	64.08	4.27

In Western Australia the proportion of its population of supporting age was larger than in any other State, whilst the corresponding Tasmanian proportion was the lowest for the Commonwealth. On the other hand, in Tasmania the proportion of dependent age was the highest for the Commonwealth, while the Victorian proportion was the lowest. Victoria had the highest and Western Australia the lowest proportion of persons aged 65 years and upwards.

In the Northern Territory the proportions are quite exceptional, the percentage of those of dependent age being much lower, and that for supporting age being much higher, than in any other part of the Commonwealth.

(iii) *Birthplaces.* The following table exhibits, in a very condensed form, the distribution of the population of the several States and Territories according to birthplace:—

BIRTHPLACES OF POPULATION AT CENSUS OF 3rd APRIL, 1911.
(COMMONWEALTH.)

Birthplace.	Population of Commonwealth at Census.								
	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal.	
Australia ..	1,377,219	1,108,945	446,695	350,261	209,050	172,497	1,505	1,498	3,667,670
New Zealand	13,963	10,067	2,576	986	3,054	1,200	18	4	31,868
United Kingdom	204,394	157,436	120,015	44,431	50,552	13,472	262	160	590,722
Other European Countries	19,771	15,346	20,227	7,989	9,428	1,134	49	5	73,949
Asia ..	11,463	6,676	8,867	1,244	5,996	778	1,413	5	36,442
Africa ..	1,999	1,498	527	357	423	145	9	..	4,958
America ..	4,424	2,983	1,688	764	1,123	279	12	5	11,278
Polynesia	1,204	279	1,728	55	88	44	12	..	3,410
At Sea ..	1,479	1,303	629	422	281	122	2	..	4,238
Unspecified	10,818	11,018	2,861	2,049	2,119	1,540	28	37	30,470
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

The proportions for the several States and Territories for each of the birthplaces shewn in the foregoing table expressed as percentages of the total population, the birthplaces of which were specified, are as follows:—

PERCENTAGE OF COMMONWEALTH POPULATION ACCORDING TO BIRTHPLACE, 3rd April, 1911.

Birthplace.	Percentage of Total Population.								
	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal.	
	%	%	%	%	%	%	%	%	%
Australia ..	84.19	85.01	74.09	86.16	74.66	90.95	45.86	89.32	82.90
New Zealand	0.86	0.77	0.43	0.24	1.10	0.63	0.55	0.24	0.72
U. Kingdom	12.49	12.07	19.90	10.93	18.05	7.10	7.98	9.54	13.35
Other E'pean Countries	1.21	1.18	3.35	1.97	3.37	0.60	1.49	0.30	1.67
Asia ..	0.70	0.51	1.47	0.31	2.14	0.41	43.05	0.30	0.82
Africa ..	0.12	0.11	0.09	0.09	0.15	0.08	0.27	..	0.11
America ..	0.27	0.23	0.28	0.19	0.40	0.15	0.37	0.30	0.25
Polynesia ..	0.07	0.02	0.29	0.01	0.03	0.02	0.37	..	0.08
At Sea ..	0.09	0.10	0.10	0.10	0.10	0.06	0.06	..	0.10
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

As regards distribution in the States according to birthplace, the population of New South Wales is very similar to that of Victoria, the proportions born in the United Kingdom and Asia being slightly higher, and that born in Australia slightly lower, in the case of New South Wales. There is also a rough similarity between the birthplace distributions

of Queensland and Western Australia. In both, the Australian-born represent a much smaller, and those born in the United Kingdom, in "Other European Countries" and in Asia, a much larger proportion than is the case with the remaining States. Polynesians were, however, more numerous represented in Queensland at the date of the Census than in any other State. Natives of New Zealand were, proportionately, most numerous in Western Australia. Tasmania had the largest proportion of Australian-born population, viz., 91 per cent., while Queensland, with 74 per cent., had the smallest. On the other hand, nearly 20 per cent. of Queensland's population consisted of natives of the United Kingdom, while only 7 per cent. of the population of Tasmania had been born there. For the Commonwealth as a whole, over 98½ per cent. of the population were from Australasian or European birthplaces.

In the case of the Northern Territory, about 46 per cent. of the population were Australian born, while 43 per cent. were of Asiatic birth.

§ 4. Elements of Growth of Population.

1. **Natural Increase.**—The two factors which contribute to the growth of a population are the "natural increase" by excess of births over deaths, and the "net immigration," i.e., the excess of arrivals over departures. While the relative potency of these factors depends upon a variety of causes, it may be said that, in general, in the case of a new country "net immigration" occupies an important position as a source of increase of population, while in an old country "natural increase," modified more or less by "net emigration," or excess of departures over arrivals, is the principal element causing growth of population. The table hereunder gives the total natural increase, as well as that of males and females:—

NATURAL INCREASE (a) OF THE POPULATION
OF STATES, TERRITORIES, AND COMMONWEALTH, FROM 1861 TO 1918.

Period.	States.						Territories.		C'wealth.
	N.S.W. (b)	Victoria.	Q'land.	S. Aust. (c)	W.Aust.	Tas.	North- ern. (d)	Federal. (e)	
MALES.									
1861 to 1865	22,055	34,286	2,444	9,645	765	3,893	..	..	73,088
1866 to 1870	25,850	34,997	5,739	10,881	754	3,281	..	..	81,502
1871 to 1875	30,067	35,132	6,704	9,979	710	3,077	..	..	85,669
1876 to 1880	34,040	31,985	7,960	13,676	1,023	3,472	..	..	92,156
1881 to 1885	42,658	33,614	7,986	16,969	1,002	5,284	..	..	107,513
1886 to 1890	54,753	39,528	17,872	16,519	1,755	6,093	..	..	136,520
1891 to 1895	56,834	45,606	20,525	15,758	1,436	6,889	..	..	147,048
1896 to 1900	48,692	33,645	17,724	12,562	3,402	6,373	..	..	122,398
1901 to 1905	51,179	34,332	16,628	12,149	8,263	7,955	-223	..	130,303
1906 to 1910	64,127	38,948	21,415	14,500	10,782	8,703	-264	..	158,191
1911 to 1915	77,070	46,160	27,497	18,673	12,730	9,386	-201	78	191,393
1916 to 1918	46,760	26,083	16,772	10,200	6,555	5,277	-81	68	111,634
1861 to 1918	554,085	434,316	169,266	161,511	49,177	69,683	-769	146	1,437,415
FEMALES.									
1861 to 1865	26,343	39,615	3,566	9,987	1,105	4,608	..	..	85,224
1866 to 1870	30,327	40,919	7,571	11,223	1,301	4,451	..	..	95,792
1871 to 1875	35,567	41,472	9,706	10,944	1,255	4,192	..	..	103,136
1876 to 1880	40,276	37,551	12,291	14,608	1,585	4,699	..	..	111,010
1881 to 1885	50,204	39,833	15,262	18,033	1,738	6,364	..	..	131,434
1886 to 1890	62,090	48,131	24,238	17,320	2,609	7,228	..	..	161,616
1891 to 1895	63,930	53,190	25,757	16,792	3,376	7,781	..	..	170,826
1896 to 1900	57,107	40,474	24,037	13,443	7,054	6,718	..	..	148,833
1901 to 1905	59,163	39,831	22,910	12,701	11,468	8,027	28	..	154,128
1906 to 1910	71,297	42,629	26,048	14,754	13,354	8,522	33	..	176,637
1911 to 1915	87,074	50,258	33,463	19,318	16,262	9,604	62	78	216,119
1916 to 1918	51,874	26,561	20,243	10,508	8,309	5,395	70	61	123,021
1861 to 1918	635,252	500,464	225,092	169,631	69,416	77,589	193	139	1,677,776

(a) Excess of births over deaths. (b) Including Federal Territory prior to 1911. (c) Including Northern Territory prior to 1901. (d) Included in South Australia prior to 1901.

(e) Part of New South Wales prior to 1911.

NOTE.—Minus sign (—) denotes excess of deaths over births.

NATURAL INCREASE (a) OF THE POPULATION
OF STATES, TERRITORIES, AND COMMONWEALTH, FROM 1861 TO 1918—*continued.*

Period.	States.						Territories.		C'wealth.
	N.S.W. (b)	Victoria.	Q'land.	S. Aust. (c)	W. Aust.	Tas.	North- orn. (d)	Feder- al. (e)	
PERSONS.									
1861 to 1865	48,398	73,901	6,010	19,632	1,870	8,501	..	..	158,312
1866 to 1870	56,177	75,916	13,310	22,104	2,055	7,732	..	..	177,294
1871 to 1875	65,634	76,604	16,410	20,923	1,965	7,269	..	..	188,805
1876 to 1880	74,316	69,536	20,251	28,284	2,608	8,171	..	..	203,166
1881 to 1885	92,862	73,447	23,248	35,002	2,740	11,648	..	..	238,947
1886 to 1890	116,843	87,659	42,110	33,839	4,364	13,321	..	..	298,136
1891 to 1895	120,764	98,796	46,282	32,550	4,812	14,670	..	..	317,874
1896 to 1900	105,799	74,119	41,761	26,005	10,456	13,091	..	..	271,231
1901 to 1905	110,342	74,163	39,538	24,850	19,751	15,982	-195	..	284,431
1906 to 1910	135,424	81,577	47,463	29,254	24,116	17,225	-231	..	334,828
1911 to 1915	164,144	96,418	60,960	37,991	28,992	18,990	-139	156	407,512
1916 to 1918	98,634	52,644	37,015	20,708	14,864	10,672	-11	129	234,655
1861 to 1918	1,189,337	934,780	394,358	331,142	118,593	147,272	-576	285	3,115,191

(a) Excess of births over deaths. (b) Including Federal Territory prior to 1911. (c) Including Northern Territory prior to 1901. (d) Included in South Australia prior to 1901. (e) Part of New South Wales prior to 1911.

NOTE.—Minus sign (-) denotes excess of deaths over births.

With two exceptions, viz., Tasmania for the period 1906 to 1910 and the Federal Territory for the period 1916 to 1918, the natural increase of females exceeded that of males throughout the years referred to in the foregoing table. The quinquennial period in which the largest natural increase of population took place was that of 1911-15 with a total for the Commonwealth of 407,512. For the individual States the quinquennia of maximum natural increase were as follows:—New South Wales, Queensland, South Australia, Western Australia, and Tasmania, 1911-15; and Victoria, 1891-5.

2. Comparison with other Countries.—Notwithstanding its comparatively low birth-rate, Australia has a high rate of natural increase, owing to the fact that its death-rate is a very low one. The following table furnishes a comparison between the average rates per annum of natural increase for some of the principal countries of the world for which such information is available, and those for the several States of the Commonwealth and the Dominion of New Zealand:—

NATURAL INCREASE PER ANNUM PER 1,000 OF MEAN POPULATION.

(VARIOUS COUNTRIES.)

Country.	Natural Increase per 1,000.	Country.	Natural Increase per 1,000.	Country.	Natural Increase per 1,000.
Australasia (1914-18)—		Europe— <i>continued.</i>		Europe— <i>continued.</i>	
Tasmania ..	18.63	Serbia ..	(b) 14.12	Belgium ..	(b) 7.83
Queensland ..	18.45	Prussia ..	(c) 13.63	Ireland ..	(g) 4.46
New South Wales	17.80	Denmark ..	(e) 12.87	France ..	(d) 0.43
Western Australia	17.12	Germany ..	(d) 12.30	Asia (1911-15)—	
South Australia	16.48	Finland ..	(d) 12.25	Japan ..	(d) 13.42
Commonwealth	16.34	Italy ..	(e) 12.10	Ceylon ..	6.46
New Zealand ..	14.78	Norway ..	(e) 11.82	America (1912-16)—	
Victoria ..	12.90	Hungary ..	(b) 11.77	Jamaica ..	13.71
Europe—		Austria ..	(b) 10.64	Canada (Province of Ontario)	(e) 11.18
Bulgaria ..	(a) 17.73	Scotland ..	(g) 8.26	Chile ..	10.29
Rumania ..	(d) 17.39	England & Wales	(f) 9.20		
Netherlands ..	(f) 14.92	Sweden ..	(e) 9.06		
		Spain ..	(d) 8.91		
		Switzerland ..	(e) 8.41		

(a) 1907-11. (b) 1908-12. (c) 1909-13. (d) 1910-14. (e) 1911-15. (f) 1912-16. (g) 1913-17.

The graphs of natural increase for each of the States, as well as for the Commonwealth, are shewn on page 144.

3. **Net Immigration.**—The other factor of increase in the population, viz., the excess of arrivals over departures, known as "net immigration," is, from its nature, much more subject to marked and extensive variation than is the factor of "natural increase." These variations are due to numerous causes, many of which have already been referred to in dealing with the influences which affect the growth of population. An important cause, not yet referred to, is that of assisted immigration. The number of persons so introduced varies considerably in different years.

**NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES,
STATES, TERRITORIES, AND COMMONWEALTH, FROM 1861 TO 1918 INCLUSIVE.**

Period.	States.						Territories.		Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North- ern. (b)	Feder- al. (c)	
MALES.									
1861 to 1865	2,084	-15,871	34,031	10,270	3,213	-2,997	..	..	31,630
1866 to 1870	23,381	13,516	10,190	-242	1,182	-313	..	..	47,714
1871 to 1875	20,346	-8,093	26,236	3,833	-80	-1,916	..	..	40,326
1876 to 1880	48,378	-5,696	13,892	25,056	-179	2,418	..	..	83,869
1881 to 1885	70,996	19,925	54,867	-1,982	2,701	1,860	..	..	148,367
1886 to 1890	29,345	51,894	18,514	-12,895	6,411	2,648	..	..	95,917
1891 to 1895	8,671	-33,192	5,088	-1,493	39,443	-2,857	..	..	15,660
1896 to 1900	854	-39,805	8,095	-8,239	36,953	2,905	..	..	945
1901 to 1905	15,671	-37,971	495	-11,031	28,127	-1,771	-697	..	7,177
1906 to 1910	11,157	9,400	12,291	10,590	711	-5,784	-366	..	37,999
1911 to 1915	18,878	2,223	6,531	-14,365	603	6,491	1,150	90	8,439
1916 to 1918	-42,197	-34,827	-23,222	-16,457	-16,395	-1,604	71	154	-134,477
1861 to 1918	206,756	-78,497	167,008	-16,955	102,690	-13,902	158	64	367,322
FEMALES.									
1861 to 1865	8,578	21,527	18,824	5,993	952	-1,358	..	..	54,516
1866 to 1870	9,928	16,702	4,851	1,207	517	-500	..	..	32,705
1871 to 1875	9,395	2,498	11,187	774	-18	-2,500	..	..	21,336
1876 to 1880	25,081	-169	7,792	12,977	130	462	..	..	46,273
1881 to 1885	38,867	7,861	27,526	-100	957	562	..	..	75,673
1886 to 1890	23,220	34,337	14,811	-11,310	1,768	-42	..	..	62,784
1891 to 1895	12,793	-13,656	-422	1,964	7,758	-1,705	..	..	6,732
1896 to 1900	143	-23,777	927	-7,627	32,043	2,009	..	..	3,432
1901 to 1905	1,566	-21,984	-2,398	-8,448	22,293	-726	81	..	-9,616
1906 to 1910	9,390	10	7,780	4,403	1,867	-4,023	-148	..	19,279
1911 to 1915	45,187	20,342	12,168	6,576	11,589	-5,277	251	118	90,954
1916 to 1918	3,384	-6,235	1,972	3,172	-3,038	-1,220	158	120	-1,687
1861 to 1918	187,246	37,456	105,018	9,581	76,818	-14,318	342	238	402,381
PERSONS.									
1861 to 1865	11,562	5,656	52,855	16,263	4,165	-4,355	..	..	86,146
1866 to 1870	33,309	30,218	15,041	965	1,699	-813	..	..	80,419
1871 to 1875	29,741	-5,595	37,423	4,607	-98	-4,416	..	..	61,662
1876 to 1880	73,459	-5,865	21,684	38,033	-49	2,880	..	..	130,142
1881 to 1885	109,863	27,786	82,393	-2,082	3,658	2,422	..	..	224,040
1886 to 1890	52,565	86,231	33,325	-24,205	8,179	2,606	..	..	158,701
1891 to 1895	21,464	-46,848	4,666	471	47,201	-4,562	..	..	22,392
1896 to 1900	997	-63,582	9,022	-15,866	68,996	4,914	..	..	2,487
1901 to 1905	17,237	-59,955	-1,903	-19,479	50,420	-2,497	-616	..	16,793
1906 to 1910	20,547	9,410	20,071	14,993	2,578	-9,807	-514	..	57,278
1911 to 1915	64,065	22,565	18,699	-7,789	12,192	-11,768	1,401	28	99,393
1916 to 1918	-38,813	-41,062	-21,250	-13,285	-19,433	-2,824	229	274	-136,164
1861 to 1918	394,002	-41,041	272,026	-7,374	179,508	-28,220	500	302	769,703

NOTE.—The minus sign (–) signifies that the number of departures was in excess of arrivals.

(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900.

(c) Part of New South Wales prior to 1911.

During the period 1861-1918, viz., 58 years, the gain to the Commonwealth population by excess of arrivals over departures was 769,703 persons, while the gain by excess of births over deaths for the same period was 3,115,191. That is, 20 per cent. of the increase for the Commonwealth during the past 58 years has been due to "net immigration" and 80 per cent. to "natural increase." In regard to the contribution by individual States to the total net immigration of 769,703, three of them, viz., New South Wales, Queensland, and Western Australia, shewed gains of 394,002, 272,026, and 179,508 respectively, while the remaining three, viz., Victoria, South Australia, and Tasmania shewed losses of 41,041, 7,374, and 28,220 respectively.

The quinquennial period in which the greatest net immigration to the Commonwealth occurred was that of 1881-5 with a total of 224,040, whilst in the period 1901-5, the departures exceeded the arrivals by 16,793. The quinquennial periods in which maximum net immigration occurred in the several States were as follows:—New South Wales and Queensland 1881-5, Victoria 1886-90, South Australia 1876-80, Western Australia and Tasmania 1896-1900. In all the States quinquennial periods have occurred in which the departures for the five years have exceeded the arrivals. The periods in which such net emigration from the several States was greatest were as follows:—New South Wales and Victoria 1896-1900, Queensland 1901-5, South Australia 1886-90, Western Australia 1871-5, and Tasmania 1911-15. In the three years 1916, 1917 and 1918 a net emigration of 136,164 was experienced, all the States having contributed to that total. This was mainly due to the large numbers who joined the oversea forces in Europe and elsewhere owing to the war.

4. **Total Increase.**—The total increase of the population is found by the combination of the natural increase with the net immigration.

In the following table are set out the figures shewing the total increase in each quinquennium from 1861 to 1915 and for the three years 1916 to 1918:—

TOTAL INCREASE OF THE POPULATION OF THE STATES, TERRITORIES, AND COMMONWEALTH FROM 1861 TO 1918.

Period.	States.					Territories.			Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal.	
				(a)			(b)	(c)	
MALES.									
1861 to 1865	25,039	18,415	36,475	19,915	3,978	896	..	..	104,718
1866 to 1870	49,231	48,513	15,929	10,639	1,936	2,968	..	..	129,216
1871 to 1875	50,413	27,039	32,940	13,812	630	1,161	..	..	125,995
1876 to 1880	82,418	26,289	21,852	38,732	844	5,890	..	..	176,025
1881 to 1885	113,654	53,539	62,853	14,987	3,703	7,144	..	..	255,880
1886 to 1890	84,098	91,422	36,386	3,624	8,166	8,741	..	..	232,437
1891 to 1895	65,505	12,414	25,613	14,265	40,879	4,032	..	..	162,708
1896 to 1900	47,838	- 6,160	25,819	4,323	40,355	9,278	..	..	121,453
1901 to 1905	66,850	- 3,639	17,123	1,118	36,410	6,184	- 920	..	123,126
1906 to 1910	75,284	48,348	33,706	25,090	11,473	2,919	- 630	..	196,190
1911 to 1915	95,948	47,168	34,028	5,523	13,333	2,895	949	- 12	199,832
1916 to 1918	4,563	- 8,744	- 6,450	- 6,257	- 9,840	3,673	- 10	222	- 22,843
1861 to 1918	760,841	354,604	336,274	145,771	151,867	55,781	- 611	210	1,804,737

NOTE.—The minus sign (—) denotes decrease.

(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900.
(c) Part of New South Wales prior to 1911.

TOTAL INCREASE OF THE POPULATION OF THE STATES, TERRITORIES,
AND COMMONWEALTH FROM 1861 TO 1918—*continued.*

Period.	States.						Territories.		Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North- ern. (b)	Federal. (c)	
FEMALES.									
1861 to 1865	34,921	61,142	22,390	15,980	2,057	3,250	..	..	139,740
1866 to 1870	40,255	57,621	12,422	12,430	1,818	3,951	..	..	128,497
1871 to 1875	44,962	43,970	20,893	11,718	1,237	1,692	..	..	124,472
1876 to 1880	65,357	37,382	20,083	27,585	1,715	5,161	..	..	157,283
1881 to 1885	89,071	47,694	42,788	17,933	2,695	6,926	..	..	207,107
1886 to 1890	85,310	82,468	39,049	6,010	4,377	7,186	..	..	224,400
1891 to 1895	76,723	39,534	25,335	18,756	11,134	6,076	..	..	177,558
1896 to 1900	56,964	16,697	24,964	5,816	39,097	8,727	..	..	152,265
1901 to 1905	60,729	17,847	20,512	4,253	33,761	7,301	109	..	144,512
1906 to 1910	80,687	42,639	33,828	19,157	15,221	4,499	115	..	195,916
1911 to 1915	132,261	70,600	45,631	25,894	27,851	4,327	313	196	307,073
1916 to 1918	55,258	20,326	22,215	13,680	5,271	4,175	228	181	121,334
1861 to 1918	822,498	537,920	330,110	179,212	146,234	63,271	535	377	2,080,157
PERSONS.									
1861 to 1865	59,960	79,557	58,865	35,895	6,035	4,146	..	..	244,458
1866 to 1870	89,486	106,134	28,351	23,069	3,754	6,919	..	..	257,713
1871 to 1875	95,375	71,009	53,833	25,530	1,867	2,853	..	..	250,467
1876 to 1880	147,775	63,671	41,935	66,317	2,559	11,051	..	..	333,308
1881 to 1885	202,725	101,233	105,641	32,920	6,398	14,070	..	..	462,987
1886 to 1890	169,408	173,890	75,435	9,634	12,543	15,927	..	..	456,837
1891 to 1895	142,228	51,948	50,948	33,021	52,013	10,108	..	..	340,266
1896 to 1900	104,802	10,537	50,783	10,139	79,452	18,005	..	..	273,718
1901 to 1905	127,579	14,208	37,635	5,371	70,171	13,485	811	..	267,638
1906 to 1910	155,971	90,937	67,534	44,247	26,694	7,418	745	..	392,106
1911 to 1915	228,209	117,768	79,659	31,417	41,184	7,222	1,262	184	506,905
1916 to 1918	59,821	11,582	15,765	7,423	4,569	7,848	218	403	98,491
1861 to 1918	1,583,339	892,524	666,384	324,983	298,101	119,052	76	587	3,884,894

NOTE.—The minus sign (—) denotes decrease.

(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900.

(c) Part of New South Wales prior to 1911.

As regards the Commonwealth as a whole, the greatest increase in any quinquennium up to 1910 was that for the period 1881–5, viz., 462,987. These figures were, however, closely approached by those for the succeeding quinquennium, viz., 456,837. The rate of increase fell off, however, in the three subsequent quinquennia, the increase for the years 1901–5 being 267,638. In the following quinquennium an improvement set in, the increase in that period being 392,106. This was followed by a further improvement in the quinquennium 1911–15, the first three years of which gave increases of 143,624, 164,652, and 138,700 respectively. In the two succeeding years a falling-off was recorded, but this must be taken as having been caused by the war, there having been an excess of departures over arrivals in the two years of 17,370 and 91,053 respectively. In spite of this adverse influence, the increase for the quinquennium 1911–15 was 506,905, the highest quinquennial increase yet recorded for the Commonwealth.

As regards the individual States the maximum increases in any quinquennium are as follows:—New South Wales, 228,209, in 1911–15; Victoria, 173,890, in 1886–90; Queensland, 105,641, in 1881–5; South Australia (including the Northern Territory), 66,317, in 1876–80; Western Australia, 79,452, in 1896–1900; Tasmania, 18,005, in 1896–1900.

As regards the minimum quinquennial increases, it will be seen that they have occurred as under—New South Wales, 59,960, in 1861-5; Victoria, 10,537, in 1896-1900; Queensland, 28,351, in 1866-70; South Australia, 5,371, in 1901-5; Western Australia, 1,867, in 1871-5; Tasmania, 2,853, in 1871-5.

In the three years 1916, 1917 and 1918 the net increase has been small, viz., 98,491, but this is mainly due to the net emigration of 136,164 in those years, to which allusion has already been made.

The graphs shewing net increase, both for the Commonwealth as a whole and for each of the States, will be found on pages 142 and 143.

5. Rates of Increase.—(i) *Rates for various Countries.* The table hereunder furnishes particulars concerning rates of increase in population for the Commonwealth, its component States, and other countries:—

RATES OF INCREASE IN POPULATION, 1881 TO 1918 (VARIOUS COUNTRIES).

Countries.	Mean Annual Rate of Increase in Population during period—							
	1881 to 1886.	1886 to 1891.	1891 to 1896.	1896 to 1901.	1901 to 1906.	1906 to 1911.	1911 to 1916.	1916 to 1918.
	%	%	%	%	%	%	%	%
AUSTRALASIA—								
Commonwealth ..	3.86	3.06	1.86	1.49	1.38	2.03	1.79	0.74
New South Wales (a)	4.83	3.23	1.99	1.57	1.99	2.03	2.36	1.18
Victoria ..	2.60	3.12	0.37	0.52	0.18	2.17	1.31	0.31
Queensland ..	8.42	3.80	2.49	2.25	1.35	2.76	1.98	0.80
South Australia (b)	1.41	1.15	1.63	0.77	0.27	2.46	1.11	0.81
Western Australia	6.13	5.54	20.81	7.25	6.22	2.43	1.88	-0.58
Tasmania ..	2.18	2.87	1.06	1.83	1.33	0.65	0.81	1.41
New Zealand ..	3.31	1.47	2.41	1.98	2.86	2.56	1.61	0.16
EUROPE—								
England and Wales	1.11	1.11	1.15	1.15	1.04	1.04	-0.95	..
Scotland ..	0.75	0.75	1.06	1.06	0.55	0.56	0.31	..
Ireland ..	-0.95	-0.94	-0.60	-0.43	-0.22	-0.06	-0.21	..
Austria ..	0.73	0.83	0.79	1.05	0.87	0.86	(c) 0.80	..
Belgium ..	1.13	0.75	1.15	0.92	1.26	0.69	(d) 0.99	..
Denmark ..	1.05	0.87	0.99	1.32	1.12	1.26	(f) 1.16	..
Finland ..	1.42	1.51	1.20	1.41	1.36	1.43	(e) 1.22	..
France ..	0.34	0.06	0.09	0.24	0.15	0.16	(d) 0.12	..
Germany ..	0.74	1.09	1.17	1.51	1.46	1.36	(e) 1.24	..
Hungary ..	1.09	1.01	0.92	1.03	0.77	0.84	(c) 0.84	..
Italy ..	0.66	0.71	0.68	0.61	0.52	0.80	(f) 1.18	..
Netherlands	1.32	1.03	1.28	1.30	1.53	1.22	1.72	..
Norway ..	0.36	0.54	0.96	1.31	0.52	0.66	(f) 0.98	..
Prussia ..	0.79	1.15	1.29	1.59	1.57	1.48	(d) 1.29	..
Rumania ..	1.77	1.34	1.15	1.41	1.46	1.48	(e) 2.80	..
Serbia ..	2.30	2.08	1.37	1.57	1.52	1.55	(c) 1.72	..
Spain ..	0.54	0.48	0.45	0.45	0.52	0.87	(f) 0.66	..
Sweden ..	0.57	0.40	0.61	0.86	0.61	0.84	(f) 0.69	..
Switzerland	0.38	0.40	1.22	1.10	1.28	1.17	(f) 0.65	..
ASIA—								
Ceylon ..	0.54	1.35	1.41	2.03	1.62	1.20	1.71	..
Japan ..	0.96	1.12	0.96	1.25	1.29	1.08	1.42	(g) 1.60
AMERICA								
Canada ..	1.10	1.08	0.97	1.19	2.99	2.99	(e) 3.87	..
Chile ..	2.97	0.72	2.66	0.90	1.53	1.56	1.66	..
Jamaica ..	0.77	1.37	1.66	1.72	1.63	0.28	1.36	..
United States	2.27	2.15	1.93	2.02	2.00	1.82	1.67	..

NOTE.—The minus sign (—) denotes decrease.

(a) Including Federal Territory.

(b) Including Northern Territory.

(c) 1911 to 1912.

(d) 1911 to 1913.

(e) 1911 to 1914.

(f) 1911 to 1915.

(g) 1916 to 1917.

(ii) *Variations in the Commonwealth Rate.* During the twenty-five years 1881-1906 the annual rate of increase in the population of the Commonwealth exhibited a marked decline, falling from an average of 3.86 per cent. for the five years 1881-6 to an average of 1.38 for 1901-6. During the succeeding quinquennium, however, an improvement took place, the rate of increase being 2.03. In the following quinquennium there was a decline owing to the war. As regards the separate States of the Commonwealth, it will be seen that though the rates of increase for the quinquennium 1911-16 were in all cases lower than those for the quinquennia 1881-6 and 1886-91, it is only in the case of Western Australia that the 1911-16 rate represents the minimum for the seven quinquennia under review.

(iii) *Comparison of Rates of Increase.* It may be noted that the highest rates of increase for the period 1906-11 are those for Canada, New Zealand, and the Commonwealth of Australia in the order named. The United States, Chile and Serbia rank next in order.

6. *Density of Population.*—From one aspect population may be less significant in respect of its absolute amount than in respect of the density of its distribution. The Commonwealth of Australia, with an area of 2,974,581 square miles, and a population on 31st December, 1918, of 5,130,479, including aboriginals, has a density of only 1.72 persons to the square mile, and is therefore the most sparsely populated of the civilised countries of the world. For the other continents the densities are approximately as follows:—Europe, 123; Asia, 53; Africa, 11; North and Central America, 16; and South America, 8. The population of the Commonwealth has thus about 21½ per cent. of the density of that of South America; about 15½ per cent. of that of Africa; about 10½ per cent. of that of North and Central America; about 3¼ per cent. of that of Asia; and about 1½ per cent. of that of Europe.

Particulars concerning the number and density of the population of the various countries of the world for the latest dates for which such information is available are given in the following table. These figures have in the main been derived from the 1918 issue of the "Statesman's Year Book," and in some instances, more particularly in the case of Africa, must be considered as rough approximations only, complete data not being obtainable. As already mentioned on page 49 *ante* the areas dealt with in the following table are those which prevailed as at the outbreak of war:—

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD.

Country.	Population.		Country.	Population.	
	Number.	Density. (a)		Number.	Density (a)
Continents—			EUROPE—continued.		
Europe	475,183,776	123.05	Rumania	7,508,009	140.37
Asia	893,227,850	53.05	Netherlands	6,583,227	523.23
Africa	140,712,204	11.37	Portugal	5,957,985	167.88
North & Central America and the West Indies	140,612,181	16.45	Sweden	5,757,566	33.27
South America ..	53,914,984	7.99	Bulgaria & E. Roumelia	5,517,700	115.55
Australasia & Polynesia	8,154,561	2.36	Greece (including Crete)	4,821,300	114.98
Total	1,716,805,556	32.73	Serbia	4,615,567	136.19
			Switzerland	3,880,500	242.90
			Denmark (incl. Iceland)	3,026,167	54.69
			Norway	2,440,500	19.58
Europe—			Turkey	1,891,000	173.77
Russia (including Poland Ciscaucasia & Finland)	153,041,100	72.09	Albania	850,000	75.11
Germany	67,812,000	324.80	Montenegro	436,789	77.96
Austria-Hungary (incl. Bosnia & Herzegovina)	52,290,566	200.15	Luxemburg	259,891	260.41
United Kingdom ..	43,661,308	358.95	Malta	223,741	1,896.10
France	39,700,000	191.74	Monaco	22,956	2,869.50
Italy	36,546,437	330.34	Gibraltar	16,499	8,249.50
Spain (incl. Canary and Balearic Islands) ..	20,723,986	106.40	San Marino	11,648	306.53
Belgium	7,571,387	665.73	Liechtenstein	10,716	164.86
			Andorra	5,231	27.39
			Total	475,183,776	123.05

(a) Number of persons per square mile.

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD—*continued.*

Country.	Population.		Country.	Population.	
	Number.	Density. (a)		Number.	Density. (a)
Asia—			AFRICA—<i>continued.</i>		
China & Dependencies ..	320,653,000	81.93	Gold Coast and Protect. . .	1,503,386	18.79
British India ..	214,267,542	223.47	Ivory Coast ..	1,417,029	11.29
Japan & Dep. (incl. Korea)	78,152,244	299.35	Sierra Leone and Protect. . .	1,403,132	45.26
Feudatory Indian States	70,888,854	99.91	Senegal ..	1,247,979	16.86
Dutch East Indies ..	47,800,000	81.96	Nyassaland Protectorate	1,141,122	28.84
Russia in Asia ..	29,141,500	4.39	Togoland ..	1,032,346	30.63
Turkey in Asia ..	19,382,900	27.72	Portuguese Guinea ..	1,000,000	40.00
Arabia (Independent) ..	12,000,000	12.00	Dahomey ..	911,749	24.30
Persia ..	9,500,000	15.13	Military Territory of the		
Philippine Islands ..	9,000,000	78.67	Niger (French) ..	850,094	1.59
Siam ..	8,819,686	45.23	French Sahara ..	800,000	0.52
Afghanistan ..	6,380,500	26.04	Mauretania ..	600,000	1.74
Tonking ..	6,119,720	132.40	Tripoli and Benghazi ..	528,676	1.30
Nepal ..	5,939,092	109.98	Eritrea ..	450,000	9.83
Annam ..	5,200,000	84.25	Italian Somaliland ..	450,000	3.23
Ceylon ..	4,547,200	179.50	Basutoland ..	405,903	34.65
Cochin China ..	3,050,785	138.75	Mauritius and Depend. . .	389,599	451.58
Cambodia ..	1,634,252	24.13	British Somaliland ..	300,000	4.41
Bokhara ..	1,250,000	15.06	French Somali Coast, &c.	208,000	4.49
Kiauchau, Neutral Zone	1,200,000	480.00	Rio Munt & C. San Juan	200,000	16.67
Federated Malay States	1,036,999	37.70	Zanzibar ..	197,199	193.33
Malay Protectorate ..	899,937	38.32	Réunion ..	173,822	180.13
Straits Settlements ..	812,793	508.00	German S. W. Africa ..	159,830	0.50
Borneo and Sarawak ..	708,183	9.69	Cape Verde Islands ..	149,793	101.21
Khiva ..	646,000	26.92	Gambia & Protectorate	145,700	32.35
Laos ..	640,877	5.73	Bechuanaland Protect. . .	125,350	0.46
Hong Kong & Territory	529,000	1,352.94	Swaziland ..	99,959	15.29
Goa ..	515,772	351.10	Comoro Islands ..	84,117	121.21
Oman ..	500,000	6.10	Spanish N. & W. Africa	68,536	787.77
Timor, &c. ..	377,815	51.54	St. Thomas & Prince Is.	58,907	129.75
Cyprus ..	298,775	83.36	Seychelles ..	24,100	154.54
French India ..	268,499	1,369.89	Fernando Po, &c. ..	23,844	29.29
Bhutan ..	250,000	12.50	Mayotte ..	13,500	94.41
Kiauchau (German) ..	192,000	960.00	Rio de Oro & Adrar ..	12,000	0.16
Kwang Chau Wan ..	168,000	435.23	St. Helena ..	3,604	76.68
Wei-hai-wei ..	147,177	516.41	Ascension ..	196	5.76
Bahrein Islands ..	103,000	412.00			
Macao, &c. ..	74,866	18,716.50	Total ..	140,712,204	11.37
Aden & Dependencies ..	46,185	5.13			
Damao and Diu ..	32,700	193.49			
Brunei ..	30,000	7.50			
Socotra & Kuria Muria Is.	12,000	8.68			
Tientsin ..	10,017	50,085.00			
Total ..	893,227,850	53.05			
			North & Central America & West Indies—		
Africa—			United States ..	102,017,312	34.30
Northern and Southern			Mexico ..	15,501,684	20.21
Nigeria Protectorate	17,500,000	52.08	Canada ..	8,361,000	2.24
Belgian Congo ..	15,000,000	16.49	Cuba ..	2,627,536	59.43
Egypt ..	12,569,000	35.91	Haiti ..	2,500,000	245.00
French Equat. Africa ..	9,000,000	8.87	Guatemala ..	2,003,579	41.49
Abyssinia ..	8,000,000	20.00	Salvador ..	1,271,336	96.49
German East Africa ..	7,659,898	19.95	Porto Rico ..	1,184,489	328.48
Morocco ..	6,000,000	25.92	Jamaica ..	906,485	215.47
Union of South Africa ..	5,973,394	12.63	San Domingo ..	708,000	39.24
Upper Senegal and Niger	5,598,973	18.53	Nicaragua ..	703,540	14.30
Algeria ..	5,563,828	16.20	Honduras ..	562,000	12.69
Angola ..	5,000,000	9.67	Costa Rica ..	441,342	19.19
British East Africa Prot.	4,038,000	16.36	Trinidad and Tobago ..	371,876	199.08
Madagascar & adjacent			Newfound'd & Labrador	256,909	1.58
islands ..	3,512,690	15.54	Guadeloupe and Depend. . .	212,430	308.76
Sudan ..	3,400,000	3.35	Martinique ..	193,087	501.52
Portuguese East Africa	3,000,000	7.03	Barbados ..	184,259	1,109.99
Uganda Protectorate ..	2,954,861	27.08	Windward Islands ..	182,164	345.66
Kamerun ..	2,540,000	13.29	Leeward Islands ..	127,193	177.89
Tunis ..	1,953,000	39.06	Alaska ..	64,828	0.11
French Guinea ..	1,812,579	19.65	Bahamas ..	58,484	13.28
Liberia ..	1,800,000	45.00	Curaçao ..	57,381	142.38
Rhodesia ..	1,656,500	3.76	British Honduras ..	42,323	4.92
			Virgin Island of U.S.A. (b)	23,000	174.24
			Bermudas ..	20,215	1,063.94
			Greenland ..	13,459	0.29

(a) Number of persons per square mile.

(b) Late Danish West Indies.

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS
COUNTRIES OF THE WORLD—*continued.*

Country.	Population.		Country.	Population.	
	Number.	Density. (a)		Number.	Density. (a)
NORTH & CENTRAL AMERICA & WEST INDIES— <i>contd.</i>			Australasia & Polynesia—		
Turks & Caicos Islands ..	6,054	27.03	Commonwealth of Australia ..	(b)5,130,479	1.72
Cayman Islands ..	5,564	62.52	New Zealand ..	(c)1,170,953	11.18
St. Pierre & Miquelon ..	4,652	50.02	Kaiser Wilhelm Land ..	} 601,427	6.39
Total ..	140,612,181	16.45	Bismarck Archipelago ..		
South America—			Caroline & Pelau Islands ..		
Brazil (incl. Acre) ..	26,542,402	8.01	Marianne Islands ..		
Argentine Republic ..	7,885,237	6.84	Solomon Islands ..		
Colombia (excl. Panama) ..	5,071,101	11.50	Marshall Islands ..		
Peru ..	4,620,201	6.40	Hawaii ..	250,627	38.86
Chile ..	3,870,002	13.35	Papua ..	201,374	2.22
Bolivia ..	2,889,970	5.62	Dutch New Guinea ..	200,000	1.32
Venezuela ..	2,827,762	7.09	Fiji ..	163,565	23.09
Ecuador ..	2,000,000	17.21	Solomon Islands (British)	150,660	10.34
Uruguay ..	1,378,808	19.11	New Caledonia and		
Paraguay ..	1,000,000	6.06	Depend-ncies ..	71,658	8.38
Panama ..	371,791	11.48	New Hebrides ..	70,000	13.73
British Guiana ..	313,859	3.51	Samoa (German) ..	35,136	35.14
Dutch Guiana ..	91,622	1.99	French Establishments		
French Guiana ..	49,009	1.53	in Oceania ..	31,477	20.71
Falkland Islands and			Gilbert & Ellice Islands	31,018	149.13
South Georgia ..	3,220	0.43	Tonga ..	23,736	60.86
Total ..	58,914,984	7.99	Guam ..	13,916	61.85
			Samoa (American) ..	7,550	74.02
			Norfolk Island ..	985	98.50
			Total ..	8,154,561	2.36

(a) Number of persons per square mile. (b) Inclusive of an allowance of 100,000 for Aboriginal Natives. (c) Inclusive of Maoris and population of Cook and other Pacific Islands.

§ 5. Seasonal Variations of Population.

1. **Natural Increase.**—For the Commonwealth as a whole the natural increase of the population is greatest in the quarter ending 30th September, and least in that ending 31st December. The birth rate is usually at its highest, and the death rate at its lowest, in the September quarter, and *vice versa* in the March quarter. The average natural increase in population of the several States for each of the quarters, based upon the experience of the ten years 1909 to 1918, is given in the following table, from which it will be seen that the quarter in which the rate of natural increase was highest is that ended 30th June for Victoria, Queensland, and South Australia, that ended 30th September for New South Wales and Western Australia, and that ended 31st December for Tasmania. The quarters shewing lowest rate of natural increase were that ended 31st March, in Victoria and Tasmania, and that ended 31st December, in the four remaining States.

AVERAGE QUARTERLY NATURAL INCREASE, STATES AND COMMONWEALTH, 1909 TO 1918.

State.	(a) Average Natural Increase for Quarter ended on last day of—								Average Natural Increase per Annum, 1909-18.	
	March.		June.		September.		December.			
	Persons.	‰	Persons.	‰	Persons.	‰	Persons.	‰	Persons.	‰
New S. Wales (b)	7,964	4.51	7,962	4.49	8,228	4.61	7,873	4.39	32,032	18.16
Victoria ..	4,462	3.28	4,732	3.46	4,561	3.33	4,533	3.30	18,288	13.43
Queensland ..	2,861	4.50	3,075	4.80	3,049	4.70	2,857	4.38	11,842	18.63
S. Australia (c)	1,718	4.03	1,875	4.40	1,857	4.35	1,677	3.91	7,127	16.72
W. Australia ..	1,326	4.45	1,349	4.50	1,455	4.82	1,230	4.05	5,360	17.97
Tasmania ..	879	4.45	881	4.49	935	4.81	984	5.05	3,679	18.61
Commonwealth	19,210	4.10	19,874	4.23	20,085	4.25	19,159	4.04	78,328	16.72

(a) The symbol ‰ denotes "per thousand." (b) Including Federal Territory. (c) Including Northern Territory.

2. **Net Immigration.**—For the Commonwealth as a whole for the decennium 1909–18, arrivals exceeded departures in the March and September quarters, while departures were in excess in the June and December quarters. New South Wales, Queensland, and Western Australia experienced excesses of arrivals in three of the four quarters, Victoria and South Australia in two, and Tasmania in one only. Particulars concerning the average net immigration of the several States are as follows :—

AVERAGE QUARTERLY NET IMMIGRATION, STATES AND COMMONWEALTH, 1909 TO 1918.

State.	Quarter ended on last day of—								Average Net Immigration per annum, 1909–18.	
	March.		June.		September.		December.			
	Persons.	°/°	Persons.	°/°	Persons.	°/°	Persons.	°/°	Persons.	°/°
N.S.W.(a)	2,491	1.41	215	0.12	1,674	0.94	1,557	-0.87	2,823	1.60
Victoria	- 235	- 0.17	-3,232	- 2.37	787	0.58	2,424	1.77	- 257	-0.19
Q'land	2,078	3.27	5,338	8.33	560	0.86	-6,084	-9.32	1,892	2.98
S.Aust.(b)	-1,296	- 3.04	-1,854	- 4.35	368	0.86	1,763	4.11	-1,019	-2.39
W. Aust.	57	0.19	985	3.29	532	1.76	-1,557	5.12	18	0.06
Tas. . .	-2,439	-12.34	-2,458	-12.54	- 722	-3.71	3,654	18.77	-1,965	-9.94
C'wealth	656	0.14	-1,006	- 0.21	3,199	0.68	-1,357	-0.29	1,492	0.32

NOTE.—The minus sign (–) denotes that the departures were in excess of arrivals, and °/° denotes “ per thousand ” of population.

(a) Including Federal Territory. (b) Including Northern Territory.

§ 6. Urban Population.

1. **The Metropolitan Towns.**—A feature of the distribution of population in Australia is the tendency to accumulate in the capital cities. To such an extent is this metropolitan aggregation carried, that in every State the population of the capital far outnumbers that of any other town therein, and ranges between 20 and 53 per cent. of the entire population of the State. The estimated populations of the several capitals on 31st December, 1918, and the percentages of such populations on the totals for the respective States, are shewn in the table hereunder. That this metropolitan concentration is phenomenal may be readily seen by comparing the percentage on the total population with the similar figures for the principal countries of Europe, also given in the table hereunder :—

METROPOLITAN POPULATION.

(VARIOUS COUNTRIES.)

State or Country.	Metropolis.	Year.	Population.	Percentage on total of State or Country.
New South Wales	Sydney	} 31st Dec., 1918	792,700	41.07
Victoria	Melbourne		723,500	50.57
Queensland	Brisbane		181,199	26.09
South Australia	Adelaide		235,751	52.89
Western Australia	Perth		133,000	42.43
Tasmania	Hobart		41,509	19.87
Commonwealth	(6 Cities)		2,107,659	41.90
New Zealand	Wellington	1918	98,600	8.90
Denmark	Copenhagen	1916	605,772	20.02
England	London (a)	1914	4,518,021	12.22
Saxony	Dresden	1914	551,697	11.07
Norway	Christiania	1910	241,834	10.11

(a) Population of Greater London in 1914 was 7,419,704.

METROPOLITAN POPULATION.
(VARIOUS COUNTRIES)—*continued.*

State or Country.	Metropolis.	Year.	Population.	Percentage on total of State or Country.
				%
Netherlands	Amsterdam	1916	628,404	9.55
Ireland	Dublin	1911	403,030	9.18
Belgium	Brussels	1912	663,647	8.77
Bavaria	Munich	1910	596,467	8.66
Portugal	Lisbon	1911	435,359	7.31
France	Paris	1911	2,888,110	7.29
Austria	Vienna	1910	2,031,498	7.11
Sweden	Stockholm	1917	408,792	7.10
Scotland	Edinburgh	1915	326,901	6.83
Greece	Athens	1907	167,479	6.36
Prussia	Berlin	1916	1,779,107	4.33
Hungary	Budapest	1910	880,371	4.22
Spain	Madrid	1910	599,807	2.95
Switzerland	Berne	1915	96,900	2.50
Russia (European)	Petrograd	1915	2,318,645	1.76
Italy	Rome	1915	590,960	1.64

2. **Urban Population Generally.**—In connection with the particulars shewing the tendency in Australia to concentrate population in the metropolis, it should be borne in mind that in most of the European States the capital is but one of many populous cities, and in some instances is by no means the most populous. In Australia, on the other hand, the metropolis is in every instance the most populous city, and, in some of the States, is also the only town of considerable magnitude.

In the following table will be found particulars of all localities in the Commonwealth returned at the date of the Census, on 3rd April, 1911, as having a population of over 3,000. From this it will be seen that there were, in all, 29 localities in the Commonwealth returned as having a population upwards of 20,000. Of these 11 were in New South Wales, 13 in Victoria, 1 in Queensland, 1 in South Australia, 1 in Western Australia, and 2 in Tasmania.

The figures given in this table relate to the localities specified as defined by the residents therein. It must be understood that no clearly defined boundaries exist in these cases, and the population given for any locality represents the number of persons who returned themselves as belonging to that locality. For the population within the boundaries of the principal Local Government Areas in the States, reference should be made to paragraph 3 following.

**POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH,
3rd APRIL, 1911.**

Town.	State in which Situated.	Approx. Population.	Town.	State in which Situated.	Approx. Population.
100,000 and over—			20,000 and under 100,000—		
Sydney	N.S.W.	107,133	<i>continued—</i>		
20,000 and under 100,000—			Hobart	Tas.	27,505
Adelaide	S.A.	32,981	Launceston	"	20,937
Ballarat	Vic.	38,686	Leichhardt	N.S.W.	24,139
Balmain	N.S.W.	31,961	Marrickville	"	25,993
Brisbane South	Qld.	21,332	Melbourne	Vic.	38,293
Broken Hill	N.S.W.	30,953	Melbourne South	"	46,016
Brunswick	Vic.	32,201	Newtown	N.S.W.	26,427
Carlton	"	27,476	Paddington	"	24,150
Collingwood	"	20,254	Perth	W.A.	31,800
Fitzroy	"	34,141	Petersham	N.S.W.	20,407
Footscray	"	21,933	Frahan	Vic.	25,489
Geelong	"	21,630	Redfern	N.S.W.	24,275
Glebe	N.S.W.	21,444	Richmond	Vic.	38,559
Hawthorn	Vic.	24,353	St. Kilda	"	25,449
			Sydney North	N.S.W.	32,764

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH,
3RD APRIL, 1911—continued.

Town.	State in which Situated.	Approx. Population.	Town.	State in which Situated.	Approx. Population.
10,000 and under 20,000—			5,000 and under 10,000—cont.		
Annandale	N.S.W.	11,250	Mount Morgan	Qld.	9,772
Ashfield	"	12,096	New Farm	"	5,394
Bendigo	Vic.	17,883	Newtown	Vic.	5,863
Botany	N.S.W.	10,228	Norwood	S.A.	9,454
Boulder	W.A.	12,833	Orange	N.S.W.	5,263
Brighton	Vic.	11,096	Paddington	Qld.	5,273
Brisbane	Qld.	17,715	Parkside	S.A.	7,774
Charters Towers	"	15,037	Port Pirie	"	7,968
Essendon	Vic.	10,087	Preston	Vic.	5,025
Goulburn	N.S.W.	10,187	Rockdale	N.S.W.	7,453
Gympie	Qld.	11,718	Rookwood	"	5,374
Ipswich	"	10,445	St. Peters	"	7,037
Kalgoorlie	W.A.	13,488	Subiaco	W.A.	8,701
Kew	Vic.	11,143	Tamworth	N.S.W.	7,607
Malvern	"	15,319	Toowong	Qld.	5,645
Manly	N.S.W.	10,687	Wagga Wagga	N.S.W.	7,446
Melbourne North	Vic.	17,750	Walleroo	S.A.	5,282
Mosman	N.S.W.	13,189	Warrnambool	Vic.	7,543
Newcastle	"	12,816	Warwick	Qld.	5,562
Northcote	Vic.	17,491	Waterloo	N.S.W.	9,471
Parramatta	N.S.W.	12,520	Woolloongabba	Qld.	8,326
Port Melbourne	Vic.	13,471			
Randwick	N.S.W.	15,793	3,000 and under 5,000—		
Rockhampton	Qld.	15,451	Albany	W.A.	3,699
South Yarra	Vic.	10,060	Armadale	Vic.	4,298
Toowoomba	Qld.	16,160	Bairnsdale	"	3,412
Townsville	"	13,678	Beechworth	"	3,409
Waverley	N.S.W.	18,961	Benalla	"	3,172
Williamstown	Vic.	12,114	Bunbury	W.A.	3,920
Woollahra	N.S.W.	12,816	Camperdown	N.S.W.	4,768
5,000 and under 10,000—					
Abbotsford	Vic.	9,308	Campsie	Vic.	3,473
Adelaide North	S.A.	9,300	Canterbury	N.S.W.	3,957
Albury	N.S.W.	5,862	Casino	"	4,190
Alexandria	"	9,491	Cessnock	"	3,635
Ararat	Vic.	5,402	Clifton Hill	Vic.	3,957
Armidale	N.S.W.	6,530	Cobar	N.S.W.	4,023
Arncliffe	"	5,034	Colac	Vic.	4,619
Ascot Vale	Vic.	5,655	Concord	N.S.W.	3,992
Auburn	N.S.W.	5,602	Coonamble	"	3,799
Bathurst	"	9,219	Cootamundra	"	3,280
Bexley	"	6,241	Cowra	"	3,352
Bundaberg	Qld.	8,727	Darlington	"	3,981
Burwood	N.S.W.	8,281	Daylesford	Vic.	3,815
Cairns	Qld.	5,193	Devonport	Tas.	3,923
Camberwell	Vic.	8,547	Dulwich Hill	N.S.W.	3,620
Castlemaine	"	5,219	Echuca	Vic.	3,578
Caulfield	"	7,669	Enfield	N.S.W.	4,137
Chatswood	N.S.W.	5,482	Forbes	"	3,475
Claremont	W.A.	6,252	Fremantle East	W.A.	4,654
Coburg	Vic.	9,454	Fremantle North	"	3,856
Cottesloe	W.A.	5,142	Gawler	S.A.	3,315
Drummoyne	N.S.W.	5,947	Geraldton	W.A.	4,037
Dubbo	"	5,368	Glen Innes	N.S.W.	3,494
Eaglehawk	Vic.	6,998	Goodwood	S.A.	4,030
Elsternwick	"	6,790	Grenfell	N.S.W.	3,443
Erskineville	N.S.W.	7,234	Guildford	W.A.	3,007
Flemington	Vic.	6,109	Gunnedah	N.S.W.	4,100
Fortitude Valley	Qld.	7,090	Hamilton	Qld.	3,224
Fremantle	W.A.	6,406	Gunnadah	N.S.W.	4,100
Fremantle South	"	6,253	Hamilton	Qld.	3,229
Glennel	S.A.	5,003	Hindmarsh	S.A.	3,556
Grafton and Grafton South	N.S.W.	6,123	Horsham	Vic.	3,554
Granville	"	6,938	Ithaca	Qld.	3,378
Hamilton	Vic.	6,944	Junea	N.S.W.	3,606
Hurstville	N.S.W.	5,112	Kangaroo Point	Qld.	4,417
Inverell	"	5,551	Katoomba	N.S.W.	4,417
Kensington	Vic.	7,341	Kensington	S.A.	3,950
Kogarah	N.S.W.	6,300	Kurri-Kurri	N.S.W.	4,175
Leederville	W.A.	5,499	Kyngeton	Vic.	4,154
Lismore	N.S.W.	7,809	Liverpool	N.S.W.	3,174
Lithgow	"	6,991	Maldon	Vic.	3,081
Mackay	Qld.	6,135	Merewether	N.S.W.	3,077
Maitland West	N.S.W.	7,395	Midland Junction	W.A.	4,125
Maryborough	Qld.	9,410	Mildura	Vic.	3,881
"	Vic.	5,804	Moonta	S.A.	4,608
Moonee Ponds	"	8,065	Moree	N.S.W.	3,772
			Mount Gambier	S.A.	3,161
			Mudgee	N.S.W.	4,531
			Narrabri	"	3,621
					4,686

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH,
3RD APRIL, 1911—*continued.*

Town.	State in which Situated.	Approx. Population.	Town.	State in which Situated.	Approx. Population.
3,000 and under 5,000— <i>cont.</i>			3,000 and under 5,000— <i>cont.</i>		
Newtown	Tas.	3,382	Stawell	Vic.	4,843
Northam	W.A.	4,205	Strathfield	N.S.W.	3,093
Oakleigh	Vic.	3,341	Summer Hill	"	3,854
Parkes	N.S.W.	3,411	Temora	"	3,561
Perth North	W.A.	4,895	Toorak	Vic.	3,630
Perth West	"	3,291	Unley	S.A.	4,397
Port Adelaide	S.A.	3,386	Wangaratta	Vic.	4,136
Prospect	"	3,998	Waratah	N.S.W.	3,597
Queenstown	Tas.	3,659	Wellington	"	4,409
Roma	Qld.	3,157	Willoughby	"	4,693
Ryde	N.S.W.	3,247	Windsor	Vic.	3,953
St. Arnaud	Vic.	4,096	Woolongong	N.S.W.	4,725
Sale	"	3,491	Wonthaggi	Vic.	3,223
Semaphore	S.A.	3,495	Wyalong	N.S.W.	3,301
Shepparton	Vic.	4,049	Young	"	3,619
Singleton	N.S.W.	3,655	Zeehan	Tas.	3,951

Many of the towns contained in the foregoing table are credited with population which is not really urban in character, owing to the fact that in the compilation of this table all persons stating that they resided in a given town were classed as part of its population, although certain of them may have dwelt a considerable distance from its business centre. For the purpose of providing a more satisfactory comparison of the urban populations of the several States, the following table has been compiled from the 1911 Census data, shewing the area and population of incorporated districts of an urban character. The incorporated areas included consist solely of those of the type of boroughs having a population of 2,500 and upwards. In all the States except Tasmania, the local government areas, although variously designated, are divided into two types—(a) boroughs (mainly urban), (b) shires (almost entirely rural). In the case of Tasmania, Hobart and Launceston correspond to the "borough" type, but several of the other "municipalities" contain towns which, under the scheme in force in the other States, would be classed as boroughs, and are certainly urban in character. Six of these, viz.—Beaconsfield, Burnie, Devonport, Newtown, Queenstown and Zeehan, have consequently been included at the figures shewn for them as localities, and an area of four square miles (2,560 acres) has been arbitrarily adopted for each. In all other cases the areas are those of the incorporated districts concerned.

URBAN POPULATION OF AUSTRALIA, 3rd APRIL, 1911.

State.	Urban Area.	Population of Urban Area.		
		Number.	Average per Acre.	Percentage on Total Population.
	Acres.			%
New South Wales	571,215	903,254	1.58	54.85
Victoria	153,880	710,418	4.62	54.00
Queensland	112,928	215,602	1.91	35.59
South Australia	29,322	153,927	5.25	37.68
Western Australia	30,061	119,591	3.98	42.39
Tasmania	23,744	68,434	2.88	35.79
Commonwealth	921,150	2,171,226	2.36	48.74

3. Municipal Population.—In the following table the population of the Local Government Areas in the several States will be found set out. It includes only those areas having upwards of 5,000 in population.

By the term "Local Government Areas" is meant those districts which have been incorporated for municipal purposes, and are variously known in the several States as Cities, Towns, Boroughs, Shires, Municipalities, Corporations, District Councils and Road Districts.

POPULATION OF PRINCIPAL LOCAL GOVERNMENT AREAS IN THE COMMONWEALTH, 3rd APRIL, 1911.

Local Government Area.	State in which Situated.	Approx. Population.	Local Government Area.	State in which Situated.	Approx. Population.
100,000 and upwards—			10,000 & under 20,000—cont.		
Sydney	N.S.W.	112,921	Parramatta	N.S.W.	12,465
Melbourne	Vic.	103,593	Port Melbourne	Vic.	13,515
20,000 and under 100,000—			Queenton	Qld.	14,277
Adelaide	S.A.	42,294	Randwick	N.S.W.	19,463
Ashfield	N.S.W.	20,431	Rockdale		14,095
Ballarat (City)	Vic.	22,017	Rockhampton	Qld.	15,456
Balmain	N.S.W.	32,038	Toowoomba	"	13,119
Bendigo	Vic.	28,539	Townsville	"	10,636
Brisbane	Qld.	39,917	Waterloo	N.S.W.	10,072
Brisbane, South	"	30,051	Waverley	"	19,831
Broken Hill	N.S.W.	30,972	Williamstown	Vic.	15,275
Brunswick	Vic.	32,215	Willoughby	N.S.W.	13,036
Cessnock	N.S.W.	21,018	Woollahra	"	16,989
Collingwood	Vic.	34,190	5,000 and under 10,000—		
Essendon	"	23,749	Alberton	Vic.	5,479
Fitzroy	"	34,283	Albury	N.S.W.	6,309
Footscray	"	23,643	Ararat (Shire)	Vic.	6,335
Glebe	N.S.W.	21,943	Auburn	N.S.W.	5,559
Hawthorn	Vic.	24,450	Bairnsdale	Vic.	8,190
Hobart	Tas.	27,526	Bathurst	N.S.W.	8,575
Launceston	"	20,754	Beechworth	Vic.	5,978
Leichhardt	N.S.W.	24,254	Bellingun	N.S.W.	9,124
Marrickville	"	30,653	Benalla	Vic.	7,688
Melbourne, South	Vic.	46,190	Berwick	"	6,632
Newtown	N.S.W.	26,498	Bexley	N.S.W.	6,517
Paddington	"	24,317	Bland	"	5,522
Perth (Municipality)	W.A.	35,767	Blaxland	"	9,661
Petersham	N.S.W.	21,712	Blue Mountains	"	6,902
Port Adelaide	S.A.	24,015	Borse	"	5,111
Prahran	Vic.	45,367	Borong	Vic.	5,412
Redfern	N.S.W.	24,427	Botany, North	N.S.W.	5,836
Richmond	Vic.	40,442	Bright	Vic.	5,943
St. Kilda	"	25,334	Bundaberg	Qld.	5,516
Sydney, North	N.S.W.	34,646	Buninyong (Shire)	Vic.	5,594
Unley	S.A.	23,773	Burnside	S.A.	9,416
10,000 and under 20,000—			Burwood	N.S.W.	9,380
Alexandria	N.S.W.	10,123	Byron	"	6,553
Annandale	"	11,240	Caboollture	Qld.	5,759
Ballarat, East	Vic.	15,962	Cairns (Town)	"	5,164
Boulder	W.A.	10,824	Canoblas	N.S.W.	5,140
Brighton	Vic.	12,083	Castlemaine	Vic.	5,228
Bulli	N.S.W.	10,123	Clifton	Qld.	7,099
Camberwell	Vic.	12,551	Coburg	Vic.	9,505
Canterbury	N.S.W.	11,335	Coolamon	N.S.W.	5,600
Caulfield	Vic.	15,919	Crookwell	"	6,223
Colac	"	14,212	Dandenong	Vic.	5,134
Fremantle (Municipality)	W.A.	14,499	Deloraine	Tas.	5,779
Geelong	Vic.	13,618	Dimboola	Vic.	5,796
Goulburn	N.S.W.	10,023	Dorrigo	N.S.W.	7,984
Hindmarsh	S.A.	11,335	Drummoyne	"	8,678
Ithaca	Qld.	15,756	Eaglehawk	Vic.	7,588
Kalgoorlie (Road District)	W.A.	12,061	Erina	N.S.W.	9,176
Kensington and Norwood	S.A.	13,892	Erskineville	"	7,299
Kew	Vic.	11,152	Esk	Qld.	5,575
Lake Macquarie	N.S.W.	14,610	Euroa	Vic.	5,130
Malvern	Vic.	15,969	Glengallan	Qld.	5,982
Manly	N.S.W.	10,465	Gobang	N.S.W.	5,326
Manning	"	11,137	Goolman	Qld.	5,289
Moorabbin	Vic.	12,757	Granville	N.S.W.	7,231
Mosman	N.S.W.	13,243	Guyra	"	6,534
Newcastle	"	11,610	Gympie	Qld.	8,923
Northcote	Vic.	17,519	Hamilton	N.S.W.	7,908
			Hampden	Vic.	9,829
			Hastings	N.S.W.	5,746

POPULATION OF PRINCIPAL LOCAL GOVERNMENT AREAS IN THE
COMMONWEALTH, 3RD APRIL, 1911—*continued.*

Local Government Area.	State in which Situated.	Approx. Population.	Local Government Area.	State in which Situated.	Approx. Population.
5,000 and under 10,000— <i>cont.</i>			5,000 and under 10,000— <i>cont.</i>		
Heidelberg	Vic.	8,610	Perth (Road District) .. .	W.A.	5,066
Highfields	Qld.	5,656	Phillip Island & Woolamai .. .	Vic.	7,067
Hornsby	N.S.W.	8,901	Pioneer	Qld.	9,752
Hunter's Hill	"	5,013	Poowong and Jeetho	Vic.	7,449
Hurstville	"	6,533	Port Germein	S.A.	5,210
Illawarra, Central	"	5,000	Portland (Shire)	Vic.	5,291
Illawarra, North	"	5,157	Port Pirie	S.A.	9,385
Imlay	"	5,564	Preston	Vic.	5,049
Ipswich	Qld.	9,528	Prospect	S.A.	6,813
Jondaryan	"	7,469	Rodney	Vic.	6,718
Kadina (District Council) .. .	S.A.	8,096	Rookwood	N.S.W.	5,418
Kalgoorlie (Municipality) .. .	W.A.	8,781	Rosalie	Qld.	7,982
Karkaroc	Vic.	5,743	Ryde	N.S.W.	5,281
Kentish	Tas.	5,571	St. Peters	"	8,410
Kerang	Vic.	8,969	"	S.A.	9,073
Kogarah	N.S.W.	6,953	Severn	N.S.W.	6,885
Korong	Vic.	5,517	Shepparton	Vic.	6,099
Ku-ring-gai	N.S.W.	9,458	Stephens	Qld.	5,415
Kyneton	Vic.	6,904	Stroud	N.S.W.	5,117
Leederville	W.A.	5,457	Subiaco	W.A.	8,926
Leven	Tas.	5,450	Swan Hill	Vic.	6,795
Lilydale	Vic.	6,329	Tamworth	N.S.W.	7,145
Lismore	N.S.W.	7,381	Tarampa	Qld.	6,699
Lithgow	"	8,196	Tarro	N.S.W.	6,492
Liverpool Plains	"	5,651	Tenterfield (Shire)	"	5,153
Livingstone	Qld.	5,656	Terania	"	5,621
Lyndhurst	N.S.W.	6,740	Thebarton	S.A.	8,720
Mackay	Qld.	5,141	Thuringowa	Qld.	5,095
Macleay	N.S.W.	6,679	Tintenbar	N.S.W.	5,865
Maitland, West	"	8,210	Toombul	Qld.	6,791
Marong	Vic.	6,646	Toowong	"	6,286
Maroochy	Qld.	5,288	Towong	Vic.	6,418
Maryborough	Vic.	5,675	Tungamah	"	5,376
"	Qld.	9,673	Tweed	N.S.W.	7,308
Mildura	Vic.	6,119	Wagga Wagga	"	6,419
Mitcham	S.A.	5,035	Wallarobba	"	5,619
Mount Morgan	Qld.	8,504	Wambo	Qld.	6,749
Mulwara	N.S.W.	7,009	Waranga	Vic.	5,291
Namoi	"	8,092	Warrnambool (Shire)	"	8,653
Nanango	Qld.	6,433	Warrnambool (Town)	"	7,010
Narracan	Vic.	5,408	Warwick	Qld.	5,248
New Norfolk	Tas.	6,124	Waugoola	N.S.W.	5,262
Newtown and Chilwell	Vic.	5,831	Wickham	"	8,434
Numurkah	"	6,844	Windsor	Qld.	8,970
Nunawading	"	7,120	Woodville	S.A.	7,787
Patrick's Plains	N.S.W.	6,894	Zeehan	Tas.	5,726

§ 7. Assisted Immigration.

In the earlier days of settlement in Australia, State-assisted immigration played an important part. Such assistance ceased for the time being in Victoria in 1873, in South Australia in 1886, and in Tasmania in 1891. In New South Wales, general State-aided immigration was discontinued in the year 1887, but those who arrived under that system and were still residing in New South Wales might, under special regulations, send for their wives and families. A certain amount of passage money, graduated according to the age of the immigrant, was required to be paid in each case. Under the provisions of these regulations, immigrants to the number of 1994 received State assistance during the years 1888 to 1899 inclusive. From 1900 to 1905 no assistance of any kind was given, but from 1906 onwards assistance has again been afforded. In Queensland and Western Australia, such assistance, although varying considerably in volume from year to year, has been accorded for many years past. Assistance to immigrants, which in the case of Victoria had practically ceased in 1873, has recently been again afforded. In South Australia the principle of State assistance was again introduced in 1911, and in Tasmania in 1912.

The number of assisted immigrants for the years 1914 to 1918, and the total from the earliest times up to the end of 1918, are given in the following table :—

ASSISTED IMMIGRANTS DURING THE YEARS 1914 TO 1918, AND UP TO THE END OF 1918.

STATES AND COMMONWEALTH.

State	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	C'with.
No. Assisted during 1914	6,655	7,496	4,096	644	1,729	185	20,805
" " " 1915	1,695	1,724	1,599	79	635	64	5,796
" " " 1916	649	327	300	..	103	18	1,397
" " " 1917	239	146	91	..	26	2	504
" " " 1918	199	101	..	..	26	..	326
Total to end of 1918 ..	271,934	186,755	214,047	102,707	41,821	22,183	839,447

§ 8: Enumerations and Estimates.

1. **Musters.**—Actual enumerations of Australia's population, of varying accuracy, have been made from the earliest times onward. These were originally known as "Musters," and were first undertaken with a view to estimating the food and other requirements of the settlements. They appear to have been very unreliable, and to have been carried out at least annually from 1788 to 1825, when they were discontinued.

2. **Census-taking.**—The first regular Census in Australia was that of New South Wales, in November, 1828. The dates on which Censuses have been taken in the several States, and the populations enumerated thereat, are shewn in the table on the next page.

3. **The Census of 1901.**—A conference of the Government Statisticians of Australia and New Zealand was held in Sydney in February and March, 1900, with the object of securing uniformity in the collection and compilation of the Census of 1901. The householder's schedule which it drafted made provision for the collection of information in all the States under the following heads, viz. :—Name, Sex, Age, Conjugal Condition, Relation to Head of Household, Occupation, Sickness and Infirmity, Birthplace, Length of Residence in Colony, Religion, Education, Materials of Houses and Number of Rooms. In addition to these, it was agreed that States so desiring might include further inquiries relating to Land, Live Stock, Crops, and certain other matters.

Provision was made for uniformity in the classification and compilation of the data by formulating rules for dealing with cases in which differences of opinion as to methods of treatment might exist. Thus, although conducted by six different States, the Census of the Commonwealth, as taken in 1901, was carried out on a fairly uniform plan, and consequently furnished data in many ways suitable for purposes of aggregation or comparison. A detailed examination of the results, however, gives many indications of departure from a common line of action, which, in the absence of a central authority, can hardly be avoided in an undertaking of this nature.

4. **The Census of 1911.**—Under Section 51, sub-section (xi.) of the Constitution Act, power is given to the Parliament of the Commonwealth to make laws with respect to "Census and Statistics." This power was brought into requisition in 1905, when the Census and Statistics Act of 1905 became law, being assented to on 8th December, 1905. Under this Act provision is made for the appointment of a Commonwealth Statistician, and amongst other duties that officer is charged with the taking of a Census in the year 1911 and in every tenth year thereafter.

The particulars which the Act requires to be included in the Census schedule are almost identical with those which were contained in the 1901 schedule, the principal alterations being that "Length of Residence in Australia" is specified instead of "Length of Residence in the Colony of Enumeration," that "Duration of Marriage" has to be asked in all cases, and that nationality has to be ascertained in addition to birthplace. The Census was taken as at 3rd April, 1911.

In each State a Census supervisor was appointed to control the collection within that State under the direction of the Commonwealth Statistician. Each State was then divided into Census districts, each of which was placed in the charge of an enumerator, and each Census district was further subdivided into collectors' districts, one collector for each district.

It should be noted, in connection with the Census of 1911, that a slight change in defining the date of reference has been made in order to accord with the English practice. In previous Australian Censuses the date of the Census has been taken to be that of the day preceding the midnight which is adopted as the determining point. Thus, at the Census of 1901, where the figures given relate approximately to midnight between the 31st March and the 1st April, the Australian Census was stated to be that of the 31st March, while in a precisely similar case in England it was stated to be that of 1st April. At the Census of 1911, taken as at midnight between the 2nd and 3rd April, the date of the Census has, in accordance with the English practice, been stated to be the 3rd April, and that day was gazetted as the day of the Census.

The total populations enumerated at the several Australian Censuses are shown in the following table:—

AUSTRALIAN CENSUSES.

Census Year.	Population Enumerated (exclusive of Aborigines).						
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth (Total).
1828	(Nov.) 36,598	..	..	..	..	..	..
1833	(2nd Sept.) 60,794	..	..	..	..	..	..
1836	(2nd Sept.) 77,096	..	..	..	..	..	..
1841	(2nd March) 130,856	..	..	..	..	(27th Sept.) 50,216	..
1844	..	..	..	(26th Feb.) 17,366	..	..	..
1846	(2nd March) 189,609	..	..	(26th Feb.) 22,390	..	..	..
1847	..	..	..	..	..	(31st Dec.) 70,164	..
1848	..	..	..	..	(10th Oct.) 4,622	..	..
1851	(1st Mar.) (a) 268,344	..	..	(1st Jan.) 63,700	..	(1st Mar.) 70,130	..
1854	..	(26th Apr.) (b) 234,298	..	..	(30th Sept.) 11,743	..	..
1855	..	..	..	(31st Mar.) 85,821	..	..	..
1856	(1st March) 269,722	..	..	..	..	..	..
1857	..	(29th Mar.) 408,998	..	..	..	(31st Mar.) 81,492	..
1859	..	..	..	..	(31st Dec.) 14,837	..	..
1861	(7th April) 350,860	(7th April) 538,628	(7th April) (b) 30,059	(7th April) 126,830	..	(7th April) 89,977	..
1864	..	..	(1st Jan.) 61,467	..	..	..	..
1866	..	..	..	(26th Mar.) 163,452	..	..	..
1868	..	..	(2nd Mar.) 99,901	..	..	..	..
1870	..	..	..	..	(31st Mar.) 24,785	(7th Feb.) 99,328	..
1871	(2nd April) 502,998	(2nd April) 730,198	(1st Sept.) 120,104	(2nd April) 185,626	..	..	..
1876	..	..	(1st May) 173,283	(26th Mar.) 213,271	..	..	..
1881 (c)	749,825	861,566	213,525	279,865	29,708	115,705	2,250,194
1886	..	..	(1st May) 322,853	..	..	..	..
1891 (d)	1,123,954	1,139,840	393,718	320,431	49,782	146,667	3,174,392
1901 (e)	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801
1911 (f)	1,646,734	1,315,551	605,813	408,558	282,114	191,211	4,455,005
	(g) 1,714			(h) 3,310			

(a) Including Port Phillip District, which afterwards became the Colony of Victoria. (b) Previously included with New South Wales. (c) 3rd April. (d) 5th April. (e) 31st March. (f) 3rd April. (g) Federal Territory, previously included with New South Wales. (h) Northern Territory, previously included with South Australia.

5. **Estimates of Population.**—In the absence of an annual enumeration of the population, it becomes necessary to adopt some method of estimating it for intercensal periods, basing such estimates on the results of the most recent Censuses. The manner in which this is effected varies, however, in different parts of the world. In England, for example, the assumption usually made is that the rate of increase of the preceding intercensal period will continue unchanged during the current period. Again, in the United States, it has been assumed, in certain cases, that the numerical increase per annum ascertained for the preceding intercensal period will hold good for the current period. From the earliest times in Australia, "statistics of fluctuation" have been obtained from the records of births, deaths, arrivals and departures. With reasonable thoroughness in the collection of such statistics, the deduced estimates possess much greater weight than those based on the mere assumption of a continuation of the increase experienced in the preceding period. In most cases, however, estimates of population, based on statistics of fluctuation, are found to be in excess at the Census, thus furnishing evidence of a uniform tendency to over-estimation, and indicating the necessity for a correction. In the population figures given in the earlier portion of the present section, the estimates of the population of the several States have been carefully revised, the results of the various Censuses being taken in conjunction with the records of births, deaths, arrivals and departures. It is believed that by this means the population of the Commonwealth from the date of settlement onwards has been obtained with a high degree of accuracy, and that the figures supplied represent a reasonably close approximation to the actual numbers. A detailed account of the adjustment for the decennium 1901-10 will be found on pp. 112-118 of Year Book No. 6. Particulars for the several States from the date of settlement onwards are given in the following tables, and are shewn by graphs on pages 139 to 141:—

COMMONWEALTH POPULATION FROM EARLIEST DATE.

Year.	Estimated Population at end of Year.								Commonwealth.
	States.						Territories.		
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern	Federal.	

MALES.

(a) 1800	3,780	..	..	..	..	..	..	..	..	3,780
1805	5,395	..	..	..	..	..	..	..	..	5,395
1810	7,585	..	..	..	..	..	..	..	..	7,585
1815	9,848	..	..	..	..	..	..	..	..	9,848
1820	23,784	..	..	..	..	..	..	..	..	23,784
1825	29,309	..	..	..	..	(b) 10,979	..	..	..	40,288
1830	33,900	..	..	..	877	18,108	..	..	..	52,885
1835	51,949	..	..	..	1,231	28,749	..	..	..	81,929
1840	85,560	..	..	8,272	1,434	32,040	..	..	..	127,306
1845	113,739	..	..	12,810	2,089	43,921	..	..	..	173,159
1850	154,976	..	..	35,902	3,576	44,229	..	..	..	238,683
1855	147,822	(b) 226,462	..	48,843	8,311	38,680	..	..	..	470,118
1860	197,851	330,302	(b) 16,817	64,340	9,597	49,653	..	..	..	668,580
1865	222,890	348,717	53,292	84,255	13,575	50,549	..	..	..	773,278
1870	272,121	397,230	69,221	94,894	15,511	53,517	..	..	..	902,494
1875	322,534	424,269	102,161	108,706	16,141	54,678	..	..	..	1,028,489
1880	404,952	450,558	124,013	147,438	16,985	64,568	..	..	..	1,204,514
1885	518,606	504,097	186,866	162,425	20,688	67,712	..	..	..	1,460,394
1890	602,704	595,519	223,252	166,049	28,854	76,453	..	..	..	1,692,831
1895	668,209	607,933	248,865	180,314	69,733	80,485	..	..	..	1,855,539
1900	716,047	601,773	274,684	180,349	110,088	89,763	(c) 4,288	..	..	1,976,992
1905	782,897	598,134	291,807	181,467	146,498	95,947	3,368	..	..	2,100,118
1910	858,181	646,482	325,513	206,557	157,971	98,866	2,738	..	..	2,296,308
1915	953,160	693,650	359,541	212,080	171,304	101,761	3,687	(b) 957	..	2,496,140
1916	923,603	666,036	344,557	201,998	159,098	99,839	3,839	1,194	..	2,401,064
1917	935,384	671,382	345,615	201,433	158,701	101,520	3,886	1,080	..	2,419,001
1918	957,723	684,906	353,091	205,823	161,464	105,434	3,677	1,179	..	2,473,297

(a) Details as to sex not available for earlier quinquennial dates. (b) Previously included with New South Wales. (c) Previously included with South Australia.

COMMONWEALTH POPULATION FROM EARLIEST DATE—*continued.*

Year.	Estimated Population at end of Year.								Commonwealth.
	States.						Territories.		
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern.	Federal.	
FEMALES.									
(a)1800	1,437	..	..	..	..	..	..	..	1,437
1805	2,312	..	..	..	..	..	..	..	2,312
1810	3,981	..	..	..	..	..	..	..	3,981
1815	5,215	..	..	..	..	..	..	..	5,215
1820	9,759	..	..	..	..	..	..	..	9,759
1825	9,004	..	..	..	..	(b) 3,213	..	..	12,217
1830	10,688	..	..	..	295	6,171	..	..	17,154
1835	19,355	..	..	..	647	11,423	..	..	31,425
1840	41,908	..	..	6,358	877	13,959	..	..	63,102
1845	74,179	..	..	9,650	1,790	20,370	..	..	105,989
1850	111,924	..	..	27,798	2,310	24,641	..	..	166,673
1855	118,179	(b) 120,843	..	48,544	4,294	31,282	..	..	323,142
1860	150,695	207,932	(b) 11,239	61,242	5,749	40,168	..	..	477,025
1865	185,616	269,074	33,629	77,222	7,806	43,418	..	..	616,765
1870	225,871	326,695	46,051	89,652	9,624	47,369	..	..	745,262
1875	270,833	370,665	66,944	101,370	10,861	49,061	..	..	869,734
1880	336,190	408,047	87,027	128,955	12,576	54,222	..	..	1,027,017
1885	425,261	455,741	129,815	146,888	15,271	61,148	..	..	1,234,124
1890	510,571	538,209	168,864	152,898	19,648	68,334	..	..	1,458,524
1895	587,294	577,743	194,199	171,654	30,782	74,410	..	..	1,636,082
1900	644,258	594,440	219,163	176,901	69,879	83,137	(c) 569	..	1,788,347
1905	704,987	612,287	239,675	181,154	103,640	90,438	678	..	1,932,859
1910	785,674	654,926	273,503	200,311	118,861	94,937	563	..	2,128,775
1915	917,259	725,526	319,134	226,205	146,712	99,264	876	(b) 872	2,435,848
1916	934,941	732,848	334,910	230,711	148,808	100,086	928	1,029	2,474,261
1917	955,270	739,622	332,212	234,781	150,722	101,857	1,022	1,024	2,516,310
1918	972,517	745,852	341,349	239,885	151,983	103,439	1,104	1,053	2,557,182
PERSONS.									
1788	859	..	..	..	..	..	..	..	859
1790	2,056	..	..	..	..	..	..	..	2,056
1795	3,466	..	..	..	..	..	..	..	3,466
1800	5,217	..	..	..	..	..	..	..	5,217
1805	7,707	..	..	..	..	..	..	..	7,707
1810	11,566	..	..	..	..	..	..	..	11,566
1815	15,063	..	..	..	..	..	..	..	15,063
1820	33,543	..	..	..	..	..	..	..	33,543
1825	38,313	..	..	..	..	..	..	..	52,505
1830	44,588	..	..	..	..	(b) 14,192	..	..	70,039
1835	71,304	..	..	..	1,172	24,279	..	..	113,354
1840	127,468	..	..	14,630	2,311	45,999	..	..	190,408
1845	187,918	..	..	22,460	4,479	64,291	..	..	279,148
1850	266,900	..	..	63,700	5,886	68,870	..	..	405,356
1855	266,001	(b) 347,305	..	97,387	12,605	69,962	..	..	793,260
1860	348,546	538,234	(b) 28,056	125,582	15,346	89,321	..	..	1,145,585
1865	408,506	617,791	86,921	161,477	21,381	93,967	..	..	1,390,043
1870	497,992	723,925	115,272	184,546	25,135	100,886	..	..	1,647,756
1875	693,367	794,934	169,105	210,076	27,002	103,739	..	..	1,898,223
1880	741,142	858,605	211,400	276,393	29,561	114,790	..	..	2,231,531
1885	943,867	959,838	316,681	309,313	35,959	128,860	..	..	2,694,518
1890	1,113,275	1,133,728	392,116	318,947	48,502	144,787	..	..	3,151,355
1895	1,255,503	1,185,676	443,064	351,968	100,515	154,895	..	..	3,491,621
1900	1,360,305	1,196,213	493,847	357,250	179,967	172,900	(c) 4,857	..	3,765,339
1905	1,487,884	1,210,421	531,482	362,621	250,138	186,385	4,046	..	4,032,977
1910	1,643,855	1,301,408	599,016	406,868	276,832	193,803	3,301	..	4,425,083
1915	1,870,419	1,419,176	678,675	438,285	318,016	201,025	4,563	(b) 1,329	4,931,988
1916	1,858,544	1,398,884	669,467	432,709	308,806	199,925	4,767	2,223	4,875,325
1917	1,890,654	1,411,004	677,827	436,214	309,423	203,177	4,908	2,104	4,935,311
1918	1,930,240	1,430,758	694,440	445,708	313,447	208,873	4,781	2,232	5,030,479

(a) Details as to sex not available for earlier quinquennial dates. (b) Previously included with New South Wales. (c) Previously included with South Australia.

The tables on this and the preceding page, shewing the quinquennial and other figures for the male, female, and total population of each State and the Commonwealth, give sufficient indication, for general purposes, of its progress. A reference to the diagrams

given hereinafter (pp. 139 to 141), on which the graphs shew the particulars for each year, is also desirable. The characteristics of the fluctuations of each element, or of the totals, will be more readily perceived by reference to the graphs than they possibly can by reference to these numerical tables. The earliest date for which particulars as to sex were available is 1796. The figures from 1788 to 1825 inclusive, as already mentioned, are based upon the results of the musters taken in those years; those for subsequent years are founded upon estimates made on the basis of the Census results and the annual returns of births and deaths and immigration and emigration.

The following table furnishes particulars relative to the increase of population of the Commonwealth during each decade, and the percentage of such increase on the population at the commencement of the decade :—

INCREASE OF COMMONWEALTH POPULATION.

Decade ended 31st December.	Increase during Decade—					
	Numerical.			Percentage.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1790	(a)	(a)	2,056	%	%	%
1800	(a)	(a)	3,161	(a)	(a)	153.75
1810	3,805	2,544	6,349	100.66	177.04	121.70
1820	16,199	5,778	21,977	213.57	145.14	190.01
1830	29,101	7,395	36,496	122.36	75.78	108.80
1840	74,421	45,948	120,369	140.72	267.86	171.86
1850	111,377	103,571	214,948	87.49	164.13	112.89
1860	429,877	310,352	740,229	180.10	186.20	182.61
1870	233,934	268,237	502,171	34.99	56.23	43.84
1880	302,020	281,755	583,775	33.47	37.81	35.43
1890	488,317	431,507	919,824	40.54	42.02	41.22
1900	284,161	329,823	613,984	16.79	22.61	19.48
1910	319,316	340,428	659,744	16.15	19.04	17.52

(a) Not available.

§ 9. Census of 3rd April, 1911.

1. Numbers Enumerated.—As already mentioned, the Census for the whole of the Australian Commonwealth was taken as for the night between the 2nd and the 3rd of April, 1911, and was the first Census under the provisions of the Commonwealth Census and Statistics Act 1905, which provides for the enumeration of the whole of Australia being dealt with from one centre, instead of each State being responsible for its own count as on previous occasions. The numbers recorded in the several States and Territories of the Commonwealth were as follows :—

POPULATION OF THE COMMONWEALTH, 3rd APRIL, 1911.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

States and Territories.	Males.	Females.	Persons.
States—			
New South Wales	857,698	789,036	1,646,734
Victoria	655,591	659,960	1,315,551
Queensland	329,506	276,307	605,813
South Australia	207,358	201,200	408,558
Western Australia	161,565	120,549	282,114
Tasmania	97,591	93,620	191,211
Territories—			
Northern	2,734	576	3,310
Federal	992	722	1,714
Total Commonwealth	2,313,035	2,141,970	4,455,005

2. **Growth during last Three Decennia.**—The total increase of population of the Commonwealth between the Census of 31st March, 1901, and that of 3rd April, 1911, was 681,204, of which 335,107 were males and 346,097 were females, as compared with a total increase of 599,409, comprising 273,889 males and 325,520 females, for the preceding ten years. The population of each sex enumerated at the Censuses of 3rd April, 1881, 5th April, 1891, 31st March, 1901, and 3rd April, 1911, was as follows :—

POPULATION OF COMMONWEALTH AT LAST FOUR CENSUSES.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

Date of Census.	Males.	Females.	Persons.	(a) Masculinity.
3rd April, 1881	1,214,913	1,035,281	2,250,194	7.98
5th April, 1891	1,704,039	1,470,353	3,174,392	7.36
31st March, 1901	1,977,928	1,795,873	3,773,801	4.83
3rd April, 1911	2,313,035	2,141,970	4,455,005	3.84

(a) Excess of males over females per 100 of population.

The increases in the populations of the several States during the past three intercensal periods have been as follow :—

INTERCENSAL INCREASES IN THE TOTAL POPULATION.

State and Territory.	1881-1891.		1891-1901.		1901-1911.	
	Numerical.	Per cent.	Numerical.	Per cent.	Numerical.	Per cent.
N.S. Wales (a) ..	374,129	49.90	230,892	20.54	293,602	21.67
Victoria ..	278,274	32.30	61,230	5.37	114,481	9.53
Queensland ..	180,193	84.39	104,411	26.52	107,684	21.62
South Australia ..	39,119	14.15	42,813	13.57	50,212	14.01
West Australia ..	20,074	67.57	134,342	269.86	97,990	53.22
Tasmania ..	30,962	26.76	25,808	17.60	18,736	10.86
N. Territory ..	1,447	41.93	(b) - 87	(b) - 1.78	(b) - 1,501	(b) - 31.20
Commonwealth ..	924,198	41.07	599,409	18.88	681,204	18.05

(a) Including Federal Territory. (b) Decrease.

For the Commonwealth as a whole, the increase in population during the period 1901-11 was greater by 81,795 than that for the period 1891-1901. The rate of increase per cent. was, however, not so great, being 18.05 per cent. for 1901-11, as against 18.88 for 1891-1901. The former corresponds to an increase of 1.67 per cent. per annum, the latter to an increase of 1.74 per cent. per annum.

As regards the separate States, the numerical increases in the case of New South Wales, Victoria, Queensland, and South Australia were greater for 1901-11 than for 1891-1901. On the other hand, Western Australia and Tasmania experienced greater numerical increases in the earlier than in the later decennium, while the Northern Territory, which exhibited an actual loss of population in both decennia, experienced a much heavier loss in 1901-11 than in 1891-1901. In the matter of rates of increase per cent. New South Wales, Victoria, and South Australia were higher in 1901-11 than in 1891-1901, while Queensland, Western Australia, and Tasmania were lower, and the rate of decrease in the Northern Territory was much heavier.

§ 10. Principal Results of Census of 1911.

1. **Census Results.**—In the first issue of the Official Year Book tables are given showing in some detail particulars concerning the Census of 1901 for the several States under the headings of Ages, Birthplaces, Occupations, Religions, and Conjugal Condition. (See Year Book No. 1, pp. 164 to 179.) In the Official Year Book No. 6, pp. 143 to 171, similar and a few additional particulars appeared as to the Census of 3rd April, 1911. In the following tables this information is given in a condensed form.

2. **Ages.**—The numbers of persons of each sex at each age enumerated in the several States of the Commonwealth at the Census of 3rd April, 1911, are as follows:—

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO AGE.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

Age Group.	States.						Territories.		Total C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nrth'n.	Federal.	
MALES.									
0-4 ..	102,003	73,061	37,724	24,109	17,709	12,636	84	85	267,411
5-9 ..	85,137	65,615	32,068	20,470	14,807	11,307	93	89	229,586
10-14 ..	79,136	63,586	31,454	19,589	11,789	10,086	65	99	215,804
15-19 ..	82,981	67,804	32,648	21,524	11,787	9,913	79	95	226,831
20-24 ..	87,314	61,895	33,600	21,564	14,713	8,843	146	104	228,179
25-29 ..	76,430	51,955	29,053	19,020	15,487	7,731	156	90	199,922
30-34 ..	64,228	44,928	24,445	15,057	15,641	6,570	175	75	171,119
35-39 ..	55,121	41,308	21,411	12,287	15,551	5,911	213	70	151,872
40-44 ..	50,940	42,512	20,086	11,468	13,923	5,555	340	43	144,867
45-49 ..	46,638	41,015	18,769	10,300	10,758	5,157	384	58	133,079
50-54 ..	39,345	31,866	15,202	9,543	7,345	4,368	415	48	108,132
55-59 ..	27,544	19,486	10,271	7,253	4,199	3,019	238	48	72,058
60-64 ..	20,023	13,834	7,474	4,971	2,788	2,115	184	27	51,416
65-69 ..	15,370	11,432	5,889	4,006	1,869	1,581	54	26	40,227
70-74 ..	10,611	9,415	4,260	2,555	1,124	1,041	39	18	29,063
75-79 ..	6,658	7,275	2,103	1,529	576	678	7	5	18,831
80-84 ..	2,719	3,903	768	818	254	341	2	3	8,808
85-89 ..	771	1,133	236	289	64	144	..	1	2,638
90-94 ..	185	267	52	68	25	43	..	..	640
95-99 ..	35	34	9	19	3	16	..	..	116
100 and upwards ..	19	8	2	1	1	4	..	..	35
Unspecified ..	4,490	3,259	1,982	918	1,152	532	60	8	12,401
Total ..	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

FEMALES.

0-4 ..	98,863	70,417	35,980	23,421	17,215	12,144	87	95	258,222
5-9 ..	83,120	63,904	31,418	19,850	14,387	10,802	88	91	223,660
10-14 ..	77,998	62,523	30,995	19,412	11,627	9,653	60	89	212,357
15-19 ..	81,015	67,719	30,888	21,350	10,806	9,785	70	92	221,705
20-24 ..	82,850	65,217	29,407	20,636	10,584	9,293	45	59	218,091
25-29 ..	72,390	55,651	23,508	18,517	10,429	7,872	46	41	188,454
30-34 ..	59,896	48,694	19,289	14,707	10,582	6,579	50	44	159,841
35-39 ..	50,708	44,549	16,738	12,213	9,917	5,361	35	39	139,560
40-44 ..	43,455	42,480	14,607	11,204	7,924	4,899	38	44	124,651
45-49 ..	37,583	38,477	12,246	10,042	5,648	4,488	24	29	108,537
50-54 ..	29,904	29,420	9,519	8,348	3,745	3,755	11	25	84,787
55-59 ..	20,905	18,457	6,356	6,190	2,427	2,558	9	21	56,923
60-64 ..	16,352	14,316	4,918	4,626	1,818	1,928	3	13	43,974
65-69 ..	13,014	12,803	4,160	3,734	1,320	1,614	4	15	36,464
70-74 ..	8,585	9,972	2,792	2,717	813	1,119	1	8	26,007
75-79 ..	5,242	6,934	1,411	1,815	376	719	1	3	16,501
80-84 ..	2,223	3,387	596	971	139	369	..	4	7,689
85-89 ..	783	1,129	232	373	59	128	..	2	2,706
90-94 ..	241	265	50	99	10	37	..	..	702
95-99 ..	34	56	10	19	1	7	..	..	127
100 and upwards ..	12	10	3	2	2	..	..	..	29
Unspecified ..	3,803	3,780	1,184	954	720	530	4	8	10,983
Total ..	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

AUSTRALIAN POPULATION AT 3RD APRIL, 1911, CLASSIFIED ACCORDING TO AGE.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS)—*continued.*

Age Group.	States.						Territories.		Total C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North'n.	Federal.	
PERSONS.									
0-4 ..	200,866	143,478	73,704	47,530	34,924	24,780	171	180	525,633
5-9 ..	168,257	129,519	63,486	40,320	29,194	22,109	181	180	453,246
10-14 ..	157,134	126,109	62,449	39,001	23,416	19,739	125	188	428,161
15-19 ..	163,996	135,523	63,536	42,874	22,593	19,678	149	187	448,536
20-24 ..	170,164	127,112	63,007	42,200	25,297	18,136	191	163	446,270
25-29 ..	148,820	107,606	52,561	37,537	25,916	15,603	202	131	388,376
30-34 ..	124,124	93,622	43,734	29,764	26,223	13,149	225	119	330,960
35-39 ..	105,829	85,857	38,149	24,500	25,468	11,272	248	109	291,432
40-44 ..	94,395	84,992	34,693	22,672	21,847	10,454	378	87	269,518
45-49 ..	84,221	79,492	31,015	20,342	16,406	9,645	408	87	241,616
50-54 ..	69,309	61,286	24,721	17,891	11,090	8,123	426	73	192,919
55-59 ..	48,449	37,943	16,627	13,443	6,626	5,577	247	69	128,981
60-64 ..	36,375	28,150	12,392	9,597	4,606	4,043	187	40	95,390
65-69 ..	23,384	24,035	10,049	7,740	3,189	3,195	58	41	76,691
70-74 ..	19,196	19,387	7,052	5,272	1,937	2,160	40	26	55,070
75-79 ..	11,900	14,209	3,514	3,344	952	1,397	8	8	35,332
80-84 ..	4,942	7,290	1,364	1,789	393	710	2	7	16,497
85-89 ..	1,554	2,262	468	662	123	272	..	3	5,344
90-94 ..	426	532	102	167	35	80	..	..	1,342
95-99 ..	69	90	19	38	4	23	..	..	243
100 and upwards ..	31	18	5	3	3	4	..	..	64
Unspecified ..	8,293	7,039	3,166	1,872	1,872	1,062	64	16	23,384
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

3. Birthplaces.—In the next table particulars are given of the populations of the several States of the Commonwealth on 3rd April, 1911, classified according to sex and birthplace, the birthplaces being grouped under the five continental divisions of the globe, with two additional headings for those born in Polynesia, and those born at sea. Of the total population of 4,455,005, those of unspecified birthplace numbered 30,470, or slightly less than 7 per thousand :—

AUSTRALIAN POPULATION AT 3RD APRIL, 1911, CLASSIFIED ACCORDING TO BIRTHPLACE.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

Birthplace.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal.	
MALES.									
Australia ..	691,736	541,659	232,757	173,811	111,269	86,948	1,029	844	1,840,053
New Zealand ..	7,296	4,968	1,632	554	1,819	574	17	2	16,862
United Kingdom ..	121,046	82,927	68,406	24,283	32,191	7,577	224	113	336,767
Other European Countries ..	15,507	11,501	12,997	5,636	8,080	776	45	4	54,546
Asia ..	10,386	5,939	3,378	1,033	5,605	579	1,359	5	33,284
Africa ..	1,087	747	332	193	244	70	9	..	2,682
America ..	3,111	1,874	1,218	523	813	183	12	4	7,738
Polynesia ..	676	121	1,567	23	57	21	11	..	2,476
At Sea ..	817	630	342	211	146	62	1	..	2,209
Unspecified ..	6,036	5,225	1,877	1,091	1,341	801	27	20	16,418
Total ..	857,698	655,591	329,506	207,358	161,565	97,691	2,734	992	2,313,035

AUSTRALIAN POPULATION AT 3RD APRIL, 1911, CLASSIFIED ACCORDING TO BIRTHPLACE.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS)—continued.

Birthplace.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Fede-ral.	
FEMALES.									
Australia ..	685,483	567,286	213,938	176,450	97,781	85,549	476	654	1,827,617
New Zealand ..	6,667	5,099	944	432	1,235	628	1	2	15,006
United Kingdom	83,348	74,509	51,609	20,148	18,361	5,895	38	47	253,955
Other European Countries ..	4,264	3,845	7,230	2,353	1,348	358	4	1	19,403
Asia ..	1,077	737	489	211	391	199	54	..	3,158
Africa ..	912	751	195	164	179	75	..	..	2,276
America ..	1,313	1,109	470	241	310	96	..	1	3,540
Polynesia ..	528	158	161	32	31	23	1	..	934
At Sea ..	662	673	287	211	135	60	1	..	2,029
Unspecified ..	4,782	5,793	984	958	778	739	1	17	14,052
Total ..	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

PERSONS.									
Australia ..	1,377,219	1,108,945	446,695	350,261	209,050	172,497	1,505	1,498	3,667,670
New Zealand ..	13,963	10,067	2,576	986	3,054	1,200	18	4	31,868
United Kingdom	204,394	157,436	120,015	44,431	50,532	13,472	262	160	590,722
Other European Countries ..	19,771	15,346	20,227	7,989	9,428	1,134	49	5	73,949
Asia ..	11,463	6,676	8,867	1,244	5,996	778	1,413	5	36,442
Africa ..	1,999	1,498	527	357	423	145	9	..	4,958
America ..	4,424	2,983	1,688	764	1,123	279	12	5	11,278
Polynesia ..	1,204	279	1,728	55	88	44	12	..	3,410
At Sea ..	1,479	1,303	629	422	281	122	2	..	4,238
Unspecified ..	10,818	11,018	2,861	2,049	2,119	1,540	28	37	30,470
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

4. Occupations.—In the compilation of the results of the Census of 3rd April, 1911, the populations of the several States and Territories were tabulated according to occupation in the following classes :—

(i) *Professional.* Embracing all persons not otherwise classed, mainly engaged in the government and defence of the country, and in satisfying the moral, intellectual, and social wants of its inhabitants.

(ii) *Domestic.* Embracing all persons engaged in the supply of board and lodging, and in rendering personal services for which remuneration is usually paid.

(iii) *Commercial.* Embracing all persons directly connected with the hire, sale, transfer, distribution, storage, and security of property and materials.

(iv) *Transport and Communication.* Embracing all persons engaged in the transfer of persons or goods, or in effecting communication.

(v) *Industrial.* Embracing all persons not otherwise classed who are principally engaged in various works of utility, or in specialities connected with the manufacture, construction, modification, or alteration of materials so as to render them more available for the various uses of man, but excluding, as far as possible, all who are mainly or solely engaged in the service of commercial interchange.

(vi) *Agricultural, Pastoral, Mineral, and other Primary Producers.* Embracing all persons mainly engaged in the cultivation or acquisition of food products, and in obtaining other raw materials from natural sources.

(vii) *Independent.* Embracing all persons of independent means having no specific occupation.

(viii) *Dependents.* Embracing all persons dependent upon relatives or natural guardians, including wives, children, and others, not otherwise engaged in pursuits for which remuneration is paid, and all persons depending upon private charity, or whose support is a burthen on the public revenue.

Particulars concerning the number contained in each of these classes are given in the table hereunder :—

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO OCCUPATION.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

Occupation.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fede- ral.	

MALES.

Class	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fede- ral.	Total C'wealth.
I. Professional ..	36,763	26,607	11,403	6,644	6,746	3,350	73	52	91,638
II. Domestic ..	18,898	13,619	6,354	3,418	4,319	1,489	127	11	48,235
III. Commercial ..	88,208	74,448	28,905	22,304	15,378	7,041	196	19	236,499
IV. Transport and Communication	60,367	37,629	22,521	15,523	11,900	4,407	194	13	152,554
V. Industrial ..	171,921	141,317	56,949	44,385	24,045	14,710	208	210	453,743
VI. Primary Pro- ducers ..	199,143	139,221	98,721	47,642	53,059	30,413	1,673	396	570,268
VII. Independent ..	5,507	4,546	2,027	931	478	436	9	5	13,939
VIII. Dependents ..	265,731	202,357	98,359	62,275	43,913	33,630	236	272	706,773
Unspecified ..	11,160	15,847	4,267	4,236	1,729	2,115	18	14	39,386
Total ..	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

FEMALES.

Class	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fede- ral.	Total C'wealth.
I. Professional ..	19,377	17,212	6,250	4,529	3,453	2,131	13	8	52,973
II. Domestic ..	54,483	48,556	20,216	14,060	9,303	6,375	74	64	153,131
III. Commercial ..	18,112	17,163	5,659	4,674	2,906	1,671	..	3	50,188
IV. Transport and Communication	1,597	1,609	621	347	326	331	..	6	4,837
V. Industrial ..	36,093	46,456	11,313	8,181	3,985	2,558	4	4	108,594
VI. Primary Pro- ducers ..	4,950	5,163	3,183	1,406	528	614	12	24	15,880
VII. Independent ..	3,401	3,507	731	761	272	443	..	1	9,116
VIII. Dependents ..	650,480	518,780	227,711	166,432	99,554	79,171	473	612	1,743,213
Unspecified ..	543	1,514	623	810	222	326	..	..	4,038
Total ..	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

PERSONS.

Class	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fede- ral.	Total C'wealth.
I. Professional ..	56,140	43,819	17,653	11,173	10,199	5,481	86	60	144,611
II. Domestic ..	73,381	62,175	26,570	17,478	13,622	7,864	201	75	201,366
III. Commercial ..	106,320	91,611	34,564	26,978	18,284	8,712	196	22	286,687
IV. Transport and Communication	61,964	39,238	23,142	15,870	12,226	4,738	194	19	157,391
V. Industrial ..	208,014	187,773	68,262	52,566	28,028	17,268	212	214	562,337
VI. Primary Pro- ducers ..	204,093	144,384	101,904	49,048	53,587	31,027	1,685	420	586,148
VII. Independent ..	8,908	8,053	2,758	1,692	750	879	9	6	23,055
VIII. Dependents ..	916,211	721,137	326,070	228,707	143,467	112,801	709	884	2,449,986
Unspecified ..	11,703	17,361	4,890	5,046	1,951	2,441	18	14	49,424
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

5. Religions.—In the Act under which the Census of 1911 was taken in the several States, persons enumerated were required under penalty to furnish replies to all the inquiries contained in the schedule, with the exception of that relating to religion. In this case, any person objecting to give such particulars was allowed to insert the words "Object to state" in the space provided for religion. Of the total population of 4,455,005 there were 83,003, or 1.86 per cent., who availed themselves of this option. There were also 36,114, or 0.81 per cent., concerning whom no particulars as to religion were obtained.

Of the remainder, 4,274,414, or 95.95 per cent., were members of the various Christian denominations, 36,785 were members of non-Christian religions, 14,673 were of indefinite religious belief, and 10,016 stated that they were of no religion.

Amongst the Christian denominations, that most numerous represented was the Church of England, with 1,710,443 adherents, the next in order being the Roman Catholic (921,425), the Presbyterian (558,336), the Methodist (547,806), the Baptist (97,074), the Congregational (74,046), the Lutheran (72,395), the Church of Christ (38,748), and the Salvation Army (26,665).

The principal non-Christian religions represented in Australia were the Hebrew, Confucian, Mohammedan and Buddhist, the members of the Hebrew congregation totalling 17,287.

Those included under the head of "Indefinite" in the attached table consist mainly of persons who stated that they were "Freethinkers" or "Agnostics," or returned themselves as being of "No Denomination," while under the head of "No Religion" are given those who were so returned on the schedules as well as a small number who stated that they were "Atheists."

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO RELIGION.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

Religion.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Fede-ral.	
MALES.									
Christian ..	820,484	623,789	305,929	192,825	147,116	92,902	1,050	961	2,185,056
Non-Christian ..	8,965	5,618	5,627	989	4,913	265	1,256	1	27,634
Indefinite ..	3,068	3,347	1,662	791	1,223	284	20	3	10,398
No Religion ..	2,471	2,110	1,595	787	1,074	169	31	2	8,239
Object to state ..	14,989	14,212	8,981	9,930	4,547	3,008	86	13	55,766
Unspecified ..	7,721	6,515	5,712	2,036	2,692	963	291	12	25,942
Total ..	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035
FEMALES.									
Christian ..	773,845	643,264	269,895	193,718	116,644	90,938	349	705	2,089,358
Non-Christian ..	3,808	3,224	563	442	937	71	106	..	9,151
Indefinite ..	1,443	1,877	435	344	332	142	2	..	4,275
No Religion ..	481	531	311	221	186	41	6	..	1,777
Object to state ..	6,997	7,758	3,611	5,331	1,598	1,921	12	9	27,237
Unspecified ..	2,762	3,306	1,492	1,144	852	507	101	8	10,172
Total ..	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970
PERSONS.									
Christian ..	1,594,329	1,267,053	575,824	386,543	263,760	183,840	1,399	1,666	4,274,414
Non-Christian ..	12,773	8,842	6,190	1,431	5,850	336	1,362	1	36,785
Indefinite ..	4,211	5,224	2,097	1,135	1,555	426	22	3	14,673
No Religion ..	2,952	2,641	1,906	1,008	1,260	210	37	2	10,016
Object to state ..	21,986	21,970	12,592	15,261	6,145	4,929	98	22	83,003
Unspecified ..	10,483	9,821	7,204	3,180	3,544	1,470	392	20	36,114
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

The accompanying table furnishes for the Censuses of 1891, 1901, and 1911, a comparison of the numbers recorded in the principal denominations and religions. An unsatisfactory feature of the table is the large number who stated their religion simply as "Protestant" or "Catholic." Presumably, the majority of the latter were "Roman Catholic," but an appropriate allocation of the undefined Protestants could not readily be made. The returns for 1911 included no fewer than 109,861 Protestants (undefined) and 75,379 Catholics (undefined).

**POPULATION OF THE COMMONWEALTH AT THE CENSUSES OF 1891, 1901, AND 1911,
CLASSIFIED ACCORDING TO RELIGION AND SEX.**

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

RELIGION:	MALES.			FEMALES.			PERSONS.		
	Census of 5th April, 1891.	Census of 31st Mch., 1901.	Census of 3rd April, 1911.	Census of 5th April, 1891.	Census of 31st Mch., 1901.	Census of 3rd April, 1911.	Census of 5th April, 1891.	Census of 31st Mch., 1901.	Census of 3rd April, 1911.
I. CHRISTIAN—									
Church of England ..	660,126	783,413	884,634	574,087	714,163	825,809	1,234,213	1,497,576	1,710,443
Presbyterian ..	187,328	221,601	289,591	164,592	204,504	268,745	351,920	426,105	558,336
Methodist ..	199,597	251,611	269,641	197,769	252,490	278,165	397,366	504,101	547,806
Baptist ..	35,129	42,662	45,661	37,149	46,676	51,413	72,273	89,338	97,074
Congregational ..	36,289	35,603	35,367	36,426	37,958	38,679	72,715	73,561	74,046
Lutheran ..	41,795	43,329	40,993	29,031	31,692	31,402	70,826	75,021	72,395
Church of Christ ..	7,123	11,265	17,382	7,714	12,927	21,366	14,842	21,192	38,748
Salvation Army ..	16,806	14,802	12,322	16,625	16,295	14,343	33,431	31,100	26,665
Seventh Day Advnt's ..	336	1,411	2,536	377	1,921	3,559	713	3,332	6,095
Unitarian ..	2,501	1,620	1,307	1,388	1,009	868	3,889	2,629	2,175
Protestant (undefined)	17,416	11,485	63,079	12,449	9,073	46,782	29,865	20,558	109,861
Roman Catholic ..	363,780	433,504	465,803	341,627	417,116	455,622	705,407	850,620	921,425
Greek Catholic ..	559	1,075	2,172	63	239	474	622	1,314	2,646
Catholic (undefined)	4,351	2,748	38,772	4,089	2,431	36,607	8,440	5,179	75,379
Others ..	10,252	10,944	15,796	9,150	10,879	15,524	19,402	21,823	31,320
TOTAL ..	1,583,393	1,867,073	2,185,056	1,432,536	1,759,376	2,089,358	3,015,929	3,626,449	4,274,414
II. NON-CHRISTIAN—									
Hebrew ..	7,634	8,137	9,165	6,171	7,102	8,122	13,805	15,239	17,287
Confucian ..			5,036			158			5,194
Mohammedan ..			3,706			202			3,908
Buddhist ..	41,427	34,712	3,110	1,339	954	159	42,766	35,666	3,269
Pagan ..			1,422			25			1,447
Others ..	303	1,784	5,195	69	682	483	372	2,466	5,680
TOTAL ..	49,364	44,633	27,634	7,579	8,738	9,151	56,943	53,371	36,785
III. INDEFINITE—									
Freethinker ..	12,551	7,863	2,753	2,934	1,319	501	15,485	9,182	3,254
Agnostic ..	728	834	2,546	134	137	538	862	971	3,084
No Denomination ..	9,408	13,620	1,568	3,824	6,137	1,120	13,232	19,757	2,688
Others ..	1,078	638	3,531	653	463	2,116	1,731	1,101	5,647
TOTAL ..	23,765	22,955	10,398	7,545	8,056	4,275	31,310	31,011	14,673
IV. NO RELIGION—									
No Religion ..	5,648	5,149	7,559	1,421	1,333	1,692	7,069	6,482	9,251
Atheist ..	574	245	516	213	29	63	787	274	579
Others ..	169	19	164	59	4	22	228	23	186
TOTAL ..	6,391	5,413	8,239	1,693	1,366	1,777	8,084	6,779	10,016
V. OBJECT TO STATE	26,307	28,443	55,766	13,093	13,688	27,237	39,400	42,131	83,002
VI. UNSPECIFIED	14,819	9,411	25,942	7,907	4,649	10,172	22,726	14,060	36,114
GRAND TOTAL ..	1,704,039	1,977,928	2,313,035	1,470,353	1,795,873	2,141,970	3,174,392	3,773,801	4,455,005

6. **Conjugal Condition.**—In the following tables particulars are given concerning the population of the several States and Territories on 3rd April, 1911, classified according to conjugal condition and age :—

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

MALES.

Age Group.	States.						Territories.		Total Cwealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fede- ral.	
NEVER MARRIED.									
Under 15 ..	266,274	202,261	101,246	64,168	44,305	34,029	242	273	712,798
15 & under 21	99,446	80,655	39,270	25,648	14,432	11,630	106	119	271,306
21 „ 45	153,938	113,648	65,276	36,380	38,446	14,707	733	225	423,353
45 „ 65	27,381	18,713	13,684	4,749	7,294	2,158	862	52	74,893
65 & upwards	7,222	5,527	2,954	938	942	413	63	10	18,069
Unspecified ..	2,089	1,800	1,148	459	641	263	54	4	6,458
Total ..	556,350	422,604	223,578	132,342	106,060	63,200	2,060	683	1,506,877

MARRIED.									
Under 15 ..	2	1	..	..	..	..	..	..	3
15 & under 21	1,097	566	260	210	99	114	1	..	2,347
21 „ 45	157,224	111,942	54,549	37,708	32,725	17,488	236	125	411,997
45 „ 65	95,496	79,536	34,056	24,987	15,630	11,291	304	114	261,414
65 & upwards	20,086	18,594	7,159	5,879	1,997	2,389	32	33	56,169
Unspecified ..	1,523	1,111	522	318	251	188	2	4	3,919
Total ..	275,428	211,750	96,546	69,102	50,702	31,470	575	276	735,849

WIDOWED.									
Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21	8	2	2	2	1	..	..	..	15
21 „ 45	3,951	2,956	1,540	865	1,153	402	12	6	10,885
45 „ 65	9,855	7,496	3,740	2,268	2,029	1,102	46	15	26,551
65 & upwards	8,903	9,220	3,169	2,457	962	1,021	6	9	25,747
Unspecified ..	170	146	62	35	35	28	1	..	477
Total ..	22,887	19,820	8,513	5,627	4,180	2,553	65	30	63,675

DIVORCED.									
Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21	..	..	..	1	1	..	..	..	2
21 „ 45	569	258	115	45	99	24	..	..	1,110
45 „ 65	566	267	81	39	77	31	1	..	1,062
65 & upwards	81	41	9	7	6	3	..	1	148
Unspecified ..	14	9	9	1	4	1	..	..	38
Total ..	1,230	575	214	93	187	59	1	1	2,360

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—*continued.*MALES—*continued.*

Age Group.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal.	
NOT STATED.									
Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21	..	..	..	..	..	..	..	..	..
21 „ 45	781	375	231	61	146	158	21	2	1,775
45 „ 65	252	189	155	24	60	77	8	..	765
65 & upwards	76	85	28	4	9	22	1	..	225
Unspecified ..	694	193	241	105	221	52	3	..	1,509
Total ..	1,803	842	655	194	436	309	33	2	4,274

FEMALES.

NEVER MARRIED.

Under 15 ..	259,975	196,838	98,389	62,681	43,229	32,598	235	275	694,220
15 & under 21	90,844	78,170	34,851	24,409	11,969	10,919	63	104	251,329
21 „ 45	103,042	101,293	32,510	28,098	12,199	11,209	43	66	288,460
45 „ 65	10,689	15,274	2,030	3,288	1,048	1,563	2	1	33,895
65 & upwards	1,868	2,027	322	543	110	330	..	1	5,201
Unspecified ..	1,185	1,255	377	311	252	174	3	4	3,561
Total ..	467,603	394,857	168,479	119,330	68,807	56,793	346	451	1,276,666

MARRIED.

Under 15 ..	6	6	4	2	..	1	..	..	19
15 & under 21	6,977	3,303	2,280	1,166	988	818	18	2	15,552
21 „ 45	181,426	134,801	62,181	43,392	33,554	20,063	147	141	475,705
45 „ 65	74,473	65,795	24,769	20,798	9,945	9,048	39	70	204,937
65 & upwards	11,245	10,748	3,998	3,521	917	1,338	2	16	31,785
Unspecified ..	2,089	1,812	682	506	376	305	1	4	5,775
Total ..	276,216	216,465	93,914	69,385	45,780	31,573	207	233	733,773

WIDOWED.

Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21	29	25	9	6	7	5	..	..	81
21 „ 45	6,936	6,143	2,487	1,469	1,407	666	9	5	19,122
45 „ 65	19,234	19,329	6,200	5,090	2,617	2,060	6	17	54,553
65 & upwards	16,959	21,515	4,924	5,657	1,692	2,306	4	15	53,072
Unspecified ..	413	504	100	112	62	49	..	..	1,240
Total ..	43,571	47,516	13,720	12,334	5,785	5,086	19	37	128,068

DIVORCED.

Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21	4	4	..	..	..	..	..	..	8
21 „ 45	774	396	57	34	76	21	..	1	1,359
45 „ 65	360	231	24	24	26	12	..	..	677
65 & upwards	36	27	4	3	..	1	..	..	71
Unspecified ..	16	7	..	1	1	..	..	..	25
Total ..	1,190	665	85	62	103	34	..	1	2,140

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—continued.

FEMALES—continued.

Age Group.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal.	
NOT STATED.									
Under 15 ..	96	62	20	24	10	9	2	..	..
15 & under 21 ..	186	113	42	29	32	59	2	..	223
21 .. 45	48	41	16	6	2	46	..	..	463
45 .. 65	26	39	6	6	1	18	..	..	159
65 & upwards	100	202	25	24	29	2	..	..	96
Unspecified ..	..	..	..	..	..	..	..	..	382
Total ..	456	457	109	89	74	134	4	..	1,323

SUMMARY OF PERSONS RECORDED IN EACH STATE AND TERRITORY OF THE COMMONWEALTH AT THE CENSUS OF 3RD APRIL, 1911, CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND SEX.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

Conjugal Condition.	States.						Territories.		Total C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal.	
MALES.									
Never married	556,350	422,604	223,578	132,342	106,060	63,200	2,060	683	1,506,877
Married ..	275,428	211,750	96,546	69,102	50,702	31,470	575	276	735,849
Widowed ..	22,887	19,820	8,513	5,627	4,180	2,553	65	30	63,675
Divorced ..	1,230	575	214	93	187	59	1	1	2,360
Not stated ..	1,803	842	655	194	436	309	33	2	4,274
Total ..	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035
FEMALES.									
Never married	467,603	394,857	168,479	119,330	68,807	56,793	346	451	1,276,666
Married ..	276,216	216,465	93,914	69,385	45,780	31,573	207	233	733,773
Widowed ..	43,571	47,516	13,720	12,334	5,785	5,036	19	37	123,068
Divorced ..	1,190	665	85	62	103	34	..	1	2,140
Not stated ..	456	457	109	89	74	134	4	..	1,323
Total ..	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970
PERSONS.									
Never married	1,023,953	817,461	392,057	251,672	174,867	119,993	2,406	1,134	2,783,543
Married ..	551,644	428,215	190,460	138,487	96,482	63,043	782	509	1,469,622
Widowed ..	66,458	67,336	22,233	17,961	9,965	7,639	84	67	191,743
Divorced ..	2,420	1,240	299	155	290	93	1	2	4,500
Not stated ..	2,259	1,299	764	283	510	443	37	2	5,597
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

7. Education.—In the following table are contained particulars of the education of the population of the States and Territories of the Commonwealth as at the date of the Census of 3rd April, 1911. Of the total population of 4,455,005, there were 3,650,030, or 81.93 per cent., who were able to read and write in the English language, and 26,210, or

0.59 per cent., who were able to read and write in a foreign language, though unable to read or write English. Of the remainder no fewer than 525,633 were recorded as being under five years of age, all of whom were classed at the Census under the head of "Cannot read."

EDUCATION OF THE POPULATION OF THE STATES AND TERRITORIES OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF 3rd APRIL, 1911.

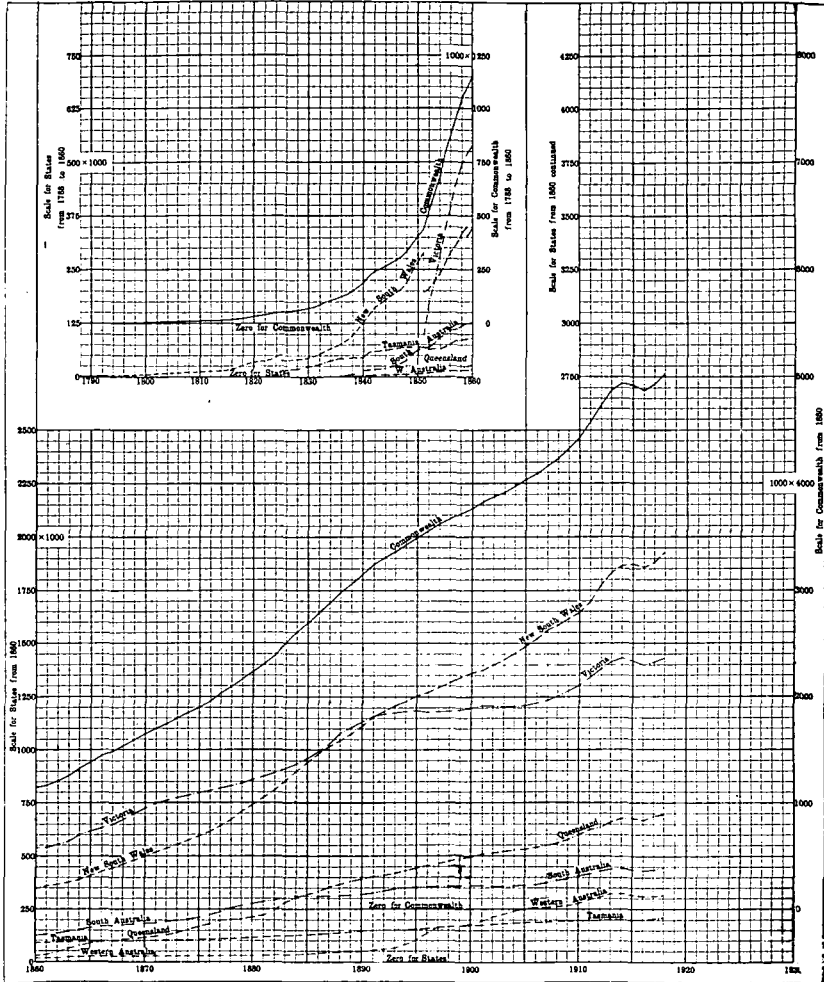
(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

States and Territories.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read only.	Read and Write.	Read only.			
MALES.							
STATES—							
New South Wales ..	696,258	2,565	5,889	497	134,215	18,274	857,698
Victoria ..	547,753	1,271	3,572	532	88,995	13,468	655,591
Queensland ..	265,896	1,136	6,185	678	49,406	6,205	329,506
South Australia ..	169,508	556	1,156	102	31,891	4,145	207,358
Western Australia	128,648	311	4,371	303	22,524	5,408	161,565
Tasmania ..	76,247	456	181	20	18,244	2,443	97,591
TERRITORIES—							
Northern..	1,126	4	852	29	642	81	2,734
Federal ..	820	9	2	..	140	21	992
Total Commonwealth	1,886,256	6,308	22,208	2,161	346,057	50,045	2,313,035

FEMALES.							
STATES—							
New South Wales ..	645,022	3,140	650	61	123,808	16,355	789,036
Victoria ..	555,675	2,626	665	66	84,449	16,479	659,960
Queensland ..	225,086	1,272	1,772	252	43,787	4,138	276,307
South Australia ..	165,634	993	531	88	29,987	3,967	201,200
Western Australia	96,702	256	317	15	20,724	2,535	120,549
Tasmania ..	74,795	409	30	4	16,235	2,147	93,620
TERRITORIES—							
Northern..	292	..	37	..	203	44	576
Federal ..	568	5	..	..	132	17	722
Total Commonwealth	1,763,774	8,701	4,002	486	319,325	45,682	2,141,970

PERSONS.							
STATES—							
New South Wales ..	1,341,280	5,705	6,539	558	258,023	34,629	1,646,734
Victoria ..	1,103,428	3,897	4,237	598	173,444	29,947	1,315,551
Queensland ..	490,982	2,408	7,957	930	93,193	10,343	605,813
South Australia ..	335,142	1,549	1,687	190	61,878	8,112	408,558
Western Australia	225,350	567	4,688	318	43,248	7,943	282,114
Tasmania ..	151,042	865	211	24	34,479	4,590	191,211
TERRITORIES—							
Northern..	1,418	4	889	29	845	125	3,310
Federal ..	1,388	14	2	..	272	38	1,714
Total Commonwealth	3,650,030	15,009	26,210	2,647	665,382	95,727	4,455,005

GRAPHS OF TOTAL POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND EACH STATE THEREIN, 1788-1918.



(See Tables pages 96 to 98.)

EXPLANATION OF GRAPHS, 1788-1860.—The base of each small square represents two years' interval for both States and Commonwealth, and the vertical height for the States 25,000 persons, and for the Commonwealth 50,000 persons.

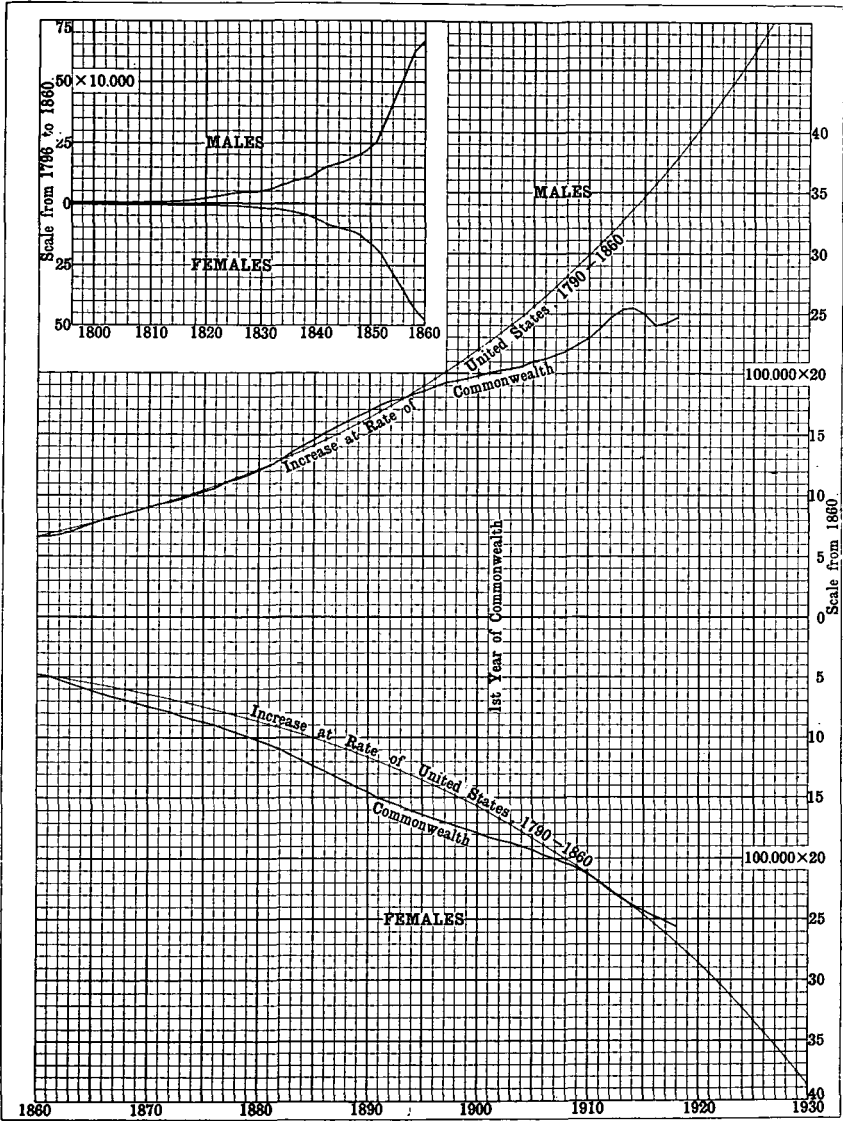
1860 onwards.—The base of each small square represents one year's interval for both States and Commonwealth, and the vertical height for the States 50,000 persons, and for the Commonwealth 100,000 persons.

In both graphs the zero line for the States is the bottom line; for the Commonwealth it is the line marked "Zero for Commonwealth." The scales on the right above the Commonwealth zero line relate to the Commonwealth, and those on the left relate to the States.

Where the population falls suddenly the fall denotes the creation of a new colony, e.g., New South Wales 1825, loses the whole population of Tasmania, then erected into a separate colony.

The curves are as follows:—Commonwealth, an unbroken line; New South Wales, — — —; Victoria, - - - - -; Queensland, - - - - -; South Australia, - - - - -; Western Australia, - - - - -; Tasmania, - - - - -; the names on the curves also shew which State each represents.

GRAPHS OF MALE AND FEMALE POPULATIONS, COMMONWEALTH OF AUSTRALIA, 1796-1918.



(See Tables pages 96 to 98.)

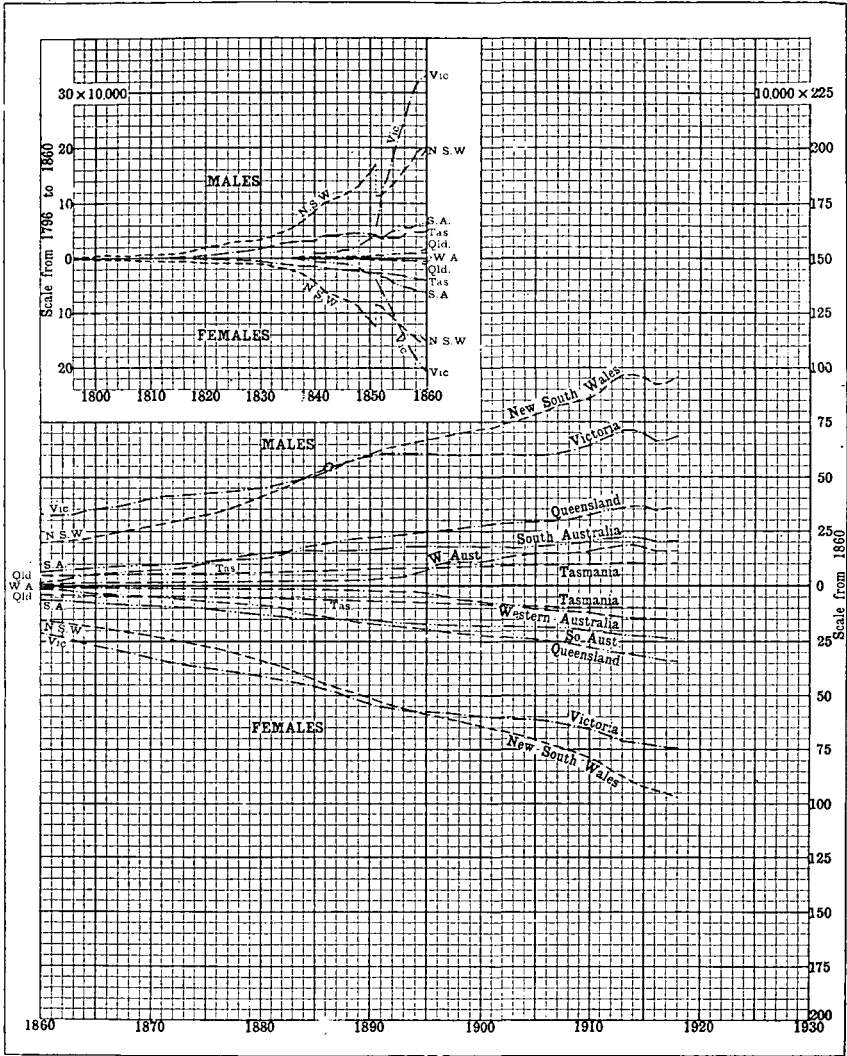
EXPLANATION OF GRAPHS.—1796-1860. The base of each small square represents two years' interval, and the vertical height 50,000 persons. The distances upward from the zero line denote the number of males, and downward the number of females.

1860 onward. The base of each small square represents one year's interval, and the vertical height 100,000 persons.

From 1860 onward is shown, for purposes of comparison, the manner in which the numbers of each sex in the Commonwealth would have grown from 1860, if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860.

The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS OF MALE AND FEMALE POPULATION OF THE STATES OF AUSTRALIA, 1796-1918.



(See Table page 96.)

EXPLANATION OF GRAPHS.—1796-1860. The base of each small square represents two years' interval, and the vertical height 20,000 persons. The distances upward from the zero line represent the number of males, and downward the number of females.

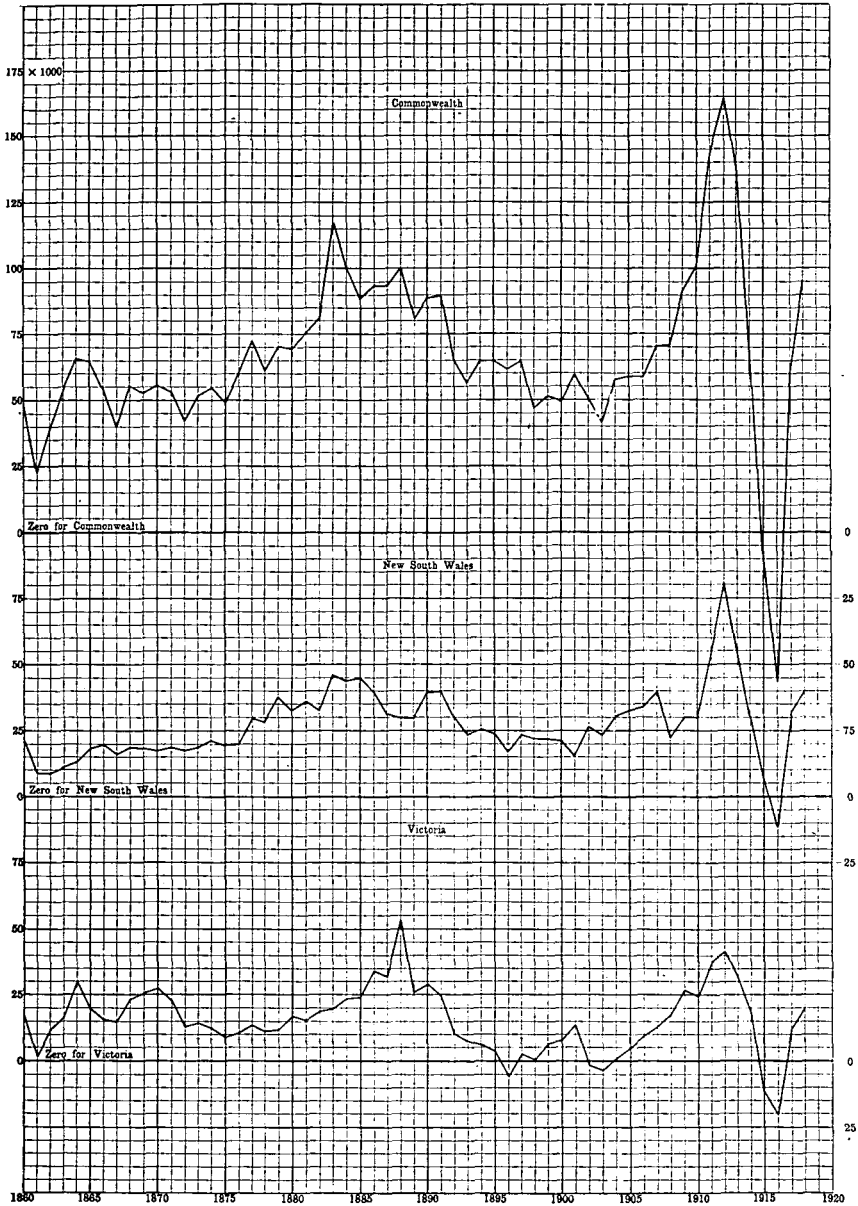
The sudden falls denote the creation of new colonies.

1860 onward.—The base of each small square represents one year's interval, and the vertical height 50,000 persons.

The names on the curves denote the States to which they refer, and the curves are as follows:—New South Wales, ————; Victoria, ————; Queensland, ————; South Australia, ————; Western Australia, ————; Tasmania, ————.

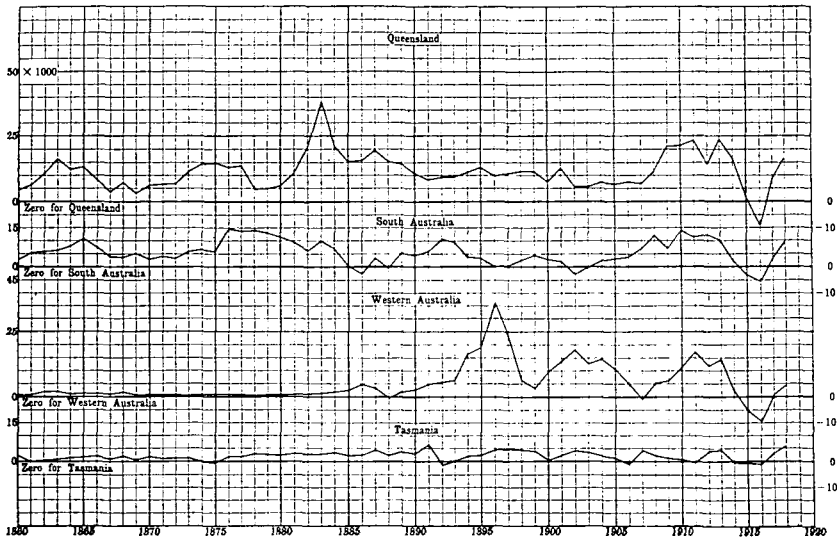
The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS SHEWING TOTAL INCREASE OF POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND THE STATES OF NEW SOUTH WALES AND VICTORIA, 1860-1918.



(For explanation see foot of next page.)

GRAPHS SHEWING TOTAL INCREASE OF POPULATION OF THE STATES OF QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1918.



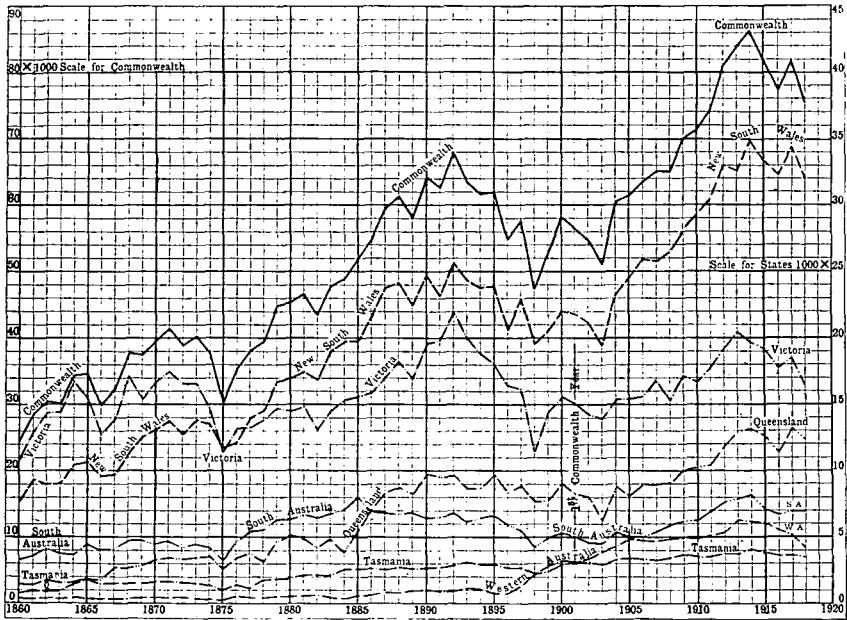
EXPLANATION OF GRAPHS SHEWING NET INCREASE.—The base of each small square represents an interval of a year for both States and Commonwealth; the vertical height represents 5,000 for the Commonwealth and the States. In the first graph (on page 142) three zero lines are taken (i) for the Commonwealth, (ii) for New South Wales, and (iii) for Victoria. In the second graph four zero lines are taken (i) for Queensland, (ii) for South Australia, (iii) for Western Australia, and (iv) for Tasmania.

DECREASES in population are shewn by carrying the graph in such cases below the zero line, the distance of the graph below the zero line indicating the extent of the decrease. The scales in these instances are on the right hand of the graph.

The names above the curves denote the States to which they belong.

(See Table page 112.)

GRAPHS OF NATURAL INCREASE OF THE POPULATION OF THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1918.

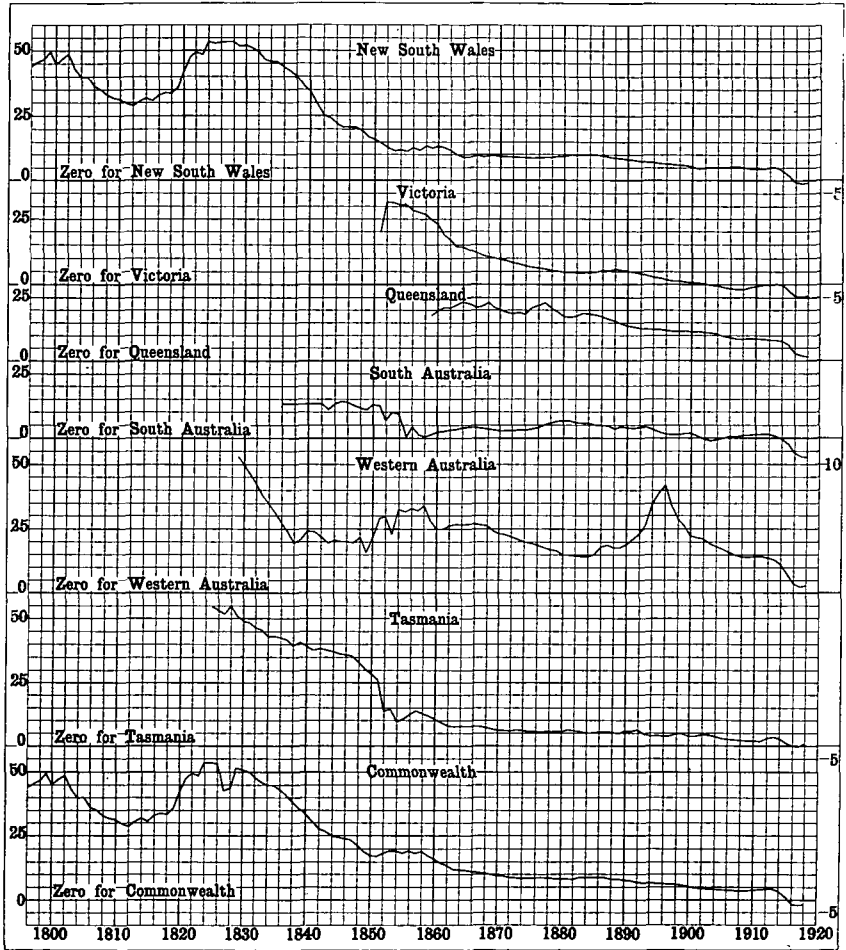


EXPLANATION OF GRAPHS.—The base of each small square represents one year for both States and Commonwealth, and the vertical height 1,000 persons for the States and 2,000 persons for the Commonwealth.

The distances upward from the zero line, marked 0 for both Commonwealth and States, denote the excess of births over deaths. The scale on the left relates to the Commonwealth, and that on the right to the States. The names shew the States to which the curves refer, they are as follows:—Commonwealth ———; New South Wales, ———; Victoria, ———; Queensland, ———; South Australia, ———; Western Australia, ———; Tasmania, ———.

(See Table page 109.)

GRAPHS SHEWING MASCULINITY OF THE POPULATION OF THE COMMONWEALTH AND STATES OF AUSTRALIA, 1796-1918.

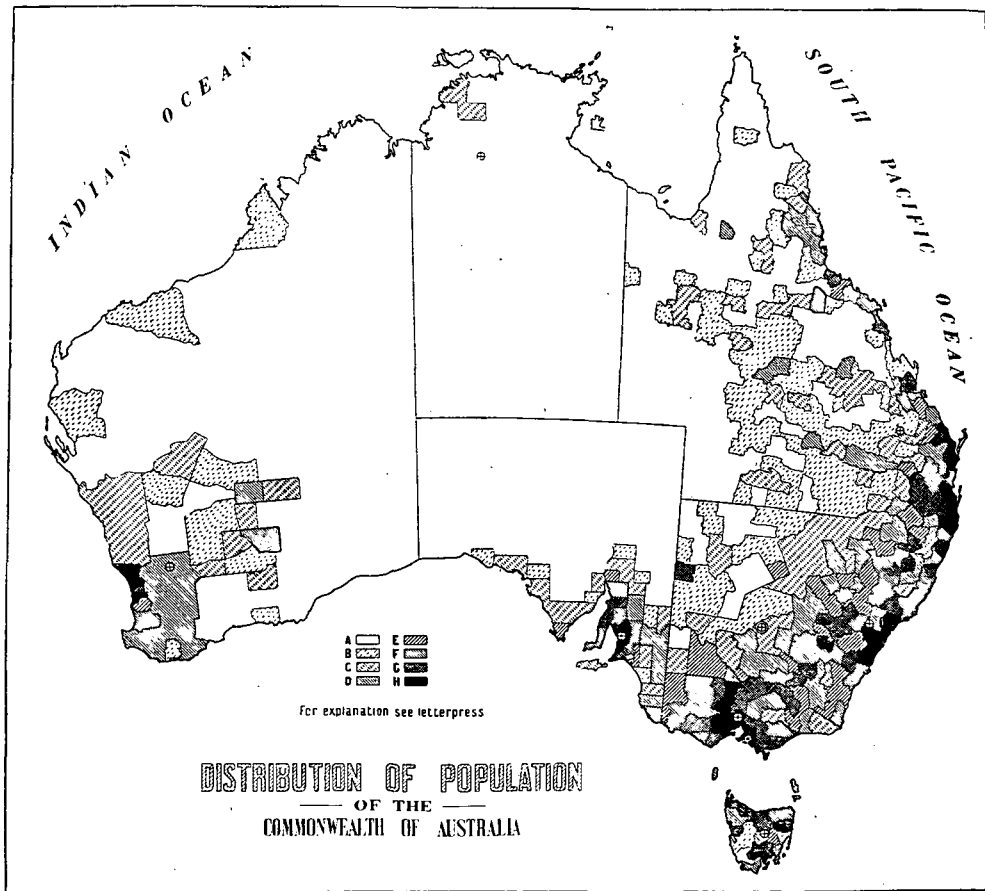


(See Table page 101.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of two years and the vertical height an excess of five males per 100 of population. The basic lines (shewn thickened) for Commonwealth and all the States are at zero, equivalent to a numerical equality of the sexes.

It will be noticed that in the case of New South Wales, and the Commonwealth in the years 1916, 1917, and 1918, Victoria in the years 1903 to 1912 and 1914 to 1918, South Australia in the years 1902 to 1904 and 1914 to 1918, and Tasmania for the years 1916 and 1917, the curves are below the zero line, thus shewing an excess of females over males.

DISTRIBUTION OF POPULATION THROUGHOUT THE COMMONWEALTH OF AUSTRALIA, ACCORDING TO CENSUS OF 1911.



The above map furnishes a graphic representation of the distribution of the population of the Commonwealth at the date of the census of 1911. For this purpose the density of the population has been computed for the counties of each State, and the areas representing these counties have been shaded in accordance with the following scale of density:—

A—	Less than 1 inhabitant in 16 sq. miles	
B—	From 1 inhabitant in 16 sq. miles to less than 1 in 4 sq. miles	
C—	1 " " 4 " "	1 in 1 sq. mile
D—	1 " " 1 sq. mile " "	2 in 1 " "
E—	2 inhabitants in 1 " " "	4 in 1 " "
F—	4 " " 1 " " "	8 in 1 " "
G—	8 " " 1 " " "	16 in 1 " "
H—	16 inhabitants and upwards in 1 sq. mile	

The cross within the concentric circles, the centre of which is practically on the longitude of Melbourne and the latitude of Sydney, represents the "centre of gravity" of the population of the Commonwealth, and the cross within the single circle in each State represents the "centre of gravity" of the population for such State.

From the following table, which gives for the Commonwealth as a whole particulars of education in conjunction with age, it will be seen that the major portion of those who were unable to read were under the age of 9. Of persons aged 20 and upwards only about 2½ per cent. were unable to read.

POPULATION OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF 3rd APRIL, 1911, CLASSIFIED ACCORDING TO EDUCATION AND AGE.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

Age.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read only.	Read and Write.	Read only.			

MALES.

0-4 .. ..	..	..	..	..	267,411	..	267,411
5-9	177,463	1,131	53	24	39,764	11,151	229,586
10-14	212,935	89	146	9	1,444	1,181	215,804
15-19	221,279	109	800	46	1,813	2,784	226,831
20 and upwards ..	1,266,625	4,911	20,813	2,062	34,307	32,284	1,361,002
Unspecified... ..	7,954	68	396	20	1,318	2,645	12,401
Total	1,886,256	6,308	22,208	2,161	346,057	50,045	2,313,035

FEMALES.

0-4 ... ..	..	..	..	..	258,222	..	258,222
5-9	173,567	1,116	46	8	36,536	12,387	223,660
10-14	209,904	75	95	6	1,062	1,215	212,357
15-19	218,273	50	101	5	847	2,429	221,705
20 and upwards ..	1,153,611	7,375	3,735	462	21,819	28,041	1,215,043
Unspecified... ..	8,419	85	25	5	839	1,610	10,983
Total	1,763,774	8,701	4,002	486	319,325	45,682	2,141,970

PERSONS.

0-4 .. ..	..	..	..	..	525,633	..	525,633
5-9	351,030	2,247	99	32	76,300	23,538	453,246
10-14	422,839	164	241	15	2,506	2,396	428,161
15-19	439,552	159	901	51	2,660	5,213	448,536
20 and upwards ..	2,420,236	12,286	24,548	2,524	56,126	60,325	2,576,045
Unspecified... ..	16,373	153	421	25	2,157	4,255	23,384
Total	3,650,030	15,009	26,210	2,647	665,382	95,727	4,455,005

8. School Attendances.—In the following table are set out particulars of school attendances of children aged last birthday from 6 to 13 years at the Census of 3rd April, 1911 :—

SCHOOL ATTENDANCES OF CHILDREN AGED LAST BIRTHDAY FROM 6 TO 13 YEARS IN THE STATES AND TERRITORIES OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF 3rd APRIL, 1911.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

NOTE.—In this table the term " State School " comprises all schools, whether primary or secondary, which are under the direct control of the State.

States and Territories	Number being educated at—			Number recorded as "scholar," but class of school not stated.	Number not indicated as receiving instruction.	Total.
	State School.	Private School.	Home.			
MALES.						
STATES—						
New South Wales ..	91,979	19,107	3,436	3,809	11,574	129,905
Victoria ..	78,185	15,367	1,198	1,826	6,031	102,607
Queensland ..	38,167	5,184	1,517	904	5,089	50,861
South Australia ..	22,817	3,548	521	380	4,409	31,675
Western Australia ..	15,289	3,239	558	508	1,653	21,247
Tasmania ..	11,042	2,113	459	485	2,832	16,931
TERRITORIES—						
Northern ..	32	25	9	1	56	123
Federal ..	98	..	22	4	25	149
Total Commonwealth..	257,609	48,583	7,720	7,917	31,669	353,498
FEMALES.						
STATES—						
New South Wales ..	84,129	23,329	4,191	3,279	12,802	127,730
Victoria ..	73,136	17,447	1,602	1,832	6,493	100,510
Queensland ..	35,656	6,765	1,713	1,032	4,759	49,925
South Australia ..	21,343	4,005	631	762	4,293	31,034
Western Australia ..	13,906	4,015	681	404	1,813	20,819
Tasmania ..	10,267	2,496	594	477	2,501	16,335
TERRITORIES—						
Northern ..	32	20	6	..	69	127
Federal ..	85	3	13	5	27	133
Total Commonwealth..	238,554	58,080	9,431	7,791	32,757	346,613
PERSONS.						
STATES—						
New South Wales ..	176,108	42,436	7,627	7,088	24,376	257,635
Victoria ..	151,321	32,814	2,800	3,658	12,524	203,117
Queensland ..	73,823	11,949	3,230	1,936	9,848	100,786
South Australia ..	44,160	7,553	1,152	1,142	8,702	62,709
Western Australia ..	29,195	7,254	1,239	912	3,466	42,066
Tasmania ..	21,309	4,609	1,053	932	5,333	33,266
TERRITORIES—						
Northern ..	64	45	15	1	125	250
Federal ..	183	3	35	9	52	282
Total Commonwealth..	496,163	106,663	17,151	15,708	64,426	700,111

9. **Blind Persons and Deaf Mutes.**—The following table contains particulars of the number of blind persons and deaf mutes as recorded at the date of the Census of 3rd April, 1911 :—

NUMBER OF BLIND PERSONS AND DEAF MUTES IN THE SEVERAL STATES OF THE COMMONWEALTH AT THE CENSUS OF 3rd APRIL, 1911.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

States.	Blind.			Deaf and Dumb.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
New South Wales ..	591	420	1,011	330	310	640
Victoria ..	595	507	1,102	280	255	535
Queensland ..	213	170	383	160	97	257
South Australia ..	192	166	358	134	112	246
Western Australia ..	85	57	142	40	36	76
Tasmania ..	78	68	146	54	44	98
Total Commonwealth ..	1,754	1,388	3,142 (a)	998	854	1,852 (a)

(a) Including 21 blind deaf mutes.

§ 11. Naturalisation.

1. **The Commonwealth Act.**—The Commonwealth Constitution empowers the Commonwealth Parliament to make laws with respect to “Naturalisation and Aliens,” a power which was exercised when the “Naturalisation Act of 1903” was passed. This Act was assented to on 13th October of that year, and came into force on 1st January, 1904, in accordance with a proclamation by *Gazette* of 14th November, 1903.

In 1917 it was considered advisable to make more stringent the provisions of the Act, notably with reference to the question of dual nationality, circumstances arising out of the war having clearly demonstrated that while many naturalised persons of enemy birth were enjoying the rights, privileges, and protection guaranteed to Australian citizens, they were still pledged to allegiance to their Mother Country. As a result the “Naturalisation Act 1903–1917,” containing a number of new and important provisions, was passed by Parliament and was assented to on 20th September of the same year.

Prior to the passing of the original Act the issue of certificates of naturalisation had been a function of the State Governments, carried out under Acts of the several State Legislatures, which, however, did not differ materially from each other, and furnished the basis on which the Commonwealth Act was drafted. From 1st January, 1904, when the Commonwealth Act of 1903 became operative, the right to issue certificates of naturalisation in the Commonwealth has been vested exclusively in the Federal Government, but all certificates or letters of naturalisation issued under the several State Acts prior to that date entitle the recipients to be deemed to be naturalised under the Commonwealth Act.

The grant of a certificate of naturalisation entitles the recipient within the limits of the Commonwealth to all the rights and privileges, and renders him subject to all the obligations, of a natural-born British subject, with the exception that where, by any Commonwealth or State Constitution or Act, a distinction is made between natural-born British subjects and naturalised persons, such distinction shall hold good in the case of all persons naturalised under the Commonwealth Act.

The "Naturalisation Act 1903-1917" (*i.e.*, the "Naturalisation Act 1903" as amended by the "Naturalisation Act 1917") provides that applications for certificate of naturalisation must be made to the Governor-General, the qualifications required in an applicant being :—

- (i) That he is not a British subject.
- (ii) That he is not an aboriginal native of Asia, Africa, or the Islands of the Pacific, excepting New Zealand.
- (iii) That he intends to settle in the Commonwealth.
- (iv) (a) That he has resided in Australia continuously for two years immediately preceding his application for naturalisation ; or
(b) That he has obtained in the United Kingdom a certificate or letters of naturalisation.

An applicant who has already obtained a certificate or letters of naturalisation in the United Kingdom is required to furnish, in support of his application—

- (i) His certificate or letters of naturalisation.
- (ii) His statutory declaration—
 - (a) That he is the person named in the certificate or letters.
 - (b) That he obtained the certificate or letters without fraud or intentional false statement.
 - (c) That the signature and seal thereto are, to the best of his knowledge and belief, genuine.
 - (d) That he intends to settle in the Commonwealth.

If the applicant is not already naturalised in the United Kingdom the particulars which he is required to furnish in support of his application are as follows :—

His own statutory declaration stating—

- (a) Name ; (b) Age ; (c) Birthplace ; (d) Occupation ; (e) Residence ; (f) Length of residence in Australia ; (g) Intention to settle in the Commonwealth ; (h) Such other particulars as are prescribed.

An applicant, whether naturalised in the United Kingdom or not so naturalised, must furnish—

- (i) Newspapers containing copies of an advertisement, as prescribed, of his intention to seek naturalisation.
- (ii) Certificates of character from three natural-born British subjects, two of whom must be householders, and the third a Justice of the Peace, Postmaster, State School Teacher, or Police Officer.
- (iii) Satisfactory evidence that he is able to read and write English.

Any person may make representation by statutory declaration with regard to an applicant for naturalisation, the contents of such declaration not to be disclosed other than with the consent of the person making the declaration, except for the purpose of a prosecution for perjury.

The Governor-General in Council is authorised to grant or withhold a certificate of naturalisation, with or without assigning any reason, as he thinks most conducive to the public good ; but the issue of a certificate of naturalisation is not admissible until the applicant furnishes a certificate signed by a Justice of the High Court of Australia, a State Judge, or a Magistrate, certifying that he has renounced allegiance to the country of which he was a subject at the time of his application for naturalisation, or at the time of his naturalisation in the United Kingdom, and that he has taken an oath or affirmation of allegiance to the Crown in accordance with the Constitution. The grant of a certificate is made free of charge.

In addition to naturalisation by grant of certificate, the Act makes provision for—

- (i) Naturalisation by marriage.
- (ii) Naturalisation by residence with naturalised parent.

The former relates to the case of a woman who is not herself a [British subject, but is married to a British subject; the latter to that of a person who is not a natural-born British subject, but who has resided at any time during infancy in Australia with a father or mother who at the time was a naturalised British subject. In each instance the person concerned is deemed to be naturalised under the Commonwealth Act.

The Governor-General may revoke any certificate of naturalisation where—

- (a) it is proved to have been obtained by any untrue statement of fact or intention; or
- (b) the Governor-General is satisfied that it is desirable for any reason that a certificate should be revoked.

Where a wife and any minor children have acquired British nationality under the certificate issued to the husband and father and such certificate is subsequently revoked, the wife and children remain British subjects unless the Governor-General otherwise declares, or unless they themselves elect to make a declaration of alienage.

In accordance with the Act, a list of persons naturalised, with their addresses, is published in the *Commonwealth Gazette* from time to time.

The administration of the Act is carried out by the Home and Territories Department, and the Governor-General is authorised to make such regulations as are necessary or convenient for giving effect to the Act.

2. *Statistics of Naturalisation.*—Particulars relative to the nationalities of the recipients of certificates of naturalisation issued under the Act during each of the five years 1914 to 1918, and to the countries from which such recipients had come, are shewn in the following table :—

COMMONWEALTH NATURALISATION CERTIFICATES GRANTED, 1914 TO 1918.

Nationalities of Recipients.	No. of Certificates Granted.					Countries from which Recipients of Commonwealth Certificates had come.	No. of Certificates Granted.				
	1914.	1915.	1916.	1917.	1918.		1914.	1915.	1916.	1917.	1918.
Italian ..	335	251	42	35	8	Great Britain ..	782	275	184	102	82
Swedish ..	375	247	152	57	38	Italy ..	341	229	34	30	9
Danish ..	248	193	174	65	52	Germany ..	1,391	149	72	36	13
Russian ..	452	187	58	50	30	America (North)	239	134	85	42	12
German ..	1,826	179	106	48	15	Sweden ..	149	111	69	21	12
Norwegian ..	208	140	95	54	36	Denmark ..	131	103	99	32	19
Greek ..	112	90	3	7	21	Norway ..	113	72	48	25	22
American (North)	83	79	65	24	..	Greece ..	55	51	3	5	13
Dutch ..	115	72	42	33	21	France ..	70	49	17	15	10
Swiss ..	84	45	36	24	12	Egypt ..	75	38	..	4	1
French ..	104	44	30	27	11	America (South)	82	36	24	5	5
Spanish ..	34	18	11	11	3	Holland ..	77	34	20	18	5
Belgian ..	16	17	6	4	5	Russia ..	98	32	8	7	4
Bulgarian ..	16	15	..	..	..	South Africa ..	99	29	23	7	5
Rumanian ..	21	10	4	..	2	Belgium ..	65	28	9	7	7
Portuguese ..	6	3	..	4	2	New Zealand ..	75	26	18	6	6
American (South)	3	3	6	..	..	Switzerland ..	50	26	20	15	3
Austrian ..	205	2	5	1	1	Spain ..	26	15	4	6	2
Mexican ..	1	2	1	..	..	Austria ..	71	2	2	..	..
Chilian ..	..	1	..	..	..	India ..	24	7	3	..	..
Luxemburger ..	..	1	..	..	..	New Caledonia ..	9	5	7	8	1
Chinese ..	7*	1	3	..	..	Turkey ..	4	3	..	..	..
Serbian ..	2	1	2	1	4	China ..	43	3	..	..	..
Icelandic ..	..	1	..	..	..	Argentina ..	..	..	9	3	1
Montenegrin ..	3	..	..	..	..	Canada ..	..	..	5	7	2
Peruvian ..	2	..	..	..	..	Finland ..	..	..	3	4	..
Turkish ..	2*	..	..	..	..	Other Countries	197	145	76	40	27
Japanese ..	2*	..	..	..	..		
Syrian ..	..	..	1	..	..				
Total ..	4,272	1,602	842	445	261	Total ..	4,272	1,602	842	445	261

* By marriage.

The following table furnishes particulars concerning the States in which the recipients of Commonwealth certificates of naturalisation during the years 1908 to 1918 were resident :—

NATURALISATION CERTIFICATES GRANTED BY COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	C'wealth.
1908 ..	396	243	377	45	152	28	..	1,241
1909 ..	644	507	378	600	221	81	..	2,431
1910 ..	665	329	333	299	187	36	..	1,849
1911 ..	565	491	469	282	248	22	..	2,077
1912 ..	565	295	464	343	243	35	..	1,945
1913 ..	603	434	525	355	342	30	2	2,291
1914 ..	1,327	1,202	625	552	520	43	3	4,272
1915 ..	411	378	345	260	191	16	1	1,602
1916 ..	260	211	152	82	115	20	2	842
1917 ..	131	131	84	45	46	7	1	445
1918 ..	85	70	59	19	25	3	..	261

3. **Census Particulars.**—On the Personal Card used at the Census of 3rd April, 1911, an inquiry as to naturalisation was made, all persons who were British subjects by naturalisation being required to indicate the fact by inserting the letter N in the place provided for the purpose on the card. In addition, in checking the cards in the Census Bureau, instructions were given that cases of women naturalised by marriage to British subjects, and of children naturalised by residence with parents who have become British subjects, should be duly taken into account by the insertion of the letter N if originally omitted. The results of the tabulation will be found in the following table :—

NUMBER OF NATURALISED BRITISH SUBJECTS RECORDED AT THE AUSTRALIAN CENSUS OF 3rd APRIL, 1911.

Particulars.	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal.	
Males ..	11,333	8,445	11,025	4,141	3,544	734	457	4	39,683
Females ..	2,808	2,182	5,562	1,763	646	293	13	1	13,268
Persons ..	14,141	10,627	16,587	5,904	4,190	1,027	470	5	52,951

§ 12. Graphical Representation of Growth of Population.

1. **General.**—The nature of the fluctuations of the numbers representing (a) total population, or those representing (b) births and deaths from year to year, or (c) the natural increase, i.e., the difference of births and deaths, or (d) the net immigration, all of which taken together make up the element of increase of total population, cannot be readily discerned from mere numerical tables. It has been deemed desirable, therefore, to furnish a series of graphical representations, shewing in some cases the characteristics of these elements from 1788 to 1918, and in others from 1860 to 1918. The graphs furnish at a glance a clear indication of the changes taking place, and of their significance from year to year. The great importance of such representations is that only by their means can the most recent changes be justly apprehended, either in their relation to the past, or their meaning for the future.

2. **Graphs of Total Population** (page 139).—These graphs furnish interesting evidence of the comparatively slow rate of growth of the several States and of the Commonwealth as a whole, during the period from the foundation of settlement in 1788 until 1832. From that year onwards to 1851, a moderately increased rate of progress was experienced. In 1851 gold was discovered in Australia, and the effect of this discovery on the population of the Commonwealth is shewn by the steepness of the curves for New South Wales and Victoria, and also for the Commonwealth, from this point onwards for a series of years. The sudden breaks in the continuity of the curves for New South Wales indicate the creation of new colonies, and their separation from the mother colony. Thus, Tasmania came into existence in 1825, Victoria in 1851, and Queensland in 1859. Owing to the extensive gold discoveries in Victoria, its population increased so rapidly that in 1854 its total passed that of New South Wales, and remained in excess until 1892, when the mother State again assumed the lead, which it has since maintained. The rate of increase in New South Wales is large, but the State is still only sparsely populated. A feature of the New South Wales curve is its comparative regularity as compared with that of Victoria, the population of which State increased with great rapidity from 1851 to 1860, less rapidly from 1861 to 1878, with a further period of increased rapidity from 1878 to 1891, and a period of very slow and fluctuating growth from the latter year to 1914. In 1915 and 1916 the population decreased, but in 1917 and 1918 increases were again recorded. Victoria, however, has a population density more than double that of Tasmania, and nearly three times that of New South Wales.

In the case of Queensland, the curve indicates a rate of growth which, though varying somewhat, has on the whole been satisfactory, and at times very rapid. Periods of particularly rapid increase occurred from 1862 to 1865, from 1873 to 1877, and from 1881 to 1889. With the exception of the year 1916 the population of this State has always increased each year up to 1918. The population of Queensland passed that of Tasmania in 1867, and that of South Australia in 1885. The population density of Queensland is one-sixteenth of that of Victoria.

The curve for South Australia indicates that with fluctuations more or less marked, the population increased at a moderate rate from the date of the effective settlement of the colony in 1836 until 1884, and that from that point onwards, a diminished rate of increase was experienced, with slight decreases in 1886, 1888, 1900, 1902, 1915 and 1916. In 1917 and 1918 increases were again recorded. The population of South Australia passed that of Tasmania in 1852. Its density is nearly one and one-fifth of that of Queensland, about one-fifth of that of New South Wales, and about one-fourteenth of that of Victoria.

The curve for Western Australia indicates that the population increased regularly but very slowly until 1886, when the discovery of gold in the Kimberley division caused an influx of population. The effects of the further rich discoveries of gold in the Murchison and Coolgardie districts in 1891 and 1892, are clearly shewn in the rapid increase of population in those and subsequent years to 1897. Two years of retarded progress then occurred, followed by a satisfactorily rapid rate of increase from 1899 to 1906, a slight decline in 1907, and a further advance in 1908 and subsequent years to 1914. Decreases occurred in 1915 and 1916, with increases in 1917 and 1918. The population of Western Australia became greater than that of Tasmania in 1899. Its density is little more than one-fourth of that of South Australia, one-third of that of Queensland, one-nineteenth of that of New South Wales, and about one-fiftieth of that of Victoria.

The Tasmanian population curve indicates a comparatively slow rate of growth throughout. Its most noticeable feature is a retardation in increase in 1852 and subsequent years, brought about by the discovery of gold on the mainland. The population density of Tasmania is about 30 per cent. greater than that of New South Wales, and a little less than half of that of Victoria.

3. **Graphs for Commonwealth of Male and Female Population** (page 140).—These curves shew the relative growth of male and female population of the Commonwealth, and it will be seen that the former are far more liable to marked fluctuations than the latter. The curves representing an increase of population on the basis of the United States rate for 1790 to 1860, indicate that on the whole the female rate of increase in the Commonwealth has been a fairly satisfactory one, and that from 1860 to 1893 the same might be said of the male population. From 1893 onwards, however, the male population of the Commonwealth has fallen considerably below this rate.

Although the rate of increase of the female population from 1860 onwards is on the whole very satisfactory, it should be noted that the total number at the beginning of this period was relatively very small, and that from 1894 onwards there is a falling-off in the rate of increase, similar to that experienced in the case of males.

4. **Graphs for each State of Male and Female Population** (page 141).—These graphs, shewing the relative progress in male and female population for each of the States, disclose the fact that in all cases the female population is much less liable to marked fluctuations than the male, and further, that in cases where rapid increases have taken place in the latter, a similar, but much more gradual, increase is in evidence in the former, commencing usually, however, somewhat later than in the case of the males. A comparison of the graphs of each of the States with that of the Commonwealth shows that the fluctuations in the latter case are smaller than in the former. This is largely due to internal migrations of the male element of the population, brought about by various causes, amongst which mining developments figure prominently.

5. **Graphs for Natural Increase of Population, Commonwealth and States** (page 144).—The graphs indicate that, with the exception of certain marked variations, the natural increase of the population of the Commonwealth, *i.e.*, the excess of births over deaths, advanced with fair rapidity from 1860 to 1892, in which year it attained its maximum, and then fell rapidly till 1898. A subsequent rise to 1900 was followed by a continuous fall for the three years succeeding, *viz.*, to 1903. The recovery shews a fairly rapid rise to 1909, during which year the natural increase was 16.35 per 1,000 of mean population. In succeeding years a correspondingly high rate was maintained with minor fluctuations until 1914, when a record of 17.54 was obtained. In 1915 and 1916 the rate declined to 16.59 and 15.74 respectively, but improved to 16.71 in 1917. In 1918 it declined to 15.16. In 1912 a rate of 17.42 was obtained; this was, however, an over-statement of the true natural increase for the year, owing to the fact that the introduction of "Maternity Allowances" in 1912 resulted in expediting the registration of births. The years in which the natural increase of the Commonwealth was at its highest were 1865, 1871, 1881, 1892, 1900, and 1914, and the years of extraordinarily low rates of natural increase were 1866, 1875, 1882, 1893, and 1903. The low rate of 1898 was due in large measure to a phenomenally high death rate experienced in practically all the States in that year, when an epidemic of measles was prevalent throughout the Commonwealth. The low rate of 1903 was brought about by the low birth rates and the high death rates which accompanied the drought of 1902-3, while the advance in the rate of natural increase since 1903 has been collateral with the marked improvement in material conditions experienced throughout the Commonwealth during that period.

6. **Graphs shewing Total Increase of Population** (pages 142 and 143).—The graphs disclose the fact that the most notable years of large total increases of population of the Commonwealth as a whole were 1864, 1877, 1883, 1888, 1909, 1910, 1911, and 1912. The total increase for 1910 was higher than for any year since 1883, while that for 1912 was the highest on record. The years in which low total increases were noticeable were 1861, 1867, 1872, 1878, 1889, 1893, 1898, and 1903. The decreases in the years 1915 and 1916 are a direct effect of the war.

The graph for New South Wales indicates a high total increase of population between 1876 and 1894, advancing to a maximum in 1883, and then declining to 1901. From the latter year onwards to 1907 an advance in the total increase was in evidence, followed by a decline in 1908, and a recovery in 1909, which was maintained in subsequent years to 1912. In 1913, 1914, and 1915 the figures fell continuously, followed in 1916 by a decrease.

Some features of the graph shewing the Victorian total increase are the height attained in 1864, 1870, 1888, 1901, and 1912, the smallness of the increase for the years 1861 and 1875, and the decreases for 1896, 1902, and 1903. The increase fell off in 1913 and 1914 and a decrease was experienced in 1915 and 1916.

For Queensland it will be seen that the years of high total increases were 1863, 1875, 1883, 1895, 1901, 1909, 1910, 1911, and 1913, while the years in which these were at very low level were 1869, 1878, 1891, and 1903. In 1914 and 1915 there was a progressive decline, followed by a decrease in 1916.

In South Australia the total increases were exceptionally high in 1865, 1876, 1877, 1878, 1883, 1892, 1908, 1910, 1911, and 1912, and correspondingly low in 1870, 1885, 1896, and 1903, while actual decreases took place in 1886, 1888, and 1902. In 1913 there was a slight decline in the total increase, followed by decreases in the years 1914, 1915, and 1916.

In Western Australia the total increase graph indicates no very marked advance until about 1884, from which it rises somewhat rapidly to 1886, and then declines to 1888. This is followed by an exceedingly rapid rise to 1896, and a subsequent fall to 1899, succeeded by a further rise to 1902, and a fall thereafter to 1907, followed by a rise to 1911, a further fall in 1912, and a rise in 1913. Decreases took place in 1888, 1907, 1914, 1915, and 1916.

In the case of the Tasmanian graph, indications of a very varied total increase are in evidence, the principal high points being those for the years 1887, 1891, 1897, 1902, 1907, 1912, and 1913, while actual decreases were experienced in 1874, 1875, 1892, 1906, 1911, 1914, 1915, and 1916.

7. Graphs shewing Masculinity of Population, Commonwealth and States (page 145).—These graphs furnish information concerning the variations which have taken place in the relative numbers of males and females in the populations of the Commonwealth and the several States during the years 1796 to 1918, and incidentally serve to indicate special features of growth in the respective populations. In general it will be noted that in recent years there has been a marked tendency towards a masculinity of zero, that is, to a condition in which the numbers of males and females in the population were equal, but that with the exception of Victoria and South Australia the masculinity had never fallen below zero prior to the outbreak of war. In 1916 and 1917, however, it fell below zero in all the States except Queensland and Western Australia, and also in the Commonwealth as a whole. In 1918 the rates were below zero in the Commonwealth as a whole, and also in the States of New South Wales, Victoria, and South Australia. The early experience of the Commonwealth exhibits a fairly rapid decline in masculinity to 1812, followed by an even more rapid rise to 1828 and a subsequent fall with more gentle slope to 1850. From 1850 onwards the decline in masculinity has been fairly continuous though subject to fluctuations. It should be noted that the marked variations of the earlier as compared with the later years have been due to a considerable extent to the fact that, owing to the smallness of the population, any considerable influx of male immigrants had a marked effect in increasing the masculinity of the population, while an influx of female immigrants tended to considerably reduce it. Two points of special interest in the graphs of the separate States are the maxima attained in 1852 in Victoria and 1896 in Western Australia, as the result of extensive male immigration consequent on the gold discoveries in the respective States.

SECTION V. VITAL STATISTICS.

NOTE.—The rates quoted throughout this Section for the years 1908 to 1918 have been calculated in accordance with the corrected populations as determined by the results of the Census of 1911.

§ 1. Births.

1. Male and Female Births, 1908 to 1918.—The total number of male and female births registered in the Commonwealth during the years 1908 to 1919 is shewn in the two tables hereunder :—

TOTAL MALE BIRTHS, COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Territory.	Commonwealth.
1908 ..	21,605	16,071	7,677	4,924	3,993	2,818	25	..	57,113
1909 ..	22,464	16,096	7,954	5,224	3,884	2,849	11	..	58,482
1910 ..	23,368	16,412	8,260	5,395	3,855	2,888	28	..	60,206
1911 ..	24,383	16,934	8,703	5,615	4,124	2,716	16	(a) 17	62,508
1912 ..	26,524	18,226	9,576	6,168	4,469	3,016	23	20	68,022
1913 ..	26,624	18,434	10,041	6,505	4,710	3,071	27	22	69,434
1914 ..	27,452	18,545	10,120	6,668	4,663	3,094	31	31	70,604
1915 ..	27,085	17,820	10,444	6,076	4,578	2,991	33	22	69,049
1916 ..	26,615	17,623	9,673	6,200	4,439	2,873	44	38	67,505
1917 ..	27,002	17,220	10,058	5,762	4,058	2,720	42	21	66,883
1918 ..	26,002	16,172	10,080	5,787	3,615	2,717	59	26	64,458

(a) Part of New South Wales prior to 1911.

TOTAL FEMALE BIRTHS, COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Territory.	Commonwealth.
1908 ..	20,853	15,026	7,153	4,832	3,762	2,797	9	..	54,432
1909 ..	21,318	15,448	7,598	4,840	3,718	2,651	16	..	55,589
1910 ..	22,076	15,025	7,909	5,145	3,730	2,698	12	..	56,595
1911 ..	23,154	16,092	8,281	5,442	3,967	2,721	15	(a) 13	59,685
1912 ..	25,337	17,570	9,162	5,911	4,220	2,837	10	19	65,066
1913 ..	25,562	17,536	9,690	6,122	4,508	2,815	25	22	66,280
1914 ..	26,189	17,677	9,762	6,236	4,541	2,923	27	24	67,379
1915 ..	25,846	17,189	9,719	5,722	4,439	2,854	28	25	65,822
1916 ..	25,465	16,612	9,239	5,657	4,124	2,769	30	25	63,921
1917 ..	25,446	15,813	9,729	5,564	3,824	2,656	27	23	63,082
1918 ..	24,707	15,425	9,456	5,570	3,491	2,563	46	23	61,281

(a) Part of New South Wales prior to 1911.

2. Total Births, 1908 to 1918.—The total number of births for the Commonwealth was higher in 1914 than in any of the preceding years, but the figures for the last four years shew a falling off for the Commonwealth as compared with those for 1913 and 1914, the births recorded for 1918 being the lowest for any year since 1911.

TOTAL BIRTHS, COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	C'wealth.
1908 ..	42,458	31,097	14,830	9,756	7,755	5,615	34	..	111,545
1909 ..	43,782	31,544	15,552	10,064	7,602	5,500	27	..	114,071
1910 ..	45,444	31,437	16,169	10,540	7,585	5,586	40	..	116,801
1911 ..	47,537	33,026	16,984	11,057	8,091	5,437	31	(a) 30	122,193
1912 ..	51,861	35,796	18,738	12,079	8,689	5,853	33	39	133,088
1913 ..	52,186	35,970	19,731	12,627	9,218	5,886	52	44	135,714
1914 ..	53,641	36,222	19,882	12,904	9,204	6,017	58	55	137,983
1915 ..	52,931	35,009	20,163	11,798	9,017	5,845	61	47	134,871
1916 ..	52,080	34,235	18,912	11,857	8,563	5,642	74	63	131,426
1917 ..	52,448	33,033	19,787	11,326	7,882	5,376	69	44	129,965
1918 ..	50,709	31,597	19,536	11,357	7,106	5,280	105	49	125,739

(a) Part of New South Wales prior to 1911.

3. Birth Rates, 1908 to 1918.—(i) *Crude Birth Rate.* The law relating to Maternity Allowances, which came into force on 10th October, 1912, had the effect of materially diminishing the period between the dates of birth and the date of registration, so that probably 6,000 births were registered during the last three months of the year which, under ordinary circumstances, would not have been registered before the beginning of 1913. The increase shewn by the 1912 birth rate over the rate for 1911 is, therefore, to some extent fictitious, and the true birth rate for the whole Commonwealth in 1912 was more probably about 27.42 per thousand than 28.65 as shewn in the subjoined table. If due allowance be made for this fact, it may be stated that the birth rate for the Commonwealth was not only higher in 1913 than in any of the preceding nine years, but that the increase which began with the year 1909 was maintained to the end of 1913, while the subsequent years show decreases in the rate, that for 1918 having fallen below the 1908 level. The very high masculinity of the population accounts for the low birth rate experienced in the Northern Territory:—

CRUDE BIRTH RATE (a), COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Territory.	C'wth.
1908 ..	26.99	25.07	26.79	25.81	30.08	29.95	9.30	..	26.59
1909 ..	27.40	25.01	27.29	25.91	28.87	28.91	7.63	..	26.69
1910 ..	27.83	24.51	27.33	26.50	27.99	29.25	11.75	..	26.73
1911 ..	28.60	25.01	27.65	26.89	28.21	28.57	9.34	(c) 16.85	27.21
1912 ..	29.86	26.39	29.67	28.65	28.83	30.53	9.82	19.15	28.65
1913 ..	28.86	25.82	30.24	29.12	29.36	30.03	14.21	17.97	28.25
1914 ..	28.96	25.45	29.46	29.33	28.45	30.33	15.46	20.79	28.05
1915 ..	28.33	24.55	29.35	26.84	27.97	29.32	13.85	19.05	27.25
1916 ..	27.89	24.29	27.91	27.39	27.21	28.47	15.26	24.11	26.78
1917 ..	28.06	23.50	29.09	26.21	25.54	27.03	13.92	17.65	26.51
1918 ..	26.53	22.29	28.37	25.80	22.84	25.91	21.03	20.19	25.25
Density (b) (No. per square mile) ..	6.24	16.28	1.04	1.17	0.32	7.97	0.019	2.37	1.69

(a) Number of births per 1,000 of the mean annual population. (b) On 31st December, 1918.

(c) Part of New South Wales prior to 1911.

The population density of each State and of the Commonwealth has been given for the purpose of considering the influence, if any, of concentration of population on birth rate, in connection with the disparities of the rate in different parts of Australia.

(ii) *Objections to Crude Birth Rate.* The figures just given represent the "crude birth rate," i.e., the number of births per thousand of mean annual population. The number of births per thousand of the female population of child-bearing ages, i.e., from

15 to 45, furnishes, however, a more significant rate. This calculation has been made for the four last Census periods, and covers in each case the Census year, together with the year immediately preceding and the year immediately following. The following results have been obtained for the four Census periods:—Total births per 1,000 women (married and unmarried) of ages 15 to 45:—Years 1880–82, 169.69; years 1890–92, 158.81; years 1900–02, 117.26; years 1910–12, 117.22. Nuptial births per 1,000 married women of ages 15 to 45:—Years 1880–82, 320.96; years 1890–92, 332.03; years 1900–02, 235.84; years 1910–12, 236.06.

4. **Birth Rates of Various Countries.**—A comparison with other countries shows that the Australian States occupy a rather low position, which is, however, fortunately counterbalanced by a still lower position in regard to their death rates, as will be seen from the table hereinafter in the section dealing with "Deaths."

CRUDE BIRTH RATE (a) OF VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Russia, European ..	1909	44.0	Tasmania ..	1918	25.9
Rumania ..	1914	42.5	South Australia ..	1918	25.8
Bulgaria ..	1911	40.2	New Zealand ..	1917	25.6
Serbia ..	1912	38.0	United States (b) ..	1910	25.4
Ceylon ..	1915	37.0	Australia ..	1918	25.3
Chile ..	1914	37.0	Denmark ..	1915	24.2
Hungary ..	1912	36.3	Norway ..	1915	23.8
Jamaica ..	1915	34.6	Western Australia ..	1918	22.8
Japan ..	1913	33.3	Scotland ..	1916	22.8
Austria ..	1912	31.3	Ontario (Canada) ..	1917	22.6
Italy ..	1914	31.1	Belgium ..	1912	22.6
Spain ..	1914	29.8	Victoria ..	1918	22.3
Queensland ..	1918	28.4	Sweden ..	1915	21.6
Prussia ..	1913	28.2	United Kingdom ..	1916	21.1
German Empire ..	1913	27.5	Ireland ..	1916	21.1
Finland ..	1914	26.9	England and Wales ..	1916	20.9
New South Wales ..	1918	26.5	Switzerland ..	1915	19.5
Netherlands ..	1915	26.2	France ..	1913	19.0

(a) Number of births per 1,000 of the mean population. (b) Figures for "provisional birth-registration area," which includes about 31 per cent. of the population.

The wide discrepancies among the crude birth rates of the various countries are, to some extent, due to differences in sex and age constitution and of conjugal condition. If the birth rates be calculated per 1,000 women of child-bearing ages, the comparison shews very different results. The report for 1908 of the Registrar-General for England and Wales contains a table shewing the nuptial births per 1,000 married women of ages 15 to 45, in a number of countries, and the information here given in regard to the period 1900–1902 is taken therefrom.

NUPTIAL BIRTHS PER 1,000 MARRIED WOMEN, AGED 15-45 YEARS, 1900-1902.

Country.	Rate.	Country.	Rate.
Netherlands ..	314.6	Switzerland ..	265.9
Norway ..	302.8	Denmark ..	259.1
Prussia ..	290.4	Spain ..	258.7
Ireland ..	289.4	Belgium ..	250.7
German Empire ..	284.2	New Zealand ..	243.2
Austria ..	283.7	Australia ..	235.8
Scotland ..	271.8	England and Wales ..	235.5
Italy ..	269.4	France ..	157.5
Sweden ..	269.0		

5. **Masculinity at Birth.**—The masculinity of births, *i.e.*, the excess of males over females per 100 births, registered during the last eleven years in the several States of the Commonwealth has, apart from the Northern Territory and the Federal Territory, the figures for which are useless for comparative purposes on account of the smallness of the returns on which they are based, varied from -0.09 in Tasmania in 1911 to 4.58 in South Australia in 1916. The following table, which gives the values for the States and Commonwealth for 1908 to 1918, shews the remarkable fact that for the Commonwealth there was a steady increase of masculinity from 1908 to 1910, with a sharp decrease in 1911 and 1912, and slight increases in every year from 1913 to 1917. In 1918 there was a distinct drop.

MASCULINITY (a) OF BIRTHS REGISTERED, COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'wealth.
1908 ..	1.77	3.36	3.53	0.94	2.98	0.37	47.06	..	2.40
1909 ..	2.62	2.05	2.29	3.82	2.18	3.60	18.52	..	2.54
1910 ..	2.84	4.41	2.17	2.37	1.65	3.40	40.00	..	3.09
1911 ..	2.59	2.55	2.48	1.56	1.94	-0.09	3.23	(b)13.33	2.31
1912 ..	2.29	1.83	2.21	2.13	2.87	3.06	39.39	2.56	2.22
1913 ..	2.04	2.50	1.78	3.03	2.19	4.35	3.85	0.00	2.32
1914 ..	2.35	2.40	1.80	3.35	1.33	2.84	6.90	12.73	2.34
1915 ..	2.34	1.80	3.60	3.00	1.54	2.34	8.20	-6.38	2.39
1916 ..	2.21	2.95	2.29	4.58	3.68	1.84	18.92	20.63	2.73
1917 ..	2.97	4.26	1.66	1.75	2.97	1.19	21.74	-4.55	2.92
1918 ..	2.55	2.36	3.19	1.91	1.75	2.92	12.38	6.12	2.53

(a) Excess of males over females per 100 total births.

(b) Part of New South Wales prior to 1911.

There is ordinarily a very small difference between the masculinity of nuptial and ex-nuptial births. Thus, according to Bodio, whose figures are quoted in the following table, for the period about 1887-1891, the masculinity ranged from 3.98 to 1.77, and from 3.80 to 0.79 for total and ex-nuptial births respectively.

MASCULINITY OF BIRTHS IN VARIOUS COUNTRIES.

Country.	Masculinity of Births.(a)		Country.	Masculinity of Births.(a)	
	All Live Births.	Ex-nuptial Live Births.		All Live Births.	Ex-nuptial Live Births.
Spain	3.98	3.80	German Empire ..	2.53	2.29
Rumania	3.71	1.67	Finland	2.44	2.53
Portugal	3.61	3.10	Hungary	2.44	1.43
Austria	2.82	2.68	Sweden	2.44	2.10
Italy	2.82	2.15	Denmark	2.34	2.44
Norway	2.82	2.87	Serbia	2.30	1.72
Ireland	2.68	2.34	France	2.25	1.43
Netherlands ..	2.68	2.29	Belgium	2.20	1.08
Scotland	2.68	2.87	Switzerland ..	2.20	0.79
Russia, European ..	2.63	2.20	England	1.77	2.15

(a) Excess of males over females per 100 total births.

The masculinity of ex-nuptial births in the Commonwealth was as follows:—

MASCULINITY (a) OF EX-NUPTIAL BIRTHS REGISTERED, COMMONWEALTH, 1908 TO 1918.

Year	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'wth.
1908 ..	4.12	2.62	-1.61	-1.62	-5.64	2.72	20.00	..	1.96
1909 ..	2.66	1.07	1.91	2.61	12.72	12.67	-20.00	..	3.03
1910 ..	2.42	1.76	0.19	0.66	-5.43	3.36	33.33	..	1.50
1911 ..	0.86	3.20	-1.04	3.00	3.87	2.76	-55.56	..	1.53
1912 ..	4.68	-2.05	-1.37	9.44	10.88	-9.47	33.33	-100.00 ^(b)	1.98
1913 ..	0.75	2.81	3.09	4.92	4.93	18.69	14.29	0.00	3.01
1914 ..	4.44	3.92	2.26	5.20	3.61	0.85	14.29	..	3.73
1915 ..	-0.72	1.09	-0.37	0.85	0.26	0.32	-17.65	..	0.00
1916 ..	1.67	4.71	6.83	5.68	0.31	-5.26	-6.67	33.33	3.22
1917 ..	2.21	3.61	3.43	0.00	-7.65	5.63	25.00	-100.00	2.34
1918 ..	1.33	-1.68	5.07	6.14	-5.59	-0.36	14.29	..	0.24

(a) Excess of males over females per 100 total births. (b) Part of New South Wales prior to 1911.

It is curious to note that while, so far as the total births are concerned, there has always been an excess of male births over female births (excepting in Tasmania in 1911), this has not been the case in regard to ex-nuptial births, since in Tasmania in 1912 the masculinity was only -9.47, while on the other hand it rose as high as 18.69 in the following year. Little weight, however, can be attached to those results on account of the small totals on which they are based, and for the same reason the figures for the Northern Territory are not taken into consideration.

6. *Ex-nuptiality of Births.*—The total ex-nuptial births rose rapidly from 1905 to 1908 and remained almost stationary till 1909, when the number again decreased, so that the year 1910 shewed the lowest number recorded since 1906. During the three years 1911-13 the numbers shew a considerable increase, with further decreases in 1914, 1915, and 1916 and a slight increase in 1917 and 1918. (See the following table.)

It is, of course, possible that the number of ex-nuptial births is somewhat understated, owing to diffidence in proclaiming the fact of ex-nuptiality, and it is not unlikely that the majority of unregistered births are ex-nuptial.

TOTAL EX-NUPTIAL BIRTHS REGISTERED IN THE COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'wealth.
1908 ..	2,887	1,793	1,118	433	337	294	5	..	6,867
1909 ..	2,821	1,870	1,097	421	346	300	5	..	6,860
1910 ..	2,853	1,759	1,034	455	313	298	9	..	6,721
1911 ..	2,921	1,969	1,057	466	362	290	9	(a) ..	7,074
1912 ..	2,904	2,046	1,170	572	377	285	3	1	7,358
1913 ..	2,793	2,169	1,228	528	406	305	7	2	7,438
1914 ..	2,836	2,015	1,148	500	388	355	21	..	7,263
1915 ..	2,633	2,012	1,082	472	383	311	17	..	6,910
1916 ..	2,461	1,763	966	458	321	285	15	3	6,272
1917 ..	2,485	1,826	992	448	327	284	16	1	6,379
1918 ..	2,625	1,849	1,066	456	286	279	21	..	6,582

(a) Part of New South Wales prior to 1911.

(i) *Rate of Ex-nuptiality, 1908 to 1918.* The rate of ex-nuptiality, i.e., the percentage on ex-nuptial to total births, has been gradually decreasing during the last ten years, on the whole, although 1917 and 1918 shewed an advance.

PERCENTAGE OF EX-NUPTIAL ON TOTAL BIRTHS, COMMONWEALTH,
1908 TO 1918.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'wealth.
	%	%	%	%	%	%	%	%	%
1908 ..	6.80	5.77	7.54	4.44	4.35	5.24	14.71	..	6.16
1909 ..	6.44	5.94	7.05	4.18	3.95	5.45	18.52	..	6.01
1910 ..	6.28	5.60	6.39	4.32	4.13	5.33	22.50	..	5.75
1911 ..	6.14	5.96	6.22	4.21	4.47	5.33	29.03	(a) ..	5.79
1912 ..	5.60	5.72	6.24	4.74	4.34	4.87	9.09	2.56	5.53
1913 ..	5.35	6.03	6.22	4.18	4.40	5.18	13.46	4.55	5.48
1914 ..	5.29	5.56	5.77	3.87	4.22	5.90	36.21	..	5.26
1915 ..	4.97	5.74	5.36	4.00	4.24	5.32	27.87	..	5.12
1916 ..	4.73	5.15	5.11	3.80	3.75	5.05	20.27	4.76	4.77
1917 ..	4.74	5.53	5.01	3.96	4.15	5.28	23.19	2.27	4.91
1918 ..	5.18	5.85	5.46	4.02	4.02	5.28	20.00	..	5.23

(a) Part of New South Wales prior to 1911.

A comparison of greater significance is obtained by calculating the number of ex-nuptial births per thousand of the single and widowed female population between the ages of 15 and 45. The calculation has been made for the last four Census periods, and covers in each case the Census year, together with the year immediately preceding and the year immediately following. The number of ex-nuptial births per 1,000 unmarried women of ages 15 to 45 has been found to be as follows:—Years 1880–82, 14.49; years 1890–92, 15.93; years 1900–02, 13.30; years 1910–12, 12.53. Corresponding figures for the countries the nuptial birth rates of which were shewn in a preceding paragraph are here given for the sake of comparison:—

EX-NUPTIAL BIRTHS PER 1,000 UNMARRIED WOMEN AGED 15-45 YEARS,
1900 TO 1902.

Country.	Rate.	Country.	Rate.
Austria	40.1	Spain	15.5
German Empire	27.4	Scotland	13.4
Sweden	24.3	Australia	13.3
Denmark	24.2	Switzerland	9.8
Prussia	23.7	New Zealand	8.9
Italy	19.4	England and Wales	8.5
France	19.1	Netherlands	6.8
Belgium	17.8	Ireland	3.8
Norway	17.2		

(ii) *Comparison of rates.* Since the rate of ex-nuptiality might appear to increase by the mere decrease in the general birth rate, the following table has been prepared:—

CRUDE EX-NUPTIAL, NUPTIAL, AND TOTAL BIRTH RATES (a),
COMMONWEALTH, 1908 TO 1918.

Rates.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
Ex-nuptial	1.64	1.60	1.54	1.57	1.58	1.55	1.48	1.40	1.28	1.30	1.32
Nuptial ..	24.95	25.09	25.19	25.64	27.07	26.70	26.57	25.85	25.50	25.21	23.93
Total ..	26.59	26.69	26.73	27.21	28.65	28.25	28.05	27.25	26.78	26.51	25.25

(a) Number of births per 1,000 of mean population.

7. *Multiple Births.*—Among the total number of 125,739 births registered in the Commonwealth in 1918 there were 122,991 single births, 2,724 twins, and 24 triplets. The number of cases of twins was 1,362, and the number of cases of triplets 8. The total number of mothers was, therefore, 124,361, the proportion of mothers of twins being one in every 91, and of mothers of triplets one in every 15,545 of total mothers.

The proportion of multiple births is a fairly constant one. In 1908 they numbered 1,065, or one in 104; in 1909, 1,142, or one in 99; in 1910, 1,189, or one in 99; in 1911, 1,236, or one in 98; in 1912, 1,350, or one in 98; in 1913, 1,369, or one in 99; in 1914, 1,401, or one in 97; in 1915, 1,417, or one in 94; in 1916, 1,383, or one in 95; in 1917, 1,477, or one in 86; and in 1918, 1,370, or one in 91. The number of cases of triplets is so small that a slight alteration in the total will completely change the proportion. Thus, they were one in 18,415 in 1908; one in 8,066 in 1909, one in 8,893 in 1910, one in 8,639 in 1911, one in 8,233 in 1912, one in 16,793 in 1913, one in 12,415 in 1914, one in 13,444 in 1915, one in 10,952 in 1916, one in 7,558 in 1917, and one in 15,545 in 1918. A case of quadruplets occurred in 1917, the only one registered by the Commonwealth Bureau of Census and Statistics since its inception.

8. Ages of Parents.—The relative ages of the parents of children registered in 1918 have been tabulated separately for male and female births, twins and triplets being distinguished from single births, and are shewn for single ages and for every State in "Bulletin of Population and Vital Statistics, No. 36; Commonwealth Demography, 1918 and previous years." In the present work the exigencies of space allow only the insertion of corresponding tables shewing the relative ages of parents in groups of five years. It will be seen from the tables that the largest number of single births occurred where the ages of both father and mother were between 25 and 29. The largest number of mothers was also found at ages 25 to 29.

(a) AGES OF PARENTS IN CASES OF SINGLE BIRTHS, COMMONWEALTH, 1918.

Ages of Fathers.	Total Children.	Ages of Mothers.									
		Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.	Un-specified	
Under 20	Males ..	200	144	53	3	..	..	..	..	..
	Females ..	228	160	58	9	..	..	..	..	..
	Total ..	428	304	111	12	..	..	..	..	..
20 to 24	Males ..	4,985	932	3,240	724	72	16	1	..	..
	Females ..	4,732	893	3,031	713	80	12	2	..	..
	Total ..	9,717	1,825	6,271	1,437	152	23	3	..	..
25 to 29	Males ..	15,047	497	5,794	7,164	1,406	165	20	..	..
	Females ..	14,266	523	5,473	6,795	1,269	189	10	2	..	
	Total ..	29,313	1,020	11,267	13,959	2,675	354	30	2	..	
30 to 34	Males ..	15,752	160	2,258	6,375	5,842	1,030	85	5	..	
	Females ..	14,841	133	2,166	6,064	5,506	890	75	4	1	
	Total ..	30,593	293	4,424	12,439	11,350	1,920	160	6	1	
35 to 39	Males ..	11,629	50	469	2,585	4,503	3,411	401	10	..	
	Females ..	10,969	45	698	2,344	4,301	3,214	365	2	..	
	Total ..	22,598	95	1,367	4,929	8,804	6,625	766	12	..	
40 to 44	Males ..	6,666	10	187	759	1,917	2,601	1,150	36	..	
	Females ..	6,313	14	175	703	1,767	2,520	1,102	32	..	
	Total ..	12,979	24	362	1,462	3,684	5,121	2,258	68	..	
45 to 49	Males ..	3,574	4	72	275	775	1,372	957	119	..	
	Females ..	3,539	8	71	292	791	1,298	1,001	138	..	
	Total ..	7,113	12	143	567	1,566	2,670	1,958	257	..	
50 to 54	Males ..	1,379	1	25	93	249	438	475	100	..	
	Females ..	1,224	4	20	73	207	408	433	79	..	
	Total ..	2,603	5	45	166	456	844	908	179	..	
55 to 59	Males ..	437	1	6	31	71	126	159	43	..	
	Females ..	404	1	14	28	68	125	128	39	1	
	Total ..	841	2	20	59	139	251	287	82	1	
60 to 64	Males ..	105	..	..	10	20	32	36	7	..
	Females ..	128	1	4	7	26	37	40	13	..	
	Total ..	233	1	4	17	46	69	76	20	..	
65 and upwards	Males ..	50	..	1	3	7	18	13	1	..	
	Females ..	50	..	3	5	16	13	6	7	..	
	Total ..	93	..	4	8	23	31	19	8	..	
Not stated	Males ..	7	..	1	1	1	1	..	..	1
	Females ..	3	..	..	1	1	1	..	..	..
	Total ..	10	..	1	2	2	2	..	..	1
Nuptial children	Males ..	59,824	1	1,799	12,306	18,023	14,863	9,208	3,305	318	1
	Females ..	56,697	2	1,787	11,713	17,034	13,974	8,707	3,182	316	2
	Total ..	116,521	3	3,586	24,019	35,057	28,837	17,915	6,487	634	3
Ex-nuptial children	Males ..	3,234	13	855	1,215	577	324	188	52	8	4
	Females ..	3,236	10	817	1,267	570	298	190	68	7	9
	Total ..	6,470	23	1,672	2,482	1,147	622	376	120	15	13
Total children	Males ..	63,058	14	2,654	13,521	18,600	15,187	9,394	3,357	326	5
	Females ..	59,933	12	2,604	12,980	17,604	14,272	8,897	3,230	323	11
	Total ..	122,991	26	5,258	26,501	36,204	29,459	18,291	6,587	649	16

(b) AGES OF PARENTS OF TWINS, COMMONWEALTH, 1918.

Ages of Fathers.		Total Children.	Ages of Mothers.						
			Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.
Under 20	Males ..	..	..	..	..	..	..	..	..
	Females ..	6	4	2	..	..	..	..	..
	Total ..	6	4	2	..	..	..	..	..
20 to 24	Males ..	64	4	42	18	..	..	..	..
	Females ..	88	12	52	24	..	..	..	..
	Total ..	152	16	94	42	..	..	..	..
25 to 29	Males ..	250	12	78	118	35	7	..	..
	Females ..	244	6	82	116	37	3	..	..
	Total ..	494	18	160	234	72	10	..	..
30 to 34	Males ..	354	..	34	116	169	35	..	..
	Females ..	384	2	28	136	185	31	2	..
	Total ..	738	2	62	252	354	66	2	..
35 to 39	Males ..	303	2	10	59	130	92	10	..
	Females ..	301	..	14	47	128	106	8	..
	Total ..	604	2	24	106	258	198	18	..
40 to 44	Males ..	196	..	..	24	56	81	33	2
	Females ..	144	..	..	20	42	59	23	..
	Total ..	340	..	..	44	98	140	56	2
45 to 49	Males ..	99	..	1	3	15	54	26	..
	Females ..	87	..	1	3	19	44	20	..
	Total ..	186	..	2	6	34	98	46	..
50 to 54	Males ..	40	..	..	4	3	19	14	..
	Females ..	26	..	..	..	7	11	8	..
	Total ..	66	..	..	4	10	30	22	..
55 to 59	Males ..	12	..	..	..	3	9	..	..
	Females ..	8	..	..	..	1	3	..	4
	Total ..	20	..	..	..	4	12	..	4
60 to 64	Males ..	4	..	..	..	..	..	2	2
	Females ..	2	..	..	..	..	..	2	..
	Total ..	6	..	..	..	..	..	4	2
Nuptial children	Males ..	1,322	18	165	342	411	297	85	4
	Females ..	1,290	24	179	346	417	257	63	4
	Total ..	2,612	42	344	688	828	554	149	8
Ex-nuptial children	Males ..	65	5	33	18	9	..	..	..
	Females ..	47	5	9	14	11	8	..	..
	Total ..	112	10	42	32	20	8	..	..
Total children	Males ..	1,387	23	198	360	420	297	85	4
	Females ..	1,337	29	188	360	428	265	63	4
	Total ..	2,724	52	386	720	848	562	148	8

(c) AGES OF PARENTS OF TRIPLETS, COMMONWEALTH, 1918.

Ages of Fathers.		Total Children.	Ages of Mothers.					
			20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	
20 to 24	Males ..	..	..	..	..	..	..	..
	Females ..	..	3	..	..	..	..	..
	Total ..	..	3	3	..	..	..	..
25 to 29	Males ..	..	2	..	1	..	..	..
	Females ..	..	4	..	2	2	..	..
	Total ..	..	6	..	3	3	..	..
30 to 34	Males ..	..	3	..	3	..	..	..
	Females ..	..	3	..	3	..	..	..
	Total ..	..	6	..	6	..	..	..
35 to 39	Males ..	..	3	..	3	..	..	..
	Females ..	..	3	..	..	..	..	..
	Total ..	..	3	..	3	..	..	..
40 to 44	Males ..	..	3	..	..	..	..	3
	Females ..	..	..	..	..	..	..	..
	Total ..	..	3	..	..	..	..	3
45 to 49	Males ..	..	2	..	..	..	2	..
	Females ..	..	1	..	..	..	1	..
	Total ..	..	3	..	..	..	3	..
Nuptial children	Males ..	..	13	..	1	7	2	3
	Females ..	..	11	..	2	5	1	..
	Total ..	..	24	..	3	12	3	3
Total children	Males ..	..	13	..	1	7	2	3
	Females ..	..	11	..	2	5	1	..
	Total ..	..	24	..	3	12	3	3

No conclusions can, of course, be drawn from one year's figures as to variations in the masculinity of the births at different ages of the parents, but so far as the figures go they indicate a few conclusions which may be mentioned, viz.: In cases where the father is older than the mother the masculinity has a tendency to be above the average, while in cases where both parents belong to the same age group, or where the father is younger than the mother, the masculinity is rather below the average. It is also below the average in cases where the father, or both father and mother, are under 25; and it is above the average where the mother alone is under 25.

9. Birthplaces of Parents.—The relative birthplaces of the parents of children whose births were registered during the year 1918 will be found tabulated in the Bulletin before-mentioned. A summary of the results of the tabulation is here given:—

BIRTHPLACES OF PARENTS OF CHILDREN, COMMONWEALTH, 1918.

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.	
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.
AUSTRALASIA—								
Commonwealth of								
Australia—								
New South Wales	37,407	418	3	40,527	467	2	2,345	27
Victoria ..	29,963	333	1	29,952	328	2	1,720	14
Queensland ..	12,162	117	2	14,703	139	2	928	8
South Australia	11,384	146	1	11,264	130	..	466	1
Western Australia	1,454	17	..	1,960	22	..	150	..
Tasmania ..	5,125	56	1	5,367	55	1	370	2
North. Territory	16	..	..	33	..	..	21	..
New Zealand ..	1,096	5	..	878	8	..	39	..
EUROPE—								
England ..	10,502	118	..	7,395	88	1	273	1
Wales ..	296	2	..	185	1	..	8	1
Scotland..	2,493	38	..	1,855	32	..	68	..
Ireland ..	1,470	23	..	936	17	..	17	1
Isle of Man ..	22	1	..	12	..	..	..	..
Other European British Possessions..	44	1	..	20	..	..	1	..
Austria-Hungary ..	81	1	..	42	1	..	1	..
Belgium ..	14	..	..	7	1	..	..	..
Denmark ..	171	..	..	45	1	..	1	..
France ..	65	..	..	37	..	..	1	..
Germany ..	651	6	..	273	4	..	9	..
Greece ..	126	1	..	62	1	..	..	..
Italy ..	328	6	..	190	3	..	3	..
Netherlands ..	50	1	..	20	..	..	..	..
Norway ..	84	1	..	23	..	..	1	..
Portugal..	1	..	..	2	..	..	..	..
Russia ..	248	2	..	147	1	..	2	..
Spain ..	35	..	..	22	..	..	..	..
Sweden ..	134	1	..	19	..	..	..	..
Switzerland ..	36	..	..	16	..	..	..	..
Other European Countries ..	31	..	..	13	..	..	..	..
ASIA—								
British India ..	129	3	..	53	..	..	7	1
Ceylon ..	12	..	..	5	..	..	..	..
Hong Kong	1	..	..	2	..	..	..	..
Straits Settlements	4	..	..	1	..	..	1	..
Other Asiatic British Possessions ..	3	..	..	2	..	..	..	..
Afghanistan ..	3	..	..	..	..	..	..	..

BIRTHPLACES OF PARENTS OF CHILDREN—*continued.*

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.	
	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.	Single Births.	Twins.
<i>ASIA—continued.</i>								
Arabia .. ..	..	..	..	..	..	..	1	..
China	144	1	..	36	..	..	3	..
Japan	14	..	..	9	..	..	..	..
Java	4	..	..	..	..	..	..	..
Philippine Islands ..	9	..	..	1	..	..	..	..
Syria	79	1	..	59	1	..	..	..
Other Asiatic Countries	12	..	..	8	..	..	..	..
<i>AFRICA—</i>								
Mauritius	12	1	..	4	..	..	..	..
S. Africa, Union of ..	82	2	..	66	1	..	4	..
Egypt	13	..	..	9	..	..	..	..
Other African British Possessions ..	2	..	..	4	..	..	..	..
Other African Countries	7	..	..	..	..	..	..	..
<i>AMERICA—</i>								
Canada	90	4	..	40	1	..	1	..
Jamaica	3	..	..	1	..	..	..	..
Newfoundland	1	..	..	..	..	..	..	..
Other American British Possessions ..	8	..	..	1	..	..	..	..
Argentine Republic ..	4	..	..	2	..	..	..	..
Brazil	2	..	..	1	..	..	..	..
Chile	2	..	..	..	..	..	..	..
Mexico	2	..	..	1	..	..	..	..
Peru .. ..	..	..	..	..	..	..	..	..
United States of America	190	..	..	94	1	..	4	..
Other American Countries	37	..	..	10	..	..	..	..
<i>POLYNESIA—</i>								
Fiji	23	..	..	17	2	..	..	..
Friendly Islands	1	..	..	..	..	..	..	..
Papua	3	..	..	2	..	..	..	..
Other Polynesian British Possessions ..	5	..	..	3	..	..	..	..
New Caledonia	8	..	..	8	..	..	2	..
New Hebrides	7	..	..	2	..	..	..	..
Samoa .. ..	..	..	..	..	..	..	..	..
Other Polynesian Islands .. ..	..	..	..	..	..	..	..	..
South Sea Islands (so described) ..	18	..	..	1	..	..	1	..
At Sea	85	..	..	60	1	..	3	..
Unspecified	13	..	..	14	..	..	19	..
Total	116,521	1,306	8	116,521	1,306	8	6,470	56

10. Occupations of Fathers.—A summary of the occupations of the fathers of all nuptial children, whose births were registered in 1918, will be found in the following table. The figures include all the States and Territories of the Commonwealth.

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN, COMMONWEALTH, 1918.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
CLASS I.—PROFESSIONAL.		CLASS III.—COMMERCIAL—contd.	
General Government	629	Stone, Clay and Glass	20
Local Government	135	Gold, Silver, and Precious Stones	3
Defence	1,692	Ironmongery	175
Law and Order	1,185	Merchants, Importers	471
Religion	425	Shopkeepers and Assistants	1,076
Charities	3	Dealers and Hawkers	387
Health	970	Agents and Brokers	577
Literature	151	Clerks, Bookkeepers, &c.	3,943
Science	88	Commercial Travellers, Salesmen	1,586
Civil Engineering, Architecture, and Surveying	362	Others engaged in Commercial Pursuits	1,351
Education	703	Speculators on Chance Events	52
Fine Arts	131	Storage	4
Music	128	Total Commercial	16,938
Amusements	484		
Total Professional	7,086	CLASS IV.—TRANSPORT AND COMMUNICATION.	
CLASS II.—DOMESTIC.		Railway Traffic	4,908
Hotelkeepers and Assistants	613	Tramway Traffic	1,227
Others engaged in providing board and lodging	344	Road Traffic	5,276
House Servants	103	Sea and River Traffic	1,737
Coachmen and Grooms	210	Postal Service	614
Hairdressers	536	Telegraph and Telephone Service	611
Laundrymen	29	Messengers, &c.	8
Others engaged in domestic occupations	247	Total Transport & Communication	14,381
Total Domestic	2,082	CLASS V.—INDUSTRIAL.	
CLASS III.—COMMERCIAL.		Books and Publications	775
Banking and Finance	486	Musical Instruments	62
Insurance and Valuation	557	Prints, Pictures and Art Materials	82
Landed and House Property	133	Ornaments and Small Wares	125
Property Rights not elsewhere clsd	3	Equipment for Sports and Games	3
Books, Publications, Advertising	158	Medals, Type, and Dies	32
Musical Instruments	13	Watches, Clocks, and Scientific Instruments	126
Prints, Pictures and Art Materials	2	Surgical Instruments	4
Ornaments and Small Wares	5	Arms and Ammunition	96
Watches, Clocks, Jewellery	8	Engines, Machines, Tools, and Implements	1,338
Surgical Instruments	2	Carriages and Vehicles	1,037
Arms and Ammunition .. ..	..	Harness, Saddlery & Leatherware	395
Machinery	45	Ships, Boats, &c.	131
Carriages and Vehicles	30	Furniture	618
Harness, Saddlery & Leatherware	2	Building Materials	848
Ships and Boats	1	Chemicals and By-products	57
Building Materials	27	Textile Fabrics	136
Furniture	63	Dress	1,796
Chemicals and By-products	9	Fibrous Materials	47
Paper and Stationery	53	Animal Food	392
Textile Fabrics	523	Vegetable Food	1,591
Dress	129	Groceries, Drinks, Narcotics, and Stimulants	366
Fibrous Materials	14	Animal Matter not elsewhere clsd.	352
Animal Food	2,373	Workers in wood not elsewhere clsd.	145
Vegetable Food	616	Vegetable Produce for Fodder	9
Groceries, Drinks, Narcotics, and Stimulants	1,322	Paper	13
Living Animals	180	Stone, Clay, Glass, &c.	460
Leather, Raw Materials	37	Jewellery and Precious Stones	240
Wool and Tallow	69	Metals, other than Gold & Silver	2,804
Hay, Corn, &c.	216	Gas, Electric Lighting, &c.	893
Other Vegetable Matter, n.e.i.	86		
Wood and Coal	131		

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN—*continued.*

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
CLASS V.—INDUSTRIAL—<i>contd.</i>		CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.	
Building—		Agricultural	19,688
Builders	421	Pastoral	3,775
Stonemasons	159	Dairy Farming	1,168
Bricklayers	452	Bees, Fisheries, and Wild Animals	421
Carpenters	2,480	Forestry	828
Slaters	60	Water Conservation and Supply	130
Plasterers	270	Mines and Quarries	4,795
Painters	1,042	Total Primary Producers	30,805
Plumbers	733		
Signwriters	58	CLASS VII.—INDEFINITE.	
Others	22	Independent Means, having no	
Roads, Railways, Earthworks ..	283	specific occupation	70
Disposal of the Dead	43	Occupation not stated	29
Disposal of Refuse	64	Total Indefinite	99
Other Industrial Workers—			
Manufacturers, &c.	495	CLASS VIII.—DEPENDENTS.	
Engineers, Firemen	3,144	Dependent Relatives	1
Contractors	1,212	Dependent on State	5
Labourers, undefined	20,259	Total Dependents	6
Others	268	Total all Occupations	117,835
Total Industrial	46,438		

11. *Mother's Age, Duration of Marriage, and Issue.*—A tabulation has been made shewing, in age-groups, the duration of marriage and issue of mothers. The total number of nuptial confinements in 1918 was 117,835, viz., 116,521 single births, 1,306 cases of twins, and 8 cases of triplets. From this number 78 mothers must be deducted, in whose case the necessary particulars either as to date of marriage or as to previous issue were not stated. The tables refer, therefore, to a total of 117,757 mothers. They exclude children by former marriages and still-born children, but include ex-nuptial children, previous issue by the same father. The tables cannot be given *in extenso*, but the following are their most salient features. The complete tabulations are shewn in "Commonwealth Bulletin of Population and Vital Statistics, No. 36; Commonwealth Demography, 1918, and previous years."

DURATION OF MARRIAGE AND ISSUE OF MOTHERS OF ALL AGES,
COMMONWEALTH, 1918.

Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.	Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.
Years.				Years.			
0-1 ..	15,036	15,288	1.02	18-19 ..	1,604	12,083	7.53
1-2 ..	8,025	8,833	1.10	19-20 ..	1,148	8,980	7.82
2-3 ..	8,729	15,043	1.72	20-21 ..	918	7,580	8.26
3-4 ..	10,841	22,155	2.04	21-22 ..	704	6,053	8.60
4-5 ..	9,809	24,207	2.47	22-23 ..	535	4,920	9.19
5-6 ..	8,800	24,944	2.83	23-24 ..	361	3,375	9.35
6-7 ..	8,256	26,439	3.20	24-25 ..	279	2,777	9.95
7-8 ..	6,941	24,584	3.54	25-26 ..	187	1,911	10.22
8-9 ..	6,221	24,301	3.91	26-27 ..	131	1,377	10.51
9-10 ..	4,969	21,287	4.28	27-28 ..	83	910	10.96
10-11 ..	4,721	21,758	4.61	28-29 ..	54	590	10.93
11-12 ..	4,111	20,592	5.01	29-30 ..	20	219	10.95
12-13 ..	3,611	19,290	5.34	30-31 ..	9	101	11.22
13-14 ..	3,058	17,549	5.74	31-32 ..	4	36	9.00
14-15 ..	2,580	15,536	6.02	32-33 ..	3	41	13.67
15-16 ..	2,213	14,146	6.39	33-34 ..	3	35	11.67
16-17 ..	2,094	13,992	6.68				
17-18 ..	1,699	12,031	7.08	Total ..	117,757	392,963	3.34

AGES AND ISSUE OF MOTHERS, COMMONWEALTH, 1918.

Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.	Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.
Under 20 years	3,588	4,332	1.21	40-44 years ..	6,541	43,284	6.62
20-24 years ..	24,151	44,237	1.83	45 yrs. and over	640	5,207	8.02
25-29 ,, ..	35,393	94,459	2.67				
30-34 ,, ..	29,251	110,023	3.76				
35-39 ,, ..	18,193	91,421	5.03	All ages ..	117,757	392,963	3.34

PREVIOUS ISSUE OF MOTHERS OF VARIOUS AGES, COMMONWEALTH, 1918.

Previous Issue.	Mothers' Ages.							Total.
	Under 20 Years.	20-24 Years.	25-29 Years.	30-34 Years.	35-39 Years.	40-44 Years.	45 Years and Over.	
0	2,934	11,286	8,624	3,702	1,361	296	14	28,217
1	587	7,688	10,066	5,433	1,952	379	32	26,137
2	64	3,698	7,729	5,770	2,467	530	29	20,287
3	3	1,154	4,905	4,880	2,692	606	35	14,275
4	..	269	2,529	3,841	2,460	686	54	9,839
5	..	45	1,052	2,603	2,170	768	47	6,685
6	..	11	358	1,655	1,833	708	59	4,624
7	..	..	99	801	1,409	678	60	3,047
8	..	..	21	365	924	655	78	2,043
9	..	..	5	141	504	491	60	1,201
10	..	..	4	37	241	346	55	683
11	..	..	1	17	110	207	46	381
12	..	..	..	3	41	108	40	192
13	..	..	..	3	17	47	6	73
14	..	..	..	..	8	21	15	44
15	..	..	..	..	2	9	8	19
16	..	..	..	..	1	2	..	3
17	..	..	..	..	1	4	1	6
18	..	..	..	..	..	..	1	1
Total Mothers	3,588	24,151	35,393	29,251	18,193	6,541	640	117,757

The tables shew a fairly regular increase in the number of children up to the period where the marriage has lasted twenty years, and it appears that the average interval between successive confinements up to that period was rather more than two years and eight months. The average number of children of all marriages was 3.34, the corresponding figures for 1917 having been 3.29; for 1916, 3.29; for 1915, 3.26; for 1914, 3.22; for 1913, 3.21; for 1912, 3.29; for 1911, 3.34; and for 1910, 3.41.

A similar table has been prepared shewing the previous issue of mothers of twins and triplets, from which it appears that 267 mothers had twins at their first confinement; 248 at their second; 245 at their third; 164 at their fourth; 119 at their fifth; 77 at their sixth; 68 at their seventh; 48 at their eighth; 41 at their ninth; 9 at their tenth; 10 at their eleventh; 4 at their twelfth; and 14 at their thirteenth.

Of the 8 cases of triplets, 3 occurred at the first confinement; 2 at the third; 2 at the sixth; and 1 at the eighth.

12. Interval between Marriage and First Birth.—The following table shows the interval between marriage and first birth. Twins and triplets are included, the eldest born only being enumerated :—

INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, COMMONWEALTH, 1918.

Interval.	Number of First Children.	Interval.	Number of First Children.	Interval.	Number of First Children.	Interval.	Number of First Children.
Under 1 mth.	333	12 mths.	1,397	2 years	2,745	14 years	18
1 month ..	390	13 "	994	3 "	1,355	15 "	10
2 months ..	608	14 "	822	4 "	621	16 "	15
3 "	739	15 "	787	5 "	390	17 "	7
4 "	955	16 "	657	6 "	249	18 "	3
5 "	1,179	17 "	605	7 "	170	19 "	2
6 "	1,492	18 "	473	8 "	99	20 "	2
7 "	1,403	19 "	372	9 "	77	21 "	1
8 "	1,245	20 "	381	10 "	52		
9 "	2,793	21 "	333	11 "	35	Total	28,217
10 "	2,276	22 "	300	12 "	43		
11 "	1,564	23 "	211	13 "	14		

Of these 28,217 children, 14,481 were males and 13,736 were females ; the masculinity of first births was therefore 2.64 as compared with 2.53 for total births.

The previous issue of mothers of ex-nuptial children is not recorded, but for the purposes of the following table all ex-nuptial births have been assumed to be first births. The table shews the ages of mothers of ex-nuptial births, of nuptial births occurring less than nine months after marriage, and of nuptial births occurring nine months or more after marriage. A comparison of the combined total of the first two columns with the total of nuptial children born nine months or more after marriage reveals the fact that for all ages the ratio of the two was as 3 is to 4. At all ages up to and including 21, however, there was a great preponderance of ex-nuptial births and of births following on ante-nuptial conception. It must, of course, be understood that a certain number of premature births are necessarily included among the births which occurred less than nine months after marriage, but there is no means of arriving at the proportion of those births.

AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, ETC., COMMONWEALTH, 1918.

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
13 years ..	1	1	2	..	1	2
14 "	22	2	24	..	2	24
15 "	69	19	88	4	23	92
16 "	157	107	264	19	126	283
17 "	301	332	633	91	423	724
18 "	532	683	1,215	232	915	1,447
19 "	623	919	1,542	525	1,444	2,067
20 "	619	938	1,557	841	1,779	2,398
21 "	558	989	1,547	1,171	2,160	2,718
22 "	502	935	1,437	1,538	2,473	2,975
23 "	471	700	1,171	1,812	2,512	2,983
24 "	374	577	951	1,785	2,362	2,736
25 "	332	474	806	1,705	2,179	2,511
26 "	268	369	637	1,635	2,004	2,272
27 "	232	276	508	1,410	1,686	1,918
28 "	180	238	418	1,240	1,478	1,658

AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH—*continued.*

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
29 years ..	167	170	337	1,107	1,277	1,444
30 " ..	183	141	324	1,005	1,146	1,329
31 " ..	118	111	229	723	834	952
32 " ..	129	75	204	629	704	833
33 " ..	127	53	180	501	554	681
34 " ..	85	54	139	410	464	549
35 " ..	96	43	139	333	376	472
36 " ..	73	37	110	282	319	392
37 " ..	73	23	96	212	235	308
38 " ..	75	29	104	225	254	329
39 " ..	67	20	87	157	177	244
40 " ..	40	14	54	96	110	150
41 " ..	31	6	37	75	81	112
42 " ..	22	3	25	45	48	70
43 " ..	18	4	22	31	35	53
44 " ..	9	1	10	21	22	31
45 " ..	9	..	9	7	7	16
46 " ..	2	1	3	4	5	7
47 " ..	..	..	..	1	1	1
48 " ..	2	..	2	1	1	3
49 " ..	2	..	2	..	..	2
Not stated ..	13	..	13	..	..	13
Total ..	6,582	8,344	14,926	19,873	28,217	34,799

These results have sometimes been wrongly interpreted. In order to make their true significance clearer, it may be pointed out that during the seven years 1908 to 1914 inclusive there was, in an average female population between the ages 12 to 54 inclusive of about 1,377,108, an annual average of 114,832 nuptial and 6,935 ex-nuptial confinements. Of the former, about 31,431 were first births, of which 10,952 occurred within 9 months of marriage (and 19,105 within 12 months), leaving 90,336 which were either not first confinements, or were ex-nuptial confinements. The female population between 12 and 54 inclusive was characterised as follows:—

" Never married " ..	690,845	" Married " ..	639,570
" Widowed " ..	44,764	" Divorced " ..	1,929

Thus the female population between the age limits mentioned, not living in the state of marriage, was 737,538 or 53.56 per cent., the married being 46.44 per cent. In the course of the period mentioned, the proportion of married women giving birth during the interval of 0 to 9 months from marriage was 0.34843 of the total nuptial first confinements, or 0.09537 of the total nuptial confinements. During the same period 269,452 marriages were consummated, the brides aged 12 to 54 inclusive being 267,852 in number. Thus the relative numbers can be set out as follow, the basis being 1,000,000 females of the ages of 12 to 54 inclusive.

CHARACTERISTICS OF FERTILITY IN AUSTRALIA, 1908-1914.

1,000,000 Females, ages 12 to 54 inclusive.					Confinements, Average for 1 Year.						Marriages, Ages 12-54 inclusive.	
					First Confinements.			All Confinements.				
Married.	Never Married.	Widowed.	Divorced.	Total.	After 9 Months.	Within 9 Months.	Total.	Nuptial.	Ex-nuptial.	Total.	Marriages.	First Confinements.
464,430	501,663	32,506	1,401	1,000,000	14,871	7,953	22,824	83,387	5,035	88,422	194,503	159,769
464,430	535,570			1,000,000	(6,516)	(3,484)	(10,000)	(94,306)	(5,694)	(100,000)	(100,000)	(82,142)
100,000	1,000,000							17,955	9,401			

If the total ex-nuptial cases in the 7 years (48,546) be added to the total nuptial cases born within 9 months of marriage (76,662), the grand total is 125,208, which is equivalent for 7 years to 90,921 for the 1,000,000 females of ages 12 to 54 inclusive. The ratio of the sum of the ex-nuptial children and those born within 9 months of marriage in one year to the total unmarried (*i.e.*, never married, widowed, and divorced) is consequently 0.02425, or about one-fortieth, while the ratio of the births within 9 months of marriage to the total unmarried females is 0.01485, or about one-seventieth. The matter may be put another way. In a female population of 1,000,000 of ages 12 to 54, there are on the average per diem 62.48 first births; the ex-nuptial births are 13.79 per diem; and the nuptial births, occurring within 9 months of marriage, are 21.77 per diem, the total births being 242.06 per diem, of which 228.27 are nuptial.

13. *Interval between Birth and Registration of Birth.*—Information was obtained during 1918 as to the period elapsing between birth and registration. It has already been mentioned in par. 3 *ante* that one of the effects of the law relating to maternity allowances has been to accelerate the registration of births, as the certificate of registration must be produced when a claim under the Act is lodged. In 1912, during the last quarter of which year the Act was in force, about 6 per cent. of all births were registered within seven days; in 1913 this percentage had risen to 34; in 1914 to 40; and in 1917 to 43. In 1918 it had fallen slightly to 41½.

INTERVAL BETWEEN BIRTH AND REGISTRATION, COMMONWEALTH, 1918.

Interval.	Nuptial Births.	Ex-nuptial Births.	Total Births.	Interval.	Nuptial Births.	Ex-nuptial Births.	Total Births.
Under 1 day	1,368	115	1,483	39 days	523	20	543
1 day ..	4,953	516	5,469	40	526	21	547
2 days ..	6,797	649	7,446	41	481	21	502
3	7,773	491	8,264	42	431	11	442
4	7,724	422	8,146	43	379	15	394
5	7,347	352	7,699	44	294	12	306
6	6,876	297	7,173	45	265	11	276
7	6,167	247	6,414	46	268	12	280
8	5,494	251	5,745	47	236	4	240
9	4,932	232	5,164	48	225	11	236
10	4,501	207	4,708	49	207	7	214
11	4,455	267	4,722	50	202	8	210
12	4,397	236	4,633	51	170	9	179
13	4,204	259	4,463	52	184	2	186
14	3,686	245	3,931	53	159	6	165
15	3,061	169	3,230	54	191	10	201
16	2,770	148	2,918	55	183	6	189
17	2,443	134	2,577	56	145	9	154
18	2,277	116	2,393	57	159	6	165
19	2,090	91	2,181	58	176	19	195
20	1,835	90	1,925	59	175	11	186
21	1,726	70	1,796	60	98	18	116
22	1,632	77	1,709	61 to 69 days	276	21	297
23	1,413	57	1,470	70 .. 79 ..	126	10	136
24	1,373	46	1,419	80 .. 89 ..	58	10	68
25	1,275	48	1,323	90 .. 99 ..	26	7	33
26	1,249	53	1,302	100 .. 109 ..	16	7	23
27	1,075	53	1,128	110 .. 119 ..	14	6	20
28	1,054	32	1,086	120 .. 129 ..	16	2	18
29	960	35	995	130 .. 139 ..	8	3	11
30	849	27	876	140 .. 149 ..	5	2	7
31	845	35	880	150 .. 159 ..	9	2	11
32	691	23	714	160 .. 169 ..	8	3	11
33	657	33	690	170 .. 179 ..	6	2	8
34	662	32	694	180 .. 365 ..	28	7	35
35	638	24	662	1 to 2 years..	1	1	2
36	544	30	574	2 years and over	3	..	3
37	564	23	587				
38	523	18	541				
				Total Births	119,157	6,582	125,739

The weighted average interval between the dates of birth and registration has been found to be as follows :—

INTERVAL BETWEEN BIRTH AND REGISTRATION, COMMONWEALTH,
1911 TO 1918.

Year.				For Nuptial Children.	For Ex-nuptial Children.
1911	..	..	..	37.4 days	26.7 days
1912	..	..	..	*	*
1913	..	..	..	15.6 "	15.2 ;
1914	..	..	..	13.4 "	14.3 "
1915	..	..	..	12.3 "	12.4 "
1916	..	..	..	12.6 "	14.9 "
1917	..	..	..	13.0 "	12.1 "
1918	..	..	..	12.9 "	12.7 "

* Introduction of maternity allowance.

Similar information for years prior to 1911 is not available, but it may be assumed that the averages did not vary much from year to year. The figures for 1912 have been omitted; they would shew an average similar to that for 1911 for the first three quarters of the year, and one similar to that for 1913 for the last quarter.

2. Marriages.

1. **Marriages, 1908 to 1918.**—The number of marriages registered in the Commonwealth in 1915 was 45,224, the highest number ever recorded. There was a steady increase in the annual number of marriages in each State from 1905 to 1915, and the crude marriage-rate increased similarly in all the States until 1907, with the exception of Western Australia. In 1908 all the States, with the exception of New South Wales and Tasmania, had a lower marriage rate than in 1907, but the rate recovered in 1909 and the three following years, and was considerably higher in 1912 than in 1907 in all the States. In 1913, although the actual number of marriages was greater in Queensland, South Australia, Western Australia, and Tasmania than it had been in 1912, the marriage rate shewed a decrease in every State with the exception of Tasmania. In 1914 the number of marriages and the marriage rate increased in all the States with the exception of South Australia and Tasmania, and in 1915 there were further increases both in the actual number of marriages and in the marriage rate in all States, with the exception of South Australia and Western Australia. The rate for 1915 was the highest ever experienced in the Commonwealth. A considerable decrease, however, took place in 1916, and a still further fall in 1917 and 1918, the actual number of marriages in the latter years being about the same as in 1909. The number of marriages in each State since 1908 is shewn below :—

TOTAL MARRIAGES, COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	Commonwealth.
1908 ..	12 641	9,335	4,009	3,112	2,012	1,432	10	..	32,551
1909 ..	13,025	9,431	4,543	3,275	1,997	1,494	10	..	33,775
1910 ..	14,307	10,239	4,768	3,661	2,107	1,493	17	..	36,592
1911 ..	15,278	11,088	5,167	4,036	2,421	1,477	10	(a) 5	39,482
1912 ..	16,666	11,738	5,627	4,056	2,524	1,506	24	6	42,147
1913 ..	16,307	11,324	5,655	4,094	2,572	1,620	16	6	41,594
1914 ..	17,357	11,829	5,894	4,010	2,660	1,543	17	1	43,311
1915 ..	18,095	12,832	6,135	3,965	2,581	1,600	12	4	45,224
1916 ..	16,316	11,342	5,208	3,602	2,365	1,433	19	4	40,289
1917 ..	13,246	9,505	4,868	3,252	1,621	1,138	34	2	33,666
1918 ..	13,194	9,156	4,815	3,190	1,612	1,131	39	4	33,141

(a) Part of New South Wales prior to 1911.

2. **Marriage Rates, 1908 to 1918.**—The number of marriages registered per thousand of mean population is shewn in the following table for the same period :—

CRUDE MARRIAGE RATE (a), COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	Commonwealth.
1908 ..	8.03	7.53	7.24	8.23	7.80	7.64	2.74	..	7.76
1909 ..	8.15	7.48	7.97	8.43	7.59	7.85	2.83	..	7.90
1910 ..	8.76	7.98	8.06	9.21	7.77	7.82	5.00	..	8.37
1911 ..	9.19	8.40	8.41	9.81	8.44	7.76	3.01	(b) 2.81	8.79
1912 ..	9.60	8.65	8.91	9.62	8.37	7.86	7.14	2.95	9.07
1913 ..	9.02	8.13	8.67	9.44	8.19	8.27	4.37	2.45	8.66
1914 ..	9.37	8.31	8.73	9.11	8.22	7.78	4.53	0.38	8.80
1915 ..	9.68	9.00	8.93	9.01	8.01	8.03	2.73	1.62	9.14
1916 ..	8.74	8.05	7.69	8.32	7.51	7.23	3.92	1.53	8.21
1917 ..	7.09	6.76	7.16	7.52	5.25	5.72	6.86	0.80	6.87
1918 ..	6.90	6.46	6.99	7.25	5.18	5.55	7.81	1.65	6.65

(a) Number of marriages (not persons married) per 1,000 of mean annual population. (b) Part of New South Wales prior to 1911.

As in some international tabulations the marriage rates are calculated per 1,000 of the unmarried population of 15 years and over, the corresponding rates have been worked out for the Commonwealth for the four last Census periods. The figures comprise in each case the Census year with the year immediately preceding and the year immediately following, and are as follows :—Years 1880–82, 48.98; years 1890–92, 45.74; years 1900–02, 42.14; years 1910–12, 50.10. These rates refer, of course, to persons married and not to marriages, as is the case in the preceding table.

3. **Marriage Rates in Various Countries.**—A comparison of the Australian marriage rate with that of European countries shews that until 1915 it was once or twice surpassed by the rate for Ontario, and equalled by the rate of some of the countries of the East of Europe, and that it was higher than the rate of the countries of Central and Western Europe, and especially than the rate of countries of the North of Europe. Since 1915 it has fallen considerably, as might be expected, but figures for European countries not being available for the last few years, a comparison cannot at present be made.

CRUDE MARRIAGE RATES.—VARIOUS COUNTRIES.

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
Serbia	1911	10.3	New South Wales ..	1918	6.9
Bulgaria	1911	9.4	Denmark	1915	6.9
Hungary	1912	8.6	Scotland	1916	6.6
Rumania	1914	8.5	Netherlands	1915	6.6
Japan	1913	8.1	Australia	1918	6.6
Belgium	1912	8.0	Norway	1915	6.5
Prussia	1912	8.0	Spain	1914	6.5
Russia (European)	1909	7.9	Victoria	1918	6.5
Ontario (Canada)	1917	7.7	Sweden	1915	5.8
German Empire ..	1913	7.7	Finland	1914	5.7
England and Wales	1916	7.5	New Zealand	1917	5.7
France	1913	7.5	Tasmania	1918	5.5
Austria	1912	7.4	Ireland	1916	5.2
South Australia ..	1918	7.2	Chile	1914	5.2
Ceylon	1915	7.2	Western Australia ..	1918	5.2
Italy	1914	7.1	Switzerland	1915	5.0
United Kingdom ..	1916	7.1	Jamaica	1915	3.0
Queensland	1918	7.0			

4. **Age at Marriage.**—(a) The age at marriage of bridegrooms and brides will be found in the following table, the previous conjugal condition of the contracting parties being distinguished. It will be seen that no less than 1,495 males who were less than twenty-one years of age were married during 1918. The corresponding number of females was 6,492. At the other extreme there were twenty-seven men of sixty-five years and upwards, who described themselves as bachelors, and thirteen spinsters of corresponding age.

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED,
COMMONWEALTH, 1918.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors.	Widowers.	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
13 years ..	..	..	..	..	1	..	..	1
14 " ..	..	..	..	..	4	..	..	4
15 " ..	1	..	..	1	41	..	..	41
16 " ..	8	..	..	8	243	..	..	243
17 " ..	43	..	..	43	707	2	..	709
18 " ..	228	..	..	228	1,585	9	1	1,588
19 " ..	449	..	..	449	1,768	2	..	1,778
20 " ..	764	2	..	766	2,117	10	1	2,128
21 " ..	1,903	1	1	1,905	3,615	18	1	3,634
22 " ..	1,978	4	..	1,982	2,874	22	2	2,898
23 " ..	2,293	11	1	2,305	2,726	55	2	2,783
24 " ..	2,377	14	1	2,392	2,557	51	3	2,611
25 " ..	2,401	14	3	2,418	2,158	66	9	2,233
26 " ..	2,302	18	2	2,322	1,834	64	8	1,906
27 " ..	2,168	25	2	2,195	1,579	61	19	1,659
28 " ..	2,015	44	6	2,065	1,244	66	13	1,323
29 " ..	1,782	46	2	1,830	973	61	19	1,053
30 " ..	1,505	65	10	1,580	843	72	16	931
31 " ..	1,143	45	11	1,199	613	62	12	687
32 " ..	1,020	50	13	1,083	472	66	17	555
33 " ..	786	58	8	852	459	81	12	552
34 " ..	685	70	10	765	364	83	15	462
35 " ..	603	69	16	688	340	66	16	422
36 " ..	515	84	16	615	252	61	16	329
37 " ..	497	84	7	588	199	75	19	293
38 " ..	456	78	19	553	203	76	12	291
39 " ..	344	81	14	439	167	68	10	245
40 " ..	277	63	10	350	151	82	14	247
41 " ..	220	88	15	323	94	53	7	154
42 " ..	208	70	9	287	103	54	10	167
43 " ..	186	54	7	247	77	53	7	137
44 " ..	172	68	8	248	57	50	3	110
45 " ..	177	77	3	257	76	49	2	127
46 " ..	151	62	7	220	53	50	4	107
47 " ..	118	70	12	200	34	31	4	69
48 " ..	104	87	9	200	39	61	4	104
49 " ..	96	79	12	187	25	32	2	59
50 " ..	78	69	7	154	32	44	3	79
51 " ..	50	54	7	111	18	22	2	42
52 " ..	73	56	11	140	19	24	1	44
53 " ..	35	58	2	95	15	26	..	41
54 " ..	44	58	5	107	10	30	..	40
55 " ..	30	62	3	95	10	22	..	32
56 " ..	28	47	1	76	6	16	..	22
57 " ..	30	40	1	71	8	18	1	27
58 " ..	21	45	3	69	5	12	1	18
59 " ..	17	29	2	48	4	19	2	25
60 " ..	16	50	1	67	2	19	..	21
61 " ..	7	23	3	33	3	12	2	17
62 " ..	5	22	..	27	2	7	..	9
63 " ..	8	30	..	38	3	10	..	13
64 " ..	4	29	1	34	2	8	1	11
65 " ..	4	22	1	27	..	3	..	3
66 " ..	4	19	1	24	8	6	..	14
67 " ..	1	11	1	13	..	4	..	4
68 " ..	6	17	..	23	..	4	..	4
69 " ..	4	17	..	21	..	9	..	9
70 " ..	2	10	..	12	..	6	..	6

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED,
COMMONWEALTH, 1918—*continued.*

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors.	Widowers.	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
71 years ..	..	9	..	9	..	2	..	2
72 " ..	..	6	..	6	1	1	..	2
73 " ..	3	10	..	13	..	1	..	1
74 " ..	..	4	..	4	1	..	..	1
75 " ..	1	8	..	9	..	..	..	..
76 " ..	1	1	..	2	..	2	..	2
77 " ..	..	2	..	2	..	..	..	..
78 " ..	..	7	..	7	..	..	..	..
79 " ..	..	2	..	2	..	1	..	1
80 " ..	..	3	..	3	..	1	..	1
81 " ..	1	..	..	1	..	..	..	..
82 " ..	..	1	..	1	..	..	..	..
85 " ..	..	1	..	1	..	..	..	..
Not stated	4	2	..	6	5	5	..	10
Total	30,452	2,405	284	33,141	30,801	2,046	294	33,141

(b) The relative ages of bridegrooms and brides are shewn for single years in "Bulletin of Population and Vital Statistics, No. 36"; a condensation into age-groups of five years is here given:—

RELATIVE AGES OF PERSONS MARRIED, COMMONWEALTH, 1918.

Ages.	Total Bridegrooms.	Ages of Brides.								
		Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.	Not stated.
Under 20 ..	729	2	490	211	24	2	..	..	..	..
20 to 24 ..	9,350	2	2,323	5,781	1,111	106	20	5	2	..
25 to 29 ..	10,830	..	1,090	5,306	3,607	673	131	15	7	1
30 to 34 ..	5,479	..	305	1,818	1,968	1,036	270	64	18	..
35 to 39 ..	2,883	..	106	606	888	671	425	132	55	..
40 to 44 ..	1,455	..	27	197	308	368	278	188	89	..
45 to 49 ..	1,064	1	8	85	168	192	242	191	177	..
50 to 54 ..	607	..	7	34	57	82	132	108	187	..
55 to 59 ..	359	..	1	9	30	33	46	59	180	1
60 to 64 ..	199	..	2	3	9	16	28	35	104	2
65 and upwards ..	180	..	..	4	4	8	8	18	138	..
Not stated ..	6	..	..	..	..	..	..	..	..	6
Total Brides ..	33,141	5	4,359	14,054	8,174	3,187	1,580	815	957	10

5. **Previous Conjugal Condition.**—In a previous table the total number of bachelors and spinsters, widowed and divorced persons, who were married during the year 1918, was shewn. In the following table the relative conjugal condition of the contracting parties is given:—

RELATIVE CONJUGAL CONDITION OF PERSONS MARRIED, COMMONWEALTH, 1918.

Conjugal Condition.	Total Bridegrooms.	Brides.		
		Spinsters.	Widows.	Divorced.
Bridegrooms { Bachelors ..	30,452	28,871	1,366	215
{ Widowers ..	2,405	1,715	633	57
{ Divorced ..	284	215	47	22
Total Brides ..	33,141	30,801	2,046	294

6. Birthplaces of Persons Married.—Information as to the birthplaces of persons who were married in 1918 was not obtained in the State of Western Australia; the following figures refer, therefore, only to New South Wales, Victoria, Queensland, South Australia, Tasmania, the Northern Territory and Federal Territory. As might be expected, there were more brides than bridegrooms who were natives of the Commonwealth. In "Bulletin No. 36, Commonwealth Demography," the relative birthplaces of bridegrooms and brides will be found tabulated.

BIRTHPLACES OF PERSONS MARRIED, COMMONWEALTH (a), 1918.

Birthplaces.	Bridegrooms.	Brides.	Birthplaces.	Bridegrooms.	Brides.
AUSTRALASIA—			ASIA— <i>continued.</i>		
New South Wales ..	10,172	11,349	Philippine Islands ..	1	..
Victoria	8,549	8,803	Syria	29	8
Queensland ..	3,511	4,125	Other Asiatic		
South Australia ..	2,943	3,088	Countries ..	1	1
Western Australia ..	71	78	AFRICA—		
Tasmania	1,268	1,392	Union of South Africa	28	17
Northern Territory	5	13	Mauritius	1	..
Federal Territory ..	1	..	Other African British		
New Zealand	309	233	Possessions ..	..	..
EUROPE—			Egypt	1	1
England	2,652	1,505	Other African Coun-		
Wales	79	39	tries	1	..
Scotland	607	348	AMERICA—		
Ireland	420	249	Canada	40	9
Isle of Man ..	5	3	Jamaica	1	..
Other European			Newfoundland ..	..	..
British Possessions	19	3	Other American Bri-		
Austria-Hungary ..	15	4	tish Possessions ..	6	1
Belgium	5	1	Argentine Republic..	3	1
Denmark	66	10	Brazil	2	..
France	23	13	Chile	2	1
Germany	103	53	Mexico	1	..
Greece	48	21	United States ..	75	26
Italy	67	13	Other American		
Netherlands ..	29	5	Countries ..	13	6
Norway	37	1	POLYNESIA—		
Portugal .. ..	..	..	Fiji	7	3
Russia	96	30	Friendly Islands ..	2	..
Spain	11	6	Other Polynesian		
Sweden	48	7	British Possessions	..	1
Switzerland ..	15	3	New Caledonia ..	2	6
Other European			New Hebrides ..	1	2
Countries ..	8	2	Samoa .. ..	..	1
ASIA—			Other Polynesian Is-		
British India ..	44	15	lands	1	2
Ceylon	2	..	South Sea Islands		
Straits Settlements	2	..	(so described) ..	6	1
Other Asiatic British			At sea	19	13
Possessions ..	1	..	Not stated	5	12
Afghanistan ..	1	..	Total		
Arabia	1	..		31,529	31,529
China	34	4			
Japan	10	1			
Java	4	..			

(a) Exclusive of Western Australia.

7. Occupations and Ages of Bridegrooms.—A tabulation has been made of the occupations and ages of all males married in the Commonwealth in the years 1908 to 1918. In "Bulletin No. 36" the 1918 tabulation is shewn for orders of occupations; here it is repeated for classes only, with a subdivision of the Industrial class and of the class of Primary Producers. The average ages of the persons falling under those twelve

subdivisions were determined, and it appears that, apart from the Indefinite class, which consists chiefly of persons who have retired from business and who are living on their own means, and where a high average age may naturally be expected, the average age ranges from 28.70 in the Manufacturing class to 32.63 years in the Pastoral class. The results obtained are shewn in the following table :—

OCCUPATIONS AND AGES OF BRIDEGROOMS, COMMONWEALTH, 1918.

Ages at Marriage.					Industrial.			Primary Producers.				
	Professional.	Domestic.	Mercantile.	Transport and Communication.	Manufacturing.	Building and Construction.	Indefinite Industrial Workers.	Agricultural.	Pastoral.	Mines and Quarries.	Other Primary Producers.	Indefinite.
16 years	4	1	1	1	2	..	1	1	1	2	..	..
17 .. .. .	..	1	4	2	5	1	18	5	1	1	1	..
18	22	2	27	15	56	4	71	11	6	13	1	..
19	32	13	50	52	76	12	137	40	8	23	6	..
20	36	5	92	95	130	29	233	86	11	10	9	..
21	155	44	270	257	301	73	470	196	38	70	25	1
22	177	39	261	245	332	74	512	227	32	58	22	3
23	205	42	338	272	365	95	554	295	50	62	27	..
24	223	54	401	279	377	92	505	310	52	69	28	2
25	223	45	445	293	343	114	445	355	61	61	31	2
26	245	40	409	249	344	95	443	346	53	70	26	2
27	240	40	348	262	301	93	408	348	73	54	25	3
28	212	41	359	203	277	100	381	336	74	52	28	2
29	198	31	326	182	213	76	358	301	60	57	28	..
30	159	28	239	169	182	71	301	281	81	52	14	3
31	128	30	213	112	134	48	219	197	58	45	15	..
32	121	29	187	93	127	38	220	153	60	37	16	2
33	110	11	150	81	85	38	152	147	41	27	10	..
34	87	12	137	58	88	32	144	144	37	18	6	2
35 to 39 years ..	264	61	474	257	321	113	595	507	154	100	30	7
40 ,, 44 ,, ..	145	42	236	124	146	38	309	249	93	54	15	4
45 ,, 49 ,, ..	87	23	177	86	112	49	224	179	64	45	18	..
50 years and upwards	120	43	196	102	140	73	278	215	68	65	13	32
Not stated	2	..	..	..	1	1	2	..	..	..	..	..
Total	3,195	676	5,340	3,489	4,458	1,364	6,980	4,929	1,176	1,075	394	65
Average age—year 1918 ..	29.91	30.76	28.97	28.53	28.55	30.41	29.41	30.54	32.69	29.00	29.74	40.85

The average age at marriage of brides has slowly risen from 25.67 years in 1908 to 25.78 years in 1913 and 1914, 25.75 years in 1915, 26.07 years in 1916, 26.22 years in 1917, and 26.11 years in 1918. The figures for the eleven years are :—1908, 25.67 years; 1909, 25.74 years, 1910, 25.77 years; 1911, 25.74 years; 1912, 25.74 years; 1913, 25.78 years; 1914, 25.78 years; 1915, 25.75 years; 1916, 26.07 years; 1917, 26.22 years; and 26.11 years in 1918. For the five years 1907–11 the average age was 25.70 years, compared with an average of 25.92 years for the five years 1912–16, and 26.11 years for 1918. As the average age of all bridegrooms during 1918 was 29.55 years, it follows that brides are on an average about three years and one-half younger than bridegrooms.

8. Fertility of Marriages.—The quotient obtained by division of the nuptial births registered, say during the five years 1914 to 1918, by the number of marriages registered during the five years 1909 to 1913, i.e., the period antecedent by five years to the period of the births, has been called the "fertility of marriages." This works out at 3.41, or in other words, the number of children to be expected from every marriage in the Commonwealth is under four. This method, while not professing any claim to accuracy, generally furnishes results which agree fairly well with those found by more elaborate and careful investigation, but in this instance, owing chiefly to the fictitious increase in the number of births shewn in 1912, it is rather higher than for a number of years prior to 1912. For the period 1907–11 the result was 3.43; for the year 1912, 3.87; for the year 1913, 3.94; for the year 1914, 3.87, for the year 1915, 3.50; for the year 1916, 3.17; for the year 1917, 2.93; and for the year 1918, 3.02.

9. **Registration of Marriages.**—In all the States of the Commonwealth marriages may be celebrated either by ministers of religion whose names are registered for that purpose with the Registrar-General, or by certain civil officers—in most cases district registrars. The percentage of marriages celebrated by ministers of religion has fluctuated during the last eleven years between 95.70 per cent. in 1918 and 97.55 per cent. in 1909. The figures for the individual States in 1918 were: New South Wales, 95.95 per cent.; Victoria, 96.92 per cent.; Queensland, 96.13 per cent., South Australia, 96.52 per cent.; Western Australia, 83.06 per cent.; and Tasmania, 98.14 per cent., the percentage for the Commonwealth being 95.70. The registered ministers in 1918 belonged to more than forty different denominations, some of which, however, can hardly be regarded as having any valid existence. A number of these have been omitted from the tabulation, and are bracketed under the heading "Other Christians." The figures for 1918 are shewn in the following table:—

MARRIAGES IN EACH DENOMINATION, COMMONWEALTH, 1918.

Denomination.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N. Ter.	Fed. Ter.	Com'-wealth.
Church of England ..	5,748	2,534	1,416	767	557	436	10	3	11,471
Roman Catholic Church..	2,741	1,711	1,103	420	291	153	5	1	6,425
Presbyterian Church of Australia ..	1,717	1,696	676	141	133	116	..	..	4,479
Methodist Church ..	1,616	1,300	758	967	219	184	8	..	5,052
Congregational Church ..	272	768	107	153	65	37	..	..	1,402
Baptist Church ..	173	439	140	194	38	57	..	..	1,041
Church of Christ ..	167	216	29	182	12	20	..	..	626
Lutheran Church ..	16	53	91	176	1	..	..	..	337
Greek Orthodox Church..	11	8	..	3	5	..	..	..	27
Unitarian Church ..	6	1	..	1	..	..	..	..	8
Salvation Army ..	97	33	31	40	7	9	..	..	217
Seventh-Day Adventists..	18	12	1	11	6	2	..	..	50
Other Christians ..	39	52	257	23	1	96	..	..	468
Hebrew ..	38	51	2	1	4	..	..	..	96
Registrar's Office ..	535	282	186	111	273	21	16	..	1,424
Unspecified ..	..	..	18	..	..	..	..	..	18
Total ..	13,194	9,156	4,815	3,190	1,612	1,131	39	4	33,141

10. **Mark Signatures.**—The marriage registers afford some clue, even if an imperfect one, to the illiteracy of the adult population, since a small and constantly diminishing percentage of bridegrooms and brides sign the registers with marks.

(i) *Males and Females, 1908 to 1918.* For a number of years, with the exception of 1908, 1910, 1912, and 1913, mark signatures by males have been slightly more numerous than those by females, the percentages for the Commonwealth during the past eleven years having been as follows:—

**PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH,
1908 TO 1918.**

Year.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
Male ..	0.71	0.65	0.56	0.56	0.43	0.36	0.41	0.27	0.37	0.37	0.33
Female	0.73	0.62	0.59	0.54	0.45	0.38	0.38	0.27	0.32	0.31	0.29

(ii) *Mark Signatures in Commonwealth States, 1908 to 1918.* The following table shews that while the Tasmanian percentage has been the highest, and the Victorian the lowest, in each of the eleven years under review, there has been a marked decrease in every State :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH,
1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	C'wealth
1908 ..	0.79	0.33	1.20	0.56	0.82	1.57	..	..	0.72
1909 ..	0.60	0.22	1.16	0.55	0.68	2.07	30.00	..	0.64
1910 ..	0.61	0.29	0.92	0.44	0.52	1.17	29.41	..	0.58
1911 ..	0.54	0.22	0.84	0.46	0.78	1.96	15.00	(a) ..	0.55
1912 ..	0.33	0.27	0.60	0.54	0.61	1.29	25.00	..	0.44
1913 ..	0.33	0.17	0.45	0.34	0.78	1.20	8.33	..	0.37
1914 ..	0.36	0.19	0.59	0.45	0.53	1.00	1.47	..	0.39
1915 ..	0.25	0.11	0.26	0.32	0.43	1.47	..	..	0.27
1916 ..	0.41	0.18	0.32	0.35	0.32	0.98	10.53	..	0.35
1917 ..	0.41	0.16	0.32	0.25	0.49	1.14	7.35	..	0.34
1918 ..	0.37	0.13	0.12	0.34	0.43	1.41	5.13	..	0.31

(a) Part of New South Wales prior to 1911.

A complete disappearance of mark signatures is hardly to be expected, for the available information tends to show that two-thirds of those who sign with marks are natives of their respective States, who apparently have not made use of the advantages offered to them by the State schools.

§ 3. Deaths.

1. *Male and Female Deaths, 1908 to 1918.*—The total number of deaths registered in the Commonwealth from 1908 to 1918 inclusive, gives an annual average of 28,546 males and 21,002 females, the details being as follow :—

MALE DEATHS, COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	C'wealth.
1908 ..	9,298	8,816	3,500	2,029	1,800	1,112	77	..	26,632
1909 ..	9,184	8,070	3,419	2,080	1,671	1,030	60	..	25,514
1910 ..	9,339	8,128	3,594	2,163	1,760	1,098	72	..	26,154
1911 ..	9,973	8,355	4,060	2,179	1,923	1,037	59	(a) 5	27,591
1912 ..	11,094	9,072	4,305	2,409	2,210	1,130	61	4	30,285
1913 ..	11,508	8,495	4,195	2,563	1,852	1,189	53	4	29,859
1914 ..	10,984	9,017	4,132	2,621	1,942	1,063	69	7	29,835
1915 ..	11,439	8,860	4,695	2,587	1,887	1,083	89	14	30,654
1916 ..	11,500	8,901	4,653	2,721	1,931	1,148	108	6	31,018
1917 ..	10,445	7,952	4,027	2,398	1,802	926	52	7	27,609
1918 ..	10,914	8,079	4,359	2,430	1,774	959	66	4	28,585
Rate(b), 1918	11.53	11.96	12.42	11.96	11.12	9.35	16.82	3.03	11.70

(a) Part of New South Wales prior to 1911. (b) Number of deaths per 1,000 of mean population.

FEMALE DEATHS, COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	Commonwealth.
1908 ..	6,757	6,950	2,180	1,805	1,079	1,017	6	..	19,794
1909 ..	6,626	6,366	2,111	1,702	1,033	812	8	..	18,658
1910 ..	6,819	6,604	2,150	1,851	980	1,022	10	..	19,436
1911 ..	7,173	6,861	2,484	1,859	1,000	890	6	(a) 5	20,278
1912 ..	7,768	7,517	2,616	1,927	1,125	927	6	6	21,892
1913 ..	8,191	6,979	2,588	2,130	1,082	942	11	7	21,930
1914 ..	7,736	7,486	2,599	2,092	1,101	855	12	4	21,885
1915 ..	8,146	6,963	2,864	2,107	1,105	932	8	3	22,128
1916 ..	8,346	7,588	2,861	2,356	1,104	908	14	2	23,179
1917 ..	7,496	6,603	2,528	1,967	967	842	11	6	20,420
1918 ..	7,902	7,098	2,792	1,960	1,059	843	8	2	21,664
Rate (b), 1918	8.19	9.56	8.27	8.27	6.99	8.33	7.48	1.81	8.54

(a) Part of New South Wales prior to 1911. (b) Number of deaths per 1,000 of mean population.

2. **Male and Female Death Rates, 1918.**—The crude male and female death rates for 1918 only are given in the last line of the preceding tables. Queensland has the highest rate for males, and Victoria for females, while Tasmania has the lowest male, and Western Australia the lowest female death rate. The rates for the two Territories are based on very small numbers, and comparisons with the States would be misleading.

Owing to differences in the age constitution of the six States, the crude rates are not, however, strictly comparable, but for the purpose of calculating the "Index of Mortality" (see page 193) a distribution into five age-groups has been made, and the death rates are shewn for males and females in each State in five-year age groups for the three years 1910–1912, that is, for the census year and for the year immediately preceding and following, on page 188.

3. **Death Rates of Various Countries.**—A comparison with foreign States is, for the same reason, apt to shew the Commonwealth in too favourable a light, but even if an allowance for the different age constitution were made, it would still be found occupying a very enviable position. The following table gives particulars of the crude death rates of various countries for the latest available years :—

DEATH RATES (a) OF VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
Tasmania ..	1918	8.8	Belgium ..	1912	14.8
Western Australia ..	1918	9.1	Prussia ..	1913	14.9
New Zealand ..	1917	9.6	German Empire ..	1913	15.0
New South Wales ..	1918	9.8	Finland ..	1914	15.6
South Australia ..	1918	10.0	Ireland ..	1916	16.5
Australia ..	1918	10.1	France ..	1913	17.7
Queensland ..	1918	10.4	Italy ..	1914	17.9
Victoria ..	1918	10.7	Japan ..	1913	19.5
Ontario (Canada) ..	1917	12.0	Austria ..	1912	20.5
Netherlands ..	1915	12.4	Serbia ..	1912	21.1
Denmark ..	1915	12.8	Bulgaria ..	1911	21.5
Norway ..	1915	13.3	Jamaica ..	1915	21.6
Switzerland ..	1915	13.3	Spain ..	1914	22.1
United States (regis- tration area) ..	1915	13.5	Hungary ..	1912	23.3
England and Wales ..	1916	14.4	Rumania ..	1914	23.8
Scotland ..	1916	14.6	Ceylon ..	1915	25.2
United Kingdom ..	1916	14.6	Chile ..	1914	27.8
Sweden ..	1915	14.6	Russia, European ..	1909	28.9

(a) Number of deaths per 1,000 of mean population.

4. Total Deaths, 1908 to 1918.—The total number of deaths in each of the Commonwealth States during the eleven years 1908 to 1918 is shown below :—

TOTAL DEATHS, COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	C'wealth.
1908	16,055	15,766	5,680	3,834	2,879	2,129	83	..	46,426
1909	15,810	14,436	5,530	3,782	2,704	1,842	68	..	44,172
1910	16,158	14,732	5,744	4,014	2,740	2,120	82	..	45,590
1911	17,146	15,216	6,544	4,038	2,923	1,927	65	(a) 10	47,869
1912	18,862	16,589	6,921	4,336	3,335	2,057	67	10	52,177
1913	19,699	15,474	6,783	4,693	2,934	2,131	64	11	51,789
1914	18,720	16,503	6,731	4,713	3,043	1,918	81	11	51,720
1915	19,585	15,823	7,559	4,694	2,992	2,015	97	17	52,782
1916	19,846	16,489	7,514	5,077	3,085	2,056	122	8	54,197
1917	17,941	14,555	6,555	4,365	2,769	1,768	63	13	48,029
1918	18,816	15,177	7,151	4,390	2,833	1,802	74	6	50,249

(a) Part of New South Wales prior to 1911.

5. Crude Death Rates, 1908 to 1918.—The death rate for 1918 shewed an increase on that for 1917, but was the lowest on record in the Commonwealth as a whole, with the exception of the rate for 1917.

CRUDE DEATH RATE (a), COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	C'wealth.	
1908	..	10.20	12.71	10.26	10.14	11.17	11.36	22.71	..	11.07
1909	..	9.89	11.45	9.70	9.74	10.27	9.68	19.22	..	10.33
1910	..	9.89	11.49	9.71	10.09	10.11	11.10	24.10	..	10.43
1911	..	10.32	11.52	10.65	9.82	10.19	10.13	19.58	(b) 5.62	10.66
1912	..	10.86	12.23	10.96	10.28	11.06	10.73	19.95	4.91	11.23
1913	..	10.89	11.11	10.39	10.82	9.34	10.87	17.49	4.49	10.78
1914	..	10.11	11.59	9.97	10.71	9.41	9.67	21.59	4.16	10.51
1915	..	10.48	11.09	11.00	10.68	9.28	10.11	22.03	6.89	10.66
1916	..	10.63	11.70	11.09	11.73	9.80	10.38	25.16	3.06	11.04
1917	..	9.60	10.36	9.64	10.10	8.97	8.89	12.71	5.21	9.80
1918	..	9.84	10.70	10.39	9.97	9.11	8.84	14.82	2.47	10.09

(a) Number of deaths per 1,000 of mean population for year. (b) Part of New South Wales prior to 1911.

6. Male and Female Death Rates, 1908 to 1918.—The rise in the Commonwealth rate in 1908 was practically limited to the male death rate, as the subjoined table shews. The decrease from 1908 to 1909 was fairly equal for the male and female rates, and the increase in 1910 was due to a rise in the female rate. From 1910 to 1911, and again from 1911 to 1912, the increase in the male rate was about one and a-half times as marked as that in the female rate, while the increase from 1912 to 1913 was more than twice as great for the male rate as for the female rate. The decrease from 1913 to 1914 was fairly equal for the male and female rates, while in 1915 and 1916 there were increases in the male rate, with a further slight decrease in the female rate in 1915, followed by an increase in 1916. In 1917 there were equally pronounced falls both in the male and female rates, which were both the lowest for any year for which records are available, and the subsequent rise in 1918 was only a very small one.

MALE AND FEMALE DEATH RATES (a), COMMONWEALTH, 1908 TO 1918.

Year.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
Male rate	12.24	11.51	11.54	11.82	12.51	11.93	11.67	12.08	12.65	11.47	11.70
Female ,,	9.81	9.06	9.24	9.40	9.84	9.53	9.27	9.16	9.44	8.18	8.54
Crude total rate	11.07	10.33	10.43	10.66	11.23	10.78	10.51	10.66	11.04	9.80	10.09

(a) Number of deaths per 1,000 of mean population.

7. *Infantile Death Rate.*—(i) *Deaths and Death Rates of Male and Female Infants, 1908 to 1918.* Improvement continues to take place in the infantile death rate since 1908, in which year it stood at 77.78 per thousand births registered, while in 1918 it had fallen to 58.57 per thousand, a rate lower than that experienced in any previous year except 1917. In the following table, which shews both the total number of deaths of children under one year and the rate per thousand births since 1908, males and females are distinguished. The universal experience that during the first few years of life the excess of male births tends to disappear, as a consequence of the higher death rate of male infants, is shewn by the fact that out of 714,264 male infants born from 1908 to 1918, 54,373 died during their first year of life, while of 679,692 female infants the number who died was only 41,762 :—

NUMBER OF INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY, COMMONWEALTH, 1908 TO 1918.

Year.	Registered Deaths under one year.			Rate of Infantile Mortality (a).		
	Males.	Females.	Total.	Males.	Females.	Total.
1908	4,885	3,791	8,676	85.53	69.65	77.78
1909	4,604	3,559	8,163	78.73	64.02	71.56
1910	4,916	3,822	8,738	81.65	67.53	74.81
1911	4,745	3,624	8,369	75.91	60.72	68.49
1912	5,446	4,102	9,548	80.06	63.04	71.74
1913	5,472	4,328	9,800	78.81	65.30	72.21
1914	5,582	4,279	9,861	79.06	63.51	71.47
1915	5,127	3,980	9,107	74.25	60.47	67.52
1916	5,186	4,057	9,243	76.82	63.47	70.33
1917	4,232	3,034	7,266	63.27	48.10	55.91
1918	4,178	3,186	7,364	64.82	51.99	58.57

(a) Number of deaths under 1 year per 1,000 births registered.

(ii) *Infantile Mortality, 1908 to 1918.* Divided among the States and Territories, the rates of infantile mortality during the last eleven years were as follows :—

RATES (a) OF INFANTILE MORTALITY, COMMONWEALTH, 1908 TO 1918.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Territory.	Com'wealth.
1908	75.20	86.05	70.67	69.50	84.72	75.16	58.82	..	77.78
1909	73.87	71.36	71.50	60.91	78.01	64.91	111.11	..	71.56
1910	74.71	76.88	62.90	70.21	78.18	101.68	200.00	..	74.81
1911	69.46	68.70	65.36	60.60	76.01	73.39	96.77	..	68.49
1912	71.00	74.48	71.73	61.68	82.06	66.80	121.21	(b)33.34	71.74
1913	77.78	70.53	63.35	69.93	70.30	70.68	115.38	76.92	72.21
1914	69.29	78.27	63.93	75.79	68.12	71.46	51.72	22.73	71.47
1915	67.67	68.78	64.33	67.04	66.54	72.37	65.57	42.55	67.52
1916	67.15	74.63	70.27	73.21	66.22	74.97	40.54	15.87	70.33
1917	56.93	56.82	53.87	53.06	57.09	52.27	43.48	45.45	55.91
1918	59.02	61.75	56.66	51.25	57.13	60.80	28.57	20.41	58.57

(a) Number of deaths under 1 year per 1,000 births registered. (b) Part of New South Wales prior to 1911.

The movement has been a fairly regular one, shewing slight increases in the rates during 1910, 1913, 1916, and 1918. The minimum rates in the six States, prior to 1917, occurred at different periods, viz., Tasmania, in 1909; Queensland, in 1910; Victoria and South Australia, in 1911; New South Wales, in 1916, and Western Australia, in 1915. The regrettable size of the Victorian rate in 1908 was wholly due to the large mortality caused by the phenomenal heat of January, 1908. With the exception of Queensland, where the 1908 rate was exceptionally low, the 1909 rate was the lowest ever experienced up to that date in any of the States. A rise occurred in every State in 1910 with the exception of Queensland, which was counterbalanced by a considerable decrease during 1911 in every State but Queensland. In 1912 the rates shewed a rise in every State except Tasmania, and this was followed by a decrease in 1913 in Victoria, Queensland, and Western Australia, and by a further rise in New South Wales, South Australia, and Tasmania. In 1914 the rates increased in every State except New South Wales and Western Australia, the increases in Victoria and South Australia being particularly noticeable. In 1915 the rate decreased in New South Wales, Victoria, South Australia, and Western Australia, and increased slightly in Queensland and Tasmania, while in 1916 it increased in every State with the exception of New South Wales and Western Australia. A considerable decrease is shown by every State during 1917, and the rates for that year are the lowest on record in every State and in the Commonwealth as a whole, whilst only a very slight increase was registered in 1918.

The total number of births, and of deaths of children under one year of age, and the average rate of infantile mortality for the eleven years 1908 to 1918 are shewn in the following table for each of the fifty-nine districts for which the vital statistics of the Commonwealth have been tabulated during that period. To afford a better idea of the geographical position of the districts, the name of a town situated in a fairly central part of each district has been added. The figures for the Federal Territory and for Lord Howe Island are included for the sake of completeness, but are too small to be used in comparison with others.

INFANTILE MORTALITY FOR THE ELEVEN YEARS 1908 TO 1918.

States and Territories.	Districts.	Towns.	Total Births, 1908-18.	Total Deaths of Children under one year, 1908-18.	Average Infantile Mortality per 1,000 Births, 1908-18.
New South Wales	Metropolitan	Sydney	210,997	15,824	75.00
	North Coast	Grafton	44,793	2,448	54.61
	Lower Hunter	Newcastle	56,346	4,185	74.27
	Cumberland	Parramatta	24,604	1,627	66.13
	South Coast	Nowra	23,005	1,453	63.16
	Northern Tableland	Armidale	32,106	2,091	65.13
	Central Tableland	Bathurst	38,746	2,876	74.23
	Southern Tableland	Goulburn	29,690	1,916	64.53
	North-Western Slope	Moree	13,198	964	73.04
	Central-Western Slope	Dubbo	19,660	1,417	72.07
	South-Western Slope	Temora	21,089	1,293	61.31
	Riverina	Hay	11,460	726	63.35
	Plains East of Darling	Cobar	5,978	547	91.50
	Trans-Darling Plains	Broken Hill	13,397	1,441	107.56
Lord Howe Island			2		111.11
Victoria	Metropolitan	Melbourne	175,556	14,788	84.23
	Central	Geelong	34,496	2,297	66.59
	North-Central	Kyneton	18,193	1,106	60.79
	Western	Hamilton	42,057	2,938	69.86
	Wimmera	Horsham	16,627	955	57.44
	Mallee	Ultima	9,610	610	63.48
	Northern	Rochester	39,822	2,713	68.13
	North-Eastern	Beechworth	13,858	779	56.14
Queensland	Gippsland	Sale	18,747	1,012	53.98
	Metropolitan	Brisbane	53,295	4,219	79.16
	Moreton	Ipswich	25,744	1,414	54.93
	Wide Bay	Maryborough	12,516	1,385	54.28
	Port Curtis	Rockhampton	16,958	1,291	76.13
	Edgumbe	Townsville	20,393	1,277	62.62
	Rockingham	Calras	10,062	613	60.92
	York Peninsula	Cooktown	1,569	108	68.83
	Carpentaria	Croydon	3,530	295	83.57
	Central-Western	Winton	946	81	85.62

INFANTILE MORTALITY FOR THE ELEVEN YEARS 1908 TO 1918—*continued.*

States and Territories.	Districts.	Towns.	Total Births, 1908-18.	Total Deaths of Children under one year, 1908-18.	Average Infantile Mortality per 1,000 Births, 1908-18.
Queensland ..	South-Western	Charleville ..	2,556	264	103.29
" ..	Central	Blackall ..	6,035	379	62.80
" ..	Maranoa	Roma ..	4,230	290	67.60
" ..	Downs	Toowoomba ..	29,290	1,818	62.07
South Australia ..	Metropolitan	Adelaide ..	60,680	4,540	74.82
" ..	Central	Gawler ..	27,023	1,404	51.95
" ..	Lower North	Redruth ..	19,789	1,492	75.39
" ..	Upper North	Port Augusta ..	6,438	368	57.18
" ..	South-Eastern	Mount Gambier ..	6,772	330	48.73
" ..	Western	Port Lincoln ..	4,662	215	46.12
Western Australia ..	Metropolitan	Perth ..	39,675	3,185	80.28
" ..	Northern Agricultural ..	Geraldton ..	12,772	816	63.89
" ..	South-Western	Katanning ..	20,006	1,007	50.33
" ..	Eastern Goldfields ..	Kalgoorlie ..	14,310	1,223	85.46
" ..	Northern Goldfields ..	Pilbara ..	3,010	257	85.38
" ..	North-Western	Roebourne ..	443	26	58.69
" ..	Northern	Broome ..	396	34	85.86
Tasmania ..	Hobart	Hobart ..	13,976	1,223	87.51
" ..	Launceston	Launceston ..	9,030	796	88.15
" ..	North-Eastern	Scottsdale ..	7,314	432	65.90
" ..	North-Western	Stanley ..	15,459	942	60.94
" ..	Midland	Zeehan ..	7,946	559	70.35
" ..	South-Eastern	Sorell ..	6,362	330	59.73
" ..	South-Western	Franklin ..	1,950	127	65.13
Northern Territory ..	..	Darwin ..	584	47	80.48
Federal Territory (1911-18) ..	..	Canberra ..	371	12	32.34

(iii) *Infantile Mortality in Various Countries and Cities.* Compared with European and American countries, the cities and States of the Commonwealth occupy a very enviable position, and it may be pointed out that experience has shewn that a high birth rate is often, though not invariably, accompanied by a high infantile death rate. The figures in the subjoined tables relate to the latest years for which returns are available :—

RATE (a) OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)	Country.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)
New Zealand ..	1915	50	25.4	Scotland ..	1916	97	22.8
South Australia ..	1918	51	25.8	Finland ..	1915	104	26.9
Queensland ..	1918	57	28.4	Belgium ..	1912	120	22.6
Western Australia ..	1918	57	22.8	Italy ..	1913	137	31.7
Australia ..	1918	59	25.3	Prussia ..	1912	146	28.9
New South Wales ..	1918	59	26.5	Serbia ..	1911	146	36.2
Tasmania ..	1918	61	25.9	Japan ..	1913	150	33.3
Victoria ..	1918	62	22.3	German Empire ..	1913	151	27.5
Norway ..	1914	68	25.2	Bulgaria ..	1911	156	40.2
Sweden ..	1913	70	23.2	Spain ..	1907	158	33.6
France ..	1912	78	19.0	Ceylon ..	1915	171	37.0
Ireland ..	1916	83	21.1	Jamaica ..	1915	175	34.6
Netherlands ..	1915	87	26.2	Austria ..	1912	180	31.3
England and Wales ..	1916	91	20.9	Hungary ..	1912	186	36.3
United Kingdom ..	1916	91	21.1	Rumania ..	1914	187	42.5
Switzerland ..	1914	91	22.5	Russia, European ..	1909	248	44.0
Ontario (Canada) ..	1917	92	22.6	Chile ..	1914	286	37.0
Denmark ..	1915	95	24.2				

(a) Number of deaths under 1 year per 1,000 births registered. (b) Number of births per 1,000 of mean population.

RATE (a) OF INFANTILE MORTALITY IN VARIOUS CITIES.

City.	Year.	Rate of Infantile Mortality. (a)	City.	Year.	Rate of Infantile Mortality. (a)
Zurich	1916	55	Birmingham ..	1915	118
Rome	1915	56	Milan	1916	124
Amsterdam ..	1916	58	Paris	1915	125
Sydney	1917	59	Genoa	1916	126
Adelaide ..	1917	60	Belfast	1912	129
Hobart	1917	60	Manchester ..	1915	129
Brisbane	1917	63	Hamburg	1912	130
Perth	1917	64	Leipzig	1912	133
Rotterdam ..	1916	65	Munich	1912	134
Melbourne ..	1917	66	Antwerp	1912	140
Geneva	1916	73	Budapest	1912	141
Stockholm ..	1916	80	Berlin	1912	142
Copenhagen ..	1915	92	Chicago	1916	145
Buenos Aires ..	1916	94	Dublin	1916	147
Edinburgh ..	1916	100	Vienna	1912	149
New York	1915	102	Marseilles ..	1916	157
Washington ..	1916	106	Brussels	1912	166
Christiania ..	1912	108	Rio de Janeiro ..	1912	174
London	1915	110	Madrid	1915	177
Glasgow	1916	111	Bucharest	1912	185
Monte Video ..	1916	111	Florence	1916	192
Aberdeen	1916	112	Montreal	1911	242
Toronto	1911	114	Petrograd	1912	249
Lyons	1916	115	Moscow	1915	317
Liverpool	1916	117	Bombay	1915	329

(a) Number of deaths under 1 year per 1,000 births registered.

(iv) *The Effect of Infantile Mortality on Birth Rate.* It has been contended by certain investigators that the birth-rate question is intimately related to that of infantile mortality, and that in many cases a declining birth rate may be to a large extent accounted for by a decline in the infantile death rate, since, in the case in which an infant has survived, the period elapsing before the birth of the next child is likely to be longer than in the case in which the infant has died. It may indeed be readily admitted that in any community the birth rate may be affected in a definite way by variations of infantile mortality, but careful investigation of the question serves to shew that, whether considered from the theoretical aspect with a view to determining the *maximum* and the *probable* effects which a given change in the rate of infantile mortality would produce in the birth rate, or from the practical point of view by observing the fluctuations in the birth rates of various countries which have been collateral with changes in their rates of infantile mortality, there is little ground for the contention that the rate of infantile mortality is an important factor in determining the variations in the birth rate. One calculation which has been made on the basis of normal Australian conditions indicates that the *maximum* effect of increasing the rate of infantile mortality 100 per cent. would, in the absence of other disturbing causes, be to increase the birth rate by only 3½ per cent., whilst the *probable* effect would be considerably less than this. In other words, the *maximum* effect of an increase in the rate of infantile mortality from 100 to 200 per 1,000 births would be to increase the birth rate from say 30 to 31 per 1,000 of population. It may be noted, too, that although in some countries an increase in birth-rate accompanies an increase in the rate of infantile mortality, in others the birth rate would appear to be quite unaffected by such an increase, while in the case of England and Wales, Scotland, and Ireland, the tendency apparently exhibited is for an increase in the rate of infantile mortality to be associated with a decrease in the birth rate. The conclusion which these results appear to warrant is that although infantile mortality undoubtedly tends on the whole to increase the birth rate, the practical effect produced is so slight that the existence of such a relation may in any instance be quite masked by more important causes of variation.

8. Deaths in Age-Groups, 1908 to 1918.—A distribution into age-groups has been made of the 545,000 deaths which occurred in the Commonwealth from 1908 to 1918, and the results are tabulated for each State. It is, however, sufficient here to shew the results for the Commonwealth as a whole, which are as follows:—

DEATHS IN AGE-GROUPS, COMMONWEALTH, 1908 TO 1918.

Ages.	Males.	Females.	Total.	Percentage of Total Males.	Percentage of Total Females.	Percentage of Total.
Under 1 year ..	54,373	41,762	96,135	17.33	18.04	17.64
1 year and under 5 ..	17,551	15,495	33,046	5.59	6.70	6.06
5 years and under 20 ..	16,596	14,220	30,816	5.29	6.15	5.65
20 years and under 40 ..	39,691	35,604	75,295	12.65	15.40	13.81
40 years and under 60 ..	68,500	40,079	108,579	21.84	17.33	19.92
60 years and under 65 ..	19,981	11,557	31,538	6.37	5.00	5.79
65 years and over ..	96,413	72,438	168,851	30.73	31.33	30.99
Age not stated ..	631	109	740	0.20	0.05	0.14
Total ..	313,736	231,264	545,000	100.00	100.00	100.00

9. Deaths at Single Ages and in Age-Groups, 1918.—The 50,249 deaths which were registered in the Commonwealth in the year 1918 will be found tabulated under single years, and in groups of five years for each State and Territory, in "Bulletin No. 36, Commonwealth Demography, 1918." It has been thought advisable to tabulate the deaths during the first two years of life in greater detail. The first month has, therefore, been shewn in weeks, and the twenty-three months up to the end of the second year in months. This tabulation shews a great number of children dying during the first week, the number gradually diminishing towards the end of the second year. The particulars relating to the Commonwealth are given in the following table:—

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, COMMONWEALTH, 1918.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
Under 1 week ..	1,675	1,269	2,944	16 months and under 17 ..	44	51	95
1 week and under 2 ..	288	189	477	17 " " " 18 ..	34	39	73
2 weeks " " 3 ..	186	134	320	18 " " " 19 ..	65	48	113
3 " " " 4 ..	138	92	230	19 " " " 20 ..	31	26	57
Total under 1 month ..	2,287	1,684	3,971	20 " " " 21 ..	37	32	69
1 month and under 2 ..	348	251	599	21 " " " 22 ..	33	30	72
2 months " " 3 ..	265	218	483	22 " " " 23 ..	23	22	45
3 " " " 4 ..	189	174	363	23 " " " 24 ..	27	29	56
4 " " " 5 ..	181	143	324	Total under 2 years ..	4,908	3,850	8,767
5 " " " 6 ..	162	124	286	2 years ..	335	311	646
6 " " " 7 ..	140	123	263	3 " " " ..	213	221	434
7 " " " 8 ..	145	105	250	4 " " " ..	176	184	360
8 " " " 9 ..	135	112	247	Total under 5 years ..	5,632	4,575	10,207
9 " " " 10 ..	113	92	205	5 years ..	160	138	298
10 " " " 11 ..	114	79	193	6 " " " ..	143	114	257
11 " " " 12 ..	99	81	180	7 " " " ..	105	94	199
Total under 1 year ..	4,178	3,186	7,364	8 " " " ..	109	63	172
12 months and under 13 ..	279	222	501	9 " " " ..	87	66	153
13 " " " 14 ..	58	76	134	Total 5 years and under 10	604	475	1,079
14 " " " 15 ..	45	50	95				
15 " " " 16 ..	54	39	93				

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1918—continued.

Ages	Males.	Females.	Total.	Ages	Males.	Females.	Total.
10 years	88	67	155	60 years	581	271	852
11 "	73	53	126	61 "	403	220	623
12 "	73	57	130	62 "	450	239	689
13 "	74	54	128	63 "	457	283	740
14 "	108	53	161	64 "	508	280	788
Total 10 years and under 15	416	284	700	Total 60 years and under 65	2,399	1,293	3,692
15 years	74	66	140	65 years	488	260	748
16 "	99	59	158	66 "	412	250	662
17 "	108	80	188	67 "	433	276	709
18 "	114	98	212	68 "	414	311	725
19 "	97	102	199	69 "	358	289	627
Total 15 years and under 20	492	405	897	Total 65 years and under 70	2,105	1,366	3,471
20 years	98	116	214	70 years	490	336	826
21 "	118	113	231	71 "	330	254	584
22 "	118	111	229	72 "	439	314	753
23 "	115	141	256	73 "	438	364	802
24 "	135	174	309	74 "	464	381	845
Total 20 years and under 25	584	655	1,239	Total 70 years and under 75	2,161	1,649	3,810
25 years	136	158	294	75 years	434	354	788
26 "	157	192	349	76 "	485	344	829
27 "	139	165	304	77 "	414	359	773
28 "	164	148	312	78 "	460	366	826
29 "	169	151	320	79 "	328	322	650
Total 25 years and under 30	765	814	1,579	Total 75 years and under 80	2,121	1,745	3,866
30 years	180	168	348	80 years	388	359	747
31 "	162	143	305	81 "	287	252	539
32 "	174	183	357	82 "	355	275	630
33 "	168	162	330	83 "	268	256	524
34 "	180	166	346	84 "	353	286	639
Total 30 years and under 35	864	822	1,686	Total 80 years and under 85	1,651	1,428	3,079
35 years	208	164	372	85 years	253	235	488
36 "	187	194	381	86 "	230	191	421
37 "	213	188	401	87 "	155	165	320
38 "	218	192	410	88 "	160	134	294
39 "	196	173	369	89 "	124	129	253
Total 35 years and under 40	1,022	911	1,933	Total 85 years and under 90	922	854	1,776
40 years	252	179	431	90 years	100	86	186
41 "	165	165	330	91 "	67	56	123
42 "	241	157	398	92 "	49	59	108
43 "	207	165	372	93 "	33	42	75
44 "	207	171	378	94 "	23	32	55
Total 40 years and under 45	1,072	837	1,909	Total 90 years and under 95	272	275	547
45 years	307	179	486	95 years	16	26	42
46 "	255	169	424	96 "	20	22	42
47 "	288	158	446	97 "	11	15	26
48 "	320	188	508	98 "	9	12	21
49 "	299	199	498	99 "	4	7	11
Total 45 years and under 50	1,469	893	2,362	Total 95 yrs. and under 100	60	82	142
50 years	407	185	592	100 years	1	6	7
51 "	287	183	470	101 "	1	3	4
52 "	365	219	584	102 " .. ..	..	4	4
53 "	348	203	551	103 "	2	2	4
54 "	409	250	659	105 " .. ..	..	1	1
Total 50 years and under 55	1,816	1,040	2,856	106 "	2	..	2
55 years	426	231	657	107 " .. ..	..	1	1
56 "	410	261	671	Total 100 years and over	6	17	23
57 "	373	244	617	Age not stated	28	3	31
58 "	470	256	726	Total all ages	28,585	21,664	50,249
59 "	445	249	694				
Total 55 years and under 60	2,124	1,241	3,365				

The following tables shew the death rate per 1,000 living at each age for the three years 1910, 1911 and 1912, viz., the Census year 1911, and the years immediately preceding and following. The Northern Territory is included with South Australia, and the Federal Territory with New South Wales :—

AVERAGE ANNUAL DEATH RATES PER 1,000 LIVING IN VARIOUS AGE-GROUPS, 1910 TO 1912.

Age Group.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
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MALES.

0 to 4 years	25.40	24.71	23.30	21.30	28.44	24.65	24.71
5 ,, 9 ,,	2.11	2.39	2.39	1.85	2.61	2.53	2.26
10 ,, 14 ,,	1.75	1.69	1.74	1.40	2.16	1.70	1.72
15 ,, 19 ,,	2.42	2.41	2.92	2.43	2.86	2.59	2.52
20 ,, 24 ,,	3.37	3.27	4.83	3.00	5.17	3.57	3.65
25 ,, 29 ,,	3.91	4.13	5.57	3.57	5.86	4.49	4.35
30 ,, 34 ,,	4.90	4.83	5.96	5.40	6.75	3.77	5.20
35 ,, 39 ,,	6.08	6.31	7.54	7.15	8.41	6.28	6.68
40 ,, 44 ,,	8.25	8.26	9.65	8.31	10.37	6.17	8.58
45 ,, 49 ,,	10.91	11.05	13.83	10.27	14.96	9.25	11.58
50 ,, 54 ,,	14.78	15.33	17.77	13.02	17.66	14.08	15.36
55 ,, 59 ,,	21.93	21.41	23.01	19.99	24.65	16.24	21.67
60 ,, 64 ,,	30.99	31.52	31.25	31.94	35.06	28.39	31.38
65 ,, 69 ,,	45.80	50.53	51.53	45.94	45.96	38.29	47.69
70 ,, 74 ,,	71.49	74.28	70.94	58.38	73.74	58.79	70.88
75 ,, 79 ,,	117.05	115.68	112.40	99.49	110.54	108.60	114.04
80 ,, 84 ,,	181.34	174.56	190.89	165.68	185.23	148.67	176.32
85 ,, 89 ,,	252.58	270.76	202.56	225.42	328.21	313.87	257.73
90 and over	375.35	365.88	272.73	279.57	321.43	465.61	357.11

FEMALES.

0 to 4 years	20.96	19.79	20.07	16.96	21.76	21.27	20.22
5 ,, 9 ,,	1.78	2.27	2.29	1.71	2.58	1.88	2.04
10 ,, 14 ,,	1.41	1.81	1.45	1.25	1.77	2.51	1.59
15 ,, 19 ,,	1.96	2.42	2.20	2.19	2.01	3.47	2.22
20 ,, 24 ,,	3.22	3.74	3.76	3.44	3.82	4.09	3.53
25 ,, 29 ,,	4.02	4.31	4.68	4.79	4.42	4.66	4.31
30 ,, 34 ,,	4.51	4.98	4.46	4.92	4.88	4.93	4.73
35 ,, 39 ,,	5.84	6.02	5.79	5.71	6.15	7.68	5.97
40 ,, 44 ,,	6.24	6.63	7.11	5.80	6.73	5.67	6.44
45 ,, 49 ,,	7.63	8.05	9.07	7.91	8.40	7.02	7.98
50 ,, 54 ,,	11.22	11.30	11.73	9.72	11.82	8.76	11.07
55 ,, 59 ,,	14.38	15.55	14.13	12.63	14.18	15.80	14.60
60 ,, 64 ,,	21.69	22.27	21.64	20.54	20.44	19.50	21.60
65 ,, 69 ,,	37.81	36.48	34.69	35.01	34.59	35.09	36.47
70 ,, 74 ,,	55.75	58.36	57.82	48.28	54.52	55.11	56.13
75 ,, 79 ,,	97.62	98.27	86.11	91.32	92.45	93.30	95.91
80 ,, 84 ,,	154.31	157.19	138.33	137.87	144.14	150.77	151.89
85 ,, 89 ,,	184.60	225.65	200.82	202.17	186.67	254.45	208.59
90 and over	307.43	361.44	351.52	328.17	358.97	317.88	334.87

**AVERAGE ANNUAL DEATH RATES PER 1,000 LIVING IN VARIOUS
AGE-GROUPS, 1910 TO 1912—continued.**

Age Group.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
PERSONS.							
0 to 4 years ..	23.21	22.29	21.72	19.16	25.15	23.00	22.50
5 ,, 9 ,, ..	1.95	2.33	2.34	1.78	2.60	2.21	2.15
10 ,, 14 ,, ..	1.58	1.75	1.60	1.33	1.97	2.10	1.66
15 ,, 19 ,, ..	2.19	2.42	2.57	2.31	2.45	3.03	2.37
20 ,, 24 ,, ..	3.30	3.51	4.33	3.22	4.60	3.84	3.59
25 ,, 29 ,, ..	3.96	4.22	5.17	4.17	5.29	4.58	4.33
30 ,, 34 ,, ..	4.71	4.92	5.29	5.16	6.00	4.34	4.97
35 ,, 39 ,, ..	5.97	6.16	6.78	6.44	7.51	6.94	6.34
40 ,, 44 ,, ..	7.31	7.44	8.58	7.09	9.06	5.94	7.59
45 ,, 49 ,, ..	9.45	9.59	11.95	9.14	12.73	8.20	9.96
50 ,, 54 ,, ..	13.25	13.40	15.48	11.49	15.64	11.63	13.48
55 ,, 59 ,, ..	18.63	18.52	19.59	16.67	20.87	16.04	18.52
60 ,, 64 ,, ..	26.79	26.86	27.44	26.48	29.25	24.08	26.87
65 ,, 69 ,, ..	42.18	43.26	44.44	40.58	41.22	36.66	42.37
70 ,, 74 ,, ..	64.41	65.98	65.87	53.36	68.67	56.91	63.91
75 ,, 79 ,, ..	108.56	107.11	101.89	95.17	103.30	100.66	105.58
80 ,, 84 ,, ..	169.10	171.29	166.15	150.82	170.12	149.75	164.97
85 ,, 89 ,, ..	217.51	248.40	201.72	211.72	266.67	284.83	232.64
90 and over ..	337.70	363.94	308.54	307.81	333.33	404.98	345.44

The tables shew a high death rate for children under five years of age, which rapidly diminishes until, at ages 10 to 14, a rate of 1.66 per 1,000 is shewn, which is the lowest at any age. The rate then gradually rises with increasing age until, at the ages 90 and over, more than one-third die every year.

10. Deaths of Centenarians, 1918.—Particulars as to the twenty-three persons who died in 1918, aged 100 years and upwards, are given in the following table. It must, of course, be understood that while the Registrars-General of the various States take the greatest care to have statements as to abnormally high ages verified as far as possible, no absolute reliance can be placed on the accuracy of the ages shewn, owing to the well-known tendency of very old people to overstate their ages. No attempt has been made by the Commonwealth Bureau of Census and Statistics to verify the truth of the statements made. The fact must not be lost sight of in connection with this question, that while parish registers in the United Kingdom often date very far back, compulsory registration of births dates practically only from 1874, the Act passed in 1836 having left many loop-holes open for those unwilling to register the births of their children :—

DEATHS OF CENTENARIANS, COMMONWEALTH, 1918.

Age.	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birth-place.	Length of Residence in Commonwealth.
			MALES.			
Yrs.						
106	Clifton Hill ..	Victoria ..	Senility	Gardener ..	England	82 years
106	Adelaide ..	S. Australia	"	Labourer ..	Ireland	89 "
103	Morphett Vale ..	"	"	Farmer ..	England	80 "
103	Deloraine ..	Tasmania	Cystitis	"	"	Unspecified
101	Mount Gambier ..	S. Australia	Bronchitis	"	Scotland	65 years
100	Parramatta ..	N.S.W. ..	Senility	Miner ..	Ireland	Unspecified

DEATHS OF CENTENARIANS, COMMONWEALTH, 1918—*continued.*

Age.	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birth-place.	Length of Residence in Commonwealth.
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FEMALES.

107	Grafton ..	N.S.W. ..	Bronchitis	Ireland	59 years
105	St. Leonards	Atheroma of Arteries	78 "
103	Talbot ..	Victoria ..	Senility ..	..	Scotland	62 "
103	Naracoorte ..	S. Australia ..	.. ..	..	..	63 "
102	Auburn ..	N.S.W. ..	.. ..	..	Ireland	Unspecified
102	Stroud ..	.. ..	.. ..	..	England	72 years
102	Randwick ..	.. ..	.. ..	..	Ireland	96 "
102	Bega ..	.. ..	.. ..	..	England	86 "
101	Camberwell ..	Victoria ..	.. ..	..	..	70 "
101	Prahran ..	.. ..	.. ..	..	Germany	71 "
101	Digby ..	.. ..	.. ..	..	Ireland	77 "
100	Lord Howe Island	N.S.W. ..	Cancer ..	..	S. Africa	66 "
100	Gosford ..	.. ..	Senility ..	..	England	53 "
100	Auburn ..	.. ..	.. ..	..	..	43 "
100	Bathurst ..	.. ..	.. ..	..	Ireland	90 "
100	Paddington ..	.. ..	.. ..	..	..	64 "
100	St. Kilda ..	Victoria ..	.. ..	..	England	73 "

11. Length of Residence in the Commonwealth of Persons who Died in 1918.—The length of residence in the Commonwealth of all persons whose deaths were registered in the year 1918 has been tabulated for all the States, and a summary of the results is shewn below :—

**LENGTH OF RESIDENCE IN COMMONWEALTH OF PERSONS WHO DIED
IN 1918.**

Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.	Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.
Born in the C'wealth ..	16,495	13,873	30,368	Resident 25 to 29 years	413	231	644
Resident under 1 year ..	60	9	69	" 30 to 34 ..	1,152	667	1,819
" 1 year ..	32	13	45	" 35 to 39 ..	923	503	1,426
" 2 years ..	48	23	71	" 40 to 44 ..	1,082	504	1,586
" 3 ..	52	32	84	" 45 to 49 ..	538	318	856
" 4 ..	79	64	143	" 50 to 54 ..	1,095	840	1,935
" 5 ..	127	84	211	" 55 to 59 ..	797	740	1,537
" 6 ..	144	118	262	" 60 to 64 ..	1,404	1,331	2,735
" 7 ..	140	98	238	" 65 yrs. and over	1,235	1,259	2,494
" 8 ..	72	57	129	Length of residence not stated ..	1,889	557	2,446
" 9 ..	66	30	96				
" 10 to 14 years ..	203	96	299				
" 15 to 19 ..	191	94	285				
" 20 to 24 ..	348	123	471	Total ..	28,585	21,664	50,249

12. Birthplaces of Persons who Died in 1918.—In the following table are shewn the birthplaces of persons whose deaths were registered in 1918 :—

BIRTHPLACES OF PERSONS WHO DIED IN 1918, COMMONWEALTH.

Birthplace.	Males.	Females.	Total.	Birthplace.	Males.	Females.	Total.
AUSTRALASIA—				ASIA—continued.			
Commonwealth of				Philippine Islands	6	..	6
Australia—				Syria	7	4	11
New South Wales	6,357	5,267	11,624	Other Asiatic			
Victoria	5,103	4,344	9,447	Countries ..	11	..	11
Queensland ..	1,864	1,490	3,354				
South Australia	1,661	1,432	3,093	AFRICA—			
Western Australia	513	446	959	Union of Sth. Africa	21	8	29
Tasmania	986	887	1,873	Mauritius	6	5	11
Northern Territory	10	7	17	Other African Brit.			
Federal Territory	1	..	1	Possessions ..	2	1	3
New Zealand	142	96	238	Egypt	4	..	4
				Other African	1	1	2
				Countries ..			
EUROPE—							
England	5,175	3,538	8,713	AMERICA—			
Wales	166	71	237	Canada	42	20	62
Scotland	1,434	1,006	2,440	Jamaica	6	3	9
Ireland	2,479	2,340	4,819	Newfoundland ..	2	1	3
Isle of Man	18	6	24	Other American			
Other European				Brit. Possessions	17	4	21
Brit. Possessions	34	15	49	Argentine Republic	..	1	1
Austria-Hungary	34	4	38	Brazil	2	..	2
Belgium	8	2	10	Chile .. ..	..	1	1
Denmark	131	35	166	Mexico .. ..	..	..	..
France	70	18	88	Peru .. ..	..	..	..
Germany	523	284	807	United States of			
Greece	20	1	21	America	79	28	107
Italy	80	17	97	Other American			
Netherlands ..	21	2	23	Countries ..	10	7	17
Norway	67	11	78				
Portugal	7	..	7	POLYNESIA—			
Russia	101	15	116	Fiji	7	1	8
Spain	14	7	21	Papua	3	..	3
Sweden	128	7	135	Other Polynesian			
Switzerland ..	43	10	53	Brit. Possessions	6	..	6
Other European				New Caledonia ..	2	1	3
Countries	8	4	12	New Hebrides ..	3	..	3
				Samoa	1	..	1
ASIA—				Other Polynesian			
British India ..	73	24	97	Islands	2	1	3
Ceylon	5	2	7	South Sea Islands			
Straits Settlements	9	..	9	(so described)	34	1	35
Other Asiatic Brit.							
Possessions ..	4	1	5	At Sea	65	54	119
Afghanistan ..	1	..	1				
China	308	3	311	Not stated	607	128	735
Japan	36	1	37				
Java	5	1	6	Total Deaths ..	28,585	21,664	50,249

13. Occupations of Male Persons who Died in 1918.—Information as to the occupations of the 28,585 males who died in the Commonwealth in 1918 is contained in the following statement :—

OCUPATIONS OF MALES WHO DIED IN 1918, COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
CLASS I.—PROFESSIONAL.		CLASS III.—COMMERCIAL—cont.	
General Government	140	Dress	16
Local Government	35	Fibrous materials	2
Defence	436	Animal food	240
Law and order	186	Vegetable food	72
Religion	76	Groceries and stimulants	141
Charity	5	Living animals	44
Health	157	Leather, raw material	4
Literature	43	Wool and tallow	10
Science	12	Hay, corn, &c.	28
Civil and mechanical engineering, architecture and surveying	95	Other vegetable matter	3
Education	110	Wood and coal	18
Fine arts	36	Stone, clay, glass	3
Music	33	Ironmongery	29
Amusements	121	Merchants	112
Total Professional	1,485	Shopkeepers and assistants	216
CLASS II.—DOMESTIC.		Dealers and hawkers	126
Hotelkeepers and assistants	245	Agents and brokers	118
Others engaged in providing board and lodging	150	Clerks, bookkeepers, &c.	547
House servants	53	Commercial travellers and salesmen	179
Coachmen and grooms	72	Others engaged in commercial pursuits	130
Hairdressers	61	Speculators on chance events	10
Laundrymen	12	Total Commercial	2,451
Others engaged in domestic occu- pations	138	CLASS IV.—TRANSPORT AND COMMUNICATION.	
Total Domestic	731	Railway traffic	468
CLASS III.—COMMERCIAL.		Tramway traffic	63
Banking and finance	87	Road traffic	563
Insurance and valuation	73	Sea and river traffic	550
Land and household property	45	Postal service.. ..	81
Property rights, n.e.i.	1	Telegraph and telephone service..	42
Books, publications and advertising	36	Messengers, &c.	11
Musical instruments	3	Total Transport and Commu- nication.. ..	1,778
Ornaments, small wares	1	CLASS V.—INDUSTRIAL.	
Storage	1	Books and publications	119
Gold, silver and precious stones	1	Musical instruments	10
Machines, tools and implements..	3	Prints, pictures and art materials	7
Carriages and vehicles	2	Ornaments and small wares	25
Harness and saddlery .. ..	..	Designs, medals, type and dies	7
Ships and boats	4	Watches and clocks	20
Building materials	25	Arms and ammunition	8
Furniture	7	Engines, machines, tools, &c.	160
Paper and Stationery	3	Carriages and vehicles	119
Textile fabrics	111	Harness, saddlery and leatherware	98

OCCUPATIONS OF MALES WHO DIED IN 1918, COMMONWEALTH—*continued.*

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
CLASS V.—INDUSTRIAL—<i>continued.</i>		CLASS VI.—AGRICULTURAL, PASTORAL, MINING PURSUITS, ETC.	
Ships, boats and equipments ..	61	Agricultural	3,119
Furniture	96	Pastoral	854
Building material	91	Dairy farming	77
Chemicals and by-products ..	8	Bees, fisheries and wild animals ..	97
Textile fabrics	26	Forestry	72
Dress	391	Water conservation and supply	18
Fibrous materials	15	Mines and quarries	1,527
Animal food	39		
Vegetable food	163	Total Primary Producers ..	5,764
Groceries and stimulants ..	57		
Animal matter	45	CLASS VII.—INDEFINITE.	
Workers in wood not elsewhere classed	20	Independent means, having no specific occupation	312
Vegetable produce for fodder ..	2	Occupation unspecified	778
Stone, clay, glass	70	Total Indefinite	1,090
Jewellery and precious stones ..	37		
Metals, other than gold and silver	364	CLASS VIII.—DEPENDENTS.	
Gas, electric lighting, &c. ..	61	Dependent relatives (including persons under 20 years of age with no specified occupation) ..	6,823
Buildings—		Supported by voluntary and State contributions	511
Builders	91	Total Dependents	7,334
Stonemasons	94		
Bricklayers	94	Total Male Deaths	28,585
Slaters	2		
Carpenters	446		
Plasterers	48		
Painters and glaziers	172		
Plumbers	82		
Signwriters	10		
Others	7		
Roads, railways and earthworks	50		
Disposal of the dead	15		
Disposal of refuse	7		
Other industrial workers—			
Manufacturers	40		
Engineers, firemen	418		
Contractors	180		
Labourers, undefined	4,055		
Others	22		
Total Industrial	7,952		

14. *Index of Mortality.*—The death rates, those for age-groups on page 188 excepted, so far shewn are crude rates, *i.e.*, they simply shew the number of deaths per thousand of mean population, without taking the age constitution of that population into consideration. It is, however, a well-known fact that the death rate and age constitution of a people are intimately related; thus, other conditions being equal, the death rate of a country will be lower if it contain a large percentage of young people (not infants). In order to have a comparison of the mortality of various countries on a uniform basis, so far as age constitution is concerned, the International Statistical Institute in its 1895 session recommended the universal adoption of the population of Sweden in five age-groups, as ascertained at the Census of 1890, as the standard population by which this “Index of Mortality,” as distinguished from the crude death rate,

should be ascertained. The calculation for 1918 is shown below for each of the States and Territories and for the Commonwealth, the distribution of the mean population of 1918 into age-groups being in accordance with the distribution as found at the Census of 1911:—

INDEX OF MORTALITY, STATES AND COMMONWEALTH, 1918.

Age-Group.	Mean Population, 1918, distributed according to Results of Census of 1911.	Number of Deaths, 1918.	No. of Deaths per 1,000 of Mean Population, 1918, in each Age-Group.	Age Distribution per 1,000 of Standard Population.	Index of Mortality.
NEW SOUTH WALES.					
Under 1 year	52,564	2,994	56.96	25.5	1.45
1 year and under 20	752,750	2,134	2.83	398.0	1.13
20 years " 40	610,442	2,444	3.82	269.6	1.03
40 " " 60	345,778	3,710	10.73	192.3	2.06
60 " and upwards	120,026	7,534	62.77	114.6	7.19
Total	1,911,560	18,816	9.84	1,000.0	12.86
VICTORIA.					
Under 1 year	33,543	1,951	58.16	25.5	1.48
1 year and under 20	545,723	1,485	2.72	398.0	1.08
20 years " 40	448,778	1,730	3.85	269.6	1.04
40 " " 60	285,730	3,276	11.47	192.3	2.21
60 " and upwards	103,986	6,735	64.77	114.6	7.42
Total	1,417,760	15,177	10.70	1,000.0	13.23
QUEENSLAND.					
Under 1 year	18,619	1,107	59.46	25.5	1.52
1 year and under 20	282,069	927	3.29	398.0	1.31
20 years " 40	225,595	1,014	4.49	269.6	1.21
40 " " 60	122,315	1,448	11.84	192.3	2.28
60 " and upwards	39,949	2,655	66.46	114.6	7.62
Total	688,547	7,151	10.39	1,000.0	13.94
SOUTH AUSTRALIA.					
Under 1 year	11,336	582	51.34	25.5	1.31
1 year and under 20	172,331	452	2.62	398.0	1.04
20 years " 40	145,048	602	4.15	269.6	1.12
40 " " 60	80,477	861	10.70	192.3	2.06
60 " and upwards	30,971	1,893	61.12	114.6	7.00
Total	440,213	4,390	9.97	1,000.0	12.53
WESTERN AUSTRALIA.					
Under 1 year	8,317	408	49.06	25.5	1.25
1 year and under 20	113,934	325	2.85	398.0	1.13
20 years " 40	114,252	420	3.68	269.6	0.99
40 " " 60	62,130	838	13.49	192.3	2.59
60 " and upwards	12,480	842	67.47	114.6	7.73
Total	311,093	2,833	9.11	1,000.0	13.69
TASMANIA.					
Under 1 year	5,729	321	56.03	25.5	1.43
1 year and under 20	86,770	190	2.19	398.0	0.87
20 years " 40	62,333	209	3.35	269.6	0.90
40 " " 60	36,224	336	9.28	192.3	1.79
60 " and upwards	12,737	746	58.57	114.6	6.71
Total	203,793	1,802	8.84	1,000.0	11.70
NORTHERN TERRITORY.					
Under 1 year	45	3	66.67	25.5	1.70
1 year and under 20	918	9	9.80	398.0	3.90
20 years " 40	1,332	20	15.02	269.6	4.04
40 " " 60	2,245	29	12.92	192.3	2.48
60 " and upwards	454	13	28.63	114.6	3.28
Total	4,994	74	14.82	1,000.0	15.40
FEDERAL TERRITORY.					
Under 1 year	56	1	17.86	25.5	0.46
1 year and under 20	995	1	1.01	398.0	0.40
20 years " 40	746	3	4.02	269.6	1.08
40 " " 60	451	1	2.22	192.3	0.43
60 " and upwards	179	..	..	114.6	..
Total	2,427	6	2.47	1,000.0	2.37

INDEX OF MORTALITY, STATES AND COMMONWEALTH, 1918—*continued.*

Age-Group.	Mean Population, 1918, distributed according to Results of Census of 1911.	Number of Deaths, 1918.	No. of Deaths per 1,000 of Mean Population, 1918, in each Age-Group.	Age Distribution per 1,000 of Standard Population.	Index of Mortality.
COMMONWEALTH.					
Under 1 year	130,209	7,367	56.58	25.5	1.44
1 year and under 20	1,955,540	5,523	2.82	398.0	1.12
20 years " 40	1,638,506	6,442	3.93	269.6	1.06
40 " " 60	935,350	10,499	11.22	192.3	2.16
60 " " and upwards	320,782	20,418	63.65	114.6	7.29
Total	4,980,387	50,249	10.09	1,000.0	13.07

NOTE.—The small number of persons whose ages were not ascertained at the 1911 Census have been proportionately distributed among the various age-groups, and the same plan has been followed in regard to the persons who died in 1918, and whose ages were not stated in the certificates of death.

It will be seen that among the States in 1918 Queensland had the highest index and Victoria the highest crude rate, while Tasmania had the lowest index and crude rate. Victoria experienced the highest crude death rate and the third highest index. The range of the indexes was above that of the crude rates, the latter varying from 8.84 per thousand in Tasmania to 10.70 per thousand in Victoria, a range of 1.86 per thousand, while the index varied from 11.70 per thousand in Tasmania to 13.94 per thousand in Queensland, a range of 2.24 per thousand.

For purposes of comparison with previous years the index of mortality is shewn in the following table for each of the eleven years 1908–1918 :—

INDEX OF MORTALITY, STATES AND TERRITORIES, 1908–1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'wealth.
1908 ..	13.13	15.58	13.37	12.89	14.81	14.46	..	..	14.10
1909 ..	12.61	14.11	12.57	12.27	13.91	12.32	..	..	13.15
1910 ..	12.48	14.15	12.60	12.50	13.48	13.62	..	..	13.17
1911 ..	13.23	14.23	13.57	12.18	14.47	12.97	(a) 17.91	(b) 6.53	13.55
1912 ..	13.63	14.94	13.91	12.76	14.55	13.69	17.23	6.36	14.08
1913 ..	13.61	13.50	13.25	13.25	12.58	13.54	20.17	6.13	13.47
1914 ..	12.72	14.11	12.70	13.03	12.56	12.11	20.35	5.17	13.18
1915 ..	13.24	13.54	14.30	13.09	12.79	13.04	21.62	7.15	13.47
1916 ..	13.48	14.28	14.37	14.45	14.15	13.43	22.63	3.63	13.99
1917 ..	12.45	12.81	12.64	12.65	12.93	11.78	13.42	6.70	12.63
1918 ..	12.86	13.23	13.94	12.53	13.69	11.70	15.40	2.37	13.07

(a) Included in South Australia prior to 1911.

(b) Part of New South Wales prior to 1911.

A comparison of the above figures with the crude death rates given on a previous page shews that while the crude rate was highest in Victoria every year, the index was highest in Victoria six times, in Queensland twice, and in New South Wales, South Australia, and Western Australia once each in the same period. South Australia had the lowest index four times, Western Australia twice, Tasmania four times, and New South Wales once, while the crude rate was lowest three times in South Australia, four times in Western Australia, three times in Tasmania, and once in Queensland. The high index in Victoria is due to the large proportion of persons over 60 years of age, and in Western Australia to the heavy mortality in the early period of life.

15. Monthly Variations in Death Rates.—(i) *General Death Rates.* The annual death rates, corresponding to the number of deaths registered in each equalised month, have been calculated for the six years 1907–1912, and a series of diagrams shewing the results for each State and the Commonwealth as a whole appears on page 216 of this issue, distinguishing the rates for males, females, and persons. The curves shewing the male and female rate exhibit in each State a fairly parallel course, irregularities

being, however, more strongly marked in the case of the male curve. The minimum rates in New South Wales and Queensland fall within the autumn months, from March to May, while in Victoria, South Australia, Western Australia, and Tasmania they fall in the spring months, October and November. In no case is there, however, a very great difference between the rates in spring and in autumn, the figures for the Commonwealth being 10.19 per thousand in March, and 10.34 per thousand in October. The maximum rates in New South Wales, Victoria, and Tasmania are experienced in August, and in Queensland in September, with the rates for December and January as secondary maxima. In South Australia the maximum rate of 11.33 per thousand falls in January, the rate for August standing next with 10.80 per thousand. In Western Australia the maximum rate is found in May.

(ii) *Infantile Death Rate.* A similar series of diagrams, shewing the monthly variations in the infantile death rates, appears on page 217. With the exception of Western Australia, where the maximum occurs in May, the maxima are found in the summer months in every State. The rates gradually decrease from January to March, shewing in several States a slight increase in April, with a further diminution until July. In July and August the rates rise to some extent, to fall again until October or November. From that time a rapid rise takes place, until the maximum is reached in December or January. Tasmania, where the seasons are rather later than in the continental States, shews two distinct minima in May and November, with a summer maximum in February, and a fairly high rate in September. In Western Australia the rates are moderately high in December and January, and drop until March, to rise rapidly in April and May, when the maximum is reached. From May to September there is a gradual decrease, with a quick rise from the latter month until December.

16. *Causes of Death.*—(i) Information regarding the changes in the classification of causes of death will be found in previous editions of this Year Book (*e.g.*, Year Book No. 5, pages 222 and 223). The statement will suffice, therefore, that the classification adopted by the Commonwealth Bureau of Census and Statistics is that of the International Institute of Statistics, as amended by the Committee of Revision which met in 1909. The detailed classification groups causes of death under 189 different headings in fourteen categories, as follows:—

- | | |
|---|---|
| i. General Diseases. | viii. Diseases of the Skin and Cellular Tissue. |
| ii. Diseases of the Nervous System and Organs of Special Sense. | ix. Diseases of the Organs of Locomotion. |
| iii. Diseases of the Circulatory System. | x. Malformations. |
| iv. Diseases of the Respiratory System. | xi. Infancy. |
| v. Diseases of the Digestive System. | xii. Old Age. |
| vi. Diseases of the Genito-urinary System and Adnexa. | xiii. Violence. |
| vii. Puerperal Condition. | xiv. Ill-defined Diseases. |

(ii) *Compilation of Vital Statistics for 1907 and Subsequent Years in Commonwealth Bureau.* The vital statistics of the Commonwealth from the year 1907 onward have been tabulated according to this classification in the Commonwealth Bureau, and the system is being employed in all the State offices in the preparation of their monthly and quarterly bulletins of vital statistics.

(iii) *Classification of Causes of Death, 1908 to 1918, according to Abridged International Classification.* An abridged classification, which enumerates thirty-eight diseases and groups of diseases according to the revised classification, is in use in many European and American States, while the Commonwealth statistics have been compiled on the detailed classification of 189 headings. A table has been compiled showing the causes of death according to the abridged classification, so that the results may be compared with those of countries which use the abridged index.

The compilations for the years 1908 to 1918 will be found in full in "Bulletins Nos. 14, 20, 25, 29, 30, 31, 32, 33, 34, 35, and 36 of Population and Vital Statistics"; here it will suffice to give the abridged classification under thirty-eight headings for the year 1918.

CAUSES OF DEATH, COMMONWEALTH, 1918.

(a) MALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Ter.	C'with.
1 Typhoid Fever ..	66	29	35	5	10	6	..	..	151
2 Typhus .. ..	..	..	..	..	..	..	..	..	..
3 Malaria	2	2	19	1	..	..	3	..	27
4 Small-pox .. ..	..	..	..	..	..	..	..	..	..
5 Measles	38	5	1	1	3	2	..	..	50
6 Scarlet Fever ..	10	11	4	3	3	1	..	..	32
7 Whooping Cough ..	55	22	10	4	6	5	..	..	102
8 Diphtheria and Croup	106	93	33	41	11	12	..	..	296
9 Influenza	204	101	71	24	45	20	..	..	465
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	..	..	..	1	..	..	..	..	1
12 Other Epidemic Diseases	19	25	25	11	12	1	1	..	94
13 Tuberculosis of the Lungs	648	487	228	159	171	50	11	..	1,754
14 Tuberculosis of the Men- inges	42	54	2	8	2	5	..	..	113
15 Other forms of Tuber- culosis	46	59	19	15	9	12	..	..	160
16 Cancer and other Malig- nant Tumours ..	877	667	344	194	123	65	2	..	2,272
17 Simple Meningitis ..	139	87	63	31	23	15	..	..	358
18 Congestion, Hæmorrhage and Softening of Brain	483	320	172	111	50	46	..	..	1,182
19 Organic Diseases of the Heart	794	601	330	234	132	89	2	1	2,183
20 Acute Bronchitis ..	109	39	18	21	6	18	..	..	211
21 Chronic Bronchitis ..	215	220	92	51	19	12	..	..	609
22 Pneumonia	530	399	168	88	80	62	..	..	1,327
23 Other Diseases of the Respiratory System (Tuberculosis exceptd.)	456	457	209	73	66	30	1	1	1,293
24 Diseases of the Stomach (Cancer excepted) ..	74	75	35	17	14	10	..	..	225
25 Diarrhœa and Enteritis (children under 2 years only)	352	282	192	66	63	26	2	..	983
26 Appendicitis & Typhlitis	86	46	43	25	10	9	..	..	219
27 Hernia, Intestinal Ob- structions	117	84	47	26	17	10	..	..	301
28 Cirrhosis of the Liver	77	44	41	15	12	3	..	..	192
29 Nephritis and Bright's Disease	476	409	204	123	70	22	8	..	1,312
30 Non-cancerous Tumours and other Diseases of Female Genital Organs	..	..	..	..	..	..	..	..	..
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	..	..	..	..	..	..	..	..	..
32 Other Puerperal Acci- dents of Pregnancy and Confinement ..	..	..	..	..	..	..	..	..	..
33 Congenital Debility and Malformations ..	840	520	228	173	116	89	..	1	1,967
34 Senile Debility	1,051	754	265	235	140	95	6	..	2,546
35 Violence	727	445	434	178	175	68	12	..	2,039
36 Suicide	166	81	69	39	46	4	3	..	408
37 Other Diseases	1,977	1,550	901	398	299	152	12	1	5,290
38 Unspecified or Ill-defined Diseases	132	111	57	59	41	20	3	..	423
Total—Males	10,914	8,079	4,359	2,430	1,774	959	66	4	28,585

CAUSES OF DEATH, COMMONWEALTH, 1918.

(b) FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Ter.	C'wth.
1 Typhoid Fever ..	41	19	19	5	12	4	..	..	100
2 Typhus ..	..	..	..	..	..	..	..	..	..
3 Malaria ..	..	..	14	..	..	..	..	..	14
4 Small-pox ..	..	..	..	..	..	..	..	..	..
5 Measles ..	27	3	2	..	..	..	..	..	32
6 Scarlet Fever ..	6	29	1	6	7	..	..	..	49
7 Whooping Cough ..	51	44	22	1	10	4	..	..	132
8 Diphtheria and Croup ..	127	116	40	42	16	8	..	..	349
9 Influenza ..	132	117	68	21	26	19	..	..	383
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	1	..	..	..	..	..	..	..	1
12 Other Epidemic Diseases ..	20	17	19	13	8	1	2	..	80
13 Tuberculosis of the Lungs ..	442	450	110	164	73	42	..	..	1,281
14 Tuberculosis of the Meninges ..	28	41	2	13	7	4	..	..	95
15 Other forms of Tuberculosis ..	47	51	6	9	8	11	..	..	132
16 Cancer and other Malignant Tumours ..	707	673	232	185	97	80	..	..	1,974
17 Simple Meningitis ..	92	55	37	19	12	10	..	..	225
18 Congestion, Hæmorrhage and Softening of Brain ..	408	389	121	101	48	48	..	..	1,115
19 Organic Diseases of the Heart ..	613	602	235	194	58	91	..	..	1,793
20 Acute Bronchitis ..	101	21	36	18	3	9	..	..	188
21 Chronic Bronchitis ..	201	158	72	40	24	17	..	..	512
22 Pneumonia ..	286	246	133	72	37	40	..	..	814
23 Other Diseases of the Respiratory System (Tuberculosis exceptd.) ..	355	323	106	63	34	25	..	..	906
24 Diseases of the Stomach (Cancer excepted) ..	71	61	25	12	9	6	..	..	184
25 Diarrhœa and Enteritis (children under 2 yrs. only) ..	266	202	135	58	61	27	..	..	749
26 Appendicitis & Typhlitis ..	63	49	17	10	7	6	..	..	152
27 Hernia, Intestinal Obstructions ..	96	75	19	27	18	7	..	..	242
28 Cirrhosis of the Liver ..	42	37	15	4	4	3	..	..	105
29 Nephritis and Bright's Disease ..	272	316	117	68	37	21	1	..	832
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs ..	57	51	18	12	13	6	2	..	159
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ..	83	45	22	13	10	10	..	..	183
32 Other Puerperal Accidents of Pregnancy and Confinement ..	172	91	70	34	23	19	..	..	409
33 Congenital Debility and Malformations ..	608	401	211	121	83	61	2	..	1,487
34 Senile Debility ..	738	838	158	207	78	99	..	..	2,118
35 Violence ..	209	173	114	46	38	20	1	1	602
36 Suicide ..	39	24	10	10	5	2	..	..	90
37 Other Diseases ..	1,419	1,301	567	341	176	131	..	1	3,936
38 Unspecified or Ill-defined Diseases ..	82	80	19	31	17	12	..	..	241
Total—Females ..	7,902	7,098	2,792	1,960	1,059	843	8	2	21,664

CAUSES OF DEATH, COMMONWEALTH, 1918.

(c) TOTAL—MALES AND FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Ter.	C'with.
1 Typhoid Fever ..	107	48	54	10	22	10	..	..	251
2 Typhus ..	..	..	..	..	..	..	..	..	..
3 Malaria ..	2	2	33	1	..	..	3	..	41
4 Small-pox ..	..	..	..	..	..	..	..	..	..
5 Measles ..	65	8	3	1	3	2	..	..	82
6 Scarlet Fever ..	16	40	5	9	10	1	..	..	81
7 Whooping Cough ..	106	66	32	5	16	9	..	..	234
8 Diphtheria and Croup ..	233	209	73	83	27	20	..	..	645
9 Influenza ..	336	218	139	45	71	39	..	..	848
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	1	..	..	1	..	..	..	..	2
12 Other Epidemic Diseases ..	39	42	44	24	20	2	3	..	174
13 Tuberculosis of the Lungs	1,090	937	338	323	244	92	11	..	3,035
14 Tuberculosis of the Meninges ..	70	95	4	21	9	9	..	..	208
15 Other forms of Tuberculosis ..	93	110	25	24	17	23	..	..	292
16 Cancer and other Malignant Tumours ..	1,584	1,340	576	379	220	145	2	..	4,246
17 Simple Meningitis ..	231	142	100	50	35	25	..	..	583
18 Congestion, Hæmorrhage and Softening of the Brain ..	891	709	293	212	98	94	..	..	2,297
19 Organic Diseases of Heart	1,407	1,203	565	428	190	180	2	1	3,976
20 Acute Bronchitis ..	210	60	54	39	9	27	..	..	399
21 Chronic Bronchitis ..	416	378	164	91	43	29	..	..	1,121
22 Pneumonia ..	816	645	301	160	117	102	..	..	2,141
23 Other Diseases of the Respiratory System (Phthisis excepted) ..	811	780	315	136	100	55	1	1	2,199
24 Diseases of the Stomach (Cancer excepted) ..	145	136	60	29	23	16	..	..	409
25 Diarrhœa and Enteritis (children under 2 years only) ..	618	484	327	124	124	53	2	..	1,732
26 Appendicitis & Typhlitis ..	149	95	60	35	17	15	..	..	371
27 Hernia, Intestinal Obstructions ..	213	159	66	53	35	17	..	..	543
28 Cirrhosis of the Liver ..	119	81	56	19	16	6	..	..	297
29 Nephritis and Bright's Disease ..	748	725	321	191	107	43	9	..	2,144
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs ..	57	51	18	12	13	6	2	..	159
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ..	83	45	22	13	10	10	..	..	183
32 Other Puerperal Accidents of Pregnancy and Confinement ..	172	91	70	34	23	19	..	..	409
33 Congenital Debility and Malformations ..	1,448	921	439	294	199	150	2	1	3,454
34 Senile Debility ..	1,789	1,592	423	442	218	194	6	..	4,664
35 Violence ..	936	618	548	224	213	88	13	1	2,641
36 Suicide ..	205	105	79	49	51	6	3	..	498
37 Other Diseases ..	3,396	2,851	1,468	739	475	283	12	2	9,226
38 Unspecified or Ill-defined Diseases ..	214	191	76	90	58	32	3	..	664
Total—Males and Females	18,816	15,177	7,151	4,390	2,833	1,802	74	6	50,249

(d) The classification for the years 1910 to 1917 is shewn for the Commonwealth in the following table, and for purposes of comparison the figures for the year 1918 have been repeated from the preceding table. Male and female deaths for 1905, 1906 and 1907 are shewn separately on page 237 of the second issue, those for 1908 on pages 211 and 212 of the third issue, for 1909 on pages 200 and 201 of the fourth issue, for 1910 on pages 202 and 203 of the fifth issue, for 1911 on pages 224 and 225 of the sixth issue, for 1912 on pages 182 and 183 of the seventh issue, for 1913 on pages 182 and 183 of the eighth issue, for 1914 on pages 188 and 189 of the ninth issue, for 1915 on pages 198 and 199 of the tenth issue of this Year Book, and for 1917 on pages 204 and 205 of the eleventh issue, while the figures for 1918 are given on pages 197 and 198 of this issue.

CAUSES OF DEATH, COMMONWEALTH, 1910 TO 1918.

MALES AND FEMALES.

Cause.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
1 Typhoid Fever	648	488	619	576	604	561	529	284	251
2 Typhus .. .. .	..	..	..	..	..	..	..	..	..
3 Malaria	55	19	17	24	22	30	50	49	41
4 Small-pox	4	1	..	1	3	1	..	..	..
5 Measles	124	206	519	186	155	439	211	72	82
6 Scarlet Fever	58	24	41	39	29	104	134	64	81
7 Whooping Cough	476	291	301	560	320	185	426	282	234
8 Diphtheria and Croup	555	696	754	808	716	703	893	646	645
9 Influenza	324	447	386	341	331	389	278	168	848
10 Asiatic Cholera .. .. .	..	..	..	..	..	..	..	..	..
11 Cholera Nostras	1	6	5	3	2	2	..	1	2
12 Other Epidemic Diseases	184	295	224	185	176	205	249	144	174
13 Tuberculosis of the Lungs	3,059	3,164	3,146	3,252	3,111	3,064	3,198	2,883	3,035
14 Tuberculosis of the Meninges	215	269	215	252	207	213	215	206	208
15 Other forms of Tuberculosis	343	303	327	296	256	278	310	275	292
16 Cancer and other Mal. Tumours	3,205	3,321	3,537	3,603	3,675	3,702	3,979	4,022	4,246
17 Simple Meningitis	567	636	749	753	812	1,209	1,201	690	583
18 Congestion, Hæmorrhage and Softening of the Brain	1,704	2,178	2,176	2,281	2,204	2,118	2,230	2,214	2,297
19 Organic Diseases of the Heart	4,378	4,896	5,267	4,989	4,836	4,370	4,509	3,852	3,976
20 Acute Bronchitis	420	515	480	397	389	489	512	321	399
21 Chronic Bronchitis	859	1,046	1,053	991	959	913	1,057	829	1,121
22 Pneumonia	1,612	1,869	2,107	1,966	1,992	2,225	2,220	1,866	2,141
23 Other Diseases of the Respiratory System (Tuberculosis excepted)	1,544	1,872	1,863	1,812	1,866	2,212	2,243	1,941	2,199
24 Diseases of the Stomach (Cancer excepted)	297	370	457	447	368	351	263	394	409
25 Diarrhoea and Enteritis (Children under two years only)	3,145	2,462	3,248	3,176	3,506	2,815	3,018	1,719	1,732
26 Appendicitis and Typhlitis	315	320	347	364	374	356	321	321	371
27 Hernia, Intestinal Obstructions	398	439	463	486	460	488	501	449	543
28 Cirrhosis of the Liver	368	385	426	365	380	376	309	335	297
29 Nephritis and Bright's Disease	1,771	1,951	2,188	2,211	2,127	2,274	2,329	2,203	2,144
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	149	120	145	153	138	139	153	148	159
31 Puerperal Septicæmia (Puerperal Fever, Peritonitis, Phlebitis)	218	209	231	235	215	182	282	250	183
32 Other Puerperal Accidents of Pregnancy and Confinement	373	406	413	428	419	394	411	482	409
33 Congenital Debility, &c.	3,221	3,142	3,611	3,823	3,860	3,993	3,826	3,423	3,454
34 Senile Debility	3,353	3,849	4,124	4,116	4,130	4,686	4,980	4,770	4,664
35 Violence	2,738	3,018	3,237	3,168	3,121	2,851	2,712	2,656	2,641
36 Suicide	516	544	631	647	643	658	577	502	498
37 Other Diseases	7,795	7,652	8,300	8,241	8,670	9,090	9,433	8,871	9,226
38 Unspecified or Ill-defined Diseases	598	460	590	614	644	717	633	667	664
Total	45,590	47,869	52,177	51,789	51,720	52,782	54,197	48,029	50,249

17. Certification of Deaths.—Information was obtained in 1918 as to the persons by whom the 50,249 deaths which occurred in the Commonwealth were certified. The result of the enquiry shews that approximately 89.9 per cent. (in 1910, 88.1 per cent. ; in 1911, 88.2 per cent. ; in 1912, 88.1 per cent. ; in 1913, 88.7 per cent. ; in 1914, 88.8 per cent. ; in 1915, 89.3 per cent. ; in 1916, 89.5 per cent. ; and in 1917, 89.3 per cent.) were certified by medical practitioners, and 9.8 per cent. (in 1910, 11.1 per cent. ; in 1911, 10.9 per cent. ; in 1912, 10.9 per cent. ; in 1913, 10.8 per cent. ; in 1914, 10.7 per cent. ;

in 1915, 10.2 per cent. ; in 1916, 9.9 per cent. ; and in 1917, 10.3 per cent.) by coroners after inquests or magisterial enquiries, while in 0.3 per cent. (in 1910, 0.8 per cent. ; in 1911, 0.9 per cent. ; in 1912, 1.0 per cent. ; in 1913, 0.5 per cent. ; in 1914, 0.5 per cent. ; in 1915, 0.5 per cent. ; in 1916, 0.6 per cent. ; and in 1917, 0.4 per cent.) of the cases there was either no certificate given or particulars were not forthcoming. The results are shewn in detail in Bulletin No. 36 ; a short summary will therefore suffice here :—

CERTIFICATION OF DEATHS, COMMONWEALTH, 1918.

Death Certified by—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'with.
Medical practitioner	16,919	13,484	6,609	3,967	2,492	1,667	40	6	45,184
Coroner ..	1,886	1,693	433	415	311	128	33	..	4,899
Not certified or not stated ..	11	..	109	8	30	7	1	..	166
Total Deaths	18,816	15,177	7,151	4,390	2,833	1,802	74	6	50,249

Of the cases certified by coroners, violent deaths numbered 2,348, senile decay 423, organic heart disease 344, ill-defined causes 335, congenital debility 140, cerebral hæmorrhage and apoplexy 87, pneumonia 125, Bright's disease 94, diarrhœa and enteritis 60, pulmonary tuberculosis 74, diseases of arteries, aneurisms, &c., 54, broncho-pneumonia, 47, acute and chronic alcoholism 56, puerperal diseases 28, infantile convulsions 33 ; a total of 4,248 out of 4,899.

Of uncertified causes of death, violent deaths numbered 21, congenital debility 13, senile debility 32, ill-defined causes 29, infantile convulsions 1, pulmonary tuberculosis 9 ; a total of 105 out of 166.

18. Deaths from Special Causes.—The table on p. 200 furnishes comparisons for the last nine years only, and comparisons will, therefore, generally be restricted to that period.

(i) *Typhoid Fever.* A continuous decline continued until 1911, when 488 deaths were recorded. Since 1911 the number of deaths from typhoid has risen and fallen twice. Of the 251 deaths recorded in 1918, 107 occurred in New South Wales, 48 in Victoria, 54 in Queensland, 10 in South Australia, 22 in Western Australia, and 10 in Tasmania.

(ii) *Typhus.* No deaths from typhus have been registered from 1910 to 1918.

(iii) *Malaria.* Deaths from malarial diseases are practically confined to the tropical districts of Northern Queensland and Western Australia, and to the Northern Territory, 33 out of 41 deaths registered in 1918 having occurred in Queensland and 3 in the Northern Territory.

(iv) *Small-pox.* The number of deaths from small-pox in Australia is very small, eleven deaths only resulting in the nine years under review. An epidemic occurred in 1913, but caused only one death. There were three deaths in 1914, one in 1915, and one in 1916.

(v) *Measles.* No serious epidemic of measles has occurred for several years ; the deaths in 1910 numbered 124, while 206 were registered in 1911. In 1912 New South Wales experienced a slight epidemic, and was responsible for 352 deaths out of 519 registered. In 1913 the number of deaths fell to 186, and in 1914 to 155. A large increase in the number of deaths occurred in 1915, but in 1916 the total fell again to 211, and in 1917 to 72, rising slightly in 1918 to 82.

(vi) *Scarlet Fever.* 29 deaths were registered in 1914, 104 in 1915, 134 in 1916 ; 64 in 1917, and 81 in 1918.

(vii) *Whooping Cough*. During 1911 only 291 deaths, and in 1912, 301 deaths were registered. In 1913 the number of deaths was 560, falling to 185 in 1915, and increasing again to 426 in 1916, with a further fall to 282 in 1917, of which 142 occurred in New South Wales and 67 in Victoria. The number registered in 1918 was the smallest in the period under review except 1915.

(viii) *Diphtheria and Croup*. Deaths from this cause increased each year to a maximum of 808 in 1913. The numbers declined to 716 in 1914 and 703 in 1915, but increased to 893 in 1916, and fell to 645 in 1918, of which 233 were registered in New South Wales, 209 in Victoria, 73 in Queensland, 83 in South Australia, 27 in Western Australia, and 20 in Tasmania.

(ix) *Influenza*. In 1910, 324 deaths were registered from this cause; in 1911, 447; in 1912, 386; in 1913, 341; in 1914, 331; in 1915, 389; in 1916, 278; and in 1917, 168. In 1918 there was rather a serious outbreak, the deaths rising to 848.

(x) *Asiatic Cholera*. No cases of Asiatic cholera have ever occurred in the Commonwealth.

(xi) *Cholera Nostras*. Isolated cases only of choleric diarrhoea occurred in each of the eight years. One death from this cause was registered during 1917, and 2 in 1918.

(xii) *Other Epidemic Diseases*. The number of deaths registered under this heading was 184 in 1910, 295 in 1911, 224 in 1912, 185 in 1913, 176 in 1914, 205 in 1915, 249 in 1916, 144 in 1917, and 174 in 1918. The list in 1918 includes the following diseases:—Dysentery 87, erysipelas 56, leprosy 9, other epidemic diseases 22. Of the 98 deaths from leprosy in the years 1908 to 1917, 80 occurred in Queensland. There have been no deaths from plague in the Commonwealth since 1912.

(xiii) *Tuberculosis of the Lungs and Acute Miliary Tuberculosis*. The deaths in 1918 numbered 3,035; viz., 1,754 males and 1,281 females. The figures for the years 1910 to 1917 were 3,059, 3,164, 3,146, 3,252, 3,111, 3,064, 3,198, and 2,883 respectively. Of the deaths in 1918, 1,090 occurred in New South Wales, 937 in Victoria, 338 in Queensland, 323 in South Australia, 244 in Western Australia, 92 in Tasmania, and 11 in the Northern Territory.

(xiiiia) *Tuberculosis of the Respiratory System*. Of the various forms of tuberculosis prevalent in the Commonwealth, that which has attracted the most attention and has been the subject of the widest comment is phthisis, or tuberculosis of the lungs. The intimate relation, however, between tuberculosis of the lungs and that of other parts of the respiratory system renders it desirable that all forms of tuberculosis of the respiratory system should be brought under one head for various investigations concerning the age incidence and duration of this disease.

In the matter of the age incidence of death from tuberculosis of the respiratory system, diagrams were given in Year Books 2, 3, and 4, pp. 239, 217, and 206 respectively, showing the frequency of deaths at successive ages in England and Wales during 1906 (Fig. 1) and in the Commonwealth during 1907 (Fig. 2). These were superseded by a fuller reference based on later results in Year Book No. 5, pp. 230, &c. The results given depended upon intercensal estimates of population, and these having been adjusted to agree with the Census of 3rd April, 1911, some slight amendments of the figures in previous issues were made in Year Book No. 5.

(xiv) *Tuberculosis of the Meninges*. The number of deaths ascribed to this cause has varied very slightly during the last eight years. The greatest number of deaths, viz., 269, occurred in 1911, and the least number, viz., 206, in 1917.

(xv) *Other Forms of Tuberculosis*. The deaths in 1918 include the following forms of tuberculosis:—Abdominal tuberculosis, 124; Pott's disease, 46; white swellings, 10; tuberculosis of other organs, 50; and disseminated tuberculosis, 62.

(xva) *All Forms of Tuberculosis.* A complete tabulation of all the different tubercular diseases from which deaths occurred in 1918 will be found in Bulletin No. 36 of Population and Vital Statistics. Here it will suffice to show a few of the features of the tabulation mentioned. The total number of deaths due to tubercular diseases was 3,535, viz., 2,027 males and 1,508 females. The following table shews the ages of these 3,535 persons :—

**AGES OF PERSONS WHO DIED FROM TUBERCULAR DISEASES,
COMMONWEALTH, 1918.**

Ages.	Male.	Female.	Total.	Ages.	Male.	Female.	Total.
Under 5 years ..	99	87	186	55 years and under 60	147	56	203
5 years and under 10	28	29	57	60 " " 65	112	46	158
10 " " 15	15	18	29	65 " " 70	67	15	82
15 " " 20	20	57	114	70 " " 75	24	16	40
20 " " 25	25	155	220	75 " " 80	18	9	27
25 " " 30	30	205	222	80 " " over ..	6	2	8
30 " " 35	35	225	178	Unspecified ..	1	..	1
35 " " 40	40	258	163	Total Deaths ..	2,027	1,508	3,535
40 " " 45	45	200	146				
45 " " 50	50	222	91				
50 " " 55	55	185	85				

A tabulation has been made of the occupations of males dying from tubercular diseases during 1918. A summary is here given :—

**OCCUPATIONS OF MALES WHO DIED FROM TUBERCULAR DISEASES,
COMMONWEALTH, 1918.**

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Professional class	192	Agricultural class	143
Domestic class	68	Pastoral class	50
Mercantile class	284	Working in mines and quarries ..	203
Engaged in transport and communication	149	Other primary producers	15
Manufacturing class	224	Independent means	7
Engaged in building and construction	86	Dependents	205
Other industrial workers	360	Occupation not stated	41
		Total Male Deaths	2,027

The length of residence in the Commonwealth of persons who died from tubercular diseases has been tabulated for the year 1918 for all the Commonwealth States, with the following results :—

**LENGTH OF RESIDENCE IN COMMONWEALTH OF PERSONS WHO DIED FROM
TUBERCULAR DISEASES, 1918.**

Length of Residence in Commonwealth.	Male.	Fem.	Total.	Length of Residence in Commonwealth.	Male.	Fem.	Total.
Born in Commonwealth	1,394	1,296	2,690	Resident 10 years & under 15	24	11	35
Resident under 1 year	5	1	6	" 15 " " 20	16	5	21
" 1 year	8	4	12	" 20 " " over ..	297	118	415
" 2 years	11	4	15	Length of residence not stated	108	12	120
" 3 " "	15	6	21				
" 4 " "	43	8	51				
" 5 " " and under 10	106	43	149	Total Deaths	2,027	1,508	3,535

From the preceding table and the table on page 190, it will be seen that, among persons who had lived less than 5 years in Australia, 412 deaths occurred, and of these 105, or 25.5 per cent., were due to tubercular diseases.

In order to shew the prevalence of tuberculosis in the several States, the death rates from tubercular diseases are shewn in the following table, together with the percentage which deaths from tuberculosis bear to the total number of deaths registered:—

DEATH RATES (a) FROM TUBERCULOSIS AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1918.

State.	Death Rates (a) from Tuberculosis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.78	0.54	0.66	6.74	6.54	6.66
Victoria	0.89	0.73	0.81	7.43	7.64	7.52
Queensland	0.71	0.35	0.53	5.71	4.23	5.14
South Australia	0.90	0.78	0.84	7.49	9.49	8.38
Western Australia	1.14	0.58	0.87	10.26	8.30	9.53
Tasmania	0.65	0.56	0.61	6.99	6.76	6.98
Northern Territory	2.80	..	2.20	16.67	..	14.86
Federal Territory .. ..	..	..	..	..	..	..
Commonwealth	0.83	0.59	0.71	7.09	6.96	7.03

(a) Number of deaths from tuberculosis per 1,000 of mean population.

The following table, which gives for a number of countries the death rates from pulmonary and military tuberculosis per 1,000 persons living, shews that the Commonwealth occupies a very enviable position when compared with most European countries:—

PULMONARY AND MILITARY TUBERCULOSIS—DEATHS PER 1,000 PERSONS LIVING.

Country.	Year.	Death Rate.	Country.	Year.	Death Rate.
Rumania	1914	0.40	United States (Registration Area) ..	1915	1.28
Denmark	1914	0.44	Prussia	1913	1.37
Australia	1918	0.61	Switzerland	1914	1.38
New Zealand	1915	0.63	Jamaica	1915	1.47
Ontario (Canada)	1917	0.88	Japan	1913	1.50
Ceylon	1915	0.89	Sweden	1912	1.60
Belgium	1912	0.93	Ireland	1916	1.69
Italy	1914	1.05	Norway	1914	1.76
Scotland	1916	1.06	France	1911	1.80
Netherlands	1915	1.10	Chile	1914	2.55
England and Wales	1916	1.20	Finland	1914	2.57
Spain	1914	1.23	Austria	1912	2.83
United Kingdom	1916	1.24	Serbia	1911	3.24
German Empire	1913	1.24	Hungary	1912	3.49

(xvi) *Cancer and other Malignant Tumours.* The number of deaths from cancer has increased continuously to 4,246 deaths in 1918. Of the deaths registered in 1918, 2,272 were those of males, viz., 877 in New South Wales, 667 in Victoria, 344 in Queensland, 194 in South Australia, 123 in Western Australia, 65 in Tasmania, and 2 in the Northern Territory; while 1,974 were those of females, viz., 707 in New South Wales, 673 in Victoria, 232 in Queensland, 185 in South Australia,

97 in Western Australia, and 80 in Tasmania. Bulletin No. 36 contains a complete tabulation of the various types of cancer and of the seat of the disease, of which the following is a summary :—

DEATHS FROM CANCER, COMMONWEALTH, 1918.

Seat of Disease.	Male.	Female.	Total.
Cancer, &c., of the buccal cavity	285	21	306
" " the stomach and liver	956	620	1 576
" " the peritonæum, the intestines, and the rectum ..	299	274	573
" " the female genital organs .. .. .	..	402	402
" " the breast .. .. .	..	283	283
" " the skin	125	52	177
" " other organs	607	322	929
Total Deaths	2,272	1,974	4,246

Of these deaths, 992 were described as cancer, 2,106 as carcinoma, 239 as epithelioma, 478 as "malignant disease," 88 as "malignant tumour," 23 as neoplasm, 54 as "rodent ulcer," 253 as sarcoma, and 13 as scirrhus.

The ages of the 4,246 persons who died from cancer in 1918 are shown in the following table, from which it will be seen that while the ages below 35 are not by any means immune from the disease, the great majority of deaths occurred at ages from 35 upwards, the maximum being found in the age group 60 to 65 :—

AGES OF PERSONS WHO DIED FROM CANCER, COMMONWEALTH, 1918.

Ages.	Male.	Female.	Total.	Ages.	Male.	Female.	Total.
Under 15 years ..	16	16	32	55 years and under 60	324	298	622
15 years and under 20	2	4	6	60 " " 65	403	228	631
20 " " 25	6	6	12	65 " " 70	322	197	519
25 " " 30	19	24	43	70 " " 75	285	199	484
30 " " 35	21	38	59	75 " " 80	215	159	374
35 " " 40	53	93	146	80 " " 85	100	99	199
40 " " 45	75	137	212	85 years and over..	48	42	90
45 " " 50	142	192	334	Unspecified ..	1	1	2
50 " " 55	240	241	481	Total Deaths ..	2,272	1,974	4,246

A tabulation, of which the following is a summary, has been made of the occupations of males who died from cancer :—

OCCUPATIONS OF MALES WHO DIED FROM CANCER, COMMONWEALTH, 1918.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Professional class	139	Agricultural class	360
Domestic class	79	Pastoral class	93
Mercantile class	262	Working in mines and quarries	104
Engaged in transport and communication	189	Other primary producers	16
Manufacturing class	240	Independent means	30
Engaged in building and construction	137	Dependents	74
Other industrial workers	489	Occupation not stated	60
		Total Male Deaths	2,272

As the following tables shew, the total death rates from cancer are below those for tubercular diseases in South Australia and Western Australia only. The male death rates from cancer were, in 1917, in excess of those from tuberculosis in all the States except South Australia and Western Australia, while the female death rates were in excess in all the States with the exception of South Australia. While the death rates from tuberculosis have a general tendency to decrease, the death rates from cancer have, on the contrary, shewn an increase in nearly every recent year. Thus for the whole Commonwealth in 1908 the death rate from tuberculosis was 0.25 per thousand greater than that from cancer. In 1909 this decreased to 0.14; in 1910 to 0.10; in 1911 to 0.09; and in 1912 to 0.03 per thousand, while 1913 shows a slight increase in the excess to 0.04 per thousand. In 1914, while the death rate from tuberculosis decreased from 0.79 to 0.73 per thousand, the rate for cancer remained stationary, the result being that the rate for cancer exceeded that for tuberculosis by 0.02 per thousand. In 1915 the death rate from cancer was 0.03 per thousand; in 1916, 0.06 per thousand; in 1917, 0.13 per thousand, and in 1918, 0.14 per thousand in excess of that of tuberculosis.

**DEATH RATES^(a) FROM CANCER AND PERCENTAGE ON TOTAL DEATHS,
COMMONWEALTH, 1918.**

State.	Death Rates (a) from Cancer.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.92	0.73	0.83	8.04	8.95	8.42
Victoria	0.99	0.91	0.95	8.26	9.48	8.83
Queensland	0.98	0.69	0.84	7.89	8.31	8.05
South Australia	0.96	0.78	0.86	7.98	9.44	8.63
Western Australia	0.77	0.64	0.71	6.93	9.16	7.77
Tasmania	0.63	0.79	0.71	6.78	9.49	8.05
Northern Territory	0.51	..	0.40	3.03	..	2.70
Federal Territory .. ..	..	..	..	..	..	..
Commonwealth	0.93	0.78	0.85	7.95	9.20	8.45

(a) Number of deaths from Cancer per 1,000 of mean population.

The following table shows the death rate of the Commonwealth in comparison with other countries :—

CANCER—DEATH RATE IN VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Ceylon	1915	0.09	New Zealand	1916	0.83
Rumania	1914	0.13	Prussia	1913	0.83
Serbia	1911	0.14	Australia	1918	0.85
Jamaica	1915	0.17	Ireland	1916	0.91
Chile	1914	0.36	German Empire	1913	0.91
Hungary	1912	0.47	United States (Regis- tration Area)	1915	0.91
Spain	1914	0.57	Norway	1914	1.02
Denmark	1914	0.58	Netherlands	1915	1.09
Japan	1913	0.66	Sweden	1912	1.10
Italy	1914	0.67	Scotland	1916	1.12
Belgium	1912	0.71	United Kingdom	1916	1.15
Ontario (Canada)	1915	0.72	England and Wales	1916	1.18
France	1911	0.80	Switzerland	1914	1.28
Austria	1912	0.81			

The fifth issue of this Year Book contains, on pages 230, &c., a paper dealing, *inter alia*, with the incidence of cancer in the Commonwealth. The paper is not reprinted in the present issue.

(xvii) *Simple Meningitis*. Deaths from this cause decreased to 567 in 1910. Since that year the number increased each year until 1914 when 812 deaths were registered. Sporadic cases of cerebro-spinal meningitis, which occurred to the end of 1914, are included in these figures, but from 1915 onward they were tabulated separately, the deaths during 1918 from cerebro-spinal meningitis being 173, and those from all other forms of meningitis, 410. Of the former, 73 occurred in New South Wales, 40 in Victoria, 39 in Queensland, 10 in South Australia, 6 in Western Australia, and 5 in Tasmania.

(xviii) *Apoplexy, Hæmorrhage and Softening of the Brain*. The deaths registered under this heading in 1910 were 1,704, viz., 864 males and 840 females; in 1911, 2,178, viz., 1,122 males and 1,056 females; in 1912, 2,176, viz., 1,146 males and 1,030 females; in 1913, 2,281, viz., 1,188 males and 1,093 females; in 1914, 2,204, viz., 1,143 males and 1,061 females; in 1915, 2,118, viz., 1,120 males and 998 females; in 1916, 2,230, viz., 1,133 males and 1,097 females; in 1917, 2,214, and in 1918, 2,297, viz., 1,182 males and 1,115 females. The 1918 figures are made up of hæmorrhage of the brain and apoplexy—1,122 males, 1,069 females, total 2,191; and softening of the brain—60 males, 46 females, total 106.

(xix) *Organic Diseases of the Heart*. The number of deaths registered in 1918 was 3,976, viz., 2,183 males and 1,793 females. Of these deaths, New South Wales was responsible for 794 males and 613 females; Victoria for 601 males and 602 females; Queensland for 330 males and 235 females; South Australia for 234 males and 194 females; Western Australia for 132 males and 58 females; Tasmania for 89 males and 91 females; the Northern Territory for 2 males; and the Federal Territory for 1 male. To the figures for 1918 correspond the following death rates and percentages to total deaths :—

DEATH RATES^(a) FROM ORGANIC HEART DISEASE AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1918.

State.	Death Rates (a) from Organic Heart Diseases.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.84	0.62	0.74	7.28	7.76	7.48
Victoria	0.89	0.81	0.85	7.44	8.48	7.93
Queensland	0.94	0.69	0.82	7.57	8.42	7.90
South Australia	1.15	0.82	0.97	9.62	9.90	9.75
Western Australia	0.83	0.38	0.61	7.44	5.48	6.71
Tasmania	0.87	0.90	0.88	9.28	10.79	9.99
Northern Territory	0.51	..	0.40	3.03	..	2.70
Federal Territory	0.76	..	0.41	25.00	..	16.67
Commonwealth	0.89	0.71	0.80	7.64	8.27	7.91

(a) Number of deaths from Organic Heart Disease per 1,000 of mean population.

(xx) *Acute Bronchitis*. The classification of causes of death requires deaths of persons under five years of age, which are merely ascribed to "bronchitis," to be classified under "acute bronchitis," and similarly certified deaths of older person under "chronic

bronchitis." This rule has been followed throughout in compiling the tables for 1910-1918, with the result that acute bronchitis is credited with 420 deaths in 1910, 515 in 1911, 460 in 1912, 397 in 1913, 389 in 1914, 489 in 1915, 512 in 1916, 321 in 1917; and 399 in 1918, viz., 211 males and 188 females.

(xxi) *Chronic Bronchitis.* The adjustment mentioned in the preceding paragraph gives a total of 1,121 deaths in 1918.

(xxii) *Pneumonia.* The 1918 figures were 1,327 males and 814 females, a total of 2,141 deaths.

(xxiii) *Other Diseases of the Respiratory System.* This head was established in 1910, the figures previously being included in "Other Diseases" paragraph (xxxvii). Deaths in 1910, 1,544; in 1911, 1,872; in 1912, 1,863; in 1913, 1,812; in 1914, 1,866; in 1915, 2,212; in 1916, 2,243; in 1917, 1,941; and in 1918, 2,199. The total for 1918 is made up as follows, viz. :—Diseases of the larynx, 77 deaths; diseases of the thyroid body, 27 deaths; broncho-pneumonia, 1,083 deaths; pleurisy, 193 deaths; pulmonary congestion and apoplexy, 264 deaths; gangrene of the lung, 18 deaths; asthma, 187 deaths; pulmonary emphysema, 33 deaths; fibroid phthisis (miners' complaint), 249 deaths; other diseases of the respiratory system (tuberculosis excepted), 68 deaths.

(xxiv) *Diseases of the Stomach (Cancer excepted).* In 1918 this heading includes—Ulcer of the stomach, 70 males, 43 females; and other diseases of the stomach (cancer excepted), 155 males, 141 females; a total of 409 deaths.

(xxv) *Diarrhœa and Enteritis (Children under two years only).* The number of deaths due to these causes is always a large one, varying from 1,719 deaths in 1917 to a maximum of 3,506 deaths in 1914. The total for 1918 was 1,732, distributed amongst the six States as follows :—New South Wales, 352 males, 266 females, total 618; Victoria, 282 males, 202 females, total 484; Queensland, 192 males, 135 females, total 327; South Australia, 66 males, 58 females, total 124; Western Australia, 63 males, 61 females, total 124; Tasmania, 26 males, 27 females, total 53; and Northern Territory, 2 males.

The following are the death rates and percentages on total deaths due to infantile diarrhœa and enteritis in the States and Territories for the year 1918 :—

DEATH RATES (a) FROM INFANTILE DIARRHŒA AND ENTERITIS, AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1918.

State.	Death Rates (a) from Infantile Diarrhœa and Enteritis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.37	0.28	0.32	3.23	3.37	3.28
Victoria ..	0.42	0.27	0.34	3.49	2.85	3.19
Queensland ..	0.55	0.40	0.47	4.40	4.84	4.57
South Australia	0.32	0.24	0.28	2.72	2.96	2.82
Western Australia	0.39	0.40	0.40	3.55	5.76	4.38
Tasmania ..	0.25	0.27	0.26	2.71	3.20	2.94
Northern Territory	0.05	..	0.04	3.03	..	2.70
Commonwealth	0.40	0.30	0.35	3.44	3.46	3.45

(a) Number of deaths from these diseases per 1,000 of mean population.

As a large number of these deaths is directly due to improper feeding, it would be interesting to know the percentage of infants who were bottle-fed, but, unfortunately, no provision exists for the registration of this information. The number of deaths was larger than usual in 1908, particularly in Victoria, and to a lesser degree in South Australia and in Tasmania, owing to the phenomenal heat experienced in the early part of that year. The rate in 1912 was higher in every State, Tasmania excepted, than that for 1911, the increase being particularly noticeable in New South Wales, Queensland and Western Australia. In 1913 all the States, with the exception of New South Wales and South Australia, experienced lower rates than in 1912, and in 1914 the rate fell in New South Wales and Western Australia, while it rose in Victoria, South Australia and Tasmania, and remained stationary in Queensland. The rates for 1915 were considerably lower than those for 1914 in every State with the exception of Queensland and South Australia, while in 1916 Victoria, South Australia and Tasmania had higher rates than in 1915. In 1917, every State experienced a large fall, the rates in Victoria, South Australia and Tasmania being less than half those of 1916. In 1918 the deaths from this cause were hardly more numerous than those for 1917.

(xxvi) *Appendicitis and Typhlitis.* Prior to 1910, deaths from these causes were included in *Other Diseases*, paragraph xxxvii. Deaths numbered 315 in 1910, 320 in 1911, 347 in 1912, 364 in 1913, 374 in 1914, 356 in 1915, 321 in 1916, 321 in 1917, and 371 in 1918, viz., 219 males and 152 females.

(xxvii) *Hernia, Intestinal Obstructions.* The number of deaths has not varied within great limits from year to year, the number registered in 1918 being 543, viz., 301 males and 242 females.

(xxviii) *Cirrhosis of the Liver.* There is little variation in the number of deaths from 1910 to 1918. 368 deaths were registered in 1910 and 297 in 1918, viz., 192 males and 105 females.

(xxix) *Nephritis and Bright's Disease.* The number of deaths attributable to these diseases from year to year is a very large one. In 1910 there were 1,771 deaths, 1,077 males and 694 females; in 1911, 1,951, 1,197 males and 754 females; in 1912, 2,188, 1,352 males and 836 females; in 1913, 2,211, 1,363 males and 848 females; in 1914, 2,127, 1,281 males and 846 females; in 1915, 2,274, 1,413 males and 861 females; in 1916, 2,329, 1,416 males and 913 females; in 1917, 2,203, 1,343 males and 860 females; and in 1918, 2,144, viz., 1,312 males and 832 females. Of the deaths registered in 1918, those of 77 males and 60 females were ascribed to acute nephritis, and those of 1,235 males and 772 females to Bright's Disease. New South Wales was responsible for 748 deaths; Victoria for 725; Queensland, for 321; South Australia for 191; Western Australia for 107; Tasmania for 43; and Northern Territory for 9; making a total of 2,144.

(xxx) *Non-cancerous Tumours and other Diseases of the Female Genital Organs.* Deaths in 1910 numbered 149; in 1911, 120; in 1912, 145; in 1913, 153; in 1914, 138; in 1915, 139; in 1916, 153; in 1917, 148; and in 1918, 159. Included in the 159 deaths registered in 1918 were the following:—Non-puerperal uterine hæmorrhage, 7; non-cancerous uterine tumours, 44; other diseases of the uterus, 33; cysts and ovarian tumours, 33; salpingitis and other diseases of the female genital organs, 38; non-puerperal diseases of the breast (cancer excepted), 4.

(xxxi) *Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis).* The number of deaths is fairly constant, varying from a maximum of 282 in 1916 to a minimum of 182 in 1915. In 1918 the number was 183.

(xxxii) *Other Puerperal Accidents of Pregnancy and Confinement.* The deaths in 1910 numbered 373; in 1911, 406; in 1912, 413; in 1913, 428; in 1914, 419; in 1915, 394; in 1916, 411; in 1917, 482; and in 1918, 409. Included in the 409 deaths registered in 1918 were the following:—Accidents of pregnancy, 73; puerperal hæmorrhage, 73; other accidents of childbirth, 77; puerperal albuminuria and convulsions, 126; puerperal phlegmasia alba dolens, embolus, sudden death, 54; death following childbirth, 4; puerperal diseases of the breast, 2.

(xxxiii) *All Puerperal Causes.* The 592 deaths registered in 1918 under the two preceding headings will be found tabulated in "Bulletin No. 36; Commonwealth Demography," under various aspects. It will suffice to repeat here the following facts:—

Of the 592 mothers who died from puerperal causes during the year 1918, 539 were married and 53 were single. As the total number of nuptial confinements was 117,835 and of ex-nuptial confinements 6,526, it follows that one in 219 of married mothers, and one in 123 of single mothers, died from puerperal causes, the general proportion being one in 210, as against one in 215 in 1914, and one in 181 in 1908.

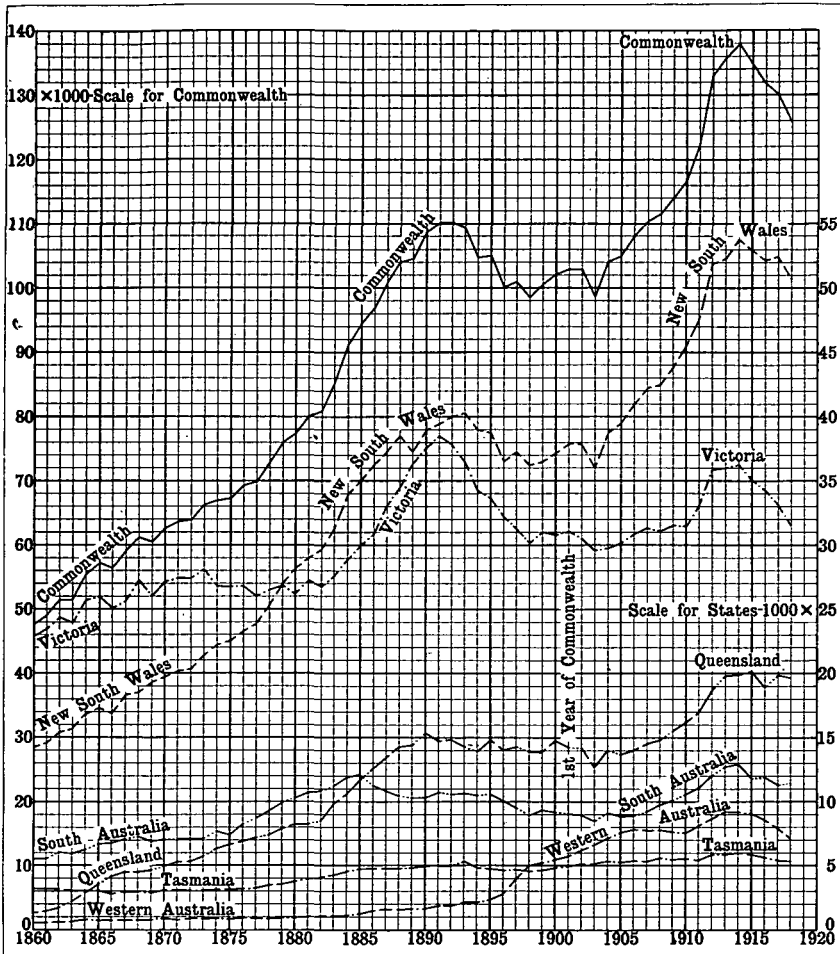
The ages of the mothers who died varied from 14 to 48 years, and are shewn in the following table:—

AGES OF MOTHERS WHO DIED FROM PUERPERAL CAUSES, COMMONWEALTH, 1918.

Age at Death.	Married Women.	Single Women.	Total.	Age at Death.	Married Women.	Single Women.	Total.
14 years ..	..	1	1	35 years ..	23	..	23
16 " ..	3	1	4	36 " ..	25	4	29
17 " ..	1	2	3	37 " ..	26	..	26
18 " ..	6	6	12	38 " ..	27	3	30
19 " ..	4	3	7	39 " ..	16	1	17
20 " ..	13	2	15	40 " ..	16	1	17
21 " ..	12	3	15	41 " ..	12	..	12
22 " ..	9	1	10	42 " ..	7	..	7
23 " ..	14	5	19	43 " ..	10	..	10
24 " ..	20	4	24	44 " ..	4	..	4
25 " ..	24	4	28	45 " ..	2	..	2
26 " ..	39	2	41	46 " ..	4	..	4
27 " ..	26	4	30	48 " ..	1	..	1
28 " ..	20	..	20				
29 " ..	31	..	31				
30 " ..	33	2	35				
31 " ..	26	1	27				
32 " ..	29	1	30				
33 " ..	29	1	30				
34 " ..	27	1	28				
				Total deaths	539	53	592

Of the 539 married women shewn in the above table, 68 left no children, 133 left 1 child each, 87 left 2, 66 left 3, 61 left 4, 38 left 5, 38 left 6, 19 left 7, 10 left 8, 9 left 9, 4 left 10, 3 left 11, 1 left 12, 1 left 13, and 1 left 14 children. The total number of children of the 539 mothers was 1,573.

GRAPHS SHewing TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1918.



(See Table page 156.)

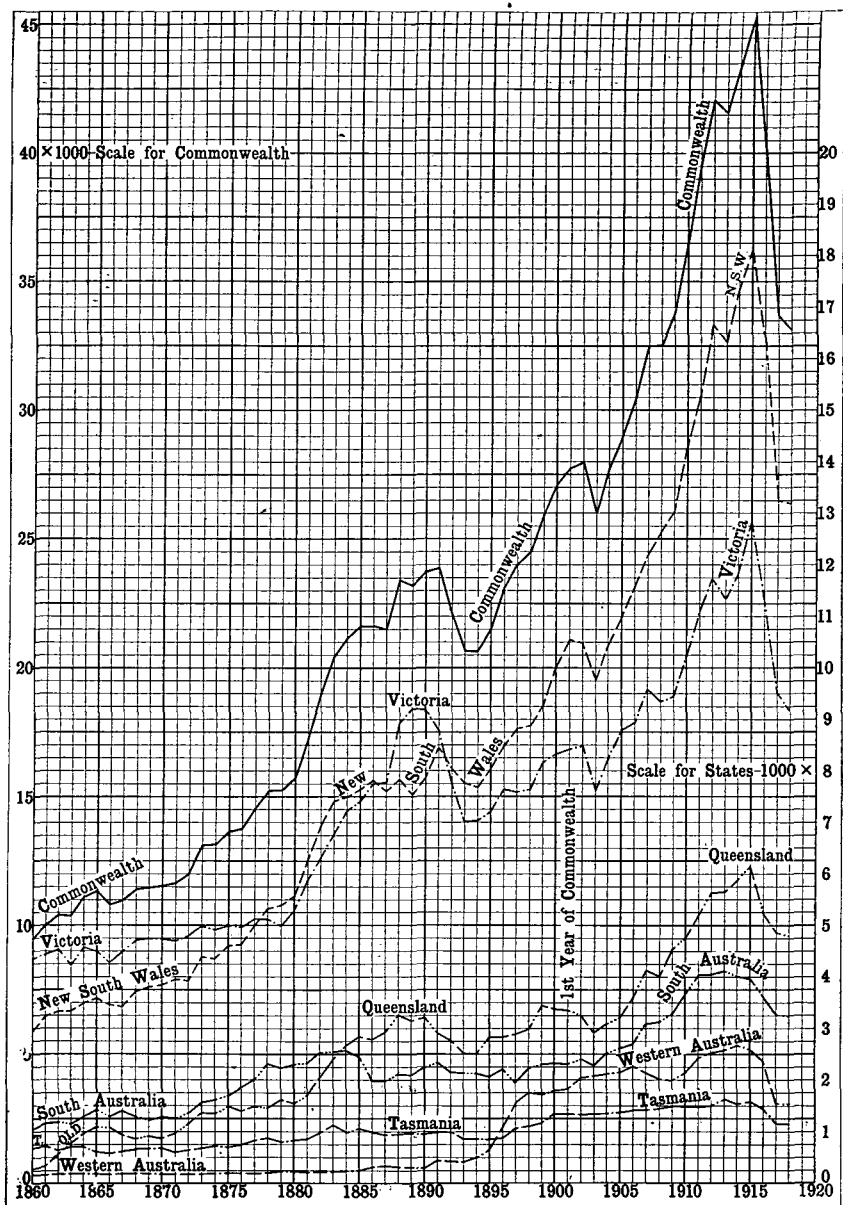
EXPLANATION OF GRAPHS. —The base of each small square represents an interval of 'one year for both Commonwealth and States, and the vertical height represents 2,000 persons for the Commonwealth, and 1,000 for the States.

The scale on the left relates to the Commonwealth, and that on the right to the States.

The distances upwards from the common zero lines of the States and Commonwealth, marked 0, denote the total annual number of births in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the characters of the lines used are as follows: —Commonwealth, ————; New South Wales, - - - - -; Victoria,; Queensland, — · — · —; Tasmania, — · — · —; South Australia, — — — — —; Western Australia, — — — — —.

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1918.



(See Table page 172.)

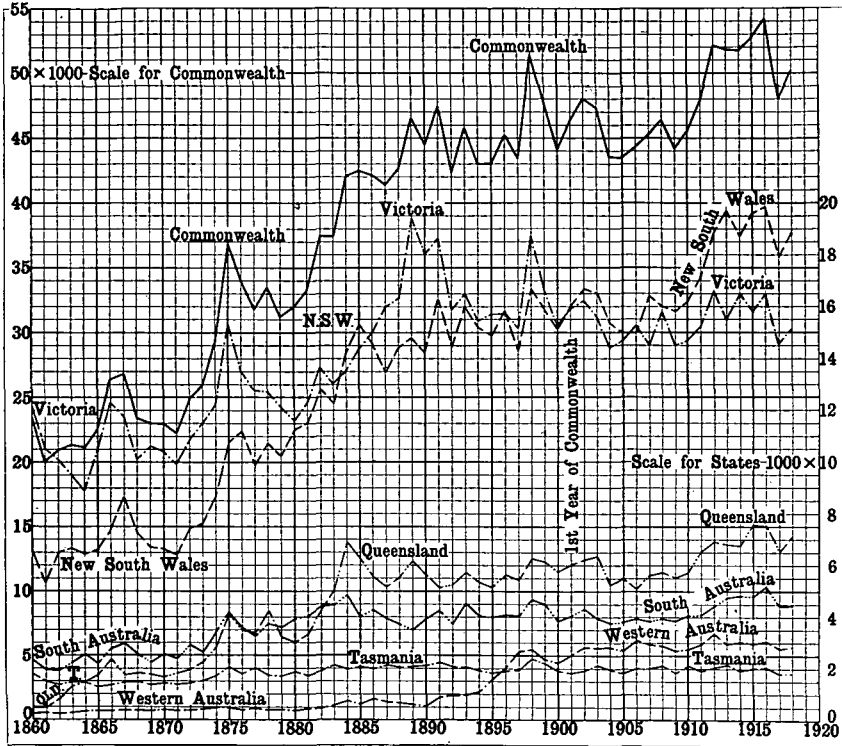
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 500 marriages for the Commonwealth and 250 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the zero line, marked 0, denote the total annual number of marriages in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the lines used are similar to those for births on page 211.

GRAPHS SHEWING TOTAL ANNUAL DEATHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1918.



(See table on page 181.)

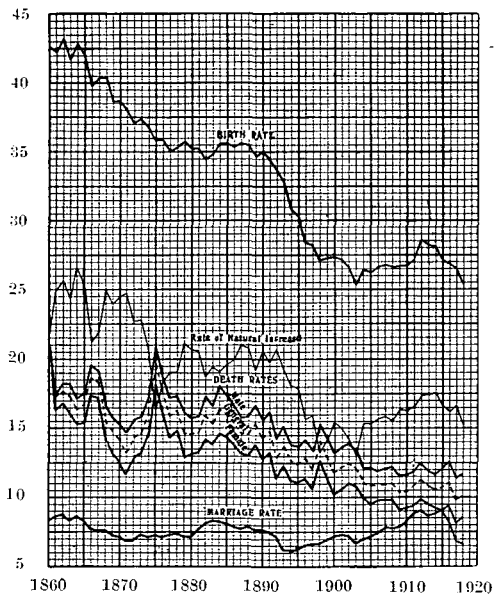
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 1,000 persons for the Commonwealth and 500 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the common zero line for States and Commonwealth, marked 0, denote the total annual number of deaths in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the curves refer are written thereon, and the lines used are similar to those for births on page 211.

GRAPHS SHEWING GENERAL BIRTH, NATURAL INCREASE, DEATH (MALE, GENERAL, AND FEMALE), AND MARRIAGE RATES IN THE COMMONWEALTH OF AUSTRALIA, 1860-1918.



(See pages 157, 173, 181, and 235.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height, according to the character of the curve, one half per thousand of the population—the basic line being five per thousand of the population.

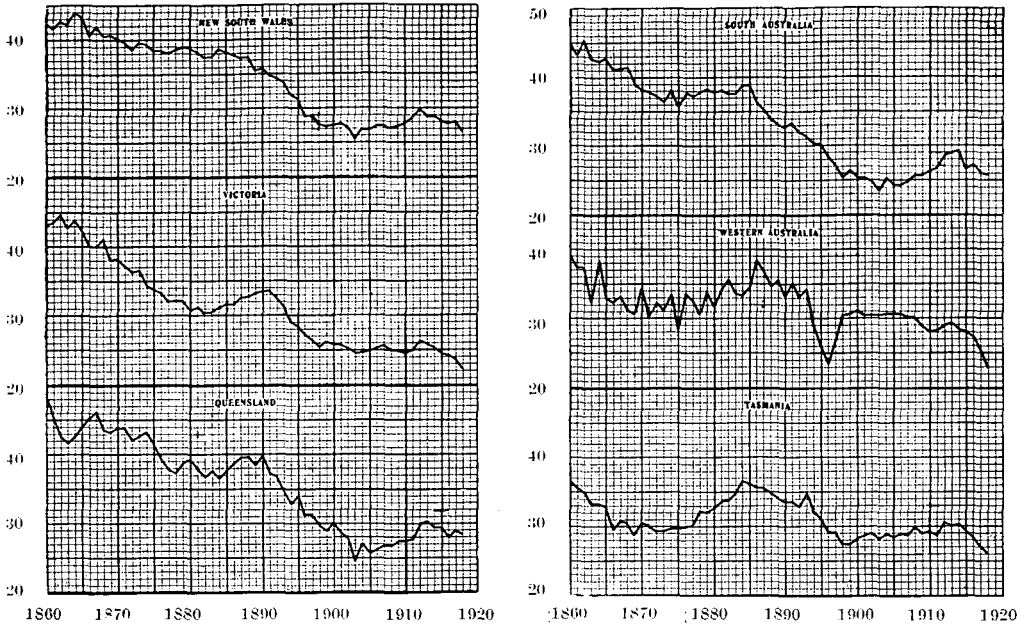
BIRTH RATE GRAPHS. (See next page.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

DEATH RATE GRAPHS. (See next page.)

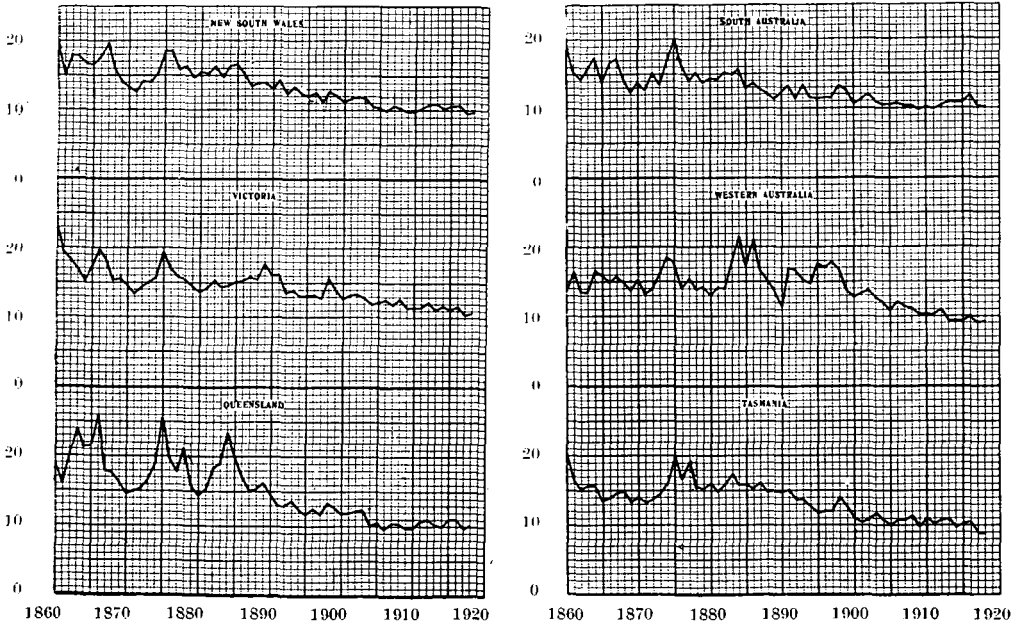
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shown by a thickened line.

GRAPHS SHEWING BIRTH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA, QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1918.



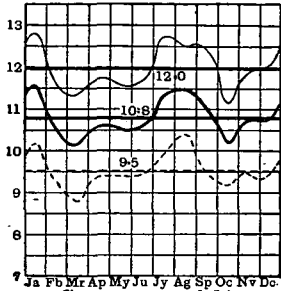
(See Table page 157.)

GRAPHS SHEWING DEATH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA, QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1918.

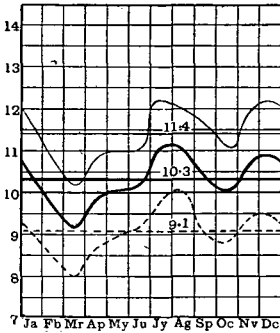


(See Table page 181.) For explanation of above graphs see page 214.

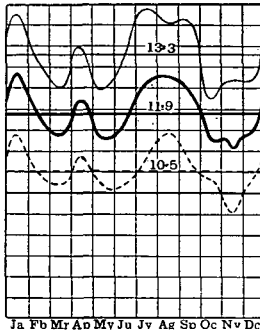
GRAPHS SHEWING GENERAL MONTHLY DEATH RATES, 1907-1912.



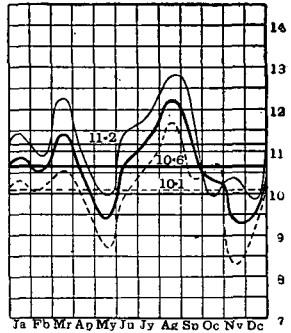
COMMONWEALTH.



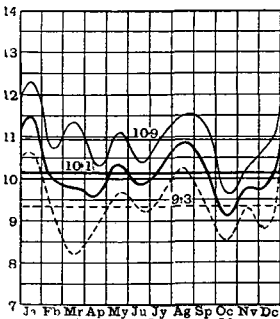
NEW SOUTH WALES.



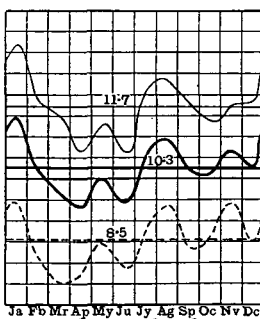
VICTORIA.



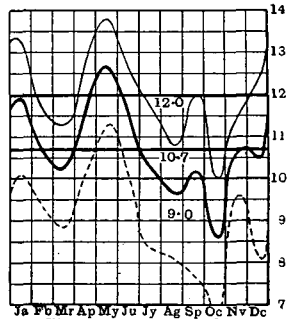
TASMANIA.



SOUTH AUSTRALIA.



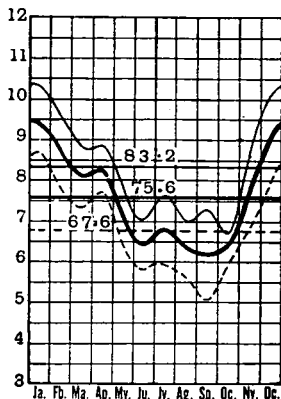
QUEENSLAND.



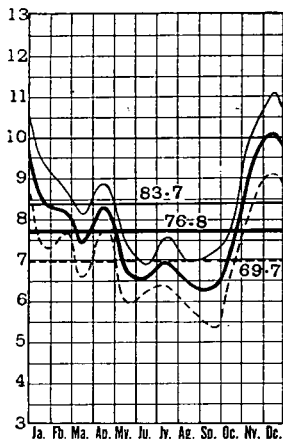
WESTERN AUSTRALIA.

Male Death Rates shewn : —————
 Female " " - - - - -
 General " " ————

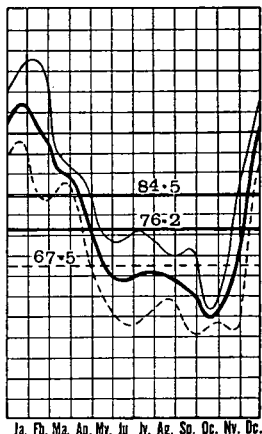
GRAPHS SHEWING INFANTILE MONTHLY DEATH RATES, 1907-1912.



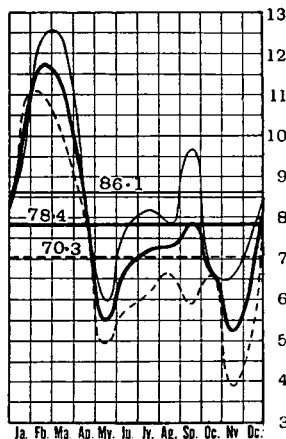
COMMONWEALTH.



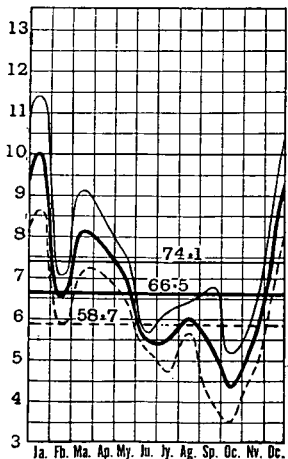
NEW SOUTH WALES.



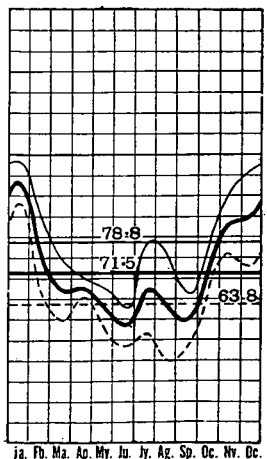
VICTORIA.



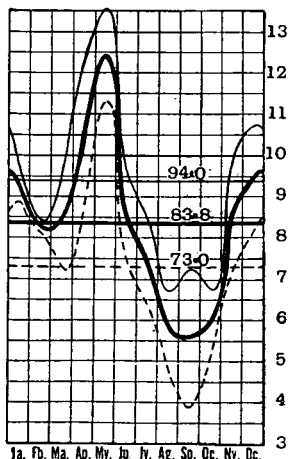
TASMANIA.



SOUTH AUSTRALIA.



QUEENSLAND.



WESTERN AUSTRALIA.

Male Death Rates shewn : —————
 Female " " - - - - -
 General " " —————

Thirty of the mothers who died had been married less than one year, 66 between one and two years, 37 between two and three years, the duration of marriage ranging up to 27 years, apart from 7 cases in which the date of marriage cannot be stated. This tabulation will be found in detail, distinguishing the ages at marriage, in "Bulletin No. 36; Commonwealth Demography," as will a further tabulation shewing in combination the duration of marriage and previous issue. These tables shew, for instance, that one mother died in the 22nd year of her marriage, leaving 14 children.

(xxxiii) *Congenital Debility and Malformations.* The total deaths registered under these heads in 1918 were 3,454, of whom 3,418 were children under one year of age. The figures include:—Malformations, 278 males, 226 females, total 504; and congenital debility, icterus, and sclerema of children under one year of age, 1,639 males and 1,261 females, total 2,950; or a grand total of 3,454. Of these deaths, 1,448 were registered in New South Wales, viz., 840 males and 608 females; 921 in Victoria, viz., 520 males and 401 females; 439 in Queensland, viz., 228 males and 211 females; 294 in South Australia, viz., 173 males and 121 females; 199 in Western Australia, viz., 116 males and 83 females; 150 in Tasmania, viz., 89 males and 61 females; 2 females in the Northern Territory, and 1 male in Federal Territory.

(xxxiv) *Senile Debility.* The deaths ascribed to "old age" form a large group, and are in excess of those due to infantile debility. In 1918, 4,664 deaths were attributed to this cause, and were distributed among the States as follows: 1,789 occurred in New South Wales, viz., 1,051 males and 738 females; 1,592 in Victoria, viz., 754 males and 838 females; 423 in Queensland, viz., 265 males and 158 females; 442 in South Australia, viz., 235 males and 207 females; 218 in Western Australia, viz., 140 males and 78 females; 194 in Tasmania, viz., 95 males and 99 females; and 6 males in the Northern Territory.

Of the males whose deaths were described as due to senility, one was aged between 55 and 60, 60 were between 60 and 64; 195 between 65 and 69; 412 between 70 and 74; 545 between 75 and 79; 663 between 80 and 84; 441 between 85 and 89; 176 between 90 and 94; 38 between 95 and 99; 4 were 100 years old and upwards; and of one the age was not stated.

Of the females, 3 were between 55 and 59; 31 between 60 and 64; 128 between 65 and 69; 263 between 70 and 74; 487 between 75 and 79; 565 between 80 and 84; 415 between 85 and 89; 163 between 90 and 94; 49 between 95 and 99; while 14 were 100 years old and upwards.

(xxxv) *Violence.* A very large number of deaths is due every year to external violence, and, as might be expected from the fact that their occupations expose them much more to accidents, males largely predominate. The figures quoted are exclusive of suicides, which have been treated as a separate group. Deaths ascribed to violence numbered, in 1910, 2,738, viz., 2,128 males and 610 females; in 1911, 3,018, viz., 2,323 males and 695 females; in 1912, 3,237, viz., 2,559 males and 678 females; in 1913, 3,168, viz., 2,503 males and 665 females; in 1914, 3,121, viz., 2,458 males and 663 females; in 1915, 2,851, viz., 2,251 males and 600 females; in 1916, 2,712, viz., 2,134 males and 578 females; in 1917, 2,656, viz., 2,069 males and 587 females; and in 1918, 2,641, viz., 2,039 males and 602 females. Of the deaths registered in 1918, those of 727 males and 209 females occurred in New South Wales; those of 445 males and 173 females in Victoria; those of 434 males and 114 females in Queensland; those of 178 males and 46 females in South Australia; those of 175 males and 38 females in Western Australia; those of 68 males and 20 females in Tasmania; those of 12 males and 1 female in the Northern Territory; and 1 female in the Federal Territory.

The following table shews the various kinds of violent deaths which occurred in 1918, distinguishing males and females:—

DEATHS FROM EXTERNAL VIOLENCE, COMMONWEALTH, 1918.

Cause of Death.	Males.	Females.	Total.
Poisoning by food	26	12	38
Venomous bites and stings	4	3	7
Other acute poisonings.. .. .	23	11	34
Conflagration	13	4	17
Burns (conflagration excepted)	115	166	281
Absorption of deleterious gases (conflagration excepted)	28	24	52
Accidental drowning	405	92	497
Traumatism by firearms	92	11	103
Traumatism by cutting or piercing instruments	10	3	13
Traumatism by fall	221	51	272
Traumatism in mines or quarries	90	..	90
Traumatism by machines	32	..	32
Traumatism by other crushing (vehicles, railways, &c.)	460	83	543
Injuries by animals	43	1	44
Starvation, thirst, fatigue	30	5	35
Excessive cold .. .. .	..	1	1
Effects of heat	55	33	88
Lightning	5	1	6
Electricity (lightning excepted)	7	..	7
Homicide by firearms	15	9	24
Homicide by cutting or piercing instruments	3	5	8
Homicide by other means	44	14	58
Fractures (cause not specified)	54	36	90
Other external violence	264	37	301
Total Deaths	2,039	602	2,641

In every kind of violent death there was, therefore, an excess of males, with the exception of burning accidents, homicide by cutting or piercing instruments, and excessive cold.

(xxxvi) *Suicide.* It may be said that suicides have remained fairly stationary during recent years, the number in 1910 having been 516, viz., 432 males and 84 females; in 1911, 544, viz., 446 males and 98 females; in 1912, 631, viz., 514 males and 117 females; in 1913, 647, viz., 516 males and 131 females; in 1914, 643, viz., 534 males and 109 females; in 1915, 658, viz., 536 males and 122 females; in 1916, 577, viz., 466 males and 111 females; in 1917, 502, viz., 408 males and 94 females; and in 1918, 498, viz., 408 males and 90 females. Of the suicides in 1918, those of 166 males and 39 females occurred in New South Wales; those of 81 males and 24 females in Victoria; those of 69 males and 10 females in Queensland; those of 39 males and 10 females in South Australia; those of 46 males and 5 females in Western Australia; those of 4 males and 2 females in Tasmania; and those of 3 males in the Northern Territory.

The modes adopted by persons who committed suicide in the years 1908 to 1918 were as follows :—

MALE AND FEMALE SUICIDES (MODES ADOPTED), COMMONWEALTH, 1908 TO 1918.

Mode of Death.	Males.		Females.		Total.	
	Total of 10 years 1908-17.	1918.	Total of 10 years 1908-17.	1918.	Total of 10 years 1908-17.	1918.
Poisoning	966	57	543	31	1,509	88
Asphyxia	13	2	5	2	18	4
Hanging or Strangulation	712	56	135	16	847	72
Drowning	342	35	168	18	510	53
Firearms	1,598	154	71	11	1,669	165
Cutting instruments	764	84	68	5	832	89
Precipitation from a height	38	6	20	2	58	8
Crushing	65	7	13	1	78	8
Other modes	165	7	24	4	189	11
Total	4,663	408	1,047	90	5,710	498

The death rates from suicide and the percentage on total deaths borne by suicides are shewn in the following table :—

DEATH RATES (a) FROM SUICIDE AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1918.

State.	Death Rates (a) from Suicide.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.18	0.04	0.11	1.52	0.49	1.09
Victoria	0.12	0.03	0.07	1.00	0.34	0.70
Queensland	0.20	0.03	0.11	1.58	0.36	1.10
South Australia	0.19	0.04	0.11	1.60	0.51	1.12
Western Australia	0.29	0.03	0.16	2.59	0.47	1.80
Tasmania	0.04	0.02	0.03	0.42	0.24	0.33
Northern Territory	0.75	..	0.60	4.55	..	4.05
Federal Territory .. .. .	..	..	..	..	..	..
Commonwealth	0.17	0.04	0.10	1.43	0.42	0.99

(a) Number of deaths from suicide per 1,000 of mean population.

From the following table, which shews the ages of the persons who committed suicide in 1918, it will be seen that both extreme youth and extreme old age are represented :—

AGES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1918.

Ages.	M.	F.	Total.	Ages.	M.	F.	Total.
10 years and under 14	1	..	1	60 years and under 65	31	6	37
15 20	5	3	8	65 70	30	1	31
20 25	13	13	26	70 75	13	5	18
25 30	32	15	47	75 80	5	..	5
30 35	37	10	47	80 85	4	..	4
35 40	40	6	46	85 90	1	..	1
40 45	38	10	48	90 94	1	..	1
45 50	70	9	79	Not stated	..	..	..
50 55	43	9	52				
55 60	41	3	44				
				Total Deaths ..	408	90	498

The following table shews the occupations of the 408 males who committed suicide :—

**OCCUPATIONS OF MALE PERSONS WHO COMMITTED SUICIDE,
COMMONWEALTH, 1918.**

Occupation.	Deaths.	Occupation.	Deaths.
Professional class	39	Pastoral class	20
Domestic class	16	Working in mines and quarries	25
Mercantile class	39	Other primary producers ..	4
Engaged in transport and communication	32	Independent means	1
Manufacturing class	43	Dependents	6
Engaged in building and construction	14	Occupation not stated	10
Indefinite industrial workers ..	106		
Agricultural class	53	Total Deaths	408

It has been said that suicide has become more frequent during recent years, but an examination of the figures from the year 1871 onwards shews that the assertion needs qualification. The absolute figures have certainly increased, but proportionately to the population the figures for 1906-10 were practically the same as those for 1886-90 and 1891-95. The figures for the five years 1911-15, shew, however, a regrettable increase, not only absolutely, but also in proportion to the population. The last three years shew lower figures and percentages than the average of 1911-15, and in 1918 particularly, the figures in proportion to population decreased almost to the level of the period 1871-85. No particulars are available for Western Australia prior to 1886, and from 1886 to 1895 the sexes are not distinguished. The figures for the first five periods are, therefore, exclusive of Western Australia :—

SUICIDES, COMMONWEALTH, 1871-75 TO 1918.

Period.	Number of Suicides.			Suicides per One Million.			Suicides of Females to 100 Suicides of Males. Based on—	
	Males.	Females.	Total.	Males.	Females.	Total.	Absolute Figures.	Rates.
1871-75 ..	715	150	865	150.94	37.56	99.07	20.98	24.88
1876-80 ..	878	145	1,023	159.69	31.06	100.62	16.51	19.45
1881-85 ..	999	183	1,182	152.58	32.90	97.61	18.32	21.56
1886-90 ..	1,394	292	(a) 1,686	179.20	43.97	(c) 116.92	20.95	24.54
1891-95 ..	1,574	337	(b) 1,911	181.34	44.09	(d) 117.07	21.41	24.31
1896-1900	1,838	410	2,248	191.11	47.88	123.65	22.31	25.05
1901-05 ..	2,054	380	2,434	201.78	40.88	124.98	18.50	20.26
1906-10 ..	2,031	437	2,468	186.11	43.22	117.39	21.51	23.22
1911-15 ..	2,546	577	3,123	206.15	50.36	131.17	22.66	24.43
1916 ..	466	111	577	190.06	45.21	117.58	23.82	23.78
1917 ..	408	94	502	169.55	37.66	102.40	23.04	22.21
1918 ..	408	90	498	166.97	35.48	99.99	22.06	21.25

(a) 1705 inclusive of Western Australian figures. (b) 1984 inclusive of Western Australian figures. (c) 116.49 inclusive of Western Australian figures. (d) 119.11 inclusive of Western Australian figures.

In the fifth issue of this Year Book (pp. 240, &c.), the result of a series of investigations into the periodicity of suicide was published. The paper was partly reprinted in the following year (pp. 241, &c.), but is not repeated in the present issue.

(xxxvii) *Other Diseases.* The number of causes included under this heading is a very large one, amounting to no less than 79 of the items shown in the detailed classification, and deaths were recorded under every one of these with the exception of the following:—Glanders, rabies, pellagra, occupational poisonings other than lead poisoning, intestinal parasites, and chyluria. The total number of deaths under "other diseases" in 1910 was 7,794, viz., 4,590 males and 3,204 females; in 1911, 7,652, viz., 4,508 males and 3,144 females; in 1912, 8,300, viz., 4,777 males and 3,523 females; in 1913, 8,241, viz., 4,794 males and 3,447 females; in 1914, 8,670, viz., 5,081 males and 3,589 females; in 1915, 9,090, viz., 5,259 males and 3,831 females; in 1916, 9,433, viz., 5,489 males and 3,944 females; in 1,917, 8,871, viz., 5,147 males and 3,724 females; and in 1918, 9,226, viz., 5,290 males and 3,936 females. In accordance with the revised edition of the classification, the following changes were made in this heading during 1910: beri-beri is now included under this heading instead of under (xii), "Other Epidemic Diseases." Other diseases of the respiratory system (2,212 deaths) are now shown under a new head (xxiii), and appendicitis and typhlitis (356 deaths) under head (xxvi). Some of the diseases included here account for very considerable numbers of deaths. Particulars of the deaths included in 1918 are shown in the following table:—

CAUSES OF DEATHS INCLUDED UNDER "OTHER DISEASES," COMMONWEALTH,
1918.

Causes.	M.	F.	Total.	Causes.	M.	F.	Total.
Purulent Infection and Septicæmia	57	53	110	Diseases of the Lymphatic System	11	7	18
Anthrax	1	..	1	Hæmorrhages, Other Diseases of Circulatory System ..	28	15	43
Tetanus	85	35	120	Diseases of the Mouth and its Associated Organs ..	12	12	24
Mycoses	3	..	3	Diseases of the Pharynx ..	34	20	54
Peri-beri	24	..	24	Diseases of the Oesophagus	13	7	20
Ricketts	3	1	4	Diarrhœa and Enteritis of Children over two years of age and Adults ..	306	330	636
Syphilis	108	67	175	Ankylostomiasis .. .. .	..	1	1
Gonococcus Infection	6	5	11	Other Diseases of the Intestines	60	33	93
Other Tumours (Tumours of the female genital organs excepted)	11	19	30	Acute Yellow Atrophy of the Liver	3	5	8
Acute Articular Rheumatism	77	101	178	Hydatid Tumours of the Liver	18	21	39
Chronic Rheumatism & Gout	89	94	183	Biliary Calculi	29	77	106
Scurvy	2	3	5	Other Diseases of the Liver	91	91	182
Diabetes	237	346	583	Diseases of the Spleen ..	4	3	7
Exophthalmic Goitre	4	68	72	Simple Peritonitis (non-puerperal)	57	69	126
Addison's Disease	11	12	23	Other Diseases of the Digestive System	23	25	48
Leucæmia	63	37	100	Other Diseases of the Kidneys and their Adnexa ..	101	74	175
Anæmia, Chlorosis	177	192	369	Calculi of Urinary Passages	37	7	44
Other General Diseases ..	38	29	67	Diseases of the Bladder ..	166	30	196
Acute and Chronic Alcoholism	195	33	228	Other Diseases of the Urethra, Urinary Abscess, &c. ..	27	..	27
Chronic Lead Poisoning ..	9	1	10	Diseases of the Prostate ..	234	..	234
Other Chronic Poisonings ..	2	..	2	Non-venereal Diseases of the Male Genital Organs ..	4	..	4
Encephalitis	44	29	73	Gangrene	76	62	138
Progressive Locomotor Ataxia	70	6	76	Furuncle	20	9	29
Other Diseases of the Spinal Cord	236	170	406	Acute Abscess	34	22	56
Paralysis without indicated cause	173	152	325	Other Diseases of the Skin and Adnexa	20	12	32
General Paralysis of the Insane	133	19	152	Non-tuberculous Diseases of the Bones	40	18	58
Other Forms of Mental Alienation	43	53	96	Other Diseases of the Joints (Tuberculosis and Rheumatism excepted) ..	4	5	9
Epilepsy	112	102	214	Amputations	3	..	3
Convulsions (non-puerperal)	6	11	17	Other Diseases of the Organs of Locomotion ..	3	1	4
Convulsions of Children under five years of age	160	136	296	Other Diseases peculiar to Infancy	336	269	605
Chorea	3	5	8	Want of Care (Infants) ..	7	7	14
Neuralgia and Neuritis ..	29	29	58				
Other Diseases of the Nervous System	146	116	262				
Diseases of the Eye	1	2	3				
Diseases of the Ear	20	14	34				
Pericarditis	47	27	74				
Acute Endocarditis	273	233	506				
Angina Pectoris	122	49	171				
Diseases of the Arteries, Atheroma, Aneurism ..	479	177	656				
Embolism and Thrombosis ..	181	264	445				
Diseases of the Veins (Varices, Varicose Ulcers, Hæmorrhoids)	9	14	23				
				Total Deaths	5,290	3,936	9,226

(xxxviii) *Unspecified or Ill-defined Diseases.* The number of cases which has to be included here is a considerable one from year to year, comprising 598 in 1910, 460 in 1911, 590 in 1912, 614 in 1913, 644 in 1914, 717 in 1915, 633 in 1916, 667 in 1917, and 664 in 1918. The detailed classification distinguishes these ill-defined diseases under three headings:—Ill-defined organic diseases, including such definitions as dropsy, anasarca, ascites, general œdema, &c.; sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Asthénia, coma, dentition, exhaustion, heart failure, &c. In 1918 the number of cases of death which would have to be classed under the first of these categories was 40; those belonging to the second, 75; and those belonging to the third, 549. It is, of course, true that there must always occur some cases where the disease is not well characterised, or where sufficient information is not procurable to allow of a clear definition being given in the certificate of death, but in the majority of cases included under this heading a more complete diagnosis and consequently a more satisfactory certificate would no doubt have been possible.

In the fifth issue of this Year Book, pp. 234, &c., some observations were published, dealing with the incidence of scarlet fever, measles, whooping cough, diphtheria and croup, typhoid, diarrhœa, enteritis, and dysentery.

19. **Causes of Death in Classes.**—The figures presented in the preceding paragraphs relate to certain definite causes of death. It is almost generally acknowledged that figures of this kind are of greater value in medical statistics than is a classification under general headings. The classification under fourteen general headings adopted by the compilers of The International Nomenclature is, however, shewn in the following table, together with the death rates and percentages on total deaths pertaining to those classes:—

DEATHS, DEATH RATES (a), AND PERCENTAGES ON TOTAL DEATHS IN CLASSES, COMMONWEALTH, 1918.

Class.	Total Deaths.			Death Rate.(a)			Percentage on Total Deaths.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1. General diseases	6,719	5,718	12,437	2.75	2.25	2.50	23.51	26.39	24.75
2. Diseases of the Nervous System and of the Organs of Special Sense	2,716	2,184	4,900	1.11	0.86	0.98	9.50	10.08	9.75
3. Diseases of the Circulatory System	3,333	2,579	5,912	1.37	1.02	1.19	11.67	11.90	11.78
4. Diseases of the Respiratory System	3,440	2,420	5,860	1.41	0.95	1.18	12.04	11.17	11.66
5. Diseases of the Digestive Organs	2,570	2,126	4,696	1.05	0.84	0.94	8.99	9.81	9.35
6. Diseases of the Genito-Urinary System and Adnexa	1,881	1,102	2,983	0.77	0.43	0.60	6.58	5.09	5.94
7. Puerperal Condition .. .. .	..	592	592	..	0.23	0.12	..	2.73	1.18
8. Diseases of the Skin and of the Cellular Tissue	150	105	255	0.06	0.04	0.05	0.52	0.49	0.51
9. Diseases of the Organs of Locomotion	50	24	74	0.02	0.01	0.01	0.17	0.11	0.15
10. Malformations	278	226	504	0.11	0.09	0.10	0.97	1.04	1.00
11. Infancy	2,032	1,537	3,569	0.83	0.61	0.72	7.11	7.10	7.10
12. Old Age	2,546	2,113	4,664	1.04	0.84	0.94	8.91	9.78	9.28
13. Violence	2,147	692	3,139	1.00	0.27	0.63	8.54	3.20	6.25
14. Ill-defined Diseases	423	241	664	0.17	0.10	0.13	1.49	1.11	1.32
Total	28,585	21,664	50,249	11.69	8.54	10.09	100.00	100.00	100.00

(a) Number of deaths per 1,000 of mean population.

20. **Deaths of Children under one Year.**—"Bulletin No. 36; Commonwealth Demography," contains tables shewing for twenty-one causes the age at death of children dying during the first year of life. In the Bulletin mentioned, the particulars

are published for males and females separately for the States, Territories and Commonwealth, but the totals for the Commonwealth only are here shown for both sexes combined:—

DEATHS OF CHILDREN UNDER ONE YEAR, COMMONWEALTH, 1918.

Age at Death.	Whooping Cough.	Pulmonary Tuberculosis.	Acute Miliary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Disseminated Tuberculosis.	Syphilis.	Simple Meningitis.	Cerebro-Spinal Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week ..	2	..	..	..	..	..	3	5	..	77	10
1 week and under 2 ..	1	..	..	..	..	..	4	3	..	20	12
2 weeks ..	2	..	..	1	..	..	5	1	..	10	14
3 ..	2	..	..	..	..	..	4	..	..	3	10
3 .. 1 mth.	2	..	..	..	..	..	4	..	..	3	10
1 month ..	2	..	..	2	..	..	16	4	1	19	48
2 months ..	33	1	..	5	..	..	15	7	..	14	27
3 ..	7	..	..	2	1	2	9	9	2	8	20
4 ..	12	..	..	1	1	..	9	8	1	4	9
5 ..	8	..	..	1	1	..	6	12	3	8	9
6 ..	9	2	..	4	..	..	3	8	3	9	8
7 ..	9	..	3	3	..	..	4	12	2	8	7
8 ..	10	1	..	2	..	..	..	7	2	2	11
9 ..	5	..	..	2	..	..	5	7	1	11	6
10 ..	4	..	..	5	1	..	2	11	1	5	8
11 ..	8	..	..	1	1	..	3	9	1	7	5
Total under 1 year ..	146	4	3	28	5	2	88	103	17	205	204

Age at Death.	Broncho-Pneumonia.	Pneumonia.	Diarrhea and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility, Icterus and Sclerema.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other Causes.	Total.
Under 1 week ..	17	15	19	11	241	1,949	503	13	79	2,944
1 week and under 2 ..	10	8	16	6	48	262	47	..	40	477
2 weeks ..	11	11	24	..	39	147	24	..	31	320
3 ..	12	7	34	2	14	102	16	..	24	230
3 .. 1 mth.	12	7	34	2	14	102	16	..	24	230
1 month ..	44	30	110	4	35	167	11	1	72	599
2 months ..	33	24	132	2	21	111	3	..	56	483
3 ..	31	13	131	2	16	67	1	..	42	363
4 ..	25	23	150	9	9	39	..	..	24	324
5 ..	28	15	117	11	15	28	..	..	25	286
6 ..	22	21	116	6	5	19	..	..	28	263
7 ..	12	17	115	7	8	17	..	..	26	250
8 ..	25	17	113	8	7	9	..	..	33	247
9 ..	19	16	77	4	3	20	..	..	29	205
10 ..	11	17	79	5	2	7	..	..	35	193
11 ..	13	14	78	3	5	6	..	..	26	180
Total under 1 year ..	313	248	1,311	80	468	2,950	605	14	570	7,364

It will be seen that the maximum number of deaths from convulsions, pneumonia, broncho-pneumonia, malformations, congenital debility, icterus and sclerema, other diseases peculiar to early infancy, and lack of care, occurred during the first month of life, while acute bronchitis was most fatal during the second month. Diarrhœa

and enteritis carried off more children in the fourth and fifth months than in any other, the numbers gradually decreasing toward the end of the year. Whooping cough reached its maximum during the second and third months of life.

21. **Ages at Death of Married Males and Females, and Issue.**—“Bulletin No. 36 ; Commonwealth Demography” contains a number of tables, for the Commonwealth, shewing the age at marriage, age at death, duration of life after marriage, birthplaces, and occupations, in combination with the issue of married persons who died in 1918. A short summary of the tables mentioned is given hereunder. Deaths of married males in 1918 numbered 14,362, and of married females, 13,346. The ages at death of the males ranged from 20 to 106 years, and those of the females, from 17 to 105 years. The tabulations mentioned in the sequel deal, however, with only 14,077 males and 13,219 females, the information in the remaining 412 cases being too incomplete to be utilised. The total number of children in the families of the 14,362 males was 73,671, the maximum in one family being 24 ; and of the 13,219 females, 69,433, with a maximum of 22. The average number of children is shewn for various age-groups in the following table :—

AGES AT DEATH OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE, COMMONWEALTH, 1918.

Age at Death.	Average Family of Males.	Average Family of Females.	Age at Death.	Average Family of Males.	Average Family of Females.
Under 20 years ..	..	0.78	70 to 74 years ..	6.31	6.39
20 to 24 years ..	0.89	1.34	75 ,, 79 ,, ..	6.57	6.72
25 ,, 29 ,, ..	1.47	1.80	80 ,, 84 ,, ..	6.75	6.51
30 ,, 34 ,, ..	2.12	2.55	85 ,, 89 ,, ..	7.06	6.57
35 ,, 39 ,, ..	2.66	3.21	90 ,, 94 ,, ..	7.00	6.13
40 ,, 44 ,, ..	3.19	3.68	95 ,, 99 ,, ..	6.72	5.64
45 ,, 49 ,, ..	3.89	3.99	100 years and upwards	3.75	4.19
50 ,, 54 ,, ..	4.20	4.46	Age not stated ..	4.83	..
55 ,, 59 ,, ..	4.71	5.04			
60 ,, 64 ,, ..	5.43	5.78	All ages ..	5.23	5.25
65 ,, 69 ,, ..	5.73	6.31			

The figures shewn in the preceding table include the issue both living and dead ; and the proportion between them, taking the issue of deceased males and females together, was about as 1,000 to 301, or, roughly speaking, as ten to three. The totals are shewn in the following table :—

ISSUE OF MARRIED MALES AND FEMALES, COMMONWEALTH, 1918.

Issue of Married Males.	Males.	Females.	Total.	Issue of Married Females.	Males.	Females.	Total.
Living ..	29,238	28,712	57,950	Living ..	26,139	25,934	52,073
Dead ..	8,825	6,896	15,721	Dead ..	9,454	7,906	17,360
Total ..	38,063	35,608	73,671	Total ..	35,593	33,840	69,433

These figures shew a masculinity in the births of 2.94, which agrees fairly well with the experience of the birth statistics.

22. **Ages at Marriage of Males and Females, and Issue.**—While the table giving the average families of married males and females naturally shews an increase in the averages with advancing ages at death, the following table, which gives the average families of males and females according to the age at marriage of the deceased parents, shews a corresponding decrease in the averages as the age at marriage advances :—

**AGES AT MARRIAGE OF MALES AND FEMALES, AND AVERAGE ISSUE,
COMMONWEALTH, 1918.**

Age at Marriage.	Average Family of Males.	Average Family of Females.
Under 20 years	7.23	7.27
20 to 24 years	6.24	5.71
25 „ 29 „	5.54	4.23
30 „ 34 „	4.69	2.69
35 „ 39 „	3.98	1.43
40 „ 44 „	3.01	0.33
45 „ 49 „	2.03	..
50 „ 54 „	1.19	..
55 „ 59 „	0.43	..
60 „ 64 „	0.28	..
65 years and upwards	0.05	..
Age not stated	4.41	4.15
All ages	5.23	5.25

It will be seen that of women who were married at ages from 40 to 44 years, one in every three gave birth to a child.

23. **Duration of Life after Marriage of Males and Females.**—The duration of life after marriage has been tabulated for males and females both in combination with the age at marriage, and with the total and average issue. The tables shewing the result do not, however, lend themselves to condensation, and are, therefore, omitted here. They will be found in “ Bulletin No. 36 of Commonwealth Demography,” pages 209 to 214.

24. **Birthplaces of Married Males and Females, and Issue.**—The following table shews the birthplaces of married males and females whose deaths were registered in 1918, together with their average issue. No generalisations can, of course, be made in those cases where the number of deaths is small, and where the average family had to be worked out on small figures. But where the figures are comparatively large, as in the case of natives of the Commonwealth, differences occur between the averages of the individual States which appear inexplicable on any other ground than that of inefficient registration in some of the States. It will be noted that the differences occur both in the male and female averages. Although the figures apply to the Commonwealth as a whole, it must be borne in mind that the vast majority of deaths of natives of any one State are registered in that particular State. The average family of all deceased males who were natives of the Commonwealth was 4.65, and that of deceased females who were natives of the Commonwealth, 4.59.

BIRTHPLACES AT MARRIAGE OF MALES AND FEMALES, AND AVERAGE ISSUE, COMMONWEALTH, 1918.

Birthplace.	Married Males.		Married Females.		Birthplace.	Married Males.		Married Females.	
	Deaths.	Average Family.	Deaths.	Average Family.		Deaths.	Average Family.	Deaths.	Average Family.
New South Wales ..	2,316	5.37	2,507	5.27	Japan	6	1.34	..	..
Victoria ..	2,060	4.15	1,986	4.13	Java .. ..	..	..	..	..
Queensland ..	391	3.86	449	3.81	Philippine Islands..	1	..	..	..
South Australia ..	761	4.66	780	4.72	Syria	7	4.43	3	3.67
Western Australia ..	76	5.62	99	4.62	Other Asiatic C'tries	1	4.00	..	..
Tasmania ..	481	5.32	547	5.13	Mauritius ..	4	1.75	5	4.40
New Zealand ..	83	3.84	71	3.26	Union of Sth. Africa	14	4.43	7	5.23
England ..	3,861	5.62	3,191	5.74	Other African British Possessions ..	1	6.00	1	5.00
Wales ..	113	5.51	66	6.11	Egypt	1	10.00	..	..
Scotland ..	1,011	5.39	891	5.60	Other African C'tries	..	..	1	2.00
Ireland ..	1,687	6.13	2,031	5.96	Canada	27	3.48	15	4.93
Isle of Man ..	13	4.85	6	7.00	Jamaica	3	5.67	2	5.00
Other European British Possessions ..	20	4.70	13	8.46	Newfoundland ..	1	5.00	2	..
Austria-Hungary ..	18	5.00	4	2.50	Other American British Possessions ..	5	5.20	4	6.25
Belgium ..	7	1.13	2	6.50	Brazil	1	7.00	..	..
Denmark ..	90	5.30	35	5.09	Chile .. ..	..	..	..	..
France ..	42	3.79	15	2.67	Mexico .. ..	..	..	..	..
Germany ..	386	6.32	272	6.67	United States ..	42	4.57	22	3.91
Greece ..	13	3.92	1	8.00	Other American Countries ..	8	5.13	6	5.67
Italy ..	37	5.05	17	4.53	Fiji	1	1.00	1	4.00
Netherlands ..	10	4.90	..	..	Papua	1	1.00	..	..
Norway ..	32	4.00	10	4.60	Other Polynesian British Possessions ..	2	0.50	1	12.00
Portugal ..	7	8.29	..	..	New Caledonia ..	1	1.00	1	4.00
Russia ..	54	4.63	14	5.21	New Hebrides ..	..	..	..	..
Spain ..	9	4.67	6	3.00	Samoa	1	10.00	..	..
Sweden ..	72	3.99	7	6.14	Other Polynesian Is. S.Sea Islds. (so desc'd.)	5	4.60	1	1.00
Switzerland ..	29	5.03	9	4.78	At Sea	49	6.04	48	5.77
Other Europ. C'tries.	4	4.50	4	4.75	Not stated	44	4.20	35	4.11
British India ..	31	2.77	20	5.00					
Ceylon ..	1	5.00	2	2.00					
Straits Settlements ..	3	2.00	..	..			
Other Asiatic British Possessions ..	2	9.00	1	1.00					
China ..	61	2.57	2	0.50					
					Total ..	14,077	5.23	13,219	5.25

25. Occupations of Married Males, and Issue.—A final tabulation shows the average issue in combination with the occupation of deceased males. When these figures are available for a number of years they will afford some clue to the much debated question as to the decrease in the birth rate among various classes of the population.

OCCUPATIONS OF MARRIED MALES, AND AVERAGE ISSUE, COMMONWEALTH, 1918.

Occupation.	Deaths of Married Males.	Average Family.
Professional class	930	4.26
Domestic class	485	3.83
Mercantile class	1,759	4.40
Engaged in transport and communication	1,243	4.67
Manufacturing class	1,578	4.99
Engaged in building and construction	847	5.41
Indefinite industrial workers	2,328	5.26
Agricultural class	2,423	6.61
Pastoral class	617	5.74
Working in mines and quarries	948	5.27
Other primary producers	92	4.80
Independent means	261	5.53
Dependents	146	4.75
Occupation not stated	420	5.77
Total	14,077	5.23

In the fifth issue of this Year Book (pp. 227 to 229), a series of observations was published dealing with the Commonwealth Rates of Infantile Mortality. These observations are not reprinted in the present issue.

§ 4. Methods of Measuring Rates of Mortality.

1. **General.**—For the purpose of measuring the rates of mortality experienced by any community, various methods of computation have been employed, which differ materially in the labour involved on the one hand, and on the other in the degree to which they suitably measure the phenomenon in question, viz., the rate at which the members of the community are dying. In this connection it may be noted that, as regards the methods indicated hereunder, it is not correct to describe any of them as erroneous, as is occasionally done. So long as these rates are based upon the actual data, one is quite as correct as another; where they differ is that, whilst one may be very suitable for comparisons with similar rates for other communities, others may be less suitable, and others again quite unsuitable. Thus the "crude death rate" which represents the ratio of the deaths of both sexes for a given period to the mean population of both sexes for that period is perfectly correct as long as the number of deaths and the mean population are accurately determined, and the division of the former by the latter is properly performed. It may also be suitable for some purposes, such, for example, as in a question involving the rate of decrement of a given population at a given time. But it is not suitable for a purpose to which it is very frequently applied, viz., to furnish a basis of comparison in respect of mortality between two communities whose populations are differently constituted in respect of sex, age, and other characteristics, or between two experiences of the same community separated by a lapse of time in which the constitution of the population has characteristically changed.

It must, however, be borne in mind that all methods of determining rates of mortality, whatever degree of refinement may have been introduced into them, consist in ultimate analysis of the determination of ratios of deaths to population. What is done in the more refined cases is to subdivide both the population and the deaths into like categories according to sex, age, occupation, conjugal condition, &c., and then to determine for each category the ratio of deaths to population. It will be convenient to review briefly the methods which have been adopted under various circumstances for measuring the rate of mortality. The principal of these are six in number, as follows:—

- (a) The computation of a crude rate for the sexes combined.
- (b) The computation of a death rate for each sex separately.
- (c) The determination of the average age at death.
- (d) The calculation of death rate corrected for sex and age.
- (e) The calculation of an index of mortality.
- (f) The construction of a life table.

2. **Crude Rate for Sexes Combined.**—Probably the simplest measure of mortality, and that which first suggests itself, is the computation of the proportion of the whole population which has passed away by death during a given period. Where two communities are similarly constituted in respect of sex and age, this crude rate furnishes a useful and simple index to the relative salubrity of their climate and conditions of life. Similarly in a community which had changed little in the sex and age constitution of its population over a series of years, the crude rate would furnish a valuable index to the progress or retrogression of the community from a sanitary point of view. Such conditions, however, rarely exist in practice. Communities usually differ too markedly from each other and from their past selves in respect of sex and age constitution to render comparisons based on crude rates more than rough guides to tendencies which need to be analysed by more refined methods. ◊

3. **Death Rate for each Sex.**—Where data in respect both of deaths and population are available for the sexes separately, one of the disadvantages of the crude rate may be overcome by computing two rates, one for each sex. In practically all communities there is a marked difference not only in the physical constitution of the sexes, but also in the conditions under which they live, in the nature of their ordinary occupations, and in the special risks incurred by them. It is consequently not a matter for surprise

that there should usually be a very marked difference between the rates of mortality experienced by them. In most civilised communities longevity is more marked amongst females than amongst males, the female death rate being lower than the male at nearly all ages. Apart, therefore, from the question of a comparison with the experience of other communities, it appears desirable, wherever practicable, to segregate males and females for the calculation of mortality rates. To combine them gives a rate which is applicable to neither the one nor the other. The subdivision according to sex, however, eliminates one of the advantages possessed by the crude rate, viz., that being a single number it is readily quoted and easily compared. A rate for each sex is not so manageable. There are two numbers to quote, and if in a comparison with another community the rate for one sex predominates in the one community, and the rate for the other sex in the other, it is not always easy to draw a conclusion as to relative salubrity.

4. Average Age at Death.—A method of estimating salubrity which at an early date in the history of vital statistics had considerable vogue was that of determining the average age at death. Off-hand it might be thought that a high average age at death was a sure sign of longevity and consequently of salubrity. A little reflection, however, will shew that everything depends on the ages of the living. For example, a community in which there were no births, arrivals or departures would shew, under normal conditions, an increasing average age at death as it gradually wore down, while a thriving community with a high and increasing birth rate would shew a decreasing average age at death; yet it would be quite possible for the latter to be much more healthy than the former. Here again it may be noted that there is nothing erroneous in computing the average age at death, but an error arises when the conclusion is drawn that a high average age at death necessarily denotes a high degree of salubrity. The method is one which is now practically obsolete as an estimate of salubrity, but, as furnishing in respect of some disease the age incidence of death, it may conveniently and legitimately be employed. For example, statistics of the average age at death from phthisis indicate that it is a disease usually fatal in early adult life, while similar statistics of the average age at death from cancer indicate that the victims are usually of more advanced age.

5. Death Rate Corrected for Sex and Age.—Where a number of communities is concerned, and it is desired to effect comparisons between them in respect of mortality, a mode of operation has been devised which, by providing a correcting factor based on age and sex for application to the ordinary crude rate, retains the simplicity of the crude rate while eliminating some of its inherent defects. This method has been most extensively employed in England, where the Registrar-General of England and Wales has supplied in his annual summaries since 1883 a series of corrected death rates for the principal English towns. The first step in calculating the desired correction factors is that of computing for each town a "standard death rate." To obtain this, the average death rates per annum in age-groups for each sex are determined for England and Wales for the whole of an intercensal period. These death rates on being applied to the sex and age distribution for a town, as ascertained at the most recent Census, give the total number of deaths that would have arisen in the town if the average rates for England and Wales had operated therein for a year on a mean population distributed as regards sex and age in the same manner as the population of the town was distributed at the date of the Census. The division of this total number of deaths by the total Census population of the town furnishes the "standard death rate" for the town. The ratio of the crude rate for England and Wales for the whole of an intercensal period to the "standard" death rate of a town for the terminal Census of the period is the town's "factor for correction" for age and sex contribution, and is applied to the crude rate determined for the town in the ordinary way during the ensuing intercensal period. Since the correction factor for any community is determined once only for each intercensal period, and when determined is applied simply as a multiplier to the crude rate for the community, for any year or other period, it is clear that it furnishes a very convenient means for taking into account the sex and age constitution. Also, if the age groups on which it is based are not too comprehensive, for example, not larger than quinquennial, or at the outside, decennial groups, and if it can safely be assumed that the sex and age distribution of the community does not during the ensuing intercensal period deviate markedly from the Census results, the application of the correction factor supplies a very reliable indication of relative salubrity.

6. *Index of Mortality.*—The method of procedure outlined in section 5 consists in the main in (a) the computation of a normal series of death rates for sex and age; (b) the application of such a series successively to the actual sex and age distributions of the various communities under consideration; (c) the calculation of the crude rate resulting from the application mentioned in (b); and (d) the computation from (c) of a correction factor. Another method which is much in vogue, and which has been approved by the International Statistical Institute, is in some respects the converse of this. It consists in (a) the determination or selection of a population norm, *i.e.*, of a normal scale of distribution of population according to sex and age; (b) the computation for the community under review of death rates for sex and age-groups corresponding to those adopted for the population norm; (c) the application of the rates in (b) to the norm in (a); and (d) the calculation of the crude rate resulting from the application mentioned in (c). The crude rate so obtained is usually called the “index of mortality,” or, in the case of the Registrar-General of England and Wales, the “rate in standard population.” Where the data for computing the rates of mortality for the appropriate sex and age-groups are readily available, this method furnishes one of the most satisfactory indications of relative salubrity that have yet been described. In essence it consists in computing for a normal population the crude death rate that would arise therein from the operation of the death rates for sex and age-groups ascertained to have operated for the community under review during a given period. From another point of view it is a weighted mean of the death rates for sex and age-groups of the community under review, the weights employed being the appropriate portions of the population norm. The principal difficulty in connection with the computation of the index of mortality for any postcensal period is that of distributing the population of any community for such period according to sex and age. An assumption usually made is that the scale of distribution is the same as that disclosed at the preceding Census. For some communities such an assumption involves little error, in others the discrepancy may be large, but there are no simple means for obviating it. In any event the indications of relative salubrity furnished by such an index or by the corrected rates dealt with in section 5 are much more reliable than can be got by crude rates, rates for sexes, or average ages at death. It may be noted here that although the only characteristics which are dealt with in the ordinary course in computing correcting factors or indices of mortality are sex and age, these are by no means the only ones whose neglect may vitiate conclusions as to relative salubrity. For example, the effect of race on death rate has not yet been definitely determined, but there is little doubt that the variation with age of the death rate amongst European races on the one hand, and coloured races on the other, is essentially different. To institute comparisons, therefore, between mixed populations such as those of the United States, the Union of South Africa, and British India, where European and coloured races are associated in such markedly different proportions, it is not sufficient merely to allow for sex and age, race also should be taken into account.

7. *Life Tables.*—In connection with the measures of mortality dealt with in sections 5 and 6 above, it may be noted that from one point of view each consists in the determination of ratios of deaths to population for sex and age-groups, and the subsequent computation of a weighted mean death rate. From another point of view each consists of the computation of a series of death rates for one population, and the application thereof to another population, the correction factor method involving the computation of standard death rates and the application thereof to variable population distributions, while the index of mortality method involves the computation of death rates in sex and age-groups for populations varying in sex and age distribution, and the application thereof to a population norm, or population of standard distribution. A further method for measuring mortality is that of constructing a Life Table for the population in question. Here again the main element is the ratio of deaths to population for sex and age-groups, but in this case there is no adoption of an arbitrary standard either of death rates or of population distribution. What is done is to arbitrarily select any number as the number of children born, and by the successive application thereto of death rates for sex and age derived from the experience of the community under observation, to compute the number who will attain each successive age, on the supposition that the computed rates for each age operate at the appropriate ages throughout the lifetime of the children so selected. A table so constructed, however, shewing the number of each sex surviving at each age out of a given number born, is no more convenient for

the purposes of quotation or of ready comparison with other experiences than is the original series of death rates for sex and age on which the table of survivors has been based. The latter, however, presents, in a convenient form, data for the computation of a measure of mortality which is convenient for the purposes of both quotation and comparison. The measure referred to is what is generally known as the "expectation of life," or the "average future lifetime." Of these expressions the former is the more generally used, but the latter expresses the nature of the function in the better way. What is represented by the expectation of life at any age is the average future life time of the persons who reach the age, and are subject at succeeding ages to the rates of mortality deduced from the experience under review. The expectation of life at age 0, consequently, since it represents the average quantity of life that will be lived by each person born, furnishes as suitable a measure of relative salubrity as could be devised, and one which is entirely free from the introduction of an arbitrary standard whether of death rates or population distribution. It necessarily relates, however, only to a completed period, and consequently will not serve the purpose of providing comparative results for a current period. For this latter purpose the correction factor and the index of mortality furnish the best results.

In Year Book No. 11, pp. 236-242, are given tables shewing some of the principal results furnished by the Australian Life Tables, 1881-90, 1891-1900, and 1901-10.

§ 5. Graphical Representation of Vital Statistics.

1. **General.**—The progressive fluctuations of the numbers representing the total births and marriages are important indexes of the economic conditions and social ideals of a community. For this reason graphs have been prepared (see pages 211 and 212), shewing these fluctuations from 1860 to 1918, both for the States and the Commonwealth. The facts are very significant from the national point of view, and call for serious consideration. To appreciate the situation properly, it should be remembered that, normally, the increase of births and also of marriages will be similar to the increase of population. Although the marriage curve shews a falling off in marriages after 1891 (see page 212), it shews a recovery in 1894, and, with the exception of a small fall for 1903, it continually advanced until 1915. In 1916, 1917, and 1918 a heavy falling off was recorded, unquestionably owing to the European War. The same characteristic is not seen in the curve of births, which, from 1904 onwards, rose continually to 1914, when there was a decline to 1918.

ACTUAL BIRTHS, DEATHS, AND MARRIAGES

EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1918, COMPARED WITH THE NUMBER THAT WOULD HAVE OCCURRED IF THE RATES OF 1890 HAD REMAINED IN OPERATION.

Year.	BIRTHS.		DEATHS.		MARRIAGES.	
	Actual.	Number of Births that would have been experienced if the 1890 birth rate had been in operation.	Actual.	Number of Deaths that would have been experienced if the 1890 death rate had been in operation.	Actual.	Number of Marriages that would have been experienced if the 1890 marriage rate had been in operation.
1890 ..	108,683		44,449		23,725	
1891 ..	110,187	111,802	47,430	45,737	23,862	24,419
1892 ..	110,158	114,502	42,208	46,842	22,049	25,009
1893 ..	109,322	116,617	45,801	47,707	20,631	25,470
1894 ..	104,660	118,734	42,958	48,573	20,625	25,933
1895 ..	105,084	111,002	43,080	49,501	21,564	26,428
1896 ..	100,134	123,212	45,202	50,405	23,068	26,911
1897 ..	101,137	125,419	43,447	51,308	23,993	27,393

ACTUAL BIRTHS, DEATHS, AND MARRIAGES, ETC.—*continued.*

Year.	BIRTHS.		DEATHS.		MARRIAGES.	
	Actual.	Number of Births that would have been experienced if the 1890 birth rate had been in operation.	Actual.	Number of Deaths that would have been experienced if the 1890 death rate had been in operation.	Actual.	Number of Marriages that would have been experienced if the 1890 marriage rate had been in operation.
1898 ..	98,845	127,371	51,406	52,106	24,472	27,819
1899 ..	100,638	129,088	47,629	52,809	25,958	28,194
1900 ..	102,221	130,848	44,060	53,529	27,101	28,579
1901 ..	102,945	132,599	46,330	54,245	27,753	28,961
1902 ..	102,776	134,603	48,078	55,065	27,926	29,399
1903 ..	98,443	136,189	47,293	55,714	25,977	29,745
1904 ..	104,113	137,917	43,572	56,420	27,682	30,122
1905 ..	104,941	139,959	43,514	57,256	29,004	30,569
1906 ..	107,890	142,030	44,333	58,103	30,410	31,021
1907 ..	110,347	144,248	45,305	59,011	32,470	31,505
1908 ..	111,545	146,720	46,426	60,022	32,551	32,045
1909 ..	114,071	149,526	44,172	61,170	33,775	32,658
1910 ..	116,801	152,869	45,590	62,537	36,592	33,387
1911 ..	122,193	157,072	47,869	64,257	39,482	34,306
1912 ..	133,088	162,477	52,177	66,468	42,147	35,487
1913 ..	135,714	168,032	51,789	68,740	41,594	36,700
1914 ..	137,983	172,073	51,720	70,394	43,311	37,583
1915 ..	134,871	173,159	52,782	70,838	45,224	37,820
1916 ..	131,426	171,654	54,197	70,222	40,289	37,491
1917 ..	129,965	171,484	48,029	70,153	33,666	37,454
1918 ..	125,739	174,217	50,249	71,251	33,141	38,031

The table printed above shews the number of births, marriages, and deaths which would have been experienced had the rate for 1890 continued, and reveals the significance of the facts disclosed by the curves. It may be remarked that the death rate has greatly improved, and among other countries Australia stands in a very favourable position in this respect. At the same time the decline in the marriage rate, overtaken once more in 1907, and the still more serious decline in the birth rate, in a country but sparsely populated, have an obvious and most important bearing on the national future, and on the extent to which it is desirable to promote immigration.

2. *Graphs of Annual Births, Commonwealth and States* (page 211).—A striking feature of the graphs of births is the practically continuous increase in the number of births exhibited in the graph for the Commonwealth from 1860 to 1891, and the marked variations of subsequent years. As the curve clearly shews, a turning point in the number of births occurred in 1891, whilst, as regards the separate States, New South Wales and Tasmania date their decline in number from 1893, Victoria from 1891, and Queensland from 1890. In South Australia the corresponding decline took place as early as 1885, while in Western Australia the increase in number of births has been practically continuous throughout.

It is of special interest to note the decline in births associated with the commercial crisis of 1891-3, and also the decline occurring in 1903, an accompaniment of the severe drought of that period.

In the case of New South Wales the graph crosses that of Victoria in 1879, i.e., the births for that year were sensibly identical in the two States. A fairly continuous increase was experienced in the former State from 1860 to 1893, the only marked fluctuation being a sudden decline in 1889 and an equally rapid recovery in 1890. From 1893 to 1898 a somewhat rapid decline again took place, succeeded by a rise, the continuity of

which was broken only by a sharp decline in 1903 and recovery in 1904. From 1904 to 1914 there was a gradual rise, followed in 1915 and 1916 by a decline, a slight rise in 1917, and a further decline in 1918.

In the case of Victoria the graph shows the increase between 1860 and 1880 to have been comparatively slight, the curve being a gradual rise, with fluctuations more or less marked to 1873, with a subsequent decline. From 1880 to 1891 the increase in the number of births is seen to be very rapid and practically continuous, while from 1891 to 1898 an equally sharp and continuous decline was experienced. A further rise and fall took place between 1898 and 1903, succeeded by a continuous rise from the last-mentioned year to 1907, and a slight fall in 1908, followed by a recovery in 1909. A slight fall in 1910 was followed by a continuous rise to 1914, since which year a continuous decline has been experienced.

Starting in 1860 with a lower number of births than any State except Western Australia, the Queensland graph shows that the births increased somewhat rapidly until 1867. The equality in the number of births in Queensland and Tasmania in 1864 is shewn by the Queensland curve crossing the Tasmanian curve at the line for that year. From 1867 to 1882 a continuous though somewhat less rapid increase was experienced, followed by a very rapid rise to 1890, in which year Queensland's maximum number of births prior to 1909 was recorded. The South Australian graph is crossed by that of Queensland at the year 1885. From 1890 onwards to 1908 the number of births fluctuated somewhat, but, on the whole, retained a practically stationary position at a height rather less than that of 1890. The most serious variation was a sudden fall in 1903, the drought year, and rapid recovery in 1904, with a further fall in 1905, and a continuous rise from 1906 to 1915. In 1916 there was a sudden fall, followed by a rapid rise in 1917 and a fall in 1918.

The South Australian graph, a slow but practically continuous rise from 1860 to 1885, exhibits this steady increase in the total number of births. This rise is followed by a slow but fluctuating decline to 1903, and a slight recovery to 1914. In 1915 there was a rapid fall, a slight rise in 1916, a further fall in 1917, and a slight rise in 1918.

The Western Australian curve indicates that an increase, which was practically continuous but very slow, took place from 1860 to 1884, and that a somewhat quicker rate of increase, experienced from 1884 to 1896, was succeeded by a still more rapid and very satisfactory rate of increase from 1896 to 1906. A slight fall was apparent to 1910, followed by a rapid rise to 1913. Since 1913 there has been a continuous decline.

The Tasmanian curve may be regarded as made up of five portions, of which the first, from 1860 to 1877, represents a period of very slight variation, with, on the whole, an increase; the second, from 1877 to 1884, a period of continuous and moderately rapid increase; the third, from 1884 to 1893, a period of rapid increase; the fourth, from 1893 to 1898, a period of continuous but slow decrease; and the fifth, from 1898 to 1914, a period of steady recovery. Since 1914 there has been a continuous fall.

It will be seen that the years in which the highest points were reached by the several curves are as follows :—

State ..	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Year ..	1914	1891	1915	1914	1913	1914	1914

3. *Graphs of Annual Marriages, Commonwealth and States* (page 212).—The Commonwealth marriage graph from 1860 to 1885 reveals a moderate but somewhat fluctuating increase in the annual number of marriages between 1860 and 1871, a more rapid increase between 1871 and 1879, and a still more rapid increase between 1879 and 1885. From 1885 to 1891 the numbers continued to increase, but with marked fluctuations in magnitude. The financial crisis associated with the period subsequent to the latter year was accompanied by a strongly-marked decline in the number of marriages, which reached its lowest point in 1894. From that year onwards a fairly rapid recovery was effected, the record for 1891 being exceeded by that of 1897. This progress was maintained until 1902, when the severe drought of that and the succeeding year was collateral with a rapid fall in the number of marriages. An equally rapid recovery, however, has since taken place, and the number of marriages in the Commonwealth during 1915 was greater than in any preceding year. In 1916, 1917, and 1918, as already mentioned, there was a heavy falling off.

4. **Graphs of Annual Deaths, Commonwealth and States** (page 213).—The curves shewing the progression of the annual number of deaths indicate clearly that the periods for which exceptionally large numbers of deaths occurred were:—(a) 1866–7, (b) 1875–6, (c) 1884–5, (d) 1889–1891, (e) 1893, (f) 1898, and (g) 1902–3. It is remarkable that in each of the periods specified the phenomenon of a relatively high number of deaths was experienced in the majority of the States. Thus, as regards 1866–7, all the States except Western Australia and Tasmania were so affected; in 1875–6 all except Western Australia; in 1884–5 all were affected; in 1889 all except Western Australia and South Australia; in 1891 all except Queensland; whilst in 1893, 1898, and 1902–3, all were affected. The fact that the periods of high death rates have been practically identical in the several States furnishes an indication that the excessive mortality has been due to a considerable extent to some common cause operating throughout the Commonwealth.

It may be noted as curious that periods of heavy mortality have occurred at intervals of approximately nine years, viz.:—1866–7, 1875–6, 1884–5, 1893, and 1902–3. There are, however, two marked increases between the third and fourth dates, and one between the fourth and fifth.

Periods in which the number of deaths was exceptionally low are far less clearly defined than those in which the number was high, and the agreement amongst the States is also less complete. The principal periods of low mortality may be said to be 1861, 1869–71, 1879, 1892, 1897, 1900, 1904–5, 1909, 1914. In 1917 there were marked declines in all the States, succeeded in 1918 by less marked increases.

5. **Graphs of Annual Birth, Death, and Marriage Rates and of Rate of Natural Increase—Commonwealth** (page 214).—(i) *General*. These graphs represent the number of births, deaths, and marriages, and the excess of births over deaths (natural increase) per 1,000 of the population of the Commonwealth, for each of the years 1860 to 1918.

(ii) *Births*. In the case of births, the graph indicates a well marked decline in rate during the period, and represents a fall from 42.56 per 1000 of population in 1860 to 25.25 per 1000 in 1918. This enormous reduction has been subject to small fluctuations during the period under review, but may, on the whole, be said to have been in evidence throughout. There are, however, two periods of arrested decline noticeable, one from 1877 to 1890, and the other from 1898 to the present time. The course of the graph thus indicates a rapid fall from 42.56 in 1860 to 34.99 in 1877, succeeded by a fluctuating but, on the whole, fairly stationary period to 34.98 in 1890, then a fall even more rapid to 27.15 in 1898, and a further comparatively stationary period to 25.25 in 1918. The lowest point reached, until 1918, viz., 25.29, was attained in 1903, the year in which the Commonwealth suffered severely from the worst drought it has ever experienced. From 1903 to 1912 there was an advance in the rate, followed by a decline to 1918. A declining birth rate is usually due to complex causes, amongst which the variations in the age constitution of the population, and the adoption of preventive measures, are generally considered the most potent. The highest birth rate recorded was 43.27 in 1862.

(iii) *Deaths*. The three graphs relating to deaths furnish particulars concerning the rates experienced during the period amongst males and females separately, and in the population as a whole, the latter occupying naturally a position between the other two. Throughout the period the rate for males has largely exceeded that for females, but the fluctuations in the two rates have synchronised remarkably, indicating that the conditions which have been responsible for the marked variations which have occurred from time to time have affected males and females alike. On the whole, the graphs furnish clear evidence of a satisfactory decline in the general death rate of the Commonwealth, a fall having taken place from 20.86 in 1860 to 10.66 in 1915. In 1916 there was a slight rise to 11.04, followed in 1917 by a fall to 9.80, the lowest rate yet recorded in the Commonwealth as a whole. In 1918 there was a slight rise to 10.09. The graphical representation of the death rates brings into prominence five years in which the rates were exceptionally high when compared with those of adjacent years. These years are 1860, 1866, 1875, 1884, and 1898. The principal cause of the excessive rate of 1860 was the prevalence in that year of measles, scarlatina, and diphtheria, while the high rates of 1866, 1875, and 1898 were also largely due to epidemics of measles. Prior to 1892, when a rate of 12.91 was experienced, the lowest general death rate for the Commonwealth

was that of 1871, viz., 13.24. The highest male death rate for the period was 20.97 in 1860, and the lowest 11.47 in 1917. For females the highest was 20.71 in 1860, and the lowest 8.18 in 1917. The difference between the male and female rate has, since 1869, been fairly constant, and has ranged between 1.97 and 3.44, with a mean value of about 2.7.

(iv) *Marriages.* In the case of the graph representing marriage rates, the fluctuations are less abrupt than in the case of the birth rate and death rate graphs, and the rate for 1915, 9.14, the highest ever recorded, does not differ very considerably from that of 1860, which was 8.42. The lowest marriage rate for the period was that of 1894, viz., 6.08, marking the culmination of the commercial and financial depression indicated by the declining rates from 1888 onwards. From 1894 to 1915 a satisfactory increase has been in evidence, disturbed only by the sharp decline which, in 1903, accompanied the severe drought experienced in the Commonwealth in that year. In 1916, 1917, and 1918 the rate declined to 8.21, 6.87, and 6.65 respectively.

(v) *Natural Increase.* This graph, which represents the excess of births over deaths per 1000 of population, exhibits marked fluctuations arising from the combined fluctuations in birth and death rates. Thus, corresponding to the high death rates of 1860, 1866, 1875, and 1898, there are exceptionally low rates of natural increase, accentuated in the last-mentioned year by a comparatively low birth rate. A combination of low birth rate and comparatively high death rate was also responsible for the very low rate of natural increase in 1903. The highest rate of natural increase for the period was 26.58 in 1864, and the lowest 13.03 in 1898.

6. Graphs of Annual Birth Rates—States (page 215).—These graphs furnish for the several States information similar to that supplied in the graph on page 214 for the Commonwealth as a whole. It will be seen that in every case the total effect has been an extensive decline in rate, subject to very marked fluctuations. In all the States the period from 1875 to 1885 was one of arrested decline, if not of actual advance, in the birth rate. With the exception of a very low rate accompanying the drought in 1903, the variations in any of the States since 1901 have not been very marked, and in most cases a slight tendency to increase is in evidence.

The highest birth rates during the period were as follows:—New South Wales (1864), 44.00; Victoria (1862), 44.71; Queensland (1860), 47.93; South Australia (1862), 45.44; Western Australia (1860), 38.96; and Tasmania (1884), 36.63. The following were the lowest rates for the period:—New South Wales (1903), 25.44; Victoria (1918), 22.29; Queensland (1903), 24.53; South Australia, (1903) 23.84; Western Australia (1918), 22.84; Tasmania (1918), 25.91.

7. Graphs of Annual Death Rates—States (page 215).—These graphs furnish for the several States similar information to that given for the Commonwealth as a whole in the diagram on page 214, and indicate in each case a satisfactory decline in death rate. It may be noted that an exceptionally high death rate was experienced in all the States in 1875, and that a similar uniformity, though on a smaller scale, is observable for the year 1898, the principal cause in each case having been an epidemic of measles. The highest death rates experienced during the period were as follows:—New South Wales (1867), 19.79; Victoria (1860), 22.77; Queensland (1866), 25.96; South Australia, (1875), 19.97; Western Australia (1884), 21.54; and Tasmania (1875), 19.99. The following were the lowest death rates for the period:—New South Wales (1917), 9.56; Victoria (1917), 10.36; Queensland (1906), 9.50; South Australia (1909), 9.74; Western Australia (1917), 8.97; and Tasmania (1918), 8.84.

8. Graphs shewing Variations in Annual Death Rates from Month to Month.—The graphs on pages 216 and 217 shew for the Commonwealth as a whole and for each of the six States the annual death rates for males, females, and persons calculated for equalised months, and the infantile death rate, calculated in the same way, and also distinguishing males, females, and persons. Further particulars in regard to these graphs will be found on pages 195 and 196.

SECTION VI.

LAND TENURE AND SETTLEMENT.

§ 1. Introduction and Early History.

1. **Introduction.**—A comprehensive description, in a classified form, of the land tenure systems of the several States has been given in preceding issues of this book; see especially Year Book No. 4 (pp. 235 to 333). The details of that description have been necessarily condensed in the present issue, and for more complete information for past years, reference may therefore be made to Year Book No. 4. The historical matter dealing with the development of land legislation in the individual States may be found in Year Book No. 2 (pp. 263 to 272), and in a more condensed form in Year Books No. 3 (pp. 245 to 254), and No. 4 (pp. 235 to 244).

§ 2. Land Legislation in Individual States.

1. **New South Wales.**—(i) *Acts now in Force.* The Crown Lands Act of 1884 and the supplementary Act of 1889 (now incorporated in the Crown Lands Consolidation Act 1913), were passed chiefly for the purpose of putting an end to speculative selection without *bona fide* intention of settlement. Pastoral leases were required to be surrendered to the Crown and divided into two equal parts, one of which was returned to the lessee under a lease with a fixity of tenure for a term of years, the other half the lessee was allowed to hold under an annual occupation licence, but this half was always open for selection.

Nevertheless accumulation of land into large estates continued, and settlement proceeded slowly. Entirely new principles of agrarian legislation have been embodied in Crown Lands Acts passed in the years 1895 to 1917, the Closer Settlement Acts 1904 to 1914, and the Closer Settlement Promotion Act 1910, which offer *bona fide* settlers special inducements by the introduction of new forms of tenure on easy terms and conditions.

(ii) *The Western Lands Acts.* All Crown lands in the Western Division of New South Wales are now subject to the special provisions of the Western Lands Acts 1901 and 1905. All leases or occupation licenses could be brought within the provisions of the Western Lands Act by application before the 30th June, 1902. Otherwise the leases or licenses were dealt with by the Board as if the Act had not been passed. All leases issued or brought under the provisions of the Western Lands Acts expire on the 30th June, 1943, except in cases where part of the land leased is withdrawn for the purpose of sale by auction, or to provide small holdings, in which case an extension of the term of lease of the remainder may be granted as compensation for the part withdrawn.

2. **Victoria.**—(i) *Acts now in Force.* The Land Act 1915 deals with the whole system of land occupation and alienation in this State. Closer Settlement was provided for by the Land Acts of 1898 and 1901 and amendments, until the introduction of the Closer Settlement Act 1904, amended in 1906, 1907, 1909, 1910, 1911 and 1912, and now included in the Closer Settlement Act 1915 (Discharged Soldiers' Settlement Act). Other special forms of tenure have been provided for by the Settlement on Lands Act 1893 and the Small Improved Holdings Act 1906; these, however, are now embraced in the Land Act and Closer Settlement Act respectively.

(ii) *Mallee Lands.* The lands in the Mallee territory, comprising an area of about 11,000,000 acres in the north-western district of the State, can be cleared at a moderate expenditure. An extension of railway facilities and of successful systems of water supply should bring this territory into greater prominence as a field for agricultural enterprise. More than one-half of this area is unalienated and available for occupation.

3. Queensland.—Acts now in Force. The Acts now in force are the Land Acts 1910 to 1918, the Closer Settlement Acts 1906 to 1917, and the Discharged Soldiers' Settlement Act 1917. The first-mentioned Acts substitute perpetual leasehold tenures for freeholding tenures in the case of all new selections and auction purchases, but conversion of existing holdings to the leasehold tenure is optional with the selector. The last-mentioned Act provides for the settlement of discharged soldiers on Crown land, land acquired under the Closer Settlement Acts, or land specially for acquired soldier settlement.

4. South Australia.—Acts now in Force. The Crown Lands Acts 1915 repealed and consolidated previous Acts, and also consolidated the Closer Settlement and Village Settlement Acts. The Pastoral Act 1904 controls the pastoral occupation of lands, and the Irrigation and Reclaimed Land Act of 1914 provides for leases of reclaimed and irrigable lands.

5. Western Australia.—Acts now in Force. The Land Act 1898, which consolidated previous legislation as to the management of Crown lands, has in turn been amended at various times, and, with such amendments, is now in force. The principle of re-purchasing Crown lands for the purpose of Closer Settlement was introduced by the Agricultural Lands Purchase Acts 1896 to 1904; these Acts were repealed and consolidated by the Agricultural Lands Purchase Act 1909.

6. Tasmania.—Acts now in Force. The law relating to land tenure and settlement is now consolidated in the Crown Lands Act 1911, the Closer Settlement Act 1913, and the Returned Soldiers' Settlement Act 1916 and its amendments.

7. Northern Territory.—Prior to the transfer of the Northern Territory to the Commonwealth on the 1st January, 1911, the sale and occupation of lands in the Territory were regulated by the Northern Territory Crown Lands Act 1890, the Northern Territory Land Act 1899, and the Northern Territory Tropical Products Act 1904, but from that date the further alienation and occupation of land in the Territory were suspended, pending a complete reorganisation of the system of land settlement by the Commonwealth Government. In December, 1912, an ordinance, cited as the Crown Lands Ordinance 1912, dealing with this question, was made, by which the conditions of land tenure and settlement in the Territory are now determined. Under this ordinance no further alienation of Crown lands is permitted, unless such alienation is in pursuance of existing agreements.

8. Administration and Classification of Crown Lands.—In each of the States of the Commonwealth there is now a Lands Department under the direction of a responsible Cabinet Minister, who is charged generally with the administration of the Acts relating to the alienation, occupation and management of Crown lands. The administrative functions of most of the Lands Departments are to some extent decentralised by the division of the States into what are usually termed Land Districts, in each of which there is a Lands Office, under the management of a land officer, who deals with applications for selections and other matters generally appertaining to the administration of the Acts within the particular district. In some of the States there is also a local Land Board or a Commissioner for each district or group of districts. In the Northern Territory the administration of the regulations relating to the occupation and management of Crown lands is in the hands of a Classification Board, consisting of the Director of Lands, the Government Secretary, the Chief Surveyor, and any other officer appointed by the Administrator.

In most of the States, Crown lands are classified according to their situation, the suitability of the soil for particular purposes, and the prevailing climatic and other conditions. The modes of tenure under the Acts, as well as the amount of purchase money or rent and the conditions as to improvements and residence, may vary in each State according to the classification of the land. The administration of certain special Acts relating to Crown lands has in some cases been placed in the hands of a Board under the general supervision of the Minister; for such purpose, for instance, are constituted the Western Lands Board in New South Wales, the Lands Purchase and Management Board in Victoria, and the Closer Settlement Board in Tasmania.

In each of the States and in the Northern Territory there is also a Mines Department, which is empowered under the several Acts relating to mining to grant leases and licenses of Crown lands for mining and auxiliary purposes. Such leases and licenses are more particularly referred to in a later part of this section. (See § 9.)

Full information respecting lands available for settlement or on any matter connected with the selection of holdings may be obtained from the Commonwealth representative in London, from the Agents-General of the respective States in London, or from the Lands Departments of the various States in the Commonwealth. The administration and classification of Crown lands in each State were more fully dealt with in Year Book No. 2 (pp. 273-6).

§ 3. Tenures under which Crown Lands may be Alienated or Occupied.

1. *Introduction.*—Crown lands may now ordinarily be alienated either by free grant (in trust for certain specified purposes), by direct sale and purchase (which may be either by agreement or at auction), or by conditional sale and purchase. Crown lands may be occupied in the several States under a variety of forms of leases and licenses, issued both by the Lands and the Mines Departments.

2. *Classification of Tenures.*—The tabular statement given on pages 240 and 241 shews the several tenures under which Crown lands may be acquired or occupied in each State of the Commonwealth. The forms of tenure are dealt with individually in succeeding parts of this section.

(i) *Free Grants, Reservations, and Dedications.* The modes of alienation given in this category include all free grants either of the fee simple or of leases of Crown lands. "Free" homesteads in Queensland and Western Australia are not included in this class, these tenures being free in the sense that no purchase money is payable, but not free from residential and improvement conditions. Reservation and dedication, which are ordinarily conditions precedent to the issue of free grants, are also dealt with therein.

(ii) *Sales by Auction and Special Sales.* This class of tenure includes all methods by which the freehold of Crown lands may be obtained (exclusive of sales under the Closer Settlement and kindred Acts) for cash or by deferred payments, and in which the only condition for the issue of the grant is the payment of the purchase money.

(iii) *Conditional Purchases.* In this class are included all tenures (except tenures under Closer Settlement and kindred Acts) in which the issue of the grant is governed by the fulfilment of certain conditions (as to residence or improvements) other than, or in addition to, that of the payment of purchase money.

(iv) *Leases and Licenses.* This class includes all forms of occupation of Crown lands (other than under Closer Settlement and kindred Acts) for a term of years under leases and licenses issued by the Lands Departments. As the terms indicate, the freehold cannot be obtained under these forms of tenure.

CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

New South Wales.	Victoria.	Queensland.
FREE GRANTS, RESERVATIONS, AND DEDICATIONS.		
Free grants in trust Volunteer land grants Reservations and dedications under Crown Lands Consolidation Act 1913 and Mining Act 1906	Free grants in trust and reservations under Land Act 1915	Free grants in trust Reservations under Land Act 1910 and under State Forests and National Parks Act 1906
SALES BY AUCTION AND SPECIAL SALES.		
Auction sales for cash or on credit After-auction sales Special sales Improvement purchases Purchases of suburban holdings, residential leases, week-end leases	Auction sales for cash or on credit Special sales	*Auction sales for cash or on credit *After-auction sales *Special sales *Unconditional selections
CONDITIONAL PURCHASES.		
Residential or non-residential conditional purchases Conversion of conditional purchase leases, homestead selections, homestead farms, settlement leases, Crown leases, special leases, church and school lands leases Homestead selections	Agricultural allotments, residential or non-residential Grazing allotments, residential or non-residential Selection from grazing area, perpetual or auriferous leases Selection from pastoral leases Mallee agricultural licences Murray settlement leases Selection purchase leases	*Agricultural farms *Agricultural homesteads *Prickly pear selections *Free homesteads
LEASES AND LICENCES.		
Conditional leases Conditional purchase leases Settlement leases Improvement leases Annual leases Residential leases Special leases Snow leases Pastoral leases Scrub lease ^a Inferior lands leases Occupation licences Western lands leases Homestead farms Suburban holdings Crown leases Leases in Irrigation Areas Week-end leases	Grazing area leases Perpetual leases Mallee leases Licences of auriferous lands Leases of swamp or reclaimed lands Grazing licences Leases and licences for other than pastoral or agricultural purposes State forest and timber reserve licences	Grazing homesteads Grazing farms Occupation licences Special leases Perpetual lease selections Perpetual lease prickly pear selections Pastoral leases Preferential pastoral leases Auction perpetual leases (town, suburban, or country) Non-competitive leases
CLOSER SETTLEMENT SALES, LEASES AND LICENCES.		
Sales by auction Settlement purchase Annual leases Labour settlements	Special sales	*Sales by auction *Agricultural farms *Unconditional selections Auction perpetual leases Perpetual lease selections
MINES DEPARTMENTS' LEASES AND LICENCES.		
Miners' rights Business licences Authorities to prospect Leases	Mining leases Special licences Miners' rights Business and residence licences	Miners' rights Mining leases and licences Miners' homestead leases

^a Since 1st January, 1917, no new sales or selections under these tenures have been made, nor may any further areas be offered under these tenures.

CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

South Australia.	Western Australia.	Tasmania.
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FREE GRANTS, RESERVATIONS, AND DEDICATIONS.

Free grants in trust Reservations and dedications under Crown Lands Act 1915 Artesian leases	Free grants in trust and free leases Reservations under Lands Acts 1898 and 1906	Free leases Reservations under Crown Lands Act 1911
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SALES BY AUCTION AND SPECIAL SALES.

Auction sales for cash After-auction sales Sales for special purposes	Auction sales for cash (The right to lease town and suburban lots is sold by auction)	Auction sales for cash or on credit After-auction sales Special sales of residence or business allotments
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CONDITIONAL PURCHASES.

Agreements to purchase Special agreements under Pin- naroo Railway Act	Conditional purchase, residential or non-residential Conditional purchase by direct payment Conditional purchase of small blocks Homestead farms Conditional auction sales Workingmen's blocks	Selection of rural lands Homestead areas Selection in mining areas Conditional auction sales
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LEASES AND LICENCES.

Perpetual leases Miscellaneous leases Miscellaneous grazing and cul- tivation leases Irrigation and reclaimed land leases Special licenses Pastoral leases Leases with right of purchase	Pastoral leases Special leases Quarrying licenses	Grazing leases Miscellaneous leases Timber licenses and leases Residence licenses Occupation licenses Temporary licenses
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CLOSER SETTLEMENT SALES, LEASES, AND LICENCES.

Sales by auction Agreements to purchase Miscellaneous leases Irrigation and reclaimed area leases Village settlements Homestead blocks	Sales by auction Conditional purchases	Special sales Leases with right of purchase
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MINES DEPARTMENTS' LEASES AND LICENCES.

Miners' rights Mining leases Miscellaneous leases Business licenses Occupation licenses Mineral claims Search licenses	Miners' rights Mining leases Miners' homestead leases	Prospectors' licenses Miners' rights Mining leases Miscellaneous licenses
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NOTE.—Northern Territory.—By the Crown Lands Ordinance of 1912, the only form of tenure under which land may be held in the Northern Territory, exclusive of land held under pre-existing rights, is that of leasehold. See § 7 of this section.

242 TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED, ETC.

(v) *Closer Settlement Sales, Leases, and Licenses.* In this division are included all forms of tenure provided for under the various Closer Settlement Acts, and also under kindred Acts, such as the Village Settlements and Small Holdings Acts.

(vi) *Mines Departments' Leases and Licenses.* The tenures specified include all methods in which Crown lands may be occupied for mining and auxiliary purposes under leases and licenses issued by the Mines Department in the several States.

3. *Limitation of Tenures in New South Wales.*—In October, 1910, it was officially stated that it was the policy of the Government to discontinue the granting of the freehold of Crown lands. Under the Crown Lands Act 1912 this policy was partially given effect to by the discontinuance of the disposal of Crown lands by conditional purchase or as homestead selections, and by the institution of several new forms of tenure, viz., homestead farms, suburban holdings, irrigation farms, and Crown leases.

The first three are leases in perpetuity, while the term of a Crown lease is 45 years.

4. *Tenure of Lands by Aliens.*—In the States of New South Wales, Queensland, South Australia and Tasmania restrictions are imposed upon the tenure of lands by aliens (i.e., persons other than natural-born or naturalised British subjects). In Victoria and Western Australia there are no such restrictions. This matter, however, is subject to the war-time regulations of the Commonwealth.

(i) *New South Wales.* Under the Crown Lands Consolidation Act 1913, an alien is not qualified to apply for an original homestead selection, original conditional purchase lease, settlement lease, original homestead lease, or original conditional purchase, unless he has resided in New South Wales for one year, and at the time of making application lodges a declaration of his intention to become naturalised within five years. If he fails to become naturalised within that period, the land is forfeited. This residential limit of twelve months does not, however, apply to applicants for homestead farms, Crown leases, suburban holdings, and leases within irrigation areas, but any alien who becomes the holder of any of these tenures must become naturalised within three years after his becoming such holder. Failure to comply with this regulation involves forfeiture of such holding, together with all improvements thereon.

(ii) *Victoria.* Under the Supreme Court Act 1915 (section 3), every alien friend resident in Victoria may acquire, either by grant from the Crown or otherwise, both real and personal property.

(iii) *Queensland.* Under the Land Act 1910 (section 59b and 62) an alien cannot apply for any land in Queensland unless he obtain a certificate that he is able to read and write from dictation words in such language as the Minister for Lands may direct. If he acquire a selection he must within five years of such acquisition become a naturalised subject.

(iv) *South Australia.* In South Australia, Asiatics are disqualified from holding perpetual leases of lands in irrigation areas under section 19 of the Irrigation and Reclaimed Lands Act 1914.

(v) *Western Australia.* In this State aliens are under no disability as regards the acquisition of the freehold of lands already alienated. Every application to acquire Crown lands, whether by a British subject or an alien, is subject to the approval of the Minister for Lands, with an appeal to the Governor in Council.

(vi) *Tasmania.* Under the Aliens Act 1861 (section 2), aliens cannot hold real estate. An alien, if the subject of a friendly State, may, however, occupy lands for any term not exceeding twenty-one years.

(vii) *Northern Territory.* No restrictions are imposed upon the tenure of lands by aliens, excepting that under the Mining Act 1903 Asiatic aliens are disqualified from holding gold or mineral leases.

§ 4. Free Grants, Reservations, and Dedications.

1. **Introduction.**—Although free grants of Crown lands were virtually abolished as far back as 1831, the Land Acts of all the States now contain provisions under which the free alienation or occupation of Crown lands for certain specified purposes—comprising generally charitable, educational, and public purposes—is allowed. In all the States, also, Crown lands may be excepted from sale and reserved to the Crown or dedicated for various public and special purposes. Generally, reservation and dedication are conditions precedent to the issue of a free grant. In addition to reservations of a permanent nature, temporary reservations are also made, but these are, as a rule, subject to considerable fluctuations in area by reason of withdrawals, renotifications, and fresh reservations.

The following table shews the area for which free grants were issued and the areas permanently reserved or dedicated in each State during 1901, and from 1913 to 1917 inclusive :—

PARTICULARS OF FREE GRANTS, RESERVATIONS, AND DEDICATIONS, 1901 AND 1913-17.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
FREE GRANTS.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ..	282	7	425	5	156	10†	885
1913 ..	2,256	62	1,805	42	106	118	4,389
1914 ..	1,888	290	295	33	17	223	2,746
1915 ..	1,596	96	1,271	22	3	172	3,160
1916 ..	1,679	26	18	6,556	1	17	8,297
1917 ..	2,066	51	18	250	7	14‡	2,406
RESERVATIONS AND DEDICATIONS.							
1901 ..	1,595	19,278	811,200	§	189,856	4,231	1,026,160||
1913 ..	1,370	8,135	..	35,382	128,229	21,811	194,927
1914 ..	1,430	5,303	..	16,120	502,167	6,718	531,738
1915 ..	512	2,280	103,494	46,738	173,155	27,066	353,245
1916 ..	2,426	6,482¶	8,251	21,390	157,601	1,602	197,752
1917 ..	779	7,637	906,008	10,312	154,110	6,717‡	1,085,563

* Including both permanent and temporary reservations and dedications.

† Free leases.

‡ These are free leases for 99 years.

§ Not available.

¶ Exclusive of South Australia.

|| Including 222 acres reserved for recreation grounds.

2. **New South Wales.**—Crown lands may be reserved or dedicated for certain charitable, educational, and public purposes specified. No promises of dedication for religious purposes were made after the 11th May, 1880, on which date a resolution against any further such grants was passed by the Legislative Assembly. Volunteer Land Office Certificates ceased to be operative after the 31st January, 1912. All cases have now been dealt with.

(i) **Reservations.** In addition to the reservations referred to above, Crown lands may also be temporarily reserved as sites for cities, towns, or villages, and may be reserved for mining purposes. Crown lands within one mile of any made or projected railway may be temporarily reserved from sale, and any Crown lands may be reserved from sale for the preservation and growth of timber. Further, Crown lands may be reserved by notification in the *Gazette* from being sold or let upon lease or license, in such particular manner as may be specified, or may be reserved from sale or lease generally.

(ii) *Areas Granted and Reserved, 1917-18.* During the financial year 1917-18, the total area for which free grants were prepared was 926 acres, including grants of 734 acres of land resumed under the 12th clause of the Public Roads Act 1902. During the same period 501 acres were dedicated and permanently reserved, the number of separate dedications being 103.

On the 30th June, 1918, the total area temporarily reserved was 24,062,834 acres, of which 6,107,112 acres were for travelling stock, 4,572,108 acres for forest reserves, 988,701 acres for water, 1,312,202 acres for mining, and the remainder for temporary commons, railways, recreation and parks, and miscellaneous purposes.

3. **Victoria.**—Under section 10 of the Land Act 1915, the Governor is authorised to reserve Crown lands, either temporarily or permanently, from sale, lease or license, for any public purpose whatever.

During the year 1917 three free grants, comprising an area of 51 acres, were issued. During the same year reservations of both a permanent and temporary nature, comprising an area of 7,637 acres, were made; of this area 334 acres were reserved for recreation grounds, and 139 acres revoked.

4. **Queensland.**—Under the Land Act 1910, the Governor in Council may grant in trust, or reserve from sale, or lease, temporarily or permanently, any Crown lands required for public purposes.

(i) *Reservations.* Under section 2 of the State Forests and National Parks Act 1906, the Governor in Council may permanently reserve any Crown lands and declare them to be a State Forest or a National Park.

(ii) *Areas Granted and Reserved, 1917.* During the year 1917 there were 3 free grants issued for a total area of 18 acres. During the same period the area reserved was 906,008 acres in excess of areas cancelled. The total area reserved up to the end of the year 1917 was 14,454,787 acres.

5. **South Australia.**—Under section 7 (*d*) of the Crown Lands Act 1915, the Governor is empowered to dedicate by proclamation any Crown lands for various charitable, educational and public purposes, and may, at any time after dedication, grant the fee simple of such lands to secure the use thereof for the purpose for which they were dedicated.

(i) *Reservations.* Under section 7 (*f*) of the same Act, the Governor may by proclamation reserve any Crown lands (i) for the use of aborigines, (ii) for the purposes of military defence, (iii and iv) for forest or travelling stock reserves, (v) for public recreation grounds, (vi) for railways or tramways, (vii) for park lands, and (viii) for any other purpose he may think fit.

(ii) *Artesian Leases.* Under special circumstances free leases of pastoral lands may be granted to discoverers of artesian wells.

(iii) *Areas Granted and Reserved, 1917.* During the year 1917 there were 21 free grants issued for a total area of 250 acres. During the same year reserves comprising 10,312 acres were proclaimed.

6. **Western Australia.**—Under section 39 of the Land Act 1898, as amended by section 27 of the Act of 1906, the Governor may reserve any Crown lands which may be required for religious, charitable, or public purposes. These reservations may be either temporary or permanent.

During the year 1917, 1 free grant containing 7 acres was issued, while the area reserved was 154,110 acres.

7. **Tasmania.**—Under section 11 of the Crown Lands Act 1911, the Governor may reserve any Crown lands for the purposes therein specified. The lands are ordinarily leased for a period of ninety-nine years at a peppercorn rental.

During the year ending 31st December, 1917, there were 2 free leases, comprising an area of 14 acres, issued. During the same period 217 acres were reserved, 150 acres being reserved for scenic purposes, 5 acres for abattoir purposes, 14 acres for recreation grounds, 6 acres for schools, and 42 acres for other municipal purposes. The total area reserved from sale and selection to the end of the year 1917 was 4,750,000 acres.

§ 5. Sales by Auction and Special Sales.

1. **Introduction.**—In all the States, sales by auction of Crown lands are held from time to time. Notifications of such sales are given in the *Government Gazettes* together with particulars as to the upset price and conditions of sale. Excepting in the case of South Australia, where land is sold at auction for cash only, the purchase may be either for cash or on credit by deferred payments. In most of the States land may also be purchased by private contract at the upset price, when it has been offered at auction and not sold. In the case of auction sales on credit in the States of Western Australia and Tasmania, certain improvement conditions are imposed, and such sales are therefore classed for the purposes of this article among *Conditional Purchases*. (See § 6.) In most of the States comparatively small areas of Crown lands may be sold without competition under special circumstances. Sales by auction and special sales under Closer Settlement Acts are referred to in a later part of this section. (See § 8.)

2. **New South Wales.**—Under the Crown Lands Act, lands not exceeding in the aggregate 200,000 acres for the whole State may be sold by auction during any one year. The sales are notified in the *Gazette* not less than one month before the day of sale. The upset prices may not be less than £8 an acre for town lands; £2 10s. for suburban lands; and other lands fifteen shillings. Town lands may not be sold in areas exceeding half-an-acre; suburban lands in areas exceeding twenty acres; and country lands in areas exceeding 640 acres. A deposit of 25 per cent. on the purchase money must be paid at the sale, and the balance in ordinary circumstances within three months. In the case of town or suburban lands, or portions of less than 40 acres, the Minister may submit the land to sale on deferred payments, in which case the balance is spread over a fixed period (not exceeding 5 years) and is payable in annual instalments with 5 per cent. interest.

A fuller description of the conditions under which land may be purchased at auction may be found in the previous issues of the Year Book. (See Year Book No. 5, p. 273.)

Alienation by Auction and Special Sales. During the year ended the 30th June, 1918, the area of Crown lands sold by auction and special sales for which grants were prepared amounted to 5,289 acres, of which 3,299 acres were sold by auction in 532 lots; 817 acres were sold by after-auction sales in 349 lots; 56 acres were sold as improvement purchases in 165 lots; and 1,117 acres were sold as special purchases in 124 lots. The following table gives particulars of Crown lands alienated by auction and special sales during 1901 and for each year from 1913 to 1918:—

NEW SOUTH WALES—AUCTION AND SPECIAL SALES, 1901 AND 1913 TO 1918.

Year.	Auction and After-auction Sales.	Improvement Purchases.	Special Sales.	Total.	
				Area.	Price.
	Acres.	Acres.	Acres.	Acres.	£
1901* ..	49,074	43	445	49,562	116,562
1913 ..	3,764†	53	2,739	6,556	58,552
1914 ..	748†	51	2,801	3,600	32,222
1915 ..	501†	49	1,897	2,447	36,411
1916 ..	492	66	2,707	3,265	35,614
1917 ..	900	39	1,120	2,059	39,967
1918 ..	10,115	55	1,791	11,961	103,796

* Year ended 31st December. Subsequent years to 30th June. † Exclusive of frontages sold under the Centennial Park Sale Act.

Particulars of total areas alienated are given hereinafter. (See § 11.)

3. **Victoria.**—Lands specially classed for sale by auction, and any land in any city, town, or borough, may be sold by auction in fee simple, not exceeding 100,000 acres in any one year, at an upset price of £1 an acre, or at any higher price determined. The purchaser must pay the survey charge at the time of the sale, together with a deposit of 12½ per cent. of the whole price; the residue is payable in equal half-yearly instalments, not exceeding forty in number, according to the amount, with interest at the rate of 4 per cent. per annum.

(i) *Special Sales without Competition.* Detached strips of land not exceeding twenty acres may be sold at a valuation to the owner of the adjoining freehold in cases somewhat similar to those specified above in respect to Crown lands in New South Wales.

(ii) *Areas Sold at Auction and by Special Sales.* The following table gives particulars of auction sales and special sales for the year 1901 and from 1913 to 1917 :—

VICTORIA—AUCTION AND SPECIAL SALES, 1901 AND 1913 TO 1917.

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Country lands	4,079	1,196	983	818	625	615
Town and suburban lands	2,127	1,278	1,273	1,276	622	617
Special sales	846	1,731	1,449	1,193	814	546
Total	7,052	4,205	3,705	3,287	2,061	1,778

Particulars of total areas alienated are given hereinafter. (See § 11.)

4. **Queensland.**—Up to 31st December, 1916, the Minister might, with the approval of the Governor-in-Council, cause any Crown lands to be offered for sale by auction. Town or suburban lands might be under either freeholding or perpetual lease tenure. The notification must specify the amount of deposit, and the term for payment of the balance of the money, which term might not exceed ten years. The upset price might not be less than £8 per acre for town lands, £2 per acre for suburban lands, and 10s. per acre for country lands. Since the close of the year 1916, the perpetual lease tenure only is available.

(i) *After-auction Sales.* The notification of lands for sale by auction might declare that any lands therein mentioned, which had been offered at auction but not sold or withdrawn, should be open to purchase at the upset price by the first applicant. The price might be paid in the same instalments and at the same periods as if the land had been bought at the auction.

(ii) *Special Sales without Competition.* Land might be sold without competition to the holder or holders of adjoining lands at a price to be determined by the Land Court, under circumstances similar to those specified above in the case of New South Wales. When the holder of any land proved that, owing to danger from flood or other reasons, it was unsafe to reside on his holding, he might be granted, on payment of a price determined by the Land Court, an area not exceeding ten acres out of the nearest convenient and available Crown lands. Perpetual leasehold is now an alternative tenure.

(iii) *Areas Sold at Auction, after Auction, and by Special Sales.* The following table shows the areas sold at or after auction, and by special sales, during the year 1901 and from 1913 to 1917 :—

QUEENSLAND—AUCTION AND SPECIAL SALES, 1901 AND 1913 TO 1917.

(FREEHOLDING TENURES.)

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Town	334	608	446	149	..	..
Suburban	793	741	923	541	..	..
Country—						
Ordinary sales	52,132	8,770	5,260	2,623	..	..
Special sales	55	835	87	79	108	..
Total	53,314	10,954	6,716	3,392	108	..

Particulars of total areas alienated are given hereinafter. (See § 11.)

During 1917 there were in Queensland auction sales, under perpetual lease, of 107 acres for town areas, 168 acres for suburban areas, and 2,599 acres for country areas—a total of 2,874 acres. Particulars for three years are shewn in the following table :—

QUEENSLAND—SALES OF PERPETUAL LEASES AT AUCTION, 1915, 1916, AND 1917.

Year.	Number of Lots Sold.				Area Sold.			
	Town.	Suburban.	Country.	Total.	Town.	Suburban.	Country.	Total.
					Acres.	Acres.	Acres.	Acres.
1915	384	87	..	471	158	749	..	907
1916	690	292	..	982	296	1,275	..	1,571
1917	279	62	125	466	107	168	2,599	2,874
Total	1,353	441	125	1,919	561	2,192	2,599	5,352

(iv) *Unconditional Selections.* This form of tenure is similar to that of a sale by auction with deferred payment. The minimum price for the land is 13s. 4d. an acre, payable in twenty annual instalments, and the maximum area granted to the applicant is 1,280 acres. A deed of grant may be obtained upon payment of the purchase money. Selection under this tenure, in common with other freeholding tenures, has now ceased.

The following table shows the number and area of unconditional selections for which applications were accepted during the year 1901 and from 1913 to 1917 :—

QUEENSLAND—UNCONDITIONAL SELECTIONS, 1901 AND 1913 TO 1917.

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.
Number	151	41	48	35	8	..
Area acres	24,322	6,603	12,081	5,639	3,035	..
Rent £	1,180	266	448	213	103	..

5. *South Australia.*—The following lands may be sold by auction for cash :—
 (a) Special blocks. Any single section of Crown lands which may be surrounded by lands sold or contracted to be sold, and any section (not exceeding 100 acres in area) which may be required for the establishment of any industry. (b) Crown lands which have been offered for perpetual lease, and not taken up for two years. (c) Town lands. (d) Suburban

lands. The upset price is determined by the Commissioner, and 20 per cent. of the purchase money must be deposited at the time of sale, and the residue paid within such a time as the Commissioner may allow.

(i) *After-auction Sales.* All Crown lands except town or suburban lands offered at auction and not sold remain open for leasing or sale under agreement, or may be sold by private contract for cash at the upset price.

(ii) *Sales for Special Purposes.* The Governor may, on the application of the purchaser or lessee under any of the Crown Lands Acts, grant two acres of the land comprised in such agreement or lease to trustees, to be used for any public or charitable purposes, or he may grant not over one acre of land, comprised in such agreement, as a site for a shop, mill, or post office. The purchase money for such land must be paid at the time of application.

(iii) *Areas Sold for Cash.* The following table shews the areas sold for cash during the year 1901 and from 1913 to 1917. The total areas sold under all types of sale are shewn in a later part of this section. (See § 11.)

SOUTH AUSTRALIA.—AUCTION AND SPECIAL SALES, 1901 AND 1913 TO 1917.

Year	1901.	1913.	1914.	1915.	1916.	1917.
Area in acres	11,314	106,432	51,248	29,081	30,799	36,964

6. *Western Australia.*—Surveyed town lots notified in the *Gazette* as open for sale were sold by public auction at a prescribed upset price up to 18th October, 1911, since which date, however, all town lands have been withdrawn from sale and are now granted under lease only. In the case of suburban lands, the purchaser must carry out certain improvements, which are more particularly referred to later. (See § 6, *Conditional Purchases.*)

Areas Sold by Auction. The following table shews the areas of town and suburban lands sold at auction during the year 1901 and from 1913 to 1918 :—

WESTERN AUSTRALIA—AUCTION SALES, 1901 AND 1913 TO 1918.

Year.. .. .	1901.	1913. ¹	1914. ¹	1915. ¹	1916. ¹	1917. ¹	1918. ¹
Area sold .. Acres	856	1,087	890	1,396	419	543	964
Number of Allotments	1,366	530	263	353	102	144	278

1. For the year ended 30th June.

Particulars as to total areas alienated are given in a later part of this section. (See § 11.)

7. *Tasmania.*—Any town lands may be sold at auction or by private contract, either for cash or on credit, provided that no such lands may be sold on credit if the price is less than £15. Rural lands may also be sold at auction or by private contract, but lots of first-class land may not be sold on credit if less than fifteen acres in area. In the case of sales on credit both of town and rural lands, improvement conditions are imposed, and such sales are therefore classified for the purposes of this article as *Conditional Purchases.* (See § 6.)

(i) *After-auction Sales.* All rural lands and town lands, not within five miles of any city, which have been offered at auction and not sold, may be purchased by private contract at the upset price, and subject to the conditions on which they were offered at auction.

(ii) *Sale of Land in Mining Towns.* The holder of a residence or business license, who is in occupation and is the owner of buildings and improvements upon the area licensed of a value equal to the upset price of such area, is entitled to purchase not more than half an acre in area. The areas may be sold on credit.

(iii) *Areas Sold for Cash.* The following table shews the areas sold for cash during the year 1901 and from 1913 to 1917 :—

TASMANIA—AUCTION AND SPECIAL SALES, 1901 AND 1913 TO 1917.

Year	1901.	1913.	1914.	1915.	1916.	1917.
Area in acres	1,915	383	2,260	339	170	133

Particulars of total areas alienated are given in a later part of this section. (See § 11.)

§ 6. Conditional Purchases.

1. **Introduction.**—In all the States of the Commonwealth¹ the freehold of the land may be acquired under what are known as systems of conditional purchase by deferred payments of half-yearly or yearly instalments. Certain conditions, generally as to residence and improvements, have to be complied with before the freehold is granted, but these conditions are usually of a light nature and are inserted chiefly with the object of guaranteeing that the occupier will become of benefit to the community by making a reasonable effort to render his holding wealth-producing. Though there is a considerable similarity between some of the forms of tenure in the several States, the terms and conditions vary greatly in detail. As a rule a lease or license for a certain period is first issued to the selector, and upon fulfilment of the prescribed conditions and payment of the full amount of purchase-money the freehold is conveyed to him. In Queensland² and Western Australia “free” homesteads may be acquired. Although under these tenures no purchase-money is payable, the grant is conditional on the performance of residential and improvement conditions; these tenures are therefore included here with conditional purchases rather than with free grants.

2. **New South Wales.**—The following are the methods by which land may be alienated by conditional purchase :—(i) Residential conditional purchase; (ii) non-residential conditional purchase; (iii) conversion of certain holdings into conditional purchase; and (iv) homestead selections.

A description of the conditions under which land may be taken up under this form of tenure is given in previous issues of the Year Book. (See No. 6, p. 277.)

During the year ended the 30th June, 1918, deeds of grant were prepared on the completion of conditional purchases for 388,338 acres, making the total number of conditional purchases in existence at the end of the financial year 87,653 for a total area of 19,225,824 acres. The following table gives particulars of conditional purchases in 1901 and from 1913 to 1918 :—

NEW SOUTH WALES.—CONDITIONAL PURCHASES, 1901 AND 1913 TO 1918.

Year.	Applications Made.		Applications Confirmed.		Areas for which Deeds have been Issued.	
	Number.	Area.	Number.	Area.	During the Year.*	To end of Year.
		Acres.		Acres.	Acres.	Acres.
1901	2,277	549,898	1,555	360,910	500,554	4,212,189
1913 ¹	783	103,844	839	105,167	406,019	15,638,374
1914 ¹	512	65,306	554	67,534	322,556	15,960,930
1915 ¹	362	47,175	287	35,249	304,012	16,264,942
1916 ¹	216	22,495	183	23,552	307,016	16,571,958
1917 ¹	168	25,761	108	13,025	357,828	16,929,786
1918 ¹	271	32,085	121	16,211	388,338	17,318,124

1. Year ended 30th June. 2. Exclusive of exchanges under the Crown Lands Act 1895.

Further particulars as to the total areas alienated and in process of alienation are given hereinafter. (See § 11.)

1. Except Queensland since 1916. 2. Prior to 1st January, 1917.

During the year ended 30th June, 1918, there were 5 original and 19 additional homestead selections applied for, comprising an area of 18,175 acres. During the same period the total number of applications confirmed was 10, comprising 5,535 acres, and 3,296 homestead selections and grants, comprising an area of 1,055,915 acres, were in existence on the 30th June, 1918. This tenure is now practically superseded by the Homestead Farm tenure. Further particulars for previous years are given in a later part of this section. (See § 11.)

3. **Victoria.**—The freehold of agricultural and grazing lands may be acquired by conditional purchase under the following tenures :—(i) Agricultural, grazing and selection purchase allotments; (ii) agricultural and grazing allotments by selection from grazing area or perpetual leases; (iii) Mallee selection purchase leases; (iv) Murray settlements leases; and (v) swamp or reclaimed lands purchase leases.

A description of the conditions under which land may be taken up under this form of tenure may be found in previous issues of the Year Book. (See No. 6, p. 278.)

With reference to Murray settlement leases, two settlement areas have been laid out under the Act with due regard to irrigation conditions, viz., those at White Cliffs and Nyah, and at the former place a dry farm area has also been subdivided. At White Cliffs 6,273 acres were subdivided as homestead allotments, and 50,345 acres as dry farm allotments, while at Nyah 1,960 acres were subdivided as homestead allotments. No additional subdivision has been made during 1917.

The subjoined table gives particulars shewing the areas selected conditionally during the year 1901 and from 1913 to 1917. A large proportion of the areas shewn has reverted to the Crown in consequence of non-fulfilment of conditions.

VICTORIA.—AREAS PURCHASED CONDITIONALLY, 1901 AND 1913 TO 1917.

(EXCLUSIVE OF SELECTION IN THE MALLEE COUNTRY.)

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
With residence	466,155	138,955	132,085	112,144	117,180	69,210
Without residence	50,257	30,392	23,599	15,645	22,485	19,462
Total	516,412	169,347	155,684	127,789	139,665	88,672
No. of selectors	2,979	1,548	1,307	883	902	646

Particulars as to total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

4. **Queensland.**—The several types of selection under which the freehold might, prior to 1917, have been acquired by conditional purchase are as follows :—(i) Agricultural farms; (ii) agricultural homesteads; (iii) prickly pear selections; and (iv) free homesteads.

In previous issues of this book may be found the conditions under which land might be selected under this form of tenure. (See No. 6, p. 280.)

Since the close of the year 1916, no selections can be acquired on a freeholding basis, but existing selections are not affected, though they may be converted to perpetual leases if the selectors so desire.

Number and Area of Conditional Purchases. The following table shows the number and area of conditional purchases for which applications were accepted in 1901 and from 1913 to 1917 :—

**QUEENSLAND.—CONDITIONAL PURCHASES (APPLICATIONS ACCEPTED),
1901 AND 1913 TO 1917.**

Year.	Agricultural Farms.		Agricultural Homesteads.		Prickly Pear Selections.		Total.	
	Number.	Area.	Number.	Area.	Number.	Area.	Number.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ..	661	160,804	669	155,512	19	48,450	1,349	364,766
1913 ..	1,477	527,461	24	3,934	548	546,749	2,049	1,078,144
1914 ..	1,554	538,844	25	5,927	636	683,000	2,215	1,227,771
1915 ..	978	300,302	12	1,913	451	481,258	1,441	783,473
1916 ..	399	120,207	5	1,337	203	180,921	607	302,465
1917 ..	..	..	..	..	..	..	..	..

During the year 1917, no land was opened for selection, nor was any selected, under tenures involving freehold.

Particulars as to total areas alienated and in process of alienation may be found hereinafter. (See § 11.)

5. **South Australia.**—The types of conditional purchases under which land may be alienated in this State are as follows :—(i) Agreement to purchase, and (ii) Agreement under the Pinnaroo Railway Act 1903.

(i) *Agreement to Purchase.* Surveyed Crown lands are available for agreement to purchase, as well as for perpetual lease under the Crown Lands Acts of 1915, the purchase money being fixed by the Land Board, and payable in sixty half-yearly payments, including interest at not less than 2 per cent. per annum. The condition as to payment of instalments for land offered under the provisions of Act of 1915 in newly surveyed mallee lands is that no payment is made for the first four years, from the fifth to end of the tenth year, interest only at the rate of 2 per cent. per annum on value of land is payable, the first instalment of purchase money, including interest at the rate of 4 per cent. per annum, being payable at the commencement of the eleventh year. All payments are made in advance, the term of agreement being thereby extended to forty years. If the conditions relating to fencing, vermin destruction, and, in some cases, to residence are fulfilled, the purchase may be completed after a term of six years from commencement of the agreement on payment of all principal and interest due. All minerals are reserved to the Crown, and the Crown may resume any part of the land for the purposes of roads, water conservation, mining, &c., compensation being payable to the purchaser for loss occasioned by resumption.

(ii) *Pinnaroo Railway Lands.* Under the Pinnaroo Railway Act 1903 provision was made for opening up about 1,500,000 acres of good agricultural country in the vicinity of a line from Pinnaroo, adjoining the Victorian border, to Tailem Bend, a distance of eighty-seven miles. These lands are now offered on agreement with covenant to purchase or on perpetual lease under the Crown Lands Act 1915. The railway has been paid for from the proceeds of the land already selected. The conditions of purchase are similar to those stated in par. (i) above.

The total area held on 30th June, 1918, was 1,083,065 acres; of this area purchase has been completed of 465,627 acres, and 16,179 acres are held on perpetual and right of purchase leases, allotted before the Pinnaroo Railway Act was passed.

(iii) *Particulars of Conditional Purchases.* The subjoined table gives particulars of the areas alienated by conditional purchase, on fulfilment of the conditions, at the end of 1901 and from 1913 to 1917 :—

SOUTH AUSTRALIA—AREAS ALIENATED UNDER AGREEMENTS TO PURCHASE, 1901 AND 1913 TO 1917.

Year	1901.	1913.	1914.	1915.	1916.	1917.
Area in acres	57,460	59,670	36,186	55,181	46,098	26,418

Particulars as to the total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

6. **Western Australia.**—The various types of selection under which the freehold can be alienated by conditional purchase in this State are as follows :—(i) Residential conditional purchase; (ii) non-residential conditional purchase; (iii) conditional purchase by direct payment; (iv) conditional purchase of blocks for vineyards, orchards, or gardens; (v) conditional purchase of grazing lands; and (vi) free homestead farms.

A full description of the various conditions under which land may be held under this form of tenure may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 283 and 284.) The following table shews the area of the selections for which grants were issued, the prescribed conditions having been fulfilled, during the year 1901 and from 1913 to 1918.

WESTERN AUSTRALIA—AREAS SELECTED CONDITIONALLY FOR WHICH CROWN GRANTS WERE ISSUED, 1901 AND 1913 TO 1918.

Particulars.	1901.	1913. ¹	1914. ¹	1915. ¹	1916. ¹	1917. ¹	1918.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Free homestead farms	147	96,435	80,784	62,520	61,395	69,816	45,770
Conditional purchases	5,234	113,885	101,421	144,684	50,845	80,096	126,642
Poison land leases . .	..	6,232	5,357	4,001	5,034	..	3,977
Total ..	5,381	216,552	187,562	211,205	117,274	149,912	176,389
Number of holdings	48	1,232	994	859	724	897	946

1. For financial year ended 30th June.

Particulars as to the total areas alienated absolutely, and in process of alienation, are given in a later part of this section. (See § 11.)

Area Conditionally Alienated. The following table shews the areas conditionally alienated under various methods of selection during the year 1901 and from 1913 to 1918 :—

WESTERN AUSTRALIA—AREAS CONDITIONALLY ALIENATED, 1901 AND 1913 TO 1918.

Particulars.	1901.	1913. ¹	1914. ¹	1915. ¹	1916. ¹	1917. ¹	1918. ¹
<i>Conditional Purchase—</i>							
Deferred payments (with residence)	161,302	510,195	338,804	164,461	85,957	47,659	124,861
" (without residence)	46,498	149,048	88,854	43,203	31,137	20,426	43,951
Direct payments (without residence)	1,909	3,548	985	985	208	146	597
<i>Free Homestead Farms</i>	63,623	151,985	112,874	62,140	32,549	21,357	21,818
<i>Under the Agric. Lands Purchase Acts</i>	4,295	10,835	2,451	4,122	1,026	96	2,813
<i>Grazing Leases</i>	64,834	585,382	454,881	227,940	157,712	145,956	352,535
<i>Poison Land Leases</i> ²	9,530	..	..	..	..	..	..
<i>Workingmen's Blocks</i> ³	8	4	1	..	1	..	..
Total	351,999	1,411,597	998,850	502,551	308,590	235,640	546,575
Number of holdings	1,888	3,771	2,788	1,514	860	637	973

1. For year ended 30th June. 2. Provisions repealed by Act of 1906.

3. Closer settlement. (See § 8, 7.)

Particulars as to the total areas in process of alienation are given in a later part of this section. (See § 11.)

7. *Tasmania*.—The various types of conditional purchases in this State are as follows:—(i) Selection of rural land; (ii) homestead areas; (iii) selection in mining areas; and (iv) sales by auction on credit, either of town or rural lands. The conditions under which land may be selected under this form of tenure are given in previous issues of the Year Book. (See No. 6, p. 283.)

The following table shews the areas alienated absolutely under systems of conditional purchases and sales on credit, the conditions having been fulfilled, and also shews the areas sold conditionally and the applications for conditional purchases received and confirmed, during the year 1901 and from 1913 to 1917:—

TASMANIA.—CONDITIONAL PURCHASES, 1901 AND 1913 TO 1917.

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.
<i>Completion of Conditional Purchases</i> ¹	Acres. 23,781	Acres. 45,937	Acres. 34,756	Acres. 39,329	Acres. 54,668	Acres. 35,646
<i>Sold Conditionally—</i>						
Free Selections	40,004	51,622	38,774	42,584	35,716	21,686
Homestead Areas	9,103	370	164	100	99	90
Auction Sales on Credit	12,961	1,916	986	3,202	2,235	2,782
Other Sales (Town Lands)	636	1,037	1,260	740	479	515
Total	62,709	54,945	41,184	46,626	38,529	25,073
<i>Applications—</i>						
Received	1,444	1,631	1,515	1,610	842	913
Confirmed	768	698	543	563	328	344

1. Including selections and sales on credit.

Particulars of total areas alienated and in process of alienation are given hereinafter. (See § 11.)

§ 7. Leases and Licenses.

1. *Introduction*.—Leases and licenses are issued in all the States and in the Northern Territory for various terms and upon various conditions. In Victoria, Queensland, South Australia, and the Northern Territory perpetual leases are issued for an indefinitely long period upon payment of an annual rent, while in all the States leases or licenses of comparatively large areas may be obtained for pastoral purposes. Provision has also been made in all the States for convenient forms of leases and licenses for various special purposes, and also for special classes of lands. The leases and licenses dealt with below are exclusive of those issued under Closer Settlement and kindred Acts, and also of those issued for mining and auxiliary purposes. (See §§ 8 and 9.)

2. *New South Wales*.—The following are the various types of leases and licenses issued in this State:—(i) Conditional leases; (ii) conditional purchase leases; (iii) settlement leases; (iv) improvement leases; (v) annual leases; (vi) residential leases; (vii) special leases; (viii) snow leases; (ix) pastoral leases; (x) scrub leases; (xi) inferior lands leases; (xii) occupation licenses; (xiii) Western lands leases; (xiv) homestead farm leases; (xv) suburban holdings leases; (xvi) Crown leases; (xvii) irrigation farm leases; (xviii) week-end leases; (xix) leases of town lands; (xx) returned soldiers' special holdings.

A description in detail of the conditions which govern the issue of these various leases and licenses may be found in previous editions of the Year Book. (See Year Book No. 6, p. 285.)

On the 30th June, 1918, there were 57,292 leases and licenses current under the Lands Department and the Western Land Board, comprising 116,159,073 acres of Crown lands. Of these leases there were 54,257, comprising 40,751,251 acres, in the Eastern and Central Divisions; and 3,035, comprising 75,407,822 acres, in the Western Division.

The following table shews the areas held under various descriptions of leases and licenses at the end of the year 1901, and at the end of 1914-15 and following financial years, and also the area and rental of leases current on the 30th June, 1918 :—

NEW SOUTH WALES.—AREAS OCCUPIED UNDER LEASES AND LICENSES,
1901 AND 1914 TO 1918.

Leases and Licenses.	1901.	1914-15.	1915-16.	1916-17.	1917-18.	
					Area.	Rent.
	Acres.	Acres.	Acres.	Acres.	Acres.	£
Pastoral	44,805,221	1,136,475	1,136,475	1,136,475	1,136,475	734
Outgoing pastoral lessees .. .. .	..	964,081	857,313	802,941	725,312	6,971
Western land leases and licenses* .. .. .	..	74,197,826	73,755,143	73,693,368	73,754,817	91,595
Occupation { (i) Ordinary	25,812,215	5,672,117	5,400,305	5,163,417	5,085,034	8,678
(ii) Preferential	12,985,651	1,304,376	1,204,845	1,184,341	1,159,345	6,215
Homestead leases	10,953,388	351,374	351,374	351,374	153,275	255
Condit'l leases—(i) Gazetted	13,014,055	15,995,625	15,663,382	15,226,444	14,831,535	191,220
(ii) Not gazetted (under provisional rent)	966,887	65,477	33,322	43,068	39,523	329
Conditional purchase leases .. .. .	..	549,772	515,312	457,173	433,228	14,400
Settlement leases	3,468,675	6,316,739	5,167,063	4,730,130	4,571,864	54,294
Improvement	5,551,060	5,181,979	4,902,058	4,636,246	4,355,297	31,026
Annual	6,755,942	3,184,830	2,991,573	2,649,284	2,516,954	20,425
Scrub	1,535,415	1,991,066	1,854,648	1,812,694	1,689,956	6,540
Snow land	79,582	11,549	6,069	10,909	131,420	1,232
Special	124,877	648,509	647,916	650,384	664,935	37,904
Inferior land	288,530	104,524	75,451	75,451	73,711	280
Artesian well	358,071	71,680	71,680	61,440	51,200	109
Blockholders' .. .. .	..	1	1	1	1	6
Residential leases (on gold and mineral fields)	5,751	13,366	13,435	13,365	13,675	1,676
Church and school lands	97,207	4,082	4,078	3,859	11	330
Permissive occupancies†	118,634	1,409,502	1,041,890	1,009,090	1,156,416	10,742
Prickly pear leases .. .. .	..	47,329	47,316	45,433	42,558	567
Crown leases .. .. .	..	1,563,684	1,896,765	2,134,446	2,449,587	28,292
Homestead farms .. .. .	..	748,918	969,453	1,036,685	1,081,622	3,360
Suburban holdings .. .. .	..	30,717	34,110	36,631	38,643	4,381
Week-end leases .. .. .	..	..	..	55	87	51
Leases of town lands .. .. .	..	..	..	16	17	56
Returned soldiers' special holdings .. .. .	..	..	..	639	2,575	450
Total under Lands Dept. and Western Land Board	126,921,161	121,565,598	118,640,977	117,015,359	116,159,073	522,118

* Includes permissive occupancy.

† Permissive occupancies in the Western Division not included.

The total annual rent derived from the leases and licenses issued by the Lands Department and the Western Lands Board amounted to £522,118, or an average of 1.07 pence per acre. Particulars regarding leases and licenses issued by the Mines Department are given in a later part of this section. (See § 9, *Occupation of Crown Lands for Mining Purposes.*)

3. Victoria.—The various types of leases and licenses (exclusive of Closer Settlement and Mines Department leases and licenses) which may be issued in this State are as follows :—(i) Grazing area leases; (ii) selection purchase leases; (iii) perpetual leases; (iv) Mallee perpetual leases; (v) licenses of auriferous lands; (vi) swamp or reclaimed lands leases; (vii) grazing licenses; (viii) leases and licenses for other than pastoral purposes; and (ix) State forests and timber reserves licenses.

A description in detail of the conditions which govern the issue of these various leases and licenses may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 291-2.)

Areas held under Leases and Licenses. The following statement shows the areas of Crown lands occupied under leases and licenses at the end of the year 1901 and from 1913 to 1917 :—

VICTORIA.—OCCUPATION OF CROWN LANDS UNDER LEASE OR LICENSE, 1901 AND 1913 TO 1917.

Tenure.	Area in Acres.					
	1901.	1913.	1914.	1915.	1916.	1917.
Pastoral Leases	39,450					
Grazing Area Leases	2,338,649	2,747,571	2,648,281	2,575,480	2,502,556	2,573,143
Grazing Licenses—						
Land Acts 1890-91	5,908,985					
Land Acts 1901 (excl. of Mallee)		5,291,179	5,437,929	5,254,997	4,647,510	4,493,453
Mallee Lands		4,694,213	4,851,246	4,868,746	4,974,132	5,028,808
Auriferous Lands (Licenses)	377,427	86,667	82,032	79,618	77,393	74,032
Swamp Lands (Leases)	4,200	3,900	3,868	3,824	3,825	3,670
Perpetual Leases	8,137	8,407	8,344	8,182	7,629	7,761
Mallee Pastoral Leases						
Mallee Allotment Leases	7,980,592					
Perpetual Leases under Mallee						
Land Acts 1896-1901	448,842	398,274	293,716	244,765	220,914	202,943
Wattles Act 1890	4,427					
Total	17,110,709	13,230,211	13,325,416	13,035,612	12,433,959	12,383,810

4. *Queensland.*—In this State Crown lands may be occupied under the following types of leases and licenses :—(i) Grazing homesteads ; (ii) grazing farms ; (iii) occupation licenses ; (iv) special leases ; (v) perpetual lease selections ; (vi) perpetual lease prickly pear selections ; (vii) pastoral leases ; (viii) preferential pastoral leases ; (ix) auction perpetual leases (town, suburban, and country) ; (x) non-competitive leases. An applicant for a grazing homestead or grazing farm may not hold more than 60,000 acres, and the term of the lease may not exceed 28 years.

(i) *Grazing Homesteads.* Lands opened for grazing selections are available for fifty-six days as grazing homesteads only. In the case of land selected up to 31st December, 1916, personal residence was necessary for the first five years, and prior to the expiration of such period or the earlier death of the lessee, a grazing homestead could not be assigned or transferred. Without the special permission of the Minister it could not be mortgaged during the five years except to the Agricultural Bank ; thereafter the lease was subject to the condition of occupation: Since 1st January, 1917, grazing homesteads are subject to personal residence by the selector during the whole term of the lease, but the restrictions on assignment or transfer still operate only during the first five years.

(ii) *Grazing Farms.* In order to obtain priority of claim the applicant may tender an annual rent higher than the notified one, for the first seven years. As soon as the land is fenced the selector becomes entitled to a lease, and may thereafter mortgage the same. The lease is subject to the condition of occupation during the whole term. The Crown may resume the whole or part of the lease.

Particulars of grazing farms and grazing homesteads are given in the following paragraph :—

(iii) *Grazing Farms, Homesteads, and Scrub Selections.* The following table shows the number of grazing farms, grazing homesteads, and scrub selections, for which applications were accepted in 1901 and from 1913 to 1917 :—

QUEENSLAND.—GRAZING FARMS, HOMESTEAD, AND SCRUB SELECTIONS, 1901 AND 1913 TO 1917.

Year.	Grazing Farms.		Grazing Homesteads.		Scrub Selections.		Total.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.
1901 ..	247	1,371,283	47	290,785	19	48,450	313	1,710,518
1913 ..	230	2,681,948	317	3,698,600	..	..	547	6,380,548
1914 ..	272	3,380,918	288	3,462,488	..	..	560	6,843,406
1915 ..	222	2,461,836	275	3,984,517	..	..	497	6,446,353
1916 ..	112	1,412,652	247	3,065,096	..	..	359	4,477,748
1917 ..	129	1,925,059	197	2,243,218	..	..	326	4,168,277

The average rent in 1917 was .89d. per acre for grazing farms and 1.53d. per acre for grazing homesteads.

Particulars of total areas held under leases and licenses are given in a later part of this section. (See § 11.)

(iv) *Occupation Licenses.* Annual licenses are granted to occupy Crown lands which have been declared open for such occupation by notification in the *Gazette*. The rent is as specified by the notification or as bid by the licensee, but the Minister may by notice before the 1st September in any year increase the rent. The total number of licenses in force at the end of the year 1917 was 2,301, comprising an area of 63,952 square miles, the total rent being £50,736. Particulars of the area held under license for previous years are given in a later part of this section. (See § 11.)

(v) *Special Leases.* Leases of any portion of Crown land may be issued for a term not exceeding thirty years to any person for any manufacturing, industrial, business or recreation purposes. Leases for a similar term may be issued for any country lands reserved for public purposes and which are infested with noxious weeds.

During the year 1917 there were 107 leases for special purposes granted, comprising an area of 4,560 acres, the total annual rent being £553, and there were extant at the end of the year 761 such leases, comprising an area of 41,668 acres and reserving rents amounting to £3,880 per annum. In addition, 95 leases of reserves, aggregating 18,547 acres, were granted at rentals amounting to £387 per annum, the total number of these leases of reserves in force at the end of the year being 356, comprising an area of 144,924 acres and reserving rents amounting to £1,469. Particulars of special leases for previous years are given in a later part of this section. (See § 11.)

(vi) *Perpetual Lease Selections.* Up to 31st December, 1916, land proclaimed to be open for agricultural farm selection (see § 6, 4) might also be opened for perpetual lease selection, and the latter mode might be conceded priority of application over the former. The rent for the first period of ten years of the lease was $1\frac{1}{2}$ per cent. on the proclaimed purchase price of the land for agricultural farm selection. The rent for each succeeding period of ten years was determined by the Land Court. Similar conditions of occupation and improvement as were prescribed for agricultural farms were attached to perpetual lease selections. From 1st January, 1917, land opened for agricultural selection may be opened only for perpetual lease selection, and land opened for prickly pear selection may be opened only for perpetual lease prickly pear selection. In the case of perpetual lease selections, the rent for the first period of 15 years is $1\frac{1}{2}$ per cent. of the notified capital value of the land, and for each succeeding period of 15 years may be determined by the Land Court. In the case of perpetual lease prickly pear selections, no rent is payable during the pear-clearing period, but thereafter rents are paid in the same manner as for perpetual lease selections. The conditions of selection are similar to those for the previous tenures of agricultural farms and prickly pear selections.

QUEENSLAND.—PERPETUAL LEASE SELECTIONS, 1913 TO 1917.

Particulars.	1913.	1914.	1915.	1916.	1917.
Number	12	18	175	294	605
Area Acres	10,887	12,991	59,760	114,011	207,581
Rent £	106	153	973	1,806	3,141

The number of perpetual lease prickly pear selections taken up during 1917 was 180, the total area being 141,336 acres.

(vii) *Special Licenses.* Licenses to cut timber or to dig for any stone, gravel, earth, shells, or guano, may be issued.

(viii) *Pastoral Leases.* Up to 31st December, 1916, existing pastoral leases were deemed to be held under the Land Act 1910. Lands open for pastoral lease might be

leased for a period not exceeding thirty years. The annual rent, per square mile, for the first ten years must be as notified in the *Gazette*, or in case of competition, bid at auction. If the value of the holding became enhanced by the development of public works in the neighbourhood, or by the occurrence of minerals on or near the holding, the rent might be redetermined. A new pastoral tenure, as from 1st January, 1917, was introduced by the amending Act of 1916, viz., preferential pastoral lease. Holdings under this tenure are confined to persons with no interests or limited interests in pastoral leases, and priority of application may be obtained by an applicant undertaking to reside on the holding personally during the first seven years.

The following table shows the total areas of pastoral leases occupied under the various Acts at the end of the year 1901 and from 1913 to 1917 inclusive :—

* QUEENSLAND.—PASTORAL LEASES OCCUPIED UNDER VARIOUS ACTS,
1901 AND 1913 TO 1917.

Particulars.	Area in Square Miles.					
	1901.	1913.	1914.	1915.	1916.	1917.
Pastoral Leases Act 1869	39,307	..	..	..	..	..
Crown Lands Act 1884	243,586	..	..	..	..	..
Land Act 1897	15,046	..	..	..	..	..
Pastoral Leases Act 1900	50,076	..	..	..	..	..
Pastoral Holdings New Leases Act 1901 .. ..	..	..	..	..	..	..
Land Act 1902 .. ..	..	..	..	..	..	..
Land Act 1910 .. ..	..	357,615	353,312	349,838	337,423	330,596
Land Act Amendment Act 1916 (preferential) .. ..	..	..	..	..	..	636
Total	348,015	357,615	353,312	349,838	337,423	331,232

* Up to the year 1910, resumed parts of pastoral holdings were included in these figures, but since that year they are held under occupation license, and are included in the figures under that head.

The gross area held at the end of the year 1917 for purely pastoral purposes (under *Occupation Licenses and Pastoral Leases*) was 394,548 square miles, at rentals aggregating £359,099 per annum. The area was 12,593 square miles less than that for the previous year, but the rental was £20,844 more. The average rent was 18s. 2½d. per square mile, as against 16s. 7¾d. for the previous year. Three non-competitive perpetual leases were issued during 1917, the total area being 30 acres, and the annual rent £2 10s.

5. South Australia.—The following are the various types of leases and licenses which are issued in this State :—(i) Perpetual leases; (ii) miscellaneous leases; (iii) miscellaneous grazing and cultivation leases; (iv) irrigation and reclaimed swamp leases; (v) licenses for special purposes; (vi) leases under the Pastoral Act 1904; and (vii) leases with right of purchase.

(i) *Perpetual Leases.* Surveyed Crown lands are available for perpetual leases as well as for agreements to purchase under Crown Lands Act of 1915. Under the Crown Lands Act of 1888 perpetual leases were granted in perpetuity, and the rent determined for each period of fourteen years, at least twelve months before the expiration of each such period. Under the Crown Lands Act of 1893 the revaluation section was repealed and the rent was fixed in perpetuity, generally at rates varying from 2 per cent. to 4 per cent. per annum on the value of the land as fixed by the Land Board. The condition as to payment of rent of land offered under provisions of the Act of 1915 in newly surveyed mallee lands is that no rent is charged for the first four years, and from the fifth to the end of the tenth year payment is made at the rate of 2 per cent. per annum, the full rate at 4 per cent. becoming due at the commencement of the eleventh year. All minerals are reserved to the Crown, and the Crown may reserve any part of the

land for the purposes of roads, water conservation, mining, &c., compensation being payable to the lessee for loss occasioned by resumption.

The conditions under which the other leases and licenses are issued will be found in detail in the previous issues of the Year Book. (See Year Book No. 5, pp. 294 and 295.)

(ii) *Areas held under Lease.* The following table shews the areas held under leases and licenses at the end of the year 1901 and from 1913 to 1917 :—

SOUTH AUSTRALIA.—AREAS UNDER LEASES AND LICENSES, 1901 AND 1913 TO 1917.

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases	5,639,519	2,702,210	2,634,685	2,574,640	2,504,143	2,440,731
Perpetual Leases ..	7,115,782	15,048,199	14,969,877	14,943,771	14,851,173	14,810,026
Pastoral Leases ..	68,916,125	96,933,810	96,382,130	95,756,850	95,016,370	100,889,010
Other Leases ..	3,905,729	1,230,105	1,193,767	1,144,683	1,128,630	1,049,522
Total held under Lease	85,577,155	115,914,324	115,180,459	114,419,944	113,500,316	119,189,289

6. *Western Australia.*—The following are the various types of leases and licenses issued in this State :—(i) Pastoral leases; (ii) permits and licenses to cut timber; (iii) special leases; and (iv) licenses for quarrying.

The conditions of tenure with respect to these leases and licenses may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 296–7.)

Areas held under Leases and Licenses. The following table shews the number and areas of leases and licenses issued during the year 1901 and from 1913 to 1918 :—

WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED, 1901 AND 1913 TO 1918.

Particulars.	1901.	1913.*	1914.*	1915.*	1916.*	1917.*	1918.*
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Pastoral Leases ..	19,909,251	18,135,488	8,365,927	7,630,023	7,439,633	9,436,159	20,287,672
Special Leases ..	149	3,993	3,382	5,571	1,707	626	8,097
Leases in Reserves ..	324	2,901,238	233,037	196,340	434,455	123,402	87,712
Timber Leases and Permits †	109,630	129,317	20,141	†	†	†	†
Residential Lots ..	221	2	..	..	..	..	..
Total ..	20,019,575	21,170,038	8,622,487	7,831,934	7,925,845	9,565,187	20,383,481
Number issued ..	1,466	1,918	1,709	1,410	1,105	510	508

* For financial year ended the 30th June. † No timber leases granted since 1903.

‡ Timber leases and permits are now under the control of the Mines Department.

Particulars as to the total area occupied under leases and licenses are given in a later part of this section. (See § 11.)

7. *Tasmania.*—The several forms of leases and licenses in this State are as follows :—(i) Grazing leases; (ii) miscellaneous leases; (iii) timber licenses; (iv) occupation licenses; (v) temporary licenses; and (vi) timber leases.

The conditions which govern the issue of these leases and licenses are more fully dealt with in the previous issues of the Year Book. (See Year Book No. 5, p. 297.)

Areas held under Leases and Licenses. The following table shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901 and from 1913 to 1917 :—

TASMANIA:—LEASES AND LICENSES ISSUED, 1901 AND 1913 TO 1917.

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Ordinary Leased Land ..	1,280,688	1,280,400	1,400,300	1,452,068	1,434,113	1,193,169
Islands ..	149,165	134,908	135,000	204,630	207,630	197,406
Land Leased for Timber ..	40,768	160,216	162,631	120,832	146,881	155,889
Total	1,470,621	1,575,524	1,697,931	1,777,530	1,788,624	1,546,464

8. Northern Territory.—The system of land settlement in the Northern Territory has been reorganised by the Commonwealth Government. A New Lands Ordinance was passed in December, 1912, known as the Crown Lands Ordinance 1912, and future disposal of land in the Territory will be made in accordance with this Ordinance, which provides for a leasehold system only, and no further alienation of Crown lands will be permitted, unless such alienation is in pursuance of existing agreements. Under this Ordinance, the classification and control of Crown lands is in the hands of a Board, consisting of the Director of Lands, the Director of Agriculture, and the Chief Surveyor. The classified land is leased in blocks, the maximum area ranging from 300 square miles of first-class pastoral to 1,280 acres of first-class agricultural land. Before offering any land for leasing, the Board fixes the annual rental, but every lease is subject to reappraisal of rent at specified periods, viz., every fourteen years in the case of town lands, and every 21 years in the case of agricultural and pastoral lands.

Leases under this Ordinance are in perpetuity, except as regards pastoral and miscellaneous leases, the term of which is 21 or 42 years, according to the quality of the land leased.

The lessee must reside on the land leased for a certain period every year, must fence, stock, and cultivate it to the extent prescribed, and must, within two years of the commencement of the lease, establish a home on it. In order to promote settlement in the Territory, the first five thousand blocks of agricultural land taken up on perpetual lease under this Ordinance will be rent free during the life of the applicant, or for 21 years from the commencement of the lease, whichever period is longer. By an amending Ordinance of 1913, additional powers are given to the Administrator in revoking and granting leases.

The various types of leases, licenses, and permits current are as follows :— (i) Agricultural leases; (ii) pastoral leases; (iii) special leases; (iv) leases with right of purchase; (v) tropical products leases; (vi) leases for horsebreeding stations; (vii) licenses; and (viii) pastoral and other permits. (See § 2, 7). The permit system was discontinued at the end of 1911.

Areas held under Lease, License, and Permit. The following table shews the total areas held under lease, license, and permit at the end of the years 1901 and 1913 to 1918 :—

NORTHERN TERRITORY.—AREA HELD UNDER LEASE, LICENSE, OR PERMIT, 1901 AND 1913 TO 1918.

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.	1918.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases	1,067	667	436	436	436	436	436
Pastoral Leases ¹	111,476,240	93,748,100	104,370,160	113,813,329	110,560,129	103,993,600	88,701,440
Other Leases ²	1,176,981	1,762,538	88,637	112,862	109,353	108,387	260,043
Total Leased	112,654,288	95,511,305	104,459,233	113,926,627	110,669,918	104,102,423	88,961,919

1. See Table given on next page.

The following table gives particulars of the areas held under the various types of lease and license as at the end of the years 1917 and 1918, and included in the previous table under the heads of "pastoral leases" and "other leases."

**NORTHERN TERRITORY.—AREAS HELD UNDER LEASE, LICENSE, OR PERMIT,
AT 31st DECEMBER, 1917 AND 1918.**

Particulars.	1917.		1918.	
	No. of Leases.	Area in Acres.	No. of Leases.	Area in Acres.
(UNDER SOUTH AUSTRALIAN ACTS.)				
Pastoral leases	225	51,534,080	224	63,998,080
Pastoral permits	52	9,034,240	54	9,034,240
Annual pastoral leases	2	63,360	2	63,360
Right of purchase leases	3	436	3	436
Agricultural leases	12	1,945	6	1,400
Leases, special purposes	1	2	1	2½
Occupation licenses	19	112	40	216
Gold-mining leases .. .. .	..	..	21	413
Mineral leases .. .. .	..	..	59	2,048
Water leases	4	6,400	5	6,401

(UNDER CROWN LANDS ORDINANCE, 1912.)

Grazing licenses	85	16,465,280	86	16,465,280
Pastoral leases	76	26,896,640	115	24,703,360
Miscellaneous leases	22	84,841	28	168,194
Agricultural leases (cultivation)	8	5,565	} 19	} 3,330
Agricultural leases (mixed farming and grazing)	4	9,362		
Town leases	71	160	72	167

§ 8. Closer Settlement.

1. **Introduction.**—In all the States, Acts have been passed authorising the Governments to repurchase alienated lands for the purpose of cutting them up into blocks of suitable size and throwing them open to settlement on easy terms and conditions. Special Acts have also been passed in several of the States authorising the establishment on particular lines of co-operative communities, village settlements, and labour colonies. Lands may be acquired either compulsorily or voluntarily in New South Wales, Victoria, Queensland, and Tasmania, but only voluntarily in South Australia and Western Australia.

The following table gives particulars up to the latest available date of operations under the Closer Settlement Acts for each State and the whole Commonwealth:—

**CLOSER SETTLEMENT.—TOTAL AREAS ACQUIRED AND ALLOTTED UP TO
30th JUNE, 1918.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Area acquired .. acres	851,522	569,334	785,311	743,191	446,804	75,633	3,471,795
Purchasing price £	2,772,422	4,239,956	1,955,060	2,441,051	421,373	274,563	12,104,425
Farms, &c., { No.	1,649	4,594	2,664	2,709	704*	253	12,573
allotted { acres	774,270	489,348	593,452	692,712	267,008	66,971	2,883,761

* Includes only farms for which Crown Grants have not issued.

The following table shews the areas of private lands acquired in each State in the financial year 1900-01, and at the end of each year from 1913 to 1918 :—

**CLOSER SETTLEMENT.—AREAS OF PRIVATE LANDS ACQUIRED,
1901 AND 1913 TO 1918.**

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 .. ..	..	28,553	132,760	..	46,624	..	207,937
1913	676,439	560,081	664,363*	624,202	446,804	49,476†	3,021,365
1914	685,156	567,687	664,363*	632,715	446,804	60,232†	3,056,957
1915	685,156	564,520	664,363*	611,402	446,804	73,162†	3,045,407
1916	745,883	564,600	664,363*	661,117	446,804	73,320†	3,156,087
1917	747,204	567,943	785,311*	685,217	446,804	75,259†	3,307,738
1918	759,526	565,442	785,311*	685,611	446,804	75,259†	3,317,953

* To the preceding 31st December. † Including 10,382 acres of Crown lands.

2. **Government Loans to Settlers.**—For the purpose of promoting pastoral, agricultural, and similar pursuits, and with the object of assisting settlers in erecting buildings and carrying out improvements on their holdings, general systems have been established in all the States and in the Northern Territory under which financial aid is rendered to settlers by the State Governments. These general systems are more particularly referred to in the section in this book dealing with "Agriculture." In many of the Closer Settlement and similar Acts, however, special provisions have been inserted with the object of lending money to settlers taking up land under these Acts, with which to build homes or effect improvements. The principal features of these provisions are referred to below.

3. **New South Wales.**—Under the Closer Settlement Act of 1901 provision was made for the acquisition of private lands or of Crown lands held under lease, for the purpose of closer settlement. No power of compulsory resumption was conferred by the Act, which was in consequence practically inoperative. Under the Closer Settlement Act of 1904, and subsequent amendments, and the Closer Settlement Promotion Act 1910, the Government is empowered to resume private lands, either by agreement or by compulsory purchase, and to alienate them on favourable terms to persons who desire to settle and make homes for themselves and their families on the soil. Land acquired under the Acts is subdivided into blocks or farms, and by notification in the *Government Gazette* is declared to be a settlement purchase area available for application. The *Gazette* notice also gives all necessary information as to the class and character of the land, and the capital value, area, &c., of each block or farm.

(i) *Closer Settlement Purchase.* Under this tenure a settler may acquire the freehold of the land under a system of deferred payments. A deposit of $6\frac{1}{2}$ per cent. of the notified value of the settlement purchase must be lodged with the application, and a similar amount by way of instalment, paid annually until the purchase-money, together with interest at the rate of $5\frac{1}{2}$ per cent., is paid off. Prior to 1st September, 1917, the deposit and annual instalments ranged from 5 per cent. to 6 per cent., and the interest from 4 per cent. to 5 per cent. Under this system the balance due to the Crown will be paid off in thirty-one years, the holding then becoming a freehold. A condition of residence for five years attaches to every settlement purchase. Under the amending Act of 1918, interest only may be paid in lieu of such instalments for such periods, and subject to such conditions as the Minister may determine. The Minister may also postpone payment conditionally or unconditionally of such interest, or one or more instalments of purchase money, if satisfied of the inability of the holder to pay, provided that the amount owing to the Crown does not exceed the original capital value plus 80 per cent. of the value of improvements effected on the settlement purchase since commencement of title.

(ii) *Closer Settlement Permissive Occupancies.* The Minister may grant permits to occupy any lands within a settlement purchase area which remain undisposed of, subject to certain terms and conditions.

(iii) *Sales by Auction.* Areas within closer settlement districts necessary for township settlement may be set apart by notification in the *Gazette*. Allotments, each of which may not exceed half an acre in extent, within such areas may be sold by auction.

(iv) *The Closer Settlement Promotion Act 1910.* Under this Act any three or more persons or any one or more discharged soldiers within the meaning of the Returned Soldiers' (Amendment) Act 1917, each of whom is qualified to hold settlement purchases and who desire to purchase from the same owner any private lands may, upon entering into an agreement with the owner and subject to valuation by the Advisory Board and the Savings Bank Commissioners, acquire such lands through the Minister on closer settlement conditions. The maximum sum which may be advanced for the purposes of this Act may not exceed £1,000,000 in any financial year.

The following table shews the number and area of farms allotted since the passing of the Act :—

NEW SOUTH WALES.—OPERATIONS UNDER CLOSER SETTLEMENT PROMOTION ACT 1910.

Year.	Farms Allotted.		
	Number.	Area.	Amount Advanced.
		Acres.	£
1910-11	26	10,785	54,131
1911-12	209	84,279	418,941
1912-13	274	107,791	599,145
1913-14	183	62,598	361,351
1914-15	95	35,963	201,163
1915-16	141	61,626	300,103
1916-17	57	28,877	123,330
1917-18	123	56,652	285,317
Total	1,108	448,571	2,343,481

(v) *Areas Acquired and Disposed of.* Up to the 30th June, 1918, forty-two estates had been opened for settlement under the Closer Settlement Acts.

The following statement gives particulars of the aggregate areas opened up to the 30th June, in each year from 1913 to 1918 :—

NEW SOUTH WALES.—CLOSER SETTLEMENT AREAS, 1913 TO 1918.

Year Ended 30th June.	Areas.			Capital Values.		
	Acquired Lands.	Adjoining Crown Lands.	Total.	Acquired Lands.	Adjoining Crown Lands.	Total.
	Acres.	Acres.	Acres.	£	£	£
1913	676,439	87,759	764,198	2,667,203	159,973	2,827,176
1914	685,156	89,540	774,696	2,685,660	163,254	2,848,914
1915	685,156	89,540	774,696	2,685,660	163,254	2,848,914
1916	745,883	91,987	837,870	2,870,116	167,962	3,038,078
1917	747,204	91,996	839,200	2,895,638	168,175	3,063,813
1918	759,526	91,996	851,522	2,947,221	170,259	3,117,480

The total area thus set apart has been divided into 1,708 farms, comprising 824,985 acres, the remaining area being reserved for recreation areas, roads, stock routes, schools, &c.

The following table gives particulars as to the disposal of the farms by closer settlement purchase for the years ended the 30th June, 1913 to 1918 :—

NEW SOUTH WALES.—CLOSER SETTLEMENT ALLOTMENTS, 1913 TO 1918.

Year.	Farms Allotted by Board to Date.			Total Amount received in respect of Settlement Purchases.	Total Number of Applications received.
	Number.	Area.	Value.		
		Acres.	£	£	
1912-13 ..	1,554	724,924	2,767,370	363,425	1,568
1913-14 ..	1,567	734,125	2,806,285	493,795	1,578
1914-15 ..	1,588	742,610	2,834,792	506,073	1,591
1915-16 ..	1,609*	748,573*	2,860,636*	718,660	1,612
1916-17 ..	1,622	759,753	2,905,550	834,485	1,625
1917-18 ..	1,624	760,083	2,907,055	985,863	1,625

* Including 46 Settlement Purchase Farms of 24,943 acres, with a capital value of £110,094, since converted into Homestead Farms.

(vi) *Labour Settlements.* These settlements were founded by the Labour Settlements Acts 1893 and 1894, which were amended and repealed by the Labour Settlements Act 1902. Land might be set apart for lease for a period of 28 years as a labour settlement under the superintendence of a Board of Control. The functions of the Board of Control were to enrol members of the settlement; to make regulations concerning the work to be done; to apportion the work among the members; and to distribute the wages and profits. The Minister was empowered to grant financial assistance to the Board of Control. Only two settlements, those at Bega and Wilberforce, were established under the Act. The Labour Settlements Act 1902 was repealed by the Bega and Wilberforce Labour Settlements Act 1917, which dissolves the Boards of Control, and provides for the settlers applying for the blocks they occupy as Homestead Farms under the Crown Lands Consolidation Act 1913.

The Murrumbidgee Irrigation Act 1910 provides for the acquisition of 1,668,000 acres near Narrandera, in Riverina, for irrigation and other purposes in connection with the Burrinjuck Irrigation Scheme. Part of this area has since been made available.

4. *Victoria.*—(i) *Closer Settlement Act 1915.* The Closer Settlement Act in Victoria is administered by a Board consisting of three persons appointed by the Governor in Council, and entrusted with power to acquire, either compulsorily or by agreement, private lands in any part of the State for the purpose of Closer Settlement. The Board may dispose of all lands acquired, either Crown lands or repurchased lands, on conditional purchase leases either as (a) farm allotments not exceeding £2,500 in value, (b) workmen's homes allotments not exceeding £250 in value, and (c) agricultural labourers' allotments not exceeding £350 in value. The price of the land must cover the cost of the original purchase and the cost of all improvements. Land acquired by the Board may also be sold in small areas in fee simple as sites for churches, public halls, butter factories, creameries, recreation reserves, or other public purposes.

The Board may approve of an agreement between an owner and one or more persons to purchase a farm or farms, not exceeding £2,500 in value. On the property being acquired by the Board, the applicant obtains a lease under Closer Settlement conditions.

(a) *Closer Settlement Leases.* Every conditional purchase lease is for such a term of years as may be agreed upon by the lessee and the Board, and payment must be made with interest at $4\frac{1}{2}$ per cent. per annum by sixty-three half-yearly instalments, or such lesser number as may be agreed upon. Under the Act postponement of payment of instalments may be granted by the Board up to 60 per cent. of the value of improvements. The lessee must personally reside during eight months in each year on his allotment, and for six years he must carry out prescribed improvements. Thereafter he may, with permission, transfer, assign, mortgage or sublet his allotment. After twelve years, if all conditions have been fulfilled, a Crown grant, with the same residence condition as that contained in the lease, will be issued. In the case of workmen's homes allotments the land must be fenced within one year, and a dwelling-house to the value of at least £50 must be erected within the same time; within two years further improvements must be made to the value of at least £25. As regards agricultural labourers' allotments, a dwelling-house to the value of at least £30 must be erected within one year, and within two years the allotment must be fenced. In the case of workmen's homes and agricultural labourers' allotments, the lessee may at any time transfer, assign or sublet with the consent of the Board.

(b) *Advances to Settlers.* The Board may make advances for the purpose of fencing and building dwelling-houses, and is empowered to erect dwelling-houses, outbuildings, or improvements on any allotment at a cost not exceeding £500 for any one allotment. Any sum so expended is repayable, with interest added, by instalments extending over a prescribed period, not greater than twenty years. Provision has also been made for deferring payments in case of hardship, as well as for advances (to the extent of 60 per cent. of the value of the improvements) to enable work to be carried on. Special advances may also be granted to purchase wire netting in rabbit-infested districts.

(c) *Loans to Municipalities.* Loans may be made out of the Closer Settlements Fund for the purpose of carrying out any road-making or other public works within the boundaries of an estate.

(d) *Areas acquired and made available for Closer Settlement.* The following statement shews the operations which have taken place in Victoria under the provisions of the Closer Settlement Acts, 1898 to 1915, up to the 30th June, 1901 and 1913 to 1918 :—

VICTORIA.—CLOSER SETTLEMENT, 1901 AND 1913 TO 1918.
(INCLUDING IRRIGATED AREAS.)

Year ended 30th June.	Total Area Acquired by Government to Date.	Total Cost to Date.	How Made Available for Settlement.						Number of Applications Granted to Date.	Total Receipts to Date.	Repayments of Principal to Date.	Area Available for Settlement.
			Farm Allotments.	Workmen's Homes Allotments.	Agricultural Labourers' Allotments.	Town Allotments.	Roads and Reserves.	Acres.				
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£	Acres.	
1901	28,553	151,566	28,461	69	3,658	44	240	193	7,529			
1913	563,554	4,315,305	498,701	512	3,658	3,564	6,334	3,306	922,842	397,803	64,550	
1914	567,687	4,222,248	500,819	828	8,829	24,903	..	4,112	1,213,593	456,511	60,028	
1915*	567,993	4,230,055	509,454	782	5,111	26,163	..	4,227	1,432,187	528,960	56,525	
1916	568,073	4,230,779	513,281	778	5,547	27,193	..	4,321	1,661,427	569,445	51,878	
1917	571,953	4,277,356	517,467	781	4,720	27,546	4,201	4,509	1,670,959	608,728	43,017	
1918	569,334	4,239,956	502,475	783	4,622	29,577	4,210	4,594	1,974,744	655,380	30,619	

* During 1915, areas previously classed as Workmen's Homes and Agricultural Allotments were transferred to Farm Allotments.

Up to 30th June, 1918, there were also acquired under the Discharged Soldiers' Settlement Act 1917, 38,030 acres, at a cost of £490,253. Applications granted numbered 283; and 31,178 acres were made available for farm allotments, 42 acres being absorbed in roads, &c.

(ii) *The Small Improved Holdings Act 1906.* Under this Act, which has been repealed, 2,822 acres at a cost of £53,568 allotted to 260 settlers were purchased close to towns where industrial employment could be obtained by the settlers.

These settlements are now under the control of the Closer Settlement Board.

(iii) *Village Communities.* The rights of lessees of land in Village Communities are now provided for in the Land Act 1915. Certain unalienated Crown lands were surveyed into allotments of one to twenty acres. The price is not less than twenty shillings an acre. Additional areas may be acquired by conditional purchase. The rent is a nominal one for three years. The total amount of monetary aid advanced up to the 30th June, 1918, was £67,379, of which sum the amount repaid to date was £44,460. After three years a lease may be obtained.

On the 30th June, 1918, there were 449 settlers actually residing, and 130 not residing, but improving, making a total of 579 in occupation. Including wives and children the total number in residence was 1,634.

(iv) *Closer Settlement in the Irrigation Districts.* The movement for closer settlement in the irrigation districts started about nine years ago, when the State adopted the policy of purchasing large areas of land commanded by irrigation schemes, and subdividing them for intensive culture. The management and supervision of these areas were formerly vested in two bodies—the Closer Settlement Board and the Water Supply Commission, but in order to do away with this dual control, the Amending Closer Settlement Act of 1912 (now incorporated in the Closer Settlement Act 1915) was passed, transferring to the Water Supply Commission the entire management, leasing, and general supervision of all such areas within irrigation districts. The State had expended between three and four million pounds on irrigation works, which were not being used to their full extent. Under the Goulburn Scheme, the largest of the State works, less than half the available water was being used. The reason was lack of people to cultivate the land as irrigation requires. Previously, in the various districts the average size of farms varied from 400 to 600 acres, while under irrigation from about 12 to 80 acres will now give employment to a good-sized family and furnish them a comfortable living. The large farms of the irrigation districts could not be properly cultivated by their owners, and the only way to make irrigation a success was to subdivide these holdings and bring in farmers to cultivate the smaller areas. To this end the State offered to buy suitable land in any district having a reliable and ample water supply, at a price fixed by impartial expert valuers, and has purchased 111,714 acres for this purpose, and now administers also the irrigated closer settlements established on Crown lands at Merbein and Nyah, which contain respectively about 7,000 acres and 3,000 acres. This land is sold to settlers on 31½ years' terms with 4½ per cent. interest on deferred payments, under what are known as closer settlement conditions, which, while providing for the liberal terms and advances referred to in this paragraph, require, on the part of the settler or his successor, residence on the block for at least eight months in each year. These payments are calculated on the Credit Foncier basis and are equalised through the whole period. As a result the settlers, by paying an additional 1½ per cent., or 6 per cent. in all, in 31½ years pay off both principal and interest. In the early stages of irrigated closer settlement the State undertook, where desired by settlers, to prepare portions of their holdings for irrigation by grading, seeding, check-banking, and constructing distributory channels, settlers being allowed to pay the cost of such works by instalments extending over ten years. The development of these settlements has, however, now reached such a stage that this is no longer necessary. Contract labour is available to new settlers, and there are facilities for the carrying-out of this work locally, but financial assistance to the same extent is still available. To further help the settler of limited means, the State will build a house and allow twenty years to pay for it. The cash payments required are as follows:—On houses costing less than £100, £10; on houses costing more, the cash payment varies from 12½ to 30 per cent. of the estimated cost. The State also makes loans to settlers equal to 60 per cent. of the value of permanent improvements, these loans to be repaid in twenty years. Five per cent. interest is charged on all advances—whether for houses, preparing land, or money furnished the settler. Last year 135 blocks were granted to new settlers, 87 of whom were discharged soldiers. During the past nine years 85,700 acres have been settled in farms averaging

fifty-two acres each—which are now the homes of 1,661 new settlers. There are also 321 allotments comprising 14,100 acres ready for immediate occupation, and a further 5,000 acres being prepared for settlers. At Shepparton, one of the oldest of these settlements, there are now 255 settlers living where there were originally twenty. At Cohuna, another early settlement, some settlers made such satisfactory progress, that they paid in full their land and other instalments, when their leases, which were for 31½ years, were only some seven years old. In Koyuga there are fifty-two settlers with good houses, many young orchards, fine crops of lucerne and vegetables, where in November 1910 there was not a house, a family, or an acre of cultivated land. Of the total area settled, 27,000 acres are under lucerne, 13,000 under fruit, and 14,000 under other crops. There are now thirteen settlers' homes for every one that existed on these areas when repurchased by the State. One hundred and thirty of the settlers are discharged soldiers.

Houses now being erected are of a better type than the original ones. This has been made possible because the settlers now applying have as a rule more capital than the earlier ones and desire better homes. Reports received regularly from officers in charge of irrigation districts indicate that in nearly all cases the settlers are making good progress on their holdings, and that there is undoubtedly an increasing feeling of security and permanence pervading these settlements.

The war conditions have made the disposal of the products of these settlements a matter of some difficulty. In regard to soft fruits, for instance, there was in the year 1916–17 a very heavy glut, and the position was so critical that the Commission arranged a peach pool for the irrigation closer settlement districts. This was continued until the Government, by obtaining some large war contracts for jam, was able in a great measure to arrange for the absorption of the surplus. In Shepparton district the settlers, in view of the difficulties experienced in disposing of their fruit, requested the Government to advance them a sum under the proposed Fruit Act for the establishment at Shepparton of a fruit-processing factory. The Government assisted as suggested, and the factory is now in operation.

5. *Queensland.*—(i) *Closer Settlement.* Under the provisions of the Act of 1906, private lands for closer settlement may be repurchased by the Crown, either by agreement or compulsorily.

(a) *Compulsory Acquisition.* The owner of an estate in possession, the whole of which is proposed to be taken compulsorily, has the right to retain in one block land of the value of £10,000 to £20,000, according to the value of the whole estate. The maximum sum which may be expended in any one year on the acquisition of land for the purpose of closer settlement is £500,000.

(b) *Disposal of Land.* A sufficient part of the land acquired must be set apart for roads, public reserves, and townships, and, up to the end of 1916, the remainder was proclaimed open for selection as agricultural farms under the Land Act 1910, which repealed the Land Acts 1897 to 1909, and under the Closer Settlement Act Amendment Act of 1913; the term of the lease was 40 years. The rent to be paid for the first year was equal to £10 for every £100 of the purchasing price; and (no payment being required during the second, third, or fourth years) an annual payment of £6 6s. 0d. for every £100, continued from the fifth to the fortieth year, would, at the end of the term, have paid off the principal sum together with interest. From 1st January, 1917, the opening of land for agricultural farm selection has not been allowed. Under the present law, the remainder of the land (after provision for roads, reserves, &c.) is opened for selection as perpetual lease selections at an annual rent fixed by the Minister, but at a rate per cent. of the capital value not more than the rate of interest paid by the Government on the purchase money of the estate of which the land forms part. The deposit of 10 per cent. is abolished, but so also is the provision that no rent need be paid during the second, third, and fourth years of the term. The rent may be reappraised for each period of fifteen years.

(c) *Areas Acquired and Selected.* The following table gives particulars of the operations under the above Acts at the end of the year 1901 and of each year from 1913 to 1917 :—

QUEENSLAND.—CLOSER SETTLEMENT, 1901 AND 1913 TO 1917.

Year.	Number of Estates Acquired.	Total Area Acquired to Date.	Total Amount of Purchase Money.	Total Area Selected to Date. ¹
		Acres.	£	Acres.
1901	15	132,760	335,056	124,710
1913	29	664,363	1,713,165	543,788
1914	29	664,363	1,713,165	559,597
1915	29	664,363	1,713,165	582,788
1916	30	785,311	1,955,060	589,047
1917	30	785,311	1,955,060	587,724

1. In addition, at the end of the year 1917 there were 12,498 acres sold at auction and 3,351 acres retained by the Government for experimental farms and for other sales.

The total area opened for selection up to the end of the year 1917 was 640,400 acres, of which 587,724 acres had been selected by 2,204 selectors. There remained 52,675 acres unselected or reserved. The total amount of rent paid up to the same date was £1,248,612, the amount in arrear being £19,294. At the end of the year 1917 there were 2,204 selectors holding 2,387 agricultural farms, 253 unconditional selections, and five prickly pear selections. In addition, land and improvements to the value of £90,966 had been sold at auction.

(ii) *Group Settlement.* The Special Agricultural Selections Acts 1901 to 1905 were partly repealed by the Amending Act of 1909, which was in its turn repealed by the Land Act 1910. Under the last Act, land may be set apart for members of bodies of selectors who desire to settle in the same locality. The terms and conditions are similar to those in force for single selectors. Every group selection shall be subject to the condition of personal residence during the first five years of the term.

The Special Agricultural Selections Act 1905 provides that financial aid may be granted to all or any of the members of a body of selectors of agricultural homesteads. Advances may also be made to each selector for a value not exceeding £80 for the purpose of buying tools, rations, stock and poultry.

The portions opened for *group settlement* in 1917 numbered 129, and comprised a gross area of 43,728 acres. Up to the end of that year 94 portions, comprising 32,202 acres, valued at £31,521, had been applied for by members of the bodies of settlers for whom they were opened.

6. *South Australia.*—Under the provisions of the Crown Lands Acts the Commissioner may repurchase land for the purposes of closer settlement at a cost not exceeding £600,000 in any two years.

Reference is made on the next page to the provisions of the Irrigation and Reclaimed Lands Act 1908, as consolidated by the Act of 1914, regarding the settlement of reclaimed lands.

(i) *Disposal of Land.* The Crown Lands Act Further Amendment Acts 1915 and 1917 enlarge the value of the blocks into which estates may be subdivided for closer settlement purposes from £2,000 to £5,000 unimproved value. The purchase-money, with interest thereon at 4 per cent. per annum, is payable in 128 half-yearly instalments.

For the first five years, improvements to the value of £3 for every £100 of the purchase money must be yearly effected.

(ii) *Areas Acquired and Selected.* The following table shews the area of land acquired by the Government in South Australia for the purposes of closer settlement, and the manner in which the same has been disposed of under the provisions of the Crown Lands Acts for the years 1902 and 1913 to 1917 :—

SOUTH AUSTRALIA.—CLOSER SETTLEMENT, 1902 AND 1913 TO 1917.

Year.	Area of Lands Repurchased to 31st Dec.	Agreements with Covenants to Purchase.	Total Area Leased as Homestead Blocks.		Perpetual Leases.	Miscellaneous Leases.	Sold.	Remainder Un-occupied, (including Roads).
			Right of Purchase.	Perpetual Lease.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1902	156,481		2,717	3,073	90,128	309	403	59,851
1913	629,574	434,417	818	1,344	50,998	134	61,061	80,802
1914	657,629	476,332	796	1,584	51,863	164	63,964	62,926
1915	666,299	487,853	753	1,579	51,588	164	65,484	58,878
1916	729,963	487,355	733	1,513	52,138	164	66,607	121,453
1917	743,191	501,439	703	1,531	71,896	144	112,642	54,836

During the financial year 1917-18, one property of 394 acres was repurchased. The total area repurchased at 30th June, 1918, was 743,191 acres, the purchase-money being £2,441,052. Of that area 692,749 acres had been allotted to 2,709 persons, the average area to each being 255 acres.

(iii) *Irrigation Areas.* Under the Irrigation and Reclaimed Lands Act 1914, special provisions are made for granting perpetual leases of reclaimed lands. The maximum area of irrigable or reclaimed land one person may hold in any irrigation area is 50 acres, but in the case of partnerships 50 acres may be held by each partner up to a maximum of 150 acres. Land above the irrigating channels is also offered to lessees of irrigable blocks for dry farming, grazing, &c. Each block is offered under perpetual lease, at a rent not less than a sum equivalent to 4 per cent. on the unimproved value of the land, plus the cost of reclaiming. In the case of swamp lands in the reclaimed lands, a drainage rate of from 5s. to 7s. 6d. per acre per annum is payable. On the irrigable land the water rate has been fixed at 30s. per acre per annum for the first four years, after which an amount will be charged sufficient to cover actual cost of supplying water, and the interest on pumping plants, channels, &c. A sliding scale covers both the rent and water rates for the first four years.

Under Part V. of the Act a fund has been constituted called the Lessees of Reclaimed Lands Loan Fund, consisting of money provided by Parliament to be expended by the Department in assisting settlers on the irrigation areas by fencing, clearing and grading their blocks, and constructing irrigation channels and drains and concrete tanks thereon. Such improvements will be undertaken up to a value not exceeding £15 per acre of the irrigable area in each lessee's block, but before the work can be commenced a deposit must be paid equal to 15 per cent. of the Department's estimated value of such improvements.

The total cost of the work, less amount of deposit paid, will be treated as a loan to the lessee, and will be repayable in twenty equal annual instalments, after the expiration of five years, or at any shorter period if so desired by the lessee, current rate of interest being charged.

Any lessee will be permitted to accept the contract for carrying out his own improvements, according to the specifications and estimate of the Department, up to the maximum amount per acre, as mentioned above.

(iv) *Village Settlement.* Out of the reserved lands the Commissioner is directed to set apart for the purpose of village settlement such land as he shall consider fit (a) for horticultural purposes, to be termed "horticultural land"; (b) for agricultural purposes, to be termed "commonage land"; and (c) land whereon any irrigation works are situated.

Land so set apart is to be divided as follows :—Horticultural lands into blocks of as nearly as practicable equal unimproved value, and of about ten acres in extent; and the commonage lands into one or more blocks of such area as the Commissioner may determine, and the lands so set apart in each case form the district of the association. No person may hold more than two blocks. Commonage lands may only be leased to the association on perpetual lease, and all unleased horticultural blocks are under the control of the association. Every member of each association must provide or contribute towards the maintenance and regulation of irrigation works, and the care and cultivation of the commonage lands.

As the Waikerie and Kingston districts were proclaimed irrigation areas under the Irrigation and Reclaimed Lands Acts 1908 and 1909, this would leave only the Lyrup Village Settlement, which is in a better position, both financially and as regards population, than the others.

(v) *Homestead Blocks.* Aboriginal reservations, except those at Point McLeay or Point Pearce, and other suitable lands may be offered as homestead blocks on perpetual lease or lease with a right of purchase. Each block must not exceed £100 in value, and residence by a member of the family for at least nine months of every year is compulsory.

There is now hardly any demand for homestead blocks, persons generally preferring small blocks of repurchased or Crown lands on ordinary conditions. The system appears to be of value only in centres of population where work can be obtained, and within a reasonable distance of a school.

(a) *Advances to Blockholders.* Advances up to £50 may be made by the Commissioner to any homestead blockholder who has complied with the conditions of his lease or agreement, to assist in erecting permanent buildings on the blocks, or other improvements. Advances must be repaid, with interest at 4 per cent. per annum, by twenty equal instalments, commencing twelve months from the date of advance. The Commissioner may, in case of hardship, extend the time of repayment, such deferred payments bearing interest at 5 per cent. per annum. The total amount advanced up to the 30th June, 1918, was £41,376, of which £39,448 had been repaid.

(b) *Particulars of Homestead Blocks.* The total number of leases and agreements of which purchase had been completed to the 31st December, 1917, was 2,326, comprising 35,009 acres, at a purchase price of £84,816, or an average of £2 8s. 0d. per acre, the average of each holding of which purchase was completed being 15 acres.

7. *Western Australia.*—Under the Agricultural Lands Purchase Act 1909, which repealed and consolidated the Agricultural Lands Purchase Acts 1896 to 1904, sums not exceeding in the aggregate £400,000 may be expended on the repurchase of Crown lands near the railways, suitable for immediate cultivation.

(i) *Acquisition of Land by the Government.* For the purpose of carrying out the provisions of the Acts, a Land Purchase Board has been constituted. Advised by the report of the Board, the Minister, with the approval of the Governor, may make a contract for the acquisition of the land by surrender at the price fixed by the Board, or at any lesser price.

(ii) *Sale of Repurchased Land.* After reservation of part of the repurchased land for public purposes, the remainder is thrown open for selection. The maximum quantity held by one person must not exceed 1,000 acres; in special cases 2,000 acres.

(iii) *Conditions of Sale to Selectors.* The maximum selling price of any repurchased land is equal to 105 per cent. of the actual cost of the land plus the cost of any improvements made upon it. A lease for twenty years is issued at a rent, the half-yearly instalments of which are to be at the rate of £3 17s. 9d. for each £100 of the selling price. Improvements must be made to the value of one-fifth of the purchase-money every two years of the first ten years of the lease. One-half of the land must be fenced within the first five years and the whole within ten years. Loans may be granted to selectors under the provisions of the Agricultural Bank Acts.

(iv) *Areas Acquired and Selected.* The transactions conducted under the provisions of the Agricultural Lands Purchase Acts are shewn for 1901 and for each year from 1913 to 1918 in the subjoined table :—

WESTERN AUSTRALIA.—CLOSER SETTLEMENT, 1901 AND 1913 TO 1918.

* Year.	Total Area Acquired.	Total Purchase-money.	Roads, Reserves, &c.	Total Area made available for Selection.		Area Selected during the Year.	Total Area occupied to Date.	Balance of Area available for Selection.	Total Revenue received to Date.
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	£
1901 ..	46,624	52,764	1,459	45,165	4,295	37,235	7,930		14,451
1912-13	446,804	421,333	12,799	290,670	10,835	270,945	19,725		175,245
1913-14	446,804	421,333	128,605	315,133	2,451	268,260	46,873		210,675
1914-15	446,804	421,373	15,825	430,979	4,122	272,190	158,789		239,409
1915-16	446,804	421,373	15,825	430,979	342	271,242	159,737		268,232
1916-17	446,804	421,373	15,825	430,979	77	269,648	161,331		295,740
1917-18	446,804	421,373	15,825	430,979	2,813	267,008	163,971		319,759

* The figures for 1901 are up to 31st December. For subsequent years they are given as up to 30th June.

On the 30th June, 1918, the total expenditure, exclusive of purchase-money but including interest, was £175,751, which left a balance of £144,008. At the same date the amount invested as sinking fund was £138,029.

(v) *Workingmen's Blocks.* Any person not already holding land within the State is entitled to obtain a lease of lands which have been surveyed and thrown open for selection as workingmen's blocks. The maximum area that may be selected by one person is, if within any town or goldfield, half an acre, or five acres elsewhere. The price is not less than twenty shillings per acre, payable in ten years by half-yearly instalments. Residence and improvement conditions must be fulfilled. At the expiration of the lease, or at any time after five years from the date of the commencement of the lease, upon compliance with all conditions and upon payment of the full purchase-money and fee, a Crown grant will be issued. No person who has once held a workingman's block is allowed to select another, except under very special circumstances.

The following table shews the number and area of accepted applications for workingmen's blocks during each year, as well as the total number and area in existence at the end of the year 1901 and for each year from 1913 to 1918 :—

WESTERN AUSTRALIA.—PARTICULARS OF WORKINGMEN'S BLOCKS,
1901 AND 1913 TO 1918.

Year	..	1901.	1913.*	1914.*	1915.*	1916.*	1917.*	1918.*
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NUMBER AND AREA OF ACCEPTED APPLICATIONS DURING YEAR.

Number ..	2	1	1	Nil	1	Nil	Nil	Nil
Area in Acres	6	4	1	Nil	1	Nil	Nil	Nil

NUMBER AND AREA OF BLOCKS OCCUPIED AT END OF YEAR.

Number ..	7	230	168	189†	176	134	108
Area in Acres	31	617	590	584	565	510	482

* For financial year ended 30th June. † Increase due to cancelled leases being reinstated.

During the years 1907 to 1911 residential blocks on the goldfields were made available as workingmen's blocks, instead of under residential lease, as before, and since 19th October, 1911, the system of leasehold has been reverted to.

8. **Tasmania.**—The principles of closer settlement were not introduced into Tasmania until the Closer Settlement Act of 1906 was passed. Under this Act, which was amended in 1908 and 1911, and consolidated in 1913, power is given to the Minister for Lands, on the recommendation of the Closer Settlement Board, to purchase compulsorily or by agreement private land in any part of Tasmania for the purpose of closer settlement, and also to deal with and dispose of any unoccupied Crown land for the same purpose.

(i) *Disposal of Land.* Lands so brought under the Act are subdivided into farm allotments of a suitable size—not exceeding £4,000 in value—and are disposed of by way of lease for 99 years. The rental is determined by the Board at a rate not exceeding 5 per cent. per annum on the capital value of the land. Any lessee who has fulfilled the conditions under the Act may, after the expiration of ten years of the term of the lease, purchase the land leased to him. The Minister has power to dispose of the fee simple of such land in any estate which is considered unsuitable for closer settlement.

A lessee must improve his holding to a value equal to 2½ per cent. on the capital value of the land in each of the first ten years of the term of his lease, and he must, within two years of the date of the lease, personally reside on his allotment during at least eight months of each of the following nine years. Provision is made for reserving a proportion of the allotments thrown open, and leasing the same, under special terms and conditions, to *bona fide* immigrants.

(ii) *Advances to Settlers.* The total advance by the Government in aid of the cost of effecting improvements to any one lessee must not exceed pound for pound of the sum expended by him in building and other improvements. Such advances must be repaid, together with interest at 5 per cent., in equal half-yearly instalments within a period not exceeding 21 years.

(iii) *Special Sales.* The fee-simple of land acquired may be disposed of by sale on the recommendation of the Board as sites for churches, public halls, dairy factories, fruit-preserving factories, mills, or creameries. The area sold may not exceed one acre in the case of a church or public hall, or five acres in other cases.

(iv) *Areas Acquired and Selected.* Up to the 30th June, 1918, twenty-four areas had been opened up for closer settlement. Particulars are given in the following statement :—

TASMANIA.—CLOSER SETTLEMENT, 1909 TO 1918.

Year.	Number of Farms made Available.	Number of Farms Allotted.	Area	Rental of	Total Area
			of Farms Allotted.	Farms Allotted.	Purchased.
			Acres.	£	Acres.
1909	49	45	9,117	789	7,902
1910	9	15	1,872	539	1,362
1911	37	36	4,965	168	5,143
1912	11	7	3,912	563	6,147
1913	18	21	5,652	1,134	3,745
1914	24	17	8,975	1,959	10,756
1915	36	53	15,153	4,393	12,930
1916	5	11	1,729	476	157
1917	5	15	3,900	993	1,939
1918 .. ..	..	8	2,366	205	Nil

The total purchase money paid by the Government up to the 30th June, 1918, was £274,563.

9. **Northern Territory.**—In the Northern Territory, a Board is constituted to deal with assistance to settlers. During 1917–18, the number of applications received and dealt with by the Board was 19. The total amount of loans granted during the year was £695, of which £116 has been repaid. A sum of £472 was also repaid on account of loans previously granted, and interest on the same. On 30th July, 1918, the total amount outstanding was £7,765.

§ 9. Occupation of Crown Lands under Leases and Licenses Issued by Mines Departments.

1. **Introduction.**—Leases and licenses for the occupation of Crown lands for mining and other purposes are issued by the Mines Departments in all the States. Such leases and licenses may be issued with respect to all Crown lands, whether otherwise unoccupied or whether occupied also under leases and licenses issued by the Lands Departments. Certain Crown lands, such as reserves, &c., are, however, subject to special conditions.

(i) *Mining on Private Lands.* Certain of the Crown lands of the several States have been alienated from time to time, subject to various reservations in respect of gold and other minerals which might afterwards be found therein. Other lands have been alienated without such reservation, but as the mineral gold does not pass from the Crown unless by express conveyance, it has remained the property of the State on all alienated lands. All lands alienated or in process of alienation are open to mining for gold; but to mining for other minerals, those lands only are open, in respect of which the rights are reserved in the grants. There are, however, generally certain reservations, such as those with reference to town or village lands and lands which have been built on or are used for special purposes. The working of minerals on private lands is regulated in the several States either by special Acts or by special provisions of the Acts relating to mining.

(ii) *Leases and Licenses Issued and Total Areas of Crown Lands Occupied.* The following tables shew the total areas of Crown lands for which leases and licenses for mining purposes were issued in each State during 1901, and for each year from 1913 to 1917 inclusive, and also the total areas of Crown lands occupied for mining purposes at the end of each year during the same period:—

CROWN LANDS, LEASES AND LICENSES FOR MINING PURPOSES, 1901 AND 1913 TO 1917.

Particulars.	N.S.W.	Victoria. ¹	Q'land. ²	S. Aust. ³	W. Aust. ³	Tas.	C'wealth.
AREAS FOR WHICH LEASES AND LICENSES ISSUED.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901	50,349	..	55,698	93,985	37,593	18,125	255,750
1913	25,154	36,141	146,366	244,528	62,773	15,534	530,496
1914	31,573	12,774	126,160	766,866	29,127	15,123	981,623
1915	14,219	10,103	56,518	965,596	37,989	13,919	1,098,344
1916	40,616	7,173	31,106	557,911	23,448	9,306	669,560
1917	72,334	7,618	15,842	268,749	28,160	7,515	400,218
TOTAL AREA OCCUPIED AT END OF YEAR.							
1901	134,209	..	124,182	14,140	66,682	50,362	4389,575
1913	219,488	123,320	285,966	412,693	149,801	45,913	1,237,181
1914	230,493	119,404	283,704	805,889	128,609	49,963	1,618,062
1915	224,621	108,773	242,196	1,012,427	145,920	53,060	1,786,997
1916	224,593	97,532	218,312	670,890	138,157	53,462	1,402,946
1917	231,981	88,599	221,647	274,003	113,656	54,391	984,277

1. Including private lands, leases, and water right licenses only. 2. Exclusive of lands held under miners' rights only. 3. Exclusive of miners' rights. 4. Excluding Victoria.

2. **New South Wales.**—Under the provisions of the Mining Act 1906 and the regulations made thereunder, Crown lands may be occupied for mining or other purposes by virtue of (i) miners' rights; (ii) business licenses; (iii) authorities to prospect; or (iv) leases.

A description of the conditions under which these licenses and leases are granted may be found in previous issues of the Year Book. (See Year Book No. 6, p. 307.)

(i) *Particulars of Leases and Licenses Issued, 1917.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1917 :—

NEW SOUTH WALES.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT DURING YEAR 1917.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
<i>Leases—</i>	Mining Act 1906	To mine for—	Acres.
	" "	Gold	926
	" "	Minerals other than coal	5,082
	" "	Coal	7,757
	Mining Act 1906 (Dredging)	Leases (mining purposes)	207
<i>Other forms of occupancy—</i>	" " "	Gold	} 384
	" " "	Minerals other than gold	
<i>Total ..</i>	.. ..	Authorities to prospect	57,978
		.. ..	72,334

(ii) *Leases and Licenses Issued and Areas Occupied.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total areas of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1913 to 1917 inclusive :—

NEW SOUTH WALES.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT, 1901 AND 1913 TO 1917.

Purposes for which Issued or Occupied.	1901.	1913.	1914.	1915.	1916.	1917.
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LEASES AND LICENSES ISSUED.

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	2,272	4,253	4,047	3,657	2,558	1,310
Mining for other minerals	47,990	14,248	26,590	9,741	13,509	12,839
Authorities to prospect .. ..	..	6,385	134	439	24,036	57,978
Other purposes	87	268	802	382	513	207
Total	50,349	25,154	31,573	14,219	40,616	72,334

TOTAL AREAS OCCUPIED.

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	6,942	12,623	12,832	11,098	10,767	9,422
Mining for other minerals	126,885	198,415	212,864	207,812	207,595	216,399
Authorities to prospect .. ..	..	3,989	10	15	218	40
Other purposes	382	4,461	4,787	5,696	6,013	6,120
Total	134,209	219,488	230,493	224,621	224,593	231,981

3. *Victoria.*—The occupation of Crown lands for mining and auxiliary purposes in this State is regulated by the Mines Act 1915. The Department of Mines and Forests is authorised to issue mining leases (gold-mining, mineral, and dredging), also licenses

(searching, tailings, and water-right), while miners' rights and business licenses are issued by the Treasury Department, and residence areas are registered by local mining registrars. A description of the conditions governing the issue of these leases and licenses will be found in previous editions of the Year Book. (See Year Book No. 6, p. 308.)

Licenses of auriferous lands not for mining purposes may be issued by the Lands Department.

Leases and Licenses Issued and Areas Occupied for Mining. Particulars of leases and licenses for mining purposes of Crown lands alone are not available, the official returns including also private lands. During the year 1917 the number of mining leases, licenses, &c., issued was 126, covering an area of 7,618 acres; the rent, fees, &c., received thereon amounted to £905. No particulars are available as to the total area of either Crown or private land occupied for mining purposes.

4. **Queensland.**—The occupation of the Crown lands for mining purposes in this State is regulated by the Mining Acts 1898 to 1902, the Mining for Coal and Mineral Oil Act 1912, and the Miners' Homestead Leases Act 1913. Under these Acts the Department of Mines is authorised to issue (i) miners' rights; (ii) mining leases; (iii) mining leases and licenses for coal and mineral oil; and (iv) miners' homestead leases.

The conditions which govern the issue of miners' rights, mining leases, and miners' homestead leases are described in previous issues of the Year Book. (See Year Book No. 6, p. 309).

Mineral leases for coal and mineral oil may be granted for a term of 21 years at an annual rent of sixpence an acre, together with a royalty, according to the distance the lease is from a seaport or other place of delivery, of twopence to threepence per ton of coal raised during the first five years of the lease, and of fourpence to sixpence per ton during the remainder of the term. A lease for mineral oil with a maximum area of 320 acres may be granted for a term of 21 years at an annual rental of sixpence per acre, with a royalty of 5 per cent. of the value of all crude oil produced. Licenses to occupy not more than 2,560 acres may be granted to any person desiring to prospect Crown lands for coal and mineral oil upon payment of one penny for every acre comprised in the application.

The "Mining on Private Land Act 1909" authorises the granting of leases, &c., on and under private land, under conditions as to compensation, &c.

(i) *Particulars of Leases and Licenses Issued, 1917.* The subjoined table gives particulars of the leases and licenses of Crown lands issued for mining purposes during the year 1917:—

QUEENSLAND.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT DURING YEAR 1917.

Lease or License.	Mining Leases.				Miners' Homestead Leases.	Coal Prospecting Licenses.	Miscellaneous Holdings.
	To mine for gold.	To mine for minerals other than gold.	Tramways	Buildings and machinery.			
Purpose for which issued.					Residence, business, &c.	To prospect for coal.	Mining, residence, &c.
Area in acres	479	1,372	..	..	11,280	2,711	*10,000

* Approximate.

(ii) *Particulars of Areas Occupied.* The following table shows the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901 and from 1913 to 1917 inclusive.

**QUEENSLAND.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT,
1901 AND 1913 TO 1917.**

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.
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LEASES AND LICENSES ISSUED DURING YEAR.*

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	3,581	1,055	356	581	102	479
Mining for other minerals	7,142	7,248	10,895	9,391	2,087	1,372
Other purposes	44,975	138,072	114,909	46,546	28,917	13,991
Total	55,698	146,375	126,160	56,518	31,106	15,842

TOTAL AREA OCCUPIED AT END OF YEAR.*

Gold mining	11,296	5,915	5,479	4,736	3,508	2,882
Mining for other minerals	23,113	34,711	39,205	43,389	39,799	39,754
Other purposes	89,773	245,340	239,020	194,071	175,005	179,011
Total	124,182	285,966	283,704	242,196	218,312	221,647

* Exclusive of lands held under miners' rights only.

5. **South Australia.**—In this State leases and licenses for mining purposes are issued by the Department of Mines under the authority of the Mining Act 1893, and amending Acts. Under these Acts mining and prospecting are permitted in virtue of (i) miners' rights; (ii) mining leases; (iii) coal or oil leases; and (iv) miscellaneous leases, and in addition occupation of Crown lands is permitted by virtue of (v) business claims, and (vi) occupation licenses.

The conditions which govern the issue of these various leases and licenses have been described in previous issues of the Year Book. (See Year Book No. 6, p. 311.)

(i) *Particulars of Leases and Licenses.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1917 :—

**SOUTH AUSTRALIA.—LEASES AND LICENSES ISSUED BY THE MINES
DEPARTMENT DURING YEAR 1917.**

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
<i>Leases</i>	Mining Act 1893	To mine for—	Acres.
<i>Mineral claims</i> .. ..	.. ..	Gold and other metals and minerals	977
<i>Licenses</i>	Mining Act Amendment Act 1900	To search for precious stones, mineral phosphates, oil, rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State	19,445
<i>Occupation licenses</i>	Mining Act 1893	Occupation by miners	248,320
Total .. ..	.. ..	.. ..	7
			268,749

(ii) *Leases and Licenses Issued and Areas Occupied.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1913 to 1917 inclusive :—

SOUTH AUSTRALIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT, 1901 AND 1913 TO 1917.

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.
LEASES AND LICENSES ISSUED.*						
Gold mining	Acres. 1,377	Acres. 312	Acres. 625	Acres. 356	Acres. 83	Acres. 215
Mining for other minerals ..	92,587	244,204	766,213	965,226	557,819	268,527
Other purposes	21	12	28	14	9	7
Total	93,985	244,528	766,866	965,596	557,911	268,749

TOTAL AREAS OCCUPIED.*

Gold mining	14,140	1,419	1,581	1,840	1,505	1,509
Mining for other minerals ..	..	411,175	804,205	1,010,474	669,281	272,385
Other purposes .. ..	..	99	103	113	104	109
Total	14,140	412,693	805,889	1,012,427	670,890	274,003

* Exclusive of miners' rights.

The following table shows the total area occupied (exclusive of miners' rights) at the end of the year 1917, classified according to the nature of the holding :—

SOUTH AUSTRALIA.—TOTAL AREA UNDER MINING ACTS, 1917.

Nature of Holding.	Number.	Area.	Nature of Holding.	Number.	Area.
Mineral leases	305	Acres. 14,314	Search licenses	118	Acres. 217,647
Gold leases	83	1,509	Coal and oil claims ..	20	12,800
Gold dredging leases ..	..	..	Gold claims	3	10
Miscellaneous leases ..	62	12,994	Coal and oil leases ..	4	1,360
Mineral claims	401	13,260	Total	1,214	274,003
Occupation licenses ..	218	109			

6. **Western Australia.**—The issue of leases and licenses by the Mines Department is regulated by the Mining Act 1904. Under this Act Crown lands may be occupied by virtue of (i) miners' rights; (ii) mining leases; and (iii) miners' homestead leases.

The conditions governing the issue of these leases and licenses are described in previous issues of the Year Book. (See Year Book No. 6, p. 312.)

(i) *Particulars of Leases and Licenses Issued, 1918.* The following table gives particulars of mining leases and licenses of Crown lands issued during 1918 :—

WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT, 1918.*

Particulars.	Gold Mining.	Minerals other than Gold.	Miners' Homesteads.	Miscellaneous.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.
Leases ..	3,181	1,284	528	81	5,074
Licenses ..	9,181	11,697	..	118	20,996

* Exclusive of miners' rights.

(ii) *Particulars of Areas Occupied.* The following table shews the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901 and from 1913 to 1918 inclusive :—

WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT, 1901 AND 1913 TO 1918.

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.	1918.
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LEASES AND LICENSES ISSUED DURING YEAR.*

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining ..	17,454	20,657	18,070	26,162	14,954	12,489	12,362
Mining for other minerals ..	19,281	40,111	9,434	9,389	6,647	14,819	12,981
Other purposes ..	858	2,005	1,623	2,438	1,847	852	727
Total ..	37,593	62,773	29,127	37,989	23,448	28,160	26,070

TOTAL AREA OCCUPIED AT END OF YEAR.*

	40,525	30,464	26,941	30,532	24,391	22,569	19,184
Gold mining ..	40,525	30,464	26,941	30,532	24,391	22,569	19,184
Mining for other minerals ..	14,091	71,291	57,495	70,146	69,405	48,778	49,952
Other purposes ..	12,066	48,046	44,173	45,242	44,361	42,309	45,241
Total ..	66,682	149,801	128,609	145,920	138,157	113,656	114,377

* Exclusive of miners' rights.

7. *Tasmania.*—Under the provisions of the Mining Act 1917, Crown lands in this State may be occupied for mining and auxiliary purposes by virtue of (i) prospectors' licenses; (ii) miners' rights; (iii) mining leases; and (iv) miscellaneous licenses. Business and residence licenses within mining areas may be issued by the Lands Department.

A description of the conditions under which these leases and licenses are issued may be found in previous editions of the Year Book. (See Year Book No. 6, p. 314.)

(i) *Particulars of Leases and Licenses Issued, 1917.* The following table shews particulars of leases and licenses of Crown lands, exclusive of prospectors' licenses and miners' rights, issued by the Mines Department during the year 1917 :—

**TASMANIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT
DURING 1917.***

Mineral.	No.	Area.	Mineral.	No.	Area.
		Acres.			Acres.
Asbestos .. ..	..	..	Silver	5	224
Barytes	3	30	Slate	4	717
Clay	2	11	Tin	106	1,598
Coal	6	1,000	Wolfram .. ..	..	..
Copper	8	474	Dredging claims	2	25
Gold	18	294	Machinery sites .. ..	..	..
Manganese .. ..	..	..	Mining easements	4	12
Minerals	34	1,327	Water rights	8	8
Osmiridium	1	23			
Scheelite	1	10			
Silica	1	20	Total	203	5,773

* Exclusive of prospectors' licenses and miners' rights, which are issued by officers in different districts throughout the State, and as to which particulars are not available.

(ii) *Leases and Licenses Issued and Areas Occupied.* The following table gives particulars of the areas of Crown lands for which leases and licenses (exclusive of prospectors' licenses and miners' rights) were issued during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1913 to 1918 inclusive :—

**TASMANIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT,
1901 AND 1913 TO 1918.***

Particulars.	1901.	1913.	1914.	1915.	1916.	1917.	1918.
LEASES AND LICENSES ISSUED.*							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	1,067	529	1,354	520	684	784	294
Mining for other minerals	17,058	14,444	13,588	13,211	8,203	6,630	5,459
Other purposes .. ..	..	561	181	188	419	101	20
Total	18,125	15,534	15,123	13,919	9,306	7,515	5,773
TOTAL AREAS OCCUPIED.*							
Gold mining	3,394	988	2,130	2,026	1,692	1,761	657
Mining for other minerals	46,968	42,360	44,593	48,330	48,637	49,742	43,063
Other purposes .. ..	..	2,565	3,240	2,704	3,133	2,888	2,880
Total	50,362	45,913	49,963	53,060	53,462	54,391	46,600

* See note to preceding table.

8. **Northern Territory.**—The granting of leases and licenses for mining purposes in the Northern Territory is under the control of the Administrator. The area of land held under Mining Regulations in the Northern Territory has been previously referred to in § 7 of this chapter (page 260).

§ 10. Resumption by Crown of Alienated Lands.

1. **General.**—Under various Acts, alienated lands may be compulsorily resumed by the Crown in the several States for certain purposes, generally connected with works of a public nature. Resumptions for closer settlement purposes have already been referred to (see § 8 above). In most of the States there are Lands Clauses or similar Acts providing the machinery, and indicating the procedure to be adopted in assessing the compensation to be paid by the Crown to private owners in cases where the parties have failed to agree as to the amount to be paid. The provisions of these Acts are generally incorporated in the special Acts specifying the purposes for which alienated lands may be resumed. Lands leased for pastoral purposes may generally be resumed by the Crown on short notice. *The lessee is ordinarily entitled to compensation for land resumed, for loss or depreciation in value of the lease caused by such resumption, and for improvements.*

(a) *New South Wales.* Alienated lands may be recovered by the Crown for authorized works and certain public purposes under the provisions of the Public Works Act 1900, and in other cases may be acquired by the Crown by purchase, gift, or surrender under Executive authority. Alienated lands required for public roads may be resumed under the Public Roads Act 1902, and if containing gold may be resumed for mining under section 72 of the Mining Act 1906. Lands dedicated or granted by the Crown for public purposes may be resumed under Section 25 of the Crown Lands Consolidation Act 1913, and section 1 of the Public Trusts Act 1897. Surrender and exchange of lands alienated or in process of alienation may be carried out under section 195 of the Crown Lands Consolidation Act 1913.

(b) *Victoria.* In Victoria lands may be resumed in accordance with the provisions of the Lands Compensation Act 1915, the Public Works Act 1915, the Railways Act 1915, the Land Act 1915, the Local Government Act 1915, the Water Act 1915, and the Forests Act 1915.

(c) *Queensland.* In this State alienated lands may be resumed under the provisions of the Public Works Land Resumption Acts 1906 to 1917 for any of the purposes specified in section 4 of that Act.

(d) *South Australia.* In this State the principal Acts under which land is repurchased for public works are the Railway Commissioners Act 1887, the Water Conservation Acts 1886, 1889, and 1900, the Waterworks Act 1882, and the Sewers Act 1878.

(e) *Western Australia.* In Western Australia private lands may be resumed under the provisions of the Land Act 1898, the Roads Act 1902, and the Public Works Act 1902.

(f) *Tasmania.* The procedure for resuming land when required for road purposes is as follows :—

When provision is made by Parliament for a Public Works vote for any road, or when an amount is available from other sources, as under the Crown Lands Act (under which a proportion of the amount paid as purchase money is set aside for road purposes), application is made to the owner of the property through which the road is to pass. In most cases either land is given free or a price is agreed on between the owner and the officers of the Department. The purchase-money, with cost of necessary survey, is charged against the provision as referred to above, the land is surveyed and proclaimed under the provisions of the Lands Vesting Act 1894. In case of it being impossible to settle the matter by arrangement with the owner, the land can be acquired by arbitration under the Lands Clauses Act, which is incorporated with the Public Works and Crown Lands

Acts, but since the passing of the Lands Resumption Act 1910 it is possible to acquire it compulsorily without waiting for the usual formalities. Under this Act a notification is given to the owner, the land is surveyed, and then resumed by notification in the *Gazette*, on the publication of which the fee simple of the land vests at once in the Crown absolutely. The owner is then called upon to submit his claim, and the amount can be settled either by arbitration or by a court of competent jurisdiction in accordance with the provisions of the Lands Resumption Act. This procedure under the Lands Resumption Act is now becoming much more general in cases where the land cannot be acquired by arrangement, and it is expected that the effect of the operation of the Act will be to the advantage of the Government and consequently of the public, in enabling land to be acquired more economically than under the former practice. The local bodies, *i.e.*, the municipalities, have also power to acquire land under the provisions of the Local Government Act, but in practice it has been found most convenient for the procedure to be carried out by the Public Works Department on behalf of the local bodies, and this ensures the title being vested in the Crown, which gives uniformity of practice, and has also the effect that inquiry made as to title at the Government office shews at once the land that has been acquired.

2. Areas Resumed.—The subjoined table shews, so far as particulars are available, the areas of private lands resumed, exclusive of resumptions for closer settlement purposes, in each State during 1901 and 1913 to 1917 :—

AREAS OF PRIVATE LANDS RESUMED BY THE CROWN, 1901 AND 1913 TO 1917.

(EXCLUSIVE OF RESUMPTIONS FOR CLOSER SETTLEMENT.)

Year.	N.S.W.*	Victoria.**	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ..	7,864	52	26	†	91	120	8,153†
1913 ..	2,363	†	79	†	†	†	†
1914 ..	527	†	..	†	†	†	†
1915 ..	1,997	†	84	†	†	492	†
1916 ..	1,619	†	401	†	†	†	†
1917 ..	6,737	†	443§	†	†	†	†

* To 30th June. ** Exclusive of resumptions for railway purposes, which for the years 1901 to 1906 inclusive amounted to 13,081 acres. † Not available. ‡ Exclusive of South Australia. § Including 361 acres resumed for soldier settlement purposes. In addition, there was resumed by various local authorities, 45 acres; and by the Water and Sewerage Board, 83 acres.

§ 11. Alienation and Occupation of Crown Lands in the Several States.

1. Introduction.—The tables given in the previous parts of this section shew separately the areas alienated, in process of alienation, and occupied under various tenures in the several States. The tables given below shew collectively the general condition of the public estate in each State, having regard to (a) the area alienated absolutely, which includes free grants, sales, and conditional purchases for which grants have been issued, the conditions having been complied with; (b) the area in process of alienation, comprising holdings for which the fee simple has not yet been alienated, but which are in process of sale under systems of deferred payments; (c) the area occupied under all descriptions of leases and licenses; and (d) the area unoccupied, which, ordinarily, includes roads, permanent reserves, forests, &c. In some cases, however, lands which are permanently reserved from alienation are occupied under leases and licenses, so that in such

cases the areas reserved are comprised in class (c) and not in class (d). Particulars of leases and licenses of reserved areas, as distinguished from leases and licenses of other lands, are not available. It should be observed that in many cases lands occupied under leases or licenses for pastoral purposes are held on short tenures only, and could thus be made available for settlement practically whenever required.

2. **New South Wales.**—The total area of the State of New South Wales (exclusive of Commonwealth Territory) is 198,036,500 acres, of which on the 30th June, 1918, 40,855,172 acres, or about one-fifth, were alienated absolutely; 20,470,027 acres, or about one-tenth, were in process of alienation; 116,391,054 acres, or upwards of three-fifths, were occupied under Lands Department, Western Land Board, or Mines Department leases and licenses; and the remaining 20,320,247 acres, or about one-tenth, were unoccupied. The next table shews the areas alienated, in process of alienation, held under leases and licenses, and unoccupied, in 1901 and from 1913–14 to 1917–18.

During the year 1917–18, a total area of 843,228 acres became available for Crown leases, homestead farms, suburban holdings, additional holdings, &c. Of this area, 48 acres were made available for irrigation farms and allotments, and 53,283 acres were acquired under the Closer Settlement Promotion Act. In addition, 185,431 acres were made available for soldiers' settlement.

**NEW SOUTH WALES.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 AND 1913 TO 1918.***

Particulars.	Area in Acres.					
	1901.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
1. Alienated.						
Granted and sold by private tender and public auction, at prices ranging from five to twenty shillings per acre, prior to 1862	7,146,579	7,146,579	7,146,579	7,146,579	7,146,579	7,146,579
Sold by auction and other sales, 1862 to date	14,638,888	14,914,336	14,914,920	14,916,901	14,917,287	14,922,516
Conditionally sold, 1862 to date	4,212,189	15,960,930	16,264,942	16,571,958	16,929,786	17,318,124
Granted under Volunteer Land Regulations, 1867 to date	168,545	172,198	172,198	172,198	172,198	172,198
Granted for public and religious purposes	241,968	235,622	236,134	238,560	239,339	239,840
Homestead grants	35,385	1,396,911	1,365,719	1,317,120	1,256,036	1,055,915
Total area alienated	26,443,554	39,826,576	40,100,492	40,363,316	40,661,225	40,855,172
2. In Process of Alienation.						
Under system of deferred payments	20,044,703	17,837,702	18,035,210	18,315,181	18,693,915	19,225,824
Under system of homestead selections (including leases converted, but excluding grants issued)	1,550,985	†	†	†	†	†
Closer settlement purchases .. .. .	..	999,579	1,029,408	1,094,475	1,153,822	1,244,203
Total area in process of alienation	21,595,688	18,837,281	19,064,618	19,409,656	19,847,737	20,470,027
3. Held under Leases and Licenses.						
Total under Lands Department and Western Land Board	126,921,161	122,085,796	121,565,598	118,641,247	117,015,359	116,159,073
Mineral and auriferous leases and licenses (Mines Department)	134,209	219,488	230,493	224,621	224,593	231,981
Total leases under all Government Departments	127,055,370	122,305,284	121,796,091	118,865,868	117,239,952	116,391,054
4. Unoccupied	23,543,468	17,067,359	17,075,299	19,397,660	20,287,586	20,320,247

Area of State (exclusive of Commonwealth Territory)—198,036,500 acres.

* The figures for 1901 are up to the 31st December, while for the other years given they are up to the 30th June. † Now included under Homestead grants.

3. *Victoria*.—The total area of the State of Victoria is 56,245,760 acres, of which 24,427,467 acres, or about three-eighths, had been alienated absolutely up to the end of the year 1917; 8,096,052 acres were in process of alienation under deferred payments; and 12,383,810 acres were occupied under leases and licenses (exclusive of leases and licenses held under the Mines Department). The following table shews the areas alienated and in process of alienation, together with the areas reserved, leased, and available for occupation at the end of the year 1901 and from 1913 to 1917 :—

VICTORIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 AND 1913 TO 1917.

Particulars.	Area in Acres.					
	1901.	1913.	1914.	1915.	1916.	1917.
1. <i>Alienated</i>	20,066,875	24,009,440	24,138,965	24,256,222	24,345,425	24,427,467
2. <i>In Process of Alienation</i> —						
Exclusive of Mallee, &c. ..	3,587,668	1,971,614	2,004,248	2,025,172	2,069,321	2,059,101
Mallee Lands	87,806	5,165,799	5,334,113	5,534,655	5,682,094	5,500,708
Under Closer Settlement Acts		‡(449,791)	‡(484,548)	494,965	507,500	518,068
Village Settlements	55,077	25,103	24,529	20,861	19,989	18,175
Total	3,730,351	7,162,516	7,362,890	8,075,653	8,278,904	8,096,052
3. <i>Leases and Licenses Held</i> —						
Under Lands Department ..	17,110,709	13,230,211	13,325,416	13,035,612	12,433,959	12,383,810
Under Mines Department*	..	..	..	..	..	..
4. <i>Unoccupied Crown Lands</i> † ..	15,337,825	11,843,593	11,418,489	10,878,273	11,187,472	11,338,431

Total area of State—56,245,760 acres.

* Not available. † Including leases and licenses held under the Mines Department, which are not available. ‡ This area is also included with land alienated.

Crown lands in Victoria include roads, 1,744,452 acres; water reserves, 315,596 acres; agricultural colleges, &c., 84,990 acres; State forests and timber reserves (now under Forests Act 1907), 4,129,778 acres; State forests and timber reserves under Land Acts, 142,300 acres; reserves in the Mallee, 418,000 acres; unsold land in towns, &c., 2,147,923 acres; and other reserves, 306,097 acres.

4. *Queensland*.—The total area of this State is 429,120,000 acres, of which, on the 31st December, 1917, 16,669,837 acres, or about one twenty-sixth, were alienated absolutely; 10,215,839 acres, or about one-fortieth, were in process of alienation; 320,970,096 acres, or about three-quarters, were occupied under leases and licenses; roads, reserves, &c., occupied 16,827,711 acres, the remaining 64,436,517 acres being unoccupied. From 1901 to 1917 the area alienated absolutely increased by 3,136,369 acres, or 23 per cent., and the area in process of alienation by 7,424,175 acres, or 266 per cent.

The following table shews the areas alienated absolutely, the areas in process of alienation, and the areas held under various forms of lease and license at the end of the year 1901 and from 1913 to 1917 :—

**QUEENSLAND.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 AND 1913 TO 1917.**

Particulars.	Area in Acres.					
	1901.	1913.	1914.	1915.	1916.	1917.
1. Alienated Absolutely.						
By Purchase ..	13,462,304	15,956,663	16,159,145	16,360,715	16,483,906	16,583,135
Without Payment ..	71,164	85,100	85,896	86,667	86,684	86,702
Total ..	13,533,468	16,041,763	16,244,541	16,447,382	16,570,590	16,669,837
2. In Process of Alienation	2,791,664	10,039,255	10,586,914	10,776,793	10,566,829	10,215,839
3. Occupied under Leases and Licenses.						
Runs in Settled Districts ..	176,000	228,873,480	226,119,640	223,896,160	215,950,840	211,581,200
„ Unsettled Districts ..	222,553,760					
Occupation Licenses ..	35,103,600	40,535,160	46,814,960	45,609,280	44,619,240	40,929,360
Grazing Farms and Homesteads	21,793,242	52,251,784	57,869,972	62,568,511	64,773,601	67,292,732
Scrub Selections ..	272,916	216,488	214,932	213,648	206,155	206,154
Leases Special Purposes ..	249	107,707	121,595	158,045	173,200	186,592
Under Mines Department ..	124,182	310,066	308,704	287,195	238,311	241,647
Perpetual Lease Selections ..	..	42,363	49,905	112,065	228,876	527,133
Auction Perpetual Leases ..	..	..	..	..	2,479	5,278
Total ..	280,023,979	322,337,898	331,499,708	332,824,904	326,192,702	320,970,096
4. Roads and Reserves	..	15,473,444	15,561,184	15,793,438	15,857,492	16,827,711
5. Unoccupied	132,770,889	65,227,640	55,227,653	53,277,483	59,932,387	64,436,517

Total area of State—429,120,000 acres.

The area open for selection (as distinguished from occupation for purely pastoral or special purposes) under every mode at the beginning of the year 1917 was 13,431,027 acres, and the area opened during the year was 8,996,660 acres, while the area withdrawn was 759,305 acres. The area selected was 4,517,194 acres, and the area remaining open at the end of the year was 17,151,188 acres. The number of grazing selections was 326 as against 359 in the previous year, and their gross area 4,168,277 acres, as against 4,477,748 acres.

5. South Australia.—The area of the State of South Australia is 243,244,800 acres. In this State, at the end of the year 1917, there were 10,737,841 acres, or about one twenty-fourth, alienated absolutely; 3,104,763 acres, or about one-eightieth, were in process of alienation; 119,437,222 acres, or about one-half, were occupied under leases and licenses; while the remaining 109,964,974 acres were unoccupied. The subjoined table shews for South Australia the areas of land alienated absolutely, and in process of alienation under deferred payments, and the area held under different forms of leases :—

**SOUTH AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 AND 1913 TO 1917.**

Particulars.	Area in Acres.					
	1901.	1913.	1914.	1915.	1916.	1917.
1. Alienated—						
Sold ..	7,413,510	10,296,156	10,383,620	10,467,883	10,544,779	10,608,162
Granted for Public purposes ..	121,613	122,818	122,851	122,873	129,429	129,679
Total ..	7,535,123	10,418,974	10,506,471	10,590,756	10,674,208	10,737,841

SOUTH AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 AND 1913 TO 1917—*continued.*

Particulars.	Area in Acres.					
	1901.	1913.	1914.	1915.	1916.	1917.
2. <i>In Process of Alienation</i> ..	553,774	2,032,635	2,410,137	2,943,395	3,039,292	3,104,763
3. <i>Held under Lease and License—</i>						
Right of Purchase ..	5,639,519	2,701,392	2,634,685	2,574,640	2,504,143	2,440,731
Perpetual ..	7,115,782	14,997,201	14,969,877	14,943,771	14,851,173	14,810,026
Pastoral ..	68,916,125	96,933,810	96,382,130	95,756,850	95,016,370	100,889,010
Other Leases and Licenses ..	3,905,729	1,229,971	1,193,767	1,144,683	1,128,630	1,049,522
*Mining Leases and Licenses ..	14,140	412,693	805,889	976,489	670,890	247,933
Total ..	85,591,295	116,275,067	115,986,348	115,396,433	114,171,206	119,437,222
4. <i>Total Occupied</i> ..	93,680,192	128,726,676	128,902,956	128,930,584	127,884,706	133,279,826
5. <i>Area Unoccupied</i> ..	149,564,608	114,518,124	114,341,844	114,314,216	115,360,094	109,964,974

Total area of State—243,244,800 acres.

* Exclusive of miners' rights.

6. *Western Australia.*—The total area of Western Australia is 624,588,800 acres, of which on the 30th June, 1918, 8,462,085 acres, or about one seventy-fourth part, were alienated absolutely; 13,105,628 acres, or about one forty-eighth part, were in process of alienation; while 208,052,623 acres, or about one-third, were occupied under leases and licenses issued either by the Lands or the Mines Departments. The remaining 394,968,464 acres, or nearly two-thirds, were unoccupied.

The following table shows the areas alienated absolutely and conditionally, and the areas held under leases and licenses at the end of the year 1901 and on 30th June, 1914, to 1918:—

WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 AND 1913 TO 1918.

Particulars.	Area in Acres.					
	1901.	1913-14.*	1914-15.*	1915-16.*	1916-17.*	1917-18.*
1. <i>Absolutely Alienated</i> ..	3,468,878	7,795,319	8,007,937	8,125,629	8,276,084	8,462,085
2. <i>In Process of Alienation—</i>						
Midland Railway Concessions ..	2,768,810	121,800	54,800	54,800	54,800	54,800
Free Homestead Farms ..	283,455	1,517,330	1,469,132	1,404,237	1,351,461	1,288,866
Conditional Purchases ..	1,349,554	8,255,604	8,402,856	7,911,998	7,673,356	11,467,291
Selections from the late W.A. Company ..	75,213	7,182	4,851	3,728	3,088	2,289
Selections under the Agricultural Lands Purchase Act ..	37,235	258,191	260,697	259,055	255,305	247,196
Special Occupation Leases and Licenses ..	8,867	1,803	1,498	1,398	1,398	1,398
Homestead or Grazing Leases ..	286,425	3,634,233	3,832,648	3,901,011	3,897,471	..
Poison Land Leases or Licenses ..	1,306,270	56,862	52,236	47,252	47,252	43,275
Immigrants' Grants ..	400	..	..	..	..	..
Village Allotments ..	6	35	34	32	32	31
Working-men's Blocks ..	31	590	584	565	558	482
Total in Process of Alienation ..	6,116,266	13,853,630	14,079,386	13,584,076	13,284,721	13,105,628

WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 AND 1914 TO 1918—continued.

Particulars.	Area in Acres.					
	1901.	1913-14.*	1914-15.*	1915-16.*	1916-17.*	1917-18.*
3. Leases and Licenses in Force—						
(i) <i>Issued by Lands Department</i>						
Pastoral Leases	96,508,549	180,891,721	186,418,417	193,023,620	189,574,945	204,820,869
Special Leases	448	30,401	35,948	37,559	33,516	38,285
Leases of Reserves	5,296	2,136,072	2,129,118	2,301,587	1,582,174	1,629,115
Selections in Goldfields	3,955	100				
Timber Leases and Licenses	865,180	658,146	†650,613	†654,550	†249,144	†627,160
Timber Permits		411,191	†410,943	†608,594	†908,850	†823,269
Residential Lots	550	224	267	268	274	269
(ii) <i>Issued by Mines Department</i>						
Gold Mining Leases	34,086					
Mineral Leases	6,576	†149,801	†128,609	†145,920	†386,350	†113,656
Other Leases	8,623					
Licenses	17,397					
Total under Leases and Licenses	97,450,660	184,277,656	189,773,915	196,772,098	192,735,253	208,052,623
4. Area Unoccupied	517,552,996	418,662,195	412,727,562	406,106,997	410,292,742	394,968,464

Total area of State—624,588,800 acres.

* Figures are now given as up to the 30th June, instead of as up to 31st December. Figures for previous years may be obtained from the Statistical Registers of Western Australia. † On the 31st December.

7. **Tasmania.**—Of the total area of Tasmania, namely, 16,777,600 acres, there were at the end of the year 1917, 5,155,511 acres, or about three-tenths, alienated absolutely; 1,184,061 acres, or about one-fourteenth, were in process of alienation, 1,790,022 acres, or nearly one-ninth, were occupied under leases and licenses for either pastoral, agricultural, timber, or mining purposes; the remaining 8,648,006 acres, or about one-half, being unoccupied. The following table shews the areas alienated, in process of alienation, and held under lease or license, and the area unoccupied at the end of the year 1901 and from 1913 to 1917. Closer Settlement leased areas are in the latter year not included in the area alienated absolutely, the settlers having begun to exercise their right of purchase, which right becomes operative ten years after date of lease :—

TASMANIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 AND 1913 TO 1917.

Particulars.	Area in Acres.					
	1901.	1913.	1914.	1915.	1916.	1917.
1. Alienated Absolutely	4,621,585	5,051,112	5,085,868	5,125,197	5,179,865	5,155,511
2. In Process of Alienation	272,376	1,290,705	1,248,844	1,225,924	1,244,014	1,184,061
3. Leases or Licenses—						
(i) <i>Issued by Lands Department</i>						
Islands	149,165	134,908	135,000	204,630	207,630	197,406
Ordinary Leased Land	1,280,688	1,280,400	1,400,300	1,452,068	1,434,113	1,193,169
Land Leased for Timber	40,768	160,216	162,631	120,832	146,881	155,889
Closer Settlement		*45,572	*52,800	*66,307	*65,781	69,087
Soldier Settlement						3,430
(ii) <i>Issued by Mines Department</i>	50,362	45,913	52,376	53,060	53,462	54,391
(iii) <i>Occupied by Commonwealth and State Departments</i>		7,121	8,498	14,315	16,026	17,150
(iv) <i>Reserved for Public Purposes</i>		63,000	68,000	95,000	96,473	99,500
Total	1,520,983	1,691,558	1,826,805	1,939,905	1,954,585	1,790,022
4. Total Area Occupied	6,414,944	8,033,375	8,161,517	8,291,026	8,378,464	8,129,594
5. Area Unoccupied	10,362,656	8,744,225	8,616,083	8,486,574	8,399,136	8,648,006

Total area of State—16,777,600 acres.

* Included in 1. Alienated Land.

8. Northern Territory.—On the 1st January, 1911, the Northern Territory was taken over by the Commonwealth. In the Northern Territory at the end of the year 1918, there were 476,476 acres, or only about one seven-hundred-and-fourth part, alienated absolutely; 106,807,751 acres, or about one-third, were held under leases and licenses; while the remaining 228,309,049, or nearly two-thirds, were unoccupied. The following table shows the area of land alienated absolutely, and also the area under lease:—

NORTHERN TERRITORY.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 AND 1914 TO 1918.

Particulars.	Area in Acres.					
	1901.	1914.	1915.	1916.	1917.	1918.
1. <i>Alienated</i> —						
Sold	473,230	474,422	474,542	475,494	475,494	476,428
Granted for Public Purposes	48	48	48	48	48	48
Total Alienated ..	473,278	474,470	474,590	475,542	475,542	476,476
2. <i>Leased</i> —						
Right of Purchase ..	1,067	436	436	436	436	436
Pastoral	111,476,240	104,370,160	113,813,329	110,560,129	103,993,600	64,964,864
Other Leases	1,176,981	88,637	112,862	109,353	108,387	41,365,975
Total Leases	112,654,288	104,459,233	113,926,627	110,669,918	104,102,423	106,331,275
3. <i>Total Occupied</i>	113,127,566	104,933,703	114,401,217	111,145,460	104,577,965	106,807,751
4. <i>Remainder Unoccupied*</i> ..	221,989,234	230,183,097	220,715,583	223,971,340	230,538,835	228,309,049

Total area of Northern Territory—335,116,800 acres.

* Including Aboriginal and other reserves, and Mission stations.

§ 12. Classification of Holdings According to Size.

1. *General.*—The classification of holdings according to their area is of interest chiefly in relation to the efforts made by the several States in recent years to promote settlement on the land on blocks of suitable size, especially by means of the Closer Settlement Acts. Returns shewing such a classification are not available for Queensland and the Northern Territory.

The following table gives particulars of the number of holdings in area series, as returned to the collectors of agricultural and pastoral statistics, for all the States excepting Queensland, to the latest available date. The figures necessarily fall short of those given in preceding tables relating to total alienations.

CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES.

Size of Holdings.	N.S.W. 1915-16.	Victoria. 1912-13.	S. Aust. 1916-17.	W. Aust. 1917-18.	Tasmania. 1917-18.	Northern Territory. 1912-13.	Federal Territory. 1915-16.
NUMBER.							
Acres.							
1 and under 50	40,083	18,757	7,272	3,696	4,606	..	36
50 " 100	8,586	7,356	1,867	643	2,348	4	26
100 " 500	26,405	24,735	6,016	3,064	5,163	19	65
500 " 1,000	9,326	10,181	4,057	3,462	788	4	27
1,000 " 5,000	7,971	6,364	4,006	4,080	723	..	34
5,000 " 10,000	942	267	127	249	125	..	4
10,000 " 20,000	411	116	43	103	56	..	..
20,000 " 50,000	233	34	24	24	33	..	2
50,000 and over ..	76	1	..	3	5	..	..
Total ..	93,983	66,811	23,412	15,324	13,847	27	194

CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES—*continued.*

Size of Holdings.	N.S.W. 1915-16.	Victoria. 1912-13.	S. Aust. 1916-17.	W. Aust. 1917-18.	Tasmania. 1917-18.	Northern Territory. 1912-13.	Federal Territory. 1915-16.
AREA.							
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1 and under 50	501,402	356,959	114,832	45,137	74,422	..	725
50 " 100	677,346	558,534	137,761	60,336	162,787	307	1,987
100 " 500	6,788,814	6,359,230	1,688,212	849,092	1,070,535	4,170	16,657
500 " 1,000	6,544,181	7,123,402	2,907,033	2,880,323	514,111	2,560	20,508
1,000 " 5,000	15,895,070	9,552,404	6,988,489	8,053,268	1,492,525	..	57,031
5,000 " 10,000	6,468,693	1,825,862	925,991	1,710,398	868,314	..	31,605
10,000 " 20,000	5,677,826	1,609,045	593,847	1,280,065	705,334	..	..
20,000 " 50,000	6,879,609	992,521	693,597	699,886	888,516	..	62,502
50,000 and over	6,665,023	51,400	..	283,000	492,115	..	..
Total	56,097,964	28,429,357	14,049,762	15,861,505	6,268,689	7,037	191,015

2. New South Wales.—The total number of holdings of one acre and over in area in this State on the 31st March, 1901, was 69,439. On the 31st March, 1916, the corresponding number was 93,983, shewing an increase of about 35 per cent. The following table shews the number of holdings for which returns were received for 1900-1 and the five years 1911-12 to 1915-16, figures later than those for 1915-16 not being available :—

NEW SOUTH WALES.—CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1901 AND 1912 TO 1916.*

Size of Holdings.	1900-01.	1911-12.	1912-13.	1913-14.	1914-15.	1915-16.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50	28,155	38,211	38,611	39,268	39,602	40,033
51 " 100	8,929	9,027	8,955	8,923	8,771	8,586
101 " 500	20,504	25,964	26,251	26,493	26,576	26,405
501 " 1,000	6,105	8,329	8,616	8,812	9,068	9,326
1,001 " 5,000	4,464	6,934	7,287	7,529	7,777	7,971
5,001 " 10,000	579	825	853	869	928	942
10,001 " 20,000	352	371	379	394	389	411
20,001 " 50,000	202	247	245	235	231	233
50,001 and over	149	84	86	82	78	76
Total	69,439	89,992	91,313	92,655	93,420	93,983

* See 1. General above.

3. Victoria.—The following table shews the number and area of holdings on the 1st March of those years for which figures are available :—

VICTORIA.—CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1906 TO 1912.*

Size of Holdings.	1906.	1908.	1910.	1912.
Acres.	Number.	Number.	Number.	Number.
1 to 50	13,309	14,692	16,609	18,757
51 " 100	5,864	6,223	6,696	7,356
101 " 500	21,628	22,510	23,397	24,735
501 " 1,000	7,688	7,817	8,216	10,181
1,001 " 5,000	4,083	4,409	4,908	5,364
5,001 " 10,000	220	231	239	267
10,001 " 20,000	116	118	131	116
20,001 " 50,000	73	61	42	34
50,001 and over	6	4	2	1
Total	52,987	56,065	60,240	66,811

* See 1. General above.

4. **South Australia.**—In the State of South Australia the classification of holdings was available for the first time in 1910-11. The following table shews the number and area of such holdings for that year and four later years, the year 1916-17 being the last year for which returns are available.

**SOUTH AUSTRALIA.—CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER)
IN AREA SERIES, 1910-11 TO 1916-17.***

Size of Holdings.	1910-11.	1913-14.	1914-15.	1915-16.	1916-17.
Acres.	Number.	Number.	Number.	Number.	Number.
1 to 50	6,745	6,757	7,013	7,195	7,272
51 „ 100	1,646	1,726	1,778	1,793	1,867
101 „ 500	5,542	5,806	5,801	6,033	6,016
501 „ 1,000	3,370	3,707	3,835	3,977	4,057
1,001 „ 5,000	2,540	3,196	3,417	3,794	4,006
5,001 „ 10,000	110	112	114	125	127
10,001 „ 20,000	53	42	41	42	43
20,001 „ 50,000	23	22	23	24	24
50,001 and over	1	1	1	..	..
Total	20,030	21,369	22,023	22,983	23,412

* See 1. General above.

5. **Western Australia.**—In this State the number of holdings of one acre and over in area was 5,699 for the season 1900-1 (see Year Book No. 1), and 15,324 for the season 1917-18, shewing an increase of 9,625, or 169 per cent. The subjoined table shews the classification of holdings for which agricultural and pastoral returns were received for 1901 and 1913-1918:—

**WESTERN AUSTRALIA.—CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER)
IN AREA SERIES, 1901 AND 1913 TO 1918.***

Size of Holdings.	1900-1.	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50	1,728	3,656	3,820	4,031	3,898	3,813	3,696
51 „ 100	198	609	608	645	640	620	643
101 „ 500	2,302	3,320	3,354	3,349	3,370	3,267	3,064
501 „ 1,000	717	3,465	3,569	3,676	3,687	3,605	3,462
1,001 „ 5,000	607	3,545	3,912	4,025	4,229	4,146	4,080
5,001 „ 10,000	73	213	240	235	254	268	249
10,001 „ 20,000	38	82	82	93	82	82	103
20,001 „ 50,000	36†	28	27	25	27	28	24
50,001 and over .. ..	..	7	8	7	7	4	3
Total	5,699	14,925	15,620	16,086	16,194	15,833	15,324

* See 1. General above.

† Including all holdings of 20,001 acres and upwards.

6. Tasmania.—In Tasmania the total number of holdings for which returns were received as on the 1st March, 1909, was 12,413. Particulars for previous years are not available. The following table shews the classification of such holdings in area series for 1912-13 and subsequent years :—

TASMANIA.—CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1912-13 TO 1917-18.*

Size of Holdings.	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50	4,752	4,402	4,416	4,403	4,392	4,606
51 „ 100	2,378	2,271	2,306	2,299	2,293	2,348
101 „ 500	5,161	5,088	5,165	5,148	5,134	5,163
501 „ 1,000	705	721	731	729	727	788
1,001 „ 5,000	634	667	676	674	672	723
5,001 „ 10,000	123	116	168	167	167	125
10,001 „ 20,000	62	69	70	69	69	56
20,001 „ 50,000	28	34	35	35	35	33
50,001 and over	1	3	3	3	3	5
Total	13,844	13,371	13,570	13,527	13,492	13,847

* See I. General above.

§ 13. The Progress of Land Settlement, 1901 to 1917.

1. Recent Progress.—The progress of settlement and the growth of land alienation in the States of the Commonwealth under recent legislation is seen in the subjoined statement, which shews concisely the condition of the public estate in each State and in the Commonwealth, at the end of 1901 and of each year from 1913 to 1917 inclusive. The effect of the land laws during that period has been generally to diminish the number of large holdings, at the same time decreasing the area held under lease, while both the area alienated and the area in process of alienation have increased. As leases of large areas fall in or are otherwise terminated they are in many cases not renewed, but the land is then cut up for the purpose of settlement under systems of deferred payment; the State Governments, also, have in many cases acquired by repurchase considerable areas under the provisions of the various Closer Settlement Acts. Further, greater facilities have been granted to the working classes to acquire possession of the soil, and special inducements have been offered to *bona fide* settlers by the introduction of new forms of tenure on easy terms and conditions.

From 1901 to 1917 the area alienated absolutely in the whole Commonwealth increased by 30,301,746 acres, or 39 per cent.; the area in process of alienation increased by 20,752,377 acres, or 59 per cent.; the area leased by 147,583,023 acres, or 20 per cent.; while the area unoccupied decreased by 198,637,146 acres, or 19 per cent.

**TOTAL AREA ALIENATED, IN PROCESS OF ALIENATION, HELD UNDER LEASE
OR LICENSE AND UNOCCUPIED,**

EXPRESSED ABSOLUTELY AND AS PERCENTAGES OF AREA OF ENTIRE STATE FOR THE
YEARS 1901 AND 1913 TO 1917.

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Occupied by the Crown or Unoccupied.*	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.

NEW SOUTH WALES.—AREA, 198,036,500 ACRES. †

1901†	26,443,554	13.32	21,595,688	10.87	127,055,370	63.96	23,543,468	11.85
1913‡	39,584,685	19.99	18,233,338	9.21	124,590,163	62.91	15,628,314	7.89
1914‡	39,826,576	20.16	18,837,281	9.51	122,305,284	61.76	17,067,359	8.57
1915‡	40,100,492	20.25	19,064,618	9.63	121,796,091	61.50	17,075,299	8.62
1916‡	40,363,316	20.38	19,409,656	9.80	118,865,868	60.02	19,397,660	9.80
1917‡	40,661,225	20.53	19,847,737	10.02	117,239,952	59.20	20,287,586	10.25

VICTORIA.—AREA, 56,245,760 ACRES.

1901	20,066,875	35.67	3,730,351	6.63	17,110,709	30.42	\$15,337,825	\$27.28
1913	24,009,440	42.68	7,162,516	12.73	13,230,211	23.54	\$11,843,593	\$21.05
1914	24,138,965	42.92	7,362,890	13.09	13,325,416	23.69	\$11,418,489	\$20.30
1915	24,256,222	43.12	8,075,653	14.36	13,035,612	23.18	\$10,878,273	\$19.34
1916	24,345,425	43.28	8,278,904	14.72	12,433,959	22.11	\$11,187,472	\$19.89
1917	24,427,467	43.43	8,096,052	14.39	12,383,810	22.02	\$11,338,431	\$20.16

QUEENSLAND.—AREA, 429,120,000 ACRES.

1901	13,533,468	3.15	2,791,664	0.65	280,023,979	65.26	132,770,889	30.94
1913	16,041,763	3.74	10,039,255	2.34	322,337,898	75.11	80,701,084	18.81
1914	16,244,541	3.79	10,586,914	2.47	331,499,708	77.25	70,788,837	16.49
1915	16,447,382	3.83	10,776,793	2.51	332,824,904	77.56	69,070,920	16.10
1916	16,570,590	3.86	10,566,829	2.46	326,192,702	76.02	75,789,879	17.66
1917	16,669,837	3.88	10,215,839	2.38	320,970,096	74.80	81,264,228	18.94

SOUTH AUSTRALIA.—AREA, 243,244,800 ACRES.

1901	7,535,123	3.10	553,774	0.23	85,591,295	35.18	149,564,608	61.49
1913	10,418,974	4.28	2,032,635	0.84	116,275,067	47.79	114,518,124	47.09
1914	10,506,471	4.32	2,410,137	0.99	115,986,348	47.68	114,341,844	47.01
1915	10,590,756	4.35	2,943,395	1.21	115,396,433	47.44	114,314,216	47.00
1916	10,674,208	4.39	3,039,292	1.25	114,171,206	46.94	115,360,094	47.42
1917	10,737,841	4.41	3,104,763	1.28	119,437,222	49.10	109,964,974	45.21

* Including roads and reserves. † To 31st December; subsequent years to 30th June.

‡ Exclusive of Commonwealth Territory which is included in the figures for 1901.

§ Including Mines Department leases and licenses.

TOTAL AREA ALIENATED, IN PROCESS OF ALIENATION, ETC.—*continued.*

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Occupied by the Crown or Unoccupied.*	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.
WESTERN AUSTRALIA.—AREA, 624,588,800 ACRES.								
1901	3,468,878	0.56	6,116,266	0.98	97,450,660	15.60	517,552,996	82.86
1913†	7,606,759	1.21	13,755,787	2.20	188,547,418	30.18	414,678,836	66.41
1914†	7,795,319	1.25	13,853,630	2.22	184,277,656	29.50	418,662,195	67.03
1915†	8,007,937	1.28	14,079,386	2.26	189,773,915	30.38	412,727,562	66.08
1916†	8,125,629	1.30	13,584,076	2.18	196,772,098	31.50	406,106,997	65.02
1917†	8,276,084	1.32	13,284,721	2.13	192,735,253	30.86	410,292,742	65.69

TASMANIA.—AREA, 16,777,600 ACRES.

1901	4,621,585	27.54	272,376	1.62	1,520,983	9.06	10,362,656	61.78
1913	5,051,112	30.09	1,290,705	7.68	1,691,558	10.05	8,744,225	52.18
1914	5,085,868	30.31	1,248,844	7.44	1,826,805	10.89	8,616,083	51.36
1915	5,125,197	30.55	1,225,924	7.31	1,939,905	11.56	8,486,574	50.58
1916	5,179,865	30.87	1,244,014	7.42	1,954,585	11.65	8,399,136	50.06
1917	5,155,511	30.73	1,184,061	7.06	1,790,022	10.67	8,648,006	51.54

NORTHERN TERRITORY.—AREA, 335,116,800 ACRES.

1901	473,278	0.14	..	..	112,654,288	33.62	221,989,234†	66.24
1913	473,990	0.14	..	..	95,511,305	28.60	239,131,505†	71.26
1914	474,470	0.14	..	..	104,459,233	31.17	230,183,097†	68.69
1915	474,590	0.14	..	..	113,926,627	33.99	220,715,583†	65.87
1916	475,542	0.14	..	..	110,669,918	33.02	223,971,340†	66.84
1917	475,542	0.14	..	..	104,102,423	31.07	230,538,835†	68.79

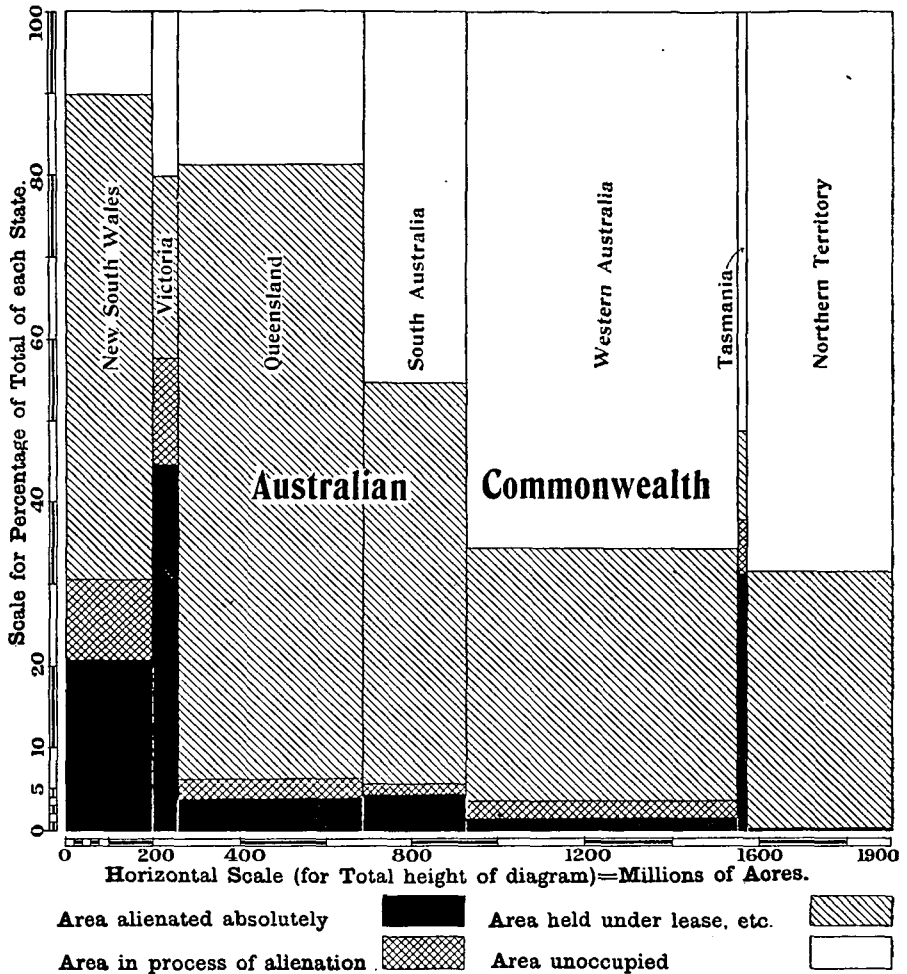
THE COMMONWEALTH.‡—AREA, 1,903,731,840 ACRES.

1901	76,142,761	4.00	35,060,119	1.84	721,407,284	37.89	1,071,121,676	56.27
1913	103,279,476	5.42	52,633,815	2.76	862,421,523	45.31	885,397,026	46.51
1914	104,171,809	5.47	54,405,553	2.86	873,914,618	45.91	871,239,860	45.76
1915	105,056,196	5.52	56,255,766	2.96	889,007,113	46.69	853,412,765	44.83
1916	105,773,536	5.56	56,203,750	2.95	881,353,026	46.30	860,401,528	45.20
1917	106,444,507	5.59	55,812,496	2.93	868,990,307	45.65	872,484,530	45.83

* Including roads and reserves. † To 30th June. ‡ Including aboriginal reserves and mission stations.
§ Including Federal Capital Territory (601,580 acres).

2. Diagram shewing Condition of Public Estate. The following diagram shews the condition of the public estate in the Commonwealth at the end of the year 1917. The square itself represents the total area of the Commonwealth, while the relative areas of individual States are shewn by the vertical rectangles. The areas alienated absolutely, in process of alienation under systems of deferred payments, and the areas

held under leases or licenses, are designated by the differently-shaded areas as described in the reference given below the diagram, while the areas unoccupied are left unshaded :—



3. Federal Territory.—The following particulars relate to the tenures of land within the Federal Capital Territory at the end of the year 1918 :—

FEDERAL CAPITAL TERRITORY, TENURES OF LAND, 1918.

	Acres.
Area of acquired lands	203,054
Lands alienated	41,112
In process of alienation (conditional purchases and conditional leases) ..	78,812
Held under lease issued by the State	152,865
Unoccupied lands (roads, reserves, &c.)	107,817
Total Area of Territory	583,660

SECTION VII.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—In earlier issues of the Year Book will be found a brief reference to the pastoral industry in Australia prior to the year 1860. (See Year Book No. 6, page 330.)

2. **Subsequent Statistics.**—While the statistical records of live stock in Australia prior to the year 1860 are somewhat defective, from that year onwards fairly complete particulars are available in most of the States. At the present time, statistics of live stock are collected annually in all the States, principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, these particulars were not collected in South Australia, and similar gaps occur in the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for the Commonwealth for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. **Increase in Numbers.**—Particulars concerning the numbers of each of the principal kinds of live stock in the Commonwealth at quinquennial intervals from 1860 to 1910, and from 1913 onwards in single years, are given in the following table, and are shewn continuously in the graphs hereinafter.

During the fifty-seven years covered by the table the live stock of the Commonwealth increased considerably, horses by 479 per cent., cattle 202 per cent., sheep 322 per cent., and pigs 233 per cent. The average annual increases which these aggregates represent are as follows:—Horses, 3.13 per cent.; cattle, 1.96 per cent.; sheep, 2.56 per cent.; and pigs, 2.13 per cent.

COMMONWEALTH LIVE STOCK, 1860 TO 1917.

Year.	Horses.	Cattle.	Sheep.	Pigs.
1860	431,525	3,957,915	20,135,286	351,096
1865	566,574	3,724,813	29,539,928	345,704
1870	716,772	4,276,326	41,593,612	543,388
1875	835,393	6,389,610	53,124,209	549,808
1880	1,061,078	7,523,000	62,176,027	815,776
1885	1,143,064	7,397,847	67,491,976	748,908
1890	1,521,588	10,299,913	97,881,221	891,138
1895	1,680,419	11,767,488	90,689,727	822,750
1900	1,609,654	8,640,225	70,602,995	950,349
1905	1,674,790	8,528,331	74,540,916	1,014,977
1910	2,165,866	11,744,714	92,047,015	1,025,850
1913	2,522,776	11,483,882	85,057,402	800,505
1914	2,522,172	11,051,573	78,600,334	862,447
1915	2,377,920	9,931,416	69,257,189	753,693
1916	2,437,157	10,467,737	76,668,604	1,006,387
1917	2,498,940	11,956,024	84,965,012	1,168,989

4. **Fluctuations.**—The increases referred to, however, have not been continuous, marked fluctuations having taken place during the period, mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1869, 1877, 1884, 1895 and subsequent years, 1902, to some extent in 1908, and in a severer form during the earlier half of 1912, and again during 1914 and 1915. The falling-off in the number of sheep in 1915 was 9,343,145, of cattle 1,120,157, of horses 144,252, and of pigs 108,754, being 11.91, 10.14, 5.72, and 12.61 per cent. respectively. The number of horses for the year 1913 was the highest ever recorded in the Commonwealth. The winter of 1913 was dry over Southern Australia, though the crops subsequently recovered under the influence of fine spring rains, but in 1914 and 1915, very pronounced drought conditions developed—enveloping the whole of sub-tropical Australia (except the New South Wales coast) during 1914, and all the Central and North-eastern parts of the continent in 1915. Throughout many parts of Western Australia, South Australia, the Riverina, Victoria, and Tasmania, the year 1914 was the driest on record, and similarly throughout a large part of Queensland and North-eastern New South Wales, 1915 was the worst year ever experienced. The result was a general failure of the crops throughout the wheat belt in 1914, heavy stock losses, the failure of the sugar crops of the East Coast and of a large proportion of the cereal crops on the Downs in Queensland.

The extraordinary recuperative power of Australia is reflected in the large increases in the numbers of stock which occurred in the good seasons supervening on the various droughts. Thus, in the nine years from 1902 to 1911, horses increased by 754,426, cattle by 4,766,212, and sheep by 39,335,174, the corresponding increases per cent. per annum being horses 4.57 per cent., cattle 5.90 per cent., and sheep 6.30 per cent.

The years in which the numbers of live stock attained their maxima are as follows :—Horses, 1913, 2,521,983 ; cattle, 1894, 12,311,617 ; sheep, 1891, 106,421,068 ; and pigs, 1917, 1,168,989.

5. **Live Stock in Relation to Population.**—The number of each kind of live stock per head of the population of the Commonwealth has varied during the past fifty-seven years in the manner shewn in the succeeding table :—

NUMBER OF AUSTRALIAN LIVE STOCK PER HEAD OF POPULATION, 1860 TO 1917.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860	0.38	3.45	17.58	0.31	1900	0.43	2.29	18.75	0.25
1865	0.41	2.68	21.25	0.25	1905	0.42	2.11	18.48	0.25
1870	0.43	2.60	25.24	0.33	1910	0.49	2.65	20.80	0.23
1875	0.44	3.37	27.99	0.29	1913	0.52	2.36	17.46	0.16
1880	0.48	3.37	27.87	0.37	1914	0.51	2.24	15.91	0.17
1885	0.42	2.75	25.05	0.28	1915	0.48	2.01	14.04	0.15
1890	0.48	3.27	31.06	0.28	1916	0.51	2.14	15.68	0.21
1895	0.48	3.36	25.93	0.24	1917	0.50	2.41	17.13	0.24

Considered in relation to population, the live stock attained its maximum for the period 1860–1917 in the quinquennium 1890–5, and its minimum in the year 1902. During the period under review, the number of horses varied but slightly in proportion to population, the range for the years shewn above being from 0.38 to 0.52 per head. In the case of cattle, the corresponding limits of variation were 2.01 and 3.45 ; sheep, 14.04 and 31.06 ; and pigs, 0.15 and 0.37.

6. Live Stock in Relation to Area.—The numbers of live stock per square mile in the several States and Territories of the Commonwealth are given in the following table:—

NUMBER OF LIVE STOCK PER SQUARE MILE.

States and Territories.	Date.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales ..	30th June, 1918 ..	2.39	10.17	124.35	1.28
Victoria ..	1st March, 1918 ..	5.85	15.60	167.95	3.68
Queensland ..	31st Dec., 1917 ..	1.09	7.93	25.66	0.26
South Australia ..	30th June, 1918 ..	0.69	0.82	16.39	0.29
Western Australia ..	31st Dec., 1917 ..	0.18	0.98	6.54	0.11
Tasmania ..	1st March, 1918 ..	1.62	7.55	65.27	2.08
Northern Territory ..	31st Dec., 1917 ..	0.05	1.22	0.10	..
Federal Territory ..	30th June, 1918 ..	1.58	14.70	152.12	0.57
Commonwealth ..	1917-18 ..	0.84	4.02	28.56	0.39

7. Minor Classes of Live Stock.—The numbers of minor classes of live stock returned for 1917-18 were as follows:—Goats, 232,421; camels, 12,734; mules and donkeys, 12,016; and ostriches, 1,079. Of these, goats were most numerous in Queensland; camels, mules, and donkeys in Western Australia; and ostriches in South Australia. In the raising of goats, considerable attention has in recent years been devoted to the angora goat and its product (mohair), and over 20,000 angora goats are included in the total of 232,421 goats shewn above. Of these, 8,015 were in New South Wales, 4,080 in Western Australia, and 3,774 in Queensland, while the quantity of mohair produced in the latter State in 1917 was set down at 3,114 lbs., and the number of skins placed on the market was returned as 441.

8. Net Exports of Principal Pastoral Products.—The quantities by which the exports of the principal pastoral products of the Commonwealth exceeded the imports for the years 1913 to 1917-18 are as follows:—

QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE COMMONWEALTH, 1913 TO 1917-18.

Products.	Unit of Quantity.	1913.	1914-15. (b)	1915-16. (b)	1916-17. (b)	1917-18. (b)
Animals (Living)—						
Cattle	No.	14,548	10,121	5,417	2,743	1,117
Horses	"	7,761	23,655	14,589	14,228	23,876
Sheep	"	33,322	10,749	728	3,198	9,080
Bones	cwt.	37,848	33,802	16,378	26,884	20,363
Glue Pieces and Sinews ..	"	38,297	30,689	23,222	26,973	11,015
Glycerine	lb.	(a)	(a)	(a)	(a)	(a)
Hair	"	279,108	206,602	554,971	514,752	324,528
Hoofs	cwt.	12,476	11,012	8,347	10,497	8,618
Horns	"	(a)	(a)	(a)	(a)	(a)
Meats—						
Frozen Beef	lb.	218,911,159	292,056,035	114,654,569	242,040,115	180,222,185
Frozen Mutton and Lamb ..	"	204,919,042	193,263,877	38,332,651	66,811,253	19,174,231
Frozen Rabbits and Hares ..	pair	9,366,290	10,290,016	11,367,538	12,674,472	13,164,307
Frozen, Other	lb.	7,685,149	13,107,560	3,004,290	10,773,154	8,200,193
Potted and Extract of	"	(a)	(a)	(a)	(a)	(a)
Preserved in Tins, &c. ..	"	51,731,741	57,326,295	13,059,238	21,922,630	43,036,310
Other	"	1,154,580	298,019	130,672	35,833	206,640
Sausage Casings	"	(a)	(a)	(a)	(a)	(a)
Skins—						
Hides	No.	10,037,882	1,134,483	453,691	99,154	15,873
Sheep	"	10,997,873	10,396,987	7,254,642	4,753,464	2,907,431
Rabbit and Hare	cwt.	86,998	56,437	51,857	48,403	71,991
Other, including Undressed Furs	No.	(a)	(a)	(a)	(a)	(a)
Tallow	cwt.	1,435,156	1,106,023	250,519	555,427	345,849
Wool—Greasy	lb.	531,248,798	443,812,275	408,461,233	331,776,079	243,784,651
Scoured	"	60,873,478	60,846,240	74,880,215	51,727,629	62,860,373
Tops	"	3,561,722	4,095,966	4,981,975	4,869,452	4,571,357

(a) Quantity not available. (b) For year ended 30th June.

The values of the net exports for the same five years are furnished in the next table, and amount to no less a total than £190,844,051 for the period, or an average of £38,168,810 per annum, of which wool represents 67 per cent. Meats, skins, and tallow rank next in order of importance.

VALUE OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE COMMONWEALTH, 1913 TO 1917-18.

Products.	1913.	1914-15.(a)	1915-16.(a)	1916-17.(a)	1917-18.(a)
	£	£	£	£	£
Animals (living)—					
Cattle	50,229	19,558	10,089	4,582	-10,993
Horses	63,389	378,505	185,183	306,200	453,616
Sheep	46,565	14,204	-17,507	8,474	15,049
Bones	22,021	20,918	10,009	20,783	21,806
Gluc Pieces and Sinews	23,328	17,641	12,815	21,416	15,196
Glycerine	13,769	13,900	16,078	26,459	41,256
Hair	28,160	26,445	26,684	26,802	21,243
Hoofs	6,178	4,156	2,361	6,363	7,848
Horns	30,444	15,300	6,379	4,191	13,309
Meats—					
Frozen Beef	2,652,144	4,989,810	2,175,343	4,945,716	3,697,957
Frozen Mutton and Lamb	2,896,292	3,413,848	769,434	1,540,546	452,627
Frozen Rabbits and Hares	497,568	531,920	724,624	913,142	985,190
Frozen, Other	99,509	180,841	30,248	195,846	190,954
Potted and Extract of	203,412	347,471	31,467	65,471	224,464
Preserved in Tins, &c.	1,062,618	1,829,601	438,881	952,399	2,308,989
Other	17,677	4,375	3,195	1,151	5,713
Sausage Casings	32,133	25,872	-21,726	1,210	-29,089
Skins—					
Hides	1,418,191	1,234,871	266,674	184,886	211,449
Sheep	2,480,900	1,743,209	1,242,358	1,137,832	808,782
Rabbit and Hare	620,487	230,139	261,868	433,546	1,155,824
Other, including Undressed Furs	746,023	106,319	253,458	190,738	276,537
Tallow	2,157,610	1,566,907	436,225	1,241,219	886,128
Wool—Greasy	21,472,360	17,470,385	20,172,243	21,870,113	16,981,347
Scoured	4,380,184	4,113,951	5,841,054	5,394,259	6,094,040
Tops	415,670	511,021	680,656	1,204,570	1,510,799
Total Values	41,436,861	38,811,167	33,558,093	40,697,889	36,340,041

(a) For year ended 30th June. Note.—The minus sign (—) signifies net imports.

§ 2. Horses.

1. Suitability of Australia for Horse-breeding.—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognised. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages were utilised to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages, the Australian horse, whether of the heavy draught, medium weight, or light saddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes.

2. Distribution throughout the Commonwealth.—As regards numbers, the State of New South Wales, the earliest settled of the group, established a lead, which it retained up to the end of 1913. For some years past Queensland has made rapid progress in this regard, and in 1914 there were 743,059 horses in that State, as compared with

731,735 in New South Wales, and 552,053 in Victoria. The figures for the past three years, however, shew that New South Wales has regained the lead. Particulars for the several States for a series of years are as follows:—

**NUMBER OF HORSES IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 TO 1917.**

Year.	N.S.W.	Vic. (a)	Q'land.	S. Aust.	W. Aust.	Tas. (a)	N.T.	F.T.	C'wealth.
1860 ..	251,497	76,536	23,504	49,399	9,555	21,034	..	..	431,525
1865 ..	282,587	121,051	51,091	73,993	15,700	22,152	..	..	566,574
1870 ..	337,597	167,220	83,358	83,744	22,174	22,679	..	..	716,772
1875 ..	357,696	196,184	121,497	107,164	29,379	23,473	..	..	835,393
1880 ..	395,984	275,516	179,152	148,219	34,568	25,267	2,372	..	1,061,078
1885 ..	344,697	304,093	260,207	164,753	34,392	28,610	6,307	..	1,143,064
1890 ..	444,163	436,459	365,812	187,686	44,384	31,165	11,919	..	1,521,588
1895 ..	499,943	424,995	468,743	181,839	58,506	31,580	14,813	..	1,680,419
1900 ..	481,417	392,237	456,788	166,790	68,253	31,607	12,562	..	1,609,654
1905 ..	506,884	385,513	430,565	197,099	97,397	37,101	20,231	..	1,674,790
1910 ..	650,636	472,080	593,813	249,326	134,114	41,388	24,509	..	2,165,866
1913 ..	744,458	562,331	707,265	283,641	156,636	43,941	22,792	1,712	2,522,776
1914 ..	731,735	552,053	743,059	267,877	161,625	42,232	21,985	61,606	2,522,172
1915 ..	6718,232	493,779	686,871	253,333	163,016	41,422	19,957	61,310	2,377,920
1916 ..	6732,334	514,403	697,517	525,422	169,730	42,620	21,674	61,457	2,437,157
1917 ..	6740,806	514,061	733,014	626,840	178,151	42,396	26,231	61,441	2,498,940

(a) 1st March year following. (b) 30th June year following. (c) Statistics not collected prior to 1880.

3. Proportion in the Several States and Territories.—The percentages of the number of horses in the several States and Territories on the total for the Commonwealth for 1901 and the past five years are as follows:—

**PERCENTAGE OF HORSES IN EACH STATE AND TERRITORY ON THE TOTAL
FOR COMMONWEALTH, 1901 AND 1913 TO 1917.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F.T.	C'wealth.
	%	%	%	%	%	%	%	%	%
1901 ..	30.03	23.90	28.52	10.20	4.55	2.00	0.80	..	100.00
1913 ..	29.51	22.29	28.04	11.24	6.21	1.74	0.90	0.07	100.00
1914 ..	29.01	21.89	29.46	10.62	6.41	1.68	0.87	0.06	100.00
1915 ..	30.20	20.77	28.89	10.65	6.86	1.74	0.84	0.05	100.00
1916 ..	30.05	21.11	28.62	10.56	6.96	1.75	0.89	0.06	100.00
1917 ..	29.64	20.57	29.33	10.52	7.13	1.70	1.05	0.06	100.00

During the period under review, the proportion in Western Australia has increased, that in Victoria has diminished, while in the case of the other States the proportion in 1917 differed little from that in 1901.

4. Oversea Export Trade in Horses.—Australia's export trade in horses is fairly considerable, though somewhat fluctuating. During the past five years it has varied in number between 8,562 for the year 1913 and 24,172 in 1917-18, and in value between £163,730 in the former and £502,557 during the latter year. The total number of horses exported during the five years, exclusive of those shipped for military purposes, amounted to 88,563, an average of 17,713 per annum. The total value of the exports for the period was £1,746,273, or £349,255 per annum. The average export value per head for the period was £19 14s. 4d. The numbers exported to the principal countries concerned in this trade are as follows:—

**NUMBER AND DESTINATION OF HORSES EXPORTED FROM THE
COMMONWEALTH, 1913 TO 1917-18.**

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
India	6,775	21,162	14,405	15,744	23,890	81,976
Java	799	65	280	148	..	1,292
Straits Settlements	436	24	174	224	21	879
Fiji	106	117	257	223	150	853
New Zealand	90	52	37	40	26	245
Japan	59	16	35	16	15	141
Papua	57	9	2	35	30	133
Philippine Islands	88	..	8	5	20	121
Mauritius	95	..	..	..	..	95
Siam .. .. .	..	..	..	34	..	34
Ceylon	3	..	..	15	..	18
Union of South Africa	8	3	..	1	..	12
Other Countries	46	2,659	11	28	20	2,764
Total	8,562	24,107^a	15,209^a	16,513^a	24,172^a	88,563^a

(a) Exclusive of shipment for military purposes.

The corresponding particulars relative to the value of the horses exported are given in the next table :—

VALUE OF HORSES EXPORTED FROM THE COMMONWEALTH, 1913 TO 1917-18.

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	£	£	£	£	£	£
India	107,925	387,046	250,710	312,271	479,520	1,537,472
New Zealand	5,319	9,765	7,232	11,190	16,360	49,866
Java	21,465	1,243	5,352	3,818	..	31,878
Straits Settlements	11,614	555	3,755	6,427	900	23,251
Fiji	3,215	3,337	6,653	5,814	3,765	22,784
Japan	2,836	875	1,900	850	750	7,211
Philippine Islands	2,061	..	1,200	60	200	3,521
Mauritius	3,229	..	..	..	..	3,229
Papua	1,271	171	65	663	538	2,708
Ceylon	840	..	..	450	..	1,290
Siam .. .. .	..	..	..	541	..	541
Union of South Africa	211	60	..	160	..	431
Other Countries	3,744	56,926	244	653	524	62,091
Total	163,730	459,978^a	277,111^a	342,897^a	502,557^a	1,746,273^a

(a) Exclusive of shipment for military purposes.

Consequent on the greater demand for remounts for the Indian Army, a large increase took place in the number of horses exported to that country during the last four years. Of the 2,659 horses exported to "Other Countries" during 1914-15—2,270, valued at £50,075, were shipped to France. In addition to the exports shewn in the above tables, there were 39,348 horses, valued at £815,300, shipped from the Commonwealth for military purposes from the commencement of the war to 30th June, 1918.

The number of horses imported into the Commonwealth is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, and imported principally from New Zealand and the United Kingdom. The average value per head of the horses imported during the last five years was £146 8s. 11d., as compared with £19 14s. 4d. per head for the exports for the same period. The average number imported per annum was, however, only 491, and the average annual value £71,876. The following table furnishes a comparison of imports and exports of horses during 1901 and each of the five years 1913 to 1917-18 :—

**COMMONWEALTH IMPORTS AND EXPORTS OF HORSES,
1901 AND 1913 TO 1917-18.**

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901	246	19,601	32,474	438,248	32,228	418,647
1913	801	100,341	8,562	163,730	7,761	63,389
1914-15	452	81,473	24,107	459,978	23,655	378,505
1915-16	620	91,928	15,209	277,111	14,589	185,183
1916-17	285	36,697	16,513	342,897	16,228	306,200
1917-18	296	48,941	24,172	502,557	23,876	453,616

5. **Comparison with other Countries.**—The numbers of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, are as follows :—

**NUMBER OF HORSES IN SOME OF THE LEADING HORSE-BREEDING
COUNTRIES IN THE WORLD.**

Country.	Date.	Number of Horses. (,000 omitted.)	Country.	Date.	Number of Horses. (,000 omitted.)
Russian Empire (a) ..	1914	35,846	Sweden	1916	701
U.S. of America	1916	21,126	Uruguay	1908	556
Argentine Republic ..	1914	8,324	Denmark	1917	538
Brazil	1916	6,065	Spain	1916	489
Austria-Hungary (b)	1910-13	4,380	Bulgaria	1910	478
Germany (c)	1915	3,342	Chile	1914	458
Canada	1917	3,035	New Zealand	1917	378
Australia	1917	2,499	Finland	1910	361
France (d)	1917	2,283	Netherlands	1913	334
Italy (e)	1914	2,235	Belgium	1913	267
United Kingdom	1917	2,190	Philippine Islands	1915	223
British India	1914-15	1,653	Algeria	1913	216
Japan	1915	1,580	Norway	1916	189
Rumania	1916	1,219	Serbia	1910	153
Mexico	1902	859	Switzerland	1916	137
Cuba	1916	750	Portugal	1906	88
Union of S. Africa ..	1911	719	Egypt	1916	34

(a) Including Poland, Caucasus and Siberia. (b) Austria 1910, Hungary 1913, Croatia-Slavonia 1911, Bosnia-Herzegovina 1910. (c) Exclusive of army horses. (d) Exclusive of invaded area. (e) Includes mules and asses.

6. **Relation to Population.**—In proportion to population, horses are much more numerous in the Northern Territory than in any other of the principal divisions of the Commonwealth. Queensland is next in order, while Tasmania has the smallest number of horses per head. In all cases the number of horses per head of population was somewhat higher in 1917 than in 1901. Particulars for 1901 and the past five years are as follows :—

NUMBER OF HORSES PER HEAD OF POPULATION,
1901 AND 1913 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	F. Terr.	C'wealth.
1901 ..	0.35	0.32	0.91	0.46	0.38	0.18	2.76	..	0.42
1913 ..	0.41	0.40	1.07	0.64	0.49	0.22	6.21	0.86	0.52
1914 ..	0.39	0.39	1.10	0.61	0.50	0.21	5.53	0.62	0.51
1915 ..	0.39	0.35	1.01	0.58	0.51	0.21	4.37	0.53	0.48
1916 ..	0.39	0.37	1.04	0.60	0.55	0.21	4.55	0.66	0.51
1917 ..	0.39	0.36	1.08	0.60	0.58	0.21	5.34	0.58	0.50

§ 3. Cattle.

1. **Purposes for which Raised.**—In all the States of the Commonwealth, cattle raising is carried out on a more or less extensive scale, the main object in certain districts being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry in the Commonwealth led to a considerable increase in numbers and improvement in quality of the dairy herds of Victoria, New South Wales, and Southern Queensland in particular, the sub-tropical portion of Australia being apparently the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts of the Commonwealth, *i.e.*, in the northern parts of Queensland, in the Northern Territory, and in the Kimberley districts in the north of Western Australia.

2. **Distribution throughout Commonwealth.**—Until 1880 New South Wales occupied the leading position in the Commonwealth group as a cattle-raising State, but in that year Queensland forged ahead and obtained a lead which it has since maintained. The extent of this lead has, however, varied considerably, owing principally to the effects produced by the tick fever and droughts, from both of which causes the Queensland herds suffered more severely than those of the other States. In fact, during the period from 1894, when the number of cattle in Queensland attained its maximum of rather more than 7,000,000, to 1903, when the number recorded was less than 2,500,000, an uninterrupted decline was experienced. During the eleven years ended 1914, however, a rapid improvement took place, and the total reached on 31st December, 1914, was over 5,450,000. Owing to drought conditions the number at the end of 1915 had fallen to 4,780,893, with a further decline to 4,765,657 at the end of 1916. An increase was again in evidence in all the States in the 1917 figures, and the Commonwealth total of 11,956,024 was the largest since the record year 1894, when an aggregate of 12,311,617 was attained.

The number of cattle in the several States and Territories at quinquennial intervals from 1860 to 1910 and for each of the last five years are as follows :—

NUMBER OF CATTLE IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 TO 1917.

Year.	N.S.W.	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tas. (a)	Nor. Ter.	Fed. Ter.	C'wealth.
1860	2,408,586	722,332	432,890	278,265	32,476	83,366	..	..	3,957,915
1865	1,961,905	621,337	848,346	158,057	45,148	90,020	..	..	3,724,813
1870	2,195,096	721,096	1,076,630	136,832	45,213	101,459	..	..	4,276,326
1875	3,134,086	1,054,598	1,812,576	219,240	50,416	118,694	..	..	6,389,610
1880	2,580,040	1,286,267	3,162,752	283,315	63,719	127,187	c19,720	..	7,523,000
1885	1,317,315	1,290,790	4,162,652	271,478	70,408	138,642	146,562	..	7,397,847
1890	2,091,229	1,782,978	5,558,264	359,938	130,970	162,440	214,094	..	10,299,913
1895	2,150,057	1,795,314	6,822,401	355,867	200,091	162,801	280,957	..	11,767,488
1900	1,983,116	1,602,384	4,078,191	214,761	338,590	165,516	257,667	..	8,640,225
1905	2,337,973	1,737,690	2,963,695	304,027	631,825	206,211	346,910	..	8,528,331
1910	3,140,307	1,547,569	5,131,699	384,862	825,040	201,854	513,383	..	11,744,714
1913	2,815,113	1,528,553	5,322,033	352,905	834,265	205,743	417,643	7,627	11,483,882
1914	2,472,631 <i>b</i>	1,362,542	5,455,943	300,579	863,835	176,524	414,558	4,961 <i>b</i>	11,051,573
1915	2,400,104 <i>b</i>	1,043,604	4,780,893	226,565	821,048	169,575	483,961	5,666 <i>b</i>	9,931,416
1916	2,757,713 <i>b</i>	1,175,098	4,765,657	288,887 <i>b</i>	863,930	179,360	428,862	8,230 <i>b</i>	10,467,737
1917	3,148,309 <i>b</i>	1,371,049	5,316,558	313,245 <i>b</i>	957,086	197,938	638,431	13,408 <i>b</i>	11,956,024

(a) 1st March year following. (b) 30th June year following. (c) Statistics not collected prior to 1880.

3. Proportion in each State.—During the period elapsing between 1901 and 1917 the proportion of cattle in the several States and the Northern Territory has varied considerably, as shewn hereunder :—

PERCENTAGE OF CATTLE IN EACH STATE AND TERRITORY ON TOTAL FOR
COMMONWEALTH, 1901 AND 1913, TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	%	%	%	%	%	%	%	%	%
1901 ..	24.11	19.12	44.43	2.65	4.69	1.99	3.01	..	100.00
1913 ..	24.51	13.31	46.34	3.07	7.27	1.79	3.64	0.07	100.00
1914 ..	22.37	12.33	49.37	2.72	7.82	1.60	3.75	0.04	100.00
1915 ..	24.17	10.51	48.14	2.28	8.27	1.71	4.87	0.05	100.00
1916 ..	26.34	11.23	45.53	2.76	8.25	1.71	4.10	0.08	100.00
1917 ..	26.33	11.47	44.47	2.62	8.01	1.65	5.34	0.11	100.00

A comparison of the positions of the several States in 1901 and 1917 shews that, while Victoria's proportion of the Commonwealth herds suffered considerable diminution, and those for Tasmania a falling-off to a slight extent, fairly large increases have taken place in Western Australia. New South Wales and the Northern Territory also shewed an upward tendency.

4. Imports and Exports of Cattle.—Although the various products of the cattle-raising industry bulk largely in the export trade of the Commonwealth, the export of live cattle from Australia has never been considerable. The number of cattle imported is also small, consisting, as in the case of horses, mainly of valuable animals for breeding. Details are as follows :—

**COMMONWEALTH IMPORTS AND EXPORTS OF CATTLE,
1901 AND 1913 TO 1917-18.**

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901	114	3,591	2,413	22,088	2,299	18,497
1913	57	5,572	14,605	55,801	14,548	50,229
1914-15 ..	221	21,090	10,342	40,648	10,121	19,558
1915-16 ..	440	19,169	5,857	29,258	5,417	10,089
1916-17 ..	234	14,254	2,977	18,836	2,743	4,582
1917-18 ..	222	23,570	1,339	12,577	1,117	-10,993

Note.—The minus sign (—) signifies net imports.

The average value of the cattle imported into the Commonwealth during the last five years was £71 5s. 1d. per head, while the average value of the cattle exported during the same period was £4 9s. 6d. As stated previously, the imported cattle were principally for stud purposes.

The comparatively large exports for the year 1913 were due to shipments to Java and Philippine Islands valued at £23,033 and £25,842 respectively. The bulk of these cattle were exported from Western Australia.

5. Cattle Slaughtered.—Complete returns of the number of cattle slaughtered annually in the Commonwealth are not obtainable, as these particulars were collected in Tasmania prior to 1911 for Hobart and Launceston only, and were collected in South Australia for the first time in 1908 in respect of the year 1907. Estimates for these States have, however, been made, and the results are included in the following table :—

**CATTLE (INCLUDING CALVES) SLAUGHTERED IN STATES, TERRITORIES, AND
COMMONWEALTH, 1901 AND 1913 TO 1917.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	N. Ter.	F. Ter.	C'wealth.
1901	335,823	251,477	377,433	c72,000	39,424	34,000	d	..	1,110,157
1913	679,901	410,694	703,367	116,282	62,613	30,038	e4,061	276	2,007,232
1914	b635,196	470,011	776,869	112,183	61,387	30,064	c4,000	b142	2,089,852
1915	b384,977	356,174	653,015	82,070	65,121	28,586	c4,000	b 55	1,573,998
1916	b393,400	247,781	578,203	b63,167	59,038	26,972	c4,000	b122	1,372,683
1917	b377,936	217,480	582,954	b69,789	50,781	23,521	c22,911	b 87	1,345,459

(a) Partly estimated prior to 1913. (b) For year ended 30th June of year following.

(c) Estimated. (d) Not available. (e) 1910 figures.

6. **Export of Beef Preserved by Cold Process.**—A large export trade in beef preserved by cold process is carried on by the Commonwealth in normal times, mainly with the United Kingdom and the Philippine Islands. The quantities so exported during the five years 1913 to 1917-18 are as follows :—

QUANTITY OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1913 TO 1917-18.

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	169,963,291	253,396,440	108,906,118	239,384,893	145,300,631	916,951,373
Egypt ..	3,990,804	4,281,049	109,969	..	30,359,072	38,740,894
Philippine Islands ..	14,535,447	11,352,425	4,089,865	548,398	1,368,713	31,894,848
United States ..	5,037,769	15,974,209	..	..	..	21,011,978
Straits Settlements ..	2,053,514	2,260,587	1,411,876	1,691,256	1,535,005	8,952,238
Italy ..	6,356,514	170,159	..	..	..	6,526,673
Union of South Africa ..	5,656,346	194,588	..	..	..	5,850,934
Hawaiian Islands ..	2,356,115	1,538,997	..	200,396	502,067	4,597,575
Canada ..	3,352,675	60,540	..	..	..	3,413,215
Malta ..	1,142,092	1,338,439	..	..	..	2,480,531
Germany ..	1,813,799	..	..	..	..	1,813,799
Hong Kong ..	423,659	216,350	38,859	90,000	98,058	866,926
Gibraltar ..	353,582	487,289	..	..	..	840,871
Ceylon ..	221,521	210,903	1,330	83,752	203,823	721,329
Other Countries ..	1,661,478	584,514	118,087	82,991	881,932	3,329,002
Total ..	218,918,606	292,066,480	114,676,104	242,081,686	180,240,301	1,047,992,186

The value of the beef preserved by cold process exported from the Commonwealth during the same years is as follows :—

VALUE OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1913 TO 1917-18.

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	2,037,978	4,430,370	2,055,045	4,890,927	2,976,301	16,390,621
Egypt ..	49,134	71,040	2,520	..	616,627	739,321
Philippine Islands ..	183,047	169,327	86,011	11,139	31,449	480,973
United States ..	66,838	209,938	..	..	..	276,776
Straits Settlements ..	25,576	33,447	28,040	34,397	31,819	153,279
Hawaiian Islands ..	38,003	24,498	..	4,358	17,968	84,827
Italy ..	75,130	2,130	..	..	..	77,260
Union of South Africa ..	65,906	2,500	..	..	..	68,406
Canada ..	44,456	1,272	..	..	..	45,728
Malta ..	13,214	22,349	..	..	..	35,563
Germany ..	23,388	..	..	..	..	23,388
Ceylon ..	2,643	3,003	25	2,352	4,582	12,605
Hong Kong ..	4,392	2,924	764	1,850	2,032	11,962
Gibraltar ..	3,595	6,691	..	..	..	10,286
Other Countries ..	18,975	10,565	3,489	2,047	17,915	52,991
Total ..	2,652,275	4,990,054	2,175,894	4,947,070	3,698,693	18,463,986

During the five years under review, the largest of Australia's customers for beef preserved by cold process has been the United Kingdom, while the second largest customer has been Egypt; the Philippine Islands, the United States, and the Straits Settlements ranked next in order of importance. Consequent on the war over 90 per cent. was absorbed by the United Kingdom during the last four years, while most of the balance was shipped to Egypt, the Philippine Islands, and the Straits Settlements. The exporting States and Territories during 1917-18 were :—Queensland, 169,798,883 lbs., valued at £3,455,308; Northern Territory, 5,053,719 lbs., valued at £116,464; New South Wales, 4,084,003 lbs., valued at £95,689; South Australia, 1,177,674 lbs., valued at £25,268; and Victoria, 135,022 lbs., valued at £5,964.

7. *Comparison with other Countries.*—In the following comparison of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case :—

NUMBER OF CATTLE IN VARIOUS COUNTRIES.

Country.	Date.	No. of Cattle. (,000 omitted.)	Country.	Date.	No. of Cattle. (,000 omitted.)
British India (a)	.. 1914-15	128,310	Sweden	1916	2,913
U.S. of America	.. 1916	63,617	New Zealand	1917	2,869
Russian Empire (b)	.. 1914	52,052	Denmark	1916	2,453
Brazil (c)	.. 1916	28,962	Netherlands	1917	2,304
Argentine Republic	.. 1914	25,867	Chile	1915	1,969
Germany .. ..	.. 1915	20,317	Belgium	1913	1,849
Austria-Hungary (d)	.. 1910-13	17,648	Switzerland	1916	1,616
France (e)	.. 1917	12,443	Bulgaria	1910	1,603
United Kingdom	.. 1917	12,382	Ceylon (c)	.. 1915	1,501
Australia	.. 1917	11,956	Japan	1915	1,388
Uruguay .. ..	.. 1916	7,803	Norway	1916	1,119
Italy (c)	.. 1914	6,646	Algeria	1913	1,108
Canada .. ..	.. 1917	5,968	Serbia	1910	957
Union of South Africa	1911	5,797	Portugal	1906	703
Mexico .. ..	.. 1902	5,142	Philippine Islands	.. 1915	534
Cuba .. ..	.. 1916	3,962	Egypt	1916	493
Spain .. ..	.. 1916	3,071	Tunis	1916	240
Rumania (c)	.. 1916	2,938			

(a) Including young buffaloes. (b) Including Poland, Caucasus and Siberia. (c) Including buffaloes. (d) Austria 1910, Hungary 1913, Croatia-Slavonia 1911, and Bosnia-Herzegovina 1911. (e) Exclusive of invaded area.

8. *Relation to Population.*—The number of cattle per head of population differs considerably in the several States, and is also subject to marked variation from year to year in the same State. Particulars for 1901 and the past five years are as follows :—

NUMBER OF CATTLE PER HEAD OF POPULATION, 1901 AND 1913 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	F. Terr.	C'wealth.
1901 ..	1.49	1.34	7.44	0.63	2.06	0.96	54.68	..	2.22
1913 ..	1.54	1.08	8.06	0.82	2.60	1.02	113.74	3.84	2.36
1914 ..	1.33	0.95	8.06	0.68	2.67	0.88	104.34	3.57	2.24
1915 ..	1.29	0.74	7.04	0.52	2.58	0.84	106.06	2.30	2.01
1916 ..	1.47	0.84	7.12	0.67	2.80	0.90	89.96	3.70	2.14
1917 ..	1.65	0.97	7.84	0.71	3.09	0.97	130.08	5.42	2.41

For the Commonwealth as a whole the ratio of cattle to population is nearly 9 per cent. greater for 1917 than for 1901, an excess of the 1917 figures over those for 1901 being in evidence in every State with the exception of Victoria.

§ 4. Sheep.

1. *The Founding of the Commonwealth Pastoral Industry.*—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales. To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and though

it would appear that the introduction of the Merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. **Distribution throughout Commonwealth.**—With the exception of a short period in the early sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained amongst the Commonwealth group the lead in sheep production which naturally attached to it as the portion of the Commonwealth in which settlement was first effected. From 1878 to 1901, the number of sheep in New South Wales represented more than half the total for the Commonwealth. In subsequent years it has rarely fallen much below that proportion, and has on several occasions exceeded it.

The number of sheep in the several States and Territories at quinquennial intervals from 1860 to 1910, and for each year from 1913 to 1917, is as follows:—

**NUMBER OF SHEEP IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 TO 1917.**

Year.	New South Wales.	Victoria. (a)	Queens- land.	South Australia.	Western Australia.	Tasmania. (a)	Nor. Terr.	Fed. Terr.	Total C'wealth.
1860	6,119,163	5,780,896	3,449,350	2,824,811	260,136	1,700,930	..	..	20,135,286
1865	8,132,511	8,835,380	6,594,966	3,779,308	445,044	1,752,719	..	..	29,539,928
1870	16,308,585	10,761,887	8,163,818	4,400,655	608,892	1,349,775	..	..	41,593,612
1875	25,353,924	11,749,532	7,227,774	6,179,395	881,861	1,731,723	..	..	53,124,209
1880	35,398,121	10,360,285	6,935,967	6,443,904	1,231,717	1,796,715	99,318	..	62,176,027
1885	37,820,906	10,681,837	8,994,322	6,593,648	1,702,719	1,648,627	49,917	..	67,491,976
1890	55,986,431	12,692,827	18,007,234	7,004,642	2,524,913	1,619,256	45,902	..	97,881,221
1895	47,617,687	12,791,094	19,856,959	6,531,006	2,295,832	1,523,846	73,313	..	90,689,727
1900	40,020,506	10,841,790	10,339,185	5,235,220	2,434,311	1,683,956	48,027	..	74,540,916
1905	39,506,764	11,455,115	12,535,231	6,277,812	3,120,703	1,583,561	61,730	..	74,540,916
1910	45,560,969	12,882,665	20,331,838	6,267,477	5,158,516	1,788,310	57,240	..	92,047,015
1913	39,701,348	12,113,682	21,786,600	5,073,057	4,421,375	1,745,356	67,109	148,875	85,057,402
1914	632,874,359	12,051,685	23,129,919	4,208,461	4,456,186	1,674,845	70,200	6134,679	78,600,334
1915	632,498,046	10,545,632	15,950,154	3,674,547	4,803,850	1,624,450	57,827	6102,683	69,257,189
1916	636,086,241	12,576,587	15,524,293	65,091,282	6,529,960	1,702,579	47,520	6110,142	76,668,604
1917	638,482,465	14,760,013	17,204,268	66,229,519	6,384,191	1,711,116	54,709	6138,731	84,965,012

(a) 1st March year following. (b) 30th June of year following.
(c) Statistics not collected prior to 1880.

3. **Proportion in the Several States and Territories.**—Particulars concerning the relative positions of the several States and Territories with respect to the total flocks of Australia during the years 1901 and 1913 to 1917, and the variations in such positions which have taken place during those years, are as hereunder:—

**PERCENTAGE OF SHEEP IN EACH STATE AND TERRITORY ON TOTAL FOR
COMMONWEALTH, 1901 AND 1913 TO 1917.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	F. Terr.	C'wealth.
	%	%	%	%	%	%	%	%	%
1901 ..	58.10	14.82	13.92	6.95	3.65	2.49	0.07	..	100.00
1913 ..	46.68	14.24	25.61	5.96	5.20	2.05	0.08	0.18	100.00
1914 ..	41.83	15.33	29.43	5.35	5.67	2.13	0.09	0.17	100.00
1915 ..	46.92	15.23	23.03	5.30	6.94	2.35	0.08	0.15	100.00
1916 ..	47.07	16.41	20.25	6.64	7.21	2.22	0.06	0.14	100.00
1917 ..	45.29	17.37	20.25	7.33	7.52	2.01	0.07	0.16	100.00

During the period, the proportion of total Commonwealth flocks declined considerably in the case of New South Wales, and in a less marked degree in Tasmania, while in the cases of Queensland, Western Australia, and Victoria substantial advances in proportion were experienced.

4. **Oversea Imports and Exports of Sheep.**—As in the case of cattle, the oversea exports of live sheep from Australia are of comparatively small importance. The principal countries to which such exports have been consigned during recent years are the Straits Settlements, Union of South Africa, and Pacific Islands; Western Australia being the principal exporting State. The following are the particulars of the imports and exports for the years 1901 and 1913 to 1917—18 :—

COMMONWEALTH IMPORTS AND EXPORTS OF SHEEP, 1901 AND 1913 TO 1917—18.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901	553	12,134	12,094	12,104	11,541	—30
1913	8,448	28,508	41,770	75,073	33,322	46,565
1914—15 ..	6,140	23,622	16,889	37,826	10,749	14,204
1915—16 ..	6,597	36,511	7,325	19,004	728	—17,507
1916—17 ..	3,809	24,470	7,007	32,944	3,198	8,474
1917—18 ..	1,719	8,850	10,799	24,899	9,080	16,049

Note.—The minus sign (—) signifies net imports.

5. **Sheep Slaughtered.**—The numbers of sheep slaughtered in the several States during 1901 and from 1913 to 1917 are as follows :—

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1901 AND 1913 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. (a)	Nor. Ter.	Fed. Ter.	C'wealth.
1901	4,519,133	2,469,797	554,705	678,000	428,534	322,000	..	..	8,972,169
1913	6,420,810	4,742,231	1,375,827	1,222,315	602,383	315,726	d516	4,765	14,684,573
1914	66,006,190	4,550,272	1,351,145	1,156,957	588,342	312,275	c500	64,351	13,970,032
1915	64,173,511	2,973,803	1,316,152	918,526	564,535	288,419	c500	63,376	10,238,822
1916	63,756,477	2,647,200	909,615	668,612	547,041	283,313	c500	62,975	8,833,233
1917	63,198,465	2,499,002	689,905	6808,914	590,244	259,287	c500	63,713	8,050,030

(a) Partly estimated. (b) Year ended 30th June year following. (c) Estimated. (d) Figures for 1910.

6. **Exports of Mutton and Lamb Preserved by Cold Process.**—Australia's export trade in mutton and lamb preserved by cold process has, in recent years, advanced rapidly. In 1903 the value of exports was £492,114, while seven years afterwards, in 1910, the value amounted to no less a sum than £2,161,513; the average for the two years, 1913 and 1914—15, was £3,155,190, but, consequent on drought and war conditions, the value of the exports fell to £769,752 in 1915—16, to £1,540,572 in 1916—17, and to £452,647 in 1917—18. In all the States considerable attention is now being paid to the breeding of a class of sheep that will best meet the requirements of consumers. Crosses between the Merino and the Lincoln, or between the Merino and the Leicester breeds, have proved exceedingly valuable, as they furnish both a good quality of wool and an excellent carcass for export purposes. The breeding of Shropshire and Southdown sheep with a view to combining meat production with that of wool is also on the increase. Special attention is being paid to the raising of lambs, as it has become widely recognised that with suitable breeds the export trade in lambs is very profitable.

As in the case of frozen beef, Australia's principal customer in this trade is the United Kingdom, which has absorbed 94 per cent. of the total quantity exported from the Commonwealth during the past five years, while the balance was shipped mainly to Egypt, Germany (1913 only), Straits Settlements, and Canada.

QUANTITY OF MUTTON AND LAMB PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1913 TO 1917-18.

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	101,440,138	187,897,976	36,539,660	65,140,182	9,532,577	490,550,533
Egypt ..	633,109	902,604	319,156	..	8,071,709	9,926,578
Germany ..	5,144,062	..	..	..	..	5,144,062
Straits Settlements ..	928,783	1,068,164	749,883	964,335	824,406	4,535,571
Canada ..	1,662,910	413,013	..	..	199,092	2,275,015
Union of South Africa ..	1,550,257	387,006	..	..	..	1,937,263
Malta ..	1,059,183	798,996	..	..	..	1,858,179
Ceylon ..	365,065	504,115	302,839	284,130	252,716	1,508,865
Philippine Islands ..	778,693	370,296	132,134	35,608	122,963	1,439,694
Hong Kong ..	401,380	256,068	194,209	272,450	144,789	1,268,896
United States ..	571,008	195,225	..	..	..	766,233
Gibraltar ..	..	463,106	..	..	..	463,106
Hawaiian Islands ..	91,085	30,802	..	..	..	121,887
Other Countries ..	306,110	176,506	105,747	116,104	27,058	731,525
Total ..	204,931,783	193,263,877	38,343,628	66,812,809	19,175,310	522,527,407

The corresponding particulars concerning the values of the exports are:—

VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM THE COMMONWEALTH, 1913 TO 1917-18.

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	2,712,682	3,321,045	725,255	1,496,658	213,710	8,469,350
Egypt ..	9,435	16,577	7,719	..	194,199	227,930
Straits Settlements ..	11,841	18,553	18,713	25,534	23,885	98,526
Germany ..	67,396	..	..	..	..	67,396
Canada ..	27,256	7,507	..	..	5,471	40,234
Ceylon ..	5,091	5,346	7,524	7,250	7,103	32,314
Malta ..	14,142	12,920	..	..	..	27,062
Union of South Africa ..	19,936	6,538	..	..	..	26,474
Hong Kong ..	5,571	4,422	4,928	7,210	4,072	26,203
Philippine Islands ..	9,649	6,212	3,039	965	3,425	23,290
United States ..	7,793	3,066	..	..	..	10,859
Gibraltar ..	..	7,660	..	..	..	7,660
Hawaiian Islands ..	1,386	772	..	..	..	2,158
Other Countries ..	4,354	3,230	2,574	2,955	782	13,895
Total ..	2,896,532	3,413,848	769,752	1,540,572	452,647	9,073,351

7. Comparison with other Countries.—As regards the size of its flocks, and the quantity and quality of wool produced, Australia has long occupied a leading position amongst the sheep-raising countries of the world. From estimates published in the Year Book of the United States Department of Agriculture it would appear that the

approximate number of sheep in the world is in the neighbourhood of 550,000,000, to which total Australia contributes about 15½ per cent. The following comparison taken mainly from the same source gives the latest available figures relative to the number of sheep in the principal wool-producing countries :—

NUMBER OF SHEEP IN VARIOUS COUNTRIES.

Country.	Date.	No. of Sheep. (,000 omitted.)	Country.	Date.	No. of Sheep. (,000 omitted.)
Australia	1917	84,965	Brazil	1916	7,205
Russian Empire (a) ..	1914	72,273	Germany	1915	5,073
U. S. of America	1916	48,483	Chile	1914	4,545
Argentine Republic ..	1914	43,225	Serbia	1910	3,819
Union of South Africa ..	1915	31,434	Greece	1914	3,547
United Kingdom	1917	27,867	Mexico	1902	3,424
Ottoman Empire	1912	27,095	Portugal	1906	3,073
Uruguay	1908	26,286	Canada	1917	2,009
New Zealand	1917	25,270	Finland	1910	1,309
British India	1914-15	23,016	Norway	1916	1,281
Spain	1916	16,012	Sweden	1916	1,198
Italy (b)	1914	13,824	Tunis	1916	1,148
Austria-Hungary (c) ..	{ 1910 }	12,337	Iceland	1914	585
	{ 1913 }		Netherlands	1917	521
France (d)	1917	10,587	Denmark	1917	270
Algeria	1912	8,338	Belgium	1910	185
Bulgaria	1910	8,632	Switzerland	1916	172
Rumania	1916	7,811			

(a) Including Poland, Caucasus, and Siberia. (b) Including goats. (c) Austria, Croatia-Slavonia and Bosnia-Herzegovina 1910; Hungary 1913. (d) Exclusive of invaded area.

8. **Relation to Population.**—The relation of the flocks of the several States and Territories to the population at the end of the year 1901 and from 1913 to 1917 is as follows :—

NUMBER OF SHEEP PER HEAD OF POPULATION, 1901 AND 1913 TO 1917.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F.T.	C'wealth.
1901 ..	30.43	8.82	19.80	13.95	13.56	10.23	10.34	..	18.83
1913 ..	21.67	8.58	33.00	11.53	13.79	8.65	18.28	74.89	17.46
1914 ..	17.66	8.42	34.18	9.53	13.79	8.32	17.66	69.42	15.91
1915 ..	17.42	7.43	23.50	8.38	15.11	8.08	12.67	41.64	14.04
1916 ..	19.24	8.99	23.19	11.77	17.91	8.52	9.97	49.55	15.68
1917 ..	20.14	10.46	25.38	14.18	20.63	8.42	11.15	56.10	17.13

A comparison of the ratios of sheep to population for 1917 with those for 1901 discloses increases in the cases of Western Australia, Queensland, Victoria, South Australia, and the Northern Territory, and decreases in the other States.

§ 5. Wool.

1. **Importance of Wool Production.**—The chief contributing factor to the pastoral wealth of Australia is the production of wool, the value of the output for the season ended 30th June, 1918, being about £37,011,000. The bulk of the wool produced in the Commonwealth is exported, but with the greater activity of the local woollen mills there has, in recent years, been an increasing quantity used in Australia, although even now the quantity so used represents only a little over 3 per cent. of the whole clip.

2. **Greasy and Scoured Wool.**—For the purpose of comparing the clips of the several States or of the Commonwealth as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

The quantity of Australian wool scoured and washed before export during recent years has been on the average about 25 per cent. of the total clip. The loss of weight in scouring varies largely with season, locality, breed, and condition. It seems preferable to express "scoured and washed" wool in terms of "greasy" rather than vice versa, since the absolute error arising from uncertainty as to average loss of weight has thus the less effect.

In the following tables relative to the production of wool, "scoured and washed" wool has been converted into the estimated equivalent amount of "greasy" wool, on the assumption that two pounds of "greasy" wool are on the average required to produce one pound of "scoured and washed" wool.

3. **Total Production.**—The estimated production of wool in the several States, formerly based on the Customs returns, being no longer available from that source, an effort has been made to arrive at approximate figures from data collected by the State Statisticians from growers and fellmongers, &c. Particulars for years prior to 1913-14 will be found in earlier issues (see Year Book No. 6, page 346, and No. 9, page 296). The following table gives the estimates obtained in reference to the five seasons ended 30th June, 1914 to 1918 :—

ESTIMATED QUANTITY OF WOOL AS IN THE GREASE, SHORN, FELLMONGERED OR ON SKINS SHIPPED DURING THE SEASONS ENDED 30th JUNE, 1914 TO 1918.

State.	1913-14.	1914-5.	1915-16.	1916-17.	1917-18.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales (a)	357,985,000	318,935,000	262,044,982	270,525,000	284,188,000
Victoria	106,833,690	95,406,867	82,330,198	94,845,024	105,424,682
Queensland	154,183,114	155,478,740	130,783,277	102,220,125	87,425,558
South Australia .. .	55,014,048	38,848,978	33,969,975	35,050,865	46,339,339
Western Australia ..	26,625,787	24,562,110	31,914,040	34,269,303	39,076,260
Tasmania	10,092,564	9,103,030	9,212,203	10,441,978	10,284,316
Northern Territory (b)	400,000	400,000	350,000	350,000	330,000
Commonwealth .. .	711,134,203	642,734,725	550,604,675	547,702,295	573,068,155

(a) Including Federal Territory. (b) Approximate figures.

It is to be noted that a shortage has apparently occurred in the collection of these statistics, the estimates falling considerably below the approximate totals obtained from oversea shipments of wool and skins, together with the quantity used in local manufactories. The Commonwealth total so obtained represented 768,586,806 lbs. for the season 1913-14. The abnormal conditions of wool shipments obtaining during the last four seasons do not admit of any similar comparison with the estimated production for those seasons.

The weight and value of wool per sheep shorn in the past five seasons is shewn in the following table:—

ESTIMATED WEIGHT AND VALUE OF WOOL PER SHEEP SHORN FOR THE SEASONS ENDED 30th JUNE, 1914 TO 1918.

Season ended 30th June.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
WEIGHT.							
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1914	7.94	6.46	7.19	8.37	5.49	5.15	7.37
1915	7.20	5.58	6.75	6.98	5.31	5.00	6.68
1916	7.09	5.79	6.37	7.65	6.17	5.29	6.63
1917	7.39	6.26	7.00	7.47	5.84	5.79	6.96
1918	7.08	6.19	6.91	7.52	6.19	5.38	6.80
VALUE.							
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1914	6 4	5 5	6 2	6 0	4 2	4 8	5 11
1915	5 6	4 10	5 3	4 10	3 8	4 6	5 2
1916	6 8	6 9	6 1	6 10	5 5	7 2	6 6
1917	9 8	8 8	9 2	9 0	6 11	9 3	9 2
1918	9 1	8 6	9 4	8 5	7 0	8 0	8 11

4. **Wool Locally Used.**—The quantity of wool used in the manufactories of the several States of the Commonwealth during the past five years was approximately as follows:—

LOCALLY USED WOOL, ESTIMATED AS "GREASY," STATES AND COMMONWEALTH, 1913 TO 1917.

State.	1913.	1914.	1915.	1916.	1917.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	2,484,446	2,484,446	54,173,576	56,487,800	56,556,988
Victoria	5,917,410	6,118,450	11,052,250	11,052,250	58,669,460
Queensland	406,829	356,553	377,538	358,504	304,091
South Australia	645,000	389,700	1,065,130	1,065,130	5995,164
Western Australia					
Tasmania	1,105,000	1,141,200	1,217,780	1,244,844	1,172,000
Commonwealth	10,558,685	10,490,349	17,886,274	20,188,528	17,697,703

(a) Previous year's figures. (b) Year ended 30th June.

5. **Bounties on Combed Wool or Tops Exported.**—Under the Bounties Act 1907, bounties were payable on combed wool or tops exported from the Commonwealth, provided they were produced therein. The maximum amount to be paid might not exceed a total of £10,000 per annum; any unexpended sum might be carried forward and be available for the years following. For the three years commencing 1st January, 1909, the rate of bounty granted was 1½d. per lb., and for the two years commencing 1st January, 1912, 1d. per lb. was payable for all combed wool or tops produced; thenceforward to the end of 1915, 1d. per lb. was payable up to 1,000,000 lbs., to any one manufacturer during a year, and ¾d. per lb. in excess of that quantity. No bounties have been paid on combed wool or tops since 1915. During the year 1908–9, an amount of £326 was paid in bounties, in 1909–10, £4,933, in 1910–11, £8,522, in 1911–12, £16,898, in 1912–13, £13,061, in 1913–14, £12,706, in 1914–15, £7,727, and in 1915–16, £5,828. The quantities of wool on which these amounts were paid were 52,085; 789,216; 1,363,555; 3,122,244; 3,134,614; 3,068,170; 3,635,811 and 2,824,436 lbs. respectively.

Figures shewing the exports of wool tops for the years 1913 to 1917–18 inclusive will be found on the next page.

6. Exports of Wool.—During the two calendar years prior to the war, about 38 per cent. of the exports of wool from the Commonwealth was despatched to the United Kingdom, whereas the shipments for the same destination during the past four years have averaged over 66 per cent. The percentage for the past five years was about 59½ per cent. The other leading consignees were the United States of America, France, Italy, Japan, and, prior to the war, Germany and Belgium. The following table shews for the years 1913 to 1917-18 the quantities of "greasy" wool exported from the Commonwealth and the principal countries to which consigned:—

COMMONWEALTH EXPORTS OF WOOL IN THE GREASE, 1913 TO 1917-18.

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	185,387,090	319,614,694	202,384,381	283,446,361	139,113,437	1,129,945,963
United States of America ..	14,666,551	61,731,511	115,112,628	16,174	57,425,217	243,952,081
France ..	159,782,827	12,787,863	13,746,706	12,254,213	5,675,577	204,247,186
Italy ..	5,778,424	18,191,774	43,167,206	25,608,163	17,641,985	110,387,552
Germany ..	94,068,893	3,036,083	..	..	..	97,104,976
Japan ..	7,199,671	22,670,413	34,725,863	16,830,727	2,919,477	84,355,151
Belgium ..	51,831,724	2,984,856	..	..	..	54,866,580
Egypt ..	151,379	..	..	..	15,522,281	15,673,660
Austria-Hungary ..	11,731,933	829,746	..	..	..	12,561,679
Canada ..	88,916	951,452	453,950	727,923	4,726,317	6,948,558
India ..	501,827	443,451	198,228	297,218	778,286	2,219,010
New Zealand ..	101,104	541,513	11,059	..	..	653,676
Other Countries ..	96,539	170,474	1,452,965	32,471	..	1,752,449
Total ..	531,436,878	443,953,830	411,252,986	339,222,250	243,802,577	1,969,668,521

Similar particulars concerning the exports of "scoured and washed" wool are as follows:—

**COMMONWEALTH EXPORTS OF "SCOURED AND WASHED" WOOL (a),
1913 TO 1917-18.**

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	26,176,484	48,171,821	37,569,727	46,917,307	59,247,374	218,082,713
United States of America ..	124,301	4,557,800	27,933,634	..	1,446,501	34,062,236
Japan ..	3,564,433	6,141,036	7,499,571	5,081,183	4,779,081	27,065,304
France ..	18,804,399	2,154,275	1,190,494	1,016,397	62,148	23,227,713
Germany ..	10,135,857	1,748,008	..	154,172	..	12,038,037
Italy ..	188,298	655,302	4,920,545	2,651,922	475,914	8,991,981
Belgium ..	5,269,908	920,506	..	..	..	6,190,414
Egypt ..	..	..	..	..	1,074,558	1,074,558
India ..	100,434	135,408	240,663	299,060	51,664	827,229
Austria-Hungary ..	62,932	147,864	..	..	..	210,796
New Zealand ..	11,042	1,879	104,364	..	..	117,785
Other Countries ..	11,998	315,392	426,553	567,059	299,490	1,620,492
Total ..	64,450,086	64,949,291	79,886,051	56,687,100	67,436,730	333,409,258

(a) Including "tops." See preceding page.

The figures for "scoured and washed wool" include tops, amounting in 1913 to 3,561,722 lbs., valued at £415,670; in 1914-15, 4,095,966 lbs., valued at £511,021; in 1915-16, 4,981,975 lbs., valued at £680,656; in 1916-17, 4,869,452 lbs., valued at £1,204,570; and in 1917-18, 4,571,357 lbs., valued at £1,510,799. In 1914-15, Japan took 4,052,965 lbs., valued at £506,161; in 1915-16, 4,894,577 lbs., valued at £665,442;

in 1916-17, 4,845,515 lbs., valued at £1,199,180; and in 1917-18, 4,566,198 lbs., valued at £1,509,681.

The total value of the wool exported from the Commonwealth to the principal countries during the five years under review was:—

**TOTAL VALUE OF WOOL EXPORTED FROM THE COMMONWEALTH,
1913 TO 1917-18.**

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-8.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	9,456,636	15,413,174	12,608,971	23,431,942	15,648,660	76,559,383
United States of America ..	745,354	3,110,301	8,381,302	13,513	4,389,755	16,640,225
France ..	7,429,856	694,751	952,026	963,097	372,453	10,412,183
Japan ..	735,018	1,502,576	2,557,091	2,470,414	1,796,089	9,091,188
Italy ..	256,718	716,260	2,115,891	1,845,861	1,005,058	5,939,788
Germany ..	4,693,157	295,376	..	..	..	4,988,533
Belgium ..	2,386,892	187,755	..	..	..	2,574,647
Egypt ..	6,037	..	..	..	939,149	945,186
Austria-Hungary ..	519,477	50,436	..	..	..	569,913
Canada ..	5,404	50,063	53,316	77,267	338,087	524,137
India ..	30,586	30,739	32,442	87,860	66,780	248,407
New Zealand ..	5,199	19,962	4,931	..	..	30,092
Other Countries ..	6,728	30,789	118,121	63,384	30,833	249,855
Total ..	26,277,062	22,102,182	26,854,091	28,953,338	24,586,864	128,773,537

7. **Care Needed in Comparing Clips.**—The Customs returns prior to 1914-15 do not furnish a reliable indication of increase or decrease in successive clips, since in each case they relate to the year ended 31st December, and include imports and exports of wool belonging to two distinct clips. A further defect in the comparability of successive clips is due to the circumstance that owing to climatic or other conditions, the time of shearing may be so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth.

8. **Wool-producing Countries in Southern Hemisphere.**—The next table, compiled by one of the leading English wool-broking firms, furnishes interesting evidence of the relative importance of the three great wool-producing areas of the Southern Hemisphere. The figures given are the latest available, and represent for the respective years the imports of wool into Europe and North America:—

**IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA,
1901 AND 1912 TO 1916.**

Year.	Australia and New Zealand.	Cape Colony.	River Plate.	Total.	Average Value of Australasian and Cape Bales.
	Bales.	Bales.	Bales.	Bales.	£
1901 ..	1,745,000	217,000	532,000	2,494,000	10.5
1912 ..	2,463,000	463,000	497,000	3,423,000	15.0
1913 ..	2,296,000	484,000	437,000	3,217,000	16.5
1914 ..	2,332,000	499,000	406,000	3,237,000	17.0
1915 ..	2,157,000	519,000	378,000	3,054,000	19.0
1916 ..	1,919,000	500,000	344,000	2,763,000	27.0

As the River Plate bale is much larger than the Australasian or Cape bale, a comparison of the number of bales is somewhat misleading. Allowing approximately for the difference in size of the several bales, it may be said that during the last five years shewn above the importations from Australia and New Zealand represent about 65 per cent. of the total.

9. **United Kingdom Importation of Wool.**—The quantity and value of wool imported into the United Kingdom during the year 1917 from the principal wool-producing countries furnish evidence of the important position which the Commonwealth occupies in the supply of wool to the mother country. This is shewn in the following table :—

IMPORTS OF WOOL INTO THE UNITED KINGDOM, 1917.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ..	338,225,043	29,400,631	U.S. of America	199,360	14,952
New Zealand ..	142,104,934	11,125,380	China ..	161,400	12,504
Union of S. Africa	44,566,040	3,156,594	Iceland and		
British India ..	48,283,084	2,284,502	Greenland ..	149,899	10,850
Argentine Re-			Canada ..	6,860	1,030
public ..	31,920,198	2,266,313	Persia ..	13,100	600
Chile ..	5,627,538	428,922	British Posses-		
Turkey, Asiatic	3,057,300	177,231	sions, n.e.i.	554,176	38,411
Egypt ..	2,883,715	163,059	Foreign Coun-		
Uruguay ..	1,871,038	135,723	tries, n.e.i. ..	393,807	21,297
Falkland Islands	1,755,205	128,547			
Peru ..	1,228,324	118,907			
France ..	231,580	19,014	Total ..	623,232,601	49,504,517

It will be seen that of the total importations of wool into the United Kingdom, Australian wool represented slightly over 54 per cent. of quantity and over 59 per cent. of value, and New Zealand nearly 23 per cent. of quantity and 22½ per cent. of value. It is interesting to note that a total of 578,379,057 lbs., valued at £46,298,154, was received from British Possessions, being a little under 93 per cent. of the total weight imported, and 93½ per cent. of the total value.

10. **The Wool Market.**—(i) *General.* A résumé of Australian wool market conditions for the seasons 1907–8 to 1912–13 will be found in Year Book No. 7 (pages 296 and 297), for the season 1913–14 in Year Book No. 8 (page 297), and for the seasons 1914–15 and 1915–16 in Year Book No. 10 (page 310).

(ii) *Purchase by British Government.* The purchase by the Imperial Government of the balance of the Australian wool clip, for the season 1916–17, was brought about as a result of war conditions. Owing to the demand for wool for British and Allied military clothing, it was decided to acquire the Australian clip at the flat rate of 15½d. per pound greasy—an increase of 55 per cent. on the prices ruling in the season immediately preceding the war, viz., 1913–14. The control of the scheme was placed in the hands of a body called the Central Wool Committee, assisted by a committee in each State. These committees consisted of representatives of the wool growers, wool sellers, wool buyers, manufacturers, and scourers or fellmongers. In addition the Central Wool Committee had a Government nominee, who acted as chairman. The broad policy laid down was that existing trade conditions were not to be disturbed; this meant that

the carrying out of the details of the scheme was left to the trade itself. The wool was prepared, catalogued and shewn in the usual way, but instead of being sold by public auction, it was valued by duly appointed Government Wool Appraisers, according to a table of limits prepared by a body of experts acting as an Advisory Board to the Central Wool Committee. On appraisal, the wool became the property of the Imperial Government, and was shipped as freight space became available, it being prescribed that the allotment of freight should be on the basis of the quantity of wool appraised in each State.

The Central Wool Committee, at the request of the Imperial Government, undertook to scour and re-class as much wool as would keep the local industries going to their full capacity.

(iii) *Financial.* Funds received from the Imperial Government were used to effect a payment of 90 per cent. of the appraised price to wool brokers for distribution to the growers within fourteen days from the final date of each series of appraisements. The balance of 10 per cent. was withheld for possible adjustments. The money so retained was placed at interest, the earnings being added to the amount available for final distribution.

The average appraised price per pound having worked out less than the purchase price of 15½d., the money retained, amounting to £2,313,461, was paid over on the 14th August, 1917. A dividend—the first—of 10 per cent. was paid on 23rd October, 1917, amounting to £2,312,608. This represents slightly more than the payment in full of the flat rate of 15½d. per pound. A small dividend will follow as soon as final adjustments can be made.

(iv) *Quantity and Value of Wool Appraised, 1916-17.* The quantity of wool appraised under the Imperial Government's purchase of a portion of the clip for the season 1916-17 amounted to 323,752,519 lbs. greasy, and 34,307,991 lbs. scoured, equivalent to 392,368,501 lbs. of wool in the grease. The average appraised price per pound of wool in the grease was 14.72d., the average for scoured wool was 22.86d. per pound, and the average of all wool—greasy, and scoured calculated as greasy—appraised under the scheme was 14.15d. per pound, the difference between this average and the 15½d. basis being equal to 9.5 per cent. on the average appraised price.

(v) *Purchase of 1917-18 Clip.* The organisation for the carrying out of the Imperial Government's purchase of the Australian wool clip 1917-18 was the same as for the balance of the season 1916-17.

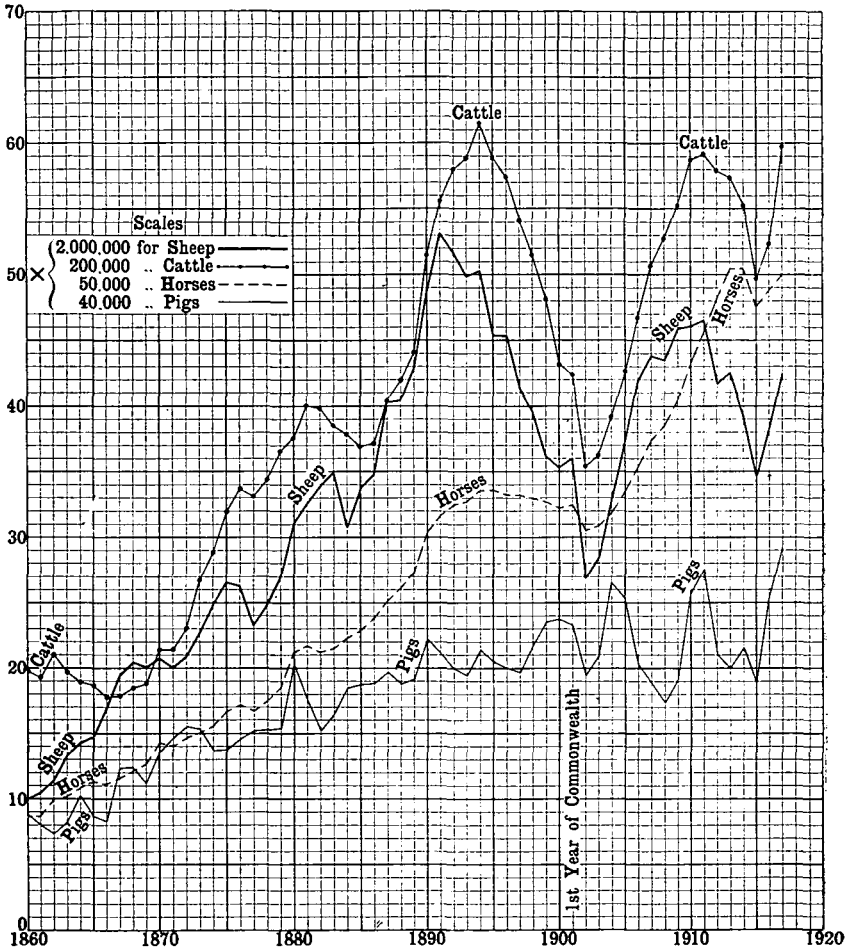
With the exception of a few modifications necessary for the better working of the scheme, no alteration was made in the method of appraisal.

Ninety per cent. of the appraised value was paid to wool growers through the wool selling brokers fourteen days after the completion of each series of appraisements, 10 per cent. again being withheld for possible adjustments.

The total quantity of greasy wool appraised was 569,629,520 lbs., and scoured wool 47,340,403 lbs., a total of 616,969,923 lbs., equal to 664,310,326 lbs. greasy.

The average appraised price of the greasy wool was 14.98d. per lb., and of the scoured wool 25.62d. per lb. The average appraised price on the greasy basis works out at 14.68d. per lb. The difference between this and the flat rate of 15½d. is equal to 5.59 per cent. of the appraised price.

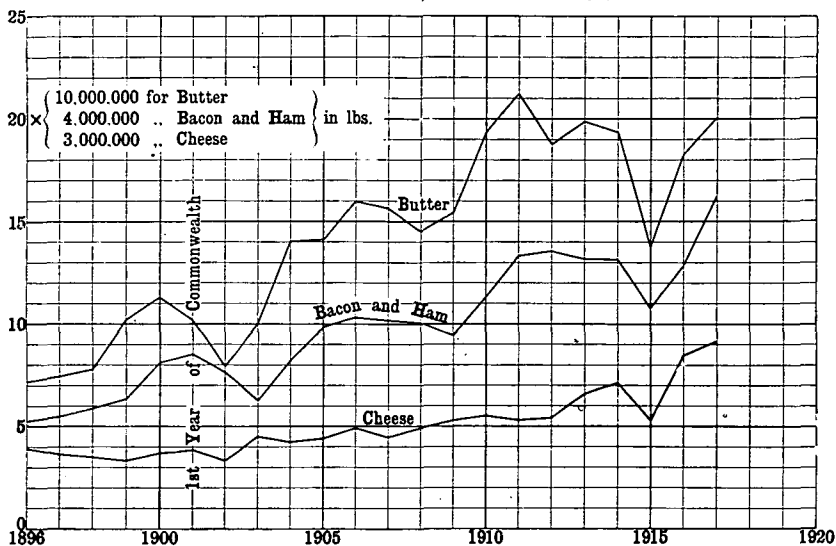
GRAPHS SHEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS IN THE COMMONWEALTH FROM 1860 TO 1917.



(See pages 293 et seq.)

EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. The totals of the sheep, cattle, horses, and pigs for the Commonwealth are indicated by the several curves or graphs, the vertical side of a small square representing 2,000,000 in the case of sheep; 200,000 for cattle; 50,000 for horses; 40,000 for pigs.

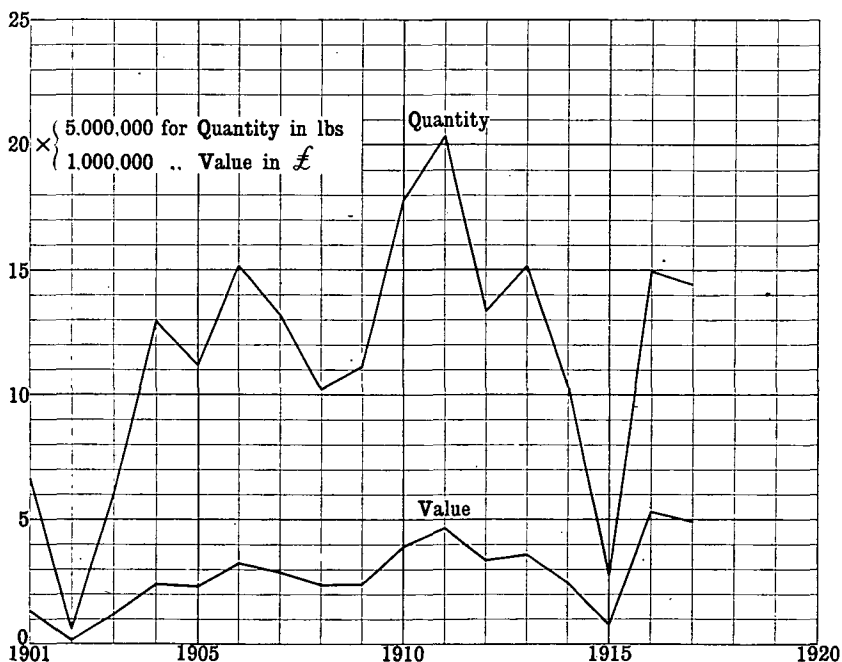
GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM, IN THE COMMONWEALTH, FROM 1896 TO 1917.



(See pages 392 and 395.)

EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham, 4,000,000 lbs.; and in the case of cheese 3,000,000 lbs.

GRAPHS SHEWING THE QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM THE COMMONWEALTH, FROM 1901 TO 1917.



(See page 393.)

EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle represents 5,000,000 lbs. in weight, or £1,000,000 in value.

The 10 per cent. retention money, together with a dividend of 5 per cent., was distributed in all centres on the 21st August, 1918, involving a sum of approximately £6,094,713. A small further dividend will be payable when outstanding accounts are finally adjusted.

PARTICULARS OF PURCHASE OF 1917-18 AUSTRALIAN WOOL CLIP.

Purchased by—		Quantity of Wool Appraised.				Values.			
		Bales.	Fadges.	Sacks.	Weight in lbs.	Appraised Value.		Based on Flat Rate Value.	
						£	s. d.	£	s. d.
British Government ..	Greasy	1,627,360	18,136	190,587	553,713,279	34,610,564	19 9	36,555,476	4 11
	Scoured	197,246	697	745	46,196,661	4,956,855	0 7	5,234,040	4 10
	Total	1,824,606	18,833	191,332	599,909,940	39,576,420	0 4	41,789,516	9 9
Woolen Manufacturers ..	Greasy	37,187	493	15,682	13,185,745	715,302	10 3	755,301	18 6
	Scoured	4,032	16	23	1,132,587	95,444	17 0	100,782	1 8
	Total	41,819	509	15,705	14,318,332	810,747	7 3	856,084	0 2
Wool Top Manufacturers ..	Greasy	7,936	1	..	2,730,496	242,287	10 4	255,836	2 9
	Scoured	46	..	..	11,155	1,835	18 7	1,938	11 9
	Total	7,982	1	..	2,741,651	244,123	8 11	257,774	14 6
Total Purchased	Greasy	1,672,483	18,630	206,269	569,629,520	35,577,155	0 4	37,566,614	6 2
	Scoured	201,924	713	768	47,340,403	5,054,135	16 2	5,336,760	18 3
	Total	1,874,407	19,343	207,037	616,969,923	40,631,290	16 6	42,903,375	4 5
Grand total in terms of Greasy ..	..	..	..	..	664,310,326	..	..	42,903,375	4 5

Note.—Woolen manufacturers obtained their supplies at the appraised price, but wool top manufacturers were required to pay the flat rate value for all their purchases.

(vi) *Purchase of 1918-19 Clip.* The purchase of the 1918-19 clip and appraisement thereof were virtually carried out on the same lines as for the clip of 1917-18.

The total wool appraised during the 1918-19 season consisted of 599,447,103 lbs. greasy and 52,662,569 lbs. scoured wool, or an equivalent of 704,772,241 lbs. in terms of greasy.

The total greasy wool appraised represented a value of £38,310,763, the average price being 15.34d. per lb., while the scoured value was £5,670,405, or an average per lb. of 25.84d.

Reducing all appraised wool to a greasy basis the average price would be 14.98d. per lb.

The difference between the appraised price and the flat rate of 15½d. was 3.49 per cent. of the appraisement.

A dividend of 3½ per cent., together with the 10 per cent. retained, or a total of 13½ per cent., was accordingly made payable on the 26th August, 1919.

PARTICULARS OF PURCHASE OF 1918-19 AUSTRALIAN WOOL CLIP.

Purchased by—	—	Quantity of Wool Appraised.				Values.	
		Bales.	Fadges.	Sacks.	Weight in lbs.	Appraised Value.	Based on Flat Rate Value.
						£	£
British Government	Greasy Scoured	1,700,290 217,092	22,378 872	235,423 668	579,168,627 51,121,844	36,975,793 5,504,575	....
	Total	1,917,382	23,750	236,091	630,290,471	42,480,368	43,963,348
Woolen Manufacturers	Greasy Scoured	37,507 4,542	300 10	10,862 1	13,139,300 1,108,427	....	....
	Total	42,049	310	10,863	14,297,727	839,756	869,072
Wool Top Manufacturers	Greasy Scoured	21,257 1,896	4 ..	.. ..	7,089,176 432,298	....	....
	Total	23,153	4	..	7,521,474	661,044	684,120
Total Purchased ..	Greasy Scoured	1,759,054 223,530	23,182 882	246,235 669	599,447,103 52,662,569	38,310,763 5,670,405	38,714,292 6,802,248
	Total	1,982,584	24,064	246,954	652,109,672	43,981,168	45,516,540
Grand total in terms of Greasy ..	..	..	..	..	704,772,241	..	45,516,540

Woolen manufacturers again purchased at appraised price, while the wool tops companies paid the flat rate and have contracted to pay in addition a percentage increase equal to that of the final dividend on the whole clip when determined.

Arrangements having been concluded for the purchase by the Imperial Government of the Australian wool clip for the currency of the war, and for one full wool year thereafter, the agreement embraces the 1919-20 season's production, the conditions being on the same lines as for previous seasons. The quantity of appraised wool in the Commonwealth awaiting shipment overseas on 30th June, 1919, was 127,266 bales of the 1917-18 season and 1,211,427 bales of 1918-19 season, or a total of 1,338,693 bales, representing a value of approximately £28,772,000.

(vii) *Average Export Value.* The average values per lb. of Australian greasy wool according to the export returns for the past ten years have been as follows :—

EXPORT VALUE PER LB. OF AUSTRALIAN GREASY WOOL, 1908 TO 1917-18.

Year	1908.	1909.	1910.	1911.	1912.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
Average value per lb. ..	d. 9.17	d. 9.35	d. 9.53	d. 8.87	d. 9.50	d. 9.70	d. 9.45	d. 11.86	d. 15.81	d. 16.71

(viii) *Exports of Wool from each State, and Quantity sold Locally.* Over 86½ per cent. of the wool grown in Australia was sold in the local markets prior to export from the Commonwealth during 1913-14. Under normal conditions prior to the war buyers from

the United Kingdom, France, Germany, and other European countries, also from America, Japan, China, and India, attended the sales conducted in Sydney, Melbourne, Geelong, Brisbane, Adelaide, Fremantle, Hobart, and Launceston.

The following table shews the number of bales of wool exported oversea from each State during the season ended 30th June, 1918, and bales appraised or sold for shipment, for use in local woollen mills for scouring, etc. It must be noted that as considerable quantities of wool grown in some States are sold in or shipped from others, these figures do not shew actual local production, but total oversea shipments and sales. The estimated quantity of wool produced in each State is given on page 309.

EXPORTS OF WOOL TO PLACES OUTSIDE THE COMMONWEALTH, AND THE QUANTITY APPRAISED OR SOLD IN THE SEVERAL STATES, DURING THE SEASON ENDED 30th JUNE, 1918.

State.	Overseas Exports.		Sales or Appraisements.	
	Bales.	%	Bales.	%
New South Wales	498,423	48.75	747,623	39.20
Victoria	295,577	28.91	511,269	26.81
Queensland	140,226	13.72	313,837	16.45
South Australia	60,678	5.93	181,331	9.51
Western Australia	16,506	1.61	118,905	6.23
Tasmania	11,084	1.08	34,366	1.80
Commonwealth	1,022,494	100.00	1,907,331	100.00

(ix) *Exports of Wool from Commonwealth and Quantity sold Locally.* The number of bales of wool exported from the Commonwealth and the number sold at local sales prior to shipment, or taken for local use, during 1895, 1900, 1905, 1910, and the succeeding four seasons is shewn in the following table:—

EXPORTS OF WOOL FROM THE COMMONWEALTH, AND THE QUANTITY SOLD LOCALLY FROM 1895 TO 1914.

Year ended 30th June.	Overseas Exports.	Local Sales.(a)	Ratio of Wool sold locally to Exports.
	Bales.	Bales.	%
1895	1,595,652	817,333	51.22
1900	1,221,163	807,031	66.09
1905	1,218,969	926,940	76.04
1910	1,921,705	1,624,561	84.54
1911	1,975,378	1,642,555	83.15
1912	2,020,547	1,700,494	84.16
1913	1,718,486	1,518,650	88.37
1914	1,966,576	1,703,744	86.64

(a) Including wool absorbed by local woollen mills and wool-scouring establishments.

The steady development of the Australian wool market is clearly shewn in this table. In the nineteen years ended 1914, the quantity sold locally more than doubled, and the ratio of wool sold locally to that exported increased from 51 per cent. in 1895

to over 86½ per cent. in the season ended 30th June, 1914. The abnormal conditions obtaining since the outbreak of war have materially affected the ratios, which in consequence are no longer serviceable as a measure of growth of the local market.

(x) *Quantities of Various Descriptions of Wool Sold or Appraised in each State.* The quantities and ratios of the various descriptions of wool marketed in each State are shewn in the following tables:—

PROPORTIONS OF THE VARIOUS DESCRIPTIONS OF WOOL SOLD OR APPRAISED LOCALLY IN THE SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON ENDED 30th JUNE, 1918.

Description of Wool.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Commonwealth.
	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
Greasy	663,662	483,266	239,807	172,787	116,474	34,166	1,710,162
Scoured	83,961	28,003	74,030	8,544	2,431	200	197,169
Total	747,623	511,269	313,837	181,331	118,905	34,366	1,907,331
Fleece, etc. ..	695,289	457,637	294,993	161,960	107,113	32,944	1,749,936
Lambs'	52,334	53,632	18,844	19,371	11,792	1,422	157,395
Total	747,623	511,269	313,837	181,331	118,905	34,366	1,907,331
Merino	560,717	243,506	306,031	161,218	109,399	15,498	1,396,369
Crossbred and all strong breeds ..	186,906	267,763	7,806	20,113	9,506	18,868	510,962
Total	747,623	511,269	313,837	181,331	118,905	34,366	1,907,331
	%	%	%	%	%	%	%
Greasy	88.77	94.52	76.41	95.29	97.96	99.42	89.66
Scoured	11.23	5.48	23.59	4.71	2.04	0.58	10.34
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Fleece, etc. ..	93.00	89.51	94.00	89.32	90.08	95.86	91.75
Lambs'	7.00	10.49	6.00	10.68	9.92	4.14	8.25
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Merino	75.00	47.63	97.51	88.91	92.01	45.10	73.21
Crossbred and all strong breeds ..	25.00	52.37	2.49	11.09	7.99	54.90	26.79
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Wool in the grease represented 89½ per cent. of the total marketed during the period under review. Of fleece and lambs' wool, the former represents 91.75, and the latter 8.25 per cent. The class of wool produced is principally merino, which is almost exclusively

grown in the northern, western, and central parts of the continent, the bulk of the merino wool dealt with in Victoria coming from Riverina and other parts of New South Wales. Victoria, the southern parts of South Australia and of New South Wales, and Tasmania, produce nearly the whole of the crossbred and other strong bred wools.

(xi) *Percentages in each State of Various Descriptions of Wool Sold or Appraised.* The following table gives the percentages of each description of wool sold or appraised in the several States during the season 1917-18 :—

PERCENTAGE OF BALES OF EACH DESCRIPTION OF WOOL SOLD OR APPRAISED IN THE SEVERAL STATES ON THE TOTAL SOLD OR APPRAISED IN THE COMMONWEALTH, 1917-18.

Description of Wool.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Commonwealth.
	%	%	%	%	%	%	%
Greasy ..	38.81	28.26	14.02	10.10	6.81	2.00	100.00
Scoured ..	42.59	14.20	37.55	4.33	1.23	0.10	100.00
Fleece, etc. ..	39.73	26.15	16.86	9.26	6.12	1.88	100.00
Lambs' ..	33.25	34.08	11.97	12.31	7.49	0.90	100.00
Merino ..	40.16	17.44	21.92	11.54	7.83	1.11	100.00
Crossbred and all strong breeds ..	36.58	52.40	1.53	3.94	1.86	3.69	100.00

§ 6. Hides and Sheepskins.

1. **Extent of Trade.**—In addition to the hides and sheepskins treated in the tanneries of the several States, a very considerable export trade is carried on, the total value of the hides and sheepskins exported from Australia during the five years 1913 to 1917-18 being no less than £11,816,519, or an average of £2,363,304 per annum.

2. **Sheepskins with Wool.**—By far the largest item included in the amount mentioned in the preceding paragraph arises from the value of sheepskins with wool exported, which are shipped principally to the United Kingdom and France. Details concerning the number so exported during the five years 1913 to 1917-18 are as follows :—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITH WOOL, 1913 TO 1917-18.

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom ..	3,861,161	5,844,442	3,506,365	2,152,016	2,172,176	17,536,160
France ..	5,932,257	2,227,714	1,863,904	753,530	..	10,777,405
U.S. of America ..	99,037	1,016,958	331,706	..	..	1,447,701
Belgium ..	996,821	29,366	..	..	..	1,026,187
Canada ..	..	206,876	61,103	46,668	..	314,647
New Zealand ..	..	39,083	25,283	..	..	64,366
Germany ..	57,735	2,578	..	..	..	60,313
Italy ..	960	..	9,949	..	..	10,909
Other Countries ..	261	1,051	24	..	..	1,336
Total ..	10,948,232	9,368,068	5,798,334	2,952,214	2,172,176	31,239,024

The next table furnishes corresponding particulars as to value :—

**VALUE OF SHEEPSKINS WITH WOOL EXPORTED FROM THE COMMONWEALTH,
1913 TO 1917-18.**

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom	804,432	1,021,432	779,615	738,483	732,030	4,075,992
France ..	1,315,156	387,692	283,293	250,783	..	2,236,924
Belgium ..	335,569	10,877	..	..	..	346,446
U.S. of America	15,127	213,249	97,890	..	..	326,266
Canada ..	..	46,374	12,553	10,869	..	69,796
New Zealand ..	..	9,748	6,268	..	..	16,016
Germany ..	11,620	812	..	..	..	12,432
Italy ..	100	..	875	..	..	975
Other Countries	55	468	5	..	..	528
Total ..	2,482,059	1,690,652	1,180,499	1,000,135	732,030	7,085,375

3. *Sheepskins without Wool.*—In the case of sheepskins without wool the principal countries to which export takes place are the United States of America and the United Kingdom. Particulars concerning the quantities exported are as follows :—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITHOUT WOOL, 1913 TO 1917-18.

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
U.S. of America	21,760	640,302	1,815,725	1,618,517	749,570	4,845,874
United Kingdom	128,578	720,417	103,497	155,189	66,996	1,174,677
Canada ..	..	3,096	540	184,460	74,710	262,806
Japan ..	..	..	1,047	2,949	7,368	11,364
France ..	5,364	..	..	1,098	..	6,462
New Zealand ..	..	12	..	24	..	36
Total ..	155,702	1,363,827	1,920,809	1,962,237	898,644	6,301,219

Corresponding details concerning value are given hereunder :—

**VALUE OF SHEEPSKINS WITHOUT WOOL EXPORTED FROM THE
COMMONWEALTH, 1913 TO 1917-18.**

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	£	£	£	£	£	£
U.S. of America	1,550	35,766	86,908	126,612	74,693	325,529
United Kingdom	5,130	37,875	5,243	12,019	9,656	69,923
Canada ..	..	233	39	13,750	10,335	24,357
Japan ..	..	..	83	337	685	1,105
France ..	382	..	..	89	..	471
New Zealand ..	..	2	..	2	..	4
Total ..	7,062	73,876	92,273	152,809	95,369	421,389

4. **Hides.**—The Commonwealth trade in cattle hides has now assumed considerable proportions, and during 1913 the total value of such hides exported amounted to £1,654,878. The exports were principally to the United Kingdom, the United States of America, Belgium and Germany. The disastrous drought of 1914-15 greatly reduced the quantity of hides in the succeeding years. This, in conjunction with the increased demand for leather, more especially for military purposes, resulted in a considerable falling-off in the quantity of hides available for export. To insure against a shortage of supplies for home consumption, on the 28th October, 1914, the Government by proclamation prohibited the exportation of hides unless the consent in writing of the Minister for Trade and Customs was first obtained. The embargo when enforced was in the case of heavy hides only. Large quantities of hides are imported into the Commonwealth, mainly from New Zealand and the Pacific Islands. The total value of cattle hides imported during 1917-18 was £151,380.

Particulars concerning the export of cattle hides during the past five years are as follows:—

COMMONWEALTH EXPORTS OF CATTLE HIDES, 1913 TO 1917-18.

Country to which Exported.	1913.(a)	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
United Kingdom ..	358,499	472,394	209,219	147,408	136,425	1,323,945
U.S. of America ..	136,687	229,665	..	2,783	4,943	374,078
Belgium ..	243,463	38,520	..	..	..	281,988
Canada ..	11,205	142,928	66,890	19,210	3,338	243,571
Germany ..	204,553	18,255	..	..	..	222,808
Italy ..	85,984	9,830	97,038	2,334	..	195,186
New Zealand ..	6,103	9,067	14,582	11,526	1,218	42,496
France ..	16,208	8,803	1,129	3,733	..	29,873
Japan ..	155	6,863	4,006	..	3,300	14,324
Austria-Hungary ..	3,631	203	..	..	..	3,834
Union of South Africa ..	..	480	2,705	..	..	3,185
Other Countries ..	1,432	216	..	..	..	1,648
Total ..	1,067,925	937,224	395,569	186,994	149,224	2,736,936

(a) Including calfskins.

In the next table are given particulars relative to the value of cattle hides exported:—

VALUE OF CATTLE HIDES EXPORTED FROM THE COMMONWEALTH, 1913 TO 1917-18.

Country to which Exported.	1913.(a)	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	578,933	666,854	264,517	270,718	335,562	2,116,584
U.S. of America ..	196,583	330,096	..	5,217	10,638	542,534
Belgium ..	385,095	51,910	..	..	..	437,005
Germany ..	338,410	29,927	..	..	..	368,337
Canada ..	16,622	170,978	97,950	33,243	5,812	324,605
Italy ..	102,834	12,299	113,924	3,772	..	232,829
New Zealand ..	8,094	13,003	15,740	24,158	3,456	64,451
France ..	20,078	13,911	1,780	7,152	..	42,921
Japan ..	335	13,063	8,479	..	8,929	30,806
Austria-Hungary ..	5,545	355	..	..	..	5,900
Union of South Africa ..	..	531	3,038	..	..	3,569
Other Countries ..	2,349	274	..	..	..	2,623
Total ..	1,654,878	1,303,201	505,428	344,260	364,397	4,172,164

(a) Including calfskins.

The number and value of cattle hides imported into the Commonwealth during the five years 1913 to 1917-18 are as follows :—

CATTLE HIDES IMPORTED INTO THE COMMONWEALTH, 1913 TO 1917-18.

Particulars.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for 5 years.
No.	133,384	83,405	146,657	94,065	132,218	589,729
Value £	238,543	145,633	293,052	161,380	151,531	990,139

The exports of calfskins during the past four years amounted to 489,086, valued at £131,500, and of horse hides during the past five years 9,135, valued at £6,091; the imports during the same period being 5,375 horse hides, valued at £4,169.

§ 7. Graphical Representation of Pastoral Production.

1. **General.**—As comparatively complete statistics relative to the number of horses, cattle, sheep and pigs are available from 1860, the graphical representation of the fluctuations in numbers for the Commonwealth as a whole, shewn on page 315, covers the period from 1860 to 1917.

2. **Horses.**—With relatively unimportant fluctuations the number of horses in the Commonwealth increased at a fairly consistent rate until 1895, when a decline set in, culminating in the losses of the drought of 1902. At this latter point the number was practically identical with that for 1890. From 1902 onwards a rapid improvement was experienced, the totals for 1913 and 1914 being the highest recorded. The disastrous drought of 1914-15 was responsible for heavy losses, the number recorded at the close of the latter year being considerably less than in 1912. The 1916 and 1917 figures, however, shewed substantial increases, the returns in both cases being somewhat below those for 1913, but considerably above those for 1912.

3. **Cattle.**—The graph for cattle furnishes evidence of rapid increase in number, interrupted by four marked periods of decline, of which the first extended from 1862 to 1866, the second from 1881 to 1885, the third from 1894 to 1902. So extensive was this last-mentioned decline that the number receded to that of 1879. From 1902 a rapid recovery took place, and the total for 1911 exceeded that existing at the end of the year 1895, though still short of the maximum attained in 1894. The fourth period of decline commenced in 1912, the figures from that year to 1914 shewing a slight decline, while those for 1915 shew a very serious falling-off, the difference between the 1911 and 1915 returns amounting to over 16 per cent. In 1916 the number of cattle commenced to ascend, an increase exceeding 2,000,000 being in evidence in that and the year following. The 1917 returns were the second highest on record, 1894 figures still holding pride of place.

4. **Sheep.**—In the case of sheep the graph furnishes evidence of six periods in which the upward movement in number has been arrested or reversed. The first of these occurred between 1868 and 1871, the second between 1875 and 1877, the third during 1884, the fourth, by far the most serious, between 1891 and 1902, the fifth during 1912, and the sixth during 1914-15. From 1902 to 1907 a rapid increase took place, succeeded by a slight decline in 1908, and a rapid advance in 1909, 1910, and 1911, the point reached in the latter year being the highest since 1894. The return for 1912 shews a considerable decrease; this was followed by an increase in 1913, but there was a heavy falling-off in 1914, amounting to 7½ per cent., and a still heavier one in 1915,

amounting to over 11½ per cent., the total number of sheep in the latter year being the lowest since 1904. As in the case of all other live stock there was a very substantial increase in the number of sheep during 1916 and 1917, an increase of 10.7 per cent. having taken place in the former and 10.8 per cent. in the latter year, or 22.7 per cent. increase in the two years.

5. Pigs.—The graph for pigs exhibits more numerous fluctuations than that for any of the other classes of live stock represented, and from 1904 to 1908 furnished evidence of a persistent decline. In 1909, however, an upward movement took place; and this was well maintained during the two succeeding years, the 1911 returns exceeding all previous records. There was a considerable decrease in 1912, and a smaller one during 1913. The 1914 returns, however, shew an upward tendency, followed by a sharp decline during 1915, and even sharper increases in 1916 and 1917, the number in the latter year exceeding the previously highest record of 1911 by 5½ per cent.

SECTION VIII.

AGRICULTURAL PRODUCTION.

NOTE.—Except where otherwise stated, the “agricultural” years hereinafter mentioned are taken as ending on the 30th June.

§ 1. Introductory.

1. **Early Attempts at Agriculture.**—The instructions issued to Captain Phillip on the 25th April, 1787, directed him, amongst other things, to proceed as soon as possible to the cultivation of the soil “under such regulations as may appear to be necessary and best calculated for securing supplies of grain and provisions.” When the settlers landed at Botany Bay, however, it was found that the glowing accounts published in England by members of Captain Cook’s expedition of the fertility of the soil in that locality were considerably overdrawn. Even when Phillip and his company moved round to Port Jackson on the 26th January, 1788, matters were for a time in no better case. The ground in the immediate neighbourhood of the settlement was not suitable for the cultivation of cereal crops, and when the time came to cultivate the soil it was found that there were very few who possessed the slightest acquaintance with the art of husbandry.

2. **The First Sowing.**—In his despatch of the 15th May, 1788, Captain Phillip states that it was proposed to sow eight acres with wheat and barley, although, owing to the depredations of field mice and ants, he was doubtful of the success of the crops.

3. **Discovery of Suitable Agricultural Land.**—A branch settlement was formed at Rosehill, on the Parramatta River, towards the close of 1788, and here grain crops were successfully raised. In his despatch of 12th February, 1790, Phillip refers to the harvest at Rosehill at the end of December, 1789, as consisting of 200 bushels of wheat and 60 of barley, in addition to small quantities of oats, Indian corn, and flax. By the year 1791 there were 213 acres under crop in this locality. In 1792 a new settlement was formed at Toongabbie, about three miles westward of Parramatta, where Phillip states “there are several thousand acres of exceeding good ground.” The Hawkesbury Valley, which probably contains some of the richest land in the world, was first settled in 1794. For a long time agricultural operations in Australia were restricted to the narrow belt of country between the tableland and the east coast of New South Wales, as it was not until the year 1813 that a passage was discovered across the Blue Mountains to the fertile plains of the west.

§ 2. Progress of Agriculture.

1. **Early Records.**—In an “Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797,” Governor Hunter gives the acreage under crop as follows:—Wheat, 3,361 acres; maize, 1,527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6,877 acres; maize, 3,389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 34 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania. At the end of 1850 the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres.

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; the area under cultivation in New South Wales decreased by nearly 66,000 acres, while in Tasmania a falling-off of over 41,000 acres was experienced. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia totalled over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres. For the same year South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

2. Progress of Cultivation since 1860.—The following table shews the area under crop in each of the Commonwealth States and Territories at quinquennial intervals since 1860 and during each of the last five seasons. The area under permanent artificially-sown grasses is excluded in all the States, except for the years 1860-79 in the case of New South Wales, where the acreage cannot be separated. During those years, however, the area laid down under permanent grasses could not have been very large :—

AREA UNDER CROP IN AUSTRALIA, 1860 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Fed. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	260,798	387,282	3,353	359,284	24,705	152,860	..	..	1,188,282
1865-6	378,255	448,194	14,414	547,124	38,180	159,547	..	..	1,585,714
1870-1	426,976	692,840	52,210	801,571	54,527	157,410	..	..	2,185,534
1875-6	451,139	736,520	77,347	1,111,882	47,571	142,547	..	..	2,567,006
1880-1	629,180	1,548,809	113,978	2,087,237	57,707	140,788	..	..	4,577,699
1885-6	737,701	1,867,496	198,334	2,298,412	60,058	144,761	..	..	5,306,762
1890-1	852,704	2,031,955	224,993	2,093,515	69,678	157,376	..	..	5,430,221
1895-6	1,348,600	2,413,235	285,319	2,092,942	97,821	212,703	..	..	6,450,620
1900-1	2,445,564	3,114,132	457,397	2,369,680	201,338	224,352	..	..	8,812,463
1905-6	2,840,235	3,219,962	522,748	2,255,569	364,704	230,237	..	..	9,433,455
1910-11	3,386,017	3,952,070	667,113	2,746,334	855,024	286,920	360	..	11,893,838
1913-14	4,567,592	4,391,321	747,814	3,169,559	1,537,923	264,140	354	4,309	14,683,012
1914-15	4,807,001	4,622,759	792,568	3,282,364	1,867,547	274,474	391	4,870	15,651,974
1915-16	5,796,376	5,711,265	729,588	3,763,570	2,189,456	333,334	274	4,371	18,528,234
1916-17	5,164,434	4,851,335	885,259	3,627,477	2,004,944	270,526	274	2,131	16,806,380
1917-18	4,461,172	4,110,225	727,958	3,079,778	1,679,772	238,199	134	1,744	14,298,982

The increase in the area under crop during the past ten years has been most marked in the case of New South Wales, Western Australia, and Victoria, the respective increases being 1,888,299, 1,185,935, and 877,702 acres. During the same period an increase of 814,761 acres was experienced in South Australia, and 195,334 in Queensland, while Tasmania experienced a decrease of 18,829 acres. The total area under crop in the Commonwealth increased during the period by 4,945,080 acres. The total for 1915-16 was the highest ever attained by the Commonwealth. During these past ten seasons the percentage of increase was particularly high in Western Australia, viz., 240 per cent. New South Wales had an increase of 73 per cent., while South Australia, Queensland, and Victoria added to their areas under crop to the extent of 36, 37, and 27 per cent. respectively. The Tasmanian decrease for the ten years represented about 7¼ per cent., while the increase for the whole of the Commonwealth during the same period was 53 per cent.

3. Relation to Population.—From the following table it will be seen that for the Commonwealth as a whole the area under crop has, during the seasons under review, with the exception of 1916-17 and 1917-18, increased at a rate which is greater than that

at which the population of the Commonwealth has increased. This relatively greater increase was in evidence in all the States, being most marked in the case of Western Australia, which has now a larger area under crop per head of population than any State except South Australia. Details for 1901-2 and for the past five seasons are as follows :—

**TOTAL AREA UNDER CROP PER 1,000 OF POPULATION, 1901-2 AND
1913-14 TO 1917-18.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ..	1,656	2,451	954	6,224	1,123	1,327	..	..	2,200
1913-14 ..	2,494	3,110	1,133	7,203	4,796	1,310	96	2,168	3,014
1914-15 ..	2,532	3,231	1,171	7,431	5,782	1,363	98	2,486	3,168
1915-16 ..	3,099	4,025	1,075	8,584	6,885	1,658	60	2,390	3,757
1916-17 ..	2,779	3,468	1,322	8,383	6,493	1,353	57	959	3,447
1917-18 ..	2,373	2,913	1,074	7,060	5,429	1,172	27	829	2,897

4. **Relation to Total Area.**—The next table furnishes a comparison of the area under crop in the Commonwealth and the several States and Territories, with the respective total areas. For the Commonwealth as a whole, the area under crop in 1917-18 represented only about one acre in every 133. In Victoria the proportion was about one acre in every 13½, in New South Wales one in 44, in Tasmania one in 70, in South Australia one in 79, in Western Australia one in 372, in Queensland one in 588, in the Federal Territory one in 345, and in the Northern Territory about one in 2,500,000.

**PERCENTAGE OF AREA UNDER CROP ON TOTAL AREA, 1901-2 AND
1913-14 TO 1917-18.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	%	%	%	%	%	%	%	%	%
1901-2 ..	1.147	5.273	0.113	0.919	0.035	1.386	..	..	0.442
1913-14 ..	2.230	7.807	0.174	1.303	0.246	1.574	0.0001	0.738	0.771
1914-15 ..	2.427	8.219	0.185	1.349	0.299	1.636	0.0001	0.834	0.822
1915-16 ..	2.927	10.154	0.170	1.547	0.351	1.987	0.0001	0.749	0.973
1916-17 ..	2.608	8.625	0.206	1.491	0.321	1.612	0.0001	0.354	0.883
1917-18 ..	2.253	7.308	0.170	1.266	0.269	1.420	..	0.290	0.751

5. **Artificially-sown Grasses.**—In all the States considerable areas are devoted to artificially-sown grasses, mainly sown on uncultivated land after burning off the existing vegetation and consequently not included with "area under crops." Statistics regarding the area under such grasses are as shewn hereunder :—

AREA UNDER SOWN GRASSES, 1901-2 AND 1913-14 TO 1917-18.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Fed. Ter.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	467,839	162,954	34,679	23,510	3,711	314,422	..	1,007,115
1913-14	1,234,405	1,094,566	236,582	30,277	6,919	605,559	50	3,208,362
1914-15	1,278,883	1,202,130	290,147	24,974	8,025	647,602	70	3,451,831
1915-16	1,247,029	1,182,995	305,186	25,443	9,119	675,335	70	3,445,377
1916-17	1,357,087	1,292,817	363,876	29,644	8,327	654,072	70	3,706,093
1917-18	1,389,640	1,268,310	406,094	20,155	11,769	679,512	83	3,776,023

(a) Including 4 acres Northern Territory 1913-14, 200 acres 1915-16 and 1916-17, and 460 acres 1917-18.

The considerable increase in the area of the grass lands of the Commonwealth is due in large measure to the great development of the dairying industry which has taken place during recent years, and which is referred to in the succeeding section.

§ 3. Relative Importance of Crops.

1. Various Crops.—In the following table are furnished details concerning the areas in the several States under each of the principal crops for the season 1917-18:—

DISTRIBUTION OF CROPS IN AUSTRALIA, 1917-18.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	Total for C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ..	3,328,856	2,690,216	127,815	2,355,682	1,249,762	21,812	..	515	9,774,658
Oats ..	82,512	293,214	3,002	106,556	95,666	34,771	..	79	615,800
Maize ..	145,733	20,987	165,124	70	97	..	25	21	332,057
Barley—									
Malting ..	4,246	41,065	5,813	79,396	1,515	4,750	..	..	136,785
Other ..	2,124	43,866	1,889	16,258	3,513	435	..	..	68,085
Beans and Peas ..	319	11,899	28	6,335	441	24,369	..	..	43,391
Rye ..	1,676	1,597	43	655	380	392	..	1	4,744
Other Cereals ..	..	..	6	30	1	..	46	..	83
Hay ..	619,614	748,808	96,431	407,011	265,899	74,107	14	1,030	2,212,914
Green Forage ..	152,374	55,903	87,909	41,869	29,856	5,873	47	19	373,850
Grass Seed ..	..	2,312	8,461	21	..	1,186	..	..	11,980
Orchards and other Fruit Gardens	64,116	83,818	26,001	29,200	21,137	38,024	..	18	262,134
Vines—									
Productive ..	6,462	18,900	1,140	24,921	2,381	..	..	..	53,804
Unproductive ..	2,132	6,336	134	4,841	615	..	..	..	14,058
Market Gardens ..	10,100	11,362	1,991	1,502	2,334	447	..	39	27,775
Sugar-cane—									
Productive ..	5,588	..	108,707	..	..	..	..	..	114,295
Unproductive ..	5,134	..	67,055	..	..	..	..	..	72,189
Potatoes ..	22,558	66,966	10,738	4,164	4,484	27,300	..	22	136,241
Onions ..	163	5,134	71	286	54	39	..	..	5,747
Other root crops ..	820	2,390	2,716	386	352	2,707	..	..	9,377
Tobacco ..	791	82	289	..	..	..	..	..	1,162
Broom Millet ..	1,918	921	940	..	..	..	2	..	3,781
Pumpkins and Melons ..	2,805	1,464	8,508	280	649	..	..	..	13,706
Hops ..	..	64	..	3	..	1,229	..	..	1,296
All other crops ..	1,125	2,921	3,147	492	636	749	..	..	9,070
Total area ..	4,461,172	4,110,225	727,958	3,079,778	1,679,772	238,199	134	1,744	14,298,982

2. Relative Areas of Crops in States and Territories.—Taking the principal crops, i.e., those in the case of which the cultivation amounts to more than 50,000 acres in the Commonwealth, the proportion of each in the various States and Territories to the total area under crop for the season 1917-18 is shewn in the next table. In four of the States, viz., New South Wales, Victoria, South Australia, and Western Australia, wheat-growing for grain is by far the most extensive form of cultivation, while in the same States, the hay crop is second in importance. In Victoria, South Australia, and Western Australia the oat crop occupies third position, while green forage ranks third in New South Wales followed closely by maize. In Queensland, on the other hand, the three principal crops in the order of importance are sugar-cane, maize, and wheat, while in Tasmania hay, orchards and fruit gardens, and oats, occupy the leading positions. For the Commonwealth as a whole, the wheat, hay, and oat crops represent over 88 per cent. of the total area under crop.

PROPORTION OF AREA UNDER CHIEF CROPS, 1917-18.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	%	%	%	%	%	%	%	%	%
Wheat ..	74.61	65.45	17.56	76.49	74.40	9.16	..	29.53	68.37
Hay ..	13.89	18.22	13.25	13.22	15.83	31.11	10.45	59.07	15.49
Oats ..	1.85	7.13	0.41	3.46	5.69	14.60	..	4.53	4.31
Green Forage..	3.42	1.36	12.08	1.36	1.78	2.47	35.07	1.09	2.61
Maize ..	3.27	0.51	22.68	0.00	0.00	..	18.66	1.20	2.32
Orchards and Fruit Gardens	1.44	2.04	3.57	0.94	1.26	15.96	..	1.03	1.83
Barley ..	0.14	2.07	1.06	3.11	0.30	2.18	..	..	1.43
Sugar-cane ..	0.24	..	24.14	..	..	..	..	..	1.30
Potatoes ..	0.51	1.63	1.48	0.13	0.27	11.46	..	1.26	0.95
Vineyards	0.19	0.61	0.17	0.97	0.18	..	..	..	0.47
All other..	0.44	0.98	3.60	0.32	0.29	13.06	35.82	2.29	0.92
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. Relative Positions of States and Territories in regard to Principal Crops.—The relative proportion of acreage of the several crops for 1917-18 and the position regarding them in each State and Territory is shewn in the following table. New South Wales exhibited the largest area under wheat and green forage; Victoria was in the leading position in regard to hay, oats, orchards and fruit gardens, and potatoes; and Queensland was first in sugar-cane and maize and second in green forage. South Australia had the largest area under vineyards and barley, and occupied second position in regard to oats; Western Australia held third position in oats and fourth in wheat, hay, maize, and vineyards; while Tasmania was second in regard to potatoes, and third in orchards and fruit gardens.

RELATIVE POSITIONS OF STATES AND TERRITORIES IN REGARD TO AREA UNDER EACH OF THE PRINCIPAL CROPS DURING THE SEASON 1917-18.

Crop.	N.S.W.	Victoria	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'w'lh.
Wheat.. .. %	34.05	27.52	1.31	24.10	12.79	0.22	..	0.01	100.00
position	1	2	5	3	4	6	..	7	
Hay %	28.00	33.83	4.36	18.39	12.02	3.35	..	0.05	100.00
position	2	1	5	3	4	6	..	7	
Oats %	13.40	47.61	0.49	17.30	15.54	5.65	..	0.01	100.00
position	4	1	6	2	3	5	..	7	
Green Forage .. %	40.76	14.95	23.51	11.20	7.99	1.57	0.01	0.01	100.00
position	1	3	2	4	5	6	7	8	
Maize %	43.89	6.32	49.72	0.02	0.03	..	0.01	0.01	100.00
position	2	3	1	5	4	..	6	7	
Orchards and Fruit Gardens .. %	24.46	31.97	9.92	11.07	8.06	14.51	..	0.01	100.00
position	2	1	5	4	6	3	..	7	
Barley %	3.11	41.46	3.76	46.69	2.45	2.53	..	..	100.00
position	4	2	3	1	6	5	..	..
Sugar-cane .. %	5.75	..	94.25	..	..	..	..	..	100.00
position	2	..	1	..	..	..	..	..
Potatoes .. %	16.56	49.15	7.88	3.06	3.29	20.04	..	0.02	100.00
position	3	1	4	6	5	2	..	7	
Vineyards .. %	12.66	37.19	1.88	43.86	4.41	..	..	..	100.00
position	3	2	5	1	4	..	..	..
All other crops .. %	14.93	30.39	19.83	7.56	3.67	23.55	0.04	0.03	100.00
position	4	1	3	5	6	2	7	8	
Total area under crop .. %	31.20	28.74	5.09	21.54	11.75	1.67	..	0.01	100.00
position	1	2	5	3	4	6	..	7	

4. Acreage of Principal Crops, Commonwealth.—The acreage devoted to each of the principal crops in the whole Commonwealth during the last five seasons is shown below :—

ACREAGE OF CHIEF COMMONWEALTH CROPS, 1913-14 TO 1917-18.

Crop.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat	9,287,398	9,651,081	12,484,512	11,532,828	9,774,658
Hay	2,754,672	2,628,613	3,597,771	2,671,862	2,212,914
Oats	859,020	774,734	721,644	844,130	615,800
Green Forage ..	486,504	1,352,158	515,561	390,151	373,850
Maize	331,879	339,781	323,637	360,072	332,057
Orchards and Fruit Gardens	216,021	232,711	247,008	257,687	262,134
Barley	222,564	153,656	169,514	230,253	204,870
Sugar-cane	160,976	172,616	164,285	178,190	186,484
Potatoes	174,262	151,845	120,993	149,895	136,241
Vineyards	61,197	60,985	62,124	65,394	67,862
All other Crops ..	128,519	133,794	121,185	125,918	132,112
Total	14,683,012	15,651,974	18,528,234	16,806,380	14,298,982

During the period under review the area devoted to the several crops has varied considerably, that under wheat attaining a maximum in the season 1915-16, and a minimum in 1913-14, while hay also reached its maximum area in 1915-16, and its minimum in 1917-18. Of the other crops, maize and barley attained their maximum areas in 1916-17, orchards and fruit gardens, sugar-cane and vineyards in 1917-18, green forage in 1914-15, and potatoes and oats in 1913-14.

§ 4. Wheat.

1. Progress of Wheat-Growing.—(i) *Acreage.* The area under wheat for grain is given below for each State at various periods since 1860, and is shown diagrammatically in the graph hereinafter :—

AREA UNDER WHEAT, 1860-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	128,829	161,252	196	273,672	13,584	66,450	..	..	643,983
1865-6	191,653	178,628	2,068	410,608	22,249	73,270	..	..	818,476
1870-1	147,997	284,167	2,892	604,781	26,640	57,382	..	..	1,123,539
1875-6	133,609	321,401	4,478	898,820	21,561	42,745	..	..	1,422,614
1880-1	233,138	977,285	12,632	1,733,542	27,688	50,022	..	..	3,054,305
1885-6	264,867	1,020,082	10,093	1,922,555	29,511	30,266	..	..	3,277,374
1890-1	353,293	1,145,163	10,390	1,673,573	33,820	32,452	..	..	3,228,631
1895-6	596,684	1,412,736	27,090	1,649,929	23,241	64,652	..	..	3,774,332
1900-1	1,530,609	2,017,321	70,304	1,913,247	74,308	51,825	..	..	5,666,614
1905-6	1,939,447	2,070,517	119,356	1,757,036	105,071	41,319	..	..	6,122,746
1910-11	2,128,826	2,398,089	106,718	2,104,717	581,862	52,242	2	..	7,372,456
1913-14	3,203,572	2,565,861	132,655	2,267,851	1,097,193	18,432	9	1,825	9,287,398
1914-15	2,756,343	2,863,535	127,015	2,502,630	1,376,012	23,865	..	1,831	9,651,081
1915-16	4,186,493	3,679,971	93,703	2,739,214	1,734,117	48,642	..	2,372	12,484,512
1916-17	3,805,699	3,125,692	227,778	2,778,357	1,566,608	27,789	..	905	11,532,828
1917-18	3,328,856	2,690,216	127,815	2,355,682	1,249,762	21,812	..	515	9,774,658
1918-19a	62,410,530	2,214,490	21,637	2,186,349	1,145,408	14,624	..	(c)	7,993,238

(a) Preliminary figures except Victorian which are final. (b) Including Federal Territory.
(c) Included with New South Wales.

The area devoted in the Commonwealth to the production of wheat for grain was higher for the season 1915-16 than for any previous season, there being an increase in all the States with the exception of Queensland, which shewed a falling-off. The figures for the season 1916-17 shew a reduction in area under wheat for grain in all the States with the exception of Queensland and South Australia, where the acreages for both States are the highest on record. In 1917-18 there was a marked decline in the area under wheat in all the States, the Commonwealth total shewing a shortage of $1\frac{1}{2}$ million acres as compared with 1916-17. Even, then, however, the total of $9\frac{1}{2}$ million acres was considerably higher than for any pre-war season. The average area under wheat in the Commonwealth in the past ten seasons, 1908-18, was 8,671,913 acres. The last five seasons exceeded this average, while the previous five seasons fell short of it.

Although final figures for 1918-19 for all the States are not yet available, the data to hand indicate the total area under wheat for grain in the Commonwealth as about 8,000,000 acres, representing a decrease of more than 18 per cent. on the 1917-18 area. New South Wales returns shew a decrease in acreage of about 28 per cent. ; Victoria, 18 per cent. ; Queensland, 83 per cent. ; South Australia, 7 per cent. ; Western Australia, 8 per cent. ; and Tasmania, 32 per cent. The total for the Commonwealth is lower than for any season since 1912-13, when an area of 7,339,651 acres was reaped.

(ii) *Yield.* The production during the same period for each State and for the Commonwealth as a whole is given below :—

PRODUCTION OF WHEAT, 1860-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Fed. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush.	Bush.	Bushels.
1860-1	1,581,598	3,459,914	3,136	3,576,593	208,332	1,415,896	..	..	10,245,469
1865-6	1,013,863	3,514,227	33,088	3,587,800	231,594	1,273,766	..	..	9,654,338
1870-1	999,595	2,870,409	39,787	6,961,164	316,769	896,881	..	..	12,084,605
1875-6	1,958,640	4,978,914	97,400	10,739,834	237,171	700,092	..	..	18,712,051
1880-1	3,717,355	9,727,369	223,243	8,606,510	332,232	750,040	..	..	23,356,749
1885-6	2,733,133	9,170,538	51,598	14,612,876	339,376	524,348	..	..	27,431,869
1890-1	3,649,216	12,751,295	207,990	9,399,389	467,389	642,980	..	..	27,118,259
1895-6	5,195,312	5,669,174	123,630	5,929,300	188,077	1,164,855	..	..	18,270,348
1900-1	16,173,771	17,847,321	1,194,088	11,253,148	774,653	1,110,421	..	..	48,353,402
1905-6	20,737,200	23,417,670	1,137,321	20,143,798	2,308,305	776,478	..	..	68,520,772
1910-11	27,913,547	34,813,019	1,022,373	24,344,740	5,897,540	1,120,744	20	..	95,111,983
1913-14	37,996,068	32,936,245	1,769,432	16,936,988	13,331,350	349,736	..	24,313	103,344,132
1914-15	12,812,803	3,940,947	1,585,087	3,527,423	2,624,190	334,220	..	17,727	24,892,402
1915-16	66,726,459	58,521,706	414,438	34,134,504	18,236,355	993,790	..	38,451	179,065,703
1916-17	36,585,380	51,162,438	2,463,141	45,745,064	16,103,216	348,330	..	12,620	152,420,189
1917-18	37,704,626	37,737,552	1,035,268	28,692,594	9,303,787	252,383	..	7,374	114,733,584
1918-19a	17,832,910b	25,239,871	104,509	22,936,925	8,837,334	278,839	..	(c)	75,230,388

(a) Final figures Victoria, those for remaining States approximate.
 (b) Including Federal Territory. (c) Included with New South Wales.

The yield for the 1917-18 season was 114,733,584 bushels, which had only twice been exceeded, viz., in 1915-16 and 1916-17. The harvest of 1915-16 totalled 179,065,703 bushels, and was the largest ever reaped in the Commonwealth. It exceeded by over 75,700,000 bushels that of 1913-14, the previous largest return. The 1916-17 yield was 152,420,189 bushels, that for 1910-11 was 95,111,983 bushels, that for 1912-13, 91,981,070 bushels, and that for 1909-10 was 90,413,597 bushels, these being the only occasions, prior to 1917-18, on which a yield exceeding 90,000,000 bushels was obtained. The harvest for 1914-15 was poor, the prolonged drought having been disastrous to the wheat areas. The yield was 24,892,402 bushels, the lowest since 1902. The approximate estimate for the 1918-19 season gives about 75,000,000 bushels, which is much below the average of the three preceding seasons, and represents a shortage of 34 per cent. on the 1917-18 yield. The decline was due in part to the diminished area under wheat and to the drought conditions during the season 1918-19.

(iii) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the seasons 1901-2 and 1913-14 to 1917-18 and for the decennium 1908-18 :—

YIELD OF WHEAT PER ACRE, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ..	10.64	6.91	19.40	4.60	10.10	21.86	..	..	7.54
1913-14..	11.86	12.84	13.34	7.47	12.15	18.97	..	13.32	11.13
1914-15..	4.65	1.38	12.48	1.41	1.91	16.10	..	10.55	2.58
1915-16..	15.94	15.90	4.42	12.46	10.52	20.43	..	16.21	14.34
1916-17..	9.61	16.37	10.81	16.46	10.28	12.53	..	14.06	13.22
1917-18..	11.33	14.03	8.10	12.18	7.44	11.57	..	14.32	11.74
Average 10 seasons 1908-18	11.73	12.51	11.28	10.61	8.94	19.40	..	14.28	11.37

As the above figures shew, there were considerable variations in the average yields, chiefly due to the vagaries of the season. The average of 2.58 bushels for 1914-15 was the lowest ever recorded for the Commonwealth with one exception, viz., the average of 2.40 bushels for 1902-3. Both were the results of exceptionally severe droughts. In both cases the yield per acre for the succeeding season was considerably above the ten-yearly average, being 14.34 bushels per acre for 1915-16 and 13.32 for 1903-4. The Commonwealth yield per acre for 1917-18, although not high, was somewhat above the ten-yearly average. This was also the case in Victoria and South Australia, the yield per acre in the other four States being below the average.

The Tasmanian yield per acre of 11.57 was the lowest ever experienced there.

(iv) *Relation to Population.* During the seasons embraced in the following table, the Commonwealth's production of wheat per head of population has varied between 3½ bushels in 1902-3 and 36½ bushels in 1915-16. The State in which wheat-growing occupies the most important position relatively to population is South Australia, which in 1916-17 had a yield averaging over 105 bushels per head. Queensland and Tasmania are the States in which the average production of wheat per head is least, the quantity raised being considerably below that required for local consumption. Particulars for 1901-2 and the past five seasons are as follows :—

AUSTRALIAN WHEAT PRODUCTION PER 1,000 OF POPULATION, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ..	10,766	10,023	3,340	22,299	4,943	5,499	..	..	10,082
1913-14..	20,743	23,324	2,680	38,489	41,572	1,734	..	12,230	21,212
1914-15..	6,883	2,755	2,342	7,986	8,124	1,908	..	9,049	5,038
1915-16..	35,675	41,241	611	77,854	57,344	4,944	..	21,023	36,307
1916-17..	19,685	36,574	3,679	105,718	52,147	1,742	..	5,677	31,264
1917-18..	19,943	26,745	1,527	65,776	30,068	1,242	..	3,505	23,247

The normal annual consumption of wheat in Australia, exclusive of the requirements for seed, poultry and other live stock, is 325 lbs. (5.43 bushels) per head of population.

2. *Australian and Foreign Wheat Yields.*—In the next table will be found a statement of the average return per acre in the principal wheat-growing countries of the world, ranging from Belgium with a maximum of 34.94 bushels per acre, to Mexico with a minimum of under 3 bushels per acre. Australia with approximately 11.74 occupies a relatively subordinate position.

AVERAGE YIELD OF WHEAT PER ACRE IN VARIOUS COUNTRIES, 1917.

Country.	Average Yield in bushels per acre.	Country.	Average Yield in bushels per acre.
Belgium (1914)	34.94	Rumania (1916)	15.72
Denmark	31.81	United States	13.73
Switzerland	31.77	France	13.39
United Kingdom	30.58	Spain	13.20
Germany (1915)	27.75	Italy	12.86
Netherlands	27.43	Australia	11.74
Egypt	25.91	India	11.16
Bulgaria (1913)	23.82	Portugal (1911)	9.78
New Zealand	22.38	Russia in Europe (1914)	9.07
Sweden	22.09	Algeria	8.72
Japan	20.27	Russia in Asia (1915)	6.97
Austria (1913)	19.89	Uruguay	6.70
Hungary (1915)	17.89	Union of South Africa	6.15
Chile (1916)	17.12	Tunis	5.15
Serbia (1914)	16.03	Argentine Republic	4.23
Canada	15.75	Mexico (1914)	2.97

3. Wheat Crops of the World.—The latest available official statistics of the production of wheat in various countries are given in the following table:—

WHEAT YIELD IN VARIOUS COUNTRIES, 1917.

Country.	Yield in bushels.	Country.	Yield in bushels.
Russia in Europe (1915) (a)	633,312,898	Algeria	28,092,243
United States	630,912,663	Japan	25,720,121
India	367,627,501	Chile	23,330,550
Canada	254,739,901	Turkey in Europe (1915)	17,449,200
Hungary (1915)	148,254,220	Persia (1915)	15,510,400
France	139,738,041	Serbia (1915)	9,694,000
Germany (1915)	137,340,714	Belgium (1915)	7,755,200
Spain	136,769,738	Sweden	7,266,622
Italy	135,715,031	Portugal (1916)	7,118,304
Australia	114,733,584	Tunis	6,749,932
Russia in Asia (1915)	91,672,280	Uruguay	5,225,066
Rumania (1916)	76,117,288	New Zealand	4,900,317
Argentine Republic	68,075,146	Union of South Africa	4,643,426
United Kingdom	64,322,816	Switzerland	4,416,586
Austria (1915)	54,286,400	Denmark	4,167,451
Bulgaria (1916)	37,070,825	Mexico (1915)	3,877,600
Turkey in Asia (1915)	33,929,000	Netherlands	3,346,369
Egypt	28,921,080		

(a) Including Poland and Northern Caucasia.

Various estimates of the total quantity of wheat produced in the world have been made. That furnished by the International Institute of Agriculture, Rome, gives the following figures for the ten years 1907 to 1916:—

WORLD'S PRODUCTION OF WHEAT, 1907 TO 1916.

Year.	1,000,000 bushels.	Year.	1,000,000 bushels.	Year.	1,000,000 bushels.
1907	3,131	1911	3,512	1915	4,492
1908	3,137	1912	3,795	1916	3,657
1909	3,569	1913	4,048	Average for 10	
1910	3,525	1914	3,548	years	3,641

In this estimate the figures given for Australia and New Zealand relate to the agricultural year ending on 30th June in the year specified.

For the ten years referred to, the Australian production of wheat aggregated 830,113,000 bushels, thus representing 2.3 per cent. of the world's production. The total quantity of wheat produced in the British Empire during the same period of ten years was approximately 7,214 million bushels, so that the Australian production of wheat represented 11.5 per cent. of that of the British Empire, while the British Empire production represented 19.8 per cent. of the world's total.

4. **Prices of Wheat.**—(i) *British Wheat.* Since the United Kingdom is the largest importer of Australian wheat, the price of wheat in the British markets is a matter of prime importance to the local producer. The table below gives the average prices per Imperial quarter realised for British-grown wheat:—

PRICES OF BRITISH WHEAT PER QUARTER, 1861 TO 1916.

Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.	Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1861 ..	55 4	61 6	50 0	1907 ..	30 7	36 3	26 0
1871 ..	56 8	60 0	52 6	1908 ..	32 0	35 6	30 5
1881 ..	45 4	55 2	40 9	1909 ..	36 11	44 9	31 4
1891 ..	37 0	41 8	32 3	1910 ..	31 8	33 9	29 0
1901 ..	26 9	27 8	25 8	1911 ..	31 8	33 4	30 0
1902 ..	28 1	31 8	24 10	1912 ..	34 9	39 2	29 10
1903 ..	26 9	30 3	24 11	1913 ..	31 8	34 3	30 0
1904 ..	28 4	30 6	26 3	1914 ..	34 11	43 3	30 11
1905 ..	29 8	32 3	26 8	1915 ..	52 10	62 0	42 9
1906 ..	28 3	30 9	25 9	1916 ..	58 5	75 10	46 3

(ii) *Australian Export Values.* In the next table will be found a statement of the export values of Australian wheat during each of the last ten years:—

EXPORT VALUES OF AUSTRALIAN WHEAT, 1908 TO 1917-18.

Year ..	1908.	1909.	1910.	1911.	1912.	1913.	1914-15	1915-16	1916-17	1917-18
Price per bushel	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	4 1	4 2	4 2	3 6	3 11	3 9	4 1	5 7	4 10	5 3

The export values here shown are the average declared values for the successive years at the several ports of shipment in the Commonwealth.

5. **Imports and Exports of Wheat and Flour.**—(i) *Quantities.* The table hereunder shows the imports, exports, and net exports of wheat and flour during 1901 and from 1913 to 1917-18. For the sake of convenience, flour has been expressed at its equivalent in wheat, one ton of flour being taken as equal to 50 bushels of grain. During 1903 and 1915-16 the Commonwealth imports of wheat and flour were equivalent to 12,607,940 and 5,633,596 bushels of wheat respectively. This importation was necessitated in each case by the failure of the crop in the preceding season. In ordinary seasons the import of wheat and flour is negligible. During the past five years the export has ranged between 6,886,293 bushels in 1914-15 and 69,810,522 bushels in 1916-17, the net exports for the period averaging 40,214,183 bushels.

IMPORTS AND EXPORTS OF WHEAT AND FLOUR, COMMONWEALTH, 1901 AND 1913 TO 1917-18.

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bushels. α	Bushels.	Bushels.	Eq. Bushels. α	Bushels.	
1901 ..	22,992	302,550	325,542	20,260,058	4,840,700	25,100,758	24,775,216
1913 ..	60	2,650	2,710	42,922,887	11,082,900	54,005,787	54,003,077
1914-15	1,641,237	5,150	1,646,387	4,210,593	2,675,700	6,886,293	5,239,906
1915-16	5,616,696	16,900	5,633,596	28,621,445	7,347,750	35,969,195	30,335,599
1916-17	40	3,000	3,040	55,278,872	14,531,650	69,810,522	69,807,482
1917-18	20	1,050	1,070	22,981,772	18,704,150	41,685,922	41,684,852

(α) Equivalent in bushels of wheat.

(ii) *Destination of Exported Breadstuffs.* In the next two tables will be found a list of the principal countries to which the Commonwealth exported wheat and flour during each year of the period 1913 to 1917-18. The countries are as shown in the Australian Customs returns, but owing to the fact that in normal times wheat ships are frequently instructed to call for orders at various ports, the countries to which these ports belong cannot always be considered as the ultimate destination of the whole of the wheat said to be exported to them.

EXPORTS OF WHEAT FROM THE COMMONWEALTH, 1913 TO 1917-18.

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for Five Years.
	Bushe's.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
United Kingdom	27,922,717	1,532,693	14,494,248	22,715,735	5,309,162	71,974,555
France	1,943,208	9,482	2,186,567	8,562,240	5,074,098	17,775,595
Union of South Africa	4,482,865	1,088,507	2,919,608	6,549,395	1,216,172	16,256,547
Italy	1,879,923	157,000	3,258,313	8,154,602	517,962	13,967,800
United States	..	..	..	357,643	6,593,878	6,951,521
Canary Islands (a)	1,477,005	..	2,960,558	884,615	..	5,322,178
Egypt	92,413	..	267,568	4,842,000	..	5,201,981
Peru	943,130	290,810	156,302	1,154,355	340,965	2,885,562
Japan	1,215,778	223,996	..	..	702,958	2,142,732
Spain	220,625	72,970	1,550,252	..	..	1,843,847
Belgium	1,742,803	..	..	..	..	1,742,803
New Zealand	..	151,042	30,380	225,852	1,295,448	1,702,722
Chile	..	650,510	..	..	..	650,510
Germany	290,553	..	..	..	..	290,553
Other Countries	711,867	33,583	797,645	1,832,435	1,931,129	5,306,659
Total	42,922,887	4,210,593	28,621,441	55,278,872	22,981,772	154,015,565

(a) For orders.

The exports of flour during the same period and the principal countries of destination were as follows:—

EXPORTS OF FLOUR FROM THE COMMONWEALTH, 1913 TO 1917-18.

Country to which Exported.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	Total for Five Years.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom	18,894	850	43,604	127,502	145,914	336,764
Union of South Africa	38,209	14,075	22,019	25,106	7,330	106,739
Java	38,103	6,003	11,674	13,826	15,573	85,179
France	..	..	14,087	33,320	32,597	80,004
Egypt	37,687	3,592	1,345	9,772	13,994	66,390
Straits Settlements	21,625	3,352	5,023	9,755	23,609	63,364
United States	..	..	..	8,131	54,889	63,020
Philippine Islands	14,366	3,313	3,383	..	35,158	56,220
Italy	..	..	14,142	25,679	6,099	45,920
New Zealand	3,057	5,064	2,190	9,006	5,736	25,053
Portuguese East Africa	15,612	3,163	216	409	..	19,400
New Caledonia	4,143	3,791	3,566	3,533	3,314	18,347
Sumatra	4,527	633	1,507	4,072	2,530	13,269
Fiji	2,619	1,834	1,257	2,199	2,280	10,189
Hong Kong	2,466	140	1,442	648	3,604	8,300
Ceylon	5,454	2,173	342	20	..	7,989
Japan	610	2	53	300	3,702	4,667
China	2,188	545	384	335	923	4,375
Mauritius	1,906	1,810	..	112	..	3,828
Other Countries	10,192	3,174	20,721	16,908	16,831	67,826
Total	221,658	53,514	146,955	290,633	374,083	1,086,843

For the five years under review the export of wheat to the United Kingdom amounted to 71,974,555 bushels, or nearly 47 per cent. of the total export for the period, while the export of flour to the United Kingdom aggregated 336,764 tons, or 31 per cent. of the total export. During the quinquennium the heaviest exports of flour have been to the United Kingdom, South Africa, and Java.

(iii) *Exports of Wheat and Flour.* From the foregoing returns it will be seen that the quantity of Australian wheat exported in the form of flour during the past five years represents, on the average, slightly over 26 per cent. of the total equivalent in wheat exported as wheat or flour from the Commonwealth.

A point of some interest in connection with the export of wheat, and one which bears also on the proportions of wheat and flour exports just referred to, is that concerning the quantity of phosphoric acid which this export has the effect of removing from the Commonwealth, and the necessity which exists for the return to the soil of this substance in some form.

According to an estimate furnished by the chemist to the New South Wales Department of Agriculture (F. B. Guthrie, Esq., F.C.S., etc.), the proportions of milled product from a bushel (60 lbs.) of wheat are, approximately, 42 lbs. of flour; 9 lbs. of bran, and 9 lbs. of pollard, while the percentage of phosphoric acid contained in these products is as follows:—

Flour	..	..	0.32 per cent., or 0.13 lb. per bushel.
Bran	..	..	3.00 ,, 0.27 ,,
Pollard	..	..	0.90 ,, 0.08 ,,

The total amount of phosphoric acid contained in a bushel of wheat is, therefore, 0.48 lb., of which 0.13 lb. is in the flour and 0.35 lb. in the offal.

During the last ten years for which complete annual returns are available, the net exports from the Commonwealth of wheat and its milled products have amounted to 328,847,537 bushels of wheat, 1,816,153 tons of flour, and 3,359,000 bushels of bran, pollard, and sharps. On the basis of the figures quoted above this export would contain no less than 172,000,000 lbs. of phosphoric acid, the value of which as a fertilizer would be over a million pounds sterling.

(iv) *Local Consumption of Wheat.* The estimated consumption of wheat for food and for seed purposes in the Commonwealth during the past ten years is given in the following tables:—

**WHEAT USED FOR HUMAN CONSUMPTION IN THE COMMONWEALTH,
1908 TO 1916-17.**

Year.	Flour Milled.	Net Exports of Flour.		Net Quantity Available for Home Consumption.		Net Quantity Available per Head of Population.	
		Flour.	Flour in Biscuits Exported.	Flour.	Equivalent in Terms of Wheat.	Flour.	Equivalent in Terms of Wheat.
	Tons.	Tons.	Tons.	Tons.	Bushels.	Tons.	Bushels.
1908 ..	552,388	116,625	1,810	433,953	21,697,650	.1035	5.173
1909 ..	603,688	129,889	1,980	471,819	23,590,950	.1104	5.519
1910 ..	649,282	139,774	2,340	507,168	25,358,400	.1161	5.803
1911 ..	696,301	175,649	2,570	518,082	25,904,100	.1154	5.769
1912 ..	677,053	167,948	2,820	506,285	25,314,250	.1090	5.450
1913 ..	760,613	221,605	2,600	536,408	26,820,400	.1117	5.583
1914 ..	713,845	174,180	2,400	537,265	26,863,250	.1092	5.461
1915 ..	541,810	7,633	2,160	532,017	26,600,850	.1075	5.374
1915-16 ..	577,038	146,618	2,650	427,770	21,388,500	.0867	4.335
1916-17 ..	869,975	290,572	2,885	576,518	28,825,900	.1183	5.913
Aggregate 10 years	6,641,993	1,570,493	24,215	5,047,285	252,364,250	.1086	5.432

ESTIMATED QUANTITY OF WHEAT USED FOR SEED PURPOSES IN THE COMMONWEALTH, 1908 TO 1917.

Year.	Area for Grain and Hay.	Wheat for Seed Purposes.		
		Quantity.	Per Acre.	Per Head of Population.
		Acres.	Bushels.	Bushels.
1908	6,535,433	6,429,000	.984	1.533
1909	7,582,238	7,322,000	.966	1.713
1910	8,527,308	8,332,000	.977	1.907
1911	8,859,949	8,282,000	.935	1.844
1912	9,112,676	8,484,000	.931	1.827
1913	10,661,430	9,747,000	.914	2.029
1914	11,012,679	10,059,000	.913	2.045
1915	14,414,024	13,041,000	.905	2.634
1916	12,894,917	11,523,000	.894	2.348
1917	10,910,669	9,713,000	.890	1.968
Aggregate for 10 years ..	100,511,323	92,932,000	.925	1.984

In addition to the above, there is to be taken into consideration grain fed to poultry and other live stock. This, doubtless, varies in quantity from year to year according to the prices current for wheat, and other causes. No data are available on which to base an estimate of actual quantity so consumed. The flour available for human consumption necessarily fluctuates from year to year coincident with stocks being heavy or light. In some years the flour available per head of population, after deducting net exports from quantity milled, shows a substantial increase over the average for the previous year, this, however, being counterbalanced by a decline in the following year. The average quantity of flour consumed per annum for the ten years under consideration was 0.1086 tons per head of population, which, when expressed in equivalent terms in wheat, represents 5.432 bushels. The estimates of quantity of grain used for seed purposes have been based on data supplied by the Agricultural and Statistical Departments of the several States giving average quantities of seed used per acre for wheat sown either for grain or hay. The average annual quantity thus used during the ten years was 1.984 bushels per head of population, and 0.925 bushels or 55½ lbs. per acre sown.

A steady decline in the average quantity of seed wheat per acre is in evidence during the period under review, chiefly due to the general use of more economical methods of sowing by the use of drills, etc.

6. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in the Commonwealth during the season 1917-18 is shewn below :—

VALUE OF THE WHEAT CROP, (a) 1917-18.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
Aggregate value..	£ 8,954,850	£ 8,962,669	£ 196,123	£ 6,814,491	£ 2,209,649	£ 59,941	£ 1,750	£ 27,199,473
Value per acre ..	£2/13/10	£3/6/8	£1/10/8	£2/17/10	£1/15/4	£2/15/0	£3/8/0	£2/15/8

(a) Exclusive of the value of straw.

7. **The Australian Wheat Marketing Scheme.**—(i) *General Principles.* Owing to the abnormal conditions prevailing, a Wheat Marketing Scheme was entered into by the Governments of the Commonwealth and of the States of New South Wales, Victoria, South Australia, and Western Australia, for the purpose of realising to the best advantage the 1915-16 wheat harvest of the States named, and of making advances to farmers pending realisation. It was subsequently decided that the 1916-17 harvest, and later, the 1917-18 and 1918-19 harvests, should be dealt with on similar lines to those of the 1915-16 harvest.

The general principles of the scheme may be shortly stated thus :—

1. That all growers should participate equitably in the realisation of the harvest and the proceeds thereof.
2. That the limited freights available should be allotted between the States in accordance with the exportable surplus of each.

The securing and general allotment of freights is under the control of the Chartering Agents, who are responsible to the Commonwealth Government.

The distribution of freights among the States is in charge of the Australian Wheat Board, which also has the duty of realising the crop. This Board consists of Ministerial representatives of the Governments of the Commonwealth and of the States and a representative of the growers, one from each State. It has the assistance of an Advisory Board consisting of well-known wheat shippers. A London Wheat Committee, consisting of the High Commissioner and the Agents-General of the States concerned, acting with the advice of the London representatives of the wheat shippers, arranges overseas sales. Adjustments are to be made between the States so that, having regard to the quantity shipped, each will ultimately receive the average net result of the whole of the overseas realisations.

In certain States the crop is bought by the State Government, and in others the wheat is received from the growers for sale on their behalf.

The Australian Wheat Board fixes all prices at which wheat may be sold, except in the case of poultry feed, which is left to the States to regulate.

Each State has a local Board or Commission to control the operations of the scheme within the State concerned. This Board or Commission effects all local sales, including sales to millers.

(ii) *Advances and Finance.* Under arrangements with the Australian banks made by the Commonwealth and State Governments, advances are made to farmers upon delivery of their wheat at railway stations to representatives of agents appointed by the different State Governments. Upon the 1915-16 crop, advances made amount to 4s. 9d. per bushel, less rail freight and handling charges. This will still leave for distribution a small amount, varying in the different States in accordance with differences in local realising, and in interest and other expenses. Upon the 1916-17 and 1917-18 crops, advances have been made amounting to 3s. 3d. per bushel, and on 1918-19, 4s. 4d. per bushel, less rail freight to seaport. This represents the position as at 4th August, 1919.

Proceeds of wheat as realised are applied in reduction of the bank overdrafts caused by payment of advances and expenses. The rate of interest payable to the banks is five per cent. The Government of each State has undertaken to repay all advances made on account of such State, and the Commonwealth Government has guaranteed repayment by the States. Advances to growers are made by means of certificates issued by the agents appointed by the various States. The certificates are payable at banks named by the growers.

(iii) *Results of the Scheme.* In all the States, certain wheat, particularly seed wheat, has not been brought under the scheme. The quantity of wheat pooled therefore differs from that harvested in each State. In addition, wheat grown in one State may be pooled in another. A considerable quantity of New South Wales wheat is included in Victorian returns, and the Victorian total also includes a small quantity of South Australian wheat.

Deliveries made on account of each harvest to 4th August, 1919, are as follows :—

WHEAT POOLED IN EACH STATE, 1915-16 TO 1918-19.

State in which pooled.	1915-16.	1916-17.	1917-18.	1918-19 (to 4/8/1919).
	Bushels.	Bushels.	Bushels.	Bushels.
New South Wales	58,574,000	32,050,000	33,715,000	13,855,000
Victoria	59,902,000	50,407,000	36,233,000	22,969,000
South Australia	29,894,000	41,996,000	25,867,000	20,393,000
Western Australia	15,004,000	13,822,000	7,526,000	7,561,000
Total	163,374,000	138,275,000	103,341,000	64,778,000

On 4th August, 1919, the total overdraft on all pools amounted to £17,231,000.

The quantities of wheat disposed of and in hand on that date were as follows :—

POOLED WHEAT DISPOSED OF AND IN HAND IN EACH STATE, 4th AUGUST, 1919.

Particulars.	N.S.W.	Vic.	S. Aust.	W. Aust.	Total.
1915-16. (In thousands of bushels.)					
Shipments	28,977	37,758	18,315	10,169	95,219
Local sales	29,597	22,144	7,758	4,835	64,334
Stocks on hand .. .. .	..	..	3,821	..	3,821
Total	58,574	59,902	29,894	15,004	163,374
1916-17. (In thousands of bushels.)					
Shipments	4,777	16,985	15,401	2,473	39,636
Local sales	19,523	19,915	12,379	10,840	62,657
Stocks on hand	7,750	13,507	14,216	509	35,982
Total	32,050	50,407	41,996	13,822	138,275
1917-18. (In thousands of bushels.)					
Shipments	10,752	6,421	7,286	1,900	26,359
Local sales	20,121	12,237	3,463	2,892	38,713
Stocks on hand	2,842	17,575	15,118	2,734	38,269
Total	33,715	36,233	25,867	7,526	103,341
1918-19. (In thousands of bushels.)					
Shipments .. .. .	..	343	963	9	1,315
Local sales	2,219	5,090	609	857	8,775
Stocks on hand	11,636	17,536	18,821	6,695	54,688
Total	13,855	22,969	20,393	7,561	64,778

The value realised to 4th August, 1919 (all pools) is as follows :—

TOTAL VALUE OF POOLED WHEAT SOLD IN EACH STATE, 4th AUGUST, 1919.

Particulars.	N.S.W.	Victoria.	S. Aust.	W. Aust.	Total.
	£	£	£	£	£
Oversea shipments and Australian Wheat Board flour contracts	11,296,000	18,891,000	12,459,000	5,416,000	48,062,000
Local sales	15,071,000	9,759,000	3,534,000	2,420,000	30,784,000
Total shipments and local deliveries	26,367,000	28,650,000	15,993,000	7,836,000	78,846,000

Since the initiation of the "Pool," several sales of magnitude have been made, including one of 3,000,000 tons to the British Wheat Commission, at a rate of 4s. 9d. per bushel f.o.b., equalling £26,600,000. This is the largest wheat transaction ever recorded.

§ 5. Oats.

1. *Progress of Cultivation.*—Oats came next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for over 68 per cent., oats represented less than 4½ per cent. of the area under crop in the Commonwealth. The progress of cultivation of oats since 1860 is shewn in the table hereunder, and more fully in the graphs hereinafter :—

CULTIVATION OF OATS, 1860-1 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	6,535	86,337	7	2,273	507	30,303	..	125,962
1865-6	10,939	102,817	348	2,872	1,232	28,538	..	146,746
1870-1	10,683	149,309	122	6,188	2,095	30,946	..	199,343
1875-6	18,856	124,100	114	3,640	1,256	32,556	..	180,522
1880-1	17,923	134,089	116	4,355	1,319	19,853	..	177,655
1885-6	14,117	215,994	208	7,871	1,596	29,247	..	269,033
1890-1	14,102	221,048	411	12,475	1,934	20,740	..	270,710
1895-6	23,750	255,503	922	34,098	1,880	32,699	..	348,852
1900-1	29,383	362,689	385	27,988	4,790	45,073	..	470,308
1905-6	38,543	312,052	533	56,950	15,713	42,776	..	466,567
1910-11	77,991	392,681	2,537	77,674	61,918	63,887	..	676,688
1913-14	103,262	442,060	4,093	116,932	133,625	58,886	154	859,020
1914-15	43,285	434,815	2,728	140,567	96,085	57,063	191	774,734
1915-16	58,449	353,932	339	126,529	104,086	78,212	97	721,644
1916-17	67,003	441,598	6,564	151,609	122,220	55,028	108	844,130
1917-18	82,512	293,214	3,002	106,556	95,666	34,771	79	615,800

(a) Including 8 acres, Northern Territory.

2. *Total Yield.*—The total oat crop of the several States for the same period is furnished in the following table :—

COMMONWEALTH OAT CROP, 1860-1 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1	98,814	2,633,693	91	52,989	11,925	926,418	..	3,723,930
1865-6	116,005	2,279,468	4,524	42,642	19,005	688,740	..	3,150,384
1870-1	119,365	2,237,010	1,586	88,383	39,974	691,250	..	3,177,568
1875-6	352,966	2,719,795	1,482	60,749	18,840	827,043	..	3,980,875
1880-1	356,121	2,362,425	2,081	50,070	21,104	439,446	..	3,231,247
1885-6	279,107	4,692,303	1,006	97,201	23,142	784,325	..	5,877,084
1890-1	256,659	4,919,325	8,967	116,229	38,791	519,395	..	5,859,366
1895-6	374,196	2,880,045	10,887	184,012	19,326	906,934	..	4,375,400
1900-1	593,548	9,582,332	7,855	366,229	86,433	1,406,913	..	12,043,310
1905-6	883,081	7,232,425	5,858	869,146	283,987	1,200,024	..	10,474,521
1910-11	1,702,706	9,699,127	50,469	1,136,618	776,233	2,063,303	..	15,428,456
1913-14	1,832,616	8,890,321	56,236	1,200,740	1,655,681	1,593,664	2,790	15,232,048
1914-15	511,759	1,608,419	43,607	368,425	464,943	1,341,800	2,151	4,341,104
1915-16	1,344,138	9,328,894	2,454	2,134,374	1,538,092	2,189,467	1,560	16,538,979
1916-17	1,083,030	8,289,289	108,664	1,839,541	1,689,352	1,006,183	1,950	14,018,009
1917-18	1,452,144	6,141,287	44,688	1,248,529	908,592	589,224	2,967	10,387,431

The principal oat-growing State of the Commonwealth is Victoria. During the past five seasons it has produced more than 56 per cent. of the total quantity of oats grown in the Commonwealth; South Australia, Tasmania, Western Australia, and New South Wales come next in order of importance. In New South Wales and Tasmania, the highest production of oats for any season was that of 1909-10, while Victoria experienced its maximum yield in 1903-4, South Australia in 1915-16, Queensland in 1916-17, and Western Australia in 1912-13. For the Commonwealth as a whole, the record yield was that of 17,541,210 bushels in the season 1903-4, while the yields of 16,538,979 and 16,248,857 for 1915-16 and 1908-9 respectively, rank second and third.

3. **Average Yield.**—The average yield per acre of the oat crop of the Commonwealth varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield in each of the seasons 1901-2 and 1913-14 to 1917-18, and also for the decennium 1908-18, are given in the succeeding table :—

AVERAGE YIELD OF OATS PER ACRE, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	21.31	20.43	27.50	13.54	16.78	31.48	..	21.22
1913-14	17.75	20.11	13.74	10.27	12.39	27.06	18.12	17.73
1914-15	11.82	3.70	15.98	2.62	4.84	23.51	11.26	5.60
1915-16	23.00	26.36	7.24	16.87	14.78	27.99	16.08	22.92
1916-17	16.16	18.77	16.55	12.13	13.82	18.28	18.06	16.61
1917-18	17.60	20.94	14.89	11.72	9.50	16.95	37.56	16.87
Average for 10 seasons 1908-18	18.96	19.44	16.87	11.72	12.70	28.26	18.72	18.02

The smallest average yield per acre ever recorded for the Commonwealth was that experienced in the abnormally dry season 1914-15, viz., 5.60 bushels, while the largest in the past ten years was that of the season 1908-9, amounting to 24.03 bushels per acre.

4. **Relation to Population.**—The State in which oat production occupies the most important position in relation to population is Tasmania, the yield for that State representing about 6.7 bushels per head during the last five years under review, as compared with 2.5 bushels per head for the Commonwealth as a whole. Particulars for the seasons 1901-2 and 1913-14 to 1917-18 are furnished in the succeeding table :—

OAT PRODUCTION PER 1,000 OF POPULATION, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	500	5,558	83	1,306	845	9,734	..	2,559
1913-14	1,000	6,296	85	2,729	5,163	7,902	1,403	3,126
1914-15	275	1,124	64	834	1,439	6,662	1,098	879
1915-16	719	6,574	4	4,868	4,837	10,892	820	3,353
1916-17	583	5,926	162	4,251	5,471	5,033	877	2,875
1917-18	768	4,352	66	2,862	2,936	2,900	1,410	2,105

5. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of the Commonwealth for the season 1917-18 is as follows :—

VALUE OF OAT CROP, (a) 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
Aggregate value ..	£296,470	£1,145,094	£5,958	£156,066	£166,575	£103,114	£610	£1,873,887
Value per acre ..	£3/11/10	£3/18/1	£1/19/8	£1/9/4	£1/14/10	£2/19/4	£7/14/5	£3/0/0

(a) Exclusive of the value of straw.

6. Imports and Exports.—The production of oats in the Commonwealth has not yet reached such a stage as to admit of a regular export trade in this cereal; in fact in certain years the imports have exceeded the exports, notably in 1903, 1906, 1908, 1910, and in each of the four years prior to 1916–17. The quantities and values of oats imported into and exported from the Commonwealth during the years 1901 and 1913 to 1917–18 are given hereunder:—

COMMONWEALTH IMPORT AND EXPORT OF OATS, 1901 AND 1913 TO 1917–18.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ..	1,526,599	153,674	2,874,334	285,347	1,347,735	131,673
1913 ..	146,102	20,282	111,280	14,102	— 34,822	— 6,180
1914–15 ..	1,767,490	344,201	38,163	7,904	— 1,729,327	— 336,297
1915–16 ..	2,473,412	501,755	582,055	85,119	— 1,891,357	— 416,636
1916–17 ..	3,700	635	670,985	97,879	667,285	97,244
1917–18 ..	838	219	368,113	53,809	367,275	53,590

Note.—The minus sign (—) signifies net imports.

The principal countries from which the Commonwealth imports of oats have been obtained are the Dominion of New Zealand, Chile, Japan, and the United States of America, while the principal countries to which oats were exported during the period under review were the South African colonies in the earlier, and the United Kingdom and New Zealand in the later years. Of the 368,113 bushels exported during 1917–18, 327,498 bushels were shipped to New Zealand.

7. Oatmeal, etc.—Importations of oatmeal, etc., into the Commonwealth take place principally from the United Kingdom, the United States, and Canada. The total importations of oatmeal, wheatmeal, and rolled oats during 1917–18 amounted to 232,438 lbs., and represented a value of £5,096, while the exports amounted to 3,295,247 lbs., valued at £46,895, principally to India, New Zealand, and the Union of South Africa.

8. Comparison with Other Countries.—A comparison of the Australian production of oats with that of the leading oat-producing countries of the world is furnished in the following table:—

PRODUCTION OF OATS IN VARIOUS COUNTRIES, 1917.

Country.	Quantity of Oats Produced.	Country.	Quantity of Oats Produced.	Country.	Quantity of Oats Produced.
	Bushels.		Bushels.		Bushels.
United States ..	1,538,715,048	Hungary (1915)	78,448,695	Netherlands ..	18,025,024
Russia in Europe		Sweden ..	68,588,928	Norway ..	11,444,736
(1915) (a) ..	758,628,205	Belgium (1915)	38,776,000	Australia ..	10,387,431
Germany (1915)	399,780,056	Denmark ..	36,531,839	Bulgaria (1916)	7,146,417
Canada ..	390,677,700	Italy ..	32,851,997	Union of South	
France ..	230,160,764	Spain ..	32,036,731	Africa ..	6,716,003
United Kingdom	208,167,272	Argentine Rep.	30,808,501	New Zealand	5,302,618
Austria (1915)	136,685,400	Rumania		Tunis ..	3,873,722
Russia in Asia		(1916) ..	28,049,589		
(1915) ..	82,242,927	Algeria ..	18,031,809		

(a) Including Poland and Northern Caucasia.

9. **Comparison of Yields.**—The average yield per acre of oats in Australia is a somewhat low one compared with the results obtained in other countries, where the cultivation of this cereal is more extensively carried on. Arranging the countries contained in the foregoing table according to the magnitude of the average yield of oats for the years specified, the results are as follows :—

YIELD OF OATS PER ACRE, VARIOUS COUNTRIES, 1917.

Country.	Average per Acre.	Country.	Average per Acre.	Country.	Average per Acre.
	Bushels.		Bushels.		Bushels.
Belgium (1914) ..	70.29	Tunis	31.24	Rumania (1916) ..	26.26
Netherlands ..	48.58	France	29.87	Spain	22.48
United Kingdom	43.70	New Zealand ..	29.79	Russia in Europe	
Norway	37.28	Italy	29.68	(1915)	21.72
Denmark	37.24	Hungary (1915)	29.45	Bulgaria (1914) ..	20.90
Sweden	35.56	Canada	29.34	Australia	16.87
United States ..	35.31	Union of South		Russia in Asia	
Germany (1915) ..	35.06	Africa	26.86	(1915)	13.38
Austria (1913) ..	31.35	Algeria	26.44	Argentine Rep. ..	12.20

10. **Price of Oats.**—The average wholesale prices of oats in the markets of the several capitals for the year 1917 are given in the following table :—

AVERAGE WHOLESALE PRICE OF OATS PER BUSHEL, 1917.

Particulars.	Sydney.(a)	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Average price per bushel ..	3 9	2 5½	2 8	2 0¼	2 6½	2 11

(a) Year ended 30th June, 1917.

§ 6. Maize.

1. **States Growing Maize.**—The only States in which maize is at all extensively grown for grain are those of New South Wales and Queensland, the area so cropped in these two States during the season 1917-18 being 310,857 acres, or 93½ per cent. of the total for the Commonwealth. Of the balance, Victoria contributed 20,987 acres, South Australia 70 acres, Western Australia 97 acres, the Northern Territory 25 acres, and the Federal Territory 21 acres. The climate of Tasmania prevents the growing of maize for grain in that State. In South Australia, prior to 1908, particulars concerning maize had not been specially asked for on the form used in the collection of agricultural statistics. In all the States, maize is grown to a greater or less extent as green forage, particularly in connection with the dairying industry.

2. **Area under Maize.**—The area devoted to the growing of maize for grain in each State, from 1875 onwards, is given in the following table, and the actual fluctuations from year to year are shewn more fully on the graph hereinafter.

The total area under maize in the Commonwealth exceeded 300,000 acres for the first time in the season 1890-1, and although it fluctuated somewhat during the succeeding seventeen years, it may be considered to have remained at about that figure. The greatest divergence during the period occurred in 1903-4, when a record total of 371,906 acres was harvested. For 1908-9 and the two following seasons a continuous increase in the area devoted to maize was in evidence, and the total of 414,914 acres for 1910-11 is the highest ever attained. The unfavourable weather conditions during 1911-12 resulted in the acreage under maize for that season being reduced by 74,849 acres as compared with the preceding season. Since then the area devoted to this crop has fluctuated slightly from year to year, that for 1916-17 having been exceeded on two occasions only.

AREA UNDER MAIZE, 1875-6 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1875-6 ..	117,582	2,346	38,711	..	60	..	..	158,699
1880-1 ..	127,196	1,769	44,109	..	32	..	..	173,106
1885-6 ..	132,709	4,530	71,741	..	120	..	..	209,100
1890-1 ..	191,152	10,357	99,400	..	81	..	..	300,990
1895-6 ..	211,104	7,186	100,481	..	23	..	..	318,794
1900-1 ..	206,051	9,389	127,974	..	91	..	..	343,505
1905-6 ..	189,353	11,785	113,720	..	43	..	..	314,901
1910-11 ..	213,217	20,151	180,862	(a)619	46	19	..	414,914
1913-14 ..	156,793	17,962	156,775	239	38	45	27	331,879
1914-15 ..	143,663	19,433	176,372	189	73	51	..	339,781
1915-16 ..	154,119	22,258	146,474	702	28	45	11	323,637
1916-17 ..	155,373	23,076	181,405	117	51	45	5	360,072
1917-18 ..	145,733	20,987	165,124	70	97	25	21	332,057

(a) Particulars for years prior to 1907-8 not available.

3. Total Yield.—The average yield for the season 1917-18 was the largest since 1913-14. The 1910-11 crop was a record one, and exceeded 13,000,000 bushels, while the average annual production of maize during the last decade was 9,155,881 bushels. Particulars concerning the yield from 1875 onwards are given hereunder :—

MAIZE CROP, 1875-6 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	N. Ter.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1875-6	3,410,517	37,177	1,006,486	..	1,200	..	..	4,455,380
1880-1	4,518,897	49,299	1,409,607	..	896	..	..	5,978,699
1885-6	4,336,163	181,240	1,574,294	..	1,417	..	..	6,093,114
1890-1	5,713,205	574,083	2,373,803	..	1,526	..	..	8,662,617
1895-6	5,687,030	351,891	2,391,378	..	600	..	..	8,430,899
1900-1	6,292,745	604,180	2,456,647	..	1,399	..	..	9,354,971
1905-6	5,539,750	641,216	2,164,674	..	428	..	..	8,346,068
1910-11	7,594,130	982,103	4,460,306	(a)6,375	718	449	..	13,044,081
1913-14	4,452,989	800,529	3,915,376	2,336	421	1,350	320	9,173,321
1914-15	3,174,825	1,018,419	4,260,673	170	999	475	..	8,455,561
1915-16	3,773,405	999,886	2,003,463	15,837	273	450	195	6,793,509
1916-17	4,333,430	1,172,330	3,018,934	993	949	450	50	8,527,136
1917-18	3,499,529	1,152,787	4,188,586	796	701	432	429	8,843,260

(a) Particulars for years prior to 1907-8 not available.

4. Average Yield.—In the following table particulars are given of the average yield per acre of the maize crops of the several States for the seasons 1901-2 and 1913-14 to 1917-18, and also for the decennium 1908-18 :—

AVERAGE YIELD OF MAIZE PER ACRE, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ..	22.98	61.42	21.96	(a)	10.16	..	..	23.86
1913-14 ..	28.40	44.57	24.97	9.77	11.08	30.00	11.85	27.64
1914-15 ..	22.10	52.41	24.16	0.90	13.68	9.31	..	24.89
1915-16 ..	24.48	44.92	13.68	22.56	9.75	10.00	17.73	20.99
1916-17 ..	27.89	50.80	16.64	8.49	18.61	10.00	10.00	23.68
1917-18 ..	24.01	54.93	25.37	11.37	7.23	17.28	20.43	26.63
Average for 10 seasons 1908-18	28.57	48.38	21.63	14.88	12.91	19.04	14.41	26.57

(a) Particulars not available.

The extraordinarily high average yield obtained in Victoria is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts that are peculiarly suited to the production of this grain. The average yield in New South Wales is appreciably higher than that obtained in Queensland.

5. **Value of Maize Crop.**—The value of the Commonwealth maize crop for the season 1917-18 has been estimated at £1,902,029, made up as follows :—

VALUE OF MAIZE CROP, 1917-18.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	F. Ter.	C'wealth.
Aggregate value	£ 962,620	£ 293,000	£ 645,740	£ 209	£ 260	£ 80	£ 120	£ 1,902,029
Value per acre	£6/12/1	13/19/3	3/18/3	2/19/9	2/13/7	3/4/0	5/14/3	5/14/7

6. **Relation to Population.**—During the past ten seasons the Commonwealth production of maize has ranged between 1.4 bushels per head of population in 1915-16 and 3 bushels per head in 1910-11. The production in Queensland, the State in which the maize yield per head of population is highest, ranged during the same period between 3 bushels per head in 1915-16 and 7½ bushels per head in 1910-11. Details for the several States for the seasons 1901-2 and 1913-14 to 1917-18 are as follows :—

MAIZE PRODUCTION PER 1,000 OF POPULATION, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ..	2,795	509	5,070	(a)	27	..	..	1,839
1913-14..	2,431	567	5,931	5	1	368	161	1,883
1914-15..	1,705	712	6,216	..	3	120	..	1,711
1915-16..	2,017	705	2,952	36	1	99	107	1,377
1916-17..	2,332	835	4,509	2	3	94	32	1,749
1917-18..	1,851	817	6,179	2	2	88	204	1,792

(a) Particulars not available.

7. **Australian and Foreign Maize Production.**—The following table gives the production of maize in Australia and in the leading maize-producing countries of the world. The figures shew that of the total production the United States of America was responsible for over 77 per cent.

PRODUCTION OF MAIZE IN VARIOUS COUNTRIES, 1917.

Country.	Production of Maize.	Country.	Production of Maize.
	Bushels.		Bushels.
United States ..	3,062,813,484	Union of South Africa ..	33,928,031
Hungary (1915) ..	175,025,170	Spain ..	26,713,756
Italy ..	84,337,800	Philippine Islands (1916)	13,652,060
Rumania (1915) ..	83,767,793	France (1915) ..	13,571,600
India (British) (1915)	79,684,680	Serbia (1915) ..	11,632,800
Russia in Europe (1916)	69,786,137	Russia in Asia (1913)	10,765,860
Egypt (1916) ..	66,270,123	Portugal (1915)	8,991,185
Mexico (1915) ..	58,164,000	Australia ..	8,843,260
Argentine Republic	57,038,527	Canada ..	7,525,161
Austria (1915) ..	40,714,800	Uruguay (1916)	4,463,118
Bulgaria (1915) ..	33,929,000	Japan ..	3,591,627

8. **Comparison of Yields.**—The average yield per acre of maize in the Commonwealth during 1917 was 26.63 bushels, and may be regarded as highly satisfactory when compared with that of other maize-producing countries. Egypt, Canada, and Hungary are the

only countries shewing a higher average. The remaining countries shewn in the following table had average yields per acre ranging from 6.36 to 25.58 bushels.

AVERAGE YIELD OF MAIZE PER ACRE IN VARIOUS COUNTRIES, 1917.

Country.	Average Yield per Acre.	Country.	Average Yield per Acre.
	Bushels.		Bushels.
Egypt (1916)	35.82	Austria (1913)	18.61
Canada	32.11	France (1915)	17.72
Hungary (1915)	28.26	Rumania (1915)	16.09
Australia (a)	26.63	Serbia (1913)	15.85
United States of America	25.58	India (1915)	13.12
Japan	25.29	Union of South Africa	13.01
Spain	24.24	Uruguay (1915)	12.95
Italy	23.25	Philippine Islands (1916)	12.77
Bulgaria (1914)	19.07	Russia in Asia (1913)	10.09
Russia in Europe	19.04	Argentine Republic	6.36

(a) Average yield for 10 years, 26.57 bushels.

9. **Oversea Imports and Exports.**—Except in the years 1902, 1903, 1912, 1914–15 and 1915–16, when many of the maize crops failed, the Commonwealth oversea trade in maize has been practically insignificant. In the first of the years mentioned, nearly two million, and in 1915–16 nearly three and a half million bushels were imported. In 1908 and 1909 also, owing to the small harvests of the seasons 1907–8 and 1908–9, the imports of maize were largely in excess of the exports. Details of imports and exports for 1901 and the past five years are as follows :—

COMMONWEALTH IMPORTS AND EXPORTS OF MAIZE, 1901 AND 1913 TO 1917-18.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901	188,423	24,764	533	75	187,890	24,689
1913	273,123	53,387	15,261	3,349	257,862	50,038
1914–15	1,457,660	282,461	12,266	2,873	1,445,394	279,588
1915–16	3,432,571	712,650	4,237	1,088	3,428,334	711,562
1916–17	41,952	8,162	50,296	11,894	— 8,344	— 3,732
1917–18	3,226	770	128,988	29,069	— 125,762	— 28,299

Note.—The minus sign (—) signifies net exports.

The principal countries to which maize has been exported from the Commonwealth are New Zealand and the Pacific Islands, while the principal countries from which importations have taken place are Java, the Pacific Islands, and South Africa.

10. **Prepared Maize.**—A moderate quantity of corn-flour is imported annually into the Commonwealth, the principal countries of supply being the United Kingdom and the United States. During the year 1917–18 these importations amounted to 125,524 lbs., and represented a value of £1,588. The exports of this commodity have been steadily increasing in dimensions during the past five years, ranging from 12,622 lbs., valued at £204, in 1913, to 2,277,604 lbs., valued at £35,425, in 1917–18.

11. **Price of Maize.**—The average wholesale price of maize in the Sydney market is given in the following table for each of the years 1908 to 1917 :—

AVERAGE SYDNEY PRICE OF MAIZE PER BUSHEL, 1908 TO 1917.

Particulars.	1908.	1909.	1910.	1911.	1912.	1913.	1914. ^a	1915. ^a	1916. ^a	1917. ^a
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Average price per bushel..	4 7	4 2	2 11	3 0	4 8	4 1	4 6	5 2	3 8	4 8

(a) For year ended 30th June of year following.

§ 7. Barley.

1. **Area under Barley.**—The area devoted to barley in the Commonwealth has fluctuated very considerably, though with a tendency to increase during the past few years. Taking a series of years, the principal barley-growing State is Victoria, but for the past five seasons South Australia has attained the lead in regard to acreage, and for 1917-18 accounted for nearly 47 per cent. of the Commonwealth area devoted to this crop; Victoria was next in importance with a percentage of about 41; the remaining 12 per cent. being represented by Queensland, New South Wales, Tasmania, and Western Australia, in the order named. The figures here given relate to the areas harvested for grain; only small areas are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this sub-section. The area under barley for grain in the several States from 1875 onwards is shewn in the following table:—

COMMONWEALTH AREA UNDER BARLEY, 1875-6 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1875-6 ..	4,817	31,568	613	13,969	5,014	5,939	61,920
1880-1 ..	8,056	68,630	1,499	13,074	6,363	8,297	105,919
1885-6 ..	5,298	74,112	406	16,493	6,178	6,833	109,320
1890-1 ..	4,937	87,751	584	14,472	5,322	4,376	117,442
1895-6 ..	7,590	78,438	721	14,184	1,932	6,178	109,043
1900-1 ..	9,435	58,853	7,533	15,352	2,536	4,502	98,211
1905-6 ..	9,519	40,938	5,201	26,250	3,665	5,372	90,945
1910-11 ..	7,082	52,687	5,578	34,473	3,369	5,235	108,424
1913-14 ..	20,601	83,351	8,826	90,552	11,502	7,723	222,564
1914-15 ..	4,861	62,492	7,166	66,315	6,986	5,836	153,656
1915-16 ..	6,369	61,400	1,367	84,900	10,069	5,409	169,514
1916-17 ..	5,195	93,015	12,674	103,627	11,105	4,637	230,253
1917-18 ..	6,370	84,931	7,702	95,654	5,028	5,185	204,870

(a) Including 9 acres Federal Territory.

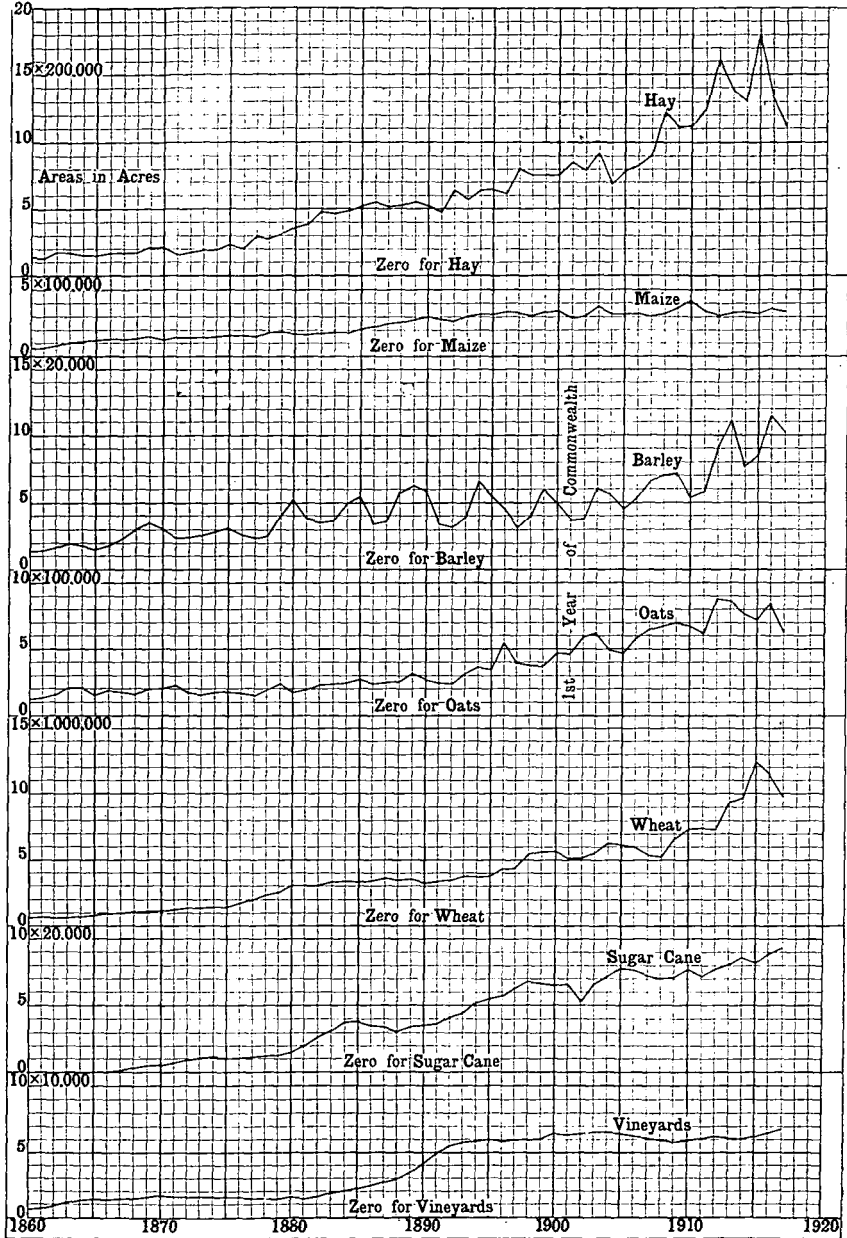
2. **Total Yield.**—The total production of barley in the Commonwealth for the season 1917-18 amounted to 3,996,858 bushels, giving an average yield of 19.51 bushels per acre as compared with 18.31 for the decennium 1908-18. Particulars concerning the yields of the several States from 1875 onwards are as follows:—

COMMONWEALTH BARLEY CROP, 1875-6 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1875-6 ..	98,576	700,665	12,260	197,315	70,196	165,357	1,244,369
1880-1 ..	163,395	1,068,830	31,433	151,886	89,082	169,156	1,673,782
1885-6 ..	85,606	1,302,854	9,826	218,334	89,581	176,466	1,882,667
1890-1 ..	81,383	1,571,599	12,673	175,583	85,451	99,842	2,026,531
1895-6 ..	96,119	715,592	7,756	140,391	18,691	138,833	1,117,382
1900-1 ..	114,228	1,215,478	127,144	211,102	29,189	116,911	1,814,052
1905-6 ..	111,266	1,062,139	61,816	505,916	49,497	106,042	1,896,676
1910-11 ..	82,005	1,340,387	83,621	544,471	33,566	142,318	2,226,368
1913-14 ..	303,297	1,812,899	115,975	1,332,714	167,915	187,484	3,920,425
1914-15 ..	46,500	600,599	105,613	447,310	24,090	104,798	1,328,910
1915-16 ..	114,846	1,734,511	8,130	1,697,670	130,870	115,523	3,801,550
1916-17 ..	73,370	1,799,784	250,167	1,734,420	134,055	88,696	4,080,492
1917-18 ..	97,824	1,970,650	143,574	1,651,036	35,761	98,013	3,996,858

(a) Including Federal Territory, 150 bushels.

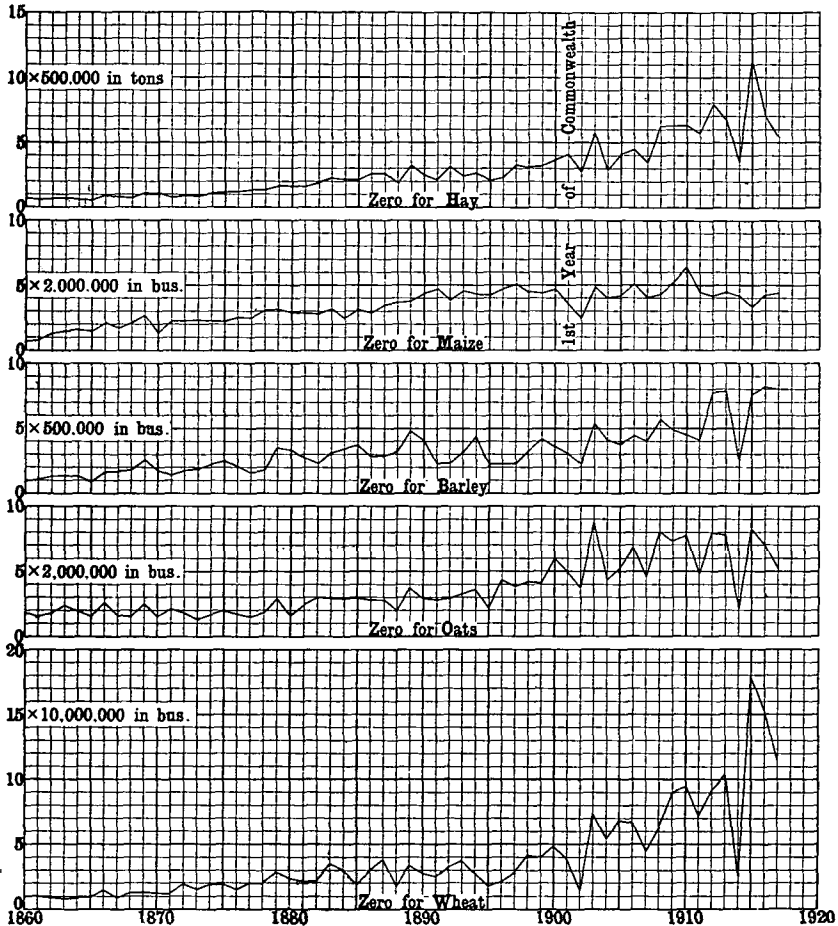
GRAPHS SHEWING THE AREA UNDER THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1917-18.



(See pages—for wheat, 331; oats, 341; maize, 345; barley, 348; hay, 358; sugar-cane, 363; and vineyards, 367.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given on the left-hand of the diagram. The height of each graph above the base line denotes, for the crop to which it relates, the total area under cultivation in the Commonwealth during the successive seasons.

GRAPHS SHEWING THE PRODUCTION OF THE PRINCIPAL CROPS IN THE COMMONWEALTH
FROM 1860-1 TO 1917-18.



(See pages—for wheat, 332 ; oats, 341 ; maize, 345 ; barley, 348 ; and hay, 360.)

EXPLANATION OF GRAPHS.—In this diagram a separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year, the vertical height of such square representing in the case of the wheat graph, 10,000,000 bushels ; oats, 2,000,000 bushels ; barley, 500,000 bushels ; maize, 2,000,000 bushels ; and hay, 500,000 tons. The height of each graph above its base line denotes the aggregate yield in the Commonwealth of that particular crop during the successive seasons.

3. **Malting and other Barley.**—In recent years the statistics of all the States have distinguished between "malting" and "other" barley. Particulars for 1917-18 season are as follows:—

MALTING AND OTHER BARLEY, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley ..	4,246	41,065	5,813	79,396	1,515	4,750	136,785
Other barley	2,124	43,866	1,889	16,258	3,513	435	68,085
Total ..	6,370	84,931	7,702	95,654	5,028	5,185	204,870
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Malting barley ..	63,891	980,219	108,518	1,351,532	8,736	89,553	2,602,449
Other barley	33,933	990,431	35,056	299,504	27,025	8,460	1,394,409
Total ..	97,824	1,970,650	143,574	1,651,036	35,761	98,013	3,996,858

Taking the Commonwealth as a whole, nearly 67 per cent. of the area devoted to this grain in 1917-18 was cropped for malting barley. The proportion varies considerably in the several States.

4. **Total Acreage and Yield.**—The following table sets out the total acreage and yield of malting and other barley in the Commonwealth as a whole during the past ten seasons:—

AREA AND YIELD, MALTING AND OTHER BARLEY, COMMONWEALTH, 1907-8 TO 1917-18.

Season.	Acres.			Bushels.			Average Bushels per Acre.		
	Malting.	Other.	Total.	Malting.	Other.	Total.	Malting.	Other.	Total.
1908-9 ..	95,644	44,599	140,243	1,084,841	889,363	2,874,204	20.75	19.94	20.49
1909-10 ..	91,814	51,199	143,013	1,536,032	900,352	2,436,384	16.78	17.59	17.04
1910-11 ..	67,408	41,018	108,424	1,369,464	856,904	2,226,368	20.32	20.89	20.53
1911-12 ..	80,919	35,547	116,466	1,459,488	597,348	2,056,836	18.04	16.80	17.66
1912-13 ..	135,880	45,507	181,387	2,920,857	938,259	3,859,116	21.50	20.62	21.28
1913-14 ..	151,944	70,620	222,564	2,625,415	1,295,010	3,920,425	17.28	18.34	17.61
1914-15 ..	101,930	51,728	153,656	995,413	333,497	1,328,910	9.77	6.45	8.45
1915-16 ..	106,217	83,297	189,514	2,365,128	1,436,424	3,801,550	22.27	22.69	22.43
1916-17 ..	141,846	88,407	230,253	2,505,118	1,575,374	4,080,492	17.66	17.82	17.72
1917-18 ..	136,785	68,085	204,870	2,602,449	1,394,409	3,996,858	19.03	20.48	19.51
Average 10 seasons 1908-18	111,039	56,000	167,039	2,036,420	1,021,694	3,058,114	18.34	18.24	18.31

For the past ten seasons the area and production of malting barley have represented approximately twice the corresponding figures for other barley. The average yield per acre for four of the seasons was in favour of malting, while for the remaining six seasons the yield per acre for other barley shewed the more satisfactory results. The average yields for the past ten seasons for malting and for other barley were 18.34 and 18.24 bushels per acre respectively.

5. **Value of Barley Crop.**—The estimated value of the total barley crop of the Commonwealth for the seasons 1913-14 to 1917-18 was £564,871, £343,423, £655,917, £734,154, and £834,075, in the order named. The extent to which the several States have contributed to the latter total is shewn in the following table:—

VALUE OF BARLEY CROP, (a) 1917-18.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	F. Ter.	C'wealth.
Total value ..	£21,050	£419,412	£24,527	£341,386	£8,097	£19,603	..	£834,075
Value per acre ..	£3/6/1	£4/18/9	£3/3/8	£3/11/5	£1/12/2	£3/15/7	..	£4/1/5

(a) Exclusive of the value of straw.

6. **Relation to Population.**—During the last five seasons embraced in the following table, the quantity of barley produced in the Commonwealth has averaged under three-quarters of a bushel per head of population. For the season 1917-18 the production ranged from 3½ bushels per head in South Australia to 2½ pounds per head in New South Wales. Details for the season 1901-2 and for the last quinquennium are as follows:—

BARLEY PRODUCTION PER 1,000 OF POPULATION, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	75	573	547	677	179	956	397
1913-14	166	1,284	176	3,029	524	930	805
1914-15	25	420	156	1,012	75	520	269
1915-16	61	1,222	12	3,872	412	575	771
1916-17	39	1,287	374	4,008	434	444	837
1917-18	52	1,397	212	3,785	116	482	810

7. **Commonwealth Imports and Exports.**—The Commonwealth oversea trade in barley is not extensive, and in most years the imports exceed the exports. In 1902, 1903, 1912, and 1914-15 somewhat extensive importations of barley from the United States and New Zealand took place, owing to the shortage in local supply resulting from the severe droughts of those periods. In 1904, the excellent crop of the season furnished the material for a heavy exportation to Japan, the total exported thither during that year being 551,821 bushels. In 1909 also there was a fairly heavy export, mainly to the United Kingdom. Particulars of the Commonwealth oversea imports and exports of barley for the years 1901 and 1913 to 1917-18 are contained in the following table:—

COMMONWEALTH IMPORTS AND EXPORTS OF BARLEY, 1901 AND 1913 TO 1917-18.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901	55,508	7,208	17,474	1,942	- 38,034	- 5,266
1913	22,810	6,026	7,414	1,069	- 15,396	- 4,957
1914-15	290,226	66,402	103,522	15,245	- 186,704	- 51,157
1915-16	147,144	27,387	185,122	36,661	37,978	9,274
1916-17	58	9	256,804	52,891	256,746	52,882
1917-18	34	8	282,252	64,703	282,218	64,695

Note.—The minus sign (-) signifies net imports.

In six years during the period embraced in the above table the Commonwealth exports of barley have exceeded in value the imports, viz., in 1904, 1905, 1909, 1915-16, 1916-17, and 1917-18. During the last ten years the total importations amounted to

1,763,243 bushels, valued at £396,200, and the total exports to 1,075,200 bushels, valued at £206,366, giving a net importation of 688,043 bushels, and a net import value of £189,834.

From time to time an export trade in Australian pearl and Scotch barley has been carried on, the total exports for 1917-18 reaching 792,726 lbs., valued at £6,960. The trade for the year was mainly with South Africa and New Zealand.

8. **Commonwealth Imports and Exports of Malt.**—In normal times the importations of malt into the Commonwealth are fairly extensive, the supply being obtained principally from the United Kingdom. Since the outbreak of the war in 1914, however, imports have continuously declined, and in 1917-18 exports totalled 117,075 bushels, valued at £47,626. These exports were mainly to Japan, South Africa, and the Philippines. Details of imports and exports for the years 1901 and 1913 to 1917-18 are given hereunder:—

COMMONWEALTH IMPORTS AND EXPORTS OF MALT, 1901 AND 1913 TO 1917-18.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901	516,135	140,615	.. ..	.. ..	516,135	140,615
1913	85,002	31,071	120	55	84,882	31,016
1914-15	68,215	23,743	165	87	68,050	23,656
1915-16	23,910	9,596	30	13	23,880	9,583
1916-17	7,452	4,196	73	35	7,379	4,161
1917-18	35	106	117,075	47,626	- 117,040	- 47,520

Note.—The minus sign (—) signifies net exports.

9. **Comparison with other Countries.**—In comparison with the barley production of other countries of the world, that of Australia appears very small indeed. Particulars for some of the leading countries for the year 1917 are as follows, the Australian figures being added for the sake of comparison:—

PRODUCTION OF BARLEY IN VARIOUS COUNTRIES, 1917.

Country.	Production of Barley.	Country.	Production of Barley.
	Bushels.		Bushels.
Russia in Europe (1915) (a)	380,229,700	Denmark	17,319,300
United States	202,580,365	Egypt	13,181,901
British India	150,690,321	Sweden	11,887,752
Germany (1915)	110,586,244	Tunis	8,014,030
Spain	74,398,521	Italy	7,194,887
Japan	74,163,947	Chile (1916)	4,224,645
Austria (1915)	61,012,097	Australia	3,996,858
United Kingdom	57,478,744	Belgium (1915)	3,877,600
Hungary (1915)	54,466,708	Norway	2,908,200
Canada	53,372,983	Netherlands	2,494,266
France	38,346,556	Serbia (1915)	2,181,150
Algeria	30,498,293	Argentine Republic	2,098,751
Rumania (1916)	29,118,837	Union of South Africa	969,400
Russia in Asia (1914)	18,855,799	New Zealand	715,417

(a) Including Northern Caucasia.

10. Average Yield of Barley per Acre in various Countries.—The following table shows the average yield of barley per acre in various countries of the world, ranging from nearly 48 bushels in the Netherlands to 5½ bushels in the Argentine Republic :—

AVERAGE YIELD OF BARLEY PER ACRE IN VARIOUS COUNTRIES, 1917.

Country.	Average yield per Acre.	Country.	Average yield per Acre.
	Bushels.		Bushels.
Netherlands	47.97	Rumania (1916)	20.03
Chile (1916)	34.91	Australia	19.51
United Kingdom	32.00	Hungary (1915)	19.25
Norway	29.98	India	19.18
Egypt	29.62	Spain	18.21
Denmark	29.16	Union of South Africa	17.01
Germany (1915)	27.63	Russia in Asia (1916)	16.88
Sweden	27.14	Italy	15.34
Japan	27.09	Russia in Europe (1915)	14.23
New Zealand	23.85	Algeria	10.74
United States	22.93	Tunis	7.72
Canada	22.31	Argentine Republic	5.41
France	21.43		

11. Average Yield.—The average yield per acre of barley varies considerably in the different States, being as a rule highest in Tasmania and Victoria, and lowest in Western Australia. Details for each State for 1901-2 and the past five seasons, and also for the decennium 1908-18, are given in the following table :—

AVERAGE YIELD PER ACRE OF BARLEY, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	17.16	21.40	23.53	15.68	13.01	27.44	20.40
1913-14	14.72	21.75	13.14	14.72	14.60	24.28	17.61
1914-15	9.57	9.61	14.74	6.75	3.45	17.96	8.65
1915-16	18.03	28.25	5.95	20.00	13.00	21.36	22.43
1916-17	14.12	19.35	19.74	16.74	12.07	19.13	17.72
1917-18	15.36	23.20	18.64	17.26	7.11	18.90	19.51
Average for 10 seasons 1908-18	15.33	21.22	16.03	16.29	11.46	23.72	18.31

12. Price of Barley.—The average prices of barley in the Melbourne market during each of the past ten years are given in the following table :—

AVERAGE MELBOURNE PRICE OF BARLEY PER BUSHEL, 1908 TO 1917.

Particulars.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Malting barley	4 10	3 10	4 1	4 10½	5 11½	3 11½	3 9½	5 4½	4 4½	4 4½
Cape barley ..	3 8	2 7	2 5	2 8	4 11	3 0	2 9¼	4 4¼	3 1½	3 1½

§ 8. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the only grain and pulse crops at all extensively grown in the Commonwealth are beans, peas, and rye. The total area under the two former crops for the season 1917-18 was 43,391 acres, giving a yield of 744,079 bushels, or an average of 17.15 bushels per acre, being slightly lower than the average yield for the decennium ended 1917-18, which was 17.39 bushels per acre. The States in which the greatest area is devoted to beans and peas are Tasmania, Victoria and South Australia. The total area under rye in the Commonwealth during the season 1917-18 was 4,744 acres, yielding 45,808 bushels, and giving an average of 9.66 bushels per acre. This was below the average for the past ten seasons, which was 11.50 bushels per acre. Over 42 per cent. of the rye grown during the season was produced in New South Wales and 37 per cent. in Victoria. In addition to these grain crops a small area of rice has for some years been cultivated in Queensland and the Northern Territory. The results obtained, however, have not up to the present been very satisfactory. Should rice-growing ever be seriously taken up in Australia, it is probable that large tracts of country in the northern parts of Queensland and Western Australia and in the Northern Territory will be found well suited to its cultivation.

§ 9. Potatoes.

1. Area.—The principal potato-growing State of the Commonwealth as regards area is Victoria; Tasmania, for some years prior to 1909-10, usually ranking second, and New South Wales third. The relative positions of the two latter States were, however, reversed during the five seasons ended 1913-14, while the position was again reversed in the last four seasons ended 1917-18.

The area under potatoes in each State from 1890 onwards is given hereunder:—

COMMONWEALTH AREA UNDER POTATOES, 1890-1 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1 ..	19,406	53,818	6,270	6,626	511	20,133	..	106,764
1895-6 ..	24,722	43,895	9,240	6,448	668	19,247	..	104,220
1900-1 ..	29,408	38,477	11,060	6,628	1,794	23,068	..	110,435
1905-6 ..	26,374	44,670	7,170	9,540	2,145	28,634	..	118,533
1910-11 ..	44,452	62,904	8,326	7,812	1,791	26,230	..	151,515
1913-14 ..	38,695	74,574	10,085	10,809	5,229	30,811	30	170,233
1914-15 ..	30,410	65,495	8,385	7,639	4,778	31,613	8	148,328
1915-16 ..	19,582	56,910	5,796	4,341	4,866	29,491	7	120,993
1916-17 ..	22,437	73,618	8,908	4,737	5,838	34,345	12	149,895
1917-18 ..	22,558	66,966	10,738	4,164	4,484	27,309	22	136,241

2. **Total Yield.**—For the season 1917–18, Victoria's production represented about 52½ per cent. of the total for the Commonwealth, Tasmania and New South Wales coming next in order with 20 and 14½ per cent. respectively. The total Commonwealth production for the season 1906–7, viz., 507,153 tons, was the highest ever attained, the yield which most nearly approached it being 449,383 tons in 1903–4. Details as to production in the several States during the period from 1890 onwards are as follows :—

COMMONWEALTH PRODUCTION OF POTATOES, 1890–1 TO 1917–18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F. Ter.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1890–1 ..	52,791	204,155	13,112	23,963	1,900	73,158	..	369,079
1895–6 ..	56,179	117,238	19,027	18,412	2,290	81,423	..	294,569
1900–1 ..	63,253	123,126	20,014	14,566	4,836	93,862	..	319,657
1905–6 ..	50,386	115,352	11,308	20,328	6,297	64,606	..	268,277
1910–11 ..	121,033	163,312	15,632	23,920	5,864	70,090	..	399,851
1913–14 ..	106,805	176,602	16,548	32,950	17,803	80,389	44	431,141
1914–15 ..	40,694	189,225	16,014	18,035	14,724	78,907	15	357,614
1915–16 ..	44,420	173,821	7,439	12,991	14,118	79,890	25	332,704
1916–17 ..	45,296	187,992	19,457	20,343	16,841	67,038	35	357,002
1917–18 ..	49,934	182,195	22,139	11,315	11,320	70,442	50	347,395

3. **Average Yield per Acre.**—The suitability of the soil, climate, and general conditions for potato growing is evidenced by the satisfactory yields per acre which are generally obtained in Australia, except in the most northerly portions, the average yield during the past ten seasons being 2.66 tons per acre. The lowest average yield is that obtained in Queensland with an average of 1.84 tons for the same period.

Particulars for each State for the seasons 1901–2 and 1913–14 to 1917–18, and also for the past decennium, are given hereunder :—

AVERAGE YIELD OF POTATOES PER ACRE, 1901–2 AND 1913–14 TO 1917–18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901–2 ..	1.50	3.13	2.25	2.41	3.14	4.51	..	2.94
1913–14 ..	2.76	2.37	1.64	3.05	3.40	2.61	1.47	2.53
1914–15 ..	1.34	2.89	1.91	2.36	3.08	2.50	1.88	2.41
1915–16 ..	2.27	3.05	1.28	2.99	2.90	2.71	3.57	2.75
1916–17 ..	2.02	2.55	2.18	4.29	2.88	1.95	2.92	2.38
1917–18 ..	2.21	2.72	2.06	2.72	2.52	2.58	2.27	2.55
Average for 10 seasons 1908–18	2.35	2.82	1.84	3.00	3.01	2.75	1.88	2.66

4. **Value of Potato Crop.**—The estimated value of the potato crop of each State for the season 1917–18 is furnished in the following table, together with the value per acre :—

VALUE OF POTATO CROP, 1917–18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
Total value ..	£263,230	£592,134	£196,484	£61,104	£142,915	£493,094	£266	£1,749,227
Value per acre ..	£11/13/5	£8/16/10	£18/6/0	£14/13/6	£31/17/5	£18/1/1	£12/1/10	£12/16/9

5. **Relation to Population.**—The average production of potatoes per annum per head of the population of the Commonwealth for the past five seasons has been approximately 166 lbs. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906-7 was nearly a ton, while for the past five seasons it has averaged about 7½ cwt. Details for the seasons 1901-2 and 1913-14 to 1917-18 are as follows :—

POTATO PRODUCTION PER 1,000 OF POPULATION, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F. Ter.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ..	28	104	44	42	30	655	..	84
1913-14 ..	59	125	25	75	56	398	22	88
1914-15 ..	22	132	24	41	46	392	8	72
1915-16 ..	24	122	11	30	44	397	14	67
1916-17 ..	24	134	29	47	55	335	16	73
1917-18 ..	26	129	33	26	37	347	24	70

6. **Commonwealth Imports and Exports.**—Under normal conditions there is usually a fairly large export trade in potatoes carried on by the Commonwealth, principally with New Zealand, the Pacific Islands, and the Philippine Islands. Thus, during 1907, out of a total export of 17,842 tons, 13,346 tons went to New Zealand, 2,102 tons to the Pacific Islands, and 2,112 tons to the Philippine Islands. On the other hand, when the droughts of 1902, 1903, 1912 and 1914 had brought about a shortage in some of the States, large importations from New Zealand took place. The quantities and values of the Commonwealth oversea imports and exports of potatoes for 1901 and for the past five years are shewn in the following table :—

COMMONWEALTH IMPORTS AND EXPORTS OF POTATOES, 1901 AND 1913 TO 1917-18.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1901	17,655	86,067	6,028	45,485	- 11,627	- 40,582
1913	996	5,537	1,689	12,012	693	6,475
1914-15	2,708	15,406	1,803	12,690	- 905	- 2,716
1915-16	17,596	149,488	1,208	13,110	- 16,388	- 136,378
1916-17	91	951	4,492	37,579	4,401	36,628
1917-18	38	367	3,348	23,203	3,310	22,836

Note.—The minus sign (-) signifies net imports.

§ 10. Other Root and Tuber Crops.

1. **Nature and Extent.**—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1917-18 being only 15,124 acres. The principal of these crops are onions, mangolds, sugar beet, turnips, and "sweet potatoes" (*Batatas edulis*). Of these, onions, sugar beet, and mangolds are most largely grown in Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in the Commonwealth during the season 1917-18 was 5,747 acres.

giving a yield of 25,143 tons, and averaging 4.4 tons per acre. The area devoted in 1917-18 to root crops other than potatoes and onions, viz., 9,377 acres, yielded 64,239 tons, and gave an average of 6.9 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," a reference to which will be made later.

2. **Commonwealth Imports and Exports.**—The only root crop, other than potatoes, in which any considerable overseas trade is carried on by the Commonwealth is that of onions. During 1916-17, 27 tons were imported and 7,806 tons exported. Of the latter, 4,105 tons were shipped to New Zealand, 1,497 tons to Canada, 620 tons to the United States, and 593 tons to the Philippine Islands. For 1917-18 the quantity imported was 34 tons, while the exports totalled 2,870 tons. Of the exports, 1,618 tons went to New Zealand, 631 tons to the Pacific Islands, and 447 tons to the Philippines.

§ 11. Hay.

1. **Nature and Extent.**—As already stated, the most important crop of the Commonwealth is that of wheat for grain. Next to this in importance is the hay crop, which for the five seasons ended 1917-18 averaged more than 17 per cent. of the area under crop in the Commonwealth, and for 1917-18 itself, 15.5 per cent. In most European countries the hay crop consists almost entirely of meadow and other grasses, whilst in Australia a very large proportion of the area under hay comprises cereal crops, mainly wheat and oats. A considerable quantity of lucerne hay is also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States from 1860 onwards is given hereunder :—

AREA UNDER HAY, 1860-1 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	46,584	90,921	276	55,818	6,626	31,837	..	..	232,062
1865-6	61,909	97,902	1,449	101,996	8,824	30,244	..	..	302,324
1870-1	65,404	163,181	3,671	140,316	17,173	33,612	..	..	423,357
1875-6	77,125	155,274	8,531	161,429	17,319	34,758	..	..	454,436
1880-1	131,153	249,656	12,022	272,567	19,563	31,615	..	..	716,576
1885-6	219,886	421,036	28,881	312,672	19,677	41,693	..	..	1,043,845
1890-1	175,242	413,052	31,106	345,150	23,183	45,381	..	..	1,033,114
1895-6	319,296	464,482	28,609	362,972	63,804	54,748	..	..	1,293,911
1900-1	466,236	502,105	42,497	341,330	104,254	61,541	..	..	1,517,963
1905-6	438,036	591,771	37,425	317,924	124,906	64,350	..	..	1,574,412
1910-11	638,577	832,669	98,558	440,177	175,432	72,992	..	..	2,258,405
1913-14	798,978	977,684	76,469	568,550	246,640	84,138	61	2,152	2,754,672
1914-15	783,107	895,755	79,327	445,832	332,037	89,598	120	2,837	2,628,613
1915-16	1,107,228	1,330,455	55,174	709,831	290,036	103,216	140	1,691	3,597,771
1916-17	857,533	897,186	112,964	483,040	240,726	79,274	140	999	2,671,862
1917-18	619,614	748,808	96,431	407,011	265,899	74,107	14	1,030	2,212,914

It will be seen from this table that in all the States marked fluctuations occur in the area devoted to the hay crop from year to year. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus, crops originally sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for the due development of the grain is not satisfactory. On the other hand, improved grain prices or the prospect of a heavy

yield will frequently cause crops originally intended for hay to be left for grain. The area under hay in the Commonwealth for the season 1915-16 was the highest on record, and that for 1912-13 the next.

2. **Kinds of Hay.**—Particulars concerning the kind of crop cut for hay are furnished in the returns prepared by five of the States. In the case of Tasmania the bulk consists of oaten hay; full particulars, however, are not available for that State.

Details for the past five seasons are given in the following table :—

KINDS OF HAY GROWN, 1913-14 TO 1917-18.

Kind of Hay Crop.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—					
Wheaten	533,890	568,982	878,881	633,438	434,908
Oaten	209,821	158,949	175,285	160,898	118,209
Barley	1,395	1,179	1,348	866	843
Lucerne	52,457	52,570	50,528	61,584	64,668
Other	1,415	1,427	1,186	747	986
Total	798,978	783,107	1,107,228	857,533	619,614
VICTORIA—					
Wheaten	220,560	192,562	333,449	195,532	192,478
Oaten	729,678	677,895	964,318	672,905	532,634
Lucerne, etc. ..	27,446	25,298	32,688	23,749	23,696
Total	977,684	895,755	1,330,455	897,186	748,808
QUEENSLAND—					
Wheaten	12,648	14,906	14,003	21,047	7,247
Oaten	16,020	12,573	6,377	30,041	10,901
Lucerne	44,270	47,785	32,288	55,928	73,347
Other	3,531	4,063	2,506	5,948	4,936
Total	76,469	79,327	55,174	112,964	96,431
SOUTH AUSTRALIA--					
Wheaten	411,101	318,586	476,423	323,633	292,803
Oaten	151,694	118,505	190,321	148,881	107,284
Lucerne	2,378	3,976	3,380	2,855	2,123
Other	3,377	4,765	39,707	7,671	4,801
Total	568,550	445,832	709,831	483,040	407,011
WESTERN AUSTRALIA—					
Wheaten	195,497	266,113	225,959	188,272	208,303
Oaten	49,801	64,037	62,622	51,255	56,002
Lucerne	264	328	258	230	352
Other	1,078	1,559	1,197	969	1,242
Total	246,640	332,037	290,036	240,726	265,899

It will be seen that wheat is the principal hay crop in New South Wales, South Australia, and Western Australia, oats in Victoria and Tasmania, and lucerne in Queensland.

3. **Total Yield.**—The Commonwealth hay crop for the season 1915-16 was the highest on record, and amounted to 5,633,988 tons. The second in importance was 3,955,311 tons for the season 1912-13, while the third was 3,507,589 tons for 1916-17. For many years past the State of Victoria has been the largest hay producer in the Commonwealth, and in the five seasons, 1913-14 to 1917-18 inclusive, accounted for 38 per cent. of the total production. The total yields of the several States from 1860 onwards are given hereunder :—

COMMONWEALTH HAY CROP, 1860-1 TO 1917-18.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.Ter.	F.Ter.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1860-1	50,927	144,211	414	71,241	8,099	62,318	..	..	337,210
1865-6	54,230	96,101	2,173	88,731	7,901	34,751	..	..	283,887
1870-1	69,602	183,708	5,506	197,149	20,833	40,763	..	..	517,561
1875-6	88,968	206,613	12,796	194,794	17,319	49,217	..	..	569,707
1880-1	174,194	300,581	23,441	261,371	19,563	35,883	..	..	815,033
1885-6	191,371	442,118	30,670	307,855	19,677	51,872	..	..	1,043,563
1890-1	213,034	567,779	50,116	310,125	25,014	52,021	..	..	1,218,089
1895-6	229,671	390,861	50,881	225,462	53,758	62,345	..	..	1,012,978
1900-1	526,260	677,757	78,758	353,662	103,813	94,198	..	..	1,834,448
1905-6	459,182	864,177	56,829	435,546	139,380	90,077	..	..	2,045,191
1910-11	843,080	1,292,410	151,252	595,064	178,891	115,190	..	..	3,175,887
1913-14	952,489	1,350,374	103,935	571,616	278,585	112,958	81	2,558	3,372,596
1914-15	610,559	568,956	102,193	210,437	156,932	81,971	220	2,676	1,733,944
1915-16	1,570,941	2,342,094	53,858	1,100,127	395,172	168,449	350	2,997	5,633,988
1916-17	1,172,078	1,232,721	145,279	615,059	236,989	103,141	350	1,972	3,507,589
1917-18	781,972	949,545	153,895	488,693	267,163	80,405	14	2,234	2,723,921

4. **Value of Hay Crop.**—The following table furnishes particulars concerning the total value and the value per acre of the hay crop of the several States of the Commonwealth for the season 1917-18 :—

VALUE OF HAY CROP, 1917-18.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	£	£	£	£	£	£	£	£	£
Total value ..	3,530,630	3,418,362	560,892	1,429,427	1,070,110	281,417	70	11,080	10,301,988
Value per acre	£5/14/-	£4/11/4	£5/16/4	£3/10/3	£4/0/6	£3/15/11	£5/-/-	£10/15/2	£4/13/1

5. **Average Yield per Acre.**—The States of the Commonwealth in which the highest average yields per acre have been obtained during the last decennium are those of Tasmania and Queensland, these being also the States in which the smallest areas are devoted to this crop. For the same period the lowest yield for the Commonwealth as a whole was that of 13 cwt. per acre in 1914-15; the next lowest was in 1907-8, when

the average yield was 19 cwt.; while the highest was that of 31 cwt. in 1915-16. The average for the decennium was 25 cwt. Particulars for the several States for the seasons 1901-2 and 1913-14 to 1917-18, and the average for the last ten years, are given hereunder:—

AVERAGE YIELD OF HAY PER ACRE, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	1.07	1.34	1.94	0.94	0.97	1.78	..	..	1.20
1913-14	1.19	1.38	1.36	1.01	1.13	1.34	1.33	1.19	1.22
1914-15	0.78	0.64	1.29	0.47	0.47	0.91	1.83	0.94	0.66
1915-16	1.42	1.76	0.98	1.55	1.36	1.63	2.50	1.77	1.57
1916-17	1.37	1.37	1.29	1.27	0.98	1.30	2.50	1.97	1.31
1917-18	1.26	1.27	1.60	1.20	1.00	1.08	1.00	2.17	1.23
Average for 10 seasons 1908-18	1.22	1.35	1.38	1.20	0.98	1.43	2.12	1.27	1.25

6. **Relation to Population.**—During the past five seasons the Commonwealth hay production per head of population has varied between 7 cwt. in 1914-15 and 22½ cwt. in 1915-16; averaging about 14 cwt. per head for the period. The State in which the hay production per head of population is highest is South Australia. Details for the seasons 1901-2 and 1913-14 to 1917-18 are given hereunder:—

HAY PRODUCTION PER 1,000 OF POPULATION, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	339	231	241	964	463	624	..	..	529
1913-14	520	956	157	1,299	869	560	22	1,287	692
1914-15	328	398	151	476	486	407	55	1,366	351
1915-16	840	1,651	79	2,509	1,243	838	77	1,639	1,142
1916-17	631	881	217	1,421	767	516	73	887	719
1917-18	414	673	227	1,120	863	396	3	937	552

7. **Oversea Imports and Exports.**—Under normal conditions hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not in such circumstances figure largely amongst the imports and exports of the Commonwealth. In 1901 and 1902, however, the exceptional demand which was created by the South African war brought about a fairly large export of hay and chaff to Natal and Cape Colony. These colonies also took a considerable quantity of Australian compressed fodder. During the year 1904, when the war between Japan and Russia was being carried on, the exports of compressed fodder to Hong Kong were valued at £42,759 and those to Japan at £23,608. The total value of the hay and chaff exported during 1901 was £406,455, as compared with only £10,264 in 1917-18, while the exports of compressed and other fodder, which amounted in value to £142,472 in 1904, had shrunk to £23,263 in 1917-18.

During 1917-18 the principal purchases of the hay and chaff exported from the Commonwealth were made by India, the Straits Settlements, Hong Kong, and New Zealand, while the bulk of the compressed fodder was exported to the Philippine Islands, New Zealand, and India.

Imports of hay and chaff into the Commonwealth are usually unimportant; for the year 1915-16, however, they totalled 36,725 tons, valued at £227,133, obtained principally from New Zealand and the United States, while for 1917-18 only 16 tons were imported, valued at £99.

8. **Hay Production in Other Countries.**—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy prominent places. The statistics of hay production in these countries are not prepared on a uniform basis, and consequently any attempt to furnish extensive comparisons would be misleading. It may be noted, however, that in the United Kingdom the production of hay from clover, sainfoin, &c., for the year 1917, amounted to 4,733,223 tons from 3,095,653 acres, while from permanent grasses a yield of 8,429,304 tons of hay was obtained from 6,494,428 acres, giving a total of 13,162,527 tons from 9,590,081 acres, or about 27 cwt. per acre.

§ 12. Green Forage.

1. **Nature and Extent.**—In all the States of the Commonwealth a considerable area is devoted to the production of green forage, mainly in connection with the dairying industry. The total area so cropped during the season 1917-18 was 373,850 acres. Of the total, the New South Wales area represented about 41 per cent., that in Queensland 23½ per cent., while that in Victoria amounted to 15 per cent. Under normal conditions the principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States from 1890 onwards are furnished in the following table:—

AREA UNDER GREEN FORAGE, 1890-1 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1	37,473	10,091	9,546	7,349	161	1,497	..	..	66,117
1895-6	66,833	25,939	19,552	7,309	430	1,883	..	..	121,946
1900-1	78,144	18,975	41,445	13,136	1,024	3,749	..	..	156,473
1905-6	95,058	34,041	66,183	23,842	1,873	4,882	..	..	225,879
1910-11	179,382	71,826	89,667	20,728	4,545	8,695	19	..	374,862
1913-14	146,093	98,963	171,290	49,948	13,126	7,037	21	26	486,504
1914-15	α949,539	139,654	184,239	52,656	19,098	6,809	83	80	1,352,158
1915-16	162,808	60,426	236,293	32,664	15,622	7,587	24	137	515,561
1916-17	149,824	49,667	116,449	37,352	28,653	8,133	24	49	390,151
1917-18	152,374	55,903	87,909	41,869	29,856	5,873	47	19	373,850

(a) Including area fed off.

2. **Value of Green Forage Crops.**—The value of these crops is variously estimated in the several States, and the Commonwealth total for the season 1917-18 may be taken approximately as £1,055,244, or about £2 16s. 5d. per acre.

3. **Relation to Population.**—Particulars concerning the area under green forage per 1,000 of the population of the Commonwealth and the several States for the seasons 1901-2 and 1913-14 to 1917-18 are given hereunder:—

AREA UNDER GREEN FORAGE PER 1,000 OF POPULATION, 1901-2 AND 1913-14 TO 1917-18.

Season.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ..	82	27	79	38	8	24	..	..	54
1913-14 ..	80	70	259	114	41	35	6	13	100
1914-15 ..	(a)510	98	272	119	59	34	21	41	274
1915-16 ..	87	43	348	74	49	38	5	75	105
1916-17 ..	81	36	174	86	93	41	5	22	80
1917-18 ..	80	40	130	96	96	29	10	9	76

(a) Including area fed off.

§ 13. Sugar-cane.

1. **Area.**—Sugar-cane is grown for sugar-making purposes in only two of the States of the Commonwealth, viz., Queensland and New South Wales, and much more extensively in the former than the latter. Thus, of the total area of 186,484 acres under sugar-cane in the Commonwealth for the season 1917-18, there were 175,762 acres, or about 94 per cent., in Queensland. Sugar-cane growing appears to have been started in the Commonwealth in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of 20 acres for the season 1862-3. In the following season the New South Wales records shew that an area of two acres was devoted to the crop in the mother State. The area under cane in New South Wales reached its maximum in 1895-6 with a total of 32,927 acres. It then fell continuously to 1902-3, when it was lower than for any previous season since 1889-90. From 1902-3 to 1906-7 it remained practically stationary; from that time, with slight variations, it gradually fell to 10,722 acres in 1917-18. In Queensland, on the other hand, although fluctuations in area are in evidence throughout, the general trend has been one of satisfactory increase, the area under cane for the season 1917-18 being the highest on record. The area under sugar-cane in the Commonwealth from 1865 is given in the following table:—

AREA UNDER SUGAR-CANE, 1865-6 TO 1917-18.

Season.	New South Wales.		Queensland.		Commonwealth.		
	Productive.	Unproductive.	Productive.	Unproductive.	Productive.	Unproductive.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1865-6 ..	141		450		591		591
1870-1 ..	1,475	2,607	2,188	4,154	3,663	6,761	10,424
1875-6 ..	3,654	2,800	7,668	5,791	11,322	8,591	19,913
1880-1 ..	4,465	6,506	12,306	7,918	16,771	14,424	31,195
1885-6 ..	9,583	6,835	40,756	18,430	50,339	25,265	75,604
1890-1 ..	8,344	12,102	39,435	11,487	47,779	23,589	71,368
1895-6 ..	14,398	18,529	55,771	21,476	70,169	40,005	110,174
1900-1 ..	10,472	11,642	72,651	35,884	83,123	47,526	130,649
1905-6 ..	10,313	11,492	96,093	38,014	106,406	49,506	155,912
1910-11 ..	5,596	8,167	94,641	47,138	100,237	55,305	155,542
1913-14 ..	6,198	7,034	102,803	44,940	109,001	51,974	(a)160,976
1914-15 ..	6,012	5,409	108,013	53,182	114,025	58,591	172,616
1915-16 ..	6,030	5,228	94,459	58,568	100,489	63,796	164,285
1916-17 ..	5,223	5,746	75,914	91,307	81,137	97,053	178,190
1917-18 ..	5,588	5,134	108,707	67,055	114,295	72,189	186,484

(a) Including 1 acre Northern Territory.

2. **Productive and Unproductive Cane.**—The areas given in the preceding table represent the area on which sugar-cane was grown during the seasons specified for purposes other than green forage. The whole area was not in any case cut for crushing during that season, there being always a considerable amount of young and "stand over" cane, as well as a small quantity required for plants. The season of 1917-18 had not only the highest recorded acreage under sugar-cane, but also the highest area cut for crushing, 1916-17 ranking second in respect of total area and 1914-15 in respect of area of productive cane.

3. **Yield of Cane and Sugar.**—Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897–8. In that season the total for the Commonwealth was 1,073,883 tons, as against 2,879,092 tons for the record season 1917–18. The second highest yield was in the season 1913–14, with a total of 2,271,558 tons. The average production of cane during the decennium ended 1917–18 was 1,797,910 tons. The three highest yields of sugar were in 1917–18, 1913–14, and 1914–15, the quantities being 327,589 tons, 265,029 tons, 245,876 tons respectively. The decennial average was 205,800 tons of sugar. Particulars relative to the total yields of cane and sugar for a series of years are as follows :—

YIELD OF CANE AND CANE-SUGAR, 1900–1 TO 1917–18.

Season.	New South Wales.		Queensland.		Commonwealth.	
	Cane.	Sugar.	Cane.	Sugar.	Cane.	Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1900–1 ..	199,118	19,938	848,328	92,554	1,047,446	112,492
1905–6 ..	201,998	20,102	1,415,745	152,722	1,617,743	172,824
1910–11 ..	160,311	20,115	1,840,447	210,756	2,000,758	230,871
1913–14 ..	185,970	22,192	2,085,588	242,837	2,271,558	265,029
1914–15 ..	181,606	20,029	1,922,633	225,847	2,104,239	245,876
1915–16 ..	157,748	19,144	1,152,516	140,496	1,310,264	159,640
1916–17 ..	143,558	16,064	1,579,514	176,973	1,723,072	193,037
1917–18 ..	174,881	19,875	2,704,211	307,714	2,879,092	327,589

Large quantities of molasses are produced as a by-product in the sugar mills; details giving the quantity produced and proportions used for distilling, fuel, manure and other purposes for a series of years will be found in Section XIII.—“Manufacturing Industries,” § 8, 17.

4. **Average Yields of Cane and Sugar per Acre.**—The average yield per acre of productive cane is much higher in New South Wales than in Queensland, the average during the last decade being 26.38 tons for the former and 17.63 for the latter State. During the nine seasons 1901–2 to 1909–10 the yield remained practically constant in New South Wales at about 21 tons per acre, except in 1907–8, when the average reached nearly 28 tons. For the past eight years, however, the average yield per acre in this State has shewn an upward tendency, reaching 30 tons or over during 1913–14, 1914–15, and 1917–18. In Queensland the average yield per acre for 1910–11, viz., 19.45 tons, was by far the highest recorded for that State prior to 1913–14, when the average was for the first time over 20 tons to the acre. In 1916–17 the yield was again over 20 tons, while the 1917–18 season gives the highest recorded average, exceeding that of 1913–14 by $4\frac{1}{2}$ tons per acre.

The years during the past decennium which gave the highest average quantity of sugar produced per acre crushed in New South Wales were 1910–11, 1913–14 and 1917–18, the averages being 3.59, 3.58 and 3.56 tons per acre in the order named. In Queensland the highest average occurred in 1917–18 with 2.83 tons per acre; the next in order were those for 1913–14 and 1916–17 with 2.36 and 2.33 tons respectively.

5. **Quality of Cane.**—The quantity of cane required to produce a ton of sugar varies not only with the district in which the cane is grown but also with the season, and for the decennium ended 1917–18 averaged 8.74 tons, the average production of sugar being

approximately 11½ per cent. of the weight of cane crushed. The quality during the decennium did not differ largely from this average except for the season 1908-9, when 9½ tons of cane were required to produce a ton of sugar, which thus represented only 10½ per cent. of the weight of cane crushed. This poor result was largely due to the effect of frosts. The systematic study of beet culture in European countries has shewn that by suitable methods the sugar contents of the root can be greatly increased, and it is believed that a similar improvement can be effected in the yield from sugar-cane.

AVERAGE YIELD OF SUGAR-CANE AND SUGAR PER ACRE, 1900-1 TO 1917-18.

Season.	New South Wales.			Queensland.			Commonwealth.		
	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.
1900-1	Tons. 19.01	Tons. 1.90	Tons. 9.99	Tons. 11.68	Tons. 1.27	Tons. 9.17	Tons. 12.60	Tons. 1.35	Tons. 9.31
1905-6	19.59	1.95	10.05	14.73	1.59	9.27	15.20	1.62	9.36
1910-11	23.65	3.59	7.97	19.45	2.23	8.73	19.96	2.30	8.67
1913-14	30.00	3.58	8.38	20.29	2.36	8.59	20.84	2.43	8.57
1914-15	30.21	3.33	9.07	17.80	2.09	8.51	18.45	2.16	8.56
1915-16	26.16	3.17	8.24	12.20	1.49	8.20	13.04	1.59	8.21
1916-17	27.49	3.08	8.94	20.81	2.33	8.93	21.24	2.38	8.93
1917-18	31.30	3.56	8.80	24.88	2.83	8.79	25.19	2.87	8.79
Average 10 seasons 1908-18	26.38	3.05	8.65	17.63	2.02	8.74	18.16	2.08	8.74

6. **Relation to Population.**—The sugar-cane production of the Commonwealth during the past five seasons has averaged about 8½ cwt. per head of population. In the same period in Queensland, the principal sugar-producing State, the production of cane per head has ranged between 34 cwt. in 1915-16 and 4 tons in 1917-18. Details for the period 1913-14 to 1917-18 are as follows:—

SUGAR-CANE PRODUCTION PER 1,000 OF POPULATION, 1913-14 TO 1917-18.

State.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	102	98	84	77	92
Queensland	3,159	2,841	1,698	2,359	3,990
Commonwealth	466	426	266	353	583

7. **Sugar Bounties.**—The provision of bounties or similar aids to the sugar-growers of the Commonwealth early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry, and at the same time diminishing the employment of coloured labour in connection therewith. An account of the various Acts in connection with sugar bounties and sugar excise tariffs will be found on pages 394 to 396 of the Year Book No. 6. In 1912 the Sugar Excise Repeal Act and the Sugar Bounty Abolition Act were passed by the Federal Parliament, conditionally on the Queensland Parliament approving of legislation prohibiting the employment of coloured labour in connection with the industry. The State Sugar Cultivation Act, the Sugar

Growers Act, and the Sugar Growers' Employees Act, of 1913, having been approved of, the 1912 Federal Acts, which repeal all previous enactments in regard to excise on sugar and bounty on cane, came into force by proclamation in July, 1913.

8. **Sugar Purchase by Commonwealth Government.**—In June, 1915, the Commonwealth Government assumed control of the Australian sugar output, paying the growers a fixed price of £18 per ton of raw sugar, subsequently raised in 1917 to £21. The Commonwealth Government disposed of the refined product at an average of £25 10s. per ton in 1915, the object then being to enable the consumer to purchase sugar of 1A grade at 3d. per lb. In January, 1916, however, the wholesale price was raised to £29 5s. per ton, and the retail price to 3½d. per lb. This arrangement was continued from year to year until 1918, when an agreement on this basis was made for a period ending 30th September, 1920.

9. **Beet Sugar.**—During the past few years an effort has been made to revive the sugar-beet industry in Victoria. In 1910–11 £554 was paid as bounty on 1,847 tons of beet, £2,244 on 7,481 tons during 1911–12, £1,667 on 6,207 tons during 1912–13, and £1,001 on 3,330 tons during 1913–14. For the 1913 crop the State Government paid £1 per ton for all topped clean roots delivered at the Maffra factory, for the 1914 crop £1 1s. was paid, £1 5s. for the 1915 and 1916 crops, and £1 7s. 6d. for the 1917 and 1918 crops, while for the 1919 crop it has been arranged to pay £1 10s. per ton.

10. **Acreage and Yield of Sugar Beet.**—The following table shows the acreage under sugar beet, and the production in Victoria during the past five seasons :—

AREA AND PRODUCTION OF SUGAR BEET IN VICTORIA, 1913-14 TO 1917-18.

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
Area acres	1,093	990	461	1,320	1,200
Production tons	7,431	10,343	4,928	15,159	14,487
Average per acre "	6.80	10.45	10.69	11.48	12.07

11. **Imports and Exports of Sugar.**—Notwithstanding the increase in the production of sugar in the Commonwealth during recent years, Australia's oversea import trade in cane sugar remained fairly extensive until 1906, the principal countries engaged in supplying this commodity being Java, Mauritius, and Fiji. In 1907 the exports of sugar exceeded the imports for the first time, the value of the net exports being £166,121. In 1914–15 also the exports were the greater by 5,308 tons, representing a net value of £138,474. These, however, are the only two years in which there has been an excess of exports. Particulars concerning the imports and exports of cane sugar for 1901 and the past five years are as follows :—

IMPORTS AND EXPORTS OF CANE SUGAR, 1901 AND 1913 TO 1917-18.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1901	98,544	1,239,550	4,738	68,876	93,806	1,170,674
1913	74,861	864,768	3,419	54,322	71,442	810,446
1914-15	13,125	181,020	18,433	319,494	- 5,308	- 138,474
1915-16	116,111	1,869,768	1,103	22,458	115,008	1,847,310
1916-17	81,161	1,639,097	1,033	21,798	80,128	1,617,299
1917-18	15,805	278,985	2,070	45,860	13,735	233,125

Note.—The minus sign (—) signifies net exports.

§ 14. Vineyards.

1. **Nature and Extent.**—The introduction of the vine into Australia has been set down by different investigators as at various dates, the years 1815 and 1828 being principally favoured. It would seem, however, that the vine was really brought out with the first fleet which initiated the colonisation of Australia in 1788, and that consequently the Australian vine is as old as Australian settlement. As already mentioned, a report of Governor Hunter's gives the area under vines in 1797 as 8 acres. From New South Wales the vine spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area which they have devoted to its cultivation. In Queensland and Western Australia also, vine-growing has been carried on for many years, but in neither State has the industry progressed with the rapidity attained in Victoria and South Australia. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz.—(i) for wine-making, (ii) for table use, (iii) for drying. The total area under vines in the several States from 1860 onwards is given in the following table :—

COMMONWEALTH VINEYARDS, 1860-1 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.		Acres.
1860-1	1,584	1,138	..	3,180	335		6,237
1865-6	2,126	4,078	110	6,629	634		13,577
1870-1	4,504	5,466	416	6,131	710		17,227
1875-6	4,459	5,081	376	4,972	675		15,563
1880-1	4,800	4,980	739	4,337	659		15,515
1885-6	5,247	9,775	1,483	5,142	624		22,271
1890-1	8,044	20,686	1,981	9,535	1,024		41,270
1895-6	7,519	30,275	2,021	17,604	2,217		59,636
1900-1	8,441	30,634	2,019	20,158	3,325		64,577
1905-6	8,754	26,402	2,044	23,603	3,541		64,344
1910-11	8,321	23,412	1,634	22,952	2,795		59,114
1913-14	8,153	22,435	1,537	26,208	2,864		61,197
1914-15	7,985	21,801	1,415	26,864	2,920		60,985
1915-16	7,883	22,353	1,373	27,764	2,751		62,124
1916-17	8,666	23,264	1,256	29,177	3,031		65,394
1917-18	8,594	25,236	1,274	29,762	2,996		67,862

There are no vineyards in Tasmania.

The area devoted to vines in the Commonwealth attained a maximum in the season 1904-5, when a total of 65,673 acres was reached. Each of the five following seasons shewed a decrease, the area in 1909-10 being only 58,151 acres. Since that year, however, the total has risen gradually until in 1917-18 the previous maximum of 1904-5 was passed, the total reached being 67,862 acres. South Australia is the only State where a steady annual increase has been recorded.

The wine-growing industry in Australia, more particularly in Victoria and New South Wales, received a severe check by various outbreaks of phylloxera. With a view to the eradication of this disease extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resistant vines, was prohibited.

2. **Wine Production.**—The production of wine in Australia has not increased as rapidly as the suitability of soil and climate would appear to warrant. The cause of this is probably twofold, being in the first place due to the fact that the Australians are not a wine-drinking people and consequently do not provide a local market for the product, and in the second to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Active steps are being taken in various ways to bring the Australian wines under notice, and it may be confidently expected that when

their qualities are duly recognised the wine production of this country will exhibit a rapid development. Particulars concerning the quantity of wine produced in the several States during 1901-2 and the past five seasons are contained in the table given hereunder:—

AUSTRALIAN WINE PRODUCTION, 1901-2 AND 1913-14 TO 1917-18.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No production of wine in Tasmania.	Gallons.
1901-2 ..	868,479	1,981,475	148,835	2,631,563	185,735		5,816,087
1913-14 ..	561,100	1,121,491	58,897	2,759,665	208,738		4,709,891
1914-15 ..	549,140	605,636	51,164	1,507,196	162,190		2,875,326
1915-16 ..	571,000	1,380,367	59,008	3,709,878	166,820		5,887,073
1916-17 ..	628,950	1,302,660	23,171	2,951,048	220,439		5,126,268
1917-18 ..	538,215	800,068	39,125	5,331,166	156,532		6,865,106

3. *Relation to Population.*—In relation to population the area of the vineyards of the several States exhibits a well-marked decline from 1901 to 1908, the Commonwealth total having fallen during the period from 17 to 13 acres per 1,000 of the population. During the following nine seasons, however, the relation has changed little, there being a slight further decline to 1914-15, and an upward trend thereafter. Details for the period are furnished in the succeeding table:—

AREA OF VINEYARDS PER 1,000 OF POPULATION, 1901-2 AND 1913-14 TO 1917-18.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ..	6	24	4	58	19	..	17
1913-14 ..	4	16	2	60	9	..	13
1914-15 ..	4	15	2	61	9	..	12
1915-16 ..	4	16	2	63	9	..	13
1916-17 ..	5	17	2	67	10	..	13
1917-18 ..	5	18	2	68	10	..	14

4. *Imports and Exports.*—The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Italy, the greater portion of the sparkling wines coming from France, and of still wines from Spain and Portugal. Particulars relative to the importations of wine into the Commonwealth during 1901 and the past five years are given hereunder:—

COMMONWEALTH IMPORTS OF WINE, 1901 AND 1913 TO 1917-18.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1901 ..	55,341	165,472	220,813	104,700	57,245	161,945
1913 ..	68,907	81,006	149,913	138,563	34,797	173,360
1914-15 ..	28,179	71,633	99,812	56,998	32,953	89,951
1915-16 ..	26,744	62,357	89,101	55,573	27,494	83,067
1916-17 ..	18,659	47,741	66,400	39,212	26,497	65,709
1917-18 ..	9,274	31,808	41,082	20,569	20,635	41,204

The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand, a small but fairly regular export trade being also carried on with India, Ceylon, Fiji, and the South Sea Islands. Details concerning the exports of wine from Australia during 1901 and the past five years are given in the following table :—

COMMONWEALTH EXPORTS OF WINE, 1901 AND 1913 TO 1917-18.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1901	2,936	863,147	866,083	6,972	122,751	129,723
1913	1,768	701,872	703,640	3,767	102,263	106,030
1914-15 ..	2,325	635,579	637,904	4,106	97,337	101,443
1915-16 ..	3,638	726,113	729,751	7,001	113,598	120,599
1916-17 ..	2,919	603,523	606,442	5,426	106,200	111,626
1917-18 ..	4,976	367,738	372,714	8,269	93,618	101,887

The sparkling wine included in the foregoing table consists largely of foreign wine re-exported.

5. Other Viticultural Products.—In addition to grapes for wine-making purposes, large quantities are grown in all the States for table use, while, particularly in Victoria and South Australia, the drying of raisins and currants is also carried on. The quantities of table grapes grown in the several States during 1901-2 and the past five seasons are as follows :—

TABLE GRAPES, 1901-2 AND 1913-14 TO 1917-18.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ..	3,475	5,110	750 ^a	2,800 ^a	1,100 ^a	..	13,235
1913-14 ..	3,883	2,849	1,306	2,067	2,690	..	12,795
1914-15 ..	2,667	3,083	1,191	1,283	1,348	..	9,572
1915-16 ..	2,940	3,524	932	1,608	2,027	..	11,031
1916-17 ..	2,214	2,606	668	758	1,940	..	8,186
1917-18 ..	1,710	1,127	696	984	1,570	..	6,087

(a) Estimated.

Statistics of the quantities of raisins and currants dried for 1901-2 and the past five seasons are given in the following table :—

RAISINS AND CURRANTS DRIED, 1901-2 AND 1913-14 TO 1917-18.

Season.	N. S. Wales.		Victoria.		South Aust.		Western Aust.		Commonwealth.	
	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
1901-2 ..	(a)		27,533	2,546	7,340	3,413	(a)	(a)	(b) 40,832	
1913-14 ..	4,874		120,303	62,098	35,548	49,170	940	837	273,770	
1914-15 ..	2,591	1,252	111,006	28,527	35,305	24,774	989	1,152	149,891	55,705
1915-16 ..	5,539	2,415	180,104	70,556	59,929	66,518	1,496	1,128	247,068	140,617
1916-17 ..	4,239	2,276	142,970	66,449	35,624	50,147	1,332	1,843	184,165	120,715
1917-18 ..	3,508	1,904	104,911	53,799	42,192	51,924	703	1,948	151,314	109,575
Average 10 seasons ..	4,243		110,179	44,229	36,905	44,220	c 1,073	c 1,251	242,100	

(a) No record.

(b) Incomplete.

(c) Average for six seasons.

6. Imports and Exports.—The following table gives the overseas imports and exports of raisins and currants during 1903 and the past five years :—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF RAISINS AND CURRANTS,
1903 AND 1913 TO 1917-18.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
RAISINS.						
	lbs.	£	lbs.	£	lbs.	£
1903.. ..	1,237,470	16,549	689,726	8,913	— 547,744	— 7,636
1913.. ..	189,504	4,837	1,918,320	25,365	1,728,816	20,528
1914-15 ..	76,132	2,646	1,184,164	19,506	1,108,032	16,860
1915-16 ..	124,964	3,983	6,952,041	215,270	6,827,077	211,287
1916-17 ..	45,237	1,907	5,621,551	166,341	5,576,314	164,434
1917-18 ..	164,699	4,791	3,957,863	114,510	3,793,164	109,719
CURRANTS.						
1903.. ..	8,640,693	61,313	92,650	800	— 8,548,043	— 60,513
1913.. ..	81,530	1,033	472,193	5,122	390,663	4,089
1914-15 ..	29,818	476	929,726	12,583	899,908	12,107
1915-16 ..	1,218,947	17,728	1,168,557	25,316	— 50,390	— 7,588
1916-17 ..	2,416	54	6,525,426	165,006	6,523,010	164,952
1917-18 ..	201	5	4,934,822	134,654	4,934,621	134,649

Note.—The minus sign (—) signifies net imports.

Except in the years 1904, 1907, 1908, which followed abnormally good seasons, the imports of raisins exceeded the exports for all years prior to 1912. During the past five years, however, the value of the exports exceeded that of the imports, the average excess for the quinquennium being £104,566. The increased production of currants in Australia in recent years had a tendency to reduce gradually the importation and increase the exportation of currants, the first year shewing a margin in favour of exports being 1912, when an excess value of £1,276 was recorded. In 1916-17 the excess was no less than £164,952, while in 1917-18 it totalled £134,649.

§ 15. Orchards and Fruit Gardens.

1. Nature and Extent.—Fruit-growing has made rapid progress in the Commonwealth during recent years, the area devoted thereto having increased in the past ten years by no less than 92,835 acres. The States in which the increase is most marked are :—Victoria, 29,707 acres; Tasmania, 18,583 acres; New South Wales, 17,402 acres; and Queensland, 11,604 acres. During the same period the South Australian fruit-growing area increased by 8,284 acres, while that in Western Australia exhibited an increase of 7,237 acres. The increased areas in Tasmania and Western Australia are mainly due to extensive plantings of apple trees with a view to the possibilities of the London market for fresh fruit. The total area devoted to orchards and fruit gardens in the several States is given hereunder :—

**COMMONWEALTH ORCHARDS AND FRUIT GARDENS, 1901-2 AND
1913-14 TO 1917-18.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ..	48,448	50,055	14,396	16,315	6,076	11,485	..	..	146,775
1913-14 ..	51,457	67,183	20,072	24,425	20,575	32,200	50	59	216,021
1914-15 ..	53,905	74,302	22,212	25,811	21,378	35,007	50	46	232,711
1915-16 ..	57,515	80,120	22,616	27,576	21,805	37,351	..	25	247,008
1916-17 ..	60,360	83,087	25,293	28,794	21,747	38,380	..	26	257,687
1917-18 ..	64,116	83,818	26,001	29,020	21,137	38,024	..	18	262,134

The varieties of fruit grown differ materially in various parts of the several States, and range from such fruits as the pineapple, paw-paw, mango, and guava of the tropics, to the strawberry, the raspberry, and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, plum, peach, apricot, cherry, and pear. In New South Wales, citrus fruits (orange, lemon, etc.), occupy the leading position, although apples, pears, peaches, plums, and apricots are also extensively grown. In Queensland the banana, the orange, the pineapple, the apple, the peach, the mango, and the plum are the varieties most largely grown. In South Australia, in addition to the apple, pear, peach, apricot, plum, orange, and lemon, the almond and the olive are also largely grown. In Western Australia, the apple, orange, peach, pear, plum, fig, and apricot are the sorts chiefly grown, while in Tasmania, although the apple represents over four-fifths of the area in that State devoted to fruit-growing, small fruits, such as the currant, raspberry, and gooseberry, are very extensively grown, and the balance of the area is mainly occupied with the pear, plum, apricot, peach, and chéry. The following table gives the acreage under the principal kinds of fruit grown, and the quantity and value of fruit produced. The acreages shewn are exclusive of young trees not yet bearing. The acreages for each kind of fruit in Victoria are not available :—

PARTICULARS OF THE PRINCIPAL KINDS OF FRUIT GROWN IN THE SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON 1917-18.

Fruit.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	F. Ter.	C'wealth.
Apples .. acres	7,415	..	1,343	8,530	7,499	20,607	11	..
	614,569	1,864,508	54,358	434,620	499,448	1,489,051	1,432	4,957,986
.. bushels	192,068	388,439	37,598	94,225	223,191	372,263	363	1,308,147
	£
Apricots .. acres	1,143	..	109	2,178	444	825	1	..
	85,814	238,420	3,772	169,950	24,439	44,613	71	567,079
.. bushels	42,907	71,526	1,414	62,932	18,635	12,540	35	209,989
	£
Bananas .. acres	1,944	..	9,141	..	79	..	..	..
	200,131	..	1,356,837	..	61,789	..	..	..
.. bunches	120,080	..	169,604	..	1,789	..	..	291,473
	£
Lemons .. acres	2,656	..	302	404	188	..	..	..
	250,600	76,296	15,948	47,188	22,432	..	..	412,464
.. bushels	150,358	20,981	7,110	12,977	8,599	..	..	200,025
	£
Nectarines } acres	7,534	..	1,875	2,049	1,178	67	1	..
	598,365	443,256	67,611	104,124	62,423	4,820	75	1,280,674
and } bshls.	254,305	121,272	19,756	40,122	43,187	1,084	32	479,758
Peaches } £	16,438	..	2,746	2,416	1,860	..	..	..
	1,482,680	75,315	400,999	203,915	150,710	..	..	2,313,619
Oranges .. acres	563,469	30,126	103,591	86,664	68,769	..	..	852,619
	£
Pineapples acres	33	..	4,166	..	..	..	..	..
	5,619	..	944,282	..	..	..	..	949,901
.. dozen	983	..	102,297	..	..	..	..	103,280
	£
Pears .. acres	1,963	..	232	1,384	926	1,308	1	..
	174,650	414,721	3,885	104,679	83,766	136,409	64	918,174
.. bushels	61,128	103,680	3,367	24,281	29,318	47,848	23	269,645
	£
Plums .. acres	1,533	..	537	1,393	705	438	2	..
	140,826	242,598	11,435	74,891	42,850	52,331	152	565,083
.. bushels	55,450	48,520	4,336	28,408	27,317	11,992	57	176,080
	£
Other fruits acres	2,599	..	2,913	2,961	825	2,021	2	..
	109,098	124,154	59,354	61,968	25,236	69,039	50	448,899
Total .. acres	43,258	57,433	23,364	21,315	13,704	25,266	18	184,358
	£ 1,549,846	908,698	508,427	411,577	446,041	514,766	560	4,339,915

(a) Cases. (b) Bushels.

2. Relation to Population.—The acreage of orchards and fruit gardens of the Commonwealth in relation to population has increased during the last sixteen years to an extent which more than compensates for the decline experienced in the case of

vineyards. Taking the two in conjunction, the relative area under vineyards and orchards has, during the period, considerably increased, averaging 55 acres per 1,000 of population in 1901-2, and 67 in 1917-18. Details for orchards and fruit gardens for 1901-2 and the past five seasons are as follows :—

**AREA OF ORCHARDS AND FRUIT GARDENS PER 1,000 OF POPULATION,
1901-2 AND 1913-14 TO 1917-18.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ..	35	41	28	45	31	66	..	..	38
1913-14..	28	48	30	56	64	160	14	30	44
1914-15..	29	52	33	58	66	174	13	23	47
1915-16..	31	57	33	63	69	186	..	14	50
1916-17..	32	59	38	67	70	192	..	12	53
1917-18..	34	59	38	67	68	187	..	9	53

3. Commonwealth Imports and Exports.—A considerable fruit trade, both import and export, is carried on by the Commonwealth with oversea countries, the major portion of the importations consisting of dried fruits, while the bulk of the exports is made up of fresh fruits. Amongst the imports, the principal dried fruits are currants, dates, sultanas, and raisins, and the principal fresh fruits bananas, oranges, lemons, and apples. In normal times the currants imported have been mainly from Greece, the dates from Arabia, Asia Minor and Persia, the raisins mainly from Spain. Of the fresh fruits imported during 1917-18, the bananas and citrus fruits were chiefly from Fiji, and the apples from Canada. In 1916-17 the value of dried fruits exported was the largest on record, viz., £372,712; while the total of £266,297 for 1917-18 ranked second in this respect. The principal consignees of Australian dried fruits exported in 1917-18 were United Kingdom, Canada, and New Zealand. The fresh fruits exported during the year were valued at £46,481, and consisted largely of citrus fruits consigned to New Zealand, and apples to Java and the Straits Settlements.

Particulars concerning the oversea imports and exports of dried fruits for 1901 and the last five years are as follows :—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF DRIED FRUITS, (a)
1901 AND 1913 TO 1917-18.**

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901' ..	14,265,731	179,305	831,996	14,206	13,433,735	165,099
1913 ..	10,551,877	112,439	2,478,585	32,099	8,073,292	80,340
1914-15 ..	4,071,250	58,451	2,313,768	35,691	1,757,482	22,760
1915-16 ..	11,857,787	159,398	8,254,878	244,069	3,602,909	- 84,671
1916-17 ..	6,058,769	89,006	13,460,274	372,712	- 7,401,505	- 283,706
1917-18 ..	1,587,451	42,856	9,427,669	266,297	- 7,840,218	- 223,441

Note.—The minus sign (—) signifies net exports.

(a) Including raisins and currants published under Vineyards, § 14, 6.

Similar information with regard to the Commonwealth oversea trade in fresh fruits for the same period is contained in the table given hereunder :—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF FRESH FRUITS,
1901 AND 1913 TO 1917-18.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs. (a)	£	lbs. (a)	£	lbs. (a)	£
1901.. ..		45,955		167,926		121,971
1913. . .	47,233,100	356,060	58,491,400	399,800	11,258,300	43,740
1914-15 . .	36,999,600	344,466	26,031,400	176,024	-10,968,200	-168,442
1915-16 . .	43,281,700	374,174	64,554,800	415,305	21,273,100	41,131
1916-17 . .	46,304,700	299,360	16,294,800	141,583	-30,009,900	-157,777
1917-18 . .	25,635,100	160,899	4,648,900	46,481	-20,986,200	-114,418

Note.—The minus sign (—) signifies net imports. (a) Not available.

4. **Jams and Jellies.**—A considerable oversea trade in jams and jellies is now carried on by the Commonwealth, the value of the imports for the year 1917-18 amounting to £521, and of the exports to £1,410,548. The destinations of the exports were principally the United Kingdom, Egypt, United States of America, India, and the Philippines. Particulars relative to imports and exports for 1901 and the last five years are as follows :—

**COMMONWEALTH OVERSEA TRADE IN JAMS AND JELLIES,
1901 AND 1913 TO 1917-18.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901.. ..	1,312,377	23,358	4,140,072	64,389	2,827,695	41,031
1913. . .	453,951	12,213	1,858,231	29,402	1,404,280	17,189
1914-15 . .	438,756	11,824	4,770,117	90,909	4,331,361	79,085
1915-16 . .	288,165	9,087	22,849,553	437,144	22,561,388	428,057
1916-17 . .	152,260	6,210	45,074,352	949,112	44,922,092	942,902
1917-18 . .	16,658	521	64,891,116	1,410,548	64,874,458	1,410,027

5. **Preserved Fruit.**—Details concerning the quantities and values of preserved fruit imported into and exported from the Commonwealth cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables, other than fresh fruits, dried fruits, potatoes, and onions, imported into Australia during 1917-18 was £50,368, and the corresponding value of exports was £278,045.

§ 16. Minor Crops.

1. **Nature and Extent.**—In addition to the leading crops which in the foregoing pages have been dealt with in some detail, there are many others which, owing either to their nature, or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are included under the headings—Market Gardens, Pumpkins and Melons, Turnips, Mangolds, Nurseries, Grass Seed, Tobacco, Flax, Hops, and Millet. Cotton-growing has in recent years received some attention in the tropical portions of the Commonwealth, although the industry cannot yet be said to be beyond the experimental stage. The total area in the Commonwealth during the season 1917-18 devoted to crops not dealt with in previous sections was 68,770 acres, of which market gardens accounted for 27,775 acres, or more than 40 per cent.

2. **Market Gardens.**—Under this head are included all areas on which mixed vegetables are grown. Where considerable areas are devoted to the production of one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., the figures are usually not included with market gardens, but are shewn either under some specific head, or under some general head as "Other Root Crops," or "All Other Crops." The area under market gardens in the several States of the Commonwealth during 1901–2 and each of the last five seasons is given in the table hereunder :—

COMMONWEALTH MARKET GARDENS, 1901–2 AND 1913–14 TO 1917–18.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901–2 ..	7,834	8,752	2,328	9,005	2,142	1,746	..	..	31,807
1913–14 ..	10,585	10,777	2,611	2,265	2,851	(a)769	60	22	29,940
1914–15 ..	10,475	12,935	2,648	1,830	2,785	628	60	27	31,388
1915–16 ..	10,940	11,379	2,330	1,712	2,787	435	..	27	29,610
1916–17 ..	10,683	10,746	2,305	1,522	2,153	448	..	27	27,884
1917–18 ..	10,100	11,362	1,991	1,502	2,334	447	..	39	27,775

(a) Crops, other than Market Gardens, were included in previous years.

The area for 1917–18 was in excess of that for 1901–2 in New South Wales, Victoria, and Western Australia. In South Australia the falling-off is more apparent than real, being in large part due to a change in the classification of crops introduced in connexion with the new system of collection which came into force for 1907–8. It is believed that the figures given for the earlier years are considerably in excess of the reality. During the past five seasons there has been very little variation in the total area of market gardens in the Commonwealth as a whole. Comparing the earliest years with the latest, Victoria shews an increase, while the remaining States shew decreases. For the Commonwealth as a whole a corresponding decrease of 2,165 acres is shewn.

3. **Grass Seed.**—The total area under this crop during 1917–18, exclusive of New South Wales, for which State no figures as to area are available, was 11,980 acres, of which 2,312 acres were in Victoria, 8,461 acres in Queensland, and 1,186 acres in Tasmania. The total yield for 1917–18, including New South Wales, was 267,148 bushels, valued at £73,165.

4. **Tobacco.**—Tobacco-growing is an industry which has experienced marked fluctuations, although at one time it promised to occupy an important place amongst the agricultural industries of the Commonwealth. Thus, as early as the season 1888–9 the area under this crop amounted to as much as 6,641 acres, of which 4,833 were in New South Wales, 1,685 in Victoria, and 123 in Queensland. This promise of importance was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2,000 acres, and that in Queensland to over 1,000 acres, the total area for the season 1917–18 had declined to 1,162 acres, distributed as follows :—New South Wales, 791 acres ; Victoria, 82 acres ; and Queensland, 289 acres. This decline in production appears to have been due to the comparatively small demand which existed in Australia for the locally-produced leaf, and to the fact that the cost of production and preparation in the Commonwealth prevented the Australian leaf from obtaining a footing in outside markets. Possibly under more favourable circumstances, and with greater attention given to the production of leaf of the best quality only, the industry may eventually assume considerable proportions. In all the States in which its cultivation has been tried, the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into the Commonwealth furnish an indication of the extensive local market which exists for an article grown and prepared in such a manner as to meet the requirements of consumers. The value of the net importations of tobacco into the Commonwealth during the year 1917–18 amounted to £365,910, comprising unmanufactured tobacco £424,011, cigars £79,362, cigarettes £9,268, and snuff £506, while manufactured tobacco shewed a balance in favour of exports amounting to £147,237.

5. **Pumpkins and Melons.**—The total area under this crop in the Commonwealth during 1917–18 was 13,706 acres, of which 2,805 acres were in New South Wales, 1,464 acres in Victoria, 8,508 acres in Queensland, 649 acres in Western Australia, and 280 in South Australia. The production for the Commonwealth amounted to 59,063 tons.

6. **Hops.**—Hop-growing in the Commonwealth is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1917-18 being 1,296 acres, of which 1,229 acres were in Tasmania, and 64 acres in Victoria; a small area of 3 acres was also grown in South Australia. The Tasmanian area, though still small, has increased considerably during the past sixteen years, the total for the season 1901-2 being only 599 acres. On the other hand, the Victorian area, which in 1901-2 was 307 acres, had diminished to 64 acres in 1917-18. The cultivation of hops was much more extensive in Victoria some thirty years ago than at present, the area devoted to this crop in 1883-4 being no less than 1,758 acres. During the year 1917-18 the exports of hops exceeded the imports for the first time, the excess weight being 80,447 lbs., and the excess value £7,668.

7. **Flax.**—For the past twenty years flax has been grown intermittently in the Gippsland district of Victoria, and attempts have also been made to introduce its cultivation into Tasmania and New South Wales, but without success. The chief reason for this failure was the dominant position held by Russia in the European fibre markets. That country produced 80 per cent. of the world's output of fibre, and the low standard of wages resulted in a correspondingly low price for fibre. Consequently the price the Australian farmer received for his flax rendered its cultivation unattractive compared with that of other agricultural products. In 1907, the Commonwealth Government, with a view to foster the industry, provided for the payment of a bounty of 10 per cent. of the market value of all flax products, but the low returns for fibre, about £45 per ton, prevented the extension of flax growing to any appreciable degree, and on 1st July, 1917, the bounty provisions expired. At the end of that year, however, the shortage of flax fibre in Europe had become very acute owing to the occupation of the Baltic Provinces by Germany, and at the suggestion of the Advisory Council of Science and Industry, and with a view primarily of assisting the Imperial Government, the Commonwealth Government formulated a scheme to encourage the cultivation of flax. A Flax Industry Committee, consisting of representatives of the Department of Agriculture of Victoria, the flax growers, and the cordage manufacturers, was appointed with executive powers under War Precautions Regulations. At the same time, a guarantee was given by the Commonwealth Government of £5 per ton for flax of specified standard grown in 1918.

The area was increased from 400 acres in 1917 to 1,400 acres in 1918, and the fibre from the latter crop has been sold to the Imperial Government at £170 per ton c.i.f., its pre-war value having been about £45 per ton. Owing to the disorganisation of Russian industries, and the depletion of the world's stocks of linens, there is every indication that the present high values of flax products will be retained for many years. The value of the products of the Australian 1918 crop is estimated as follows:—Fibre £12,800, linseed £5,700, and tow £1,500, or a total of £20,000. A further guarantee has been given by the Commonwealth Government of £6 per ton for the 1919 flax crop. About 2,500 acres have been planted in 1919, and with a normal season the return from flax products is estimated at about £38,000. There are four mills operating in Gippsland, and the erection of additional mills is anticipated. The whole of the commercial flax crop is grown in Victoria, but a grant of £1,000 has been made by the Commonwealth Government for experimental work, and in all the States experiments are being carried out to determine the suitability of the soil and climate for the cultivation of this crop. Experiments are also being carried out with a view to improve the existing methods of treatment at the mills, as it is considered that, without definite and exact data, the results of carefully conducted tests and investigation, the industry will rest on an empirical basis, and will be unable to compete with the older established and highly organised fibre industries in other parts of the world.

8. **Millet.**—Millet appears in the statistical records of three of the Commonwealth States. The total area devoted thereto in 1917-18 was 3,781 acres, of which 1,918 acres were in New South Wales, 921 in Victoria, 940 in Queensland, and 2 in the Northern Territory. The particulars here given relate to millet grown for grain and fibre. That grown for green forage is dealt with in the section relating thereto.

9. **Nurseries.**—In all the States somewhat extensive areas are devoted to nurseries for raising plants, trees, etc. Statistics concerning the area so occupied for flowers, fruit trees, etc., are available for New South Wales, Victoria, South Australia, and Western Australia. During 1917-18 the area in those States was 618, 1,247, 167, and 89 acres respectively. Statistics so far as they relate to forestry are given elsewhere.

10. **Cotton.**—Cotton-growing on a small scale has been tried in Queensland, but so far without very marked success. In 1902, 8 acres were devoted to this crop, in 1907, 300 acres were under cultivation, and in 1911 the maximum either in regard to area or production was reached, an area of 605 acres producing 186,894 lbs. of unginned cotton. A gradual falling-off has since been experienced, and in 1917 the area was only 133 acres with a production of 76,656 lbs. of cotton. Special efforts have recently been made to encourage the growth of cotton in Queensland, and the Agricultural Department of that State in 1916 distributed to upwards of 300 intending growers sufficient seed to plant about 800 acres. Hopes are entertained that with the invention of a mechanical device for the picking of the cotton the industry will become firmly established, since the soil and conditions appear eminently suitable for the growth of this crop. Small areas in the Northern Territory have also been planted with cotton. The tropical portions of Western Australia have also long been regarded as suitable for its cultivation.

11. **Coffee.**—Queensland is the only State of the Commonwealth in which coffee-growing has been at all extensively tried, and here the results have up to the present time been far from satisfactory. The total area devoted to this crop reached its highest point in the season 1901–2, when an area of 547 acres was recorded. The area then continuously declined to 1906–7, when it was as low as 256 acres. In subsequent seasons the area fluctuated somewhat, but on the whole with a downward tendency, and in 1917–18 only 51 acres were recorded with a yield of 16,242 lbs.

12. **Other Crops.**—Miscellaneous small crops are grown in the several States, amongst which may be mentioned tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

§ 17. Bounties on Agricultural Products.

1. **General.**—The Bounties Act of 1907 passed by the Federal Parliament in order to encourage the manufacture and production of certain articles in the Commonwealth included among the items on which bonuses were payable several agricultural products. Under an Act passed in 1912 the provisions of the 1907 Act in respect of certain items were renewed. Products of the soil on which these bounties were payable are as follows :—

BOUNTIES ON AGRICULTURAL PRODUCTS.

Article.	Period dating from 1st July, 1907, during or in respect of which Bounty may be paid.	Rates of Bounty.	Maximum amounts which may be assigned in any one year.
Cotton, ginned	8 years	10 % on market value	£ 6,000
Fibres—			
New Zealand flax	10 "	10 " "	3,000
Flax and hemp	10 "	10 " "	8,000
Jute	10 "	20 " "	9,000
Sisal hemp	10 "	10 " "	3,000
Oil materials supplied to an oil factory for the manufacture of oil—			
Cotton seed	8 "	10 " "	1,000
Linseed (flax seed)	10 "	10 " "	5,000
Rice, uncleaned	10 "	20s. per ton	1,000
Coffee, raw, as prescribed	8 "	1d. per lb.	1,500
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed	10 "	2d. "	4,000
Fruits—			
Dates (dried) (a)	15 "	1d. "	1,000
Dried (except currants and raisins) or candied, and exported	10 "	10% on market value	6,000

(a) Any unexpended amount assigned in any year to be available for the years following.

At the present time the only one of these bounties still in force is that relating to dates.

2. **Bounties Paid.**—Although the rate of bonus on the several articles was fairly liberal, the bounties were not availed of to any great extent, as will be seen from the following table, which gives particulars as to the quantity of the articles raised and the amounts paid as bounties in respect thereto for the five financial years ended 1917-18.

PARTICULARS OF BOUNTIES PAID ON AGRICULTURAL PRODUCTS (OTHER THAN SUGAR), 1913-14 TO 1917-18.

Article.	Quantity produced on which Bounties were paid.					Amount paid as Bounties.				
	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.(a)
Cotton, ginned lbs.	9,642	..	13,751	..	..	£ 21	..	£ 22	..	..
Fibres—										
Flax and hemp tons	137	34	238	122	..	318	77	634	267	..
Sisal hemp „	..	..	2,250	..	5	..	..	2	..	19
Oil materials supplied to an oil factory for the manufacture of oil—										
Cottonseed lbs.	6,306	..	22,400	..	..	1	..	10	..	..
Linseed (flax seed) cwt.	..	..	..	..	..	..	..	..	..	..
Coffee, raw, as prescribed lbs.	17,540	17,022	732	..	..	73	71	3	..	..
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed lbs.	41,263	41,891	17,423	57,795	1,577	344	349	145	488	13
Fruits—										
Dried (except currants and raisins) or candied, and exported lbs.	142,928	41,212	6,000	579,334	131,432	433	98	16	2,063	342

(a) Bounties paid on goods produced during 1916-17.

During the year 1916-17 the total amount paid in respect of flax and hemp was claimed by the State of Victoria. The bounty paid for tobacco leaf was paid to New South Wales and Queensland, the amounts being £16 and £472 respectively. Victoria, South Australia, and Tasmania claimed the bonuses on dried fruits, the amounts being £80, £1,698, and £285 in the order named. The sums paid in 1917-18 were due in respect of bounties earned prior to 1st July, 1917.

No bounties were paid on New Zealand flax, jute, or uncleaned rice, nor have any yet been paid on dates.

§ 18. Fertilisers.

1. **General.**—In the early days of settlement and cultivation in the Commonwealth, scientific cultivation was in a comparatively undeveloped state. The early farmers were neither under the necessity, nor in fact aware of the necessity, of supplying the constituents to the soil demanded by each class of crop. The widely divergent character of the soils in the Commonwealth, their degeneration by repeated cropping, the limitations of climatic conditions, the difficulties of following any desired order of rotation of crops, all rendered it essential to give attention to artificial manuring. The introduction of the modern seed-drill, acting also as a fertiliser distributor, has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made productive. There is reason to believe that this feature will be even more strikingly characteristic of the future.

2. **Fertilisers Acts.**—In order to protect the interests of users of artificial manures legislation has been passed in each of the States, regulating the sale and preventing the adulteration of fertilisers. The following is a list of such Acts in force :—

New South Wales ..	The Fertilisers Act of 1904.
Victoria	The Fertilisers Act of 1915.
Queensland ..	The Fertilisers Act of 1914 ; amended 1916.
South Australia ..	The Fertilisers Act of 1918.
Western Australia ..	The Fertilisers and Feeding Stuffs Act of 1904 ; amended 1905 and 1911.
Tasmania ..	The Fertilisers Act of 1912.

As regards their main features these measures are practically identical. The words "fertiliser" and "manure," as used in these Acts, mean any substance containing nitrogen, phosphoric acid, or potash, manufactured, produced, or prepared in any manner for the purpose of fertilising the soil or supplying nutriment to plants, but do not include farm-yard or stable manure or similar articles in their natural or unmanufactured state. The Acts provide that every vendor of fertilisers must, within a stated period, forward to the Secretary of Agriculture, or corresponding officer, samples of the fertilisers on sale by him, together with the distinctive names or brands by which they are known, and the price at which he intends to sell during the year. On every bag, package, or bundle of fertiliser sold, or exposed for sale, he must attach a printed label shewing thereon :—

- (i) The number of net pounds of fertiliser in such bag or parcel ;
- (ii) The figure or trade mark attached to the fertiliser and intended to identify it ;
- (iii) The proportion per centum of nitrogen, phosphoric acid, and potash contained therein.

In addition to the above the vendor must furnish every purchaser with an invoice certificate, signed by himself or his agent, stating his full name and place of business and the quality of the fertiliser sold.

Any officer or analyst appointed under the Acts may enter any manufactory, warehouse, store, vessel, wharf, railway station, conveyance, or other place where fertiliser is manufactured, stored, exposed for sale, or in course of delivery or transit, and demand and take samples of such fertiliser. Every sample so taken must be divided by such officer into three parts, and each marked, sealed, and fastened by him in the presence of the person in charge, and disposed of as follows :—

- (i) One part to be taken by person in charge.
- (ii) One part to be used for analysis.
- (iii) One part to be retained by the officer for future comparison.

Every buyer of fertiliser is entitled to submit a sample to the analyst appointed under the Act, and receive a certificate of its analysis. If the analysis prove it to be under what it is represented to be, the vendor must pay the cost of analysis.

3. **Imports.**—The local production of artificial manures has assumed large proportions during the last few years, though considerable quantities are still imported. The importation of fertilisers has increased over 200 per cent. since 1901. The chief items,

as regards both quantity and value, are those relating to phosphates, a fertiliser which has proved itself to be very suitable for the growing of cereals in Australian soils. During 1917-18 the quantities of rock phosphates imported represented 98½ per cent. of the total importation of fertilisers. The colony of Gilbert and Ellice Islands, with 62 per cent., was the principal contributor; Pleasant Island contributed 28 per cent., and the balance of 10 per cent. was obtained from Christmas Island. The whole of the soda nitrate came from Chile.

The imports of artificial manures during the last five years are given in the following table. It will be noticed that the quantities of rock phosphates imported have been consistently large, and have shewn an increase during the five years of nearly 14 per cent. The importation of manufactured superphosphates on the other hand, though considerable in 1913 and 1914-15, has declined to zero in 1917-18, the falling off in 1915-16 and 1916-17 being particularly heavy.

COMMONWEALTH IMPORTS OF FERTILISERS, 1913 TO 1917-18.

Fertiliser.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
Bonedust cwt.	15,341	10,901	..	40	..
.. £	4,378	3,136	..	18	..
Guano cwt.	26,819	2,053	1,800	264,581	..
.. £	5,733	814	792	30,772	..
Superphosphates .. cwt.	534,198	502,382	57,790	200	..
.. £	89,474	79,889	10,308	61	..
Rock phosphates .. cwt.	3,200,648	3,464,547	3,813,788	3,556,561	3,643,038
.. £	397,634	397,284	440,434	444,984	433,940
Soda nitrate cwt.	66,783	67,508	112,203	165,472	53,800
.. £	37,320	34,059	49,463	107,977	43,264
Other cwt.	212,525	108,291	5,109	1,202	397
.. £	52,832	31,644	3,509	1,494	909
Total { cwt.	4,056,314	4,155,682	3,990,690	3,988,056	3,697,235
.. £	587,421	546,826	504,506	585,306	478,113

4. Exports.—The subjoined table shews the exports of artificial manures for the years 1913 to 1917-18. Practically the whole of these fertilisers are manufactured locally, and are shipped mainly to New Zealand, Java, Japan and the Pacific Islands :—

COMMONWEALTH EXPORTS OF FERTILISERS, 1913 TO 1917-18.

Fertiliser.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
Bonedust cwt.	86,295	148,229	71,795	37,337	17,252
.. £	26,023	45,707	22,563	12,832	7,221
Guano cwt.	6,242	2,800	..	4,455	840
.. £	848	470	..	1,061	234
Superphosphates .. cwt.	257,629	311,067	823,361	483,552	699,784
.. £	47,308	64,224	158,862	105,492	179,691
Rock phosphates .. cwt.	18,555	22,340	75,839	68,010	70,004
.. £	3,050	3,429	10,695	8,464	9,810
Soda nitrate cwt.	10,154	1,500	2,619	7,339	30,037
.. £	5,388	897	1,835	5,678	14,532
Ammonia sulphate .. cwt.	46,067	113,801	129,651	109,248	18,888
.. £	31,577	75,379	102,821	111,794	16,741
Other cwt.	237,734	224,309	86,964	72,572	118,147
.. £	63,154	38,972	28,059	20,925	211,322
Total { cwt.	662,676	824,046	1,190,229	780,513	954,952
.. £	177,434	229,078	322,835	266,246	439,551

5. **Statistics of Use of Fertilisers.**—The statistics available in connection with the use of manures in the Commonwealth for a series of years refer to all the States with the exception of Queensland; those for that State were collected for the first time for 1915-16. Particulars concerning New South Wales are given hereunder:—

FERTILISERS USED IN NEW SOUTH WALES, 1913-14 TO 1917-18.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1913-14	4,567,592	2,224,623	48.71	166,503	50,476
1914-15	4,807,001	2,329,819	48.47	168,450	55,169
1915-16	5,796,376	2,753,301	47.50	177,788	56,621
1916-17	5,164,434	2,352,180	45.55	166,374	50,704
1917-18	4,461,172	1,974,620	44.26	181,052	44,883

Particulars for Victoria for the past five seasons are as follows:—

FERTILISERS USED IN VICTORIA, 1913-14 TO 1917-18.

Season.	Total Area of Crops.	Farmers Using Manure.	Area Manured.		Manure Used.	
			Aggregate.	Percentage on Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	No.	Acres.	%	Tons.	Tons.
1913-14	4,391,321	30,610	3,401,013	77.45	219,423	105,612
1914-15	4,622,759	31,874	3,728,279	80.65	209,534	117,935
1915-16	5,711,265	33,378	4,336,252	75.92	187,602	128,667
1916-17	4,851,335	33,165	3,870,742	79.79	181,268	117,812
1917-18	4,110,225	30,109	3,336,418	81.17	167,114	106,119

During the last three seasons, 1915-16, 1916-17, and 1917-18, 25,166, 22,145, and 17,862 acres were respectively manured in Queensland, 43,483, 34,811, and 42,779 loads of natural and 7,608, 6,869, and 4,833 tons of artificial manure were used, while the percentages of area manured on total area under crop were 3.45, 2.50, and 2.45.

The figures relating to the use of fertilisers in South Australia are shown in the table below:—

FERTILISERS USED IN SOUTH AUSTRALIA, 1913-14 TO 1917-18.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1913-14	3,169,559	2,584,814	81.55	100,435	97,023
1914-15	3,282,364	2,722,349	82.94	103,537	96,812
1915-16	3,763,570	3,112,462	82.70	90,142	102,685
1916-17	3,627,477	2,872,571	79.19	101,032	96,893
1917-18	3,079,778	2,553,713	82.92	87,550	90,795

Corresponding particulars relative to Western Australia for the seasons 1913-14 to 1917-18 are given in the following table :—

FERTILISERS USED IN WESTERN AUSTRALIA, 1913-14 TO 1917-18.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1913-14	1,537,923	1,459,218	94.88	58,390	58,962
1914-15	1,867,547	1,808,504	96.84	54,245	67,839
1915-16	2,189,456	2,117,166	96.70	53,257	70,523
1916-17	2,004,944	1,903,026	94.92	49,216	70,326
1917-18	1,679,772	1,586,748	94.46	49,578	58,989

Statistics relating to the use of manures in Tasmania for the past five seasons are as follows :—

FERTILISERS USED IN TASMANIA, 1913-14 TO 1917-18.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Tons.	Tons.
1913-14	264,140	136,764	51.78	30,530	14,398
1914-15	274,474	144,732	52.73	31,572	13,065
1915-16	333,334	182,374	54.71	30,486	15,232
1916-17	270,526	144,532	53.43	30,990	13,886
1917-18	238,199	120,476	50.58	28,006	11,472

6. **Local Production of Fertilisers.**—Statistics relative to the local production of fertilisers are incomplete, and detailed returns for fertiliser factories other than bone mills are not available. The number of firms engaged in the manufacture of artificial manures in the Commonwealth at latest available date was 89, made up as follows :— New South Wales, 21 ; Victoria, 29 ; Queensland, 22 ; South Australia, 10 ; Western Australia, 4 ; and Tasmania, 3.

7. **Benefits Derived from the Use of Fertilisers.**—There is little doubt that the increasing use throughout the Commonwealth of fertilisers, natural and artificial, combined with the greater attention being devoted to fallowing and to the combination of sheep-farming with agriculture, is having the effect of improving the prospects of those dependent for a livelihood on the products of the soil. Reference has previously been made to the loss to the soil of phosphoric acid which the Commonwealth export of wheat and its milled products involves, and the necessity which thus arises for returning this ingredient in some form. Similarly, other staple products exported impose their respective tolls upon the soil, and the increased use of fertilisers furnishes evidence that producers are alive to the necessity for making good the deficiency so arising.

§ 19. Ensilage.

1. **Value to Stockowners.**—The use of ensilage as a substitute for green fodder during periods of drought or spells of dry weather, or for winter use, is less extensive in Australia than the circumstances would appear to warrant. There is, however, a growing disposition on the part of dairy farmers to make silos on their holdings, as they find that

dairy cattle eat ensilage greedily, and that by its means the output of milk, both in regard to quantity and quality, may be kept up long after the supply of ordinary green food is exhausted. Sheepbreeders are also recognising the fact that during protracted periods of dry weather the silo enables them to keep their stock in good condition, and that lambing can take place satisfactorily. Ensilage thus obviates the expense of travelling or trucking sheep for hundreds of miles to get beyond the drought area, or the equally costly and even ruinous alternative of providing chaff for food at high prices and costly freight. In the rearing of lambs for the London market, ensilage appears to be destined to play an important part, as the lambs thrive upon it much better than upon dry food. By the judicious economising of the surplus growth of green food with the use of the silo, farmers and squatters can carry more stock on their holdings than they otherwise would be justified in doing. Not only is the great waste of superabundant food thus avoided, but it becomes possible to change into a succulent and nutritious food much growth that in any other state would not be eaten by stock. Thus such vegetation as marsh mallows, thistles, weeds of all sorts, and even the swamp reed (*Arundo phragmites*), which grows in great quantities in lagoons, billabongs, and swamps, are all eaten with avidity when offered to stock in the form of ensilage. The pit and stack silos are rapidly being superseded by those built of red gum and hardwood or concrete. This is found to a great extent to obviate the loss sustained by mould, at the same time reducing the risk of fire. The silos vary in capacity from 40 to 130 tons. A portable silo made of iron has been devised in sections of such size and weight as to admit of ready handling. These silos can be increased in diameter or height by the addition of further sections.

2. **Government Assistance in the Production of Ensilage.**—The Government of Victoria, recognising that defective methods of making ensilage have often been adopted, has for some years been making special efforts to educate the farming community, by the issue of bulletins, lectures, etc., so that mistakes may be avoided, and the conditions essential for the production of good ensilage may be better appreciated. These conditions vary with the climate and with the locality. The Government also undertakes the erection of different types of silos on very liberal terms, repayment extending over a series of years. Experts erect the silos and give practical lessons as to packing them, etc. The New South Wales Government has, by giving advice in the "Agricultural Gazette," and by the issue of special bulletins, taken steps towards the education of the farmers. Silos also have been erected on the various experimental farms with a view to demonstrating the value of ensilage. No financial assistance is, however, given in New South Wales in this connection.

3. **Quantity Made.**—Particulars concerning the number of silos and the quantity of ensilage made in the several States of the Commonwealth in the seasons 1913-14 to 1917-18 are furnished in the following table:—

COMMONWEALTH ENSILAGE-MAKING, 1913-14 TO 1917-18.

State or Territory.	1913-14.		1914-15.		1915-16.		1916-17.		1917-18.	
	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.
	(a)		(a)		(a)		(a)		(a)	
New South Wales ..	No. 129	Tons. 18,358	No. 83	Tons. 10,963	No. 130	Tons. 18,511	No. 119	Tons. 16,336	No. 116	Tons. 14,789
Victoria ..	270	19,505	161	9,055	269	16,356	179	10,974	117	9,852
Queensland ..	75	4,273	52	3,363	37	3,012	70	5,115	60	4,556
South Australia ..	16	778	6	681	43	1,688	20	1,795	13	921
Western Australia ..	22	658	11	403	12	518	12	278	11	325
Tasmania ..	17	662	10	231	17	849	7	114	38	518
Federal Territory ..	1	8	..	..	..	..	..	..	..	..
Northern Territory ..	..	..	..	..	..	..	1	55	1	50
Commonwealth ..	530	44,242	323	24,696	508	40,934	408	34,667	356	31,011

(a) No. of holdings on which ensilage was made.

Following the drought of 1902-3 greater attention was paid to ensilage than was previously the case, and during the four seasons ended 1909-10 a continuous and fairly rapid increase was in evidence in all the States, both in the number of holdings on which ensilage was made, and in the quantity produced. The following five seasons, however, shewed a falling-off, but the reduction cannot be accepted as an indication of a lessening of appreciation of the benefits of ensilage, but rather of the fact that stocks had not been drawn upon to any great extent during the previous seasons. The accumulated stocks proved of very great value during the 1914 drought, though far below what would have been the case if more attention had been paid to ensilage-making during the previous years of surplus green food. A very substantial increase took place in 1915-16, both in the holdings on which ensilage was made and in the quantity produced, but 1916-17 and 1917-18 returns shew a falling-off in all the States with the exception of Queensland and Tasmania.

§ 20. Agricultural Colleges and Experimental Farms.

1. **Introduction.**—In most of the States, agricultural colleges and experimental farms have been established with a view to promoting agriculture and to establishing improved and more scientific systems of stock-breeding and dairying. In these colleges, and on some of the farms, provision is made for the accommodation of pupils, to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilisers are made, manures are tested, and elementary veterinary science, etc., is taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of shewing that it is practicable to produce certain crops in a given place, but also to shew how it is possible to make farming pay best in that locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder; in cheese and butter making; in the management, breeding, and preparation for the market of live stock; in the eradication of pests and weeds; and in carpenters', blacksmiths', and other trades.

Travelling expert lecturers are sent to the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins on matters of importance at special seasons.

2. **Particulars of Agricultural Colleges and Experimental Farms.**—In previous issues detailed information is given in respect of agricultural colleges, experimental farms and agricultural education generally. See Year Book No. 11, pp. 393-5.

§ 21. Government Loans to Farmers.

1. **Introduction.**—All the Australian States have established systems under which financial aid is rendered to agriculturists by the Government. The principle upon which such aid is founded was probably first practically applied in Germany, in the year 1770, when the *Landschaften Bank* was created. The establishment of the *Crédit Foncier* nearly a century later in France was a creation of a similar character. This latter institution was designed to enable house and land owners to raise money on mortgage at a low rate of interest, with facility for repayment by annual instalments including redemption of the capital. It dates from 1852, but the mortgage bank known as the *Caisse Hypothécaire*, which, after a struggling existence, was finally liquidated in 1864, was based essentially on the same principle. Over the operations of the *Crédit Foncier*, created under governmental patronage and invested with such special privileges as to virtually constitute it a monopoly, the Government exercised a direct control, by appointing its governor and its two deputy-governors. The *Crédit Foncier* was empowered to lend money only on a first mortgage, and to the amount of one-half of the estimated value of houses and farms, and one-third that of vineyards, woods, and other plantations, and the commission charged could not exceed six-tenths per cent. The system developed

and adopted in the Commonwealth, with the object of assisting farmers to make improvements or to develop or utilise the agricultural or pastoral resources of the land, is analogous. Particulars of advances made under the Closer Settlement and similar Acts are dealt with in the section on Closer Settlement.

2. **Aggregate of Transactions in each State, 1915 to 1918.**—The subjoined table gives aggregates of transactions in reference to advances to farmers in each State during the past four years :—

STATE GOVERNMENT ADVANCES DEPARTMENTS—AGGREGATE OF LOANS TO FARMERS, 1915 TO 1918. (a)

State.	Total Advanced to 30th June—				Balance Due at 30th June—			
	1915.	1916.	1917.	1918.	1915.	1916.	1917.	1918.
	£	£	£	£	£	£	£	£
N.S.W.	3,918,978	4,119,842	4,281,897	4,514,157	2,514,078	2,513,332	2,522,674	2,544,054
Victoria	3,714,733	3,666,952	4,040,582	4,204,582	1,783,043	1,833,988	1,920,737	1,957,694
Q'land	1,147,996	1,517,040	1,810,910	2,026,823	880,204	1,186,895	1,428,530	1,525,649
S. Aust. ^b	2,769,009	2,831,631	2,847,017	2,956,859	1,330,026	1,300,877	1,232,705	1,223,897
W. Aust.	3,961,158	3,533,493	3,626,658	3,700,488	2,561,679	2,695,550	2,753,559	2,789,388
Tasmania	72,252	97,776	117,027	124,319	66,572	87,106	103,152	105,965
Commonwealth	14,984,726	15,966,734	16,723,891	17,527,228	9,135,602	9,617,748	9,961,357	10,146,647
	Profits for Year ended 30th June—				Accumulated Profits at 30th June—			
	£	£	£	£	£	£	£	£
N.S.W.	15,111	16,633	17,477	17,446	71,741	88,374	104,898	120,085
Victoria	10,102	14,000	15,623	14,284	112,411	126,411	142,064	156,348
Q'land	4,448	6,674	(d)	(d)	22,654	29,328	429,328	429,328
S. Aust. ^b	10,668	11,670	11,400	11,454	79,899	91,069	102,469	113,923
W. Aust.	9,363	7,706	2,894	2,371	74,645	82,351	85,245	88,239
Tasmania	712	1,278	1,238	1,224	1,509	2,787	4,025	5,249
C'ommonwealth	50,404	57,961	48,632	46,779	362,359	420,320	4468,029	4513,172

(a) Compiled from figures furnished by the Government Savings Bank of Victoria. (b) Includes loans to farmers and other producers and to local bodies on the security of their own rates. (c) Including profits in connection with house and similar loans. (d) Not shown since amalgamation with Government Savings Bank. (e) See note (d).

3. **New South Wales.**—(i) *Initial Legislation.* New South Wales adopted the principle of advances to settlers on 4th April, 1899, when the Advances to Settlers Act received assent. The objects of this Act were to authorise the raising of a loan for making temporary advances to settlers; to provide for the making and repayment of such advances; and for purposes incidental to, or consequent on, those objects. In order to provide the funds necessary for the carrying out of this Act, the Colonial Treasurer was authorised to sell inscribed stock, secured upon the Consolidated Revenue, to an amount not exceeding £500,000, to be sold in amounts of £10 or some multiple of £10 and bearing interest at the rate of 3½ per cent. per annum, payable half-yearly. A board, consisting of not more than three members, appointed by the Governor, called the Advances to Settlers Board, was appointed to deal with applications for loans and to decide whether they should be granted. The maximum amount that was authorised to be advanced to any one person was £200, which was to be repaid in full, together with interest at the rate of 4 per cent., within ten years of the making of the loan, but on no account was a loan to be granted except on the recommendation of the Board and when the security given was deemed satisfactory. An Amendment Act was passed in 1902, by which the advance limit of £200 was increased to £500, and the period within which repayments were to be made was extended to thirty-one years. In the latter part of the same year a further Amendment Act came into force. Under the provisions of this Act

the amount of inscribed stock was increased to £1,000,000, and the maximum amount of advance to any person was raised to £1,500, interest on the latter being payable at the rate of not less than 4 per cent. per annum.

(ii) *Legislation now in Force.* The above Acts were all repealed by the Government Savings Bank Act of 1906, which received assent on 21st December of that year. All property held by the Advances to Settlers Board was to be vested in three Commissioners appointed under this Act, who were styled "The Commissioners of the Government Savings Bank of New South Wales." An Advances Department of the Savings Bank was constituted, and debentures to the amount of £305,000 (that being the amount of stock issued under the Advances to Settlers Acts and held at the beginning of this Act) were issued, an equivalent amount of Government stock transferred to the Savings Bank Department being, at the same time, cancelled. All monies, securities, documents, property, etc., held by or on behalf of the Advances to Settlers Board were transferred to, and became vested in, the Commissioners, and were carried to the accounts of the Advances Department of the Savings Bank. This Act was amended in 1913, 1914, and 1916.

(iii) *Security on which, and Objects for which, Advances are made.* The Commissioners are authorised to issue debentures to the amount of £2,000,000, bearing interest at such rate as they may determine. They may lend monies from the Advances Department (a) upon mortgage of an estate of inheritance in fee simple in any land in the State; (b) upon mortgage of conditional purchases with or without associated conditional leases, homestead grants or selections, settlement leases or purchases, conditional, additional conditional, or special conditional purchase leases, Crown leases, homestead farm leases, irrigation farm leases, or any holding which has been converted into any of the foregoing tenures under the Crown Lands Acts; and (c) on deposit at call or for periods not exceeding two years in the Treasury or any bank of issue in the State, or on deposit in the Savings Bank Department. Loans may be made for any of the following purposes:— (a) To pay off existing encumbrances or to purchase the land; (b) to pay off money to the Crown in respect of the land; (c) to make improvements or to develop the agricultural or pastoral resources of the land; and (d) to build homes on the land.

(iv) *Amount and Repayment of Advances.* No loan to any one person may amount to less than £50 or more than £2,000, and applications for loans not exceeding £500 have priority over those of a larger amount. Advances may be made up to two-thirds of the value of the interest of the borrower in the land, buildings and improvements, except where the land is held as a conditional lease, homestead grant, settlement lease, homestead selection, settlement purchase, in connection with which the conditions of residence and improvements have not been completed, conditional, additional conditional, or special conditional purchase lease, Crown lease, homestead farm lease, or irrigation farm lease, or a conditional purchase as to which the first five years' certificate has not issued, in which cases the amount advanced may not exceed three-fourths of the holder's interest in the improvements. Loans are made only in respect of first mortgages, and except in the case of loans on the security of freeholds or certificated conditional purchases, are repayable by equal half-yearly instalments within such period, not exceeding thirty-one years, as the Commissioners think fit. Loans granted on the security of freeholds and certificated conditional purchases are repayable either in the same manner as loans on other securities just mentioned, or at the expiration of a fixed term not exceeding five and a-half years, during which period interest only is payable.

(v) *Advances on Purchases of Farms.* To facilitate close settlement on private estates suitable for the purpose, the Commissioners are authorised to make advances in order to assist persons in purchasing land. In the case of such advances the title to the land must be either freehold or certificated conditional purchase, and the amount advanced may not exceed 80 per cent. of the Commissioners' valuation.

4. *Victoria.*—(i) *Legislation.* The Advances Department of the Government Savings Bank of Victoria was established by the Savings Bank Act of 1896. This Act has been frequently amended, and in 1915 the various Acts and amendments were consolidated under the title of the State Savings Bank Act of 1915. This latter Act was amended twice in 1915, and again in 1916. For the purpose of advancing money to settlers and others, a branch of the bank called the *Crédit Foncier* Department was established, which was authorised to borrow on debentures or mortgage bonds up to a sum of £6,000,000.

(ii) *Security on which Advances are Granted.* In order to assist farmers, graziers, market gardeners, or other persons employed in agricultural, horticultural, viticultural, or pastoral pursuits, the Savings Bank Commissioners are empowered to make advances, either by instalments or otherwise, upon the security of any lands held by such person either (a) in fee simple, or (b) under a Crown lease in which the rent received is taken by the Crown in part payment of the lands demised. Security must be, in every case, a first mortgage. A loan may be either in cash, or in debentures or mortgage bonds at par face value at the option of the Commissioners.

(iii) *Amount of Advances.* The limits of the advances are £50 and £2,000, as in New South Wales, applications for advances under £500 having also similar priority. The amount of the advance which may be made for land held in fee simple or under lease as specified in (b) above must not exceed two-thirds of the actual value of such land at the time of the advance. In the case of land held under lease as aforesaid, such two-thirds value must be reduced by the amount of all rent payable in respect of the land previous to the issue of a Crown grant for such. If the person appointed by the Commissioners as valuator of any land held under lease as above, certify that the improvements effected thereon increase the productive power of the land and are equal to at least £1 per acre, and that the value of such land and improvements exceeds £2 per acre, the Commissioners may make, notwithstanding anything contained above, an advance of fifteen shillings for every acre so improved.

(iv) *Special Provision for Vineyards, Orchards, etc.* In the case of land which has acquired a special increase of value by reason of being cultivated as vineyards, hop-grounds, orchards, fruit-growing plantations, etc., advances may be made on the following terms:—(a) The total amount which may be at any time advanced upon any such lands may not be more than £100,000 in the whole. (b) The amount of two-thirds of the actual value referred to above may be increased by one-quarter of any special increase in value, but such increase is in no case to be considered as greater than £30 an acre. (c) No advance may be for a longer period than fifteen years.

(v) *Purposes for which Advances Granted.* Advances are made for the following purposes only:—(a) To pay off existing liabilities; (b) to pay off money owing to the Crown in respect of the land; (c) to make improvements or to improve and develop the agricultural, horticultural, viticultural, or pastoral resources of the land.

(vi) *Repayment of Advances.* The rate of interest charged on loans is fixed at $4\frac{1}{2}$ per cent. per annum, but, by the Amendment Act of 1915, it may be altered from time to time by the Commissioners, subject to the approval of the Governor in Council. All advances, together with interest, must be repaid by sixty-three half-yearly instalments, or such smaller number as may be agreed upon between the borrower and the Commissioners.

5. *Queensland.*—(i) *Legislation.* The Queensland Government was authorised, under the Agricultural Bank Act of 1901, to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the State, and a body of three trustees was appointed to administer the Act. The original Act was amended in 1904, 1905, 1911, 1914, and 1915, and in 1916 it was repealed by the Queensland Government Savings Bank Act of 1916, when the duties of the trustees under the former Act were transferred to the Commissioner of the Government Savings Bank. In order to provide for the amount of the unpaid balances of all monies advanced under the Agricultural Bank Act, and also to obtain funds for the purpose of making advances, the Commissioner may raise, by the issue of debentures, any sum of money which, with the above-mentioned balances, shall not exceed £5,000,000.

(ii) *Security on which, and Purposes for which, Advances are made.* Advances may be made to owners of agricultural lands or to occupiers of Crown lands held either as agricultural, grazing, prickly-pear or unconditional selections, and may be made for any of the following purposes:—(a) The payment of existing liabilities; (b) agricultural, dairying, grazing, horticultural, or viticultural pursuits on the holding; (c) adding to the improvements already made; (d) the purchase of stock, machinery, or implements; (e) not exceeding £400 for unspecified purposes, provided the applicant is a bona fide resident settler. Advances are only made on the security of first mortgages.

(iii) *Amount and Repayment of Advances.* The amount which may be advanced must not exceed fifteen shillings in the pound of the fair estimated value of the holding with the improvements thereon, and no advance to any one person must exceed £1,200. Advances, not exceeding on the whole £300, may be made to the full value of the improvements proposed to be made, for any of the following purposes, namely:—Buildings, up to £80; ringbarking, clearing, fencing, draining, or water conservation, up to £200; providing a well or bore, up to £150. Where the holder of agricultural land has an area of thirty-five or more acres cleared and sown with Rhodes grass, or any other approved grass, an amount not exceeding £100 may be advanced for the purchase of approved dairy stock to the full value of the improvements already made. The Commissioner may require, in addition to any other security, a lien over the stock so purchased. No advance may be made to any alien who has not first obtained a certificate that he is able to read or write from dictation words in such language as the Commissioner may direct. During the first five years following the date of the loan, the borrower must pay interest at the rate of 5 per cent. per annum. After the expiration of that period the loan, together with interest, must be repaid by half-yearly instalments within twenty years, the amount of such half-yearly instalment being £4 0s. 3d. for each £100 advanced. Advances made on the security of a mortgage of a grazing selection must be repaid, with interest at 5 per cent. per annum, within a term ending not later than the date upon which the lease would expire. Any advances under this Act may, at the option of the borrower, be repaid sooner or in larger instalments than herein specified.

6. South Australia.—(i) *Legislation.* Under the State Advances Act of 1895, amended in 1896, 1901, and 1912, a State Bank has been established in South Australia for the purpose of making advances (i) to farmers, graziers, and other producers, and in aid of industries, upon the security of lands held in fee simple, or under Crown lease; and (ii) to local authorities, upon the security of their rates. The bank, managed by a board consisting of five trustees appointed by the Governor, has funds raised by the issue of mortgage bonds, carrying interest at a rate not exceeding $4\frac{1}{2}$ per cent., payable half-yearly, to an amount not greater than the total amount due to the bank for State advances, and in any case not greater than £3,000,000. By the Amending Act of 1912, a fund called The Loan to State Bank Fund was constituted, and the Treasurer was empowered to raise any sum or sums of money up to £400,000 in any one financial year, and not exceeding in the aggregate at any time a sum of £3,000,000, by the issue and sale of Government Inscribed Stock or Treasury Bills, for the purpose of purchasing or taking up from the bank, mortgage bonds for such amounts as are required by the bank. The Advances to Settlers on Crown Lands Act, and the Loans to Producers Act, were passed in 1908 and 1917 respectively, and are referred to in (iii) and (iv) below. Several Acts have, from time to time, been passed dealing with seed wheat advances.

(ii) *Amount and Repayment of Advances.* No advance to farmers, graziers, or other producers, or in aid of any industry, may exceed three-fifths of the unimproved value of the fee simple of the land and permanent improvements thereon, and if the land has acquired a special additional value by reason of cultivation as a vineyard or orchard, plus one-third of such special additional value. If the advance be on the security of a Crown lease, the amount of the loan may not exceed one-half the selling value of the lease, including the interest of the holder in any improvements on the land. The amount lent to any one person at any time may not exceed £5,000. Advances are repayable by half-yearly instalments, the rate of interest, up to the limit of 5 per cent. per annum, being a matter of arrangement between the bank and the borrower. Security must be, in every case, a first mortgage, but, with the exception of the State Advances Act, a second mortgage may be taken as collateral security. The balance, or any portion thereof, of the principal money owing in respect of any State advance may be paid, with all interest due thereon, on the day appointed for any half-yearly payment.

(iii) *The Advances to Settlers on Crown Lands Act.* This Act was passed in 1908, and subsequently amended in 1909, 1911, and 1912. The Act with amendments was consolidated in 1914, and again amended in 1915 and 1916, and is administered by a board called the Advances to Settlers Board. The Treasurer is authorised to set apart a sum not exceeding £200,000 in any one financial year for the purpose of loans to settlers. The maximum amount which may be advanced to any one settler is £850, and for a period of

five years following the date on which the advance is made the settler is required to pay interest at a rate fixed by the Treasurer, payable half-yearly. At the expiration of that period it is provided that he must repay the amount advanced by seventy equal half-yearly instalments, together with simple interest at the fixed rate on the balance outstanding. A rebate of interest at a fixed rate is allowed if the half-yearly payment is made within fourteen days of the date on which it falls due. All advances made to settlers for the purpose of stocking their holdings must be repaid, together with simple interest at the fixed rate, within such time, and by such instalments, as the board may determine. Advances may be made on the prescribed security for the purpose of:—(a) making improvements on a holding such as ringbarking, clearing, fencing, boring for water, erecting permanent buildings, etc.; (b) stocking a holding; (c) discharging any mortgage existing on a holding; and (d) any other purpose. The amounts which may be advanced for the abovementioned purposes are for:—(a) any sum, not exceeding £400, up to the fair estimated aggregate value of the holding and the improvements made on or about to be made thereon, or in case such estimated value is in excess of £400, any further sum not exceeding £250, up to three-fourths of the amount of such excess; (b) any sum, not exceeding £200; and (c) and (d) any sum, not exceeding three-fourths of the fair estimated aggregate value of the holding and the improvements thereon. Under this Act, the Commissioner of Crown Lands may, on the application of a settler, erect on such settler's holding water improvements, in the nature of sheds having rain-water catchment roofs, and tanks connected therewith for the storage of water. The cost of such improvements are deemed to be an advance from the board, and the settler is obliged to execute a first mortgage on his holding, in order to secure to the board the due payment of the advance.

(iv) *The Loans to Producers Act 1917.* Under the provisions of this Act, any owner of a freehold estate or holder of a Crown lease may obtain loans for one or more of the following purposes:—(a) the purchase of fruit-grading machinery, (b) the erection of silos, and (c) any other prescribed purpose. Advances must be repaid, together with simple interest at the fixed rate, within such time and by such instalments as the Minister may determine.

7. *Western Australia.*—(i) *Legislation.* By the Agricultural Bank Act of 1894 the Governor of Western Australia was empowered to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the State. This Act was amended from time to time until a consolidating Act was passed in the year 1906 repealing all previous enactments on the subject. Under this last Act the bank was placed under the control of three trustees, appointed by the Governor, in whom is vested the whole of the bank property. The necessary funds are provided for by the issue of mortgage bonds bearing interest at a rate not exceeding 4 per cent. per annum. The amount authorised to be raised was £1,000,000, but by subsequent Amending Acts, this was raised successively to the present total of £4,500,000. Amendments to the consolidated Act of 1906 were made in 1907, 1909, 1910, 1911, 1912, 1913, 1914, and 1917.

(ii) *Purposes for which Advances may be made.* The bank is authorised to make advances to persons engaged in the business of farming or grazing, or in agricultural, horticultural, or pastoral pursuits, or in any industry that the Governor may by proclamation declare to be a rural industry, for any purpose incidental to or in aid of any such business, pursuit, or industry, including the erection of a dwelling house.

(iii) *Amount of Advances.* The amount advanced to any one borrower cannot exceed £2,000, and no advance for the purpose of any proclaimed rural industry can exceed a sum limited by the proclamation relative to such rural industry. Advances are made only on a first mortgage, but a second mortgage may be taken as collateral security.

(iv) *Repayment of Advances.* During the five years following the date of the loan the borrower pays interest only, at such rate per annum as may be prescribed. If the rate of interest be more than 5 per cent., it must not exceed by more than 1 per centum per annum the rate payable on funds raised by the bank. After the expiration of the above period the amount advanced, with interest at the prescribed rate, must be repaid within twenty-five years by equal half-yearly payments. Whenever an advance is made for any purpose other than that of effecting improvements, it must be repaid, together with

interest at 6 per cent. per annum, by half-yearly instalments within such period, not exceeding twenty-five years, as the trustees think fit. Advances may be repaid by larger instalments than specified, and at any time within the prescribed period.

8. *Tasmania.*—(i) *Legislation.* Under the State Advances Act 1907, an agricultural bank, administered by three trustees appointed by the Governor, was established for the purpose of making advances to promote the agricultural development of the State. Funds were raised by the issue of debentures or inscribed stock for a sum not exceeding £150,000, interest at a rate determined by the Treasurer being payable on same. This Act was the subject of amendments in 1912, 1914, and 1916.

(ii) *Security on which, and Objects for which, Advances are made.* The trustees may make advances on the prescribed security to farmers, graziers, and persons engaged in agricultural, dairying, grazing, or horticultural pursuits, owning land in fee simple or holding land under purchase from the Crown upon the credit system, for any of the following purposes:—(a) The payment of liabilities already existing on the holding; (b) agricultural, dairying, grazing, or horticultural pursuits on the holding; and (c) making or adding to improvements.

(iii) *Amount of Loans.* The minimum amount of any loan is £25, and the maximum £1,000. No advance on the security of freehold land may exceed three-fifths of its capital value as estimated by the trustees, and in respect of land held from the Crown under the credit purchase system, the advance may not exceed one-half of the capital value of the land after deducting from such capital value the amount of instalments due at the date of the loan. Advances are made only on the security of a first mortgage, but a second mortgage may be taken as collateral security.

(iv) *Repayment of Loans.* Interest at a rate determined by the Treasurer is payable on all advances made. After five years the borrower must begin to pay off the principal in fifty half-yearly instalments, but the advance may, at the option of the borrower, be repaid at any time sooner than is provided, and in larger instalments.

9. *Particulars Respecting Agricultural and Stock Departments.*—In Year Book No. 7, 1901–1913, on pages 364 to 369, will be found particulars respecting Agricultural and Stock departments of the several States of the Commonwealth as on 30th June, 1913. The main features of organisation are set out under their respective headings, and will be found to embrace such items as the number on staffs, expenditure, facilities for agricultural education and work undertaken in agricultural colleges, technical schools, experimental farms, and orchards and vineyards. The nature of lectures and other forms of agricultural instruction by experts is dealt with, as well as the extent of distribution of plants, and the special steps taken by the departments to disseminate information amongst agriculturists, and also to facilitate placing the products of the State on the market.

§ 22. Graphical Representation of Crops.

1. *Areas of Principal Crops.*—A graphical representation of the areas devoted to each of the principal crops in the Commonwealth since 1860 will be found on page 349. The crops so represented are as follows:—Wheat, hay, oats, maize, sugar-cane, barley, and vines.

2. *Production.*—On page 350 will be found a graphical representation of the aggregate yields in the Commonwealth since 1860 of wheat, oats, barley, maize, and hay.

SECTION IX.

FARMYARD AND DAIRY PRODUCTION.

§ 1. Introductory.

1. **General.**—The introduction of cattle into Australia, and the early history of the dairying industry are referred to in some detail in earlier issues of this work (see Official Year Book No. 6, pp. 430 *et seq.*). It may here be noted that the original stock has been crossed with specially imported stud cattle, while further judicious crossing of strains has resulted in an increased and improved milk supply. In Australia, dairy cattle thrive in the open throughout the year, local climatic conditions demanding no protection other than tree plantations for shelter, and rugging in the coldest weather. Indigenous and imported grasses furnish food during the greater part of the year, and winter fodder, when necessary, is given to the cattle in the fields. With the adoption of scientific methods in the treatment of animals and pasturage and in the processes of manufacture, coupled with effective State supervision, the dairying industry has shewn rapid expansion.

2. **Official Supervision of Industry.**—Dairy experts, under the supervision of the various State Agricultural Departments, give instruction in approved methods of production, and inspect animals, buildings, and marketable produce. A high standard of cleanliness, both of *personnel* and *matériel*, prevails. Financial assistance of a temporary nature is also given, advances made being generally repaid with promptitude.

The export trade is regulated by the terms of the Commonwealth Commerce Act 1905 and regulations thereunder. The provisions of this Act are set out in detail in Official Year Book No. 6, pp. 431–2. It will be sufficient to note here that true trade description, etc., must be marked on all produce intended for export, while official inspection ensures the maintenance of purity and quality. Upon request of the exporter the goods are certificated by the inspector.

3. **Mixed Farming.**—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places remote from the metropolis well-equipped factories have been established.

4. **Factory System.**—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or “creameries,” has resulted in a considerable reduction in the cost of manufacture, since improved appliances, such as refrigerators, may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is rapidly diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires less than $2\frac{1}{2}$ gallons.

5. **Butter and Cheese Factories.**—The factories in the Commonwealth for the manufacture of butter, cheese, and condensed milk numbered 559 in 1917. These were distributed as regards the various States as follows:—New South Wales, 164; Victoria, 182; Queensland, 135; South Australia, 44; Western Australia, 4; Tasmania, 30.

§ 2. Milk, Butter, and Cheese.

1. **Dairy Herds.**—Following the drought year 1902 there was up to 1911 a general increase in the number of dairy cows; the returns for 1912 and the three years following, however, shew a decrease in all the States, with the exception of Western Australia. During 1917 satisfactory increases have taken place in all the States, the total increase for the year in the number of dairy cows in the Commonwealth amounting to 157,555. In New South Wales, Victoria, South Australia, and Tasmania—as will be seen from the table given below—the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory, and Western Australia there is a greatly preponderating number of other cattle, dairying not being firmly established in the tropical regions of the Continent. In southern Queensland, however, the industry has developed remarkably during the last decade. The figures for the Northern Territory are rough estimates only:—

CATTLE AND DAIRY CATTLE, COMMONWEALTH, 1913 TO 1917.

State.		1913.	1914.	1915.	1916.	1917.
New South Wales	{ All Cattle ..	2,815,113	2,472,631	2,400,104	2,757,713	3,148,909
	{ Dairy Cows ..	789,474	769,550	743,058	742,544	776,662
Victoria	{ All Cattle ..	1,323,553	1,362,542	1,043,604	1,175,098	1,371,049
	{ Dairy Cows ..	656,080	610,517	451,088	488,086	534,388
Queensland	{ All Cattle ..	5,322,033	5,455,943	4,780,893	4,765,657	5,316,558
	{ Dairy Cows ..	391,439	387,311	335,243	343,311	399,508
South Australia	{ All Cattle ..	352,905	300,579	226,565	288,887	313,245
	{ Dairy Cows ..	107,879	91,181	78,515	86,311	96,661
Western Australia	{ All Cattle ..	834,265	863,835	821,048	863,930	957,086
	{ Dairy Cows ..	30,680	28,106	28,342	33,788	37,979
Tasmania	{ All Cattle ..	205,743	176,524	169,575	179,360	197,938
	{ Dairy Cows ..	59,380	51,229	47,540	52,522	58,910
Northern Territory	{ All Cattle ..	417,643	414,558	483,961	428,862	638,431
	{ Dairy Cows ..	70	70	70	70	70
Federal Territory	{ All Cattle ..	7,827	4,961	5,666	8,230	13,408
	{ Dairy Cows ..	715	870	537	719	728
Commonwealth	{ All Cattle ..	11,483,882	11,051,573	9,931,416	10,467,737	11,956,024
	{ Dairy Cows ..	2,035,717	1,938,834	1,684,393	1,747,351	1,904,906

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with locality and season, probably reaching as high as 500 gallons, but averaging for the whole of Australia, for all dairy cows and for all seasons, prior to 1916, considerably under 300 gallons per annum. For 1917 the average yield in Victoria, South Australia, and New South Wales was over that quantity; being 391, 353, and 326 gallons respectively, while the average for the Commonwealth as a whole for 1917 was 333 gallons. The best yields over a series of years appear to be in Victoria, New South Wales, and South Australia, while Queensland and Tasmania in normal years are above Western Australia. In the following table the annual average yields per cow for the last five years are taken from the number of dairy cows which were milking during any part of the year. The average given is considerably below that for cows which were yielding during the greater part of the year. The highest averages obtain in those States which have most extensively adopted scientific methods of dairying, such as systematic breeding, culling of herds, milk testing, etc.

PRODUCTION OF MILK, COMMONWEALTH, 1913 TO 1917.

Heading.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth. b
1913—								
Dairy Cows a .. No.	805,395	656,009	383,550	111,306	28,995	59,770	720	2,045,745
Production 1,000 gals.	231,503	216,948	90,545	27,593	5,550	11,557	89	583,785
Aver. per cow .. gals.	287	331	236	248	191	193	124	285
1914—								
Dairy Cows a .. No.	779,512	633,298	389,375	99,530	29,393	55,305	792	1,987,205
Production 1,000 gals.	237,856	193,653	100,190	22,220	5,589	11,568	74	571,150
Aver. per cow .. gals.	305	306	257	223	190	209	93	287
1915—								
Dairy cows a .. No.	756,304	530,802	361,277	84,848	28,224	49,385	704	1,811,544
Production 1,000 gals.	183,935	142,115	70,094	22,185	6,059	10,300	79	434,767
Aver. per cow .. gals.	243	268	194	261	215	209	113	240
1916—								
Dairy cows a .. No.	742,801	469,587	339,277	82,413	31,065	50,031	628	1,715,802
Production 1,000 gals.	225,920	186,593	86,938	29,954	6,826	13,364	84	549,679
Aver. per cow .. gals.	304	397	256	363	220	267	134	320
1917—								
Dairy cows a .. No.	759,603	511,237	371,410	91,486	35,883	55,716	724	1,826,059
Production 1,000 gals.	247,398	199,738	105,384	32,309	7,550	14,843	131	607,353
Aver. per cow .. gals.	326	391	284	353	210	266	182	333

a Mean for the year.

b Exclusive of Northern Territory.

3. Butter and Cheese.—The butter output shews, in general, a tolerably steady increase since the drought year 1902, the most marked development being in Queensland. The production of butter reached its highest figures in 1911, the next highest yields being in 1917 and 1913. The year 1917 marks the highest cheese production, the return being nearly 39 per cent. in advance of the 1913 figure. In both butter and cheese a decrease took place in some of the States in 1907, 1908, 1914, and 1915, due to the dryness of the seasons. For the five years from 1913 to 1917 the figures are :—

PRODUCTION OF BUTTER AND CHEESE, COMMONWEALTH, 1913 TO 1917.

State.	1913.	1914.	1915.	1916.	1917.
BUTTER.					
New South Wales	77,766,703	84,126,893	85,623,885	89,355,639	80,460,225
Victoria	73,381,567	62,421,288	42,345,113	59,568,771	64,405,711
Queensland	35,199,387	37,230,240	25,456,714	28,967,279	38,930,690
South Australia	8,036,274	6,252,961	6,317,613	9,798,142	10,482,895
Western Australia	518,566	451,112	716,408	1,080,466	1,361,484
Tasmania	3,843,247	3,480,531	3,204,922	3,691,649	4,848,227
Federal Territory	12,494	47,387	47,658	48,832	47,782
Commonwealth	198,758,238	193,970,412	137,672,313	182,470,778	200,497,014

CHEESE.

	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	6,620,648	6,356,627	6,979,636	7,830,239	7,799,676
Victoria	4,856,321	4,395,502	3,497,278	5,869,562	5,285,003
Queensland	5,395,050	7,931,869	4,383,410	8,495,825	11,142,114
South Australia	2,216,985	2,000,547	1,412,692	2,476,081	2,449,716
Western Australia .. ..	..	1,675	835	665	100
Tasmania	654,411	554,191	555,375	736,500	754,196
Commonwealth	19,743,415	21,240,411	15,829,226	25,408,872	27,430,805

a For year ended 30th June of year following.

4. **Concentrated Milk.**—"Condensed" or "concentrated" milk denotes milk the bulk of which is reduced by evaporation. Small quantities of such milk were made prior to 1911, in which year the output for the Commonwealth was nearly doubled. During the next three years a steady increase was maintained, but in 1915 a considerable falling-off was in evidence in each of the three contributing States; this, however, was more than compensated for during the next two seasons, when substantial increases occurred in each State, the Victorian returns for 1917 shewing an increase of over 100 per cent. on the output for 1915. There is still a considerable import of milk, as will be seen from the tables hereunder; but in each year, with the exception of 1915-16, there was an excess of exports. No condensed or concentrated milk is made in South Australia, Western Australia, or Tasmania. In New South Wales, Victoria, and Queensland the following are the returns for the last five years:—

CONDENSED AND CONCENTRATED MILK MADE, 1913 TO 1917.

Year.	N.S.W.	Victoria.	Queensland.	Commonwealth.
	lbs.	lbs.	lbs.	lbs.
1913	3,682,812	20,942,620	8,059,051	32,684,483
1914	5,991,458 ^a	19,093,750	6,967,486	32,052,694
1915	4,918,064 ^a	16,690,426	5,368,510	26,977,000
1916	5,829,990 ^a	33,280,635 ^a	6,584,272	45,694,897
1917	8,973,916 ^a	37,805,070 ^a	9,409,059	56,188,045

^a For year ended 30th June of year following.

5. **Oversea Trade in Milk, Butter, and Cheese.**—The following tables give the imports, exports, and net exports or imports of butter, cheese, and milk. In each of the five years exports of butter exceeded imports, but there was a net import of cheese and milk in 1915-16.

IMPORTS, EXPORTS, AND NET EXPORTS OF BUTTER, CHEESE, AND MILK, COMMONWEALTH, 1913 TO 1917-18.

Products.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
IMPORTS.					
Butter lbs.	13,844	2,378,893	4,577,332	517,091	8,610
" £	565	180,557	349,110	38,749	592
Cheese lbs.	364,699	230,348	1,532,336	88,035	45,976
" £	17,334	10,554	66,936	5,536	2,940
Milk—concentrated and preserved ^a lbs.	1,150,715	2,596,964	4,191,493	1,607,445	772,987
" £	26,579	90,146	152,051	63,713	42,458
EXPORTS.					
Butter lbs.	75,802,303	54,105,777	18,036,317	75,361,869	72,277,526
" £	3,565,282	2,664,975	1,117,629	5,338,848	4,904,417
Cheese lbs.	1,609,452	2,547,857	159,003	10,586,456	8,427,098
" £	42,421	72,823	9,347	420,600	350,819
Milk—concentrated and preserved ^a lbs.	2,875,030	5,066,169	939,660	16,453,339	25,890,663
" £	75,165	126,556	31,340	553,993	1,029,424
NET EXPORTS.^b					
Butter lbs.	75,788,459	51,726,884	13,458,985	74,844,778	72,268,916
" £	3,564,717	2,484,418	768,519	5,300,099	4,903,825
Cheese lbs.	1,244,753	2,317,509	-1,373,333	10,500,421	8,381,122
" £	25,087	62,274	-57,589	415,064	347,879
Milk—concentrated and preserved ^a lbs.	1,724,315	2,469,205	-3,251,833	14,846,394	24,917,676
" £	48,586	36,410	-120,711	490,280	986,966

Note.—The minus sign (—) signifies net imports.

^a See definition above. ^b i.e., excess of exports over imports.

6. **Local Consumption of Butter and Cheese.**—The total production of butter and cheese, with the net export or import for the corresponding period subtracted or added, gives approximately the quantity available for consumption in the Commonwealth. In the period considered hereunder, with the exception of the year 1915, the local supply of cheese was adequate :—

BUTTER AND CHEESE FOR LOCAL CONSUMPTION, 1913 TO 1917.

Products.	1913.	1914.	1915.	1916.	1917.
	lbs.	lbs.	lbs.	lbs.	lbs.
Butter .. Total ..	122,969,779	137,820,074	124,213,323	107,626,000	128,228,098
" .. Per head of mean population ..	25.6	28.0	25.1	21.93	26.28
Cheese .. Total ..	18,498,662	19,194,818	17,202,559	14,908,451	19,049,633
" .. Per head of mean population ..	4.8	3.9	3.5	3.04	3.90

The quantity available for consumption in 1917 averaged 26 lbs. of butter and nearly 4 lbs. of cheese per head of mean population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom in normal times is given as about 20 lbs. per head per annum.

§ 3. Pigs, Bacon, etc.

1. **Pigs.**—Attention has been paid, both privately and by the various State Governments, to improving the breed, and consequently the market value of pigs. The number of pigs in the Commonwealth from 1913 to 1917 is shewn below :—

NUMBER OF PIGS, COMMONWEALTH, 1913 TO 1917.

State.	1913.	1914.	1915.	1916.	1917.
New South Wales ..	287,896	286,478 ^b	280,869 ^b	359,504 ^b	395,639 ^b
Victoria <i>a</i> ..	221,277	243,196	192,002	254,436	323,159
Queensland ..	140,045	166,638	117,787	129,733	172,699
South Australia ..	64,119	69,893	66,237	118,542 ^b	110,353 ^b
Western Australia ..	47,966	59,816	58,231	90,756	111,844
Tasmania <i>a</i> ..	37,990	34,960	37,778	53,033	54,653
Northern Territory ..	1,018	1,240	500	124	124
Federal Territory ..	194	226 ^b	289 ^b	259 ^b	518 ^b
Commonwealth ..	800,505	862,447	753,693	1,006,387	1,168,989

a As on 1st March of year following.

b As on 30th June of year following.

An examination of the returns of pigs shews remarkable fluctuations. There was a general increase in 1909–10–11, a heavy decline in 1912 and 1913, an increase in 1914, and again a heavy falling-off during 1915, followed by substantial increases during 1916 and 1917, in which latter year the number of pigs was the highest ever recorded in Australia. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, pages 294 and 295.

2. **Bacon and Ham.**—From 1905 to 1908 the production of bacon and ham in the Commonwealth shewed little annual variation. In 1909, however, there was a considerable falling-off, but a large increase took place in subsequent years up to 1912.

During the succeeding three years the production again fell away, more especially in 1915, but a satisfactory increase was recorded in 1916, and again in 1917, when heavy increases took place in all the States, the increase for the Commonwealth amounting to 13,536,271 lbs.

PRODUCTION OF BACON AND HAM, COMMONWEALTH, 1913 TO 1917.

State.	1913.	1914.	1915.	1916.	1917.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ..	15,180,378	a15,323,528	a13,569,022	a15,779,369	a18,544,053
Victoria ..	19,289,258	18,774,497	13,659,974	a18,115,028	a21,311,876
Queensland ..	13,709,716	13,339,131	12,363,939	10,427,649	14,791,540
South Australia ..	3,265,773	3,409,372	2,432,485	a3,993,137	a6,591,064
Western Australia ..	6100,143	6112,421	b202,824	c2,058,027	c2,362,604
Tasmania ..	1,116,535	1,612,433	895,020	992,779	1,298,819
Federal Territory ..	11,885	3,520	7,619	a8,787	a11,091
Commonwealth ..	52,673,688	52,574,902	43,130,883	51,374,776	64,911,047

a For year ended 30th June of year following. b Made on farms only. c A portion only from pigs slaughtered in the State, balance imported and subsequently cured.

3. **Oversea Trade in Pig Products.**—The oversea trade in pigs and pig products is shewn in the following tables:—

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, COMMONWEALTH, 1913 TO 1917-18.

Particulars.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
BACON AND HAM.					
Imports lbs.	126,692	107,520	425,277	90,626	5,097
„ £	6,301	5,412	20,643	4,787	353
Exports lbs.	1,866,894	1,220,426	590,788	1,006,431	5,068,952
„ £	74,718	58,900	35,278	60,414	321,635
Net Exports .. lbs.	1,740,202	1,112,906	165,511	915,805	5,063,855
„ £	68,417	53,488	14,635	55,627	321,282
FROZEN PORK.					
Imports lbs.	..	74,337	862,768	73,294	121
„ £	..	2,601	32,249	2,680	3
Exports lbs.	215,175	48,791	2,783	32,681	262,503
„ £	5,259	1,400	108	1,341	11,915
Net Exports .. lbs.	215,175	- 25,546	- 859,985	- 40,613	262,382
„ £	5,259	- 1,201	- 32,141	- 1,339	11,912
PIGS.					
Imports No.	20	52	12	6	20
„ £	54	535	63	23	438
Exports No.	440	168	64	19	36
„ £	1,336	511	582	146	209
Net Exports .. No.	420	116	52	13	16
„ £	1,282	- 24	519	123	- 229

Note.—The minus sign (—) signifies net imports.

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, COMMONWEALTH, 1913 TO 1917-18—*continued.*

Particulars.		1913.	1914-15.	1915-16.	1916-17.	1917-18.
LARD.						
Imports..	.. lbs.	884,812	268,043	3,873,248	408,552	7,208
" ..	.. £	23,900	7,433	108,985	12,225	380
Exports..	.. lbs.	4,299,987	1,491,149	342,593	1,796,821	1,466,703
" ..	.. £	85,194	31,542	13,736	59,205	56,353
Net Exports	.. lbs.	3,415,175	1,223,106	- 3,530,655	1,388,269	1,459,495
" ..	.. £	61,294	24,109	- 95,249	46,980	55,973

Note.—The minus sign (-) signifies net imports.

From 1901 to 1903 there was a considerable net import of bacon and ham, but for the following years, up to 1917-18, with the exception of 1915-16 when the figure was small, there was a large net export. The local production of pork and lard for each of the years 1911 to 1913 was more than sufficient for the local demand; during 1914-15, 1915-16, and 1916-17, however, the imports of frozen pork exceeded the exports by 25,546 lbs., 859,985 lbs., and 40,613 lbs. respectively, while in 1915-16 the net import of lard amounted to 3,530,655 lbs.

The net exports of pig products have fluctuated considerably during the past five years. In 1913 the net exports amounted to 5,370,552 lbs. In 1914-15 they decreased to 2,310,466 lbs., while the 1915-16 figures shewed the heavy net import of 4,225,129 lbs. During 1916-17 and 1917-18 the net exports amounted to 2,463,461 lbs. and 6,785,732 lbs. respectively.

4. Local Consumption of Bacon and Ham.—From 1904 to 1917 the production of bacon and ham was sufficient to meet the local demand, and there was a surplus for export.

BACON AND HAM AVAILABLE FOR LOCAL CONSUMPTION, 1913 TO 1917.

Particulars.	1913.	1914.	1915.	1916.	1917.
	lbs.	lbs.	lbs.	lbs.	lbs.
Total	50,933,486	51,181,876	42,965,372	50,458,971	59,847,192
Per head of mean population	10.6	10.4	8.7	10.3	12.27

5. Total Dairy Production.—The total dairy production of the Commonwealth in 1917 is shewn below:—

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1917.

Where Produced.	N.S.W. <i>a</i>	Victoria. <i>a</i>	Q'land.	S. Aust. <i>a</i>	W. Aust.	Tasmania.	Fed. Terr. <i>a</i>	C'wealth.
MILK.								
Used for—	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.
Butter ..	183,604,105	148,217,740	82,800,698	23,783,836	3,265,407	12,081,985	16,395	453,770,216
Cheese ..	8,040,450	5,240,950	10,279,849	2,401,570	300	757,937	..	26,721,056
Condensing and concentrating ..	2,366,330	12,023,370	2,802,670	..	..	..	..	17,282,370
Other purposes ..	53,386,665	34,255,870	9,410,822	6,123,475	4,284,558	2,002,638	115,055	6109,589,083
Total ..	247,397,550	199,737,930	105,384,029	32,308,881	7,550,325	14,842,560	131,450	6607,362,725

BUTTER.

In Factories On Dairy and other Farms	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
	75,867,550	59,701,560	36,854,031	6,916,202	483,348	3,478,365	..	183,301,056
	4,592,675	4,704,151	2,076,659	3,566,693	878,136	1,369,862	7,782	17,195,958
Total ..	80,460,225	64,405,711	38,930,690	10,482,895	1,361,484	4,848,227	7,782	200,497,014

a For year ended 30th June, 1918. *b* Including 10,000 gallons, Northern Territory.

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1917—*continued.*

Where Produced.	N.S.W. <i>a</i>	Victoria. <i>a</i>	Q'land.	S. Aust. <i>a</i>	W. Aust.	Tasmania	F. Ter. <i>a</i>	C'wealth.
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CHEESE.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ..	6,088,412	3,973,110	10,973,576	2,446,306	..	425,739	..	23,907,143
On Dairy & other Farms ..	1,711,264	1,311,893	168,538	3,410	100	328,457	..	3,523,662
Total ..	7,799,676	5,285,003	11,142,114	2,449,716	100	754,196	..	27,430,805

CONDENSED OR CONCENTRATED MILK.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ..	8,973,916	37,805,070	9,409,059	..	..	..	..	56,188,045

BACON AND HAM.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ..	15,602,919	17,908,100	14,031,697	5,013,028	62,010,645	857,129	..	55,423,518
On Dairy & other Farms ..	2,941,134	3,403,776	759,843	1,578,036	351,959	441,690	11,091	9,487,529
Total ..	18,544,053	21,311,876	14,791,540	6,591,064	2,362,604	1,298,819	11,091	64,911,047

a For year ended 30th June, 1918. *b* A portion only from pigs slaughtered in the State, the balance being imported and subsequently cured.

§ 4. Poultry Farming.

1. **Development of the Industry.**—Poultry stocks are largely maintained by farmers, and production therefrom furnishes a considerable addition to the annual agricultural or dairying returns. During recent years, however, poultry-keeping has assumed an independent position among rural industries, while it is also carried on in conjunction with pig farming. Special poultry farms have been instituted for scientific breeding, and poultry experts engaged by the State Governments give lectures and instruction. Poultry for consumption is extensively reared, and the egg-producing qualities of the birds have also been greatly improved by careful breeding. Co-operative egg-collecting circles have been formed in some districts; eggs are also delivered with the milk and cream to the local butter factories, and thence forwarded to market.

2. **Production of Poultry.**—There is some difficulty in obtaining correct figures for the yield of poultry products. The following values are returned:—

ESTIMATED VALUE OF POULTRY AND EGGS, COMMONWEALTH, 1913-14 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania <i>a</i>	F. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1913-14 ..	1,578,000	1,706,700	219,400	569,254	223,713	230,000	1,600	4,528,667
1914-15 ..	1,597,000	1,743,860	234,994	524,347	204,591	230,000	1,180	4,535,972
1915-16 ..	2,144,000	1,747,000	107,370	518,808	184,360	200,000	2,000	4,903,538
1916-17 ..	1,905,500	1,714,770	324,958	618,441	201,284	250,000	2,500	5,017,453
1917-18 ..	2,079,000	2,160,650	295,882	669,105	188,982	250,000	3,000	5,646,619

a Estimated.

3. **Oversea Trade in Poultry Products.**—The imports and exports of eggs shew a considerable balance on the side of imports in each of the years 1901 to 1906 and from 1909 to 1916-17. In 1907 the export greatly exceeded the import, and in 1908 the imports were greater in quantity, but less in value, than the exports, while in 1917-18 the net export of eggs amounted to 6,965 dozen.

The number of eggs imported into the Commonwealth since 1913 amounted to 810,974 dozen. Of this number China has supplied 737,911 dozen; Japan, 30,230 dozen; United States of America, 19,502 dozen; Straits Settlements, 18,630 dozen; and United Kingdom, 2,171 dozen.

There is at present only a small oversea trade in either live or frozen poultry, the values of the net exports during 1917-18 being £440 and £3,510 respectively.

IMPORTS, EXPORTS, AND NET EXPORTS OF EGGS AND OF LIVE AND FROZEN POULTRY, COMMONWEALTH, 1913 TO 1917-18.

Particulars.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
Eggs.					
Imports doz.	53,577	63,065	649,399	35,762	9,171
„ £	1,748	2,431	27,791	1,485	434
Exports doz.	4,872	12,119	3,541	8,651	16,136
„ £	377	735	262	585	1,462
Net Exports .. doz.	- 48,705	- 50,946	- 645,858	- 27,111	6,965
„ £	- 1,371	- 1,696	- 27,529	- 960	1,028
EGG CONTENTS.					
Imports lbs.	13,712	9,665	37,421	20,452	8,669
„ £	1,110	1,138	4,486	3,480	1,708
Exports lbs.	a	a	a	a	a
„ £	15	31	481	14,259	1,508
Net Exports .. lbs.	a	a	a	a	a
„ £	- 1,095	- 1,107	- 4,005	10,779	- 200
LIVE POULTRY.					
Imports No.	1,725	1,262	931	480	753
„ £	913	1,857	1,107	1,127	383
Exports No.	2,480	1,164	1,959	3,105	988
„ £	1,074	603	781	3,523	823
Net Exports .. No.	755	- 98	1,028	2,625	235
„ £	161	- 1,254	- 326	2,396	440
FROZEN POULTRY.					
Imports lbs.	10,328	1,193	6,643	3,096	931
„ £	475	53	293	137	39
Exports pair	25,520	14,765	2,155	5,400	6,541
„ £	10,979	12,496	1,050	3,904	3,549
Net Exports .. a	a	a	a	a	a
„ £	10,504	12,443	757	3,767	3,510

Note.—The minus sign (-) signifies net imports. a Quantity not available.

§ 5. Bee Farming.

1. **The Bee-farming Industry.**—Bee farming, like poultry farming, is ordinarily an adjunct to agricultural or dairying industries. The returns of honey from productive hives during 1917-18 gave an average of 76 lbs. per hive, while the average quantity of wax was a little more than one pound per hive.

The value of the exports of honey from Australia during the five years ended 1916-17 amounted to £19,178, or an annual average of £3,836. This average was considerably exceeded in 1917-18, when the value of the exports equalled £79,225. It is believed that this export could be considerably increased. Australian honey exhibited at the Franco-British Exhibition in London in 1908 obtained the highest award.

2. *Production of Honey and Beeswax.*—The particulars of honey and beeswax production are as given in the following table :—

**NUMBER OF HIVES AND PRODUCTION OF HONEY AND BEESWAX,
SEASON 1917-18.**

State.	Bee Hives.			Honey Produced.		Beeswax Produced.	
	Pro- ductive.	Unpro- ductive.	Total.	Quantity.	Value.	Quantity.	Value.
	No.	No.	No.	lbs.	£	lbs.	£
New South Wales ..	50,563	10,314	60,877	3,863,430	68,415	53,314	4,609
Victoria ..	50,315	7,831	58,146	4,974,888	88,097	64,980	6,769
Queensland ..	13,487	5,235	18,722	771,015	13,044	11,519	784
South Australia ..	21,952	2,490	24,442	1,279,433	25,322	12,942	971
Western Australia ..	6,618	1,284	7,902	358,019	4,878	5,459	365
Tasmania ..	6,323	1,419	7,742	124,482	4,150	2,857	214
Federal Territory ..	105	..	105	12,081	214	28	2
Commonwealth ..	149,363	28,573	177,936	11,383,348	204,120	151,099	13,714

QUANTITY OF HONEY AND BEESWAX PRODUCED, 1913-14 TO 1917-18.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Ter.	C'wealth.
HONEY.								
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1913-14	1,862,471	1,961,746	754,760	876,395	156,162	180,472	4,364	5,796,370
1914-15	1,138,925	700,672	542,679	1,033,556	344,054	37,858	4,680	3,802,424
1915-16	1,585,634	933,933	460,599	358,469	122,125	56,468	4,750	3,521,978
1916-17	1,660,518	1,547,023	352,099	961,723	184,910	84,121	4,780	4,795,174
1917-18	3,863,430	4,974,888	771,015	1,279,433	358,019	124,482	12,081	11,383,348
BEESWAX.								
1913-14	39,060	37,323	12,059	11,607	3,910	4,630	184	108,773
1914-15	26,483	20,017	10,859	14,365	5,471	1,354	193	78,742
1915-16	29,874	18,707	8,890	7,410	4,584	1,397	45	70,907
1916-17	29,387	22,131	7,042	9,793	3,985	2,059	47	74,444
1917-18	53,314	64,980	11,519	12,942	5,459	2,857	28	151,099

The quantity of honey and beeswax produced from year to year naturally varies considerably according to the conditions of the seasons. During the last five years New South Wales has produced 10,110,978 lbs. of honey and 178,118 lbs. of beeswax, while the Victorian figures amounted to 10,118,262 lbs. and 163,158 lbs. respectively for honey and beeswax. These two States together accounted for 69 per cent. of the total production of honey, and 70 per cent. of that of beeswax. The States following next in order of importance were South Australia, Queensland, and Western Australia.

400 SUMMARY OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS.

3. Oversea Trade in Bee Products.—In normal years honey is produced in the Commonwealth in sufficient quantities to supply all local requirements, and a considerable quantity is sent oversea. The more general use of frame hives in recent years has affected the production of wax, and as a result the quantity imported has exceeded that exported during each of the past four years.

IMPORTS, EXPORTS, AND NET EXPORTS OF HONEY AND BEESWAX, COMMONWEALTH, 1913 TO 1917-18.

Particulars.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
HONEY.					
Imports lbs.	636	1,790	59,324	491	382
" £	19	51	692	18	12
Exports lbs.	284,322	151,405	25,162	333,407	3,199,691
" £	4,094	2,589	1,045	9,526	79,225
Net Exports .. lbs.	283,686	149,615	- 34,162	332,916	3,199,309
" £	4,075	2,538	353	9,508	79,213
BEESWAX.					
Imports lbs.	6,059	13,048	38,807	19,195	54,686
" £	480	1,013	2,868	1,544	4,842
Exports lbs.	10,455	2,173	3,506	7,234	1,471
" £	657	154	234	548	134
Net Exports .. lbs.	4,396	- 10,875	- 35,301	- 11,961	- 53,215
" £	177	- 859	- 2,634	- 996	- 4,708

Note.—The minus sign (-) signifies net imports.

Of the exports of honey in 1917-18 the United Kingdom took 2,160,624 lbs., while 809,175 lbs. were sent to the United States of America.

§ 6. Summary of Australian Farmyard and Dairy Products.

The value of the principal farmyard and dairy products raised in the Commonwealth in 1917 was as follows :—

VALUE OF THE PRINCIPAL FARMYARD AND DAIRY PRODUCTS RAISED IN THE COMMONWEALTH DURING THE YEAR 1917.

Produce.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Ter.	C'wealth.
	£	£	£	£	£	£	£	£	£
Milk, consumed as such.. ..	2,224,444	1,427,328	392,118	255,145	178,523	83,443	417	4,794	4,566,212
Butter.. ..	5,468,056	4,228,878	2,672,801	698,088	95,061	325,649	..	529	13,489,062
Cheese.. ..	301,614	197,725	412,588	83,175	3	24,998	..	..	1,020,103
Condensed and concentrated milk	206,250	972,648	243,842	..	..	..	..	..	1,422,740
Bacon and ham..	912,583	1,048,792	779,178	285,706	122,864	60,835	..	546	3,210,504
Poultry and eggs	2,079,000	2,160,650	295,882	669,105	188,982	250,000	..	3,000	5,646,619
Honey and wax..	73,024	94,866	13,828	26,293	5,243	4,364	..	216	217,834

§ 7. Summary of Australian Farmyard and Dairy Products Exported, 1913 to 1917-18.

The quantities and values of Australian farmyard and dairy products exported from the Commonwealth during each of the last five years are shewn below :—

QUANTITIES OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1913 TO 1917-18.

Products.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
Beeswax lbs.	10,455	2,173	3,506	7,234	1,450
Butter "	75,795,642	54,021,523	16,722,010	74,878,634	72,277,526
Cheese "	1,602,809	2,542,478	128,229	10,569,279	8,426,641
Egg albumen and yolk "	a	a	a	a	a
Eggs doz.	4,872	12,119	3,469	8,386	15,922
Feathers, undressed "	a	a	a	a	a
Honey lbs.	284,322	151,381	25,162	333,407	3,199,691
Lard "	4,279,440	1,487,536	342,569	1,681,918	1,465,352
Meats—					
Bacon and ham "	1,846,966	1,219,103	556,251	1,005,171	5,067,946
Frozen poultry pair	25,520	14,765	2,131	5,400	6,541
Frozen pork lbs.	215,175	48,791	2,733	32,681	262,503
Milk, concentrated and preserved "	2,779,963	4,907,395	708,643	15,777,333	25,581,708
Pigs, living No.	440	168	64	19	36
Poultry, living "	2,480	1,154	1,939	3,105	983

a Quantity not available.

VALUE OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING THE YEARS 1913 TO 1917-18.

Products.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Beeswax "	657	154	234	548	133
Butter "	3,564,925	2,659,030	1,022,742	5,301,273	4,904,417
Cheese "	42,030	72,527	7,915	419,628	350,791
Egg albumen and yolk "	3	735	4	8,327	854
Eggs "	377	735	259	573	1,450
Feathers, undressed "	1,576	607	45	..	..
Honey "	4,094	2,588	1,045	9,526	79,225
Lard "	84,737	31,433	13,735	56,126	56,292
Meats—					
Bacon and ham "	73,982	58,823	33,583	60,358	321,573
Frozen poultry "	10,979	12,496	1,033	3,904	3,649
Frozen pork "	5,259	1,400	108	1,341	11,915
Milk, concentrated and preserved "	72,950	122,613	24,589	531,976	1,025,895
Pigs, living "	1,336	511	52	146	209
Poultry, living "	1,074	591	766	3,523	819
Total "	3,863,979	2,963,508	1,106,640	6,397,249	6,757,122

§ 8. British Imports of Dairy Products.

1. Value of Britain's Imports of Dairy Products.—In the following table are given the values of the principal dairy products imported into the United Kingdom during the years 1913 to 1917 :—

PRINCIPAL DAIRY PRODUCTS IMPORTED INTO THE UNITED KINGDOM, 1913 TO 1917.

Products.	1913.	1914.	1915.	1916.	1917.
	£	£	£	£	£
Butter "	24,083,658	24,014,276	27,022,745	18,964,002	18,895,707
Cheese "	7,035,039	7,966,162	11,107,100	12,945,765	19,462,390
Bacon and ham "	20,497,132	21,288,646	30,721,776	41,223,147	48,769,759
Pork "	1,665,495	2,663,199	1,010,284	1,303,117	899,346

2. **Butter.**—Australia in 1911 and 1917 stood second, in 1912, 1913, 1914, and 1916 third, and in 1915 fourth, in regard to value of butter imported into the United Kingdom ; but the import of other Australian dairy products was inconsiderable.

IMPORTS OF BUTTER INTO THE UNITED KINGDOM, 1917.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	Cwt.	£		Cwt.	£
Denmark ..	622,160	7,032,600	Iceland and Greenland ..	17	178
Australia ..	529,809	5,213,397	Norway ..	1	9
New Zealand ..	310,925	3,195,608	Foreign Countries n.e.i. ..	16	164
Argentine Republic	142,300	1,407,846	British Possessions n.e.i. ..	2	15
Netherlands ..	75,880	762,958			
France ..	45,707	500,145			
Canada ..	33,057	343,086			
Union of S. Africa	32,526	306,098			
United States ..	10,534	106,084			
British India ..	3,582	27,519			
			Total ..	1,806,516	18,895,707

In January, 1910, the average price of Australian butter in London was 111s. After a fall in 1911, 134s. was reached in the middle of January, 1912. This high average was followed by a rapid decline. Higher prices were again in evidence as 1913 advanced, 128s. being obtained for best unsalted butter in October and November of that year ; from that time till the middle of 1914 prices gradually fell to 108s., when an upward movement commenced, which continued through the latter half of 1914 and, with slight variation, throughout 1915 ; in December of that year 168s. was obtained for best unsalted. A slight fall in January, 1916, was followed by a gradual rise throughout the year, 210s. being obtained for best unsalted in December. Quotations for London prices are only available to end of August, 1917, on which date best Australian butter was listed at 212s. per cwt. At the commencement of March in the same year the price was 220s., this being the highest recorded price for Australian butter. Prices in London during the last nine years have been considerably higher than the average of any previous year since the Australian export trade was instituted over twenty years ago. A marked approach to Danish values has lately been made in the prices of Australian butter, Danish choice at the close of 1916 being 224s., or only three halfpence per pound over Australian.

3. **Cheese.**—The value of the United Kingdom cheese imports in 1917 was £19,462,390, of which eleven and a half million pounds' worth was received from Canada, and four million pounds' worth from New Zealand. Small experimental shipments from Australia were made in 1908 and following years, fair prices being realised. The value of the imports from Australia has increased from £24,568 in 1913 to £482,327 in 1917.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1917 at £48,769,759, the United Kingdom received imports to the value of £7,767,592 from Denmark ; £28,072,659 from the United States ; and £11,623,199 from Canada. The import from Australia was small, experimental shipments only having been made during recent years.

5. **Pork.**—The total value of the United Kingdom imports of pork (including refrigerated, frozen, and salted) was £899,346 in 1917. There was no import from Australia, the chief supplying country being the United States, £707,111.

6. **Other Products.**—There is practically no United Kingdom import from Australia of honey, beeswax, poultry, game, or eggs, but lard to the value of £47,447, and frozen rabbits to the value of £609,562 were received from the Commonwealth in 1917.

§ 9. Graphical Representation of Dairy Production.

Two graphs shewing respectively the development in dairy production and in the exports of butter will be found on page 316.

SECTION X.

FORESTS, FORESTRY, AND FORESTAL PRODUCTS.

§ 1. The Forests of Australia.

1. *Extent of Forests.*—Although no definite survey of forest lands has been made on a uniform basis for the different States of Australia, the following table gives the results of careful estimates made for each State :—

FOREST RESERVES AND FOREST AREAS, STATE AND COMMONWEALTH, 1917.

State.	Area of Forest Reserves.		Total Forest Area.	Percentage of State Area.		Percentage of Commonwealth Area.	
	Permanent.	Temporary.		Specially Reserved.	Total Forest.	Specially Reserved.	Total Forest.
	(a)	(b)					
	Acres.	Acres.	Acres.	%	%	%	%
c New South Wales	7,039,074		15,000,000	3.55	7.57	0.37	0.79
Victoria ..	4,149,035	125,500	11,800,000	7.60	20.98	0.22	0.62
Queensland ..	1,142,885	2,804,967	40,000,000	0.92	9.32	0.21	2.10
South Australia	135,935	18,704	3,800,000	0.03	1.56	0.01	0.20
Western Australia	10,008	1,611,698	20,400,000 ^(d)	0.26	3.27	0.09	1.07
Tasmania ..	..	1,028,000	11,000,000	6.13	65.56	0.05	0.58
(e) Commonwealth	18,065,806		102,000,000	..	..	0.95	5.36

(a) Reservations in perpetuity. (b) Reservations which may be cancelled at any time.
(c) Inclusive of Federal Area. (d) S.W. Division only. (e) Exclusive of Northern Territory and portion of Western Australia.

In the case of Victoria, the figures for area of permanent reserves include 3,381,905 acres reducible only by Act of Parliament, and 746,401 acres by resolution of both Houses of Parliament.

The actual area of wooded land is probably in all cases much greater than shewn above. For example, that of Western Australia is estimated at 97,900,000 acres; Queensland has probably 143,000,000 acres; and Victoria has a considerable extent of "Mallee" country not included in the above estimate. The basis of estimation for each State in any case cannot be regarded as quite identical. Considerable areas not included as forest lands possess timber of local value.

The absolute and relative forest areas of Australia and other countries, to the latest available date, are shewn in the table on the next page.

RELATIVE AREAS OF FOREST LANDS, AUSTRALIA AND OTHER COUNTRIES.(a)

Country.	Total Wooded Area.	Per-centage of Total Area.	Country.	Total Wooded Area.	Per-centage of Total Area.
	Sq. Miles.	%		Sq. Miles.	%
Australia	159,375	5.36	Rumania	10,836	21.36
New Zealand	26,562	25.63	Sweden	90,241	52.20
United Kingdom	4,740	3.82	Norway	26,685	21.50
France	38,620	18.65	Russia in Europe	859,375	39.00
Algeria	10,249	2.98	United States	860,000	24.08
Germany	54,015	25.90	Canada	625,000	17.34
Switzerland	3,290	20.60	Cape of Good Hope	537	0.19
Italy	17,613	15.92	British India	249,867	22.85
Austria	37,700	31.66	Japan	71,890	48.33
Hungary	34,750	29.30			

(a) Areas as before the war.

2. **Distribution of Timber.**—The characteristics of the forest areas are given in some detail for each State in Official Year Book No. 6, pp. 446–9. The more conspicuous timber regions of Australia as a whole are the eastern and southern portions, including Tasmania, and, again, the south-western portion northwards and eastwards from Cape Leeuwin. In regard to distribution, on the eastern side of the continent the largest timber is found on the crests and coastal slopes of the mountain ranges, but in the south-west, in addition to the vegetation between mountains and sea, a large area of forest stretches inland from the coastal ranges. The hills encircling Adelaide and Yorke and Eyre Peninsulas also bear good forest. The Kimberley district is timbered, and in the Northern Territory and round the shores of the Gulf of Carpentaria there are considerable forest areas. In the coastal regions of parts of West and North-West Australia, and along the shores of the Great Australian Bight and Encounter Bay, there is little forest. The areas in the centre of the continent are thinly timbered.

Special articles relating to Australian Eucalyptus timbers will be found in Official Year Book No. 10, pp. 85–98.

§ 2. Forestry.

1. **Objects.**—Economic forestry, aiming at the conservation of forestal wealth by safeguarding forests against inconsiderate destruction, and by the suitable re-afforestation of denuded areas, is essential to the preservation of industries dependent upon an adequate supply of timber, and to the perpetuation of a necessary form of national wealth. Though in Australia large areas of virgin forests still remain, the inroads made by timber getters, by agriculturists, and by pastoralists—who have destroyed large areas by “ring-barking”—are considerable; and it is not unlikely that climatological changes are caused thereby. It is stated that beneficial consequences follow on the planting of trees on denuded lands, or along eroding coasts, and that a forest covering beneficially regulates the effects of rainfall.

Successful planting of exotics in various parts of the Commonwealth has demonstrated that the Australian climate is suitable for the cultivation of a large number of the most valuable and beautiful of the world's timber trees.

2. **Forestry Departments.**—Each State of the Commonwealth has organised a separate forestry department or branch of service specially charged with forestal matters. Forest improvement work is carried on, areas of young forest being cleaned up by the felling and removal of stunted, diseased and suppressed growth, the burning of debris and the making of fire breaks. Provision is made for effective patrols in forest districts to check the ravages caused by fires, often due, it is believed, to carelessness.

3. **Sylvicultural Nurseries and Plantations.**—Recognition of the necessity for systematic sylviculture has led to the creation in most of the States of a number of sylvicultural nurseries and plantations. The locality of these establishments, together with a brief statement of the nature of their activities, is given in previous issues of the Year Book. (Reference may be made to Official Year Book No. 6, pp. 451-3.) Details regarding forest nurseries and plantations are as follows:—

FOREST NURSERIES AND PLANTATIONS, 1917.

Particulars.	New South Wales. (a)	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
State Forest Nurseries—							
Number	5	4	3	7	1	1	21
Area .. (acres)	28	49	15	7	17	20	136
Plantations—							
Number	7	19	3	..	2	..	31
Area	1,072	20,740	100	..	594	..	22,506
Number of persons employed in Forestry Departments—							
Administrative	39	11	3	1	1	1	56
Professional	13	4	2	1	1	2	23
General	136	124	35	130	40	7	472

(a) Including Federal Territory Area.

4. **Revenue and Expenditure.**—The revenue and expenditure of the State Forestry Departments from 1913-14 to 1917-18 are given below:—

REVENUE OF STATE FORESTRY DEPARTMENTS, 1913-14 TO 1917-18.

State.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
New South Wales	99,333	87,386	68,107	67,273	70,969
Victoria	57,746	70,834	59,189	50,615	55,917
Queensland	62,973	75,318	70,691	60,865	66,660
South Australia	6,868	5,588	5,081	10,259	14,279
Western Australia	48,236	53,904	45,726	19,058	23,866
Tasmania	4,659	4,224	3,615	3,860	3,860
Commonwealth	279,815	297,254	253,309	211,930	235,582(a)

(a) Including Northern Territory, £31.

EXPENDITURE OF STATE FORESTRY DEPARTMENTS, 1913-14 TO 1917-18.

State.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
New South Wales	44,828	47,207	50,531	73,762	77,688
Victoria	58,007	65,219	65,142	53,551	68,557
Queensland	7,386	7,654	7,416	9,516	13,930
South Australia	22,832	24,217	24,892	22,571	21,381
Western Australia	11,463	12,068	8,870	9,807	10,363
Tasmania	760	1,204	683	682	1,204
Commonwealth	145,276	157,569	157,534	169,889	193,123

5. **Instruction in Scientific Forestry.**—Several schools have been established in which, while general scientific instruction is imparted, special attention is paid to forestry. In the classes, theoretical forestry, botany, geology, physics, land surveying, etc., are taught; while in outside work trainees receive practical instruction in the preparation of seed-beds, seed-sowing, propagation, planting out, pruning, the general care and improvement of plantations and natural forests, and the employment of timber to the best advantage. The desire is to give the prospective forester a thorough training in all branches of the work. Courses of lectures are also given at various centres, and, at some of the higher technical schools, members of the forest staffs are afforded opportunities of qualifying in special subjects. Methods of training, etc., are not uniform in the various States, and one of the prime objects of the Conference of 1916 was the evolution of a system which, while aiming at uniformity, would be sufficiently elastic to provide for special needs in any State.

6. **Forest Congresses.**—Interstate Conferences on Forestry were held in 1911 and 1912, chiefly with a view of securing uniformity of management. An International Forest Congress was held at Paris in June, 1913, when Professor Percy Groom, of South Kensington Imperial College, represented the Commonwealth Government. The papers and reports dealt chiefly with the threatened shortage of timber, and the measures necessary to avert the danger. Interstate Forestry Conferences were held at Adelaide in May, 1916, and at Perth in November, 1917.

§ 3. Commercial Uses of Principal Australian Timbers.

1. **General.**—The uses of the more important of Australian timbers are many and various, and are indicated in previous issues of this work. (See Official Year Book No. 6, pp. 454-6; and Official Year Book No. 10, Section III., § 7 and 8.)

The Commonwealth Government is experimenting with Australian woods for rifle stocks, telephone switch boards, aeroplane parts, etc. Queensland maple (*Flindersia chatawaiana*) is at present largely used for rifle stocks, and supplies of coachwood are being accumulated at Lithgow for the same purpose. Money has also been made available for the seasoning and storing of Australian timber, and depots have been established at Canberra and Newington in New South Wales, and at Maribyrnong in Victoria. Timber seasoning depots have also been established by State Governments at the principal centres, and from these, contractors may obtain timber at scheduled rates. Other timber seasoning works have been established by private enterprise.

2. **Uniformity in Nomenclature.**—Unfortunately the vernacular names applied to the gums, ironbarks, etc., in the various States, and even in different parts of the same State, do not always refer to identical timbers. The resulting confusion has not only been productive of loss, but it has, to some extent, prejudicially affected the timber trade. This subject is referred to at some length in the special article, "Australian Eucalyptus Timbers," in Section III., § 7 and 8, in Official Year Book No. 10. At the 1916 Forestry Conference alluded to above, the matter came up for special consideration, and a resolution was passed affirming the desirability of establishing a uniform nomenclature. It was further resolved that committees should be appointed in each State to take the necessary steps to give practical effect to that resolution.

§ 4. Forestal Industries and Production.

1. **Timber.**—Estimates of the quantity and value of local timber sawn and hewn in each State are given hereunder:—

QUANTITIES OF LOCAL TIMBER SAWN OR HEWN IN EACH STATE OF THE COMMONWEALTH DURING THE YEARS 1913 TO 1917.

State.	1913.	1914.	1915.	1916.	1917.
	sup. feet.	sup. feet.	sup. feet.	sup. feet.	sup. feet.
New South Wales	164,899,000	164,899,000 ^a	140,940,000 ^b	115,201,000 ^b	125,243,000 ^b
Victoria	81,770,000	84,374,000	62,589,000	62,589,000 ^a	70,038,000
Queensland	156,634,000	168,456,000	144,950,000	121,850,000	111,663,000
South Australia	2,342,000	2,617,000	2,348,000	2,348,000 ^a	3,729,000 ^b
Western Australia	218,908,000	227,297,000	123,494,000	100,356,000	85,218,000
Tasmania	60,780,000	52,182,000	47,890,000	52,019,000	44,986,000
Commonwealth	685,333,000	699,825,000	522,211,000	454,363,000	440,952,000 ^c

(a) Figures for previous year. (b) Year ended 30th June. (c) Including Northern Territory, 75,000 sup. feet.

2. **Other Forest Produce.**—(i) *General.* No satisfactory estimates of the total value of forest production are available. Large returns are credited to firewood, but these are subject to a wide range of uncertainty.

(ii) *Eucalyptus Oil.* A considerable quantity of eucalyptus oil is produced each year, chiefly in Victoria, the product being used as a drug and also in connection with ore flotation processes. Complete information regarding local production and consumption is not available. Oversea exports amounted in 1913 to £40,000, in 1914–15 to £21,000, in 1915–16 to £36,000, in 1916–17 to £60,000, and in 1917–18 to £77,000, the bulk of the product being forwarded to the United Kingdom. Large quantities have also been exported to the United States.

(iii) *Tan Barks.* In addition to the wattle bark, mentioned at the close of this section, a valuable tan bark is obtained from the mallet (*E. occidentalis*) of Western Australia. Its exploitation has, however, been so rapid that the available supply is now comparatively small.

§ 5. Oversea Trade.

1. **Imports.**—The quantity and value of timber imports during the four years 1914–15 to 1917–18 inclusive are shewn according to countries of origin in the following tables. The figures in the first table are exclusive of a few items such as veneers, etc. :—

IMPORTS OF DRESSED TIMBER, COMMONWEALTH, 1914–15 TO 1917–18.

Country of Origin.	Quantity.				Value.			
	1914–15.	1915–16.	1916–17.	1917–18.	1914–15.	1915–16.	1916–17.	1917–18.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	12,834	265	1,109	100	211	23	51	18
New Zealand	25,719	117,929	70,317	163,979	355	1,663	1,070	2,064
Other British Possessions .. .. .	.. .. .	78,622	22,230	40,975	.. .. .	718	252	461
Germany	447,678	.. .. .	.. .. .	.. .. .	3,383	.. .. .	.. .. .	.. .. .
Norway	40,289,602	16,858,100	3,245,724	400	334,459	145,895	32,711	2
Sweden	11,699,062	7,690,606	.. .. .	.. .. .	95,994	66,729	.. .. .	.. .. .
United States	1,438,799	717,003	481,603	107,323	14,628	7,295	8,023	2,658
Other Foreign Countries	4,530	2,711	20,727	10,838	132	73	398	207
Total	59,918,224	25,465,236	3,841,710	323,815	449,162	222,396	42,505	5,410

As the table shews, the bulk of the imports of dressed timbers came from Norway, Sweden (except war years), and the United States. Practically the whole of this timber consists of softwoods—deal and pine—used for lining, weatherboards, flooring, shelving, doors, box-making, etc.

**IMPORTS OF UNDRESSED TIMBER, INCLUDING LOGS, COMMONWEALTH,
1914-15 TO 1917-18.**

Country of Origin.	Quantity.				Value.			
	1914-15.	1915-16.	1916-17.	1917-18.	1914-15.	1915-16.	1916-17.	1917-18.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	236,396	91,707	56,459	6,144	2,238	1,336	438	116
Canada ..	1,484,840	73,166	752,571	11,737,562	5,368	532	4,479	74,959
India ..	858,999	831,939	228,601	109,486	26,550	17,924	6,618	5,113
New Zealand ..	71,000,372	75,138,381	77,557,033	69,305,936	469,063	479,454	536,608	571,599
Straits Settlements ..	194,255	217,450	282,300	254,325	1,182	1,203	1,586	2,211
Other British Possessions ..	50,273	8,719	766,230	275,623	558	158	4,135	1,339
Japan ..	12,576,157	12,796,031	7,178,349	1,988,267	64,713	83,876	115,930	40,843
Java ..	6,239	48,599	4,683	7,495	41	1,345	136	84
Norway ..	2,857,057	1,557,451	69,695	..	22,086	12,279	570	..
Russia ..	3,301,910	211,931	..	..	20,795	1,212	..	..
Sweden ..	2,276,154	1,653,468	36,500	..	19,108	14,119	604	..
United States ..	171,222,415	138,033,305	109,620,926	85,877,463	943,834	792,888	680,077	637,960
Other Foreign Countries ..	265,236	951,732	51,382	94,774	3,465	6,140	955	1,331
Total ..	266,330,303	231,613,879	196,604,729	169,657,075	1,579,001	1,412,466	1,352,136	1,335,555

By far the larger proportion of the undressed timber imports also consists of softwoods such as yellow pine, redwood, and oregon from the United States and Canada; kauri, rimu, and white pine from New Zealand; pine from Japan, and (prior to the war) red deals from Russia, Norway, and Sweden. Amongst the hardwoods imported the principal are oak from the United States and Japan, and teak from India.

2. Exports.—The quantity and value of undressed (sawn) timber exported from 1913 to 1917-18 are given below, the countries of destination being also shewn:—

EXPORTS OF UNDRESSED TIMBER (SAWN), COMMONWEALTH, 1913 TO 1917-18.

Country to which Exported.	Quantity. (a)					Value.				
	1913.	1914-15.	1915-16.	1916-17.	1917-18.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	£	£	£	£	£
United Kingdom	20,222	20,185	5,741	1,478	27	140,082	143,698	45,286	10,118	428
Canada ..	619	67	19	260	316	8,028	990	321	3,796	6,504
Union of S. Africa	33,793	34,403	23,100	11,944	6,154	233,782	241,139	162,788	83,598	43,012
Ceylon ..	1,926	5,307	30	5,444	..	12,923	36,142	203	36,041	..
Egypt ..	..	(b) 7	(b) 413	..	..	..	(b) 49	(b) 3,638	..	..
Fiji ..	1,421	1,534	780	839	916	12,939	17,238	5,830	8,415	12,614
India ..	23,960	13,130	..	..	..	160,577	87,260	..	..	2,310
Mauritius	235	655	655	..	277	1,587	4,366	4,368	..	..
New Zealand ..	38,586	25,517	15,912	12,666	5,993	278,975	202,398	140,507	109,323	63,802
Ocean Island ..	347	241	197	..	..	3,139	1,690	1,873	..	..
Papua ..	598	192	205	277	132	6,184	2,026	2,412	5,278	1,720
Straits Settlements	88	12	10	2	59	478	118	100	34	899
Other British Possessions	249	504	599	510	310	2,151	4,714	4,987	6,211	3,920
Argentine Republic	1,584	..	..	..	..	10,558	..	..	..	..
Belgium ..	2,429	202	..	..	..	17,146	1,378	..	..	..
China ..	1	2,582	..	..	..	2	17,764	..	..	..
Egypt ..	56	..	..	..	..	377	49	..	..	..
Germany ..	1,762	177	..	..	..	14,293	1,365	..	..	..
Japan ..	86	7	1	70	704	890	73	15	702	11,827
Kaiser Wilhelm L.	131	28	..	1	..	1,522	297	3	10	..
Marshall Islands	211	6	5	2	4	2,227	81	59	22	53
Bismarck Archipelago	..	282	41	188	99	5,100	3,258	580	2,024	1,378
New Caledonia ..	201	96	33	25	298	2,123	800	417	300	3,710
Philippine Islands	63	..	..	..	..	449	..	..	..	..
Portuguese E. Africa	3,106	24	606	..	..	21,775	239	4,039	..	..
U.S. of America ..	1,295	294	469	1,433	4,050	13,879	3,891	6,826	21,354	75,674
Uruguay ..	..	668	..	..	..	..	4,518	..	..	..
Other Foreign Countries	1,836	256	124	193	170	13,752	2,581	1,398	2,512	2,222
Total ..	134,805	106,376	48,940	35,332	19,509	964,938	778,122	385,650	289,738	230,073

(a) Exclusive of timber not measured in super. feet. (b) Previously included with foreign countries.

As the table shews, the bulk of the exports of undressed timber was consigned to South Africa, New Zealand, and (except for latest years) the United Kingdom, and consisted of Australian hardwoods, which have earned an excellent reputation for such purposes as railway sleepers, harbour works, wood paving, etc.

The quantities of timber imported and exported during the last five years are given in the next table:—

QUANTITIES OF TIMBER IMPORTED INTO AND EXPORTED FROM THE
COMMONWEALTH, 1913 TO 1917-18.

Description.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
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IMPORTS.

Veneers .. sup. feet	1,959,436	1,438,272	430,060	499,514	459,307
Dressed .. "	83,849,002	62,789,849	28,653,427	8,014,939	536,124
Undressed .. "	349,680,896	255,897,777	223,278,433	195,830,413	169,657,075
Logs .. "	23,437,906	10,432,526	8,335,446	774,316	278,320
Palings .. No.	..	..	..	..	..
Pickets .. "	2,302,748	923,155	808,342	611,399	688,822
Shingles .. "	1,526,994	1,067,060	2,677,620	2,083,408	2,391,326
Staves—					
Dressed, etc. .. "	..	73,609	67,380	12,764	8,964
Undressed .. "	3,639,969	2,535,831	591,750	152,283	575,300
Laths for blinds .. "	(a)	(a)	(a)	(a)	(a)
" other .. "	46,337,501	18,544,270	17,629,168	11,419,145	17,568,419
Spokes, rims, felloes .. "	(a)	(a)	(a)	(a)	(a)
Doors .. "	1,410	1,611	1,925	300	666
Architraves, mouldings, etc. .. lin. feet	80,398	2,313	6,202	..	..
Other .. "	(a)	(a)	(a)	(a)	(a)

EXPORTS.

Veneers .. "	..	..	..	..	..
Dressed .. sup. feet	716,621	742,844	498,074	322,058	297,341
Undressed .. "	134,805,222	106,375,692	48,939,938	35,332,403	19,807,434
Logs .. "	1,899,474	411,204	226,400	197,721	298,460
Palings .. No.	487,094	462,705	232,240	603,569	121,506
Pickets .. "	1,411	1,350	800	..	..
Shingles .. "	31,300	..	..	..	100,000
Staves—					
Dressed, etc. .. "	..	..	..	..	1,230
Undressed .. "	..	840	..	..	..
Laths for blinds .. "	(a)	(a)	(a)	(a)	(a)
" other .. "	7,190	284,521	111,600	63,000	92,160
Spokes, rims, felloes .. "	(a)	(a)	(a)	(a)	(a)
Doors .. "	(a)	(a)	(a)	(a)	(a)
Architraves, mouldings, etc. .. lin. feet	107,664	99,152	41,673	40,768	48,265
Other .. "	..	..	..	..	..

(a) Quantity not available.

QUANTITIES OF TIMBER IMPORTED AND EXPORTED, ETC.—*continued.*

Description.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
EXCESS OF IMPORTS OVER EXPORTS.					
Veneers .. sup. feet	1,959,436	1,438,272	430,060	499,514	459,307
Dressed	83,132,381	62,047,005	28,155,353	7,692,881	238,783
Undressed	214,875,674	149,522,085	174,338,495	160,498,010	149,849,641
Logs	21,538,432	10,021,322	8,109,046	576,595	- 20,140
Palings No.	- 487,094	- 462,705	- 232,240	- 603,569	- 121,506
Pickets	2,301,337	921,805	807,542	611,399	688,822
Shingles	1,495,694	1,067,060	2,677,620	2,083,408	2,291,326
Staves—					
Dressed, etc. ..	..	73,609	67,380	12,764	7,734
Undressed	3,639,969	2,534,991	591,750	152,283	575,300
Laths for blinds ..	(a)	(a)	(a)	(a)	(a)
" other	46,330,311	18,259,749	17,517,568	11,356,145	17,476,259
Spokes, rims, felloes ..	(a)	(a)	(a)	(a)	(a)
Doors	(a)	(a)	(a)	(a)	(a)
Architraves, mouldings, etc. .. lin. feet	- 27,266	- 96,839	- 35,471	- 40,768	- 48,265
Other	(a)	(a)	(a)	(a)	(a)

(a) Quantity not available. Note.—The minus sign (—) signifies excess of exports over imports.

The values of the timber imports and exports during the last quinquennium are shewn hereunder :—

VALUE OF TIMBER IMPORTED INTO AND EXPORTED FROM THE COMMONWEALTH, 1913 TO 1917-18.

Description.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
IMPORTS.					
Veneers	£ 55,374	£ 43,625	£ 20,610	£ 25,670	£ 21,613
Dressed	625,032	468,025	243,155	74,477	6,672
Undressed	2,036,330	1,534,188	1,383,140	1,346,497	1,335,555
Logs	121,261	44,813	29,326	5,639	2,173
Palings .. ..	..	..	..	..	..
Pickets	8,497	3,406	4,030	2,174	4,040
Shingles	2,208	1,654	3,487	3,132	4,569
Staves—					
Dressed, etc. ..	..	1,607	1,907	337	260
Undressed,	22,870	16,440	11,164	3,538	3,516
Laths for blinds ..	4	..	..	..	..
" other	40,131	24,676	14,809	9,230	20,729
Spokes, rims, felloes ..	13,993	21,228	11,239	6,001	6,008
Doors	445	591	910	103	201
Architraves, mouldings, etc. ..	250	31	22	..	..
Other	81	156	90	2,030	1,246
Total value ..	2,926,476	2,160,440	1,723,889	1,478,828	1,406,582

VALUE OF TIMBER IMPORTED AND EXPORTED, ETC.—*continued.*

Description.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
EXPORTS.					
	£	£	£	£	£
Veneers .. ..	..	..	..	..	..
Dressed	8,160	9,327	7,190	4,804	5,314
Undressed	964,938	778,073	385,650	289,738	232,418
Logs	25,325	4,020	1,716	1,648	2,345
Palings	2,688	2,403	1,225	4,176	889
Pickets	40	20	7	..	..
Shingles	42	..	..	..	139
Staves—					
Dressed, etc. ..	..	..	..	..	127
Undressed .. ..	..	22	..	..	..
Laths for blinds ..	297	367	152	29	..
" other	11	246	245	147	308
Spokes, rims, felloes ..	8,039	6,769	6,570	4,333	5,259
Doors	960	482	554	354	..
Architraves, mouldings, etc.	541	457	152	164	257
Other .. ..	..	..	..	..	..
Total value ..	1,011,041	802,186	403,461	305,393	247,056

EXCESS OF IMPORTS OVER EXPORTS.

Veneers	55,374	43,625	20,610	25,670	21,613
Dressed	616,872	458,698	235,965	69,673	1,358
Undressed	1,071,392	756,115	997,490	1,056,759	1,103,137
Logs	95,936	40,793	27,610	3,991	-172
Palings	-2,688	-2,403	-1,225	-4,176	-889
Pickets	8,457	3,386	4,023	2,174	4,040
Shingles	2,166	1,654	3,487	3,132	4,430
Staves—					
Dressed, etc. ..	..	1,607	1,907	337	133
Undressed	22,870	16,418	11,164	3,538	3,516
Laths for blinds ..	-293	-367	-152	-29	..
" other	40,120	24,430	14,564	9,083	20,421
Spokes, rims, felloes ..	5,954	14,459	4,669	1,668	749
Doors	-515	109	356	-251	201
Architraves, mouldings, etc.	-291	-426	-130	-164	-257
Other	81	156	90	2,030	1,246
Total value ..	1,915,435	1,349,212	1,320,428	1,173,435	1,159,526

Note.—The minus sign (—) signifies excess of exports over imports.

A fair amount of sandalwood is exported each year, principally from Western Australia, and to a smaller extent from Queensland. The largest proportion of this product is consigned to Hong Kong, China, and the Straits Settlements.

EXPORTS OF SANDALWOOD, 1913 TO 1917-18.

Country to which Exported.	Quantity.					Value.				
	1913.	1914-15.	1915-16.	1916-17.	1917-18.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
Hong Kong ..	91,054	93,600	96,949	130,314	102,325	41,476	48,338	51,087	71,460	76,093
Straits Settlements	17,835	15,985	10,620	10,308	19,576	5,931	9,854	6,410	6,504	12,236
Other British Possessions ..	10,760	11,333	8,576	7,100	2,000	4,560	6,428	4,602	4,429	1,275
China ..	13,540	50,845	18,850	9,660	14,785	5,593	27,544	9,316	5,554	9,857
Other Foreign Countries ..	486	386	120	120	1,842	387	273	78	102	4,481
Total ..	133,675	177,149	135,115	157,502	140,528	57,947	92,435	71,493	88,049	103,942

Tanning bark figures both as an export and import in the Commonwealth trade returns, as the following tables shew :—

EXPORTS OF TANNING BARK, 1913 TO 1917-18.

Country to which Exported.	Quantity.					Value.				
	1913.	1914-15.	1915-16.	1916-17.	1917-18.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom	3,078	218	3,018	6,797	..	1,010	102	1,434	3,103	..
New Zealand ..	45,013	57,873	51,138	41,098	95,192	20,559	24,604	23,574	20,703	45,007
Other British Possessions ..	621	1,006	714	205	208	307	382	371	107	72
Belgium ..	36,250	7,256	..	..	..	14,281	2,688	..	..	..
Germany ..	58,011	3,256	..	..	..	23,853	1,109	..	..	..
Other Foreign Countries ..	1,379	8,049	39,598	11,199	1,745	601	3,140	16,354	5,001	611
Total ..	144,352	77,658	94,468	59,299	97,145	60,411	32,025	41,733	28,914	45,690

Prior to the war there was a fairly considerable export of tan bark to Germany and also to Belgium. The exports westward have naturally dwindled away, and at the present time New Zealand receives the largest share of the available export, while there is an increasing trade with Japan and Java. During recent years the largest proportion of the exports consisted of wattle bark from Tasmania and Victoria.

A comparison of the imports and exports of tanning bark during the last five years is given in the next table :—

TANNING BARK IMPORTED INTO AND EXPORTED FROM THE COMMONWEALTH, 1913 TO 1917-18.

Particulars.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
QUANTITIES—	cwt.	cwt.	cwt.	cwt.	cwt.
Imports	77,689	66,136	122,188	148,206	71,133
Exports	144,352	77,658	94,468	59,299	97,145
Excess of exports over imports	66,663	11,522	-27,720	-88,907	26,012
VALUES—	£	£	£	£	£
Imports	27,987	24,924	47,698	51,461	24,711
Exports	60,411	32,025	41,733	28,914	45,690
Excess of exports over imports	32,424	7,101	-5,965	-22,547	20,979

Note.—The minus sign (—) denotes excess of imports.

The imports consist almost exclusively of wattle bark from the plantations in South Africa. One variety of Australian wattle was found to flourish in the sandy belts near the coast, but it is the *Acacia decurrens*, var. *mollis*, which is chiefly relied upon for the production of wattle bark in the South African plantations. Seed has been tried from New South Wales, Tasmania, and Victoria, but it is stated that most of the seed is obtained from the best wattle bark areas in eastern Tasmania and western Victoria.

Two reasons have been given to account for the success of the industry in South Africa. (i) It was found that the treeless, grassy highlands of Natal were specially suitable for wattle culture, and the trees could therefore be grown in rows and economically attended to, while the necessary bark sheds and other appurtenances could be placed in the most advantageous positions. (ii) There was an abundance of cheap and efficient Hindoo labour available for employment on the plantations.

SECTION XI.

FISHERIES AND PISCICULTURE.

§ 1. Commercial Fisheries.

1. **Fish Stocks.**—Australasia possesses an abundant and varied fish fauna, which embraces both tropical and temperate varieties and includes destructive as well as valuable species. In rivers and lakes both indigenous and imported varieties thrive. The latter have been introduced and acclimatised for industrial and sporting purposes by Governments and angling societies. Exploitation of the fishing areas—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is, where necessary, expressly forbidden; proclaimed localities are closed against net-fishing, and a minimum size of mesh for nets is fixed. The sea-fishermen in some districts have made regulations in their own interests for the purpose of controlling the market supply, and these they rigorously observe.

2. **Economic Fisheries.**—Although Australia's food fishes are abundant, the development of the industry has been slow. It has been authoritatively stated that the marine fisheries, properly fostered, will develop into an industry of national importance. Local catches of lake and river fishes furnish, in the aggregate, a not inconsiderable amount of food supply. (See also § 5 and 6 hereinafter.)

3. **Distribution of Supplies.**—Present methods of distribution impose serious difficulties on the development of fishing generally, since there is a wide divergence between the price paid by the consumer and the return received by the producer. States and municipalities are interesting themselves in the direction of more economic distribution. Good markets are assured in the chief cities for regular deliveries of fresh fish. (See also § 5 and 6 hereinafter.)

4. **Oyster Fisheries.**—Natural oyster beds, whose ample product is of excellent quality, exist on the foreshores in the shallow waters of inlets and estuaries in several parts of Australia. By husbanding the natural crop, and by judicious transplanting, the oyster output has been very materially augmented, and it is believed that there is a great future for the industry. The areas are leased by the Government to private persons, lengths of foreshore being taken up and profitably exploited. In New South Wales and Queensland particularly, the industry has developed; and small yields have been obtained in South Australia and Victoria.

5. **Pearl-shelling, Bêche-de-Mer, etc.**—(i) *General.* Pearl-shelling is carried on in the tropical districts of Queensland, the Northern Territory, and Western Australia. The pearl oyster inhabits the northern and western coastal waters from Cape York to Shark Bay, a length of shore of over 2,000 miles. The shells are marketed in considerable quantities, and pearls also are obtained in Queensland and Western Australia. The fishing is generally conducted with the aid of diving apparatus, in water varying from 4 to 20 fathoms in depth. In Queensland and the Northern Territory the bêche-de-mer

industry is carried on, and tortoise-shell is obtained on the coasts. Experiments have been made in cultivating the pearl oyster on suitable banks. During the year 1917-18 there were twenty boats engaged in pearl-shelling in the Northern Territory, and the pearl-shell obtained was returned as 912 cwt., valued at £6,319. Bêche-de-mer valued at £3,529 was also raised during the same year. In October, 1911, a pearl weighing 178 grains, and valued at £3,000, was obtained at Broome. Further details regarding pearl-shelling are given in Official Year Book No. 6, p. 463. Trochus-shell to the value of £12,000, £23,000, and £21,800 was raised in Queensland during 1915, 1916, and 1917 respectively.

(ii) *Royal Commission on Pearl-shelling Industry.* In accordance with the "White Australia" policy, it was originally determined that the employment of Asiatic labour in the pearl-shelling industry should be restricted, and ultimately cease, and it was proposed that after 31st December, 1913, permits to indent Asiatics for the pearling fleet should no longer be issued. In view, however, of the disorganisation of the industry occasioned by the war, the time was extended to the 30th June, 1918, after which date permits to introduce Asiatic labour were to be granted only in cases where the diver and tender of a boat were Europeans. Since the receipt of the Report of the Royal Commission, referred to hereunder, this proviso was, however, revoked. In March, 1912, a Royal Commission to inquire into the pearling industry was appointed by the Commonwealth Government, and after visits to the Queensland and Western Australian waters, various sittings, and the issue of a progress report, presented its final report in 1916. The Commissioners stated that, while it may be practicable, they did not consider it desirable or profitable to attempt by any drastic methods to transfer the industry from Asiatics to Europeans. They further stated that, while the labour now employed is almost entirely Asiatic, they did not consider that the "White Australia" policy would be weakened or imperilled by allowing the industry to continue as at present conducted.

§ 2. Fisheries Statistics.

1. *Estimates for the Commonwealth.*—The returns given below have been furnished by the State departments. Estimates and approximations, where shewn, are official. The data do not generally lend themselves to presentation on a uniform scheme, but the principal facts have as far as possible been compiled for the Commonwealth.

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS, PEARL-SHELL, AND BÊCHE-DE-MER), COMMONWEALTH, 1917.

State.	No. of Boats Engaged.	Value of Boats and Equipment.	No. of Men Employed.	Total Take of—		Value of Take.	
				Fish.	Lobsters.	Fish.	Lobsters.
				cwt.	doz.	£	£
New South Wales ..	898	52,278	3,126	173,470 ^b	8,546 ^c	243,062 ^b	6,410
Victoria ..	789	68,412	992	92,019	15,305	121,148	8,381
Queensland ..	540	26,756	1,064	47,298	..	64,660	..
South Australia ..	925	55,500	1,073	129,000	9,000 ^e	225,000	12,000
Western Australia	246	19,658	506	21,142	3,624	38,356	1,812
Tasmania (a) ..	..	..	..	..	..	..	..
Northern Territory	3	200	12	910	..	3,492	..
Commonwealth (d)	3,401	222,804	6,773	463,839	(a)	695,718	28,603

(a) Not available. (b) Including 14,789 cwt. fish, valued at £27,606, obtained by State trawlers.
(c) Also 818 baskets crabs, value £614. (d) Exclusive of Tasmania. (e) Cwt.

The available returns from the Commonwealth oyster fisheries appear in the next table. Edible oysters are not found in Western Australia. There is no information available in regard to the small consumption of local oysters in Tasmania.

EDIBLE OYSTER FISHERIES, COMMONWEALTH, 1917.

State.	Number of Boats Engaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Number of Leases.	Oysters Taken.	
					Quantity.	Value.
	No.	£	No.	No.	cwt.	£
New South Wales	408	13,487	400	3,181	36,860	52,928
Victoria	77	4,270	109	1	13,155	7,894
Queensland	91	9,603	129	638	24,048	25,353
South Australia	1	200	2	..	250	375
Western Australia .. ..	..	..	..	..	..	..
Tasmania .. ..	..	..	..	..	..	..
Northern Territory .. ..	..	..	..	..	..	..
Commonwealth	577	27,560	640	3,820	74,313	86,550

The pearling industry is carried on in the tropical waters of Queensland, Western Australia, and the Northern Territory. During the last few years the return from the pearling industry has been adversely affected by labour conditions, coupled with the restriction in the market consequent on the war. Some of the pearling fleets have transferred their operations to Dutch waters. Bêche-de-mer is obtained in Queensland and the Northern Territory, the product being exported to China.

PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES, COMMONWEALTH, 1917.

State.	Number of Boats En-gaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Quantity of Pearl-shell obtained.	Value of Pearl-shell obtained.	Value of Pearls obtained.	Value of Bêche-de-mer obtained.	Value of Tor-toise-shell obtained.
	No.	£	No.	Tons.	£	£	£	£
New South Wales .. ..	..	..	..	..	..	..	..	..
Victoria .. ..	..	..	..	..	..	..	..	..
Queensland (a)	126	63,000	1,098	155	21,000	572	39,305	278
South Australia .. ..	..	..	..	..	..	..	..	..
Western Australia	317	129,160	2,349	2,007	238,344	38,761	..	..
Tasmania .. ..	..	..	..	..	..	..	..	..
Northern Territory	28	6,750	168	30	4,951	..	2,759	100
Commonwealth	471	198,910	3,615	2,192	264,295	39,333	42,064	378

(a) Also trochus-shell to the value of £21,800.

For obvious reasons the returns in regard to the value of pearls obtained can be regarded as rough approximations only. The next table gives the revenue from fisheries in each State.

PUBLIC REVENUE FROM FISHERIES, COMMONWEALTH, 1917.

State.	Licenses.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ..	1,385	7,837	243	361	9,826
Victoria.. ..	450	1	110	10	571
Queensland ..	2,164	3,515	5	..	5,684
South Australia ..	389	..	..	..	389
Western Australia ..	4,091	1,067	..	557	5,715
Tasmania (a) ..	547	..	..	55	602
Northern Territory ..	54	..	..	16	70
Commonwealth ..	9,080	12,420	358	999	22,857

(a) Returns incomplete; refer mainly to Fisheries Board of Hobart.

A summary of the main items of information available in regard to General and Oyster Fisheries in the Commonwealth is given hereunder for the five years 1913-17 :—

GENERAL AND OYSTER FISHERIES, COMMONWEALTH, 1913 TO 1917.

Particulars.	1913.	1914.	1915.	1916.	1917.
General Fisheries—					
No. of boats engaged ..	3,114	3,321	3,374	3,581	3,401 (b)
No. of men employed ..	6,428	7,363	7,355	7,102	6,773 (b)
Fish obtained—					
Quantity .. cwt.	388,371 (b)	563,543	466,040 (b)	469,574 (b)	463,839 (b)
Value .. £	489,236	519,723	709,176	742,535	695,718
Lobsters obtained—Value £	30,879	33,111	30,722	33,582 (b)	28,603 (b)
Edible Oyster Fisheries(a)—					
No. of boats engaged ..	428	398	503	547	577
No. of men employed ..	487	453	618	618	640
Oysters obtained—					
Quantity .. cwt.	68,054	60,199	71,122	85,740	74,313
Value .. £	74,204	62,153	76,160	94,884	86,550
Public Revenue from Fisheries—					
Licenses .. £	7,379	9,664	7,717	8,673	9,080
Leases .. £	11,081	12,823	13,004	14,065	12,420
Fines and forfeitures .. £	480	427	713	764	358
Other sources .. £	442	662	218	255	999
Total revenue .. £	19,382	23,576	21,652	23,757	22,857

(a) There are practically no oyster fisheries in Victoria, Western Australia, and Tasmania.

(b) Exclusive of Tasmania.

The following table gives in summarised form for the years 1913-17 the details available in regard to pearling and bêche-de-mer fishery for the States where these industries are carried on, i.e., Queensland, Western Australia, and the Northern Territory. The low production of pearl-shell in 1915 was, of course, due to the loss of market occasioned by the war. For obvious reasons, figures regarding value of pearls obtained can be taken as rough approximations only.

**PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES, COMMONWEALTH,
1913 TO 1917.**

Particulars.	1913.	1914.	1915.	1916.	1917.
No. of boats engaged ..	598	581	346	429	471
No. of men employed ..	4,277	4,137	2,561	3,336	3,615
Pearl-shell obtained—					
Quantity .. tons	2,014	1,823	1,180	1,538	2,192
Value .. £	346,437	297,776	143,407	229,255	264,295
Pearls obtained(a)—					
Value .. £	97,730 (b)	97,535 (b)	14,894 (b)	27,190 (b)	39,333 (b)
Bêche-de-mer obtained—					
Quantity .. tons	625	531	770	513	624
Value .. £	30,943	27,847	40,078	30,222	42,064
Tortoise-shell obtained—					
Quantity .. lbs.	1,382	870	327	982	942
Value .. £	850	625	155	262	378

(a) As returned. (b) Incomplete.

In addition to the production mentioned above, Queensland during 1917 raised trochus shell valued at £21,800. The shell is used principally in the manufacture of "pearl" buttons.

§ 3. Oversea Trade in Fish.

That the development of the fishing industry in Australia leaves much to be desired is evident from the fact that the import of preserved fish into the Commonwealth is very large. The figures for the imports for the last five years were as follows:—

IMPORTS OF FISH, COMMONWEALTH, 1913 TO 1917-18.

Classification.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
Fresh (oysters) ..	{ cwt. 8,912	6,353	4,736	3,059	1,583
	{ £ 5,281	4,187	3,040	2,157	1,098
Fresh, or preserved by cold process	{ cwt. 34,172	27,015	25,771	18,363	11,080
	{ £ 78,510	65,741	68,676	48,191	26,306
Potted	{ cwt. (a)	(a)	(a)	(a)	(a)
	{ £ 37,644	38,552	54,414	44,268	1,300
Preserved in tins	{ cwt. 171,733	194,005	213,347	174,145	148,421
	{ £ 525,996	660,693	755,286	715,741	788,728
Smoked, dried, and n.e.i.	{ cwt. 24,629	15,477	10,403	10,015	7,320
	{ £ 70,605	37,141	32,868	37,239	35,602
Total	{ cwt. (b) 239,446	242,850	254,257	205,582	168,404
	{ £ 718,036	806,314	914,284	847,596	853,034

(a) Not available. (b) Exclusive of potted fish.

Tinned fish constitutes by far the largest proportion of the imports, the bulk of it consisting of salmon from the United States, Canada, Norway, and Alaska. The potted fish comes chiefly from the United Kingdom. New Zealand supplies the largest proportion of the fresh fish, the bulk of the remainder coming from the United Kingdom. The small import of oysters consists entirely of New Zealand produce.

The exports of local fish produce for the five years 1913 to 1917-18 are given hereunder :—

EXPORTS OF FISH (AUSTRALIAN PRODUCE), 1913 TO 1917-18.

COMMONWEALTH.

Classification.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
Fish, fresh, smoked, or preserved by cold process	{ cwt. 114 £ 367	1,919 9,532	918 2,806	764 3,089	983 4,048
Preserved, in tins, dried, salted, etc.	{ cwt. 11,334 £ 40,573	10,655 29,337	11,044 40,441	12,222 39,839	13,413 57,254
Total	{ cwt. 11,448 £ 40,940	12,574 38,869	11,962 43,247	12,986 42,928	14,396 61,302

The quantity of fresh fish exported from the Commonwealth is trifling, and the amount of £4,048 shewn in the table above consists chiefly of cured bêche-de-mer exported to Hong Kong from the Northern Territory. The bulk of the amount of £57,254 consists of an export of salt fish also to Hong Kong from Queensland.

The exports of pearl-shell and tortoise-shell are given hereunder for the five years 1913 to 1917-18 :—

EXPORTS OF PEARL-SHELL AND TORTOISE-SHELL, 1913 TO 1917-18.

COMMONWEALTH.

Article.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
Pearl-shell	{ cwt. 41,813 £ 383,193	26,276 179,430	50,124 194,052	70,030 363,669	59,598 347,964
Tortoise-shell	{ lbs. 3,244 £ 2,081	1,244 822	570 333	1,283 802	1,241 609

More than 80 per cent. of the pearl-shell exported during 1917-18 was consigned to the United States, which took nearly £286,000 worth of the total export. The next largest share went to Japan, which took £53,000 worth. Smaller quantities were sent to Canada and the United Kingdom.

§ 4. Development of the Fishing Industry.

1. **Transport and Marketing.**—Up to the present the question of adequate transport and marketing of the proved supplies of fish has not been satisfactorily dealt with in all the States. In New South Wales, as shewn in § 6 hereinafter, the matter of exploiting and marketing trawlable fish has been undertaken by the State Government, which has also taken steps to improve the conditions under which the ordinary coastal fishing is carried on. In Queensland, also, State trawling was developed in 1919.

2. **Experiment and Culture.**—In many respects the fishing industry is capable of modification and development. Although some valuable work has been done by the State Governments in the way of experiment and culture, a uniform policy of development for Australia is desirable, and recommendations have been made that the Fisheries Departments of the various States should co-operate with the Federal Government with a view to increasing the productiveness of the Commonwealth waters; and that uniform fisheries laws should be adopted by adjacent States.

All live fish imported into Australia are examined on shipboard in order to prevent the importation of undesirable fish.

With the object of ascertaining something of the movements of oceanic fishes, as well as of those estuarine fishes which make periodical oceanic migrations, reports are furnished regarding the various kinds of fishes, etc., and their movements along the coast.

Fuller details regarding the activities of the States in fish-culture are given in Official Year Book No. 6, pp. 471-2.

By arrangement with the Commonwealth Fisheries Department, members of the staff of the Australian Museum, Sydney, accompanied the F.I.S. *Endeavour* on various cruises. Specimens were collected, mounted for scientific purposes, and distributed to other Australian Museums, a considerable number being put aside for the Commonwealth Fishery Museum.

3. Consumption of Fish.—Despite the circumstance that numerous varieties of valuable food fishes abound in the coastal waters of Australia, while the freshwater rivers and lakes yield abundant supplies of natural and acclimatised species, the fishing industry has not developed to the extent that might reasonably be expected. It has been said that the Australians are not an "ichthyophagous race," but the comparatively heavy import of dried and preserved fish would appear to disprove this statement. The natural explanation seems to be that the industry is ill-managed, the price to the consumer is high, while the fisherman's gain is uncertain—and the system of distribution lacks method. Considerable improvement has, however, been effected in recent years, particularly in New South Wales (*vide* § 6 herein).

§ 5. The Commonwealth Department of Fisheries.

1. The Federal Council of Australasia.—The Federal Council had power to legislate with regard to fisheries in Australasian waters beyond territorial limits. In its second session (opened 16th January, 1888) an Act was passed to regulate pearl-shell and bêche-de-mer fisheries in Australasian waters adjacent to Queensland; and in the third session, opened shortly afterwards, the Act was made applicable to Western Australia. Upon the passing of the Commonwealth Constitution Act of 1900, however, the Federal Council ceased to exist.

2. Commonwealth Investigations.—In 1907 the Commonwealth Government decided to demonstrate what might be attained commercially by the application of modern methods. A Federal Investigation Ship, the *Endeavour*, was constructed specially for the work, and a Director of Fisheries was appointed. Experimental cruises were immediately undertaken. These shewed that the Commonwealth possesses an asset of considerable value in her sea fisheries. The scope and results of the inquiries are set out in the reports issued by the late Director.

3. Scope of the Inquiry.—The immediate scope laid down for the investigation was, shortly, as follows:—

- (i) By various means of capture to ascertain what marketable food-fishes may be found in ocean waters adjacent to Australia.
- (ii) In what quantity they may be taken.
- (iii) To what extent they migrate, and whither.
- (iv) How they may be conveniently and economically captured.
- (v) By systematic survey to find out and chart suitable fishing grounds.

In addition to the work which was thus carried on in the various recognised methods of capture (including long-line and drift-net fishing, etc.), hydrographic survey work, etc., was carried out for the purpose of ascertaining the nature of the sea bottom, depth of water, currents, and sea temperature.

4. **The F.I.S. "Endeavour."**—The construction of the investigation vessel was undertaken in the Commonwealth, and was upon the lines shown by the most recent European experience to be of greatest advantage, with necessary modifications to suit the Australian climate. A description of the vessel, which was the first Commonwealth-owned seagoing ship, is given in Official Year Book No. 6, p. 473. Up to the end of 1913, 85 cruises had been made in eastern and southern waters. In 1914, 13 more cruises were successfully undertaken; but the vessel with all on board, including the Director, was lost on her 99th cruise, which was commenced on 20th November, 1914.

5. **Trawling Grounds Discovered by the "Endeavour."**—According to information supplied by the Commonwealth Department of Trade and Customs, it would appear from the experiments carried out by the *Endeavour* on the shelf of the east coast of Australia, that the best trawling grounds extend from near Port Stephens, in New South Wales, past Sydney to Gabo Island, continuing across the eastern slope of Bass Strait past Flinders Island to Tasmania. These trawling grounds cover an area of approximately 6,000 square miles, and are within easy access to two markets—Sydney and Melbourne. Extensive operations have been carried out on these grounds, and fish in payable quantities have been obtained.

A very rich trawling ground has also been located in the centre of the Great Australian Bight, estimated to cover an area of about 4,000 square miles. The depth varies from 80 to 300 fathoms, but the greater portion of the trawlable area is situated between 100 and 200 fathoms. Excellent results were obtained by the *Endeavour* in this locality, *fine rock ling and flathead being among the many choice varieties caught*. This ground is situated about half-way between Adelaide and Albany, and about two days' steaming from either place.

In both of the trawling areas referred to above, considerable quantities of prime edible fish have been caught by the *Endeavour*, thus demonstrating the potential value of Australia's deep-sea fisheries.

6. **The Continental Shelf.**—In addition to the primary duty of locating payable trawling grounds, extensive hydrographic surveys were carried out by the *Endeavour* along the coast from the north of Queensland to the west coast of Western Australia. Soundings, samples of the sea bottom, sea temperatures, etc., were taken, principally within the hundred-fathom line, in order to determine the suitability or otherwise of the localities for trawling. These observations were, in most instances, taken prior to the casting of the trawl net, which was the principal means of capture used by the *Endeavour* for ascertaining the richness of areas so far as the abundance of fish food was concerned. Most of the soundings have been charted and are available for public information.

The late Mr. H. C. Dannevig, formerly Director of Fisheries for the Commonwealth, in his "Report on the Continental Shelf on the East Coast of Australia" (Fisheries—Volume III, Part 6), explained how systematic surveys were carried out by him on the *Endeavour* and information obtained as to the nature of the continental shelf which surrounds the Australian continent.

The shelf consists of a narrow submerged ledge, varying in width from 10 miles to more than 100 miles, covered by a depth of less than 100 fathoms. From the outer edge of this ledge or shelf the bottom slopes away more or less abruptly towards the great ocean depths. It is within the area of the shelf that trawling grounds may be looked for.

On the east coast of Australia, the typical shelf commences at Sandy Cape in Queensland, and continues southwards. For about 360 miles, or south of Smoky Cape in latitude 31° S., the shelf presents peculiarities which gradually disappear further south. One of these peculiarities is that the shallow portion of the shelf continues seawards for a considerable distance, so that, for instance, at Double Island, the depth is only 50 fathoms. At this depth the shelf may here be said to terminate, as, at depths

from 60 to 100 fathoms, apart from being narrow and rocky, the sea floor is frequently so steep as to form part of the general slope downwards to abyssal depths. Another peculiarity is that northwards from Cape Moreton the shallow portion of the ledge is mainly covered with coral sand, which southwards gives way to a somewhat yellow sand, occasionally interspersed, in localities where the currents are strong, with gravelly beds.

Southwards from Smoky Cape the relative proportion between the inner and outer areas becomes reversed. At the Cape itself the shelf is narrow and divides into two equal belts; the shallow area of less than 50 fathoms, and a deeper stratum with an average depth of 70 fathoms. From here southwards the outer stratum becomes gradually wider at the expense of the inshore or secondary ledge, a maximum width of which is found in the Newcastle Bight, where the inshore ledge is seven to eight miles wide, while the outer ledge extends for another twenty-one miles before breaking off into the deep. Simultaneously with the appearance of the outside ledge at Smoky Cape the depth of the "break off" increases quickly to about 100 fathoms, and remains so for the remainder of the coast south to Gabo Island.

Southwards from Gabo Island the shelf widens out considerably, and consists entirely of the outward or deeper stratum, which, between 50 and 300 fathoms, is many miles wide. The edge gradually bends westward parallel with the coast until opposite the mouth of the Snowy River, where at a distance of about thirty miles from land it turns abruptly to the south. On approaching the bend, the shallow area (of less than 50 fathoms) has gradually extended at the expense of the outer ledge, and while the former continues westward through Bass Strait and connects Victoria and Tasmania, the latter extends as a relatively narrow belt along the eastern slope past Flinders Island and along the east coast of Tasmania.

The hundred-fathom line from the south of Tasmania to the western end of the Great Australian Bight was also surveyed by the *Endeavour*. On that portion of the coast it was found that the continental shelf was considerably wider than on the east coast, and the slope of the shelf more gradual.

7. **Publications of the Commonwealth Fisheries Department.**—New and rare species of fish and marine forms secured by the *Endeavour* have been preserved, examined and described by various scientists, recognised as authorities on the subject of marine life. The following monographs have been published by the Department of Trade and Customs, the names of the authors being appended :—

Subject.	Author.
<i>Mollusca</i> (2 parts)	Charles Hedley, F.L.S. (Assistant Curator and Conchologist, Australian Museum, Sydney).
<i>Fishes</i> (4 parts)	Allan R. McCulloch (Zoologist, Australian Museum).
<i>Sponges</i>	E. F. Hallmann, B.Sc. (Australian Museum).
<i>Assymetron</i>	Miss Janet W. Raff, B.Sc. (Melbourne University).
<i>Globigerina Ooze</i>	F. Chapman, B.A., A.L.S. (Palæontologist, National Museum, Melbourne).
<i>Hydroïda</i> (3 parts)	W. M. Bale, F.R.M.S.
<i>Foraminifera and Ostræoda</i>	F. Chapman, B.A., A.L.S.
<i>Algæ</i>	A. H. Lucas, M.A. (Sydney Grammar School).
<i>Polychæta</i> (2 parts)	William Benham, M.A., D.Sc., F.R.S. (Professor of Biology at the University of Otago, N.Z.).
<i>Gephyrean Priapulæ</i>	Do. do. do.
<i>Sea Lilies, Star Fishes, Brittle Stars and Sea Urchins</i>	Hubert Lyman Clark (Curator of Echinoderms, Museum of Comparative Zoology, Cambridge, Mass., U.S.A.).
<i>Cephalopoda</i>	S. Stillman Berry.
<i>Spider Crabs</i>	Miss Mary J. Rathbun (United States National Museum, Washington, D.C.).

The following papers were, in addition, prepared by the Director of Fisheries, the late Mr. H. C. Dannevig :—

First and Second Preliminary Reports on the Fishing Experiments carried out by the F.I.S. *Endeavour*.

Notes on Australia's Fisheries, with a summary of the results obtained by the F.I.S. *Endeavour*.

Paper on the Continental Shelf of the East Coast of Australia.

Paper on the Physiography of Bass Strait.

§ 6. The State Trawling Industry—New South Wales.

As far back as the year 1898, the New South Wales Government equipped a small vessel called *Thetis* for the purpose of investigating the potentialities of the State coastal waters in regard to the supply of edible fish. The knowledge gained from the cruises of this vessel was, of course, considerably augmented by that obtained since 1907 by the more modern methods adopted by the Commonwealth vessel *Endeavour*. In view of the favourable outlook, the State Government determined to exploit the fishing industry. The necessary vessels and equipment were ordered, and by the middle of the year 1915, three steam trawlers built of steel and equipped in accordance with the most up-to-date methods had commenced operations in the coastal waters. Other vessels have also been built for trawling and surface fishing. It was not long before these vessels had proved the existence of highly valuable trawling grounds within a day's steam of Sydney Heads, and what is believed to be one of the most prolific areas in the world has been located within three hours' steam of the home wharf. The ample product has been landed and sold to the public at extremely low rates in the State retail depots as well as at occasional sales in markets and in country districts.

There are seven State retail fish depots, six in the metropolitan district, and one at Newcastle.

Moreover, in connection with the undertaking, arrangements have been made for the collection and distribution of fish taken by coastal and estuarine fishermen. With this end in view, large refrigerating stations have been built at Newcastle, Clarence River, and Port Stephens. The scheme has proved a great boon to fishermen by obviating the losses caused by the uncertain supply of ice and the absence of facilities for marketing.

There is a strong feeling that it is desirable for either the Government or the City Council to take over the entire control of the fishing industry.

§ 7. Fish Preserving.

Bounties were provided for ten years by the Federal Government for fish preserving, the rate payable being $\frac{1}{4}$ d. per lb. The amounts paid were £27 in 1907-8; £1,727 in 1908-9; £311 in 1909-10; £115 in 1910-11; £168 in 1911-12; £103 in 1912-13; £80 in 1913-14; £156 in 1914-15; £106 in 1915-16; £177 in 1916-17. In 1917-18, £35 was paid in satisfaction of a claim made in the preceding year. Up to the present but little development has taken place, the establishments which claimed bounty for fish preserving numbering only one in 1917-18, as compared with five in 1916-17, two in 1915-16, and five in 1914-15.

SECTION XII.

MINES AND MINING.

§ 1. The Mineral Wealth of Australia.

1. **Place of Mining in Australian Development.**—The value of production from the mineral industry is now considerably less than that returned by the agricultural or the pastoral industry, nevertheless it was the discovery of gold in payable quantities that first attracted population to Australia, and thus laid the foundation of its nationhood. Prior to 1851, the year when Hargraves' memorable discovery was made, coal and copper had both been mined to some extent, and the existence of deposits of other minerals, including gold, had been proved. But it was the news of the sensational finds of the precious metal in 1851 and the year immediately following that brought about a constant stream of immigration, and caused an increase in population from 221,000 at the end of 1841 to upwards of 1,168,000 at the end of 1861.

2. **Extent of Mineral Wealth.**—The large production of gold, silver, copper, and tin, the extent of the coal deposits, the presence of large quantities of iron ore, and the great variety of minerals found in appreciable quantities, suggest that the future history of mining will, in all probability, be even more remarkable than that of the past. For the extent of the total mineral wealth of Australia cannot yet be regarded as well ascertained, since the mineral exploration of the country is, after all, still in its infancy. The presence of considerable deposits of valuable minerals has long been known. Thus, coal was discovered in 1797, and a shipload was exported to Bengal in 1799; silver was discovered by Count Strzelecki as early as 1839, and was worked as early as 1864; copper mining dates back to 1844; lead to about 1848; iron to about 1850; while the discovery of gold in payable quantities dates back to 1851. Cobalt, nickel, manganese, chromium, tungsten, molybdenum, mercury, antimony, bismuth, zinc, radio-active ores, &c., have all been found, some in fairly large quantities.

Among the more valuable non-metalliferous substances may be mentioned coke, kerosene-shale, graphite, alunite, asbestos, diatomaceous earth, clays, ochres, etc.; in building stones: sandstones, syenites, granites, basalts, augite-andesite, porphyries, serpentines, slates, limestones, and marbles; in precious stones: diamonds, emeralds, rubies, sapphires, amethysts, precious opal, turquoise, topazes, garnets, chrysolites, cairngorm, agates, etc. In general, it may be said that the variety of Australian mineral wealth is very great.

3. **Quantity and Value of Production during 1917.**—The continuance of the war in 1916 naturally had a very serious effect on the mineral industry in Australia, although this was to some extent compensated for by the high prices ruling for industrial metals, particularly copper. In New South Wales, the returns for 1917 shewed an advance of over £2,000,000 on those for the previous year, due principally to the increased return from silver, lead, and coal. In Victoria, owing to the decline in the gold yield, the returns for 1917 shewed a decrease in production of about £110,000. The Queensland production shewed a decrease of £8,000. South Australia shewed an increase of about £148,000, contributed to most largely by copper and ironstone. For Western Australia the falling-off in 1917 amounted to about £264,000, and was due entirely to the reduced

gold yield. The Tasmanian production shewed an increase in 1917 of about £61,000 over the return for the previous year, the improvement being due to the heavier yield in tin. The table hereunder shews the quantity of the minerals produced in 1917 :—

QUANTITY OF MINERALS PRODUCED IN THE COMMONWEALTH, 1917.

Minerals.	Unit.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.¶	C'wealth.
Alunite ..	ton	1,788	..	..	29	..	..	..	1,817
Antimony ore ..	"	301	12,052	..	..	12	..	..	12,365
Asbestos ..	"	5	..	..	..	..	271	..	276
Bismuth ore ..	cwt.	409	..	2,705*	..	10	84	..	3,208
Brown coal ..	ton	..	39,144	..	..	..	..	..	39,144
Chromite ..	"	587	..	756	..	..	..	..	1,343
Coal ..	"	8,292,867	466,220	1,048,473	..	326,550	63,412	..	10,197,522
Coke ..	"	455,587	..	..	..	..	..	..	455,587
Copper (ingot and matte) ..	"	6,576	..	19,062	7,213	535	5,845	..	39,231
Copper ore ..	"	..	..	†	†	966	771	48	1,785
Diatomaceous earth ..	"	140	750	..	..	..	..	..	890
Gold ..	fine oz.	82,171	201,872	179,305	7,145	970,318	14,496	866	1,456,173
Gypsum ..	ton	..	1,187	..	12,770	..	..	..	13,963
Iron (pig) ..	"	45,025	..	..	..	..	..	..	45,025
Iron oxide ..	"	1,431	..	..	..	..	..	..	1,431
Ironstone ..	"	4,482	..	25,065	328,886	..	..	..	357,933
Kaolin ..	"	1,519	1,573	..	1,967	..	..	..	5,059
Lead and silver lead concentrates, etc. ..	"	20,817	..	480	..	4,661	§	..	25,958
Lead and silver ore, concentrates, etc. ..	"	234,881	..	†	622	22	9,576	9	245,110
Limestone flux ..	"	74,440	..	135,703	68,464	..	..	..	278,607
Magnesite ..	"	9,189	74	..	150	42	..	..	9,455
Manganese ore ..	"	3,721	..	21	264	..	..	..	4,006
Mica ..	cwt.	..	..	..	760	..	..	..	760
Molybdenite ..	"	1,405	1,000	2,224	19	280	..	9	4,937
Phosphate ..	ton	2,000	1,525	..	5,101	..	..	..	8,626
Platinum ..	oz.	259	..	..	..	..	..	..	259
Pyritic ore ..	ton	..	..	..	..	3,575	7,686	..	11,261
Salt ..	"	..	†	..	46,858	..	..	..	46,858
Scheelite ..	"	127	..	9	..	†	69	..	205‡
Shale ..	"	31,661	..	..	..	..	..	..	31,661
Silver ..	fine oz.	1,782,004	7,669	241,639	1,825	222,075	..	..	2,255,212
Tantalite ..	cwt.	..	..	..	340	..	..	..	340
Tin (ingot) ..	ton	1,109	..	§	..	..	2,637	..	3,746
Tin ore ..	"	963	139	1,177	..	383	†	270	2,932
Wolfram ..	"	118	22	354	..	..	172	130	796
Zinc, spelter and concentrates ..	"	113,531	..	..	..	..	..	..	113,531

* Including 2,625 cwt. bismuth and wolfram. † Included with metal. ‡ Not available for publication. § Included with ore. ¶ Year ended 30th June, 1917.

The comparative value of the production of minerals raised in each State during 1917 is given in the following table :—

VALUE OF COMMONWEALTH MINERAL PRODUCTION IN 1917.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.‡	C'wealth.
	£	£	£	£	£	£	£	£
Alunite ..	10,728	..	..	145	..	..	..	10,873
Antimony ore ..	3,738	58,489	..	..	258	..	..	62,485
Asbestos ..	25	..	..	..	..	271	..	296
Bismuth ore ..	9,391	..	*22,469	..	24	895	..	32,779
Brown coal ..	..	10,571	..	..	..	..	..	10,571
Chromite ..	1,468	..	756	..	..	..	..	2,224
Coal ..	4,422,740	335,259	597,360	..	191,822	38,673	..	5,585,854
Coke ..	541,093	..	..	..	..	..	..	541,093
Copper (ingot and matte) ..	814,154	..	2,208,232	902,495	64,860	841,583	..	4,831,324
Copper ore ..	..	..	†	†	20,878	6,171	5,517	32,566
Diamonds ..	2,006	..	..	..	..	..	..	2,006
Diatomaceous earth ..	440	2,600	..	..	..	..	..	3,040

* Including bismuth and wolfram, £21,172. † Included with metal. ‡ Year ended 30th June, 1917.

VALUE OF COMMONWEALTH MINERAL PRODUCTION IN 1917—*continued.*

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.‡	C'wealth.
	£	£	£	£	£	£	£	£
Gems (unspecified)	..	..	14,208	..	..	..	..	14,208
Gold ..	349,038	857,500	761,639	30,334	4,121,645	61,577	3,677	6,185,410
Gypsum ..	..	1,335	..	11,179	..	..	..	12,514
Iron (pig) ..	247,637	..	..	..	..	..	..	247,637
Iron oxide ..	1,265	..	..	..	..	..	..	1,265
Ironstone ..	3,498	..	23,611	359,723	..	..	..	386,832
Kaolin ..	2,032	1,500	..	3,442	..	..	..	6,974
Lead and silver-lead ore, concentrates; &c.	616,531	..	14,407	..	139,940	†	..	770,878
Limestone flux ..	4,165,324	..	*	12,018	593	152,122	275	4,330,332
Magnesite ..	25,746	..	56,926	21,395	..	..	..	104,067
Manganese ore ..	9,992	222	..	300	50	..	..	10,564
Mica ..	2,791	..	105	1,597	..	..	..	4,493
Molybdenite ..	31,608	500	48,618	337	..	..	..	337
Opal ..	12,522	..	100	359	158	..	45	81,288
Phosphate ..	4,500	1,525	..	500	..	..	..	13,122
Platinum ..	2,072	..	..	6,064	..	..	..	12,089
Pyritic ore ..	..	..	..	..	1,752	7,137	..	2,072
Salt ..	..	†	..	93,716	..	..	..	8,889
Scheelite ..	23,419	..	1,523	..	42	12,130	..	93,716
Shale ..	36,565	..	..	..	..	..	..	37,114
Silver ..	328,241	1,406	40,774	333	38,339	..	..	36,565
Tantalite ..	..	..	..	..	2,513	..	..	409,093
Tin (ingot) ..	240,410	..	..	..	..	427,917	..	2,513
Tin ore ..	133,286	19,709	160,600	..	45,288	*	27,120	668,327
Wolfram ..	21,682	3,600	58,548	30	..	28,714	20,269	386,003
Zinc, spelter and concentrates	441,486	..	..	..	..	..	..	132,843
Unenumerated ..	49,268	24	3,101	16,707	865	5,132	..	441,486
Total ..	12,554,696	1,294,240	4,012,977	1,460,674	4,629,027	1,582,322	56,903	25,590,839

* Included with metal.

† Not available for publication.
‡ Year ended 30th June, 1917.

‡ Included with ore.

It may be pointed out in connection with the figures given in the above table that the totals are exclusive of returns relating to certain commodities, such as stone for building and industrial uses, sand, gravel, brick clays, lime, cement, and slates, which might rightly be included under the generic term "mineral." Valuations of the production of some of these may be obtained from the reports of the various Mines Departments, but in regard to others it is impossible to obtain adequate information. In some instances, moreover, the published information is of little value. Thus, the New South Wales Mines' Report supplies the value of exports only in connection with building stone, and it is obvious that such figures are of little value as regards production, while the Victorian figures are incomplete. It has therefore been considered advisable to discard both totals. By restricting the comparison to items in connection with which properly comparable information can be obtained for each State, it is believed that a satisfactory estimate of the progress of the mineral industry can be more readily obtained. The items excluded from the total for New South Wales in 1917 consist of—lime, £40,865; marble, £770; Portland cement, £347,381. Sulphuric acid to the value of £33,084 was produced in New South Wales in 1917. For South Australia the principal items in the unenumerated class are flint pebbles, £3,956; and fireclay, £1,405; while the sulphur contents of the copper ores are valued at £8,820.

4. Total Production to end of 1917.—In the next table will be found the estimated value of the total mineral production in each State up to the end of 1917. The figures given in this table are also exclusive of the same items referred to in connection with the preceding table. Thus the total for New South Wales falls short by £5,812,000 of that published by the State Department of Mines, the principal items excluded being cement, £3,844,000; lime, £489,000; and building stone, £26,000.

COMMONWEALTH MINERAL PRODUCTION TO END OF 1917.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.*	C'wealth.
	£	£	£	£	£	£	£	£
Gold ..	61,998,778	298,651,651	82,111,979	1,541,917	133,888,331	8,674,405	2,256,937	589,123,998
Silver and lead ..	80,501,877	255,538	2,992,821	361,363	1,215,714	6,301,439	61,884	91,693,636
Copper ..	14,292,224	216,656	19,546,341	31,069,636	1,534,626	13,722,318	218,933	80,600,734
Iron ..	2,035,504	15,641	370,371	1,237,673	36,695	52,110	..	3,747,994
Tin ..	10,963,004	836,726	9,155,443	..	1,303,886	13,834,785	413,333	36,507,177
Wolfram ..	222,060	10,302	963,377	301	1,395	104,139	87,288	1,388,862
Zinc ..	12,651,737	..	..	15,993	5,437	22,876	..	12,696,043
Coal ..	87,779,612	3,864,478	7,593,344	..	1,849,237	863,588	..	101,950,259
Other ..	9,849,518	561,176	1,710,366	1,429,965	46,243	205,640	17,751	13,820,659
Total ..	280,294,314	304,412,168	124,444,042	35,059,848	139,881,564	43,781,300	3,056,126	931,529,362

* To 30th June, 1917.

The "other" minerals in New South Wales include antimony, £335,686; bismuth, £152,421; chrome, £106,683; coke, £3,802,630; diamonds, £131,077; opal, £1,426,432; and oil shale, £2,424,769. In the Victorian returns antimony ore was responsible for £486,747. Included in "other" in the Queensland production were opal, £178,295; gems, other, £330,297; antimony ore, £58,343; manganese, £70,041; and limestone flux, £491,432. The chief item in South Australian "other" minerals was salt, £801,911, and limestone flux, £150,741. Considerable values from gypsum and rock phosphates are also included. In the Tasmanian returns limestone flux was responsible for £91,739, while the figures for recent years include values for iron pyrites.

It will be convenient in the succeeding pages to deal first with gold and the various metals, then with non-metallic minerals and precious stones, and finally to furnish some account of the extent of employment in mining generally.

(A) METALS.

§ 2. Gold.

1. **Discovery of Gold in Various States.**—The discovery of gold in payable quantities was an epoch-making event in Australian history, for, as one writer aptly phrases it, this event "precipitated Australia into nationhood." A more or less detailed account of the finding of gold in the various States appears under this section in Official Year Books Nos. 1 to 4, but considerations of space preclude its repetition in the present issue.

2. **Production of Gold at Various Periods.**—In the following table will be found the value of the gold raised each year in the several States and in the Commonwealth from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development, large quantities of gold were taken out of Australia by successful diggers, who preferred to keep the amount of their wealth secret. For South Australia the records in the earlier years are somewhat irregular, and the remark applies to some extent also to the returns for Western Australia and Tasmania.

In New South Wales the yield for 1917 was about 26,000 ozs. lower than in 1916, and was the second lowest recorded since 1851. In Victoria the yield for 1917 shewed a decrease of 54,781 ozs. fine on that for the preceding year. With the exception of the Gippsland district, where there was a small increase, all the gold mining areas shewed a diminished yield as compared with 1916, the falling-off in Bendigo amounting to nearly 26,000 ozs.; in Ararat and Stawell to 15,000 ozs.; and in Maryborough to 12,000 ozs. crude. In Queensland the yield in 1917 was nearly 36,000 ozs. less than in the preceding year. As is the case in other States where there is a diminishing production, the decline is due to the gradual depletion of the mines in the principal fields. The returns for South Australia for 1917 shew a decrease of about 600 ozs. on the previous year's output. For Western Australia the figures shew a decrease of over 91,000 ozs. in 1917, as compared

with 1916, diminished returns being recorded in the outputs from all the fields except Peak Hill, Murchison, and Phillips River. For Tasmania there was a decline of about 1,300 oza., due to cessation of operations at some of the mines.

VALUE OF GOLD RAISED IN AUSTRALIA, 1851 TO 1917.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1851	468,336	851,596	..	..	..	28,737†	..	1,348,669
1852	2,660,946	9,146,140	..	..	..	472,615	..	12,279,701
1853	1,781,172	10,976,392	..	..	..	217,538	..	12,975,102
1854	773,200	8,873,932	..	..	..	65,030	..	9,712,171
1855	654,591	11,277,152	..	..	..	†	..	11,931,746
1856	689,174	12,217,076	..	..	..	†	..	12,804,150
1857	674,477	11,320,852	..	..	..	†	..	11,996,475
1858	1,104,175	10,384,924	..	..	..	1,146*	..	11,489,949
1859	1,259,127	9,394,812	..	..	..	850	..	10,656,127
1860	1,465,373	8,896,276	14,565	..	..	460	..	10,376,674
1861	1,806,172	8,140,692	3,928	..	..	32	..	9,950,824
1862	2,467,780	6,920,804	625	..	..	..	..	9,389,209
1863	1,796,170	6,779,276	14,802	..	..	..	..	8,590,248
1864	1,304,926	6,489,788	83,292	..	..	..	..	7,878,006
1865	1,231,243	6,444,216	92,938	..	..	..	..	7,770,397
1866	1,116,404	6,187,792	85,561	..	..	1,044	..	7,390,801
1867	1,053,578	6,005,784	189,248	..	..	4,382	..	7,252,992
1868	994,665	6,739,672	593,516	..	..	2,536	..	8,330,389
1869	974,149	6,179,024	523,045	..	..	514	..	6,614,437
1870	931,016	5,217,216	489,539	..	..	3,666	..	7,916,627
1871	1,250,485	5,475,768	616,907	*550,000	..	23,467	..	7,663,758
1872	1,644,117	5,325,508	660,396	6,363	..	27,314	..	6,814,186
1873	1,396,375	4,681,588	717,540	293	..	18,390	..	6,810,923
1874	1,041,614	4,390,572	1,356,071	4,175	..	18,491	..	5,961,152
1875	877,664	4,273,668	1,438,433	7,034	..	11,982	..	6,068,511
1876	613,190	3,855,040	1,438,111	9,888	..	44,923	..	5,050,614
1877	471,448	3,232,160	1,312,265	..	..	23,289	..	4,712,825
1878	430,200	3,032,160	1,149,240	1,225	..	100,000	..	4,760,708
1879	407,219	3,035,768	1,034,216	90	..	230,895	£52,500	4,933,424
1880	444,252	3,316,484	944,869	..	..	201,297	£26,522	5,194,390
1881	573,582	3,339,512	957,570	880	..	216,901	£11,945	5,043,521
1882	526,522	3,458,440	785,868	4,634	..	187,337	£80,720	4,580,523
1883	458,530	3,121,012	736,810	10,534	..	170,442	£77,195	4,826,810
1884	396,059	3,114,472	1,062,471	15,469	..	160,404	£77,935	4,626,069
1885	378,665	2,940,872	1,062,514	18,295	..	155,300	£70,414	4,428,339
1886	366,294	2,660,874	1,187,189	32,535	1,148	117,250	£63,139	4,666,401
1887	394,579	2,471,104	1,481,990	72,003	18,517	158,533	£34,602	4,737,256
1888	317,241	2,500,104	1,690,477	34,205	13,273	147,154	£47,339	5,280,972
1889	434,784	2,459,352	2,695,629	37,305	58,871	119,703	£95,823	5,281,309
1890	460,285	2,354,240	2,182,563	20,808	86,664	75,888	£108,763	5,677,575
1891	559,251	2,305,596	2,030,312	27,380	115,182	145,459	£108,110	6,186,966
1892	575,299	2,617,824	2,164,391	26,997	220,284	158,917	£109,392	7,641,491
1893	651,256	2,684,504	2,167,794	12,561	421,385	141,326	£102,734	7,828,597
1894	1,156,717	2,867,816	2,380,282	33,401	787,999	217,024	£81,024	9,889,728
1895	1,315,929	2,960,344	2,150,561	26,600	879,748	206,115	£81,773	11,078,456
1896	1,073,360	3,220,348	2,132,979	14,350	1,068,808	237,574	£84,467	14,533,084
1897	1,104,315	3,251,064	2,552,668	39,020	2,564,977	290,660	£67,694	15,571,924
1898	1,201,743	3,349,028	2,750,348	10,676	3,990,698	291,496	£88,385	16,302,731
1899	1,623,230	3,418,000	2,838,446	15,582	6,246,732	327,545	£70,251	18,514,762
1900	1,070,920	3,229,628	2,871,578	14,494	6,007,611	316,220	£83,858	19,585,852
1901	737,164	3,102,753	2,541,764	16,613	7,235,653	295,176	£69,647	21,581,267
1902	681,970	3,062,028	2,720,512	24,828	7,947,961	301,573	£70,251	22,942,120
1903	1,080,029	3,259,482	2,839,801	28,650	8,770,719	254,403	£84,467	25,521,306
1904	1,146,109	3,252,045	2,714,934	76,025	8,424,226	280,015	£84,467	26,511,924
1905	1,165,013	3,173,744	2,517,295	45,853	8,305,654	312,580	£84,467	27,514,762
1906	1,078,866	3,280,478	2,313,464	27,000	7,622,749	254,963	£84,467	28,514,762
1907	1,050,730	2,954,617	1,978,938	20,540	7,210,749	277,607	£84,467	29,514,762
1908	954,854	2,849,838	1,975,554	12,300	6,999,882	242,482	£84,467	30,514,762
1909	869,546	2,778,956	1,935,178	30,206	6,776,274	190,201	£84,467	31,514,762
1910	892,211	2,422,745	1,874,955	28,000	6,246,848	157,370	£84,467	32,514,762
1911	769,353	2,140,855	1,640,323	15,000	5,823,075	132,108	£84,467	33,514,762
1912	702,129	2,039,464	1,477,979	28,000	5,448,385	161,300	£84,467	34,514,762
1913	635,703	1,847,476	1,128,768	27,800	5,581,701	141,876	£84,467	35,514,762
1914	528,873	1,755,236	1,059,674	26,581	5,237,353	111,475	£84,467	36,514,762
1915	562,819	1,397,793	1,060,703	25,830	5,140,228	78,784	£84,467	37,514,762
1916	459,370	1,090,194	913,951	33,000	4,508,532	67,072	£84,467	38,514,762
1917	349,038	857,500	761,639	30,334	4,121,645	61,577	£84,467	39,514,762
Total	61,998,778	298,651,651	82,111,979	1,541,917	133,888,331	8,674,405	2,256,937	589,123,998

* Mines Department estimate of gold production to 1871. † Including gold dust to the value of £3,020 exported in 1850. ‡ Not available. § Estimate prior to 17th August, 1880. ¶ 17th August to 31st December, 1880. ¶¶ 1st January to 30th June. ** Year ended 30th June.

The amount of gold raised in the Commonwealth in any one year attained its maximum in 1903, in which year Western Australia also reached its highest point. For the other States of the Commonwealth the years in which the greatest yields were obtained were as follows:—New South Wales, 1852; Victoria, 1856; Queensland, 1900; South Australia, 1906, and Tasmania, 1899.

The following table shows the quantity in fine ounces of gold raised in each State and in the Commonwealth during each of the last ten years, the value of one ounce fine being £4 4s. 11¹/₂d. :-

QUANTITY OF GOLD PRODUCED IN THE COMMONWEALTH, 1908 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
1908 ..	224,792	670,909	465,085	2,896	1,647,912	57,085	5,695	3,074,374
1909 ..	204,709	654,222	455,580	7,111	1,595,270	44,777	7,323	2,968,992
1910 ..	188,856	570,363	441,402	6,592	1,470,633	37,048	6,008	2,720,902
1911 ..	181,121	504,000	386,165	3,531	1,370,868	31,101	7,277	2,484,063
1912 ..	165,295	480,131	347,946	6,592	1,282,659	37,973	5,337	2,325,933
1913 ..	149,657	434,933	265,735	6,545	1,314,044	33,400	3,119	2,207,433
1914 ..	124,507	413,218	249,468	6,258	1,232,978	26,243	2,296	2,054,968
1915 ..	132,498	329,068	249,711	6,081	1,210,113	18,547	*890	1,946,908
1916 ..	108,145	256,653	215,162	7,769	1,061,399	15,790	†909	1,665,827
1917 ..	82,170	201,873	179,305	7,141	970,318	14,496	†866	1,456,169

* 1st January to 30th June.

† Year ended 30th June.

3. *Changes in Relative Positions of States as Gold Producers.*—A glance at the figures in the table shewing the value of gold raised will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached the State each year. With the exception of the year 1889, when its output was surpassed by that of Queensland, Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was outstripped by that of Western Australia, the latter State from this year onward contributing practically half, and so far as recent years are concerned more than half the entire yield of the Commonwealth. New South Wales occupied the second place on the list until 1874, when Queensland returns exceeded those of the parent State, a condition of things that has been maintained ever since. South Australia has occupied the position of lowest contributor to the total gold yield of the Commonwealth since the year 1871. Taking the average of the last ten years, the relative position of each State in regard to the gold production of the Commonwealth was as follows:—

RELATIVE POSITION OF STATES AS GOLD PRODUCERS, 1908 TO 1917.

State.	Annual Average of Gold Production, 1908 to 1917.	Percentage on Commonwealth.	State.	Annual Average of Gold Production, 1908 to 1917.	Percentage on Commonwealth.
	£			£	
Commonwealth ..	9,729,617	100·00	New South Wales ..	663,390	6·82
Western Australia ..	5,588,392	57·44	Tasmania ..	134,425	1·38
Victoria ..	1,918,006	19·71	South Australia ..	25,705	0·27
Queensland ..	1,382,872	14·21	Northern Territory	16,827	0·17

4. *Methods of Gold Mining adopted in Each State.*—(i) *New South Wales.* In New South Wales the earlier "rushes" were to surface alluvial or shallow-sinking grounds. Many of these were apparently soon worked out, but there is reason to believe that in some instances payable results would be obtained by treating the rejected wash-dirt on more scientific principles. With the exhaustion of the surface deposits discoveries were made by sinking to what are called deep alluvial leads, representing the beds of old drainage channels in Pliocene and Pleistocene times. The first of these deep alluvial leads

was discovered at Forbes, in New South Wales, in 1862. The Tertiary deep leads at Gulgong were discovered in 1871. Cretaceous leads occur at Tibooburra, and detrital gold has been found in permo-carboniferous conglomerates at Tallawang. The method of dredging is at present being extensively used for winning gold from the beds of running streams, and from loose river flats and other wet ground where sinking would be impracticable. The system was introduced from New Zealand, where it was originally applied with great success on the Clutha River, and practically all the auriferous rivers of New South Wales have been worked by dredges. Hydraulic sluicing is employed also in several places, the necessary machinery being fitted to a pontoon for convenience in moving from place to place. The quantity of alluvial gold obtained, other than by dredging, amounted to 2,952 ozs. in 1917, the chief yields being—Hill End, 101 ozs.; Windeyer, 224 ozs.; Major's Creek, 140 ozs.; Adelong, 106 ozs.; Sofala, 382 ozs.; Uralla, 223 ozs.; Tumut, 142 ozs.; Tumberumba, 151 ozs. The quantity obtained by dredging was 27,364 ozs.; the largest returns being obtained at Araluen, 8,105 ozs.; Adelong, 11,186 ozs.; Braidwood, 558 ozs.; Gundagai, 6,198 ozs.; Stuart Town, 1,266 ozs. The dredges in operation during 1917 numbered 67, of which 16 were of the bucket type and 51 were suction plants. In the recovery of gold 13 bucket dredges and 3 pumping plants were employed, while 3 bucket dredges and 48 pumping plants were engaged in the winning of stream tin. The value of the plants in operation was estimated at £317,349. The quantity of gold won from quartz amounted to 45,621 ozs. At the present time the Cobar district is the chief centre of the production from quartz, the yields from the Cobar and Canbelego fields included therein being respectively 21,487 ozs. and 1,957 ozs. Next come the Wellington field with 5,324 ozs.; Peak Hill, 2,970 ozs.; Wyalong, 2,500 ozs.; Hill Grove, 2,356 ozs.; Hill End, 2,320 ozs.; and Cootamundra, 1,260 ozs.

The table below shews as far as can be ascertained the yield from alluvial and quartz mining in each of the principal districts during 1917. Owing to the circumstance that it was impossible to obtain complete returns from all the mine and battery owners the total for the State necessarily falls short of that given in preceding pages.

GOLD WON IN NEW SOUTH WALES, ALLUVIAL AND QUARTZ, 1917.

District.	Alluvial.		Quartz.	Total.
	Other than by Dredging.	By Dredging.		
	Ozs.	Ozs.	Ozs.	Ozs.
Albert	51	..	..	51
Bathurst	409	..	2,111	2,520
Clarence and Richmond	26	..	188	214
Cobar .. .. .	..	..	23,444	23,444
Hunter and Macleay .. .. .	..	..	300	300
Lachlan	135	6,198	4,363	10,696
Mudgee	284	..	8,657	8,941
New England	28	..	54	82
Peel and Uralla	429	..	2,376	2,805
Southern	328	8,663	1,265	10,256
Tambaroora and Turon	606	1,266	2,337	4,209
Tumut and Adelong	656	11,237	526	12,419
Total	2,952	27,364	45,621	75,937

(ii) *Victoria.* Lode mining predominates in Victoria, although a considerable amount of gold is obtained from alluvial workings, both surface and deep leads. The deepest mines in Australia are found in the Bendigo district, where there are two shafts 4,614 and 4,318 feet deep respectively. Altogether there were some five years ago no less than fifty-three shafts in this district which had reached a depth of over 2,000 feet. A considerable amount of attention is given to dredging and hydraulic sluicing, particularly in the Beechworth, Maryborough, Castlemaine, Ararat, Stawell, and Ballarat districts, the number of plants in operation at the end of 1917 being 73, of which 26

were bucket dredges, 16 pumps, 25 jet elevators, and 6 sluicing by gravitation. The total quantity of gold won by dredging and sluicing in 1917 was 44,756 ozs., the total area treated being 306 acres. Tin to the value of £16,936 was also won. The yields from alluvial workings and quartz reefs, as returned (in crude ounces) from the chief mining districts of the State during last year, were as follows :—

GOLD WON IN VICTORIA, ALLUVIAL AND QUARTZ, 1917.

District.	Alluvial.	Quartz.	Total.
	Ozs.	Ozs.	Ozs.
Ararat and Stawell	12,665	1,772	14,437
Ballarat	5,792	14,267	20,059
Beechworth	37,239	13,973	51,212
Bendigo	2,114	63,960	66,074
Castlemaine	9,479	29,373	38,852
Gippsland	4,450	3,954	8,404
Maryborough	11,727	1,389	13,116
Total	83,466	128,688	212,154

The largest output from lode mines in 1917 was furnished by the A.I Gaffney's Creek, with 8,114 ozs., followed by the Ajax Central at Daylesford, with 7,880 ozs., and the North British, Tarrengower, 6,599 ozs. Several of the mines in the Bendigo area reached a production bordering on 5,000 ozs. It is hoped that the consolidation of the mines in the "Central area" at Bendigo will result in a more extended treatment of the low-grade ore. Of the deep alluvial mines the Cathcart Central Company, at Ararat, produced 5,824 ozs., and the Langi Logan South, 2,587 ozs., while the Duke and Main Leads in the Maryborough area returned 5,972 ozs. In dredging, Cock's Pioneer, at Beechworth, was the most successful, with 7,290 ozs.

(iii) *Queensland.* Operations in Queensland are at present chiefly confined to reefing, and to the production of gold in connection with the smelting of copper and other ores, the yield from alluvial in 1917 being only 1,611 ozs., while the quantity produced from stone treated was 79,245 ozs.; from copper and other ores 96,600 ozs.; and from old tailings 1,849 ozs.; making a total production of 179,305 ozs., valued at £761,639. The yields from the principal fields are given below :—

GOLD WON IN QUEENSLAND, ALLUVIAL AND QUARTZ, 1917.

District.	Alluvial.	From Stone Treated.	From Copper and other Ores and old Tailings.	Total.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
Charters Towers	86	30,565	133	30,784
Gympie	158	33,201	..	33,359
Mount Morgan	43	..	93,538	93,581
Ravenswood	96	1,639	7	1,742
Croydon .. .. .	..	944	547	1,491
Etheridge, Oaks and Woolgar	185	6,309	615	7,109
Cloncurry .. .. .	..	..	2,647	2,647
Gladstone	66	182	686	934
Clermont	112	1,821	..	1,933
Chillagoe .. .. .	..	3,620	6	3,626
Other districts	865	964	270	2,099
Total	1,611	79,245	98,449	179,305

Included in the total alluvial gold from "other" districts is an amount of 460 ozs. from the Palmer field.

(iv) *South Australia.* In South Australia alluvial gold has been worked for many years in the gullies round Adelaide, while a fair amount of gold has been obtained by this method at Teetulpa, in the northern areas. The battery and cyanide returns as published in the *Mining Review* shew that the chief producing centres in 1917 were Deloraine, Tarcoola, and Mount Torrens.

(v) *Western Australia.* The auriferous deposits of Western Australia may be grouped under three headings—(1) superficial deposits, (2) deposits in beds of conglomerate, and (3) lode and vein deposits. The first class includes a number of deposits of alluvial type, either in the beds of existing watercourses or in deep leads, up to 100 feet or more below present surface level. Associated with these are deposits of crystalline gold in "pug," oxide of iron, and soft weathered portions of underlying bed rock. Considerable areas of auriferous surface soil are also found, and these have apparently originated from the denudation by weathering of the bed rock and its associated veins. The shallow surface deposits have been worked by ground sluicing wherever water was available, but most of the ground has been worked by "dry-blowing." The pug and clayey bedrock are usually treated in puddling machines or stamp batteries and Huntington mills, or by a combination of both methods. In regard to (2) it may be noted that in several localities on the Pilbara goldfield and in one on the Yalgoo, gold has been found in conglomerate of the Nullagine series of rocks, now tentatively accepted as of Cambrian age. The gold is crystalline and is confined to the interstitial cementing material. Occasional occurrences of gold are met with in laterite conglomerate of tertiary and post tertiary age, and at Kintore in conglomerate of the same age. Lode and vein deposits alluded to in (3) are found in great variety in Western Australia. The gold is always found associated with iron pyrites in the unoxidised portions of the lodes, and often also with copper pyrites, arsenical pyrites and galena. Tellurides of gold occur at times, and scheelite is a common accessory mineral. The principal auriferous rocks are of very great geological age, most probably pre-Cambrian, and possibly Archæan, and have all been subjected to intense metamorphism. It is found that the rich veins are not restricted to any one particular description of rock—granite, quartz, porphyry, quartz dolerite, diorite, etc., and even metamorphic sedimentary country rock, have been found to carry them in various parts of the State. The total production of gold from all sources during 1917 was 970,317 ounces, of which only about 1 per cent. was alluvial. The yields in each district were as shewn below :—

GOLD WON IN WESTERN AUSTRALIA, ALLUVIAL, QUARTZ, ETC., 1917.

Goldfields.	Alluvial.	Dolled and Specimens.	Crushed.	Total.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
East Coolgardie	224	1,715	556,044	557,983
East Murchison .. .. .	..	692	32,164	32,856
Mount Margaret	100	798	100,976	101,874
Murchison	175	1,066	81,065	82,306
North Coolgardie	17	100	34,679	34,796
Coolgardie	151	738	9,397	10,286
Phillips River .. .. .	..	..	4,735	4,735
North-east Coolgardie	13	25	5,895	5,933
Yilgarn .. .. .	..	..	78,245	78,245
Broad Arrow	67	2,978	13,474	16,519
Peak Hill	41	..	1,703	1,744
Pilbara	186	29	5,192	5,407
Dundas .. .. .	..	953	17,468	18,419
Yalgoo	131	17	5,665	5,813
West Pilbara	56	3	246	305
Kimberley	82	..	..	82
Other goldfields	5	1	111	117
Total	1,248	9,115	947,057	957,420

The figures in the previous table are compiled from returns from the individual mines, and are somewhat incomplete; the total is therefore less than that shewn on page 429, which represents mint and export returns.

(vi) *Tasmania.* The yield from Tasmania in gold mining is chiefly obtained from quartz reefing, and the returns from each district in 1917 are given below :—

GOLD WON IN TASMANIA, 1917.

District.			Total.	District.			Total.
			Ozs.				Ozs.
Beaconsfield	..	..	5,976	Lisle	..	}	310
Mathinna	..	..	807	Golconda	..		
Mt. Victoria	..	}	200	Lilydale	..		
Warrentinna	..			West Coast	..	..	7,414
Mt. Cameron	..	..	31	Total		..	14,738
Lefroy	..	..			

The total production was valued at £61,577, equal to 14,496 ozs. fine, of which about 5,976 ounces were produced by the Tasmania Gold Mine, at Beaconsfield. During the year 1917, about 7,000 ounces of gold were produced from the ores treated at the reduction works of the Mt. Lyell Mining and Railway Co. Ltd.

(vii) *Northern Territory.* Pine Creek was for some years the chief mining field in the Northern Territory, but operations have for a long period been carried on in a desultory manner, chiefly by Chinese labour. Lately the output has fallen still lower owing to the transference of Chinese gold miners to tin and wolfram mining. It is stated that the field has been unfairly exploited, the rich pockets only having been scooped out without any systematic prospecting. Confidence in the auriferous prospects of the area was also shaken by the failure of various companies, but in the view of the Mines Department the ground has not been properly tested or systematically mined. The metal is also worked at Bridge Creek, Union Reefs, The Shackle, Fletcher's Gully, and Tanami fields.

5. **Remarkable Masses of Gold.**—Allusion has already been made in preceding Year Books to the discovery of "nuggets" and other remarkable masses of gold, but it is not proposed to repeat this information in the present issue. It may be noted, however, that in 1913 nuggets yielding 180 ozs., 50 ozs., and 23 ozs. were obtained at Poseidon in Victoria. In the same State also, and near the spot at Moliagul where the famous "Welcome Stranger," weighing 2,284 ozs., was discovered in 1869, a mass of quartz yielding 94 ozs. of gold was obtained in 1913. A small lump of quartz from a mine at Tallangatta furnished 44 ozs. In an alluvial deposit at Corindhap four nuggets weighing respectively 100, 60, 60, and 30 ozs. were obtained at a depth of 13 feet.

6. **Modes of Occurrence of Gold in Australia.**—This subject has been alluded to at some length in preceding issues of the Year Book, but considerations of space will not permit of repetition in the present issue.

7. **Place of Commonwealth in the World's Gold Production.**—In the table given below will be found the estimated value of the world's gold production, and the share of the Commonwealth therein during the ten years 1908 to 1917. The figures given

in the table have been compiled chiefly from returns obtained directly by the Commonwealth Bureau of Census and Statistics from the gold-producing countries of the world.

WORLD'S GOLD PRODUCTION, 1908 TO 1917.

Year.	World's Production of Gold.	Gold Produced in Commonwealth.	Percentage of Commonwealth on Total.
	£	£	%
1908	92,237,000	13,062,000	14.16
1909	92,960,000	12,611,000	13.57
1910	93,390,000	11,558,000	12.38
1911	95,097,000	10,552,000	11.10
1912	96,824,000	9,880,000	10.20
1913	93,435,000	9,377,000	10.04
1914	90,043,000	8,729,000	9.69
1915	95,982,000	8,270,000	8.62
1916	93,043,000	7,076,000	7.61
1917	86,714,000	6,185,000	7.13

While the production of gold in the Commonwealth shews a considerable decrease during the nineteen years from 1897 to 1917, the world's total production more than doubled itself in the same period. The following table will be found interesting as shewing the various foreign countries where the chief increases have taken place during the interval in question :—

GOLD YIELD, VARIOUS COUNTRIES, 1897 TO 1917.

Country.	1897.	1900.	1915.	1916.	1917.
	£	£	£	£	£
United States	11,787,000	16,269,000	20,490,000	18,715,000	16,912,000
Canada	1,240,000	5,742,000	3,900,000	3,952,000	3,138,000
Costa Rica	2,000	31,000	152,000	202,000	200,000
Colombia .. .. .	..	..	1,121,000	1,095,000	977,000
Transvaal	11,654,000	1,481,000	38,628,000	39,490,000	38,306,000
Rhodesia	800	308,000	3,887,000	3,952,000	3,544,000
Gold Coast	85,000	38,000	1,720,000	1,630,000	1,549,000
Madagascar	8,500	142,000	286,000	198,000	195,000
India	1,571,000	1,893,000	2,370,000	2,303,000	2,222,000
Corea	208,000	371,000	765,000	885,000	913,000
Japan	142,000	290,000	1,331,000	1,274,000	1,150,000
Netherlands East Indies	24,000	112,000	555,000	487,000	499,000

The largest increase was recorded in the Transvaal, where the production more than trebled itself in the nineteen years 1897 to 1917.

Amongst countries where important increases took place between 1908 and 1917 may be mentioned Ecuador, where the production in the interval increased from £72,000 to £182,000; Honduras, from £62,000 to £107,000; Congo, from £26,000 to £429,000; Portuguese East Africa, from £15,000 to £38,000; and Philippine Islands, from £38,000 to £297,000.

8. **Employment in Gold Mining.**—The number of persons engaged in gold mining in each State in 1901 and during each of the last five years is shewn in the following table :—

PERSONS EMPLOYED IN GOLD MINING, 1901 AND 1913 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ..	12,064	27,387	9,438	1,000	19,771	1,112	200	70,972
1913 ..	3,570	11,931	3,123	800	13,445	481	175	33,525
1914 ..	3,443	10,398	2,793	375	12,110	402	180	29,701
1915 ..	2,888	8,755	2,766	200	11,323	215	99	26,246
1916 ..	2,317	6,402	1,900	150	9,824	176	99	20,868
1917 ..	1,823	6,069	1,375	150	8,752	155	92	18,416

§ 3. Platinum and the Platinoid Metals.

1. **Platinum.**—(i) *New South Wales.* The existence of platinum was first noted in New South Wales in 1851 by Mr. S. Stutchbury, who found a small quantity near Orange. Since the year 1878 small quantities of the metal have been obtained from beach sands in the northern coastal district. Platiniferous ore was noted in 1889 at Broken Hill. The chief deposits at present worked in the State are situated at Platina in the Fifield division, near Parkes, and the production in 1917 amounted to 259 ozs., valued at £2,072, while the total production recorded for the period 1894–1917 amounted to 14,073 ozs., valued at £37,509.

At Platina, gold is found in association with the platinum, and it is estimated that there are 200 acres of metalliferous country sufficiently rich to yield a satisfactory return, provided it were worked on a large scale with an abundant water supply.

(ii) *Victoria.* In Gippsland, Victoria, the metal has been found in association with copper. The production of platinum in 1913 amounted to 127 ozs., and was contained in matte produced by the Gippsland Copper, Platinum, and Gold Mining and Smelting Company, from ores raised from the old mine at Cooper's Creek. There was no production during the last four years.

2. **Osmium, Iridium, etc.** (i) *New South Wales.* Small quantities of osmium, iridium, and rhodium are found in various localities. As far back as 1860, the Rev. W. B. Clarke stated that he found native iridium. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban; on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places. In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

(ii) *Victoria.* In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

(iii) *Tasmania.* For many years osmiridium has been known to exist in the bed of the Savage River, on the West Coast, and in rivulets and creeks in the serpentine country, but it was not until early in 1911 that efforts were made to work the deposits. During that year the price paid for the mineral reached £7 10s. per oz., and about 100 men were engaged in the search for it. The quantity produced amounted to 271 ozs., valued at £1,188. In 1912 the production was 779 ozs., valued at £5,742, or an average of £7 7s. 9d. per oz. The production in 1913 amounted to 1,261 ozs., valued at £12,016, in 1914 to 1,019 ozs., valued at £10,076, in 1915 to 247 ozs., valued at £1,581, in 1916 to 222 ozs., valued at £1,899, and in 1917 to 332 ozs., valued at £4,898. A specimen found by a prospector at the Whyte River weighed 2 ozs. 8 dwts. 7 grs. A new and valuable discovery was made in 1917 in a creek between the Mt. Stewart silver mine and the Meredith Range. It is stated that the selling price has occasionally reached as high as £11 per oz., but this extraordinary value was dependent on causes which are not too well known. Owing to the war, the market in 1914 was for a time closed, but a parcel of 13 ozs. forwarded to America was sold at an average of £5 13s. 6d. per oz. The declining

production in 1915 and 1916 was due to difficulty in disposing of the metal. In 1917 the price increased from £11 to £18 10s. per oz., and for selected parcels £22 10s. per oz. was paid. Besides a steady and increasing use in the manufacture of fountain pens there is at present some demand for iridium and osmiridium in connection with the prevailing fashion in hard platinum jewellery.

§ 4. Silver.

1. **Occurrence in Each State.**—Particulars regarding the occurrence of silver in each State will be found in preceding Year Books, Nos. I. to V., but considerations of space preclude the repetition of this matter in the present volume.

2. **Development of Silver Mining.**—In illustration of the development of silver mining in Australia the following table has been compiled, shewing the production of silver, silver-lead and ore, and lead from each State during the years 1881, 1891, 1901, and the five years ending 1917 :—

PRODUCTION OF SILVER AND LEAD, AUSTRALIA, 1881 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1881 ..	14,651	5,021	13,494	1,182	11,224	50	..	45,622
1891 ..	3,621,614	6,277	50,000	1,787	250	52,284	4,140	3,736 352
1901 ..	1,954,964	6,657	69,234	3,196	7,609	206,228	710	2,248,598
1913 ..	4,173,867	2,954	134,121	1,400	82,422	319,997	2,228	4,716,989
1914 ..	3,611,369	2,188	38,640	529	69,512	96,225	545	3,819,008
1915 ..	3,321,101	1,771	34,610	902	63,629	91,689	..*	3,513,702
1916 ..	4,084,623	3,338	50,588	5,173	109,221	153,796	†1,068	4,407,807
1917 ..	5,110,096	1,406	55,181	12,351	178,872	152,122	†275	5,510,303

* 1st January to 30th June.

† Year ended 30th June.

Information regarding the respective quantities and values of the silver and lead included is given hereunder where available.

New South Wales. The figures quoted for New South Wales in the above table represent the *net* value of the product (excluding zinc) of the silver-lead mines of the State. In explanation of the values thus given, it must be noted that the metallic contents of the larger portion of the output from the silver-lead mines in the State are extracted outside New South Wales, and the Mines Department considered, therefore, that the State should not take full credit for the finished product. Hence the *net* value referred to above relates to that of the ore, concentrates, and bullion, as declared by the several companies to the Customs Department at date of export. The real importance of the State as a producer of silver, lead, and zinc is thus to some extent lost sight of. The next table, however, which indicates the value of these metals locally produced, and the value of concentrates exported during the last five years, will shew the estimated total value of the yield from the three metals :—

VALUE OF PRODUCTION FROM SILVER-LEAD MINES OF NEW SOUTH WALES, 1913 TO 1917.

Year.	Value of Silver, Lead, and Spelter produced within the C'wealth.	Value of Concentrates Exported.	Total.
	£	£	£
1913	2,709,867	3,759,691	6,469,558
1914	2,592,322	3,004,248	5,596,570
1915	1,634,717	3,176,434	4,811,151
1916	1,079,290	3,861,018	4,940,308
1917	945,164	5,052,237	5,997,401

The metallic contents represented in the values above were given as—Silver, 9,363,133 ozs.; lead, 150,637 tons; and spelter, 78,729 tons.

As regards silver alone, the following table, which has been prepared on a basis similar to that on which the preceding table was compiled, shews the estimated total quantity and value of that metal yielded by the mines of New South Wales up to the end of 1907 and during the last ten years :—

ESTIMATED QUANTITY AND VALUE OF SILVER YIELDED BY MINES OF NEW SOUTH WALES TO END OF 1917.

Period.	Produced in Australia.		Contained in Concentrates, etc., Exported.		Total Production.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
To the end of 1907	Fine ozs. 109,680,872	£ 17,152,292	Fine ozs. 120,424,691	£ 20,394,602	Fine ozs. 229,425,563	£ 37,546,894
1908	6,484,288	693,034	5,499,381	587,768	11,983,669	1,280,802
1909	3,717,016	382,605	6,867,775	732,563	10,584,791	1,115,168
1910	5,196,323	561,280	7,608,336	843,257	12,804,659	1,404,537
1911	5,731,468	620,578	8,797,677	973,210	14,529,145	1,593,788
1912	5,220,538	641,707	8,293,711	1,036,715	13,514,249	1,678,422
1913	5,908,638	719,249	8,596,251	1,038,714	14,504,889	1,757,963
1914	5,481,286	630,658	7,879,240	820,754	13,360,526	1,451,412
1915	3,081,952	325,210	5,222,927	544,055	8,304,879	869,265
1916	1,962,091	279,592	6,107,280	839,751	8,069,371	1,119,343
1917	1,782,004	323,241	7,581,129	1,389,874	9,363,133	1,178,115
Total	153,566,476	22,334,446	192,878,398	29,201,263	346,444,874	51,535,709

3. Chief Centres of Silver Production.—Broken Hill, in New South Wales, and Zeehan, in Tasmania, are the great centres of silver production in Australasia. The production in Queensland has, however, considerably expanded during the last few years.

(i) *New South Wales.* (a) *Broken Hill.* A description of the silver-bearing area in this district is given in preceding issues of the Year Book. During 1913 the output of ore from the mines in this division amounted to 1,744,000 tons, the highest recorded in the history of the field, but owing to the dislocation caused by the war the quantity raised in 1914 decreased to 1,442,000 tons. For 1915 the production was returned as 1,505,000 tons, but the British Junction, North Junction Lead and Block 10 mines were closed throughout the year. During 1916, when the Junction North mine remained closed, the production was returned at 1,020,000 tons, but the value of the output was £4,480,000 as compared with £3,342,000 in 1915. For the year 1917 the production of ore was stated at 1,031,000 tons, and the estimated value of the output £5,148,000.

Although the returns are not complete in all cases, the following table relating to the mines at Broken Hill will give some idea of the richness of the field :—

RETURNS OF BROKEN HILL SILVER MINES TO END OF 1917.

Mine.	Authorised Capital.	Value of Output to end of 1917.	Dividends and Bonuses Paid to end of 1917.
	£	£	£
Broken Hill Proprietary Co. Ltd.	600,000	*45,768,375	11,287,654
Broken Hill Proprietary Block 14 Co. Ltd.	155,000	3,692,392	601,660
British Broken Hill Proprietary Co. Ltd.	339,000	3,787,102	652,550
Broken Hill Proprietary Block 10 Co. Ltd.	1,000,000	4,553,640	1,382,500
Sulphide Corporation Ltd. (Central Mine)	1,050,000	†19,231,310	2,289,375
Broken Hill South Silver Mining Co.	200,000	8,307,746	2,395,848
North Broken Hill Mining Co. Ltd.	600,000	5,555,220	1,678,940
Broken Hill Junction Lead Mining Co.	150,000	1,084,352	85,000
Junction North Broken Hill Mine	375,000	2,182,615	88,793
The Zinc Corporation Ltd. .. ..	||	2,169,427	10,000
Barrier South Ltd.	168,000	151,157	50,000
Totals	4,637,000	†96,483,336	20,522,320

* The value of the ores purchased during the years 1908 to 1914 is not included. † Output understated owing to incomplete returns. ‡ Not available.

(b) *Yerranderie*. The mines on the Yerranderie field in the Southern Mining District produced 174,321 ozs. of silver in 1916, besides 234 ozs. of gold, and 585 tons of lead, the total production being valued at £42,000. Mining operations in this locality are carried on under considerable difficulties owing to the heavy cost of transport, the cost of cartage to and from Camden railway station—£2 5s. per ton—preventing successful exploitation of the lower grade ores.

(c) *Cobar*. A considerable quantity of silver is obtained from the Great Cobar Mine and attached properties, the production in 1914 amounting to 24,305 ozs. Owing to the dislocation of the industry caused by the war the yield in 1915 fell to 1,838 ozs., but it rose again in 1916 to nearly 48,000 ozs.

(ii) *Tasmania, West Coast*. The production of silver-lead ore in 1917 was 9,576 tons, valued at £152,122, to which the Zeehan Mines contributed 1,885 tons, valued at £35,000. In the Mt. Farrell District the North Mt. Farrell contributed 2,000 tons, valued at £23,000, while the Magnet Mines returned a yield of 3,800 tons, valued at £76,000, and the Round Hill, Mt. Claude, about 800 tons, valued at £10,000. The silver contents of the copper ores treated at the Mt. Lyell works amounted in 1917 to 305,506 ozs.

(iii) *Queensland*. The yield for the chief silver-producing centres in 1917 was as follows:—Charters Towers, silver £1,636, lead £615; Cloncurry, silver £7,804; Etheridge, silver £2,581, lead £3,015; Mt. Morgan, silver £8,522; Herberton, silver £11,242, lead £2,790; Burketown, lead £6,937, silver £1,275; Chillagoe, silver £3,414, lead £488.

(iv) *South Australia*. Rich specimens of silver ore have been discovered at Miltalie and Poonana, in the Franklin Harbour district, also at Mount Malvern and Olivaster, near Rapid Bay, and in the vicinity of Blinman and Farina. The surrounding district is highly mineralized, but, so far, has not been thoroughly prospected. The production of silver and silver-lead ore in 1917 was valued at £12,000.

(v) *Western Australia*. The quantity of silver obtained as a by-product and exported in 1917 was 222,075 ozs., valued at £38,339. In addition, lead and silver-lead to the value of £593, and 4,661 tons of pig lead, valued at £139,940, were exported.

(vi) *Northern Territory*. Silver-lead ores are worked near Pine Creek, and at Mount Shoebridge near Brock's Creek railway station. About 178 tons of ore were shipped during 1916 from McCarthy's lead mine.

4. **World's Production of Silver.**—The world's production of silver during the last ten years for which particulars are available is estimated to have been as follows:—

WORLD'S PRODUCTION OF SILVER, 1908 TO 1917.

Year	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.
World's production in 1,000 fine ozs.*	212,570	227,291	240,223	254,214	250,979	214,391	171,429	179,754	176,000	167,000

* Add 000 to figures for fine ounces.

Australasia's share in the world's silver production in 1917 was estimated at 3,500,000 ounces, or about 2 per cent. on the total production.

5. **Prices of Silver.**—As the production of silver is dependent to a very large extent on the price realised, a statement of the average price per standard ounce in the London market at various periods and during the last seven years is given below:—

PRICE OF SILVER, 1881 TO 1917.

Year	1881.	1891.	1901.	1911.	1912.	1913.	1914.	1915.	1916.	1917.
Pence per standard oz. ..	51 $\frac{1}{2}$	45 $\frac{1}{2}$	27 $\frac{3}{4}$	24 $\frac{3}{4}$	28 $\frac{1}{2}$	27 $\frac{1}{2}$	25 $\frac{1}{2}$	23 $\frac{1}{2}$	31 $\frac{1}{2}$	40 $\frac{1}{2}$

During the month of November, 1906, owing to the small sales in New York, and also to the fact that the Indian, American, and Mexican Governments were all buying silver, the price rose to 33 $\frac{1}{2}$ d., the highest realised since 1893, when the average stood at 36 $\frac{1}{2}$ d.

6. **Employment in Silver Mining.**—The number of persons employed in silver mining in 1901 and during each of the last five years is given below :—

NUMBER OF PERSONS EMPLOYED IN SILVER MINING, 1901 AND 1913 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ..	6,298	..	40	150	..	2,414*	†	8,902‡
1913 ..	9,357	..	204	30	132	1,272	16	11,011
1914 ..	8,242	..	130	25	100	491	10	8,998
1915 ..	5,564	..	49	25	70	519	86	6,313
1916 ..	6,461	..	62	25	§244	555	86	7,433
1917 ..	7,619	..	71	..	§328	646	33	8,697

* Including copper miners. † Included in South Australia. ‡ Including copper miners in Tasmania.
§ Lead ore.

As the table shews, the bulk of the employment was in New South Wales and Tasmania, the quantity of silver raised in the other States, excepting Queensland, being unimportant.

§ 5. Copper.

1. **Production of Copper.**—The production of copper in the various States of the Commonwealth has been influenced considerably by the ruling prices, which have undergone extraordinary fluctuations. The quantity and value of the production in earlier years and for 1913 to 1917 are shewn in the following tables :—

PRODUCTION OF COPPER, AUSTRALIA, 1881 TO 1917.

State.	1881.	1891.	1901.	1908.	1913.	1914.	1915.	1916.	1917.	
QUANTITY.										
N.S.W.	Ingot & Matte	4,124	2,363	6,087	8,679	9,153	5,081	2,463	5,617	6,576
	Ore ..	1	347	645	392	308	1,526	4,510	554	..
Victoria	Ore ..	583	60	..	983	1,221	..	..	..	..
Q'land	Ingot & Matte	331	85	3,087	14,698	23,655	18,436	19,704	19,520	19,062
	Ore ..	..	35	1,997	..	..	..	..	..	..
S. Aust.	Ingot & Matte	3,824	3,592	9,741	5,628	7,161	6,881	7,725	7,279	7,213
	Ore ..	21,638	13,035	1,869	..	..	..	..	..	..
W. Aust.	Ingot & Matte	..	..	880	479	82	183	946	457	535
	Ore ..	..	263	2,661	2,503	4,339	3,913	737	650	966
Tasmania	Ingot & Matte	..	..	9,981	8,833	4,569	7,509	7,901	6,305	5,845
	Ore ..	..	..	10,029	1,185	..	3,288	66	97	771
Northern Territory	Ingot & Matte	..	..	..	100	..	..	..	..	..
	Ore ..	..	257	483	424	41	528	831*	950†	48†

VALUE.

	£	£	£	£	£	£	£	£	£
N.S.W. ...	267,884	119,195	412,292	502,812	598,733	274,671	234,437	586,127	814,154
Victoria	8,186	216	..	1,994	2,829	..	..	..	..
Q'land ..	19,637	4,084	182,256	882,901	1,660,178	1,118,648	1,423,793	2,265,422	2,208,232
S. Aust.	418,296	235,817	491,617	338,000	488,986	417,437	561,247	822,527	902,495
W. Aust.	..	4,462	110,769	57,091	142,363	38,174	91,169	64,833	85,738
Tasmania	..	..	1,010,037	609,651	375,664	496,041	709,534	886,454	847,754
Nor. Terr.	..	3,619	8,460	7,968	482	4,860	7,000*	8,162†	5,517†
C'wealth	714,003	367,373	2,215,431	2,400,417	3,269,235	2,349,881	3,032,180	4,633,525	4,863,890

* 1st January to 30th June. † Year ended 30th June.

A short account of the discovery of copper in the different States is given in the earlier Year Books.

2. Sources of Production.—(i) *New South Wales*. The principal seat of the copper-mining industry at the present date is in the Cobar district, the value of the deposits there being first recognised in 1869. The value of the output from this district in 1917 was £509,916, out of a total for the State of £814,154. During the year the Great Cobar Limited produced 2,694 tons of copper valued at £314,299, the C.S.A. Mines Ltd. in the same division 443 tons valued at £33,276, and the Gladstone Mine 284 tons valued at £35,099. The most important yields from other districts included 680 tons valued at £73,850 from the Mowamba Mines Ltd. at Nymagee, 650 tons valued at £52,000 from Mount Royal Mine, Tottenham, 292 tons valued at £29,200 from the Abercrombie Mines at Burruga, and from the Mount Hope Ltd. 267 tons valued at £26,700.

The Electrolytic Refining and Smelting Company of Australia Limited, established at Port Kembla, produced 5,604 tons of copper, valued at £706,104, from ores won in the State.

(ii) *Queensland*. The yield in this State amounted in 1917 to 19,062 tons, valued at £2,208,232, to which the Cloncurry field contributed 10,189 tons, valued at £1,181,953. Next in order were Mount Morgan with 6,971 tons, valued at £808,636; Gladstone, 744 tons, £83,295; Herberton, 565 tons, £65,577; Chillagoe, 204 tons, £23,664, and Mount Perry, 176 tons, £20,416.

The Cloncurry district—reckoned the richest and most extensive cupriferous area in Australia—produces more than half the copper output of the State, and its yield far exceeds in value the total gold output.

(iii) *South Australia*. Taking the entire period over which production extended, the yield of copper in South Australia easily outstrips that of any other State in the Commonwealth. In recent years, however, Queensland, Tasmania, and New South Wales have come to the front as copper producers, as the table on the preceding page will shew. Deposits of copper ore are found over a large portion of South Australia. A short account of the discovery, etc., of some of the principal mining areas, such as Kapunda, Burra Burra, Wallaroo, and Moonta, is given in preceding issues of the Official Year Book. During 1917 the production amounted to 7,213 tons, valued at £902,495, the bulk of the production being from the Wallaroo and Moonta Company which employs over 1,900 hands.

(iv) *Western Australia*. The value of copper and ore exported from this State in 1917 was £85,738. According to the returns, the production in the West Pilbara field was 784 tons, valued at £13,406, while the Phillips River field shewed a production of 5,256 tons, valued at £66,868. The Peak Hill district shewed a production of 288 tons, valued at £9,683, and small quantities were produced on the Murchison and Ashburton fields.

(v) *Tasmania*. The quantity of blister copper produced in Tasmania during 1917 was 5,845 tons, valued at £841,583, and of copper and copper ore, 771 tons, valued at £6,171, the bulk of the production being due to the Mount Lyell Mining and Railway Co. Ltd. This Company treated 240,894 tons of ore in 1917, and produced 5,845 tons of blister copper, containing copper, 5,779 tons; silver, 305,506 ozs.; and gold, 7,339 ozs., the whole being valued at £872,406. The employes in 1917 numbered 1,612, of whom 755 were miners, 701 were engaged in the reduction works, and 156 in the railway department.

(vi) *Northern Territory*. Copper has been found at various places, including Copperfield, 5 miles south-east of Pine Creek, Mount Diamond and Burns Wolfram, 45 miles east of Pine Creek, at Coronet Hill, Daly River, Kilgour Creek, and Woolagarang.

3. Prices of Copper.—The great variation in price that the metal has undergone is shewn in the following table, which gives the average price in London and New York during 1901 and in each of the last five years. The figures are given on the authority

of *The Mineral Industry*. No quotations were recorded for the months August, September and October in the London price for 1914, and the average for that year is based on the returns for the remaining nine months.

FLUCTUATION IN VALUE OF COPPER, 1901 AND 1913 TO 1917.

Year.	London Price per Ton Standard Copper.	New York. Price in Cents per lb.	
		*Lake Copper.	Electrolytic Copper.
	£	Cents.	Cents.
1901	66.79	16.55	16.11
1913	68.35	15.69	15.27
1914	61.52	..	13.60
1915	72.53	..	17.28
1916	116.06	..	27.20
1917	124.89	..	27.18

* The term "Lake" copper is used to designate all copper sold in the trade as such, regardless of the process by which it is refined. During the last five months of 1913 sales by the Lake Superior Companies were scattered and irregular.

4. **World's Production of Copper.**—The world's production of copper in 1901, and during the five years 1913–17, is estimated to have been as follows:—

WORLD'S PRODUCTION OF COPPER, 1901 AND 1913 TO 1917.

Year	1901.	1913.	1914.	1915.	1916.	1917.
World's production— (short tons)	583,517	1,104,517	1,018,395	1,206,793	1,552,347	1,559,736

The Australasian production is estimated at about 2½ per cent. of the total.

5. **Employment in Copper Mining.**—The number of persons employed in copper mining during 1901 and in each of the last five years was as follows:—

PERSONS ENGAGED IN COPPER MINING, 1901 AND 1913 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ..	2,964	4	814	4,000	321	*	†	8,103‡
1913 ..	2,629	12	3,687	4,000	213	2,162	53	12,756
1914 ..	1,357	..	2,578	3,000	192	2,099	88	9,314
1915 ..	914	..	2,149	2,000	144	1,758	97	7,062
1916 ..	1,661	..	2,922	2,000	113	1,719	97	8,512
1917 ..	2,074	..	3,154	2,000	154	1,671	92	9,145

* Included with silver miners. † No returns. ‡ Excluding Tasmania and Northern Territory.

§ 6. Tin.

1. **Production of Tin.**—The development of tin mining is, of course, largely dependent on the price realised for the metal, and as in the case of copper, the production has been subjected to somewhat violent fluctuations. The table below shows the production in each of the Commonwealth States during the years 1881, 1891, 1901, and 1913 to 1917 :—

TIN PRODUCED IN AUSTRALIA, 1881 TO 1917.

State.	1881.	1891.	1901.	1913.	1914.	1915.	1916.	1917.
QUANTITY.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	{ Ingots 5,824	1,454	649	903	650	857	909	1,109
	{ Ore 609	203	11	2,118	1,667	1,331	1,220	963
Victoria ..	{ Ingots 70	..	..	..	..	..	..	..
	{ Ore 20	1,678	77	57	53	96	122	139
Queensland	{ Ingots 479	193	477	†	†	†	†	†
	{ Ore* 2,977	2,043	1,184	3,198	2,085	2,125	1,707	1,177
Western Australia	{ Ingots ..	..	97	..	..	..	..	..
	{ Ore ..	204	507	484	363	429	463	383
Tasmania ..	{ Ingots 4,120	3,236	1,789	2,609	1,784	2,103	2,219	2,637
	{ Ore 4	56	79	†	†	†	†	†
Northern Territory	{ Ore ..	29	80	258	165	558	1147	1270

VALUE.

	£	£	£	£	£	£	£	£
New South Wales ..	568,795	133,963	76,544	421,292	267,130	266,780	306,497	373,696
Victoria ..	7,620	5,092	4,181	6,980	4,955	9,447	12,955	19,709
Queensland ..	193,699	116,857	93,723	343,669	176,197	183,472	181,401	160,600
Western Australia ..	..	10,200	52,102	72,142	35,649	41,391	49,101	45,288
Tasmania ..	375,775	292,990	216,186	531,983	259,300	292,306	350,852	427,917
Northern Territory ..	..	1,870	5,498	25,526	15,200	55,545	114,700	127,120
Total ..	1,145,889	500,502	448,234	1,401,592	758,431	798,941	915,506	1,054,330

* Dressed tin ore, about 70 % tin. † Included with ore. ‡ Included with ingots. § 1st January to 30th June. || Year ending 30th June.

2. **Sources of Production.**—(i) *New South Wales.* A large proportion of the output in New South Wales was obtained by dredging, the quantity so won in 1917 being valued at £183,156. In the Tingha division the yield amounted to 600 tons, valued at £90,533, the yield from dredging being estimated at £60,534. The Emmaville division in the New England district shewed a yield of 936 tons, valued at £141,568, of which dredging produced 520 tons, valued at £78,836. In the Wilson's Downfall division, 137 tons, valued at £14,605, were raised. The Glen Innes division, also in the New England district, returned a yield of 138 tons, valued at £22,886. The Ardlethan field, in the Lachlan division, produced ore and concentrates to the value of £62,069.

(ii) *Victoria.* In Victoria lode tin has been discovered at Mt. Wills, Beechworth, Eldorado, Chiltern, Stanley, and other places in the north-eastern district; and stream tin has been found in a large number of places, including those just mentioned in the north-eastern district. The bulk of the production in 1917 was obtained by Cock's Pioneer Gold and Tin Co. in the Eldorado district. About £1,300 worth was won in the Toora District, and small yields were recorded from the Beechworth, Mt. Pilot, Chiltern, and Mitta Mitta districts.

(iii) *Queensland.* The chief producing districts in Queensland during 1917 were Herberton, 541 tons, valued at £71,307; Stanthorpe, 214 tons, £30,550; Cooktown, 218 tons, £31,704; Chillagoe, 104 tons, £13,882; and Kangaroo Hills, 70 tons, £9,142. The production of tin was to some extent adversely affected in 1916 by the lack of skilled miners, and also by the high prices offered for several of the other industrial metals, but the phenomenally high prices realised for tin at the close of 1917 has given a fresh impetus to prospecting operations.

(iv) *Western Australia.* The export of tin ore and ingot for the State during 1917 amounted to 383 tons, valued at £45,288. The production from the Greenbushes field amounted to 238 tons, valued at £29,928, and from the Pilbara field 69 tons, valued at £9,264. There was no production from the other fields in 1917.

(v) *Tasmania.* The tin ore raised in 1917 amounted to 2,637 tons, valued at £427,917, as compared with the year 1913, when the production was returned as 4,010 tons, valued at £531,983. The heavy decline was of course due to the paralysis of the tin market occasioned by the war, coupled to some extent with unfavourable weather conditions. The bulk of the production in 1917 came from the North-Eastern Division with 1,250 tons of ore, valued at £211,995. Of the total yield in this division, 631 tons were contributed by the Pioneer and Gladstone districts, 571 tons by the Ringarooma, Derby, and Branxholm districts, and small quantities from Moorina district and Straits Islands. The next highest output was returned from the North-Western Division with 691 tons, to which the celebrated Mt. Bischoff contributed 438 tons, and the Mt. Bischoff Extended, 195 tons. In the Eastern Division, the Avoca mines produced about 202 tons out of a total of 373 tons. The mines in the Western Division produced 250 tons of tin ore in 1917.

(vi) *Northern Territory.* Mount Wells, in the Burrundie district, has yielded a fair output of tin since 1886, and recent developments have proved that the lodes are increasing in size and quality. Copper, silver-lead and tin shows occur abundantly in the district, but little work has been done on them. The recently discovered tin field at Maranboy, about 40 miles east of the Katherine telegraph station, was the largest producer in 1916. It is stated that rapid and systematic development of the ore bodies on this field is greatly retarded by lack of capital. A fairly extensive deposit has been located at Hayes Creek, about 12 miles from Brock's Creek, and only 6 miles from the railway line. Efficient prospecting would probably reveal the existence of other deposits. Two batteries for the treatment of tin ore have been erected by the Government, one at Maranboy, costing £20,163, and one at Hayes Creek, at an expense of £3,294.

3. *World's Production of Tin.*—According to *The Mineral Industry* the world's production of tin during each of the last five years was as follows:—

WORLD'S TIN PRODUCTION, 1913 TO 1917.

1913.	1914.	1915.	1916.	1917.
Tons. 124,890	Tons. 111,506	Tons. 113,319	Tons. 114,108	Tons. 120,790

The yields from the chief producing countries in each of the last three years were as follows:—

	1915.	1916.	1917.
Malaya ..	46,800 ..	43,900 ..	39,800
Bolivia ..	21,800 ..	21,100 ..	25,800
Banka ..	13,800 ..	14,600 ..	13,200
Siam ..	7,800 (a) ..	7,800 ..	9,000 (a)
Cornwall ..	5,000 ..	4,700 ..	4,100 (a)
Billiton ..	5,800 ..	5,000 (a) ..	5,000 (a)
Nigeria ..	4,600 ..	5,000 ..	6,500
China ..	3,000 (b) ..	3,800 (a) ..	9,100 (b)
Australia ..	2,300 ..	5,000 (a) ..	4,600
South Africa ..	2,100 ..	2,000 ..	1,600

(a) Estimate.

(b) Shipments to Europe and U.S.A.

Based on the results for the last two years, Australia's share of the world's tin production would appear to be about 4 per cent.

4. **Prices of Tin.**—The average price of the metal in the London market for the year 1897 and from 1907 to 1917 was as follows :—

PRICE PER TON OF TIN, 1897 TO 1917.

Year.			Price per Ton.	Year.			Price per Ton.
			£ s. d.				£ s. d.
1897	..	..	61 8 0	1912	..	..	209 8 5
1907	..	..	172 12 9	1913	..	..	206 5 7
1908	..	..	133 2 6	1914	..	..	156 12 7*
1909	..	..	134 15 6	1915	..	..	164 4 0
1910	..	..	155 6 2	1916	..	..	132 3 5
1911	..	..	192 7 0	1917	..	..	237 13 1

* Quotations incomplete.

According to *The Mineral Industry* the monthly average in December, 1917, reached the enormous figure of £298 10s. 3d. per ton. The conditions in 1917 were, however, quite abnormal, and, instead of London prices ruling the market, each consuming country tended to fix its own rates, with the result that widely different quotations were recorded from London, New York, France, and Italy.

5. **Employment in Tin Mining.**—The number of persons employed in tin mining in 1901 and during the last five years is shewn below :—

PERSONS ENGAGED IN TIN MINING, COMMONWEALTH, 1901 AND 1913 TO 1917.

Year.	N.S.W.	Victoria.	Qld.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.
1901	1,428	..	1,148	413	1,065	..	4,054
1913	2,362	116	2,102	403	1,947	267	7,197
1914	2,168	65	1,570	217	1,523	186	5,729
1915	1,648	27	1,218	188	1,221	154	4,456
1916	1,938	135	1,093	235	1,217	154	4,772
1917	1,779	42	878	211	1,311	151	4,372

§ 7. Zinc.

1. **Production of Zinc.**—The production of spelter is practically confined to the Broken Hill district of New South Wales, where zincblende forms one of the chief constituents in the enormous deposits of sulphide ores.

Gratifying results have been achieved in the work of the profitable extraction of the zinc contents of the large heaps of accumulated tailings and from the ore raised on the Broken Hill field. The year 1909 witnessed the passing of this problem out of the experimental stage, and the practical solution of the difficulty which had confronted the mining companies for many years. At present not only is the zinc being obtained in a marketable form, but the silver and lead contents are being turned to profitable account. In 1899 the exports of zinc (spelter and concentrates) amounted to 49,879 tons; in 1909 they totalled 373,906 tons, valued at £1,041,280; and in 1917, 113,531 tons,

valued at £441,486, the great bulk of the production being obtained from tailings. The following table shews the production of spelter and concentrates in New South Wales from 1889 to 1917 :—

NEW SOUTH WALES.—PRODUCTION OF ZINC, 1889 TO 1917.

Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value.	Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value.
	Tons.	£		Tons.	£
1889	97	988	1914	359,310	1,020,711
1891	219	2,622	1915	190,916	1,111,569
1899	49,879	49,207	1916	209,741	961,849
1913	506,661	1,547,987	1917	113,531	441,486

The total quantity of zinc (spelter and concentrates) produced in New South Wales to the end of the year 1917 was 4,199,876 tons, valued at £12,623,515. The metallic zinc contents of the ores and concentrates produced during 1917 was estimated at nearly 79,000 tons.

At the Silver Spur mine at Texas, in the Stanthorpe division in Queensland, part of the ore is high in zinc and lead, but low in silver. Profitable extraction of the zinc and lead depends, however, on railway connection with the mine. Zinc sulphide is produced by the Mount Garnet Mine in the Herberton district, and during 1916 several hundred tons of good quality ore were raised, but until a suitable treatment plant has been erected, it is stated that production cannot be economically undertaken.

During the year 1916, a small quantity of zinc, valued at £630, was produced in Western Australia, but there was no production in 1917.

The Tasmanian mineral returns for 1917 included an item of 48 tons of zinc valued at £1,968, but as the metal was produced at the Electrolytic Zinc Co.'s works at Risdon from concentrates sent from Broken Hill, the item has been excluded from the totals shewn herein.

2. **Prices of Zinc.**—During the four years 1911 to 1914, the price of zinc averaged £23 15s. per ton, ranging from £21 in 1914 to £26 3s. 4d. in 1912. Owing to the heavy demand and other circumstances arising out of the war, the prices in 1915 and 1916 reached the very high average of £68 19s. 7d. and £71 18s. 6d. per ton respectively. For 1917 the average recorded was £54 per ton.

§ 8. Iron.

1. **General.**—The fact that iron-ore is widely distributed in the Commonwealth has long been known, and extensive deposits have been discovered from time to time at various places throughout the States. It will appear, however, from what is stated below, that until quite recently, little has been done in the way of converting these deposits into a marketable commodity.

(i) *The Manufactures Encouragement Act 1908-14.* It was hoped that the passing by the Commonwealth Parliament of the Manufactures Encouragement Act, which came into force on the 1st January, 1909, would assist in firmly establishing the iron industry in Australia on a remunerative basis, both in the smelting of pig iron and in the production of bar iron and steel from Australian ore. The Act referred to, together with its amendment in 1912, provided for the payment up to June, 1914, of bounties of 12s. per ton on Australian pig iron, puddled bar iron, and steel, and of 10 per cent. on the value of galvanised sheet or plate, wire netting, wire, and iron or steel pipes and tubes. During the period from 30th June, 1909, to 30th June, 1915, a sum of £173,671 was paid in connection with these bounties. (For details see Official Year Book No. 11, p. 452.)

(ii) *The Iron Bounty Act 1914-15.* This Act repealed the Manufactures Encouragement Act 1908-14, and provided for a bounty on Australian pig iron up to the end of 1916. The rate of bounty was 8s. per ton, and the total amount authorised £60,000.

Provision was made for transfer, if required, to the State, of lands, buildings, etc., used in the manufacture of pig iron. During the three years 1915 to 1917 the respective bounties amounted to £19,808, £24,465, and £11,454, and the corresponding tonnages of pig iron to 49,520, 61,162, and 28,635 tons. So far New South Wales is the only State where bounty has been claimed.

2. **Production of Iron.**—(i) *New South Wales.* Reference to the extent of the deposits of iron ore in the State, and the events leading up to the establishment of iron-works at Lithgow, will be found in earlier issues of the Year Book (see No. III., p. 508). During 1917 the following materials were received at the blast furnace at the Eskbank Iron Works, Lithgow:—Iron ore, 91,927 tons; limestone, 35,377 tons; and coke, 77,871 tons. The output was 45,025 tons of pig iron, and the quantity of steel ingots made 19,667 tons. The iron ore was raised from quarries at Tallawang and Coombing Park.

The Broken Hill Proprietary Company established works for the manufacture of iron and steel on a large scale at Newcastle, and operations were started early in 1915. The Company is utilising the immense deposit of iron ore at the Iron Knob quarries in South Australia, which are connected with the seaboard at Hummock Hill, a distance of about 36 miles, by the Company's tramway. The ore quarried for the year ending December, 1918, amounted to 267,863 tons. Extensive limestone works and loading bin at Devonport, Tasmania, as well as quarries in New South Wales for dolomite, magnesite, etc., are also owned by the Company. The steel works consist of two blast furnaces of a nominal daily capacity of 350 tons each, and a third furnace of 100 tons for the production of foundry iron. The output of pig iron for the year from the one blast furnace and small foundry furnace amounted to 138,873 tons. The seven 65-ton open-hearth steel furnaces already in operation are being extended by the addition of two others of equal capacity. With seven furnaces, the present output is over 3,000 tons weekly. The actual output of steel ingots during 1918 was 163,990 tons. The works are supplied with a 28-in. bloom and rail-rolling mill, able to deal with 500 tons of finished rails daily. There are also in operation an 18-in., 12-in., and 8-in. mill for merchant steel, as well as a rod mill for production of rods for wire drawing capable of an output of 350 to 400 tons of rods per week down to size No. 5, .212 of an inch. The output from the mills during the twelve months ending 1918 was as follows:—

Rails	69,008 tons
Billets	26,221 "
Fishplates and Splice Bars	11,485 "
Structural Steel	16,468 "
Round and Octagon Steel	13,157 "
Flat Steel.. .. .	5,308 "
Plates	8,414 "
Blooms	8,197 "
Square Steel	909 "
Rods	3,850 "
Total	163,017 tons

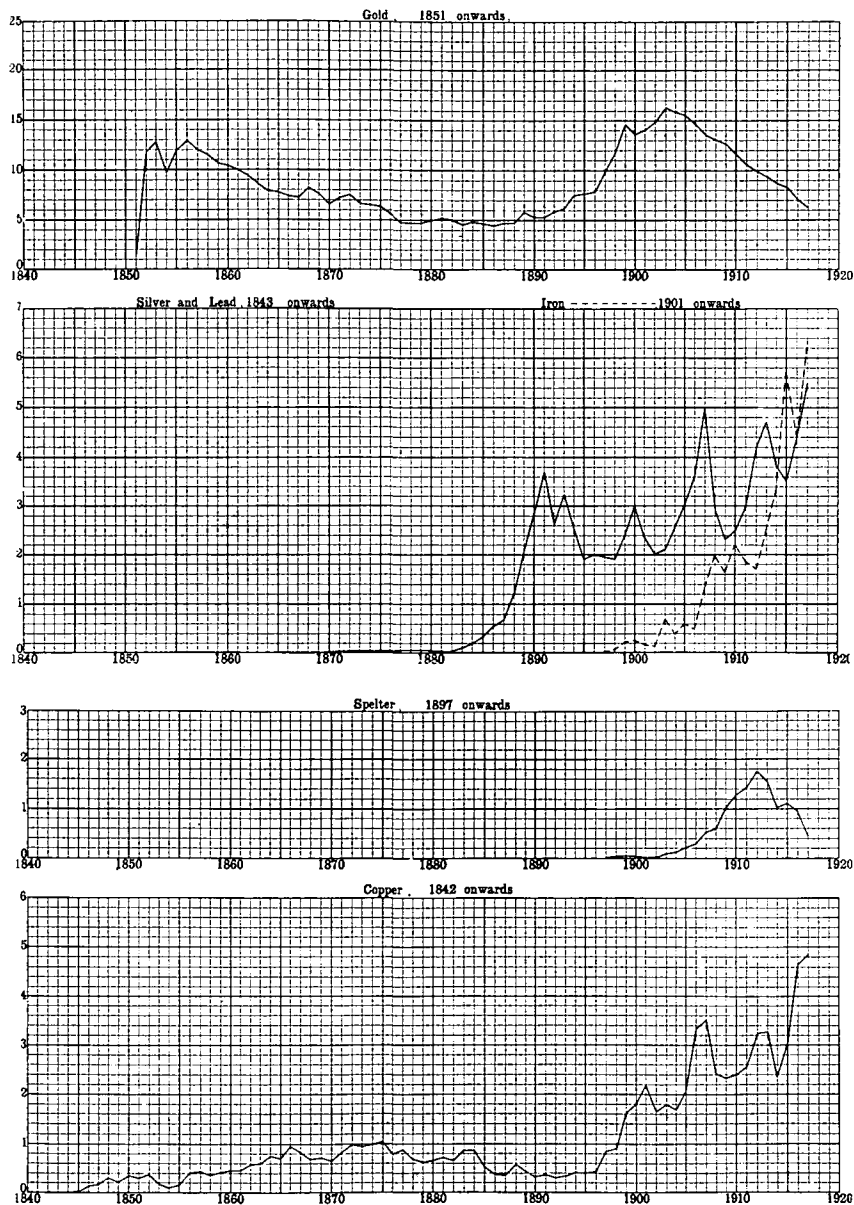
The Company is producing its own coke for the furnaces, having already 156 by-products ovens in operation and 39 in course of construction. The tar and sulphate of ammonia produced during 1918 amounted to 1,587,305 gallons and 2,326 tons respectively.

The following table shews the quantity and value of finished iron, pig iron, etc., made in New South Wales during the last seven years from locally-raised ores:—

NEW SOUTH WALES.—PRODUCTION OF IRON (LOCAL ORE), 1911 TO 1917.

Particulars.	1911.	1912.	1913.	1914.	1915.	1916.	1917.
Quantity .. Tons	36,354	32,677	46,563	75,150	76,318	52,556	45,025
Value .. £	145,416	130,708	186,252	254,257	267,000	197,085	247,637

GRAPHS SHEWING VALUES OF THE PRINCIPAL MINERALS PRODUCED IN THE COMMONWEALTH, 1840 TO 1917.



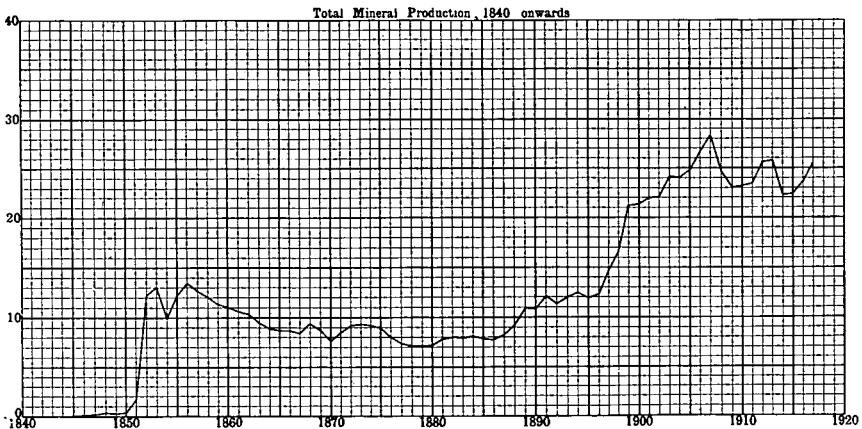
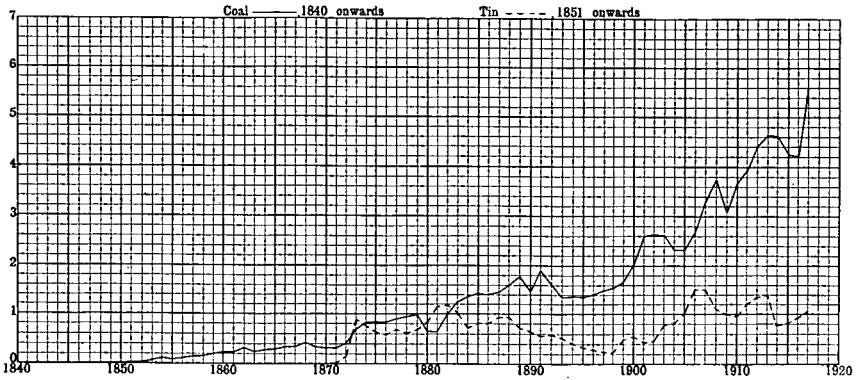
(See pages—for gold, 428 ; silver, 436 ; iron, 446 ; spelter, 445 ; copper, 439.)

EXPLANATION OF GRAPHS.—The values shewn in the above diagrams are those of the total Commonwealth production of certain of the most important minerals in successive years from 1842 to 1917.

The base of each small square represents an interval of one year, and the vertical height represents in the case of gold £1,000,000, in the case of silver and lead, zinc, and copper £200,000, and in the case of iron £20,000.

In the case of the graph for Iron, for " 1901 onwards " read " 1897 onwards. "

GRAPHS SHEWING VALUES OF THE PRINCIPAL MINERALS PRODUCED IN THE COMMONWEALTH, 1840 TO 1917.



(See pages 454 for coal ; 442 for tin ; and 425 for total mineral production.)

EXPLANATION OF GRAPHS.—The values shewn in the above diagrams are those of the total Commonwealth production of certain of the most important minerals in successive years from 1840 to 1917.

The base of each small square represents an interval of one year, and the vertical height represents in the case of coal and tin £200,000, and in the case of total mineral production £1,000,000.

A quantity of iron oxide is purchased by the various gasworks for use in purifying gas, the output in New South Wales being drawn chiefly from the deposits at Port Macquarie, while smaller quantities are obtained from Mittagong. During 1917 the iron oxide raised amounted to 1,431 tons, valued at £1,265, while the total output to the end of that year was 26,000 tons, valued £48,000. Up to the end of 1912 a certain amount of ironstone was raised each year for fluxing purposes, but as the smelting companies obtained suitable ores for treatment there was no subsequent production till 1916, when 1,472 tons, valued at £1,083, were raised. In 1917 the quantity raised was 4,482 tons, valued at £3,498. The total raised for the period 1899-1917 amounted to 113,000 tons, valued at £86,000.

(ii) *Victoria.* Iron ore has been located at various places in Victoria, particularly at Nowa Nowa, in the Gippsland district, and at Dookie. A blast furnace was erected in 1881 near Lal Lal, on the Moorabool River, and some very fair quality iron was produced, which was used for truck wheels and stamper shoes in the Ballarat mines. The fall in the price of the metal, however, led to the closing of the works. In his report for 1905 the Secretary for Mines states that without special assistance to the industry there does not seem to be any prospect of the deposits being profitably worked.

(iii) *Queensland.* Queensland possesses some extensive deposits of iron ore, which is mined chiefly for fluxing purposes in connection with the reduction of gold and copper ores. During the year 1917, 25,065 tons of ironstone flux, valued at £23,611, were raised, of which 23,438 tons, valued at £22,944, came from the Rockhampton district, and about 1,600 tons, valued at £700, from the Cloncurry field. In 1917 satisfactory tests were made in connection with the smelting of ore from the extensive lode of magnetic iron at Biggenden, and the Government Geologist has recommended the establishment of a State ironworks to make pig iron from the ore.

(iv) *South Australia.* South Australia possesses some rich deposits of iron ore capable of being mined for an indefinite period. The best known deposit is the Iron Knob, a veritable hill of iron of high percentage, situated about 40 miles W.S.W. from Port Augusta. The estimated quantity of iron ore in sight at the Iron Knob and Iron Monarch has been set down at 21,000,000 tons. The Broken Hill Company utilises ore from this quarry at its ironworks at Newcastle, New South Wales, and the amount raised for the year 1917 was 328,386 tons, valued at £359,723.

(v) *Western Australia.* This State has some very rich deposits of iron ore, but owing to their geographical position, the most extensive fields at the present time are practically unexploited, the production in the State being confined chiefly to that needed for fluxing purposes. The Murchison field possesses some extensive deposits of high-grade ore. There are also deposits on Koolan Island at Yampi Sound. The production of pyritic ore reported in 1917 amounted to 3,575 tons, valued at £1,752.

(vi) *Tasmania.* The existence of large quantities of iron ore in Tasmania was noted as far back as 1822, when Surveyor-General Evans alluded to the "surprising abundance of iron within a few miles of Launceston." A company known as the Tasmanian Charcoal Iron Company was formed to work these deposits, and commenced operations in June, 1876. Unfortunately, however, the presence of chromium rendered the pig iron so hard and brittle that the works had to be abandoned. Extensive deposits of specular iron ore are also found in the neighbourhood of the Blythe and Gawler Rivers. The total production of iron ore in 1908 was 3,600 tons, valued at £1,600, and was all raised by the Tasmanian iron mine at Penguin, but owing to the closing down of that mine in 1909 there has been no further production. Iron pyrites for the manufacture of sulphuric acid and of manures is produced on the West Coast, the quantity raised in 1917 being 7,685 tons, valued at £7,137.

(vii) *Northern Territory.* Large bodies of rich ironstone have been discovered in various parts of the Territory, particularly between the Adelaide River and Rum Jungle. Owing to the lack of local coal, however, the deposits possess no immediate value.

(viii) *World's Production of Iron, 1915.* The quantity of iron produced in Australia is but a very small proportion of the world's production, which in 1915, the latest year for which complete estimates are available, amounted to 64,516,000 metric tons (pig iron). The leading position for magnitude of production is held by the United States, which in 1915 produced 30,000,000 tons, compared with Germany's 11,790,000 tons, and the United Kingdom's 8,793,000 tons. The position of the three countries named is similar to what it has been for several years past. Unfortunately, complete returns for a later year than 1911 are not available in regard to steel, but the production for that year is given as 58,276,000 metric tons.

§ 9. Other Metals.

1. **Antimony.**—This metal is widely distributed in the north-eastern portion of New South Wales, between the 148th meridian and the coast, and has been found native at Lucknow, near Orange. Dyscrasite, a silver antimonide, has been found in massive blocks in the Broken Hill lodes. The production of antimony (metal and ore) in 1917 amounted to 301 tons, valued at £3,738. The ore was raised mainly in the Hillgrove division, where it is found in association with scheelite and gold, and small quantities were obtained in the Glen Innes and Kempsey Divisions. The total quantity of antimony (metal and ore) raised in New South Wales up to the end of 1917 was 18,262 tons, valued at £335,686. The production of antimony concentrates in Victoria during 1917 amounted to 12,052 tons, valued at £58,489. The whole of the production came from ore raised by a company operating at Costerfield. In Queensland extensive deposits were discovered at Neerdie, in the Wide Bay district, during 1872, also at Wolfram Camp, on the Hodgkinson field, on the Palmer River, in the Ravenswood district, and on the Mitchell River in the Herberton district. Ore has also been obtained in the Dividing Range near Herberton, and adjacent to some of the central tributaries of Emu Creek. Production in 1916 amounted to 192 tons, valued at £3,965, but owing to the low price quoted for antimony ore the deposits were not worked in 1917. In Western Australia lodes of stibnite carrying gold have been found in the Roeburne district. During 1917, 12 tons of antimony, valued at £258, were exported.

2. **Arsenic.**—During 1917 the high price ruling for arsenic and the urgency of the need for supplies in connection with the destruction of prickly pear led to the reservation by the Queensland Mines Department of an extensive area of arsenic-bearing deposits in the Stanthorpe District. Operations have been commenced, and it is hoped to produce the article at pre-war prices. The Beescroft mine at Sundown, in the Stanthorpe district, produced 32 tons of arsenical pyrites, valued at £580, during the year, and investigation is being made into the possibilities of other districts. In South Australia attention is being devoted to arsenic-bearing minerals at Woodside, at Westward Ho, near Mannahill, and on Kangaroo Island. In the form of arsenopyrite, arsenic is of wide distribution in Victoria, but the deposits are worked to a limited extent only. At Ballarat a small quantity of the oxide is obtained from the flues of roasting furnaces.

3. **Barium.**—A valuable lode of barium sulphate has been discovered near Dalwin, on the North Lyell railway, in Tasmania. It is stated that the lode is from $2\frac{1}{2}$ to 7 feet wide over a length of over 40 chains.

4. **Bismuth.**—This metal has been found in New South Wales, near Glen Innes, in the Deepwater division, and also at Whipstick, in the Pambula division, its discovery dating from 1877. About 20 tons of metal and ore, valued at £9,391, were exported from New South Wales during 1917; the total quantity exported to the end of that year was 633 tons, valued at £152,421. In Queensland wolfram and bismuth have been found in various districts, but the chief centres of production in 1917 were the Herberton and Chillagoe fields. The total production for the year was valued at £80,836, of which 352 tons, valued at £58,367, was returned as wolfram, 4 tons, valued at £1,297, as bismuth, and 131 tons, valued at £21,172, as bismuth and wolfram. In South Australia deposits

are found at Balhannah, at Mount Macdonald, and at Murninnie, on the shores of Spencer's Gulf. In Tasmania 4 tons, valued at £895, were raised in 1917, principally from the Shepherd and Murphy mine at Middlesex.

5. **Chromium.**—In New South Wales chromium is found at Bowling Alley Point, on the Peel River, at Barraba, at Manilla, at Gordon Brook, in the Clarence River district, at Bingara, Wallendbeen, and near Gundagai. The production during recent years has been small, the quantity raised in 1917 being 587 tons, valued at £1,468. Nearly four-fifths of the production was obtained as follows :—At Wallendbeen 179 tons, Manilla 148 tons, and 139 tons at Bowling Alley Point. The total production to the end of 1917 amounted to 33,700 tons, valued at £106,683. Chrome iron ore is found in Queensland in the Rockhampton district, where the Black Lode Chrome Quarry, near Canoona, produced 750 tons, and the Elgalla mine, at Cawarral, 10 tons in 1917, the total output being valued at £756.

6. **Carnotite.**—A discovery of carnotite ore was made in 1906 20 miles E.S.E. from the Olary railway station in South Australia. (See also "Radium.")

7. **Cobalt.**—This metal was found at Carcoar in New South Wales in 1889, and subsequently at Bungonia, Port Macquarie, and various other places. There was no export of cobalt since 1911, and the total produced since 1860 amounted in value to only a little over £10,000. Deposits have been noted in South Australia near Bimbourie and South Blinman; in Western Australia at Norseman and Kanowna; and at various places in Victoria.

8. **Lead.**—This metal was first noted in New South Wales in 1849, when small specimens of native metal were found by the Rev. W. B. Clarke. At present lead mining *per se* is not practised to any extent in the Commonwealth, the supply of the metal being chiefly obtained in conjunction with silver. In New South Wales, lead in the form of pig, carbonate, and chloride, exported in 1917, amounted to 20,817 tons, valued at £616,531. The total lead exported to the end of 1917 was 264,000 tons, valued at £4,821,361. As stated previously, the metallic contents of the major portion of the silver lead ores are extracted outside New South Wales, and these figures refer only to lead actually produced in the State. In Victoria, oxides, sulphides, and carbonates of lead are found in the reefs of most of the goldfields. The deposits are not, however, of sufficient extent to repay the cost of working. In Queensland the deposits are worked chiefly for the silver, copper or gold contents of the ore, the lead produced in 1917 amounting to 480 tons, valued at £14,407, of which 231 tons were produced in the Burketown district, 100 tons at Etheridge, and 93 tons were recorded from the Herberton area. Pig lead to the value of £139,940 was exported from Western Australia in 1917. Complete information is not available as to the lead contents of Tasmanian silver-lead ores. At one time South Australia produced a fair amount of lead, £22,303 worth being raised in 1902, but the production rapidly decreased, and no output has been recorded since 1910.

9. **Mercury.**—In New South Wales mercury was first recorded by the Rev. W. B. Clarke in 1841. Cinnabar has been found in lodes and impregnations at various places, such as Bingara, Clarence River, etc. Up to the present the production of quicksilver has been small, the total being only about 3,000 lbs. During 1916 the Pulganbar Company raised 200 tons of ore from their mine at Ewengar in the Drake division. The mercury produced was valued at £180. There was no production recorded in 1917. In Victoria native mercury and cinnabar have been found at Silver Creek, a tributary of the Jamieson River. Lodes of cinnabar have been found in Queensland at Kilkivan, and at Black Snake, in the Wide Bay district; about four tons were produced between 1874 and 1891. Between O.K. and Mungana several shows have been prospected with encouraging results. Small quantities have been found disseminated over a large area near Willunga in South Australia, and it is also found in New Guinea.

10. **Manganese.**—Ores of this metal occur in widely separated districts in New South Wales, but the low price of the metal in past years precluded mining to any great extent, and the production to date has been small. During 1917, 3,721 tons, valued at £2,791, were raised at Grenfell, and about 50 tons were produced from a mineral lease in the county of Forbes. In Queensland there are extensive deposits at Mount Miller,

near Gladstone, and in the Stanthorpe district, the production in 1917 being 21 tons, valued at £105, produced in the former area. Small quantities of manganese ore were raised in Victoria during 1916 from mines in the vicinity of Heathcote. Extensive deposits of the ore were mined at Boolcunda in South Australia some years ago. Deposits have also been noted at Kangaroo Island, Quorn, Tumbly, and various other parts of the State. The production in 1917 was valued at £1,597. In Western Australia ores of the metal are found widely scattered, the black oxide being especially plentiful in the Kimberley district.

11. **Molybdenum.**—In New South Wales molybdenite (associated with bismuth) is obtained at Kingsgate, near Glen Innes, at Deepwater, at Rocky River in the Tenterfield division, in the Bathurst division, and at Whipstick in the Pambula division, the export in 1917 being 70 tons, valued at £31,608, as compared with 54 tons, valued at £22,066, in the previous year. The production at Kingsgate was valued at about £4,500. In the Deepwater division £18,000 worth was obtained. A small quantity was also obtained in the Tenterfield division. The Whipstick mines produced 20 tons of concentrates, valued at £9,000. There was a small production also from Yetholme in the Bathurst division. In Victoria the Everton Molybdenite Co. at Everton produced in 1917 50 tons of ore, valued at £500. The production in Queensland for 1917 was 111 tons, valued at £48,618, practically the whole of which was contributed by the mines at Wolfram, in the Chillagoe field. A small quantity was produced in 1914 from mines in the Moonta district in South Australia, and the occurrence of the metal is reported from various other localities. At the Yelta mine bunches of the ore are scattered through the copper ore, and the molybdenite is picked out during the dressing of the copper ore. About £350 worth was obtained in 1917. Molybdenite occurs in small quantities at various localities in Western Australia. In the Northern Territory, molybdenite is found at Yenberrie, where it is stated that the ore increases in richness as the workings become deeper.

12. **Radium.**—(i) It is reported that there have been several definite discoveries in Australia of the occurrence of minerals containing radium. The discovery at Olary, in South Australia, of carnotite, which is an alteration product of pitchblende, the compound from which radium is obtained, has already been referred to. In 1910 pitchblende was identified in portion of the workings at Olary, and a specimen exhibiting a high degree of radio-activity was obtained. This is the first authentic discovery of the mineral pitchblende in Australia. The deposits of radio-active uranium ores found at Radium Hill were mined during the last few years, and the concentrates forwarded to Sydney for treatment at the company's works at Woolwich. As noted in (ii) below, operations are at present at a standstill. Monazite from Pilbara, Western Australia, has been shewn to give off radium emanations. The mineral has been called "pilbarite." Lastly, it is stated that the ores obtained at the Moonta mines, South Australia, contain from one-tenth to one-fifteenth of the amount of radium found in high-grade pitchblende, and that a product having a fairly high degree of radio-activity can be extracted therefrom with comparative ease.

(ii) *Production of Radium Bromide.* At the end of November, 1912, a small quantity of radium bromide was produced at the Radium Hill Co.'s works at Woolwich, Sydney, this being the first occasion on which a marketable amount of this salt has been obtained outside of Europe. It is estimated by the chemist in charge that the present plant at the works is capable of providing £600 worth of radium weekly. From the 30th June, 1913, to the end of May, 1914, the works produced 239 milligrams of high-grade radium preparation. The industry, however, is at present inactive in consequence of the war.

13. **Tungsten.**—Wolfram and scheelite, the principal ores of tungsten, are both mined to some extent in New South Wales. During 1917 the production of wolfram was 118 tons, valued at £21,682, and of scheelite 127 tons, valued at £23,419. Wolfram was mined chiefly at Torrington, in the Deepwater division, and scheelite at Hillgrove. In Victoria the production of wolfram was returned in 1917 as 22½ tons, valued at £3,600, practically the whole of which came from the Mount Murphy Co. at Benambra. In Queensland, tungsten ores are found in several districts, the chief centres of production in 1917 being Chillagoe and Herberton. (See also "Bismuth.") A deposit of wolfram was discovered near Yankalilla, in South Australia, as far back as 1893, but the production

up to date has been small. It is believed that careful examination will lead to increased production from the deposits at Callawonga Creek. In the Northern Territory wolfram to the value of £20,269 was obtained in 1916-17 chiefly from the Burns Wolfram mine, 40 miles east of Pine Creek, from Yenberrie in the same district, and from Hatches Creek about 800 miles south-east of Darwin. Deposits have also been located at Wauchope Creek, 80 miles west of Hatches Creek. Numerous samples of good wolfram ore have been obtained at the Frew River in Central Australia.

In Western Australia a deposit of wolfram was discovered in the West Kimberley district about 70 miles to the north-east of Derby. The export in 1916 was, however, trifling, and there was no record of production in 1917. Wolfram is mined at various points in Tasmania, the production for 1917 being 172 tons, valued at £28,714, obtained chiefly at Avoca and from the Shepherd and Murphy mine at Middlesex. Scheelite has been discovered on King Island in Bass Strait, and as a result of operations in 1917, 69 tons of concentrates of an estimated value of £12,130 were produced.

14. **Tantalum.**—Tantalite in small quantities has been found in the Greenbushes mineral field of Western Australia for some time past, but recently a lode of fairly extensive proportions was located at the Wodgina tinfield. Up to the end of 1905 the production of this mineral in Western Australia amounted to 73 tons, valued at about £10,000, but early in 1906 it was found that the supply exceeded the demand and production was temporarily stopped; in 1908 a small quantity valued at £400 was exported. About £327 worth was reported as having been raised in the Greenbushes and Pilbara fields during 1909, but none was exported owing to the entire absence of any market. No further production was recorded until 1916, when 47 tons, valued at £9,375, were exported, consisting of ore which had been raised some years previously at Wodgina, in the Pilbara field. The export in 1917 amounted to 17 tons, valued at £2,513. Small quantities of the mineral are also found in the Northern Territory.

15. **Uranium.**—This mineral has been discovered in South Australia in the country between Mount Painter and Mount Pitts, about 80 miles east from Farina. The uranium ores occur most frequently in the form of torbernite and autunite, and are found over a considerable area. The discovery is therefore of considerable importance, since ores of this mineral are found to a very limited extent in other parts of the world, and radium is regarded as one of the products of disintegration of uranium.

In addition to the metals enumerated above there is a large number of others occurring in greater or less degree, while fresh discoveries are being constantly reported.

(B) NON-METALLIC MINERALS.

§ 10. Coal.

1. **Production in each State.**—(i) *Historical.* A historical account of the discovery of coal in each State will be found in preceding issues of the Year Book. (See No. III., pp. 515-6.)

(ii) *New South Wales.* The production in 1917 amounted to 8,292,867 tons, valued at £4,422,740, or an increase of about 166,000 tons in quantity, and £1,086,000 in value, as compared with the output in 1916. The increased output was yielded by the mines in the Western and Northern districts, the Southern Collieries shewing a small reduction on the 1916 returns.

(iii) *Victoria.* During 1917, 505,364 tons of coal were raised, valued at £345,830. Of this total 405,498 tons, valued at £283,848, were raised by the State coal mine at Wonthaggi, and 34,936 tons, valued at £9,607, from the State brown coal mine at Morwell. The total production for 1917 was about 85,000 tons more than in the preceding year.

(iv) *Queensland.* The quantity of coal raised in 1917 was 1,048,473 tons, valued at £597,360, this production being greater than in 1915 and 1916. The increase is chiefly due to greater production from the collieries in the Ipswich district. Twenty-five collieries were working in the Ipswich district, six on the Darling Downs, four in the Maryborough district, one at Mount Mulligan in the Chillagoe district, and six at Blair Athol and Bluff.

The industry is at present in a very satisfactory position in the northern State, and owing to the wide area over which the deposits stretch, practically no limit can be set to its possibilities of extension.

(v) *Western Australia.* Five collieries were in operation on the Collie field during 1917, and the output for the year was 326,550 tons, or about 25,000 tons more than in 1916.

(vi) *Tasmania.* The principal collieries in Tasmania are the Cornwall and Mount Nicholas, the former producing 23,000 and the latter 31,000 tons out of a total yield in 1916 of 56,000 tons.

The quantity and value of coal produced in each State and in the Commonwealth at various periods since 1881 are shewn in the following table :—

PRODUCTION OF COAL, AUSTRALIA, 1881 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
QUANTITY.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1881	1,769,597	3	65,612	..	..	11,163	1,846,375
1891	4,037,929	29,156	271,603	..	..	43,256	4,381,944
1901	5,968,426	209,479	539,472	..	117,836	45,438	6,880,651
1913	10,414,165	596,896	1,037,944	..	313,818	55,043	12,417,866
1914	10,390,622	620,251	1,053,990	..	319,210	60,794	12,444,867
1915	9,449,008	590,968	1,024,273	..	286,666	64,536	11,415,451
1916	8,127,161	420,098	907,727	..	301,526	55,575	9,812,087
1917	8,292,867	505,864	1,048,473	..	326,550	63,412	10,236,666
VALUE.							
	£	£	£	£	£	£	£
1881	603,248	3	29,033	..	..	5,581	637,865
1891	1,742,796	21,404	128,198	..	..	21,628	1,914,026
1901	2,178,929	147,228	189,877	..	68,561	18,175	2,602,770
1913	3,770,375	274,940	403,767	..	153,614	25,367	4,628,063
1914	3,737,761	289,099	416,292	..	148,684	27,853	4,619,689
1915	3,424,630	275,343	409,342	..	137,859	30,418	4,277,592
1916	3,336,419	216,875	389,348	..	147,823	27,736	4,118,201
1917	4,422,740	345,830	597,360	..	101,822	38,673	5,596,425

The Victorian figures for 1917 include about 39,000 tons of brown coal, valued at £10,600, of which 35,000 tons were produced at the State mine at Morwell.

2. *Distribution and Quantity of Coal in each State.*—(i) *New South Wales.* Estimates have from time to time been made as to the total quantity of coal available for working in the deposits in New South Wales, and while these naturally differ to some extent, they agree in placing the amount at well over a thousand million tons, without taking into consideration the deposits existing below a depth of 4,000 feet. According to Mr. E. F. Pittman, the coal-bearing rocks of New South Wales may be classified as follows :—

COAL-BEARING ROCKS OF NEW SOUTH WALES.

Geological Age.	Maximum Thickness of Coal-bearing Strata.	Locality.	Character of Coal.
I. Tertiary—Eocene to Pliocene ..	Approx. 100 ft.	Kiandra, Gulgong, and Chouta Bay	Brown coal or lignite
II. Mesozoic—Triassic or Trias-Jura	2,500 ..	Clarence and Richmond Rivers	Coal suitable for local use only
III. Palæozoic—Permo-Carboniferous	13,000 ..	Northern, Southern, and Western Coalfields	Good coal, suitable for gas, household and steaming
IV. Palæozoic—Carboniferous ..	10,000 ..	Stroud, Bullah Dellah	Very inferior coal, with bands; of no value

In regard to the Tertiary deposits, it may be noted that no serious attempt has been made to use the coal as fuel in New South Wales. At Kiandra a deposit of lignite was found to possess a maximum thickness of 30 feet, but as a general rule the seams vary from 3 to 4 feet in thickness. The Triassic or Trias-Jura deposits in the Clarence and Richmond districts contain numerous seams, but the coal is largely intersected by bands, while its large percentage of ash renders it unfit for use as fuel for industrial purposes. These beds extend under the great western plains, but the presence of artesian water precludes the possibility of their being worked. The Clarence basin extends into Queensland, and at Ipswich thick and valuable seams of coal are worked. It is in the Permo-Carboniferous division that the great productive coal seams of the State are found, the area which they cover being estimated at about 16,550 square miles. The deepest part of the basin is somewhere in the vicinity of Sydney, where the "Sydney Harbour Colliery" is working the top seam at a depth of 2,384 feet. This mine, however, was idle during the greater part of 1917. Towards the north, south and west the seams rise towards the surface, and outcrop in the neighbourhood of Newcastle, Bulli and Lithgow. The coal from the various districts embraced in this division differs considerably in quality—that from the Newcastle district being especially suitable for gas-making and household purposes, while the product of the Southern (Illawarra) and Western (Lithgow) is an excellent steaming coal. At the present time the Greta coal seams are being extensively worked between West Maitland and Cessnock, and this stretch of country, covering a distance of 15 miles, is now the most important coal mining district in Australasia. The Permo-Carboniferous measures have in various places been disturbed by intrusions of volcanic rocks, which in some instances have completely cindered the seams in close proximity to the intrusive masses, while in other instances the coal has been turned into a natural coke, some of which has realised good prices as fuel.

The table hereunder gives the yields from the various divisions at intervals from 1881 to 1917:—

COAL RAISED IN NEW SOUTH WALES, 1881 TO 1917.

District.	1881.		1901.		1911.		1917.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£	Tons.	£
Northern..	1,352,472	437,270	3,999,252	1,669,519	5,793,646	2,320,673	5,380,957	3,074,966
Southern..	253,283	115,505	1,544,454	407,196	2,066,621	636,163	1,841,869	920,107
Western ..	163,842	50,473	424,720	102,214	831,337	210,329	1,070,041	427,667
Total ..	1,769,597	603,248	5,968,426	2,178,929	8,691,604	3,167,165	8,292,867	4,422,740

Sydney Harbour Colliery. This colliery possesses considerable interest from the circumstance that its workings are amongst the deepest in the world. Extended reference to the history of its opening will be found in preceding Year Books. (See No. VI., p. 504.)

(ii) *Victoria.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district. Deposits of brown coal and lignite of immense extent occur in gravels, sands, and clays of the Cainozoic period throughout Gippsland, Mornington Peninsula, Werribee Plains, Gellibrand, and Barwon and Moorabool basins. In the Latrobe Valley, the beds reach a thickness of over 800 feet. When dried, the material makes good fuel, but owing to its excessive combustibility and friability requires to be consumed in specially constructed grates. Its steaming value is equal to about half that of the Wonthaggi coal. Some large factories already have adopted brown coal for firing boilers, and there is also a fair demand for the product by householders. In 1917 an Advisory Committee appointed to report on the brown coal deposits of Victoria recommended the establishment of an open-cut mine at Morwell in connection with a comprehensive scheme for electrical power generation and transmission, as well as for the supply of brown coal for other requirements.

The output of coal from the chief Victorian collieries during the last ten years was as follows :—

PRODUCTION OF COAL IN VICTORIA, 1908 TO 1917.

Year.	State Coal Mine.	Outtrim Howitt Company.	Jumbunna Coal Company.	Coal Creek.	Silkstone Co-operative Company.	Austral Coal.	Other Companies.	Total Production.	Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1908	..	47,633	58,552	..	6,967	..	810	113,962	64,778
1909	2,946	44,156	65,945	3,265	..	10,631	1,730	128,673	76,945
1910	201,053	46,832	61,954	10,968	..	36,052	13,050	369,909	189,254
1911	506,059	28,359	57,397	4,589	..	34,607	28,987	659,998	301,141
1912	455,659	24,326	53,306	4,829	..	31,506	23,529	593,155	259,321
1913	486,238	22,460	38,795	6,218	..	33,462	9,723	596,896	274,940
1914	550,107	16,597	24,236	5,887	..	20,034	3,390	620,251	289,099
1915	528,922	7,500	28,160	6,338	..	16,229	3,819	590,968	275,343
1916	354,146	..	31,792	5,688	..	10,885	17,587	420,098	216,875
1917	405,498	..	22,236	1,958	..	13,888	61,784	505,364	345,830

Included in the total for "other companies" is an amount of 20,149 tons raised by the Powlett North Woolamai, and 2,491 tons raised by the Sunbeam Colliery. The figures also include about 35,000 tons of brown coal raised by the State at Morwell.

(iii) *South Australia.* The coal from Leigh's Creek in South Australia is subject to similar disabilities to those of the Victorian brown coal, and until some means are devised of overcoming these, production will probably languish. During 1917 the Department of Mines raised about 700 tons for experimental purposes. The deposit is situated about 370 miles by rail from Adelaide, and 160 from Port Augusta.

(iv) *Queensland.* In Queensland the coal-bearing strata are of vast extent and wide distribution, being noted under the greater portion of the south-eastern districts, within 200 miles of the sea, as far north as Cooktown, and under portions of the far western interior. The Ipswich beds are estimated to occupy about 12,000 square miles of country, while the Burrum fields occupy a considerably larger area. At Callide, fifty miles west of Gladstone, a seam of coal free from bands has been struck in a shaft only 60 feet deep, and borings have proved the deposit to be of considerable magnitude. The beds in the Cook district are estimated to comprise rather more than 1,000 square miles, but coal measures extend to the south-west far beyond Laura and to the north of the railway. Extensive beds occur in the basin of the Fitzroy River, in the Broadsound district, and at the Bowen River. Amongst other places where the mineral is found may be enumerated Clermont, the Palmer River, Tambo, Winton, Mount Mulligan, and the Flinders River. Boring operations have proved the existence of seams of workable coal for some distance on both sides of the Dawson River. A bituminous coal is yielded by the Ipswich seams, those of the Darling Downs yield a cannel, while anthracite of good quality is furnished by the Dawson River beds.

The quantity and value of coal raised in Queensland at various periods since 1861 were as shewn below :—

PRODUCTION OF COAL IN QUEENSLAND, 1861 TO 1917.

Year ..	..	..	1861.	1871.	1881.	1891.	1901.	1917.
Quantity ..	..	Tons	14,212	17,000	65,612	271,603	539,472	1,048,473
Value..	..	£	9,922	9,407	29,033	128,198	189,877	597,360

The distribution of production during the last three years was as follows :—

QUEENSLAND COLLIERIES, 1915, 1916, AND 1917.

Districts.	1915.		1916.		1917.	
	Tons Raised.	Average Value at Pit's Mouth.	Tons Raised.	Average Value at Pit's Mouth.	Tons Raised.	Average Value at Pit's Mouth.
		<i>s. d.</i>		<i>s. d.</i>		<i>s. d.</i>
Ipswich	682,491	7 3	583,692	7 11	728,605	10 8
Darling Downs ..	97,411	8 11	99,511	9 10	97,797	12 9
Wide Bay and Maryborough ..	104,358	11 10	79,726	12 2	72,282	15 10
Rockhampton (central)	6,741	8 6	5,034	9 6	6,410	11 10
Clermont	123,731	7 8	124,483	7 9	132,664	11 5
Mount Mulligan (Chil-lagoe)	9,541	12 7	15,281	13 4	10,715	15 6
Total	1,024,273	8 0	907,727	8 7	1,048,473	11 5

It is estimated that about one-third of the production from Ipswich was shipped at Brisbane, about 60 per cent. being for bunker purposes and the remainder going to northern ports for railways, gasworks, meatworks, etc. The high average value of Queensland coal in 1917 was due to a readjustment of coal prices and wages.

(v) *Western Australia.* The coal seams in Western Australia belong to the Carboniferous, Mesozoic, and Post-tertiary ages. Most of the coal contains a large proportion of moisture, and belongs partly to the hydrous bituminous and partly to the lignite class. The only coalfield at present worked is at Collie, in the Permo-Carboniferous beds. The coal produced is bright and clean, but very fragile when free from moisture. The increased output up to 1914 is partly due to the establishment of a bunkering trade at Bunbury and Fremantle, and partly to the employment of improved machinery. Difficulties with an inflow of water on the Scottish Collieries and a falling-off in the bunkering trade were responsible for the diminished returns in 1915. The production from this field since 1901 was as follows :—

PRODUCTION OF COAL IN WESTERN AUSTRALIA, 1901 TO 1917.

Year ..	1901.	1910.	1911.	1913.	1914.	1915.	1916.	1917.
Quantity Tons	117,836	262,166	249,899	313,818	319,210	286,666	301,526	326,550
Value £	68,561	113,699	111,154	153,614	148,684	137,859	147,823	191,822

(vi) *Tasmania.* In Tasmania coal occurs in the following geological periods :—
 (1) Permo-Carboniferous : Lower Coal Measures. (2) Mesozoic : Upper Coal Measures.
 (3) Tertiary : Brown Coal and Lignite deposits. Permo-Carboniferous coal is found at Avoca, Mt. Nicholas and Fingal, Thomson's Marshes, Langloh, Seymour, York Plains, Mike Howe's Marsh, Longford, Colebrook, Schouten Island, Spring Bay and Prosser's Plains, Compton and Old Beach, Lawrenny, Longhole, Sandfly, Ida Bay, Hastings and Southport, Recherché and South Coast, Tasman's Peninsula. Deposits of lignite and brown coal are plentiful in beds of Tertiary age, but they have not been exploited to any extent. An estimate gives the approximate quantity of coal available as sixty-five

million tons, of which eleven millions are in the Lower Coal Measures and fifty-four millions in the Upper Measures, exclusive of an unknown quantity in strata fringing the Central Tiers.

PRODUCTION OF COAL IN TASMANIA, 1901 TO 1917.

District.	1901.	1910.	1911.	1913.	1914.	1915.	1916.	1917.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
North-western ..	2,952	1,720	1,496	1,167	1,074	270	673	350
North-eastern ..	37,239	71,115	54,296	52,759	58,743	63,507	54,284	61,910
Midland ..	1,536	721	635	847	847	691	598	399
South-eastern ..	..	8,899	640	270	130	68	20	753
South-western ..	3,711							
Total ..	45,438	82,455	57,067	55,043	60,794	64,536	55,575	63,412

The bulk of the output in 1917 was raised from the Cornwall and Mt. Nicholas mines in the North-eastern Division, which produced 27,681 and 32,113 tons respectively.

3. Production of Coal in Various Countries.—The total known coal production of the world in 1912 amounted to about 1,100 million tons (exclusive of brown coal or lignite), towards which the Commonwealth contributed 11 million tons, or about 1 per cent. The following table shews the production of the British Empire and the chief foreign countries in units of 1,000 tons in 1901 and during each of the years from 1911 to 1916 where the returns are available :—

COAL PRODUCTION, BRITISH EMPIRE, 1901 AND 1911 TO 1916.

Year.	United Kingdom.	British India.	Canada.	Australian C'wealth.	New Zealand.	Union of S. Africa.
1901	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.
1911	219,047	6,636	5,791	6,881	1,228	712
1912	271,892	12,716	11,908	10,550	2,066	6,933
1913	260,416	14,706	15,237	11,730	2,178	7,248
1914	287,430	14,708	13,404	12,418	1,888	7,858
1915	265,665	16,446	12,176	12,445	2,276	7,570
1916	253,206	17,104	11,800	11,415	2,209	7,394
1916	256,375	17,254	12,882	9,812	2,257	8,935

COAL PRODUCTION, FOREIGN COUNTRIES, 1901 AND 1911 TO 1916.

Year.	Russian Empire.	Sweden.	German Empire.	Belgium.	France.	Spain.	Japan.	United States.
1901 ..	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.
1911 ..	16,215	268	106,795	21,856	31,126	2,609	8,885	240,780
1912 ..	28,414	355	172,065	22,603	38,602	3,853	17,632	447,854
1913 ..	30,640	360	174,875	22,972	40,648	3,626	19,640	443,188
1914 ..	32,206	364	190,109	22,858	40,192	4,293	21,316	477,202
1915 ..	33,113	367	161,535	..	29,311	3,600	19,372	508,893
1916 ..	..	412	159,000	14,015	19,590	3,722	22,293	474,660
1916 ..	..	415	144,354	..	21,132	4,277	22,534	526,873

The United States returns include a large proportion of anthracite, the quantity averaging for the last five years about 79 million tons.

Including New Zealand the production from Australasia takes second place amongst the possessions of the British Empire, British India coming first in order.

4. Export of Coal.—The exports of coal from the Commonwealth are practically confined to New South Wales.

The total quantity of coal of Australian production (exclusive of bunker coal) exported from the Commonwealth to other countries in 1917 was 488,417 tons, valued at £349,504, of which amount 487,647 tons, valued at £348,735, were exported from New South Wales. Owing to the war the figures are, of course, considerably below those of normal years.

In the following table will be found the quantity and value of the exports from New South Wales, at decennial intervals since 1881 and during the last five years. The figures are given on the authority of the Mines Department of that State, and include both bunker coal and coal exported from New South Wales to other States of the Commonwealth :—

EXPORTS OF NEW SOUTH WALES COAL, 1881 TO 1917.

Year	1881.	1891.	1901.	1911.	1913.	1914.	1915.	1916.	1917.
Quantity, 1,000 tons ..	1,030	2,514	3,471	5,024	6,232	5,868	4,668	3,434	3,264
Value, £1,000	417	1,307	1,682	2,664	3,342	3,159	2,485	1,873	2,381

The principal oversea countries to which coal was exported from New South Wales during the year 1917-18 are as shewn hereunder. The quantity and value refer strictly to exports, and exclude bunker coal :—

DESTINATION OF NEW SOUTH WALES OVERSEA EXPORTS OF COAL, 1917-18.

Country.	Quantity.	Value.	Country.	Quantity.	Value.
	Tons.	£		Tons.	£
Chile	4,295	2,779	Java	11,953	8,133
Society Islands ..	13,952	10,464	Papua	3,246	2,407
Straits Settlements	11,819	8,595	New Caledonia ..	22,280	17,236
Fiji	45,616	33,824	Gilbert and Ellice		
New Zealand	198,563	143,148	Islands	2,105	1,521
Hawaii	763	572	Solomon Islands	2,871	2,468
India	21,023	16,043	Pleasant Island ..	1,140	756

The quantity of bunker coal taken from New South Wales by oversea vessels was about 495,000 tons.

The distribution of the total output from New South Wales collieries during the last five years was as follows; the particulars given of quantity exported include coal shipped as bunker coal :—

DISTRIBUTION OF TOTAL OUTPUT OF NEW SOUTH WALES COAL, 1913 TO 1917.

Year.	Exports to Australasian Ports.	Exports to other Ports.	Local Consumption.	Total.
	Tons.	Tons.	Tons.	Tons.
1913	3,465,787	2,765,937	4,182,441	10,414,165
1914	2,581,810	3,286,223	4,522,589	10,390,622
1915	2,601,070	2,067,324	4,780,614	9,449,008
1916	2,203,659	1,230,439	4,693,063	8,127,161
1917	2,225,228	1,038,569	5,029,070	8,292,867

The figures quoted above are given on the authority of the New South Wales Mines Department. Owing to the abolition of the record of interstate trade it is impossible to give the quantities forwarded to each of the States of the Commonwealth.

5. **Consumption of Coal in Australia.**—An estimate of the consumption of coal in the Commonwealth may be arrived at by adding the imports to the home production, and deducting the exports (including bunker coal taken by oversea vessels). The following table shews the consumption of coal in Australia, computed in the manner specified, for the last five years :—

CONSUMPTION OF COAL IN AUSTRALIA, 1913 TO 1917.

Year.	Quantity of Coal Consumed.		
	Home Produce.	Produce of Other Countries.	Total.
	Tons.	Tons.	Tons.
1913	8,671,491	4,449	8,675,940
1914	8,944,867	23,066	8,967,933
1915	9,250,592	6,580	9,257,172
1916	8,266,215	11,068	8,277,283
1917	8,985,599	65,512	9,051,111

The bunker coal taken away in 1917 is estimated at 763,000 tons.

6. **Price of Coal.**—(i) *New South Wales.* The price of coal in New South Wales has been subject to considerable fluctuation since the date of first production. Up to the end of 1857 the average value of the total output was 11s. 10d. per ton. Next year the value had risen to nearly 15s., declining thereafter until in 1871 the price realised was 7s. From 1872 to 1879 there was a rise in value to 12s. Between 1882 and 1891 the price ranged between 8s. and 10s. From 1891 onwards there was a steady decline until 1898, when the average was 5s. 4d. Henceforward prices rose again until 1902, when 7s. 5d. was the average. A decline then set in until 1905, when the price stood at a little over 6s., followed by a rise of one penny in 1906, and a further rise of eightpence in 1907. In 1908 the average was 7s. 4d., in 1916, 8s. 3d., while in 1917 the price advanced to 10s. 8d. per ton, the highest recorded since 1879. The price of New South Wales coal depends on the district from which it is obtained, the northern (Newcastle) coal always realising a much higher rate than the southern or western product. The average rate in each district during the last five years was as follows :—

PRICE OF COAL, NEW SOUTH WALES, 1913 TO 1917.

Year.	Northern District.	Southern District.	Western District.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1913	7 9.91	6 1.13	5 1.85
1914	7 8.26	6 4.12	5 6.33
1915	7 7.24	6 11.23	5 6.08
1916	9 0.72	7 1.77	5 6.90
1917	11 5.14	9 11.89	7 11.92

(ii) *Victoria.* In Victoria the average price of coal up to the 31st December, 1890, was 19s. 3d. per ton. In 1895 the price was still as high as 12s. 2d., but in the following five years there was a serious decline, the value in 1900 being quoted at 9s. 7d. per ton. In 1901, however, there was an astonishing rise, the figure being as high as 14s. 7d. Since that year, however, the price again declined up to 1916, the average for 1905 being 10s. 2d.; for 1909, 12s.; for 1912, 8s. 9d.; for 1913, 9s. 3d.; for 1914 and 1915, 9s. 4d.; and for 1916, 10s. 4d. In 1917, however, the price rose to 14s. 5d. per ton. These averages are exclusive of brown coal, the production of which in 1917 was valued at 5s. 5d. per ton.

(iii) *Queensland.* Prices in the principal coal-producing districts during the last five years were as follows:—

PRICE OF COAL, QUEENSLAND, 1913 TO 1917.

District.	Value at Pit's Mouth.				
	1913.	1914.	1915.	1916.	1917.
	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>
Ipswich	7 0½	7 1	7 3	7 11	10 8
Darling Downs	8 6	8 9	8 11	9 10	12 9
Wide Bay and Maryborough	10 11	11 4	11 10	12 2	15 10
Rockhampton	10 4	8 9	8 6	9 6	11 10
Clermont	7 7	8 5	7 8	7 9	11 5
Mount Mulligan (Chillagoe)	..	17 2	12 7	13 4	15 6

As previously stated, the readjustment of prices and wages in the industry was responsible for the high averages in 1917.

(iv) *Western Australia.* The average price of the Collie (Western Australia) coal up to the end of 1901 was 9s. 4d. per ton, the price in 1901 being 11s. 7d. In 1902 the average stood at 12s. 3d., and from that time the price fell steadily until 1906, when it was 7s. 7½d. per ton. In 1907, the average prices was 7s. 8½d.; in 1908, 8s. 7½d.; in 1909, 8s. 5½d.; in 1910, 8s. 8d.; in 1911, 8s. 10d.; in 1912, 9s. 2d.; in 1913, 9s. 9d.; in 1914, 9s. 4d.; in 1915, 9s. 8d.; in 1916, 9s. 9d.; and in 1917, 11s. 9d. per ton.

(v) *Tasmania.* The average price per ton of coal at the pit's mouth in Tasmania was 8s. in 1901. In 1902 it was 8s. 7d.; in 1903, 8s. 9d.; in 1904 and 1905, 9s. 8d.; in 1906, 9s. 9d.; in 1907, 1908, and 1909, 8s.; in 1910, 11s. 9d.; in 1911 and 1912, 9s. 2d.; in 1913, 9s. 3d.; in 1914, 9s. 2d.; in 1915, 9s. 5d.; in 1916, 9s. 9d.; and in 1917, 12s. 2d. per ton.

7. *Price of Coal in other Countries.*—According to a report published by the Board of Trade, the average value of coal at the pit's mouth in the five principal coal-producing countries of the world, excluding Russia, for which no information is available, for the five years ended 1912, was as follows:—

PRICE OF FOREIGN COAL, 1908 TO 1912.

Year.	United Kingdom.	Germany.	France.	Belgium.	United States.
	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>
1908	8 11	10 3½	12 11½	13 1½	5 11½
1909	8 0½	10 2½	12 5½	11 8½	5 7½
1910	8 2½	9 11½	12 3½	11 10½	5 10½
1911	8 1½	9 9½	12 5½	12 0	5 10½
1912	9 0½	10 6½	12 8½	13 5½	6 1

The price of coal at the pit's mouth in the principal British possessions is averaged by the same authority as follows:—

PRICE OF COAL, BRITISH POSSESSIONS, 1908 TO 1912.

Year.	British India.	C'wealth of Australia.	New Zealand.	Canada.	Union of Sth. Africa.
	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>	Per ton. <i>s. d.</i>
1908	5 3	7 4½	10 4½	10 8	6 9½
1909	4 8½	7 6½	10 10½	10 10½	6 3½
1910	4 1	7 6½	11 1½	11 0½	5 10½
1911	3 11½	7 5½	10 10½	10 9½	5 8½
1912	4 6	7 6½	10 11½	11 5½	5 6½

8. **Employment and Accidents in Coal Mining.**—The number of persons employed in coal mining in each of the States during the year 1917 is shewn below. The table also shews the number of persons killed and injured, with the proportion per 1,000 employed, while further columns are added shewing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations.

Returns published by the Board of Trade, England, some years ago, gave the total known number of persons engaged in coal mining in the principal countries of the world as 3½ millions, the number in the United Kingdom being 1,068,000; the United States, 723,000; Germany, 628,000; France, 199,000; Russia, 169,000; Belgium, 146,000; Austria, 75,000; India, 133,000; and Japan, 145,000.

The latest available returns shew the rate in the United Kingdom in respect of deaths through accidents in coal mines as 1.17, and for the British Empire 1.48 per 1,000 persons employed in coal mines. For France the rate is given as 1.17, for Germany 2.30, and the United States 3.35. For foreign countries generally the rate is stated at 2.48 per 1,000.

EMPLOYMENT AND ACCIDENTS IN COAL MINING, 1917.

State.	Persons Employed in Coal Mining.	No. of Persons.		Proportion per 1,000 Employed.		Tons of Coal Raised for each Person.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	17,338	24	148	1.38	8.54	346,000	56,000
Victoria ..	1,557	3	24	1.93	15.41	168,000	21,000
Queensland ..	2,229	4	17	1.79	7.63	262,000	62,000
Western Australia	571	..	121	..	211.91	..	2,700
Tasmania ..	173	..	5	..	28.90	..	12,700
Commonwealth ..	21,868	31	315	1.42	14.40	330,000	32,500

The figures for New South Wales include a small number of shale miners.

§ 11. Coke.

1. **Production of Coke.**—Notwithstanding the large deposits of excellent coal in Australia, there was, prior to the war, a fairly considerable amount of coke imported from abroad. In 1917-18, however, the import was negligible. The table hereunder gives the production in New South Wales during the last five years:—

COKE MADE IN NEW SOUTH WALES, 1913 TO 1917.

Year	1913.	1914.	1915.	1916.	1917.
Quantity tons	298,612	304,800	417,753	437,587	455,587
Value, total £	208,989	213,069	313,241	387,571	541,093
Value per ton	14s. 0d.	13s. 11d.	15s. 0d.	17s. 9d.	23s. 9d.

During the last five years the industry has made considerable progress. It provides a profitable means of disposal for the small coal which until recent years was allowed to go to waste.

A small quantity of coke is made in Queensland, the quantity returned in 1917 being 13,399 tons, but the bulk of that used in ore reduction is imported, mainly from New South Wales. The following table shews the amount manufactured locally during the last five years:—

QUEENSLAND.—COKE MANUFACTURED, 1913 TO 1917.

Year	1913.	1914.	1915.	1916.	1917.
Manufactured locally tons	14,942	16,685	17,085	17,904	13,399

It is estimated that the total amount of coke consumed for smelting purposes in Queensland during 1917 was 73,000 tons, of which 13,000 tons were produced locally, and 60,000 tons were imported from New South Wales. Oversea imports and exports of coke amounted to a few tons only.

§ 12. Oil Shale and Mineral Oils:

1. *Production of Shale.*—(i) *New South Wales.* As pointed out by Mr. E. F. Pittman, the name kerosene shale has been rather inaptly applied to a variety of torbanite, cannell, or boghead mineral found at various geological horizons in New South Wales. The mineral does not, as a rule, split in parallel layers, the fracture being rather of a conchoidal type. Pure samples have been found to contain over 89 per cent. of volatile hydro-carbons. The discovery of the mineral in New South Wales dates probably as early as 1802. Its occurrence in the Hartley Vale district was noted by Count Strzelecki in 1845. The mineral has been found at several places in the Upper Coal Measures, and in at least two in the Lower Carboniferous. Production on anything like a large scale commenced in 1868, when about 17,000 tons, valued at £48,000, were raised. The production in 1917 amounted to 31,661 tons, valued at £36,565, as compared with 17,425 tons, valued at £17,772, in 1916. For 1917 the whole of the production came from the Western District.

(ii) *Victoria.* Up to the present no extensive deposit of oil shale has been located in Victoria.

(iii) *Queensland.* The discovery of natural gas and traces of oil in a deep bore at Roma has fostered the hope that energetic development will lead to the discovery of mineral oil in quantity in this locality. At the end of 1917 the bore had reached a depth of 2,875 feet, and the casing was within 160 feet of the bottom. Although it is hoped that eventually the bore will be a producer of oil, attention is being devoted to the possibilities of the profitable utilisation of the natural gas therefrom as a source of supply of gasolene. Oil-bearing shales are common in many parts of the State. The deposit at Duinga on the Central railway line shewed a thickness of 6 feet, and contained about 30 gallons of oil to the ton. Inflammable gas and a little oil have been noted in bores put down for coal on the Dawson River. There are shale deposits at Munduran Creek, near Gladstone, Casuarina Island, Redbank Plains in the Ipswich District and Murphy's Creek, near Toowoomba. It is stated that the borings have not so far penetrated to a sufficient depth to properly test the strata.

(iv) *South Australia.* In this State large areas of bituminous shale, of which the boundaries are only approximately known, occur at Leigh's Creek and Lake Phillipson. Reference to the mineral known as coorongite is made in sub-section 13. Specimens of bitumen have been discovered on Kangaroo Island, and it was supposed that they were the product of a petroleum-bearing area. The Government Geologist states, however, that the island strata are not of such nature as to support this supposition. In regard to the mainland area it is argued by some investigators that the bores so far put down have not been carried to sufficient depth to fairly test the strata. A bonus of £5,000 for the discovery of oil has been offered by the South Australian Government. An oil expert

engaged by the Government reported adversely on the prospects, but his conclusions have been challenged by other investigators. A large number of licenses to search for oil was taken out some years ago and bores were put down near Kingston and near Robe.

(v) *Western Australia.* A deposit of carbonaceous shale of considerable thickness is known to exist at Coolgardie, but the mineral has not yet been raised in any quantity. It is stated that small seepages of oil have been noted near Wonnerup, and indications have been reported from the neighbourhood of Albany and Esperance.

(vi) *Tasmania.* Tasmanite shale has been discovered in the basins of the Mersey, Don, and Minnow Rivers, and the Government Geologist estimates the probable capacity of the beds at 12,000,000 tons. The crude oil content of average quality shale has been estimated at 40 gallons to the ton. In July, 1912, the Railton-Latrobe Shale Oil Company acquired the leases and plant of the Tasmanian Shale and Oil Company, at Latrobe, and it was proposed to develop the deposits on a large scale. The production in 1914 was, however, small, amounting to 75 tons, valued at £75, while no returns from this source were included in the production records for 1915. In 1916, the Company raised 1,286 tons of shale, valued at £1,286, but there was no record of production in 1917. Large pieces of asphaltum have been discovered in places along the sea coast and in several of the bays of Port Davey Harbour, but it is believed that the material originates in submarine beds. A bore was put down in 1916 by a private company on Bruni Island in search of petroleum, but after sinking about 429 feet, operations ceased for lack of funds.

In 1917 a deposit of tasmanite shale was located on the Cam River.

(vii) *Northern Territory.* The existence of oil shale has been reported for many years in the Boroloola district, while several oil licenses have been applied for in the Victoria River district. Results so far, however, have been negative, and experts have pronounced unfavourably on the prospects.

(viii) *Papua.* An expert has reported that the deposits of oil-bearing shale can be worked at a profit, and oil of a satisfactory quality has been obtained from two comparatively shallow bores. It is proposed to test the deeper deposits where indications warrant expectation of a copious supply. (See also Section XXIX., Papua.)

2. *Export of Shale.*—In 1916–17 New South Wales exported a small quantity of shale, but there was no export in the succeeding year.

3. *Shale Oils Bounties.*—The *Shale Oils Bounties Act 1910* provided for the payment of bounties on certain goods manufactured in Australia from Australian shale on or after the 1st July, 1910, and before the 1st July, 1913. The total amount made available for bounties under this Act was £50,000. During the year 1913, the bounties paid in New South Wales amounted to £985 on 118,000 gallons of kerosene, and £809 on 324 tons of refined paraffin wax. Under the *Shale Oil Bounty Act of 1917* a sum of £270,000 was provided for bounty on crude shale oil at various rates.

§ 13. Other Non-Metallic Minerals.

1. *Alunite.*—Probably the most remarkable deposit of alunite in the world occurs at Bullahdelah, in the county of Gloucester, New South Wales, a large proportion of a low bluff ridge in the district being composed of this mineral. The deposits are worked by quarrying, and from 1890 up to the end of 1917, 48,000 tons had been exported, valued at £159,000, the exports for the year 1917 being 1,788 tons, valued at £10,728.

Deposits of a high-class alunite are reported to have been discovered near Sunbury, in Victoria.

According to the Geologist's report, apart from its scientific interest, no commercial importance attaches to the presence of natural alum over the area examined near Boonmoo, on the Chillagoe Railway in Queensland.

In South Australia an extensive deposit of the mineral was located in 1913 at Carrickalinga Head, on the coast north of Normanville, and within a short distance of Adelaide. It is stated that the specimens so far analyzed have proved richer in valuable constituents than any similar find yet recorded. The mineral returns for 1917, however, make no mention of any production during the year.

2. **Asbestos.**—This substance has been found in various parts of Australia, but up to the present has not been produced in any considerable quantity. In New South Wales the deposits at Jones' Creek, in the Gundagai division, were opened up during the year 1909 and a trial parcel of 15 tons shipped to Germany. About 10 tons were raised in this division during 1917. Developmental operations were carried on during 1916 by a company at Wood's Reef, in the Barraba division, but there was no record of production. In Queensland seams of asbestos have been found over a belt of country extending from Cawarral to Canoona. Samples of the fibre proved suitable for the manufacture of fibro cement, sheeting, and tiles, but so far a payable deposit has not been located. In Western Australia a deposit of the fibrous chrysolite variety was located at Soanesville, on the Pilbara goldfield, and in 1909 £154 worth of this mineral was raised. The discovery of a deposit of commercial quality was reported from the Nullagine district in 1917. In 1899 Tasmania raised 200 tons, valued at £363, but there was no further production until 1916, when a small quantity was raised at Anderson's Creek, near Beaconsfield. In 1917, 271 tons, valued at £271, were produced. Deposits of asbestos of the mountain leather and mountain cork varieties have been discovered at Oodlawirra, while deposits of a good blue variety have been discovered near Hawker and about 23 miles from Eudunda, in South Australia.

3. **Barytes.**—In New South Wales during 1917 about 318 tons of barytes, valued at £598, were obtained in the Mudgee division, 45 tons were raised in the Braidwood district, and 50 tons, valued at £150, at Harold's Cross, in the Major's Creek area. Deposits of the mineral have also been located in the Burrowa, Carcoar, Trunkey, and Cootamundra divisions. The production in South Australia during 1917 was given as £2,370. About 50 tons of barytes were produced in Tasmania in 1917.

4. **Clays and Pigments.**—Valuable deposits of clays and pigments of various sorts are found throughout the Commonwealth. There is a considerable local production of earthenware, bricks, and tiles, but the finer clays have not as yet been extensively used. In New South Wales the production of kaolin in 1917 amounted to 1,500 tons, valued at £2,000, raised in the Murrumburrah, Pambula, Gulgong, Cootamundra, and Goulburn divisions. Fireclay to the amount of 520 tons was raised in the Lithgow division. Deposits of steatite were worked during 1917 in the Murrumburrah division, the quantity raised during the year amounting to 234 tons. Near Morangaroo 5,000 tons of silica were raised by the Silica Fire Brick Company. About 200 tons of ochre, valued at £220, were raised in the Dubbo division. In Victoria 861 tons of kaolin were obtained at Egerton, 312 tons at Stawell, and 200 tons at Heathcote and Pyalong, the total value of the production being given at £1,500. A small quantity of pigments was raised from a lease in the Balnarring area. In Queensland, 10,602 tons of fireclay, valued at £2,286, were mined during the year 1917 in the Mount Morgan district. On Kangaroo Island, South Australia, where, it is stated, the first pottery mill in the Commonwealth was erected, there are vast deposits of felspar, china-stone, silica, and firebrick clay. There are also very extensive deposits of fireclay near Ardrossan on the Yorke Peninsula. Ochre deposits suitable for making coloured tiles are found near Port Noarlunga. Porcelain and other clays of good quality have been found in Tasmania at Beaconsfield, Sorell, Hagley, etc. Deposits of ochre have been opened up at Dubbo, Wellington, and Marulan, in New South Wales, and ochres and pigments of excellent quality have been produced therefrom. Extensive deposits of iron oxide, giving a return of 80 per cent. ochre, have been discovered near Oodlawirra in South Australia. Oil and water paints of good quality have been made from coloured ochres from Sorell, in Tasmania, and a deposit of ochre of good quality has been located near Mowbray. Preparations have been made for the manufacture of paints from the chrome and iron oxides at Anderson's Creek, near Beaconsfield.

5. **Coorongite.**—This peculiar india-rubber like material was first noted many years ago near Salt Creek and in the vicinity of Coorong Inlet, in South Australia, as well as at various localities on Kangaroo Island. It was thought that the substance owed its origin to subterranean oil-bearing strata, but so far the search for petroleum has not been attended with success. (See also § 12, iv.) While the origin of coorongite is still in doubt, it is held by some observers that it is not a petroleum product.

6. **Fuller's Earth.**—Small quantities of this material were produced in 1917, from leases in the Narrabri division, New South Wales.

7. **Graphite.**—Graphite is found in New South Wales near Undercliff Station, in the county of Buller, but the deposit is not sufficiently pure to prove remunerative. A small quantity was raised during 1917 from a site in the Wilson's Downfall division. In Victoria the mineral occurs in Ordovician slates in several of the goldfields, but is not worked. In Queensland graphite was raised some years ago by the Graphite Plumbago Company at Mt. Bopple, near Netherby, on the Maryborough-Gympie line. In South Australia deposits are found in various places at Eyre's Peninsula. While a large proportion of the product is not suitable for commercial use, the work so far done shews that flake graphite containing as high as 80 per cent. carbon can be obtained. In Western Australia deposits occur at Monglinup Creek, near the Oldfield River, at Northampton, in the Murchison division, on the Donnelly River, and at Kendenup, about 40 miles from Albany. At the last-mentioned locality, where the ore is of good grade, a fair amount of developmental work has been done.

8. **Gypsum.**—This mineral is found in various places in the Commonwealth. It occurs in two forms, large crystals, and a floury earth consisting of minute crystals and known as "copi." Both forms are exceedingly pure. It is used largely as a natural manure and to some extent in the manufacture of Portland cement. Gypsum, or hydrous sulphate of lime, when burnt, forms plaster of Paris, but in spite of the abundant supply of suitable material it has not yet been used for this purpose. In Victoria during 1917 there was a production of 1,187 tons, valued at £1,335, obtained at Boort. Numerous deposits of gypsum are found in Southern Yorke's Peninsula in South Australia. The production in 1917 was valued at £11,179. A factory for the manufacture of plaster of Paris has been erected by the Permasite Co. on its lease at Dry Bone Lake. A deposit of gypsum sand containing practically an inexhaustible supply is found on the edge of Lake Austin in Western Australia.

9. **Magnesite.**—Deposits of this mineral have been discovered at several localities in New South Wales. During 1917, 3,489 tons, valued at £4,362, were raised at Fifield, and 5,000 tons, valued at £5,000, at Attunga. About 700 tons were raised in the parish of Tout, county of Kennedy. The mineral is found at Heathcote in Victoria, where 74 tons, valued at £222, were produced in 1917. There are deposits in the neighbourhood of Rockhampton and Bowen in Queensland, and a deposit of exceptional purity has been located in the vicinity of Tumby Bay in South Australia, about five miles from the township of Tumby. The Broken Hill Co. is working a small deposit near the Beetaloo Waterworks. During 1915, 688 tons of magnesite, valued at £1,196, were exported from Western Australia, but the export in 1916 amounted to 12 tons only, and in 1917 to 42 tons. A large area of magnesite bearing country has been located at Bulong, about 20 miles east of Kalgoorlie.

10. **Tripolite, or Diatomaceous Earth.**—Although tripolite has been found at Barraba, Cooma, Wyrallah, and in the Warrumbungle Mountains in New South Wales, the deposits have not been worked commercially on any considerable scale. From the deposits at Middle Flat, in the Cooma division, 110 tons of diatomaceous earth, valued at £350, were produced in 1917. A small quantity also was raised in the Barraba district. In Victoria there is a remarkably pure deposit at Lillicur, near Talbot, while beds of the mineral are also met with at other places in the Loddon Valley, near Ballarat, at various places close to Melbourne, at Craigieburn, Lancefield, Portland, Swan Hill, Bacchus Marsh, etc. During 1917, a production of 750 tons, valued at £2,600, was recorded from Amherst. Fairly extensive deposits of diatomite exist in Queensland, in the Nerang, Beaudesert and Canungar areas, but the various outcrops have as yet been only partially examined. In Tasmania a deposit of diatomaceous earth has been located at Oatlands, but its use for the manufacture of explosives is apparently prejudiced by the circumstance that the diatoms are pulverised and contaminated with clay.

11. **Salt.**—Salt is obtained from salt lakes in the Western and North-western Districts of Victoria, and from salterns in the neighbourhood of Geelong. Large quantities are also obtained from the shallow salt lakes of South Australia, chiefly on Yorke Peninsula. Lake Hart, about 60 square miles in area, situated about 120 miles N.W. from Port Augusta, contains immense supplies of salt of good quality, which at present, however, owing to distance from market, possess no economic value. The salt is simply scraped from the beds of the lakes in summer time and carted to the refinery.

It is stated that care must be taken not to leave too thin a crust of salt over the underlying mud, as the resultant "crop" after the winter rains will in that case be smaller than usual. A bore put down near Kingscote, on Kangaroo Island, revealed brine from which salt can be profitably obtained by evaporation. In Western Australia supplies were obtained from dried-up shallow lakes and consumed locally or exported. The chief centres of production were formerly Rottneest Island, near Fremantle, Middle Island, near Esperance, and Port Gregory; but during recent years the bulk of the demand has been supplied from imports.

12. **Natural Manures.**—Gypsum has already been referred to (see 8 *ante*). South Australia possesses deposits of rock phosphate near Port Clinton and Ardrossan on Yorke Peninsula, at Belvedere near Kapunda, and at Kooringa, and also at many other places which have only been prospected to a small extent. The production in 1917 was 5,101 tons, valued at £6,064. Phosphate of lime has been found in small quantities in the limestone caves of New South Wales. In the Wellington division, from the area situated near the caves, about 2,000 tons of phosphate, valued at £4,500, were raised during 1917. There was a small production also from an area in the Cowra division. In Victoria, about 1,500 tons of phosphate rock were raised in 1917 at Mansfield. Although it can hardly be considered a mineral product, mention may be made here of the large accumulations of guano on the Abrolhos Islands, off the coast of Western Australia, in the neighbourhood of Geraldton. The deposits vary in thickness from four to twenty-seven inches. During the years 1876–80 over 36,000 tons were raised; no figures are available shewing the quantity raised in recent years.

§ 14. Gems and Gemstones.

1. **Diamonds.**—Diamonds were first noted in New South Wales by E. J. Hargraves in 1851, and in October of the same year by Geological Surveyor Stutchbury. The Cudgegong field was discovered in 1867, and shortly afterwards the Bingara diamantiferous deposits were located. Stones of small size are also found at Cope's Creek and other places in the Inverell district. The largest diamond won in New South Wales was reported to have been obtained in 1905 at Mt. Werong, near Oberon, and weighed $28\frac{1}{2}$ carats. It is difficult to secure accurate returns in connection with the production of precious stones, but the yield of diamonds in 1917 was estimated at 2,991 carats, valued at £2,006, while the total production to the end of 1917 is given at 191,855 carats, valued at £131,077. The yield in 1917 was contributed by miners working in the vicinity of Copeton, in the Tingha division. Small quantities of diamonds are found in Victoria in the gravels of streams running through granite country in the Beechworth district, at Kongbool in the Western District, and near Benalla. The stones are generally small and the production up to date has been trifling. In 1912, eleven small diamonds, valued at £20, were picked out of the sluice boxes of the Great Southern alluvial mine at Rutherglen. A few small diamonds have been found in the Pilbara district in Western Australia. In South Australia diamonds have been found on the Echunga goldfield, the most notable gem being Glover's diamond, which was sold for £70.

2. **Sapphires.**—These gems were discovered in New South Wales in 1851, near Burrandong. They have also been found in small quantities near Inverell, and at a few other localities in the State. There is no record of production. Specimens of sapphire have been found in Victoria, but the stones of commercial size are generally of little value owing to flaws.

In Queensland sapphires are found in the gravel of creek beds, between Withersfield and Anakie on the Rockhampton-Winton railway line. The gems shew excellent fire and lustre, but the colour is darker blue than the Oriental sapphire. Hyacinths are occasionally found in association with the gems. The production of sapphires in Queensland in 1917 was valued at £14,208, as compared with £600 in 1915, and over £40,000 in 1913. The gem mining industry practically collapsed on the outbreak of the war, as the German buyers ceased business. With the opening up of markets in London and Paris,

however, the sale of the gems recommenced, and as satisfactory prices are being realised the prospects of the field are encouraging. At present there are three regular buyers on the field, and three casual buyers operate occasionally. The approximate value of the stones cut on the field is given as £2,250. About 175 men are engaged in the search for the gems.

Sapphires are plentifully found in the tin drifts of the Ringarooma and Portland districts in Tasmania, but the stones are, as a rule, small and not worth saving.

3. Precious Opal.—This stone was first discovered in New South Wales at Rocky Bridge Creek on the Abercrombie River, in the year 1877, and later a most important discovery was made at White Cliffs in the Wilcannia district, which, until recently, contributed the bulk of the production. In 1917, however, out of a total production valued at £12,522, the yield from the Lightning Ridge field, near Walgett, amounted to £11,922, while the output from the White Cliffs field was only £600. The war had a very depressing effect on the industry, and operations were practically at a standstill on the White Cliffs field. Some very fine stones are at times obtained, one weighing 5 ozs. and valued at £300 being recovered in 1911. Occasionally, black opals of very fine quality are found, one specimen from the Wallangulla field, weighing 6½ carats, being sold in 1910 for £102. It is stated that this locality is the only place in the world where the "black" variety of the gem has been found. The total value of opal won in New South Wales since the year 1890 is estimated at £1,426,000.

Small quantities of precious opal are also found in the Beechworth district in Victoria.

In Queensland, the first recorded discovery of the gem dates from about 1875. The opaliferous district stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1917 was estimated at £100, and up to the end of that year at about £178,000. These figures are, however, merely approximations, as large quantities of opal are disposed of privately to buyers on the fields, no record of which is obtained. At present, the industry suffers from the peculiar disability that in good seasons there is plenty of work available on the pastoral stations, and most men prefer this to the uncertain results obtainable by fossicking, while in dry seasons when constant work is not obtainable, the search for opal is limited by the difficulty in obtaining sufficient water.

Precious opal has been discovered in South Australia in a locality 144 miles N. by E. of Tarcoola. The specimens show similar characteristics to those obtained at White Cliffs in New South Wales. Production in 1917 amounted to £500.

4. Other Gems.—Emeralds were found in New South Wales in the year 1890, near the township of Emmaville, the largest specimen found in the district weighing 23 carats in the rough. Altogether 2,225 carats were sent to London during that year, some of the gems bringing £4 a carat, but the production has since dwindled. The mine at the Glen in the Emmaville division was re-opened and worked for a short period during 1908, when about 1,000 carats of emeralds, valued at about £1,650, were obtained. The largest stone in the rough weighed 60 carats. Small emeralds of fine quality have been found at Poonna, in Western Australia, and it is stated that prospecting at greater depths would possibly reveal the existence of larger specimens. Amongst other gems found in New South Wales at various times may be mentioned *turquoises*, discovered in 1894, near Bodalla; *topazes*, fine specimens of which have been obtained in the New England district; and *zircon*s and *garnets*. Zircons of small size are plentifully found in the vicinity of Table Cape in Tasmania. Topazes are common in the tin drifts of Tasmania, and some fine specimens have been found. Turquoises are also found in thin veins in Victoria. In Gascoigne's mine, situated near the King River, in the parish of Edi, samples of the gem have been found equal in colour to the best Persian stone, and a considerable quantity of turquoises from this mine has been sold in England and Germany. Fine *agates* are found in many places in Victoria, but have not been made use of to any extent. The gems also occur plentifully in the bed of Agate Creek, about four miles south of Forsayth, on the Etheridge field in Queensland. Garnets are found in Western Australia, and beautiful specimens of *crocidolite* have been obtained at Yarra Creek in the Murchison district. *Rubies* have been found at various places in New South Wales and Queensland. *Tourmaline* has been found on Kangaroo Island, in South Australia, and *beryls* near Williamstown, Victoria, and at Poonna in Western Australia.

Very large but impure beryl crystals have been found at Ben Lomond in Tasmania. Some fine samples of *chiastolite* or luck stone have been found at Mt. Howden, near Bimbourie, in South Australia.

(C) GENERAL.

§ 15. Numbers Engaged, Wages Paid, and Accidents in Mining.

1. **Total Employment in Mining.**—The number of persons engaged in the mining industry in each State and in the Commonwealth fluctuates according to the season, the price of industrial metals, the state of the labour markets, and according also to the permanence of new finds, and the development of the established mines. During the year 1917 the number so employed was as follows:—

NUMBER OF PERSONS ENGAGED IN MINING, 1917.

State.	Number of Persons Engaged in Mining for						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal and Shale.	Other.	
New South Wales	1,823	7,619	2,074	1,779	17,338	2,184	32,817
Victoria	6,069	..	..	42	1,557	286	7,954
Queensland	1,375	71	3,154	878	2,229	1,096	8,803
South Australia	150	..	2,000	..	..	650	2,800
Western Australia	8,752	328	154	211	571	25	10,041
Tasmania	155	646	1,671	1,311	173	94	4,050
Northern Territory*	92	33	92	151	..	120†	488
Commonwealth	18,416	8,697	9,145	4,372	21,868	4,455	66,953

* Estimated. † Wolfram.

The following table shews the number of persons engaged in mining in the Commonwealth during each of the years 1891, 1901, and 1916, together with the proportion of the total population so engaged. The general falling-off since 1901 is due to the stagnation caused by the war, and largely also to the decline in the gold-mining industry:—

PROPORTION OF PERSONS ENGAGED IN MINING, 1891, 1901, AND 1917.

State.	1891.		1901.		1917.	
	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.
New South Wales	30,604	2,700	36,615	2,685	32,817	1,753
Victoria	24,649	2,151	28,670	2,381	7,954	566
Queensland	11,627	2,934	13,352	2,664	8,803	1,294
South Australia	2,683	834	7,007	1,931	2,800	648
Western Australia	1,269	2,496	20,895	11,087	10,041	3,254
Tasmania	3,988	2,695	6,923	4,017	4,050	2,036
Northern Territory .. ..	..	..	..	..	488	..
Commonwealth	74,820	2,341	113,462	2,992	66,953	1,366

2. **Wages Paid in Mining.**—Particulars regarding wages paid in the mining industry, which in earlier issues of the Year Book were given in this section, have now been transferred to the section dealing with Labour and Industrial Statistics.

3. **Accidents in Mining, 1917.**—The following table gives particulars of the number of men killed and injured in mining accidents during the year 1917 :—

NUMBERS KILLED AND INJURED IN MINING ACCIDENTS, 1917.

Mining for—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	C'wealth.
KILLED.								
Coal and shale	24	3	4	..	..	..	..	31
Copper ..	4	..	2	2	..	1	..	9
Gold ..	..	5	3	..	21	..	1	30
Silver, lead, and zinc ..	7	..	..	..	..	..	..	7
Tin ..	2	..	..	..	..	1	..	3
Other minerals	..	..	..	..	..	..	..	..
Total ..	37	8	9	2	21	2	1	80
INJURED.								
Coal and shale	148	24	17	..	121	5	..	315
Copper ..	3	..	26	6	7	25	..	67
Gold ..	..	17	3	..	701	..	..	721
Silver, lead, and zinc ..	31	..	..	..	4	9	..	44
Tin ..	1	..	2	..	..	9	..	12
Other minerals	2	..	1	..	7	..	..	10
Total ..	185	41	49	6	840	48	..	1,169

§ 16. State Aid to Mining.

1. **Introduction.**—The terms and conditions under which the States granted aid in mining were alluded to at some length in previous issues (see Year Books IV. and V.), but owing to considerations of space they have been omitted from this issue. A résumé of what is being done in this direction at the present time is given hereunder.

2. **New South Wales.**—The chief aid given in this State is in the direction of assistance to prospectors. Up to the end of 1917 the total sum expended in this manner amounted to £479,280, of which £12,000 was advanced in 1917. During the year the Government subsidy to the Miners' Accident Relief Fund amounted to £5,522.

3. **Victoria.**—Under the Mining Development and Surplus Revenue Acts the sum of £489,834 was expended from revenue, and £304,455 was provided out of votes during the period 1897 to 1917 as follows :—

	£
Advances to mining companies	238,185
Advances to prospectors	97,877
Boring for gold and coal	252,117
Construction of roads and tracks	63,211
Erection of testing plants, batteries, etc.	92,430
Miscellaneous, cyanide patents, Schools of Mines, etc.	50,469
Total	794,289

The expenditure in 1917 was £34,000, of which £13,978 was advanced to companies; £4,473 was loaned to miners; £221 was spent on constructing roads, etc.; £10,868 on boring for gold, coal, etc.; and £4,460 on testing plants and miscellaneous. The Government batteries number 33, several of which are managed by local trusts without expense to the Department so far as cost of working is concerned. The State's contribution to the Coal Miners' Accident Relief Fund amounted to £613.

4. **Queensland.**—State assistance to the mining industry in 1917 amounted to £31,597, of which £17,922 consisted of loans in aid of deep sinking; £6,872 grants in aid of prospecting; £2,288 in aid of roads and bridges to gold and mineral fields; £970 advance under *Mining Machinery Advances Act 1906*; and £3,545 purchase of boring plant and boring for oil at Roma.

5. **South Australia.**—Aid is given to the mining industry under the terms of the Mining Act of 1893, and previous measures. Up to the end of 1917 the total amount of subsidy paid was £64,797, of which £10,168 has been repaid, and £1,500 written off, leaving a debit of £53,129. Portion of this amount is represented by machinery that has fallen into the hands of the Government. Repayments are made from profits, but in only two instances have the profits enabled a full return to be made.

6. **Western Australia.**—Under the Mining Development Act of 1902 assistance was granted in 1917 in accordance with the subjoined statement:—Advances in aid of mining work and equipment of mines with machinery, £5,072; advances in aid of erection and equipment of crushing plants, £1,017; rebates to prospectors, £1,571; advances in aid of boring, £129; providing means of transport, £137; subsidies for carting long distances to batteries, £153; Warburton Range Expedition, £731; miscellaneous, £567; making a total of £9,377. The receipts under the Act came to £4,012, of which £2,400 consisted of refunds of advances.

In 1917 there were 32 State batteries in operation. The amount expended thereon up to the end of 1917 was £91,981 from revenue and £274,558 from loan, giving a total of £366,539. During the year receipts amounted to £37,815, and working expenditure to £45,369.

The total value of gold and tin recovered to the end of 1917 at the State plants was £4,918,000, resulting from the treatment of 1,157,407 tons of gold ore and 72,088 tons of tin ore, together with a small amount from residues.

7. **Tasmania.**—Under the terms of the *Aid to Mining Act 1912* the expenditure for the year 1917 amounted to £581, and the total up to the end of that year to £19,480. The bulk of this was expended in mining, prospecting, and development work undertaken by or under the direction of the Department of Mines. Under the *Mining and Public Works Appropriation Act 1913*, a sum of £2,804 was expended during 1917, while the outlay to the end of that year was £57,692. Of the latter sum, £21,273 consisted of advances on the security of ore produced from any mine in the State, and £11,209 was absorbed by expenses in connection with the State Argent Flat mine, Zeehan. Under the *Public Works Appropriation Act 1913*, a sum of £231 was expended in 1917, the total expenditure under this Act being £7,509. Further, a sum of £17,254 was expended under the Mining Appropriation Act of 1915 in respect to the State mine at Zeehan. The practise of granting £5 per month to an approved prospector has resulted in the efficient investigation of mining possibilities over a wide area.

8. **Northern Territory.**—During the year 1917–18 the Government aid to mining amounted to £5,147, of which £2,011 was in aid of prospecting for gold; £2,594, copper; £211, tin; and other, £331.

§ 17. Commonwealth Government Control of Industrial Metals.

1. **General.**—The policy of the Commonwealth Government is to have all metallic ores, as far as possible, treated within the Commonwealth, so that the resultant metals can be marketed in a refined state.

The Australian Metal Exchange, formed in September, 1915, with offices in Melbourne and Sydney, controls the export of metals and minerals (except the noble metals—gold, silver, and platinum), and no metals or minerals can be exported from Australia unless

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the contract be first registered with the Exchange by an active member and, while a state of war lasts, with the consent of the Minister for Trade and Customs. The members of the Exchange must be British companies, British firms, or natural-born British subjects, and the Attorney-General has the right of veto with regard to membership during the continuance of the present war and for one year after the declaration of peace.

2. **Lead.**—The following are the plants existing in the Commonwealth for treating silver-lead ores and concentrate :—

At Port Pirie, South Australia, is situated the Smeltery and Refinery of the Broken Hill Associated Smelters Proprietary Limited. The works were purchased by the above-named company from the Broken Hill Proprietary Co. Ltd. on the 2nd June, 1915, and have since been considerably enlarged and modernised. At present the works have an annual capacity of 160,000 tons of refined lead and 8,000,000 ozs. of silver, and are thus amongst the largest in the world. The Smelter Company, which provides in its Memorandum and Articles of Association for all British control, was formed primarily to treat on a co-operative basis the lead concentrates of its own shareholding companies and to undertake in addition general customs work. In order, however, to give effect to the new metal policy of the Commonwealth Government, arrangements were made about the middle of 1916 whereby other Broken Hill companies, who were not shareholders, were enabled to participate in the advantages of co-operative smelting, refining, and realisation. As a result the whole of the Broken Hill output of lead concentrate, excepting that of the Sulphide Corporation's mine, is to-day controlled and treated by the Associated Smelters Proprietary.

At Cockle Creek, near Newcastle, New South Wales, is located the Smeltery and Refinery of the Sulphide Corporation Ltd. The smelting plant here was established years ago, and produced bullion which was refined in Great Britain. The Refinery was added towards the end of 1917, and is now producing about 50,000 tons of refined lead and also gold and silver. The works cater for all the smaller silver-lead mines in New South Wales, Victoria, Queensland, and Tasmania, as well as for the company's own mine—the Central—at Broken Hill.

At Fremantle, Western Australia, is located the Smeltery and Refinery of the Fremantle Trading Company Limited. The plant running at its full capacity is capable of an annual output of 15,000 tons of pig-lead or silver-lead bullion from usual grade lead concentrates. The company is at present smelting only the Northampton lead ores, which contain little or no silver, and the present output is at the rate of 5,000 tons per annum. The plant in operation has a capacity for an annual output of about 7,000 tons of pig lead.

3. **Zinc.**—The Zinc Producers' Association Proprietary Limited was formed in May, 1916, to control and dispose of the Australian output of zinc concentrate and metals. All the principal zinc-producing companies are members, and the Association is founded on a co-operative basis. Fundamental principles are "all British control" and "equality of treatment" to all members. The Commonwealth Government is represented on the Board, and provision is made in the Articles of Association for the appointment of a representative of the Imperial Government on the Association's London Board.

The following contracts have been negotiated with the Board of Trade, London :—

- (a) Sale of all stocks of Broken Hill zinc concentrate and slime on hand at 31st December, 1917, less certain stipulated reserves, also the sale of 250,000 tons per annum during the period of the war and one year thereafter, and 300,000 tons per annum for nine years succeeding (if these quantities are available) plus option to the buyer over any balance of production. Full provision has been made for the requirements of works in Australia, and for all commitments in respect to contracts already made by the Association to Allied Countries.

- (b) Sale of supplies available up to 45,000 tons per annum of spelter and electrolytic zinc for ten years from 1st January, 1918. The contract contains a provision reserving supplies for Australian consumption and for other existing markets.

In order to facilitate the early establishment of Australian zinc industries the Imperial Government has undertaken to advance £500,000, if required, to finance Australian zinc works, interest on such advances to be at the same rate as is paid by the Imperial Government.

Zinc works have been established within the Commonwealth as follow :—

At Port Pirie, South Australia, there is a Zinc Distillery, established in 1909 by the Broken Hill Proprietary Co. Ltd., and now controlled by the Broken Hill Associated Smelters Proprietary Company Limited. This plant has a capacity for the treatment of 16,000 tons of zinc concentrates and a production of 6,000 tons of spelter and other zinc products. Nearly one-third of the spelter product is used by the Smelter Company in its lead refining.

At Risdon, Hobart, there are works for the production of electrolytic zinc controlled by the Electrolytic Zinc Company of Australasia Proprietary Limited, which, when completed, will have a capacity for a production of about 37,000 tons of electrolytic zinc per annum. The company is also engaging in other allied industries, such as zinc rolling and the manufacture of zinc oxide, lithophone, etc.

A contract for electrical power has been arranged with the Tasmanian Government. The first block of 4,000 h.p. at 11,000 volts is now being delivered to the Risdon works, allowing for an output of 5,000 tons of high-grade zinc per annum. It is expected that the second block of 26,000 h.p. will be delivered in two sections, the first of 11,000 h.p. in about twelve months, and the balance of 15,000 h.p. at a later date, when it is anticipated the plant at Risdon will be ready to treat zinc concentrates and produce high-grade zinc to its full capacity.

The Mount Lyell Mining and Railway Company Limited, having acquired mines on the West Coast of Tasmania containing large bodies of complex sulphide ores, formed a new company—The Mount Read and Rosebery Mines Limited—to take over these properties. The new company promises to be a substantial producer of electrolytic zinc.

4. Copper.—The Copper Producers' Association Proprietary Limited was formed in November, 1917, on similar lines to those of the Zinc Producers' Association, to control and dispose of the output of copper produced within the Commonwealth. All the principal copper-producing companies are members of the Association, and, as in the case of the Zinc Producers' Association, the Commonwealth Government is represented on the Board of Directors.

Works are established within the Commonwealth for the refining of copper as follow :—

At Port Kembla, New South Wales, owned by the Electrolytic Refining and Smelting Company of Australia Limited, with a capacity for an output of 44,000 tons of electrolytic and fire-refined copper per annum.

At Wallaroo, South Australia, owned by the Wallaroo and Moonta Mining and Smelting Company Limited, with a capacity for an output of 9,000 tons of refined copper per annum.

At Bowen, Queensland, owned by the Mount Elliott Limited, with a capacity for an output of 9,000 tons of refined copper per annum.

At Lithgow, New South Wales, owned by the Mouramba Mines Limited, with a capacity for an output of 2,500 tons of refined copper per annum.

At Kandos, New South Wales, works are being erected for the C.S.A. Mines which, when completed, will have a capacity for an output of 2,500 tons of electrolytic copper per annum.

Metal Manufactures Limited, a company formed at the instigation of the Commonwealth Government by the principal copper-producing companies, is now manufacturing at its extensive works at Port Kembla, New South Wales, high conductivity copper wire, rods, bars, and strips. All the usual sections of bar and strip are being made as well as special sections, including commutator segments. Hard and soft-drawn copper wire, and square, hexagonal, and round rods are produced in all sizes. Square and rectangular wire of the dimensions of circular wire is made to order. Stranding machinery has been installed by the company to make hard-drawn bare copper strand of all known sizes. Single and double cotton-covered wires form a regular part of the output.

The extension of the works to cover a wider field of production is now under consideration by the company.

5. Tin.—The principal tin smelters are the Mount Bischoff Company, Tasmania, the Sydney Smelting Company (Pyrmont Works), New South Wales, and the Irvinebank Company, Queensland. These are capable of treating all the tin ore and concentrate at present produced in Australia.

6. Molybdenite, Wolfram, and Scheelite.—The Commonwealth Government in September, 1915, entered into an arrangement with the Imperial Government for the acquisition of all wolfram, molybdenite, etc., produced in Australia. Under this arrangement, practically the whole of these minerals produced in Australia are being acquired for the Imperial Government, the prices fixed from the 1st January, 1918, being—

Wolfram and scheelite, 65 per cent., WO_3 , 52s. 6d. per unit at producing centres.
Molybdenite, 85 per cent., MoS_2 , 100s. per unit at producing centres.

This arrangement with the Imperial Government will terminate six months after the declaration of peace.

SECTION XIII.

MANUFACTURING INDUSTRIES.

§ 1. General.

1. **Industrial Progress.**—The statistics of manufactures in the Commonwealth shew that many industries have now been permanently established on a secure basis, and also indicate a consistent progress both in regard to the extension of existing industries and the establishment of new ones. As will be seen from the following pages, this growth has been particularly rapid since the abolition of inter-colonial tariffs consequent upon the creation of the Commonwealth of Australia in 1901, the throwing open of the whole of the Australian markets to the industrial products of each State having facilitated the internal distribution of the products of Australian industry.

(i) *The Gold Discoveries, 1851.* Prior to the gold discoveries (1851) there was little development in the manufacturing industries of Australia. Reference to that period will be found in earlier issues of the Year Book (see No. 6, page 524.)

(ii) *Later Progress.* Soon after the discovery of gold, the construction of the first railways (1854) and the re-establishment of regular steamship communication with Europe (1856) helped to encourage the nascent industrial activity. The Colonies of New South Wales and Victoria, which had recently (1855) received the benefits of responsible government, soon turned their attention to the settlement of an agricultural population on the land. The Acts which were passed had a beneficial effect on the workers, giving them opportunities for employment not previously open to them, and fostering the manufacturing industries by increasing the measure of primary production. During the following years the various manufacturing industries prospered. The statistics of the States are not sufficiently complete or uniform to enable a statement of the progress of these industries to be given. The following table, however, shewing, so far as returns are available, the number of factories and the number of employees in each State at decennial periods from 1861 to 1911, and for each of the six years 1912 to 1917, will serve to indicate generally the progress which has been made. Consequent on New South Wales, Victoria, and South Australia furnishing returns for the commercial year ended 30th June, the 1917 manufacturing figures published in this issue for these three States are for the year ended 30th June, 1917, while Queensland, Western Australian, and Tasmanian figures are for the year ended 31st December, 1917.

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
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NUMBER OF FACTORIES.

1861	601	531
1871	1,813	1,740
1881	2,961	2,488	571 ^d	823 ^d
1891	3,056	3,141	1,328 ^d	996 ^d	175
1901	3,367	3,240	2,110 ^d	1,335 ^d	662	420 ^e	11,143
1911	5,039	5,126	1,657	1,314	710	609	14,455
1912	5,162	5,263	1,790	1,341	711	611	14,878
1913	5,346	5,613	1,838	1,353	763	623	15,536
1914	5,269 ^c	5,650	1,796	1,323	787	603	15,428
1915	5,269 ^c	5,413	1,775	1,266	780	589	15,092
1916 ^a	5,210	5,413	1,782	1,266	771	568	15,010
1917 ^b	5,356	5,445	1,793	1,286	759	540	15,179

^a New South Wales for year ended 30th June, 1916; Victoria and South Australia, calendar year 1915; Queensland, Western Australia, and Tasmania, calendar year 1916. ^b New South Wales, Victoria, and South Australia for year ended 30th June, 1917; the remaining States for year ended 31st December, 1917. See last paragraph above. ^c For year ended 30th June, 1915. ^d Not on same basis as other States. ^e For 1902.

Note.—In this and all subsequent tables, except where specially mentioned, "Number of Employees" includes working proprietors.

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 TO 1917—
continued.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF EMPLOYEES.							
1861	..	4,395	..	..	..	..	..
1871	..	13,583	19,569	..	5,629 ^d	..	..
1881	..	31,191	43,209	..	10,995 ^d	..	..
1891	..	50,879	53,525	..	14,099 ^d	..	..
1901	..	66,135	66,529	26,172 ^d	19,233 ^d	12,198	7,466 ^e
1911	..	108,624	111,948	37,156	27,885	15,799	10,298
1912	..	115,561	116,108	40,948	28,500	16,382	9,957
1913	..	120,400	118,744	42,363	28,511	17,299	9,784
1914	..	116,611 ^c	118,399	43,282	26,874	17,640	8,922
1915	..	116,611 ^c	113,834	42,079	25,496	14,631	8,420
1916 ^a	..	116,401	113,834	39,983	25,496	12,676	8,362
1917 ^b	..	117,997	116,970	40,446	26,010	12,168	8,079

For notes see previous page.

2. **Defects in Industrial Statistics.**—A complete statistical account of the growth of the manufacturing industries in Australia unfortunately cannot be given for any lengthy period, owing to the fact that the necessary statistics have not been collected in past years by the several States upon a definite and identical basis. Even in respect of the definition of a "factory" or (so far as they might be included in related returns) the statistics of persons employed therein, there was formerly no common agreement. The relatively minor place that manufacturing industry held in relation to the total activity of Australia was, perhaps, responsible for the fact that the necessity for uniform method was not earlier recognised.

In 1896 it was agreed, as between Victoria and New South Wales, to adopt a common definition of the term "factory," viz., "any factory, workshop, or mill where four or more persons are employed or power is used." This agreement was adopted for the States generally at the Conference of State Statisticians in 1902, when it was decided, however, that the term "factory," should include also "all establishments, whether making for the trade, wholesale or retail, or for export." It was further agreed that industries should be arranged, as far as possible, under a uniform classification which was drawn up by the conference. As a result of the conference of 1902 a higher degree of uniformity in the collection and presentation of industrial statistics was attained in the several States, so that returns upon which anything like a proper comparative study of the development and progress of various manufacturing industries in the Commonwealth may be based date back only as far as the year 1903, when the resolution of the conference first came to be put into force. All the States did not, however, fall completely into line, and, as may be seen in the succeeding parts of this section, the comparisons afforded by the returns for the years 1903 to 1906 inclusive are in some cases subject to various limitations. At the Conference of Statisticians held in Melbourne in 1906 special consideration was given to the methods to be adopted for the collection of statistical information regarding primary and secondary production and industry. The classification of industries prepared by the conference of 1902 was adopted, and a set of forms for the collection and compilation of industrial statistics on a definite and uniform basis in each State was agreed upon. The States have not, even yet, fallen entirely into line in collecting and classifying the returns. The particulars for the past eleven years are, however, in more complete co-ordination than formerly, and it is now possible to give particulars for the several States in greater detail and with greater uniformity throughout.

3. **Classification of Manufacturing Industries.**—Under the classification prepared by the Conference of Statisticians held in 1902, and adopted at that held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein, most of the categories being further subdivided. Where two or more industries are carried on by one proprietor in one building, each industry is, when possible,

treated as a separate establishment. The statement given hereafter shows the classification which has been adopted; it must be understood, however, that this classification does not pretend to be exhaustive, but merely serves as a guide for the collection and presentation of statistics in the several States on a definite and uniform basis :—

CLASSIFICATION OF MANUFACTURING INDUSTRIES.

<p>CLASS I.—TREATING RAW MATERIALS, ETC. Bolling-down, Tallow Refining, etc. Tanneries Woolscouring and Fellmongering Chaff-cutting, etc.</p>	<p>Confectionery Corn-flour, Oatmeal, etc. Flour Mills Jam and Fruit Canning Pickles, Sauces and Vinegar Sugar Mills Sugar Refining Aerated Waters, Cordials, etc. Breweries Condiments, Coffee, Spices, etc. Distilleries Ice and Refrigerating Malting Tobacco, Cigars, etc.</p>	<p>CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING. Docks and Slips Sailmaking Ship and Boat Building and Repairing</p>
<p>CLASS II.—OILS AND FAT, ETC. Oil and Grease Soap and Candles</p>	<p>CLASS VII.—CLOTHING AND TEXTILE FABRICS. Woollen and Tweed Mills Boots and Shoes Slop Clothing Clothing (Tailoring) Dressmaking and Millinery— Makers' material Customers' material Dyeworks and Cleaning Furriers Hats and Caps Waterproof and Oilskin Shirts, Ties, and Scarfs Rope and Cordage Tents and Tarpaulins</p>	<p>CLASS XIII.—FURNITURE, BEDDING, ETC. Bedding, Flock, and Upholstery Billiard Tables Furniture and Cabinet Making Picture Frames Window Blinds</p>
<p>CLASS III.—STONE, CLAY, GLASS, ETC. Bricks and Tiles Glass (including Bottles) Glass (Ornamental) Lime, Plaster, Cement and Asphalt Marble, Slate, etc. Modelling, etc. Pottery and Earthenware</p>	<p>CLASS VIII.—BOOKS, PAPER, PRINTING, ETC. Electrotyping and Stereotyping Paper-making, Paper Boxes, Bags, etc. Photo-engraving Printing and Binding</p>	<p>CLASS XIV.—DRUGS AND CHEMICALS, ETC. Chemicals, Drugs, and Medicines Fertilisers Paints, Varnishes, and By-products</p>
<p>CLASS IV.—WORKING IN WOOD. Boxes and Cases Cooperage Joinery Saw Mills Wood-turning, etc.</p>	<p>CLASS IX.—MUSICAL INSTRUMENTS, ETC. Musical Instruments and Sewing Machines</p>	<p>CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS. Surgical, Optical, and other Scientific Instruments</p>
<p>CLASS V.—METAL WORKS, MACHINERY, ETC. Agricultural Implements Brass and Copper Cutlery Engineering Galvanised Iron-working Ironworks and Foundries Lead Mills Railway Carriages Railway and Tramway Workshops Smelting Stoves and Ovens Tinsmithing Wireworking Other Metal Works</p>	<p>CLASS X.—ARMS AND EXPLOSIVES. Arms and Explosives</p>	<p>CLASS XVI.—TIMEPICES, JEWELLERY, AND PLATED WARE. Electro-plating Manufacturing Jewellery, etc.</p>
<p>CLASS VI.—FOOD AND DRINK, ETC. Bacon Curing Butter Factories Butterine and Margarine Cheese Factories Condensed Milk Meat and Fish Preserving Biscuits</p>	<p>CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC. Coach and Wagon Building Cycles Perambulators Saddlery, Harness, etc. Spokes, etc.</p>	<p>CLASS XVII.—HEAT, LIGHT, AND POWER. Coke Works Electric Apparatus Electric Light and Power Gas Works and Kerosene Lamps and Fittings, etc. Hydraulic Power</p>
		<p>CLASS XVIII.—LEATHERWARE (N.E.I.). Leather Belting, Fancy Leather, Portmanteaux and Bags</p> <p>CLASS XIX.—MINOR WARES. Basket and Wickerware, Matting, etc. Brooms and Brushware Rubber Goods Toys Umbrellas Other Industries</p>

§ 2. Number of Factories.

1. **General.**—In stating the number of factories in the States of the Commonwealth, it is to be remembered that in the collection of statistics for years prior to 1907 the same basis has not been adopted in each State. In Queensland, for example, prior to 1906, the statistics included all establishments where two or more hands were employed, except Government railway workshops, which were not included till 1907. The difference in other respects is not material.

In the following table, shewing the total number of factories in the Commonwealth during the years 1903 and 1911 to 1917, it should be noted that the alteration in the

number of factories from year to year does not necessarily indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers. (See § 3, 5.)

FACTORIES OF THE COMMONWEALTH, 1903 AND 1911 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1903 ..	3,476	4,151	2,001 ^d	906 ^d _e	586	431	11,551
1911 ..	5,039	5,126	1,657	1,314	710	609	14,455
1912 ..	5,162	5,263	1,790	1,341	711	611	14,878
1913 ..	5,346	5,613	1,838	1,353	763	623	15,536
1914 ..	5,269 ^c	5,650	1,796	1,323	787	603	15,428
1915 ..	5,269 ^c	5,413	1,775	1,266	780	589	15,092
1916 ^a ..	5,210	5,413	1,782	1,266	771	568	15,010
1917 ^b ..	5,356	5,445	1,793	1,286	759	540	15,179

^a See note ^a first table this section. ^b See note ^b first table this section. ^c For year ended 30th June, 1915. ^d Not on same basis as other States. ^e 1904 results, those for 1903 not available.

(i) *Classification of Factories in Commonwealth, 1912 to 1917.* The following table shows the total number of factories in the Commonwealth for each year from 1912 to 1917, classified on the basis indicated in § 1, 3 hereof:—

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1912 TO 1917.

Class of Industry.	1912.	1913.	1914. ^a	1915. ^a	1916. ^b	1917. ^c
	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	871	907	870	839	817	797
II. Treating oils and fats, animal, vegetable, etc.	102	100	101	99	96	92
III. Processes in stone, clay, glass, etc.	709	732	706	654	626	606
IV. Working in wood	1,752	1,812	1,764	1,702	1,661	1,646
V. Metal works, machinery, etc.	1,779	1,814	1,824	1,814	1,832	1,802
VI. Connected with food and drink, etc.	2,331	2,366	2,333	2,328	2,372	2,403
VII. Clothing and textile fabrics, etc.	3,115	3,266	3,254	3,117	3,085	3,176
VIII. Books, paper, printing and engraving	1,158	1,206	1,229	1,225	1,225	1,232
IX. Musical instruments, etc.	21	21	19	19	20	25
X. Arms and explosives	16	20	19	20	21	17
XI. Vehicles and fittings, saddlery and harness, etc.	1,249	1,396	1,365	1,337	1,334	1,374
XII. Ship and boat building and repairing	97	96	93	88	72	74
XIII. Furniture, bedding, and upholstery	670	719	703	693	697	704
XIV. Drugs, chemicals, and by-products	202	206	213	206	207	238
XV. Surgical and other scientific instruments	44	48	52	51	51	63
XVI. Jewellery, timepieces, and platedware	177	190	200	199	195	190
XVII. Heat, light, and power	372	420	454	474	466	479
XVIII. Leatherware, n.e.i.	66	67	65	67	69	74
XIX. Minor wares, n.e.i.	147	150	164	160	164	187
Total	14,878	15,536	15,428	15,092	15,010	15,179

^a New South Wales figures for year ended 30th June, 1915. ^b See note ^a first table this section. ^c See note ^b first table this section.

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 (see § 1, 2 hereof) is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used." The total increase in the number of factories according to this table from 1912 to 1917 was 301, or an average of 60 a year. The state of the manufacturing industries throughout Australia cannot, however, be gauged from a mere enumeration of the number of

factories. Some of the factories concerned were practically in their infancy, employing but few hands, while others were developed on a large scale. Also, as pointed out previously, amalgamations may in some instances account for a reduction in the numbers.

(ii) *Classification of Factories in each State, 1917.* The following table shews the number of factories in each State of the Commonwealth, classified according to the nature of the industry. (See classification given in § 1, 3 hereof) :—

CLASSIFICATION OF FACTORIES IN EACH STATE, 1917.

Class of Industry.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wth.
I. Treating raw material, product of agricul. & pastoral pursuits, etc.	256	304	41	107	43c	46c	797
II. Treating oils and fats, animal, vegetable etc.	38	27	14	13	d	d	92
III. Processes in stone, clay, glass, etc.	278	170	36	61	39	22	606
IV. Working in wood	647	424	301	88	61	125	1,646
V. Metal works, machinery, etc.	599	700	208	176	79	40	1,802
VI. Connected with food & drink, etc.	787	635	487	248	138	108	2,403
VII. Clothing and textile fabrics, etc.	1,038	1,441	252	242	136	67	3,176
VIII. Books, paper, printing & engraving	455	445	145	91	72	24	1,232
IX. Musical instruments, etc.	13	9	..	3a	..	..	25
X. Arms and explosives	5	12	..	b	..	..	17
XI. Vehicles and fittings, saddlery and harness, etc.	434	533	145	137	76	49	1,374
XII. Ship and boat building & repairing	35	11	10	8	5	5	74
XIII. Furniture, bedding and upholstery	253	268	73	45	41	19	704
XIV. Drugs, chemicals, and by-products	113	94	3	10	12	6	238
XV. Surgical and other scientific instruments	17	28	7	6	5	..	63
XVI. Jewellery, timepieces & platedware	52	91	18	15	8	6	190
XVII. Heat, light, and power	223	158	32	17	31	18	479
XVIII. Leatherware, n.e.i.	25	38	3	5	3	..	74
XIX. Minor wares, n.e.i.	88	57	13	14	10	5	187
Total	5,356	5,445	1,793	1,286	759	540	15,179

a Includes Class X. b Included in Class IX. c Includes Class II. d Included in Class I.

2. *Use of Mechanical Power.*—The principal motive power is steam, but the chief towns possess electric power stations owned either by the Government, or by public bodies or private companies. From these many factories find it convenient to derive their motive power.

The following table shews the number of factories in which machinery was worked by steam, gas, oil, electricity, or water and the horse-power of engines or motors used, in each State and in the Commonwealth :—

UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1917.

State.	Number of Establishments.			Actual Horse-power of Engines Used.					
	Using Machinery worked by Steam, Gas, Oil, Electricity, or Water.	Others.	Total.	Steam.	Gas.	Oil.	Elec-tricity.	Water.	Total.
N.S.W., 1916-17	No. 4,272	No. 1,084	No. 5,356	H.P. 159,712	H.P. 13,312	H.P. 1,830	H.P. 61,702	H.P. 274	H.P. 236,830
Vic., 1916-17 ..	4,184	1,261	5,445	81,611	18,651	2,375	34,348	..	136,985
Q'land., 1917 ..	1,399	394	1,793	43,873	9,851	1,716	13,399	27	68,866
S. Aust., 1916-17	1,019	267	1,286	23,913	7,413	1,825	6,992	..	45,143
W. Aust., 1917 ..	611	148	759	39,887	5,365	768	5,814	..	51,834
Tas., 1917 ..	446	94	540	4,350	233	173	9,564	6,283	20,603
Commonwealth	11,931	3,248	15,179	358,346	54,825	8,687	131,819	6,584	560,261

A comparison of the above table with that immediately preceding will explain the preponderance of horse-power employed in the New South Wales factories, this State possessing by far the largest number of industries demanding a considerable amount of power; Victoria, on the other hand, has the largest number of establishments, such as those connected with clothing and textile fabrics, wherein much less mechanical power is utilised.

The number of establishments in the Commonwealth using machinery worked by steam, gas, oil, or electricity was 11,931, or 78.60 per cent. of the total; 3,248 establishments, representing 21.40 per cent., used no mechanical power. The total actual horse-power in use was 560,261, distributed in the following proportions:—Steam, 63.96 per cent.; gas, 9.79 per cent.; oil, 1.55 per cent.; electricity, 23.53 per cent.; and water, 1.17 per cent.

The following table shews the horse-power of engines used in connection with factories in the Commonwealth during each of the last six years:—

**UTILISATION OF MECHANICAL POWER IN FACTORIES IN COMMONWEALTH,
1912 TO 1917.**

Year.	Number of Establishments.			Actual Horse-power of Engines used.					
	Using Machinery worked by Steam, Gas, Oil or Electricity.	Others.	Total.	Steam.	Gas.	Oil.	Elec- tricity.	Water.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
1912 ..	10,558	4,320	14,878	284,228	43,905	6,829	56,797	..	391,759
1913 ..	11,239	4,237	15,536	313,085	48,677	8,142	72,250	..	442,154
1914a ..	11,396	4,032	15,428	336,766	50,976	8,542	95,253	..	491,537
1915a ..	11,438	3,654	15,092	333,494	54,994	8,558	107,788	..	504,834
1916b ..	11,550	3,460	15,010	349,157	53,921	8,541	118,149	..	529,768
1917c ..	11,931	3,248	15,179	358,346	54,825	8,687	131,819	6,584	560,261

a New South Wales figures for year ended 30th June, 1915. b See note a first table this section.
c See note b first table this section.

During the last five years the number of establishments using mechanical power has increased 13 per cent., the actual horse-power of engines used increasing over 43 per cent. during the same period.

§ 3. Numbers Employed in Australian Factories.

1. **Total Number Employed.**—Each person employed in and about a factory, in whatever capacity, is now included as a factory employee, consequently every proprietor who works in his business is counted as an employee, and all "outworkers" (see paragraph 6 hereinafter) are also included. The individuals embraced may be classed under the following heads, viz.:—(i) Working proprietors; (ii) managers and overseers; (iii) accountants and clerks; (iv) engine-drivers and firemen; (v) skilled and unskilled workers in the factories, [mills, or workshops; (vi) carters and messengers; and (vii) others.

(i) *Average Numbers Employed, 1912 to 1917.* The following table shews, for each year from 1912 to 1917 inclusive, (a) the average numbers of persons (including both sexes and all ages) employed in manufacturing industries in each State; (b) the percentage

of the numbers employed in each State on the total numbers employed in the Commonwealth; and (c) the numbers employed per ten thousand of the mean population in each State and the Commonwealth :—

AVERAGE NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES, 1912 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
AVERAGE NUMBER.							
1912	115,561	116,108	40,948	28,500	16,382	9,957	327,456
1913	120,400	118,744	42,363	28,511	17,299	9,784	337,101
1914	116,611 ^a	118,399	43,282	26,874	17,640	8,922	331,728
1915	116,611 ^a	113,834	42,079	25,496	14,631	8,420	321,071
1916 ^b	116,401	113,834	39,983	25,496	12,676	8,362	316,752
1917 ^c	117,997	116,970	40,446	26,010	12,168	8,079	321,670

PERCENTAGE ON COMMONWEALTH TOTAL.							
	%	%	%	%	%	%	%
1912	35.29	35.46	12.51	8.70	5.00	3.04	100.00
1913	35.72	35.22	12.57	8.46	5.13	2.90	100.00
1914	35.15	35.69	13.05	8.10	5.32	2.69	100.00
1915	36.32	35.45	13.11	7.94	4.56	2.62	100.00
1916 ^b	36.75	35.94	12.62	8.05	4.00	2.64	100.00
1917 ^c	36.68	36.37	12.57	8.09	3.78	2.51	100.00

PER 10,000 OF MEAN POPULATION.							
1912	665	856	648	676	543	519	705
1913	665	852	649	658	551	499	702
1914	626 ^a	832	641	611	545	450	674
1915	626 ^a	798	612	580	454	422	650
1916 ^b	622	798	590	580	403	422	642
1917 ^c	635	836	600	601	394	406	659

^a For year ended 30th June, 1915. ^b See note ^a first table this section.
^c See note ^b first table this section.

(ii) *Rates of Increase, 1912 to 1917.* The following table shews the percentage of increase or decrease on the average number of persons employed for the preceding year from 1913 to 1917. The figures for the past four years are somewhat vitiated by the change in dates of collecting the statistics in New South Wales, Victoria, and South Australia :—

PERCENTAGE OF INCREASE ON AVERAGE NUMBER EMPLOYED, 1913 TO 1917.

Years.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1912-13 ..	4.19	2.27	3.46	0.04	5.60	-1.74	2.95
1913-14 ..	-3.27 ^a	-0.29	2.17	-5.74	1.97	-8.81	-1.64
1914-15 ..	-3.27 ^a	-3.86	-2.78	-5.13	-17.06	-5.63	-3.21
1915-16 ^b ..	-0.18	-3.86	-4.98	-5.13	-13.36	-0.69	-1.35
1916-17 ^c ..	1.37	2.75	1.16	2.02	-4.01	-3.38	1.55

Note.—The minus sign (-) indicates decrease.
^a Eighteen months ended 30th June, 1915. ^b See note ^a first table this section.
^c See note ^b first table this section.

2. Classification of Numbers Employed in Factories in the Commonwealth, 1912 to 1917.—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1912 to 1917 inclusive :—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES
IN THE COMMONWEALTH, 1912 TO 1917.**

Class of Industry.	1912.	1913.	1914. <i>a</i>	1915. <i>a</i>	1916. <i>b</i>	1917. <i>c</i>
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	9,624	9,495	9,221	9,306	9,009	9,411
II. Treating oils and fats, animal, vegetable, etc.	2,091	2,091	2,259	2,523	2,399	2,554
III. Processes in stone, clay, glass, etc.	12,909	13,794	13,570	12,616	11,604	10,949
IV. Working in wood	30,660	31,646	30,137	26,030	23,336	22,079
V. Metal works, machinery, etc.	66,472	68,839	66,112	65,368	65,850	62,115
VI. Connected with food and drink, etc.	46,812	49,882	51,980	49,266	48,272	52,781
VII. Clothing and textile fabrics, etc.	84,661	84,237	81,076	78,952	80,292	83,201
VIII. Books, paper, printing and engraving	25,077	26,013	25,213	24,928	24,890	24,954
IX. Musical instruments, etc.	628	616	542	515	542	652
X. Arms and explosives	899	1,240	1,674	2,028	2,571	2,951
XI. Vehicles and fittings, saddlery and harness, etc.	13,400	13,913	13,125	12,350	12,006	12,196
XII. Ship and boat building and repairing	3,821	4,216	5,633	6,097	4,605	4,953
XIII. Furniture, bedding, and upholstery	10,405	10,462	9,534	8,961	8,716	9,072
XIV. Drugs, chemicals, and by-products	4,381	4,328	4,490	4,601	4,738	5,036
XV. Surgical & other scientific instruments	238	264	282	301	293	361
XVI. Jewellery, timepieces, and platedware	2,302	2,170	2,026	1,878	1,835	1,975
XVII. Heat, light, and power	8,550	9,394	9,942	9,939	10,018	10,329
XVIII. Leatherware, n.e.i.	1,231	1,204	1,217	1,292	1,376	1,488
XIX. Minor wares, n.e.i.	3,295	3,297	3,695	4,120	4,400	4,613
Total	327,456	337,101	331,728	321,071	316,752	321,670

a New South Wales figures for year ended 30th June, 1915. *b* See note *a* first table this section.

c See note *b* first table this section.

There was a total decrease in the average number of hands employed from 1912 to 1917 of 5,786, or an annual average of 1,157. The greatest decline occurred in Classes III., IV., and V., the decreases being 1,960, 3,581, and 4,357 respectively. Increases occurred in Classes II., VI., IX., X., XII., XIV., XV., XVII., XVIII., and XIX.

3. Classification of Numbers Employed in each State, according to Class of Industry.—The following table shows a similar classification of employees in manufacturing industries in each State :—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES
IN EACH STATE, 1917.**

Class of Industry.	N.S.W. 1916-17.	Vic. 1916-17	Q'land. 1917.	S.A. 1916-17	W.A. 1917.	Tas. 1917.	C'wth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	3,659	3,535	665	834	335 ^c	383 ^c	9,411
II. Treating oils and fats, animal, vegetable, etc.	1,301	796	174	283	<i>d</i>	<i>d</i>	2,554
III. Processes in stone, clay, glass, etc.	5,321	3,519	423	1,026	424	236	10,949
IV. Working in wood	7,155	6,386	4,110	1,064	2,018	1,396	22,079
V. Metal works, machinery, etc.	27,090	17,180	5,575	8,448	2,528	1,294	62,115
VI. Connected with food and drink, etc.	15,520	15,354	15,247	3,383	1,594	1,703	52,781
VII. Clothing and textile fabrics, etc.	26,221	41,233	7,297	4,833	2,322	1,295	83,201
VIII. Books, paper, printing, and engraving	9,529	8,830	2,983	1,824	1,080	708	24,954
IX. Musical instruments, etc.	431	198	..	23 ^a	..	..	652
X. Arms and explosives	1,354	1,597	..	<i>b</i>	..	..	2,951
XI. Vehicles and fittings, saddlery, and harness, etc.	4,137	4,575	1,256	1,317	538	373	12,196
XII. Ship and boat building & repairing	4,185	464	134	112	27	31	4,953
XIII. Furniture, bedding, and upholstery	3,636	2,766	1,155	820	398	297	9,072
XIV. Drugs, chemicals, and by-products	1,812	2,086	84	674	359	21	5,036
XV. Surgical and other scientific instruments	147	135	34	25	20	..	361
XVI. Jewellery, timepieces, & platedware	689	948	125	123	58	32	1,975
XVII. Heat, light, and power	3,728	4,164	897	959	308	273	10,329
XVIII. Leatherware, n.e.i.	602	711	98	54	23	..	1,488
XIX. Minor wares, n.e.i.	1,480	2,563	189	208	136	37	4,613
Total	117,997	116,970	40,446	26,010	12,168	8,079	321,670

a Includes Class X. *b* Included in Class IX. *c* Includes Class II. *d* Included in Class I.

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 83,201 employees, or 25.87 per cent. of the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 361 hands, or 0.11 per cent. of the total number of employees. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 4, 5 hereof.)

4. Classification of Numbers Employed in each State according to Nature of Employment.—In the following table the average numbers of persons employed in each State are classified according to the nature of their employment :—

AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED ACCORDING TO NATURE OF EMPLOYMENT, 1917.

State.	Average Number of Persons Employed.						Total.
	Working Proprietors.	Managers and Overseers.	Accountants and Clerks.	Engine-drivers and Firemen.	Workers, Skilled & Unskilled, in Factory Mill or Workshop ^a	Carters, Messengers, and Others.	
N.S. Wales, 1916-17	4,007	3,968	5,167	2,843	99,171	2,836	117,997
Victoria, 1916-17 ..	5,201	3,619	4,345	1,758	98,520	3,527	116,970
Queensland, 1917 ..	1,493	1,557	1,867	1,755	31,694	2,080	40,446
S. Australia, 1916-17	1,172	994	1,213	566	21,530	535	26,010
W. Australia, 1917	491	604	578	371	9,688	436	12,168
Tasmania, 1917 ..	383	353	419	277	6,351	296	8,079
Commonwealth	12,747	11,095	13,589	7,575	266,954	9,710	321,670

^a Including outworkers.

5. Classification of Factories according to Number of Hands Employed.—(i) The number of factories in each State classified according to number of hands employed, and the average number of hands employed therein, are shewn in the following table :—

CLASSIFICATION OF FACTORIES IN EACH STATE ACCORDING TO NUMBER OF HANDS EMPLOYED, 1917.

No. of Persons Employed in each Factory.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tasmania. 1917.	C'wealth.
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NUMBER OF FACTORIES.

Under 4 ..	976	1,165	343	216	169	127	2,996
4 ..	548	595	178	166	86	56	1,629
5 to 10 ..	1,795	1,744	560	472	248	188	5,007
11 to 20 ..	945	867	309	198	130	77	2,526
21 to 50 ..	671	647	241	138	84	67	1,848
51 to 100 ..	230	236	79	55	25	18	643
Over 100 ..	191	191	83	41	17	7	530
Total ..	5,356	5,445	1,793	1,286	759	540	15,179

AVERAGE NUMBER OF HANDS EMPLOYED.

Under 4 ..	2,206	2,632	748	531	344	270	6,731
4 ..	2,192	2,380	712	664	344	224	6,516
5 to 10 ..	12,345	12,033	3,892	3,228	1,735	1,267	34,500
11 to 20 ..	13,915	12,616	4,561	2,823	1,898	1,125	36,938
21 to 50 ..	20,922	20,427	7,510	4,382	2,670	2,091	58,002
51 to 100 ..	16,194	16,219	5,570	3,723	1,736	1,251	44,693
Over 100 ..	50,223	50,663	17,453	10,659	3,441	1,851	134,290
Total	117,997	116,970	40,446	26,010	12,168	8,079	321,670

(ii) Reference to the following table will shew a tendency for the proportionate number of hands employed in the larger establishments to still further increase and for that of the smaller factories to diminish. During the quinquennial period under discussion, the ratio of hands in factories employing under 21 hands to total number of employees in all factories shews a decline from 26.63 per cent. in 1912 to 26.33 in 1917. A heavier falling-off appears in establishments employing from 21 to 100 hands, viz., 33.94 to 31.92 per cent. The larger establishments with 101 hands and upwards during the same period exhibit an increase from 39.43 to 41.75 per cent. of total employed. The average number of hands per establishment in 1912 was 22.01, and in 1917, 21.19.

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH ACCORDING TO NUMBER OF HANDS EMPLOYED DURING THE YEARS 1912 TO 1917.

Year.	Establishments Employing on the Average—							
	20 hands and under.		21 to 100 hands.		101 hands and upwards.		Total.	
	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.
1912—								
Number	11,660	87,231	2,673	111,126	545	129,099	14,878	327,456
Average per establishment		7.48		41.57		236.88		22.01
Percentage on total	78.37	26.63	17.97	33.94	3.66	39.43	100.00	100.00
1913—								
Number	12,280	90,005	2,676	109,704	580	137,392	15,536	337,101
Average per establishment		7.33		41.00		236.88		21.70
Percentage on total	79.04	26.70	17.23	32.54	3.73	40.76	100.00	100.00
1914a—								
Number	12,284	88,071	2,589	106,584	554	136,924	15,427	331,579
Average per establishment		7.17		41.16		247.15		21.49
Percentage on total	79.62	26.56	16.79	32.14	3.59	41.30	100.00	100.00
1915a—								
Number	12,106	84,545	2,445	101,722	541	134,804	15,092	321,071
Average per establishment		6.99		41.60		249.18		21.27
Percentage on total	80.22	26.33	16.20	31.68	3.58	41.99	100.00	100.00
1916b—								
Number	12,081	83,263	2,386	98,107	543	135,382	15,010	316,752
Average per establishment		6.89		41.11		249.32		21.10
Percentage on total	80.49	26.29	15.90	30.97	3.61	42.74	100.00	100.00
1917c—								
Number	12,158	84,685	2,491	102,695	530	134,290	15,179	321,670
Average per establishment		6.97		41.23		253.38		21.19
Percentage on total	80.10	26.33	16.41	31.92	3.49	41.75	100.00	100.00

a New South Wales figures for year ended 30th June, 1915. b See note a first table this section.
c See note b first table this section.

6. **Outworkers.**—The term "outworker" or "homeworker" has acquired a special meaning in connection with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in the employees' own homes. Individuals working for themselves are not included. The following table gives particulars of the average number of outworkers connected with factories in each State during each year from 1912 to 1917 inclusive:—

NUMBER OF OUTWORKERS(a) CONNECTED WITH FACTORIES, 1912 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1912	895	1,959	140	71	14	86	3,165
1913	724	1,910	122	54	7	72	2,889
1914	582b	1,737	117	58	8	58	2,560
1915	582b	1,473	92	44	6	70	2,267
1916c	577	1,473	99	44	6	35	2,234
1917d	677	1,814	89	41	5	32	2,658

a In all tables relating to number of hands employed in factories, outworkers are included.
b Year ended 30th June, 1915. c See note a first table this section. d See note b first table this section.

The Factories Acts in each State contain provisions regulating the employment of outworkers. Generally, records of out-work must be kept by factory proprietors, specifying the names and remuneration of workers, and stating the places where the work is done. Further particulars are given in a later part of this book. (See Section relating to *Industrial Unionism and Industrial Legislation*.)

§ 4. Sex Distribution in Factories.

1. **Employment of Females in Factories.**—In all the States the employment of female labour in factories is now regulated by Act of Parliament. In Victoria the first Act dealing with the subject was passed in the year 1873, and provided that no female should be employed for more than eight hours a day without the permission of the Chief Secretary. The number of working hours for women is now limited to forty-eight per week in all the States, overtime being allowed only with the permission of the Departments, and then to a limited extent. The maximum periods of continuous labour, and the intervals of cessation therefrom, are also prescribed by the several Acts. Further reference is made to the restrictions regarding the employment of females in a later part of this book. (See Section relating to *Industrial Unionism and Industrial Legislation*.)

2. **Distribution of Employees according to Sex, 1912 to 1917.**—In New South Wales the ratio of the number of females employed in factories to the number of males during 1886 was about one to seven; in 1891 one to six; in 1903 it became about one to four; and is now just below one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is more than one to two. In South Australia and Western Australia the ratio at the latest date was one female employed to every four males, while Queensland was slightly less than one to four, and Tasmania less than one to five. The ratio for the whole of the Commonwealth was more than one to three. The employment of women is, however, largely confined to a few trades.

The great prosperity in clothing and textile industries is one of the main causes of increase in female employment. Certain trades are specifically known as women's trades, such as clothing and textile trades, preparation of food, book-binding, and lighter work connected with the drug trade, as, for example, wrapping. In common also with commercial establishments, a considerable number of factories employ women as clerks and typists.

(i) *Average Number of Males and Females Employed, 1912 to 1917.* The following table shews the average number of male and female employees in factories in each State from 1912 to 1917:—

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1912 TO 1917.

State.	1912.	1913.	1914.	1915.	1916. ^b	1917. ^c
MALES.						
New South Wales ..	88,178	93,036	90,394 ^a	90,394 ^a	87,724	88,910
Victoria ..	77,565	80,054	79,772	75,971	75,971	74,924
Queensland ..	33,254	34,715	35,717	34,387	32,235	32,763
South Australia ..	23,083	23,323	22,111	20,772	20,772	20,798
Western Australia ..	13,805	14,625	14,996	12,290	10,259	9,704
Tasmania ..	8,391	8,354	7,613	7,161	7,046	6,860
Commonwealth ..	244,276	254,107	250,603	240,975	234,007	233,959

^a Year ended 30th June, 1915. ^b See note ^a first table this section.
^c See note ^b first table this section.

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN
MANUFACTURING INDUSTRIES, 1912 TO 1917—*continued.*

State.	1912.	1913.	1914.	1915.	1916. <i>b</i>	1917. <i>c</i>
FEMALES.						
New South Wales ..	27,383	27,364	26,217 ^a	26,217 ^a	28,677	29,087
Victoria ..	38,543	38,690	38,827	37,863	37,863	42,046
Queensland ..	7,694	7,648	7,565	7,692	7,748	7,683
South Australia ..	5,417	5,188	4,763	4,724	4,724	5,212
Western Australia ..	2,577	2,674	2,644	2,341	2,417	2,464
Tasmania ..	1,566	1,430	1,309	1,259	1,316	1,219
Commonwealth ..	83,180	82,994	81,125	80,096	82,745	87,711

^a Year ended 30th June, 1915. ^b See note *a* first table this section.
^c See note *b* first table this section.

It will be seen that during the years specified there has been for the whole Commonwealth a total decrease in the number of male employees of 10,317, or an annual average of 2,063, whilst the number of female employees has shewn a total increase of 4,531, or an annual average of 906. The decline in the number of males employed since 1913 is, of course, due in a large measure to the disorganising effect of the war.

(ii) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1912 to 1917.* The following table shews the average number of male and female employees per 10,000 of the mean male and female population respectively in each State from 1912 to 1917 :—

AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000
OF MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1912 TO 1917.

State.	1912.	1913.	1914.	1915.	1916. <i>b</i>	1917. <i>c</i>
MALES.						
New South Wales ..	967	979	935 ^a	935 ^a	920	963
Victoria ..	1,145	1,151	1,119	1,077	1,077	1,125
Queensland ..	970	982	978	932	910	948
South Australia ..	1,077	1,062	1,002	960	960	1,030
Western Australia ..	802	823	826	696	615	612
Tasmania ..	854	823	741	702	706	690
Commonwealth ..	1,009	1,015	981	948	936	975
FEMALES.						
New South Wales ..	332	319	293 ^a	293 ^a	313	311
Victoria ..	567	555	543	525	525	574
Queensland ..	266	256	244	242	239	234
South Australia ..	261	242	217	212	212	226
Western Australia ..	199	196	186	161	163	164
Tasmania ..	168	151	137	129	134	122
Commonwealth ..	374	361	342	333	340	354

^a Year ended 30th June, 1915. ^b See note *a* first table this section.
^c See note *b* first table this section.

3. Rate of Variation for each Sex.—The percentages of annual increase or decrease during the years 1913 to 1917 in the average number of males and females employed in manufacturing industries in the several States and the Commonwealth are shewn below :—

PERCENTAGE OF ANNUAL INCREASE IN NUMBERS OF MALE AND FEMALE EMPLOYEES, 1913 TO 1917.

State.	1912-13.	1913-14.	1914-15.	1915-16. <i>b</i>	1916-17. <i>c</i>
MALES.					
	%	%	%	%	%
New South Wales ..	5.51	-2.84 _a	-2.84 _a	-2.95	1.35
Victoria ..	3.21	-0.35	-4.76	-4.76	-1.38
Queensland ..	4.39	2.89	-3.72	-6.26	1.64
South Australia ..	1.04	-5.20	-6.06	-6.06	0.13
Western Australia ..	5.94	2.54	-18.04	-16.53	-5.41
Tasmania ..	-0.44	-8.87	-5.94	-1.61	-2.64
Commonwealth ..	4.02	-1.38	-4.90	-2.89	-0.02
FEMALES.					
New South Wales ..	-0.07	-4.19 _a	-4.19 _a	9.38	1.43
Victoria ..	0.38	-0.16	-1.98	-1.98	11.05
Queensland ..	-0.60	-1.08	1.68	0.73	-0.84
South Australia ..	-4.23	-8.19	-0.82	-0.82	10.33
Western Australia ..	3.76	-1.12	-11.46	3.25	1.94
Tasmania ..	-8.68	-8.46	-3.82	4.55	-7.37
Commonwealth ..	-0.22	-2.25	-1.27	3.31	6.00

Note.—The minus (-) sign indicates decrease.

a Eighteen months ended 30th June, 1915. *b* See note *a* first table this section.

c See note *b* first table this section.

4. Ratio of Female Employment in Factories.—The extent to which females are employed in the factories of the Commonwealth may perhaps be best shewn by giving the masculinity of employees for each State for a series of years. The following table furnishes particulars for each of the years 1912 to 1917 inclusive :—

EXCESS OF MALES OVER FEMALES PER 100 OF BOTH SEXES COMBINED, 1912 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1912	52.6	33.6	62.4	62.0	68.6	68.6	49.2
1913	54.5	34.8	63.9	63.6	69.1	70.8	50.8
1914	55.0 _a	34.8	65.0	64.6	70.0	70.7	51.1
1915	55.0 _a	33.5	63.4	62.9	68.0	70.1	50.1
1916 _b	50.7	33.5	61.2	62.9	61.9	68.5	47.8
1917 _c	50.7	28.1	62.0	59.9	59.5	69.8	45.5

a Year ended 30th June, 1915. *b* See note *a* first table this section.

c See note *b* first table this section.

Since 1914, owing principally to the war, the excess of males employed over females per 100 of both sexes combined has gradually declined from 51.1 in 1914 to 45.5 in 1917 for the Commonwealth as a whole. This decline is in evidence in all the States. The tables given in the succeeding paragraph shew that the comparatively high proportions of females have been due not so much to the incursion of female labour into what may be termed men's trades, as to the activity in those trades in which women are ordinarily engaged, more especially in dressmaking, millinery, etc.

5. **Employment of Females in Particular Industries.**—The employment of women in manufacturing industries in Australia is largely confined to a few trades, of which the more important are comprised in Classes VI., VII., and VIII., viz., in connection with food, drink, etc., clothing and textile fabrics, and books, paper, printing, etc. The following table shews the average number of females employed in each of these classes in each State, and also shews the percentages of the average number so employed on the total average number of females employed in all classes of factories:—

AVERAGE NUMBER OF FEMALES EMPLOYED IN PARTICULAR INDUSTRIES, AND PERCENTAGES ON AVERAGE TOTAL EMPLOYED, 1917.

Class.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
AVERAGE NUMBER.							
VI. Food, drink, etc.	4,093	4,326	937	561	242	218	10,377
VII. Clothing and textile fabrics	19,020	30,341	5,537	3,594	1,808	815	61,615
VIII. Books, paper, printing, etc.	2,576	2,626	738	548	252	98	6,836
All other classes	3,398	4,253	471	509	162	90	8,883
Total	29,087	42,046	7,683	5,212	2,464	1,219	87,711
PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.							
VI. Food, drink, etc.	14.07	10.29	12.20	10.76	9.82	17.88	11.83
VII. Clothing and textile fabrics	65.39	73.35	72.07	68.96	73.38	66.86	70.25
VIII. Books, paper, printing, etc.	8.86	6.24	9.60	10.51	10.23	7.88	7.79
All other classes	11.68	10.12	6.13	9.77	6.57	7.38	10.13
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It will be seen that by far the greater part of the total number of females employed in factories work in one or other of the three classes of industry indicated, Class VII. being the most important. The classification of the employment of females in the several industries in that class, and the relation of their number to that of the males so employed, are shewn in the following table:—

FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII. DURING 1917.

Industry.	New South Wales. 1916-17.			Victoria. 1916-17.			Other States ^a		
	Males.	Females	Femi- ninity. <i>b</i>	Males.	Females	Femi- ninity. <i>b</i>	Males.	Females	Femi- ninity. <i>b</i>
Woolen and tweed mills	444	590	14.12	926	1,123	9.61	297	375	11.61
Boots and shoes	2,694	1,702	-22.57	5,048	3,446	-18.86	1,514	882	-26.38
Slop clothing Clothing (tailoring) Dressmaking and milli- nery	2,546	7,311	48.34	2,115	7,789	57.29	1,743	5,295	50.47
Dyeworks and cleaning	173	5,660	94.07	298	8,723	93.39	33	3,324	98.03
Furriers	83	89	3.49	73	87	3.75	..	..	..
Hats and caps	33	60	29.03	84	208	42.47	..	..	..
Waterproof and oilskin	468	895	31.33	657	1,052	23.11	71	116	24.06
Shirts, ties, and scarfs	50	185	57.45	46	160	55.34	..	..	..
Rope and cordage	238	2,232	80.73	458	7,588	88.62	79	1,519	90.11
Tents and tarpaulins	299	16	-89.84	553	413	-14.49	169	156	-4.00
Other	171	277	23.66	121	120	-0.41	87	87	..
.	2	3	20.00	13	132	82.07	..	..	..
Total, Class VII.	7,201	19,020	45.07	10,392	30,841	49.59	3,993	11,754	49.29

Note.—The minus sign (-) denotes excess of males over females.

^a See note *b* first table this section. *b* Excess of females over males per 100 of both sexes combined.

§ 5. Child Labour in Factories.

1. **Conditions of Child Labour.**—The employment of young persons in factories in each State of the Commonwealth is regulated by Acts of Parliament in a similar manner to the employment of female labour. Excepting under special circumstances, children under a certain age may not be employed in factories. The minimum age in all the States is 14, with the exception of South Australia, where it is 13 years, and Victoria, where the minimum for females is 15 years. Other restrictions on the employment of young persons in factories are more particularly referred to in a later part of this book. (See Section relating to *Industrial Unionism and Industrial Legislation.*) The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed in Factories, 1912 to 1917.**—In the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age. The following table shews the average number of children of each sex employed in manufacturing industries in each State during the years 1912 to 1917 :—

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1912 TO 1917.

State.	1912.	1913.	1914.	1915.	1916. ^b	1917. ^c
MALES.						
New South Wales ..	2,225	2,385	2,437 ^a	2,437 ^a	2,578	2,604
Victoria ..	2,652	2,743	2,898	3,355	3,355	3,072
Queensland ..	1,114	1,122	1,148	1,247	1,197	1,170
South Australia ..	1,078	1,122	1,064	1,068	1,068	844
Western Australia ..	356	346	381	414	398	408
Tasmania ..	322	283	213	262	217	253
Commonwealth ..	7,747	8,001	8,141	8,783	8,813	8,351
FEMALES.						
New South Wales ..	2,093	2,086	2,326 ^a	2,326 ^a	2,605	2,449
Victoria ..	1,740	1,840	1,816	2,197	2,197	2,301
Queensland ..	764	701	713	835	745	704
South Australia ..	704	611	522	591	591	586
Western Australia ..	334	360	361	311	271	314
Tasmania ..	121	141	77	97	102	89
Commonwealth ..	5,756	5,739	5,815	6,357	6,511	6,443
TOTAL						
New South Wales ..	4,318	4,471	4,763 ^a	4,763 ^a	5,183	5,053
Victoria ..	4,392	4,583	4,714	5,552	5,552	5,373
Queensland ..	1,878	1,823	1,861	2,082	1,942	1,874
South Australia ..	1,782	1,733	1,586	1,659	1,659	1,430
Western Australia ..	690	706	742	725	669	722
Tasmania ..	443	424	290	359	319	342
Commonwealth ..	13,503	13,740	13,956	15,140	15,324	14,794

^a Year ended 30th June, 1915. ^b See note ^a first table this section.

^c See note ^b first table this section.

3. **Percentage of Children on Total Persons Employed.**—The foregoing table shows a general increase in several of the States in the number of children employed in factories during the past quinquennial period. The increase for the first year, however, when examined in conjunction with the total number of persons employed, shows a fairly regular decrease in the percentage of child labour. In 1914 there were both an actual and a percentage increase in several of the States, and in all of them during 1915. In 1916 New South Wales was the only State to show an actual increase, but percentage increases occurred in New South Wales and Western Australia, while Queensland and Tasmania showed decreases both actual and per cent. on total employees.

The 1917 figures reveal an actual and percentage decrease in all the States with the exception of Western Australia and Tasmania, where slight increases were recorded.

PERCENTAGE OF CHILDREN IN FACTORIES ON TOTAL NUMBER OF EMPLOYEES, 1912 TO 1917.

State.	1912.	1913.	1914.	1915.	1916. <i>b</i>	1917. <i>c</i>
New South Wales ..	3.74	3.71	4.08 _a	4.08 _a	4.45	4.28
Victoria ..	3.78	3.86	3.98	4.88	4.88	4.59
Queensland ..	4.59	4.30	4.30	4.95	4.86	4.63
South Australia ..	6.25	6.08	5.90	6.51	6.51	5.50
Western Australia ..	4.21	4.08	4.21	4.96	5.28	5.93
Tasmania ..	4.45	4.33	3.25	4.26	3.81	4.23
Commonwealth ..	4.12	4.08	4.21	4.72	4.84	4.60

a Year ended 30th June, 1915. *b* See note *a* first table this section.

c See note *b* first table this section.

4. **Industries Employing Child Labour.**—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the table below, which shows the average number of children of each sex employed in the several industries indicated in each State:—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1917.

Class.	Industry.	N.S.W. 1916-17.		Victoria. 1916-17.		Q'land. 1917.		S. Aust. 1916-17.		W. Aust. 1917.		Tas. 1917.		C'wealth.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
IV.	Joinery, boxes, cases, etc. ..	81	..	80	..	21	..	28	..	18	1	7	..	235	1
"	Saw mills ..	62	..	19	..	51	2	5	..	6	..	35	..	178	2
V.	Engineering, ironworks, and foundries ..	223	7	354	2	47	..	76	..	59	1	9	..	768	10
"	Galvanised ironworking and tinsmithing ..	77	19	113	62	53	2	54	4	..	..	4	..	301	87
"	Railway carriage, railway and tramway workshops ..	104	..	112	..	19	..	85	..	13	..	3	..	336	..
VI.	Meat & fish preserving ..	5	7	37	..	114	3	..	..	..	..	..	..	156	10
"	Biscuits ..	157	91	73	34	22	20	8	9	25	18	24	7	309	179
"	Confectionery ..	43	79	47	82	23	46	28	21	7	16	1	..	149	244
"	Jams, pickles, sauces, etc. ..	17	10	16	14	26	16	27	31	2	4	19	1	107	76
"	Tobacco, cigars, etc. ..	82	93	44	32	2	3	..	..	2	2	..	..	130	130
VII.	Woollen, cotton, and tweed mills ..	35	69	121	99	8	20	5	16	..	..	3	6	172	210
"	Boots and shoes ..	158	235	250	327	41	61	40	40	17	13	16	7	522	683
"	Clothing (tailoring and slop) ..	80	446	75	277	53	192	17	99	13	34	8	15	246	1,063
"	Dressmaking and millinery ..	10	490	11	495	1	153	..	134	1	135	..	30	23	1,437
"	Hats and caps ..	32	75	48	27	..	3	2	6	..	..	..	..	82	111
"	Shirts, ties, scarfs, etc. ..	20	185	15	442	6	68	2	87	2	48	..	..	45	830
VIII.	Electrotyping, printing and binding ..	341	212	343	133	223	54	77	27	46	16	24	10	1,054	452
"	Paper making, paper boxes, etc. ..	50	110	30	50	3	13	18	55	1	8	..	..	102	236
XI.	Coach and wagon building ..	66	1	88	..	31	..	31	..	5	..	18	..	239	1
"	Cycles and motors ..	46	3	72	..	25	1	43	2	17	1	12	..	215	7
XIII.	Billiard tables, cabinet making and furniture ..	74	1	65	1	65	4	32	..	27	..	19	..	282	6

5. **Apprenticeship.**—It is obvious that the age of apprenticeship in each State must be limited by the conditions governing the employment of child labour in factories. The early Apprentices Acts in some of the States are apparently in conflict on this point with the Factories Acts. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, as may also those directing that education be continued up to a certain age or standard.

Indentures must be entered into specifying the conditions of the employment. Apprenticeships may not exceed seven years in duration, and usually become inoperative at twenty-one years of age, or in the case of women, on marriage. In Tasmania, however, the section of the Wages Boards Act 1910 which deals with apprentices has been amended to provide for the issue of licenses by the Minister to enable persons to complete their term of apprenticeship after the age of twenty-one if necessary.

The Arbitration Courts and Wages Boards have power to limit the number of apprentices which may be taken into a factory and specify the term of apprenticeship. No general statistics of the number of apprentices in Australia have been collected up to the present time. Various enactments relating to child labour are referred to in the Section of this book dealing with *Industrial Unionism and Industrial Legislation*.

§ 6. Amount of Wages Paid and Value of Production.

1. **Introduction.**—The importance of the manufacturing industries of the Commonwealth is indicated by the fact that the total value of the output for 1917 was £206,386,646, of which amount the sum of £132,283,096 represents the value of the raw materials used. The difference between these two amounts, viz., £74,103,550, represents the amount by which the value of the raw materials was enhanced in the process of manufacture. The total amount of salaries and wages paid in factories during 1917 was £36,618,218.

2. **Amount of Salaries and Wages Paid.**—The total amount of salaries and wages paid during the year in various classes of factories in the Commonwealth (excluding all sums drawn by working proprietors) is shown in the following table :—

AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES
IN COMMONWEALTH, 1917.(a)

Class of Industry.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	456,731	389,287	85,928	80,666	30,005 ^d	23,233 ^d	1,065,850
II. Treating oils and fats, animal, vegetable, etc. . .	150,175	97,201	19,967	31,560	e	e	298,903
III. Processes in stone, clay, glass, etc. . .	668,512	430,696	51,191	123,183	53,163	19,310	1,346,055
IV. Working in wood . .	860,556	747,568	480,897	146,198	315,970	143,393	2,694,582
V. Metal works, machinery, etc. . .	4,239,046	2,232,273	788,658	1,315,331	400,985	183,390	9,159,683
VI. Connected with food and drink, etc. . .	1,849,842	1,722,458	2,157,740	369,687	217,766	164,996	6,482,489
VII. Clothing and textile fabrics, etc. . .	2,053,388	2,884,445	479,625	322,537	167,438	89,467	5,996,900
VIII. Books, paper, printing and engraving . .	1,181,368	1,024,259	370,595	188,236	161,409	92,202	3,018,069
IX. Musical instruments, etc.	58,873	25,146	..	2,342 ^b	..	..	86,361
X. Arms and explosives	239,492	176,106	..	c	..	..	415,598
XI. Vehicles & fittings, saddlery & harness, etc.	462,983	463,177	121,483	145,058	60,581	34,767	1,288,049

a Excluding all amounts drawn by working proprietors. b Includes Class X. c Included in Class IX. d Includes Class II. e Included in Class I.

**AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN
COMMONWEALTH, 1917(a)—continued.**

Class of Industry.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
	£	£	£	£	£	£	£
XII. Ship and boat building and repairing ..	674,056	67,235	13,599	13,873	4,114	2,888	775,765
XIII. Furniture, bedding and upholstery ..	392,566	273,207	120,878	87,869	49,458	26,187	950,165
XIV. Drugs, chemicals, and by-products ..	196,135	236,495	6,011	84,296	49,882	1,029	573,848
XV. Surgical & other scientific instruments ..	17,336	11,383	4,175	2,682	1,620	..	37,196
XVI. Jewellery, timepieces, and platedware ..	89,171	97,135	12,983	15,580	6,601	3,266	224,736
XVII. Heat, light and power ..	590,355	619,462	147,327	141,858	58,473	52,007	1,609,482
XVIII. Leatherware, n.e.i. ..	57,703	58,083	8,830	4,168	1,433	..	130,217
XIX. Minor wares, n.e.i. ..	143,021	277,901	10,053	18,970	11,798	2,527	464,270
Total ..	14,381,309	11,833,517	4,879,940	3,094,094	1,590,696	838,662	36,618,218

a Excluding all amounts drawn by working proprietors.

The maximum amount of salaries and wages paid in any particular class was in Class V., the amount being £9,159,683, or 25 per cent. on the total amount; the minimum amount was in Class XV., £37,196, or 0.10 per cent. on the total amount. The State in which the largest amount was paid was New South Wales. The following statement shows the total amount of salaries and wages paid, and the average amount paid per employee in each State, during each of the years 1912 to 1917; the figures are exclusive of working proprietors and of the amounts drawn from the business by them:—

**AMOUNT OF SALARIES AND WAGES PAID AND AVERAGE AMOUNT PER ANNUM
PAID PER EMPLOYEE, 1912 TO 1917.**

Year.	Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
		£	£	£	£	£	£	£
1912	Total amount paid ..	11,592,052	10,102,244	3,699,065	2,869,653	2,169,144	855,334	31,287,492
	Average per employee ..	104.44	91.19	93.88	105.63	136.65	90.41	99.74
1913	Total amount paid ..	12,683,384	10,714,336	4,075,191	3,034,537	2,215,187	883,452	33,606,087
	Average per employee ..	109.66	94.74	100.05	111.66	132.31	95.18	104.14
1914 ^a	Total amount paid ..	12,667,721	11,099,940	4,211,489	2,946,296	2,342,428	835,829	34,103,703
	Average per employee ..	112.94	98.50	100.91	115.31	137.30	98.82	107.36
1915 ^a	Total amount paid ..	12,067,721	11,036,345	4,226,635	2,705,130	1,791,276	783,547	33,210,654
	Average per employee ..	112.94	101.75	104.21	111.53	127.31	97.82	108.00
1916 ^b	Total amount paid ..	13,413,845	11,036,345	4,181,254	2,705,130	1,656,799	835,467	33,828,840
	Average per employee ..	119.29	101.75	108.13	111.53	136.29	104.88	111.35
1917 ^c	Total amount paid ..	14,381,309	11,833,517	4,879,940	3,094,094	1,590,696	838,662	36,618,218
	Average per employee ..	126.16	105.87	125.28	124.57	136.22	108.97	118.54

a New South Wales figures for year ended 30th June, 1915. *b* See note *a* first table this section.
c See note *b* first table this section.

In comparing the figures in the preceding table, regard should be paid to the nature of certain industries which are carried on to a greater extent in some States than in others. In Victoria, for instance, there is a large number of hands employed in Class VII., comprising a heavy percentage of women and children. The position occupied by Western Australia is principally due to the high ratio of male to female employees in that State.

It will be noted that there has been a persistent increase in the average wage paid per employee in each of the States during the period under review. Taking the Commonwealth as a whole, during the period 1912-17 there has been an increase of 17 per cent. on the total amount of wages paid, and nearly 19 per cent. on the average paid per employee.

The following tables shew the approximate amount paid in salaries and wages to males and females in each class of industry in each State during 1917, and the total amounts paid to employees of each sex during the last six years:—

AMOUNT(a) OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS EMPLOYED IN EACH CLASS OF INDUSTRY IN THE SEVERAL STATES OF THE COMMONWEALTH DURING 1917.

Class of Industry.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
MALES.							
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . . .	450,405	388,071	85,554	80,098	d29,888	d22,843	1,056,859
II. Treating oils and fats, animal, vegetable, etc. . . .	134,557	91,404	19,374	30,263	e	e	275,598
III. Processes in stone, clay, glass, etc. . . .	663,646	425,915	50,848	122,703	52,713	19,196	1,335,021
IV. Working in wood . . .	853,055	741,687	477,197	144,653	315,514	142,383	2,674,489
V. Metal works, machinery, etc. . . .	4,205,241	2,208,597	793,399	1,309,105	398,346	182,998	9,087,686
VI. Connected with food and drink, etc. . . .	1,623,178	1,478,476	2,109,112	347,604	206,565	154,864	5,919,799
VII. Clothing and textile fabrics, etc. . . .	980,067	1,285,732	213,249	150,097	63,590	49,119	2,741,854
VIII. Books, paper, printing and engraving . . .	1,030,291	881,900	330,024	166,217	146,658	87,427	2,642,517
IX. Musical instruments, etc. . . .	56,024	24,521	..	b2,342	..	..	82,887
X. Arms and explosives	239,270	108,173	..	c	..	..	347,443
XI. Vehicles and fittings, saddlery and harness etc. . . .	452,148	448,467	117,951	140,997	59,059	33,398	1,252,020
XII. Ship and boat building and repairing . . .	672,804	67,021	13,599	13,873	4,114	2,888	774,299
XIII. Furniture, bedding, and upholstery . . .	363,889	254,428	114,681	86,328	48,058	25,246	892,630
XIV. Drugs, chemicals, and by-products . . .	156,052	210,557	4,163	80,617	47,267	877	499,533
XV. Surgical and other scientific instruments	14,832	10,857	4,088	2,604	1,299	..	33,680
XVI. Jewellery, timepieces, and platedware . . .	82,904	90,224	12,059	15,024	6,458	3,214	209,883
XVII. Heat, light, and power	586,327	587,520	145,548	139,001	58,473	51,655	1,568,524
XVIII. Leatherware, n.e.i. . .	47,917	43,622	6,970	3,324	1,276	..	102,109
XIX. Minor wares, n.e.i. . .	114,565	243,679	8,633	17,484	10,502	2,245	397,108
Total . . .	12,727,172	9,590,851	4,496,449	2,852,334	1,449,780	778,353	31,894,939

FEMALES.

J. Treating raw material, product of agricultural and pastoral pursuits, etc. . . .	6,326	1,216	374	568	117d	300d	8,991
II. Treating oils and fats, animal, vegetable, etc. . . .	15,618	5,797	593	1,297	e	e	23,305
III. Processes in stone, clay, glass, etc. . . .	4,866	4,781	343	480	450	114	11,034
IV. Working in wood . . .	7,501	5,881	3,700	1,545	456	1,010	20,093
V. Metal works, machinery, etc. . . .	33,805	23,676	5,259	6,226	2,639	392	71,997
VI. Connected with food and drink, etc. . . .	226,664	243,982	48,628	22,083	11,201	10,132	562,690
VII. Clothing and textile fabrics, etc. . . .	1,073,321	1,598,713	266,376	172,440	103,848	40,348	3,255,046
VIII. Books, paper, printing and engraving . . .	151,077	142,359	40,571	22,019	14,751	4,775	375,552
IX. Musical instruments, etc. . . .	2,849	625	..	..	..	..	3,474
X. Arms and explosives	222	67,933	..	..	..	..	68,155

a Exclusive of amount drawn by working proprietors. b Includes Class X. c Included in Class IX. d Includes Class II. e Included in Class I.

AMOUNT(a) OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS EMPLOYED IN EACH CLASS OF INDUSTRY, ETC.—*continued.*

Class of Industry.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
FEMALES—<i>continued.</i>							
XI. Vehicles and fittings, saddlery and harness, etc.	£ 10,835	£ 14,710	£ 3,532	£ 4,061	£ 1,522	£ 1,369	£ 36,029
XII. Ship and boat building and repairing.	1,252	214	..	..	..	..	1,466
XIII. Furniture, bedding and upholstery	28,677	18,779	6,197	1,541	1,400	941	57,535
XIV. Drugs, chemicals, and by-products	40,083	25,938	1,848	3,679	2,615	152	74,315
XV. Surgical and other scientific instruments.	2,504	526	87	78	321	..	3,516
XVI. Jewellery, timepieces and platedware	6,267	6,911	924	556	143	52	14,853
XVII. Heat, light, and power	4,028	31,942	1,779	2,857	..	352	40,958
XVIII. Leatherware, n.e.l.	9,786	14,461	1,860	844	157	..	27,108
XIX. Minor wares, n.e.l.	28,456	34,222	1,420	1,486	1,296	282	67,162
Total	1,654,137	2,242,666	383,491	241,760	140,916	60,309	4,723,279

a Exclusive of amount drawn by working proprietors.

AMOUNT(a) OF SALARIES AND WAGES PAID TO MALES AND FEMALES IN THE SEVERAL STATES OF THE COMMONWEALTH, 1912 TO 1917.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
MALES.							
1912. Amount paid ..£	10,283,733	8,388,613	3,386,191	2,647,842	2,024,318	798,098	27,528,795
Per cent on total ..	88.71	83.04	91.54	92.25	93.34	93.31	87.99
Average per employeef	122.50	115.18	106.57	121.42	152.02	100.85	118.87
1913. Amount paid ..£	11,323,791	8,925,814	3,744,050	2,809,066	2,068,212	826,358	29,697,291
Per cent. on total ..	89.28	83.30	91.87	92.57	93.37	93.54	88.37
Average per employeef	127.76	118.94	112.95	127.43	146.79	105.09	123.32
1914. bAmount paid ..£	11,296,572	9,252,336	3,880,472	2,734,603	2,199,961	782,300	30,146,244
Per cent. on total ..	89.18	83.35	92.14	92.81	93.92	93.60	88.40
Average per employeef	130.98	123.84	113.39	131.21	152.31	109.24	126.86
1915. bAmount paid ..£	11,296,572	9,161,852	3,886,165	2,506,579	1,667,477	723,010	29,241,655
Per cent. on total ..	89.18	83.02	91.94	92.66	93.09	92.27	88.05
Average per employeef	130.98	123.76	118.03	122.92	141.93	106.97	123.02
1916. cAmount paid ..£	11,888,028	9,161,852	3,823,488	2,506,579	1,520,760	772,789	29,673,496
Per cent. on total ..	88.63	83.02	91.44	92.66	91.79	92.50	87.72
Average per employeef	141.46	123.76	123.57	122.92	155.80	116.10	133.58
1917. dAmount paid ..£	12,727,172	9,590,851	4,496,449	2,852,334	1,449,780	773,352	31,894,939
Per cent. on total ..	88.50	81.05	92.14	92.19	91.14	92.81	87.10
Average per employeef	149.35	136.48	143.51	144.99	156.99	120.13	143.53
FEMALES.							
1912. Amount paid ..£	1,308,319	1,713,631	312,874	222,123	144,514	57,236	3,758,697
Per cent. on total ..	11.29	16.96	8.46	7.75	6.66	6.69	12.10
Average per employeef	48.39	45.15	41.00	41.43	56.56	37.00	45.79
1913. Amount paid ..£	1,359,593	1,788,522	331,141	225,471	146,975	57,094	3,908,796
Per cent. on total ..	10.72	16.70	8.13	7.43	6.63	6.46	11.63
Average per employeef	50.29	47.01	43.66	43.94	55.42	40.24	47.74
1914. bAmount paid ..£	1,371,149	1,847,604	331,017	211,693	142,467	53,529	3,957,459
Per cent. on total ..	10.82	16.65	7.86	7.19	6.08	6.40	11.60
Average per employeef	52.91	43.65	44.06	44.95	54.44	41.27	49.46
1915. bAmount paid ..£	1,371,149	1,874,493	340,470	198,551	123,799	60,537	3,968,999
Per cent. on total ..	10.82	16.98	8.06	7.34	6.91	7.73	11.95
Average per employeef	52.91	50.24	44.62	42.47	53.34	48.39	50.18
1916. cAmount paid ..£	1,525,817	1,874,493	357,766	198,551	136,039	62,678	4,155,344
Per cent. on total ..	11.37	16.98	8.56	7.34	8.21	7.50	12.28
Average per employeef	53.72	50.24	46.29	42.47	56.80	47.85	50.79
1917. dAmount paid ..£	1,654,137	2,242,666	383,491	241,760	140,916	60,309	4,723,279
Per cent. on total ..	11.50	18.95	7.86	7.81	8.86	7.19	12.90
Average per employeef	57.49	54.05	50.31	46.81	57.71	49.56	54.47

a Exclusive of amounts drawn by working proprietors.

b Year ended 30th June, 1915, for

New South Wales.

c See note a first table this section.

d See note b first table this section.

A further analysis of salaries and wages paid is given in the following table, the amounts paid to managers, overseers, etc., being differentiated from those paid to other employees. As previously mentioned, amounts drawn by working proprietors are excluded in all cases.

DETAILS OF SALARIES AND WAGES PAID TO MANAGERS, OVERSEERS, ETC., AND OTHER EMPLOYEES IN FACTORIES DURING 1917.(a)

Class of Industry.	Salaries and Wages Paid to—						
	Managers, Overseers, Accountants, and Clerks.		All Other Employees.		All Employees.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
	£	£	£	£	£	£	£
I. Treating raw material product of agricultural and pastoral pursuits, etc. . .	126,060	2,865	930,799	6,126	1,056,859	8,991	1,065,850
II. Treating oils and fats, animal, vegetable, etc. . .	62,036	6,024	213,562	17,281	275,598	23,305	298,903
III. Processes in stone, clay, glass, etc. . .	158,833	6,469	1,176,183	4,565	1,335,021	11,034	1,346,055
IV. Working in wood . .	337,104	17,886	2,337,385	2,207	2,674,489	20,093	2,694,582
V. Metal works, machinery, etc. . .	859,590	39,976	8,228,096	32,021	9,087,686	71,997	9,159,683
VI. Connected with food and drink, etc. . .	1,097,690	67,593	4,822,109	495,097	5,919,799	562,690	6,482,489
VII. Clothing and textile fabrics, etc. . .	423,781	172,021	2,318,073	3,083,025	2,741,854	3,255,046	5,996,900
VIII. Books, paper, printing, and engraving . .	520,612	66,744	2,121,905	308,808	2,642,517	375,552	3,018,069
IX. Musical instruments, etc. . .	9,079	1,802	73,808	1,672	82,887	3,474	86,361
X. Arms and explosives . .	20,445	3,590	326,998	64,565	347,443	68,155	418,598
XI. Vehicles and fittings, saddlery and harness, etc. . .	126,786	16,504	1,125,234	19,525	1,252,020	36,029	1,288,049
XII. Ship and boat building and repairing . .	67,238	1,279	707,061	187	774,299	1,466	775,765
XIII. Furniture, bedding, and upholstery . .	69,671	11,371	822,959	46,164	892,630	57,535	950,165
XIV. Drugs, chemicals, and by-products . .	105,334	12,975	394,199	61,340	499,533	74,315	573,848
XV. Surgical & other scientific instruments . .	6,355	646	27,325	2,870	33,660	3,516	37,196
XVI. Jewellery, timepieces, and platedware . .	19,495	4,463	190,388	10,390	209,883	14,853	224,736
XVII. Heat, light, and power . .	296,959	14,228	1,271,565	26,730	1,568,524	40,958	1,609,482
XVIII. Leatherware, n.e.i. . .	17,540	2,892	85,569	24,216	103,109	27,108	130,217
XIX. Minor wares, n.e.i. . .	48,813	5,576	348,295	61,586	397,108	67,162	464,270
Total	4,373,426	454,904	27,521,513	4,268,375	31,894,939	4,723,279	36,618,218
Average paid per employee . .	223.48	88.95	135.81	52.31	143.53	54.47	118.54

a See note b first table this section.

3. Value of Fuel and Light used in Factories.—The amount expended in factories on fuel and light is of considerable importance; in 1917 it amounted to £4,054,940. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £1,175,935; Class VI., Connected with Food, Drink, etc., £922,316; Class XVII., Heat, Light, Power, etc., £781,018, of which amount £665,596 was expended on generating electric light and power; and Class III., £401,017, of which

£276,944 was represented in brick and pottery works, etc., and glass factories. The following tables shew the value of fuel and light used in the different classes of industry in the several States of the Commonwealth at latest date, and of the total used for each of the last six years :—

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1917.

Class of Industry.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	59,005	46,671	11,877	10,142	3,228 ^c	1,231 ^c	132,154
II. Treating oils and fats, animal, vegetable, etc.	35,014	22,621	3,237	6,419	^d	^d	67,291
III. Processes in stone, clay, glass, etc.	208,707	124,412	8,762	38,704	15,584	4,848	401,017
IV. Working in wood ..	29,085	20,153	10,130	4,270	2,683	1,147	67,468
V. Metal works, machinery, etc. ..	567,186	175,028	33,720	323,018	26,356	50,627	1,175,935
VI. Connected with food and drink, etc. ..	272,132	264,519	263,586	69,169	34,711	18,199	922,316
VII. Clothing and textile fabrics, etc. ..	54,879	91,834	10,873	10,474	3,979	1,933	173,972
VIII. Books, paper, printing, and engraving ..	41,586	46,112	15,540	7,615	5,462	1,741	118,056
IX. Musical instruments, etc. ..	851	422	..	42 ^a	..	..	1,315
X. Arms and explosives ..	4,874	10,710	..	^b	..	..	15,584
XI. Vehicles and fittings, saddlery and harness, etc. ..	14,531	14,969	3,099	5,607	3,204	788	42,198
XII. Ship and boat building and repairing ..	21,226	2,842	188	298	22	75	24,651
XIII. Furniture, bedding, and upholstery ..	10,530	8,120	2,984	2,247	1,476	563	25,920
XIV. Drugs, chemicals, and by-products ..	16,640	22,095	633	13,156	6,603	33	59,160
XV. Surgical and other scientific instruments	239	516	187	137	73	..	1,152
XVI. Jewellery, timepieces, and platedware ..	2,058	2,988	562	777	191	45	6,621
XVII. Heat, light, and power	420,071	140,264	49,256	66,062	94,079	11,286	781,018
XVIII. Leatherware, n.e.l. ..	1,135	1,861	186	28	47	..	3,257
XIX. Minor wares, n.e.l. ..	6,915	28,019	232	359	302	28	35,855
Total ..	1,766,664	1,024,156	415,052	558,524	198,000	92,544	4,054,940

^a Includes Class X. ^b Included in Class IX. ^c Includes Class II. ^d Included in Class I.

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1912 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1912 ..	1,360,141	683,376	261,978	363,403	191,025	187,461	3,047,384
1913 ..	1,371,425	739,835	328,519	417,280	198,161	185,681	3,240,901
1914 ..	1,364,186 ^a	804,325	335,219	406,987	210,192	189,012	3,309,921
1915 ..	1,364,186 ^a	834,966	300,716	399,731	187,121	110,803	3,197,523
1916 ^b ..	1,528,220	834,966	310,454	399,731	193,523	116,704	3,383,598
1917 ^c ..	1,766,664	1,024,156	415,052	558,524	198,000	92,544	4,054,940

^a Year ended 30th June, 1915. ^b See note ^a first table this section.

^c See note ^b first table this section.

4. Value of Raw Materials used in Factories.—The total value of raw materials worked up (i.e., exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1917 was £132,283,096, which represents 64 per cent. of the total value of the finished products. (See next paragraph.) The following table shews the value of the raw materials worked up in various classes of industry in each State :—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH, 1917.

Class of Industry.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	6,439,773	3,735,414	1,004,128	635,973	c268,265	c186,081	13,169,634
II. Treating oils and fats, animal, vegetable, etc.	1,537,066	681,648	112,912	155,290	d	d	2,486,911
III. Processes in stone, clay, glass, etc.	438,279	195,563	19,876	67,804	21,863	10,370	753,255
IV. Working in wood	2,249,143	1,121,763	715,727	441,519	95,999	83,401	4,707,492
V. Metal works, machinery, etc.	13,377,135	3,268,458	827,594	4,932,320	387,710	727,659	23,520,876
VI. Connected with food and drink, etc.	23,058,427	15,258,083	15,457,551	3,435,328	1,504,888	1,158,667	59,872,944
VII. Clothing and textile fabrics, etc.	4,383,210	7,134,655	1,073,681	638,740	346,928	174,289	13,751,503
VIII. Books, paper, printing, and engraving	1,532,211	1,407,671	342,788	266,373	170,725	75,511	3,804,279
IX. Musical instrum'ts. etc.	100,471	20,455	..	a2,958	..	..	123,884
X. Arms and explosives	59,268	497,503	..	b	..	..	556,771
XI. Vehicles and fittings, saddlery and harness, etc.	452,551	559,818	156,604	167,439	77,805	44,175	1,458,392
XII. Ship and boat building and repairing	366,483	54,720	11,508	8,377	3,036	2,643	446,767
XIII. Furniture, bedding, and upholstery	633,017	465,741	157,434	99,185	75,250	30,887	1,461,514
XIV. Drugs, chemicals, and by-products	986,603	940,898	18,173	353,903	290,164	13,257	2,611,998
XV. Surgical and other scientific instrum'ts.	16,720	11,179	3,109	1,320	1,865	..	34,193
XVI. Jewellery, timepieces, and platedware	108,486	169,600	12,386	13,818	8,788	1,183	314,261
XVII. Heat, light, and power	776,208	569,113	92,413	73,849	40,694	20,375	1,582,652
XVIII. Leatherware, n.e.l.	217,608	251,644	17,749	9,249	2,580	..	498,830
XIX. Minor wares, n.e.l.	312,008	750,889	14,633	28,869	17,864	2,677	1,126,940
Total	57,044,667	37,103,750	20,938,266	11,331,814	3,323,424	2,541,175	132,283,096

a Includes Class X. b Included in Class IX. c Includes Class II. d Included in Class I.

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £59,872,944. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £23,520,876 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £34,193. The following table gives particulars for the six years ended 1917 :—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1912 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1912 ..	37,122,441	27,002,302	11,078,954	8,199,110	2,586,195	2,286,618	88,275,620
1913 ..	40,537,476	28,465,699	14,183,539	8,354,258	2,782,839	2,083,666	96,407,477
1914 ..	42,559,370a	28,986,694	15,710,794	7,931,175	2,608,312	1,992,719	99,789,064
1915 ..	42,559,370a	30,728,743	15,939,583	8,720,436	2,634,700	2,193,250	102,776,082
1916b ..	44,227,079	30,728,743	16,127,926	8,720,436	3,033,638	2,342,623	105,180,445
1917c ..	57,044,667	37,103,750	20,938,266	11,331,814	3,323,424	2,541,175	132,283,096

a Year ended 30th June, 1915. b See note a first table this section. c See note b first table this section.

5. Total Value of Output of Manufacturing Industries.—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State is shewn in the following table. The figures given represent not only the increase in value due to the process of manufacture, but also include the value of the raw materials used. The difference between the value of the materials used and the total output (see paragraph 6 hereof) is the real value of production from manufactories:—

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH, 1917.

Class of Industry.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust 1917.	Tas. 1917.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	7,714,062	4,722,446	2,295,377	794,207	c348,359	c242,702	16,117,153
II. Treating oils and fats, animal, vegetable, etc.	2,030,059	1,014,331	168,855	222,247	d	d	3,435,492
III. Processes in stone, clay, glass, etc.	1,785,329	984,755	119,636	289,207	104,624	67,179	3,350,730
IV. Working in wood	3,599,153	2,264,070	1,511,561	681,913	565,625	290,732	8,913,054
V. Metal works, machinery, etc.	21,420,189	6,606,014	1,891,242	7,537,319	865,711	1,623,252	39,943,727
VI. Connected with food and drink, etc.	28,047,685	20,305,035	21,533,272	4,339,562	2,185,700	1,597,286	78,008,540
VII. Clothing and textile fabrics, etc.	7,804,506	11,991,448	1,895,743	1,174,338	597,571	333,407	23,797,013
VIII. Books, paper, printing, and engraving	3,504,378	3,327,495	1,041,871	606,380	463,469	233,869	9,177,462
IX. Musical instruments, etc.	192,585	55,480	..	a6,110	..	..	254,175
X. Arms and explosives	406,476	761,241	..	b	..	..	1,167,717
XI. Vehicles and fittings, saddlery and harness, etc.	1,124,913	1,261,373	351,157	386,898	171,352	100,068	3,395,761
XII. Ship and boat building and repairing	1,084,808	151,950	28,521	30,456	8,342	7,468	1,311,545
XIII. Furniture, bedding, and upholstery	1,190,923	893,331	346,602	215,505	140,712	77,256	2,864,329
XIV. Drugs, chemicals, and by-products	1,656,748	1,521,953	49,550	541,575	394,075	16,287	4,180,188
XV. Surgical and other scientific instruments	48,385	33,872	10,812	6,208	4,998	..	104,275
XVI. Jewellery, timepieces, and platedware	238,247	352,611	34,428	40,956	17,928	5,783	689,953
XVII. Heat, light, and power	3,237,029	2,208,846	627,631	449,656	344,705	176,801	7,044,668
XVIII. Leatherware, n.e.l.	326,008	370,474	33,094	15,818	5,611	..	751,005
XIX. Minor wares, n.e.l.	532,837	1,220,559	29,950	53,997	36,606	5,910	1,879,859
Total	85,944,320	60,047,284	31,969,302	17,392,352	6,255,388	4,778,000	208,386,646

a Includes Class X.

b Included in Class IX.

c Includes Class II.

d Included in Class I.

It will be seen that the State of New South Wales far outstrips the other States in the total value of the output of her factories, the value being £85,944,320, or 41.64 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 29.09 per cent.; the value of the output of Queensland was 15.49 per cent.; of South Australia 8.43 per cent.; of Western Australia 3.03 per cent.; and of Tasmania 2.32 per cent. The two most important classes in order of value of output (Classes VI. and V.) are the same as in order of value of raw materials used. The following statement shews the value of output of factories, value per employee, and value per head of mean population in each State during the six years ended 1917:—

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1912 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1912 ..	61,163,328	45,410,773	18,798,904	13,438,218	6,092,268	3,871,916	148,775,407
1913 ..	65,672,495	47,936,647	23,688,789	13,998,670	6,481,331	3,782,831	161,560,763
1914 ..	68,253,332 ^a	49,439,985	25,491,955	13,215,970	6,381,512	3,667,754	166,450,508
1915 ..	68,253,332 ^a	51,466,093	25,444,812	13,994,223	5,712,793	4,215,447	169,086,700
1916 ^b ..	70,989,864	51,466,093	25,541,024	13,994,223	6,007,111	4,576,530	172,574,845
1917 ^c ..	85,944,320	60,047,284	31,969,302	17,392,352	6,255,388	4,778,000	208,386,646

a Year ended 30th June, 1915.

b See note a first table this section.

c See note b first table this section.

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1912 TO 1917—*continued.*

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
PER EMPLOYEE. ^a							
	£	£	£	£	£	£	£
1912 ..	529	391	459	472	372	389	454
1913 ..	545	404	559	491	375	387	479
1914 ..	585 ^b	418	589	492	362	411	502
1915 ..	585 ^b	452	605	549	390	501	527
1916 ^c ..	610	452	639	549	474	547	545
1917 ^d ..	728	513	790	669	514	591	642
PER HEAD OF MEAN POPULATION.							
1912 ..	35.22	33.48	29.77	31.87	20.21	20.20	32.03
1913 ..	36.32	34.41	36.30	32.29	20.64	19.30	33.63
1914 ..	36.67 ^b	34.73	37.77	30.04	19.73	18.49	33.78
1915 ..	33.67 ^b	36.07	37.04	31.85	17.72	21.15	34.21
1916 ^c ..	37.95	36.07	37.69	31.85	19.09	23.09	34.97
1917 ^d ..	46.24	42.93	47.43	40.19	20.27	24.02	42.30

^a Including working proprietors. ^b Year ended 30th June, 1915. ^c See note ^a first table this section.
^d See note ^b first table this section.

6. Value of Production of Manufacturing Industries.—The difference between the figures given in paragraph 5 and the corresponding figures in paragraph 4 represents the amount added to the value of the raw materials by the process of manufacture. This is the real measure of the value of production of manufacturing industries. The following table shews the value added in this manner in each State for the various classes of factories :—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1917.

Class of Industry.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	£ 1,274,289	£ 987,032	£ 391,249	£ 158,234	£ 680,094	£ 656,621	£ 2,947,519
II. Treating oils and fats, animal, vegetable, etc.	492,993	332,688	55,943	66,957	<i>d</i>	<i>d</i>	948,581
III. Processes in stone, clay, glass, etc. . .	1,347,050	789,192	99,760	221,903	82,761	56,809	2,597,475
IV. Working in wood . .	1,350,010	1,142,367	795,834	240,394	469,626	207,331	4,205,562
V. Metal works, machinery, etc. . .	8,043,054	3,337,556	1,063,648	2,604,999	478,001	895,593	16,422,851
VI. Connected with food and drink, etc. . .	4,989,258	5,046,952	6,075,721	904,234	680,812	438,619	18,135,596
VII. Clothing and textile fabrics, etc. . .	3,421,296	4,856,793	822,062	535,598	250,643	159,118	10,045,510
VIII. Books, paper, printing, and engraving . .	1,972,167	1,919,824	699,083	340,007	283,744	158,358	5,373,183
IX. Musical instruments, etc.	92,114	35,025	..	63,152	..	..	130,291
X. Arms and explosives . .	347,208	263,738	..	<i>b</i>	..	..	610,946
XI. Vehicles and fittings, saddlery and harness, etc. . .	672,362	701,555	194,553	219,459	93,547	55,893	1,937,369
XII. Ship and boat building and repairing . .	718,325	97,230	17,013	22,079	5,306	4,825	864,778
XIII. Furniture, bedding, and upholstery . .	557,906	427,590	189,168	116,320	65,462	46,369	1,402,815
XIV. Drugs, chemicals, and by-products . .	670,145	572,055	31,377	187,672	103,911	3,030	1,568,190
XV. Surgical & other scientific instruments . .	31,665	22,693	7,703	4,888	3,133	..	70,082
XVI. Jewellery, timepieces, and platedware . .	129,761	183,011	22,042	27,138	9,140	4,600	375,692
XVII. Heat, light, and power . .	2,469,821	1,639,733	535,218	375,807	304,011	146,426	5,462,016
XVIII. Leatherware, n.e.i. . .	108,400	118,830	15,345	6,569	3,031	..	252,175
XIX. Minor wares, n.e.i. . .	220,829	469,070	15,317	25,128	18,742	3,233	752,919
Total ..	28,899,653	22,943,534	11,031,036	6,060,538	2,931,964	2,236,825	74,103,550

^a Includes Class X. ^b Included in Class IX. ^c Includes Class II. ^d Included in Class I.

The amount of the value added in each State is not quite in the same order as in the case of value of output, the four most important classes being VI., V., VII., and XVII., in the order named. The value added to raw material by process of manufacture and amount per employee and per head of mean population are shewn in the following statement for the years 1912 to 1917 :—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH.
1912 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
VALUE.							
	£	£	£	£	£	£	£
1912 ° ..	24,040,887	18,408,471	7,719,950	5,239,108	3,596,073	1,585,298	60,499,787
1913 ..	25,135,019	19,470,948	9,505,250	5,644,412	3,698,492	1,699,165	65,153,286
1914 ..	25,693,962 ^a	20,453,291	9,781,161	5,284,795	3,773,200	1,675,035	66,661,444
1915 ..	25,693,962 ^a	20,737,350	9,505,229	5,273,787	3,078,093	2,022,197	66,310,618
1916 ^b ..	26,762,785	20,737,350	9,413,098	5,273,787	2,973,473	2,233,907	67,394,400
1917 ^c ..	28,899,653	22,943,534	11,031,036	6,060,538	2,931,964	2,236,825	74,103,550

PER EMPLOYEE.

	£	£	£	£	£	£	£
1912 ..	208	159	189	184	214	159	185
1913 ..	209	164	224	198	214	174	193
1914 ..	220 ^a	173	226	197	214	188	201
1915 ..	220 ^a	182	226	207	210	240	207
1916 ^b ..	230	182	235	207	235	267	213
1917 ^c ..	245	196	273	233	241	277	230

PER HEAD OF MEAN POPULATION.

	£	£	£	£	£	£	£
1912 ..	13.84	13.57	12.22	12.43	11.63	8.27	13.03
1913 ..	13.80	13.98	14.57	13.02	11.78	8.67	13.56
1914 ..	13.80 ^a	14.37	14.49	12.01	11.07	8.44	13.53
1915 ..	13.80 ^a	14.54	13.84	12.00	9.55	10.14	13.41
1916 ^b ..	14.31	14.54	13.89	12.00	9.45	11.27	13.66
1917 ^c ..	15.55	16.40	16.37	14.01	9.50	11.24	15.19

^a Year ended 30th June, 1915. ^b See note ^a first table this section.

^c See note ^b first table this section.

As the total value of the output for the Commonwealth was estimated at £206,386,646, there remained, after payment of £132,283,096, the value of the raw materials used, of £36,618,218 for salaries and wages, and of £4,054,940 for fuel, the sum of £33,430,392 to

provide for all other expenditure and profits. The following table gives corresponding particulars for each State, expressed absolutely, and as percentages on the total value of the output :—

VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH FACTORIES, 1917.(a)

State.	Raw Materials Used.	Fuel and Light.	Salaries and Wages.	All other Expenditure, Interest, and Profits.	Total Value of Output.
VALUE AND COST, ETC.					
	£	£	£	£	£
New South Wales, 1916-17	57,044,667	1,766,664	14,381,309	12,751,680	85,944,320
Victoria, 1916-17 ..	37,103,750	1,024,156	11,833,517	10,085,861	60,047,284
Queensland, 1917 ..	20,938,266	415,052	4,879,940	5,736,044	31,969,302
South Australia, 1916-17..	11,331,814	558,524	3,094,094	2,407,920	17,392,352
Western Australia, 1917 ..	3,323,424	198,000	1,590,696	1,143,268	6,255,388
Tasmania, 1917 ..	2,541,175	92,544	838,662	1,305,619	4,778,000
Commonwealth ..	132,283,096	4,054,940	36,618,218	33,430,392	206,386,646

PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.

	%	%	%	%	%
New South Wales, 1916-17	66.37	2.06	16.73	14.84	100.00
Victoria, 1916-17 ..	61.79	1.70	19.71	16.80	100.00
Queensland, 1917 ..	65.50	1.30	15.26	17.94	100.00
South Australia, 1916-17..	65.16	3.21	17.79	13.84	100.00
Western Australia, 1917 ..	53.13	3.16	25.43	18.28	100.00
Tasmania, 1917 ..	53.18	1.94	17.55	27.33	100.00
Commonwealth ..	64.10	1.96	17.74	16.20	100.00

a See note b first table this section.

§ 7. Land, Buildings, Plant and Machinery.

1. **General.**—As an indication of the permanent character and stability of the industries which have been established in the Commonwealth, it may be noted that the values of land and buildings and of plant and machinery used in the factories are rapidly increasing. Thus, for the whole Commonwealth the total value of land and buildings and plant and machinery has increased from 1912 to 1917 by £21,190,532, i.e., from £69,337,768 to £90,528,300, or at the rate of £4,238,106 per annum.

The following statement shows the values of land and buildings and of plant and machinery used in connection with manufacturing industries in each State :—

VALUE OF LAND, BUILDINGS, PLANT, AND MACHINERY IN CONNECTION WITH MANUFACTURING INDUSTRIES, 1917.

Value of—	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tasmania. 1917.	C'wealth.
	£	£	£	£	£	£	£
Land and buildings	18,920,057	12,052,227	5,251,877	3,462,296	2,398,264	1,127,716	43,212,437
Plant and machinery	20,364,122	11,732,062	7,846,834	3,313,113	2,835,085	1,224,647	47,315,863
Total ..	39,284,179	23,784,289	13,098,711	6,775,409	5,233,349	2,352,363	90,528,300

The total capital invested in land, buildings, plant and machinery in manufacturing industries in the Commonwealth during the year 1917 was approximately £90,528,300 (or £18 11s. 1d. per head of population); of that sum £43,212,437 was invested in land and buildings occupied as manufactories, the remaining £47,315,863 being the value of the plant and machinery used in connection therewith.

2. **Value of Land and Buildings.**—The value of the land and buildings occupied in connection with manufacturing industries may be conveniently classified, according to the nature of the industry concerned.

(i) *Total Value in Commonwealth, 1912 to 1917.* The following table shews for the whole Commonwealth the approximate values of land and buildings occupied in connection with manufacturing industries of various classes during each year from 1912 to 1917 inclusive:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH, 1912 TO 1917.

Class of Industry.	1912.	1913.	1914. ^a	1915. ^a	1916. ^b	1917. ^c
	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	1,004,221	1,014,783	1,063,549	1,069,890	1,002,686	1,126,504
II. Treating oils and fats, animal, vegetable, etc.	449,453	452,415	466,373	465,757	518,932	524,349
III. Processes in stone, clay, glass, etc.	1,382,062	1,593,769	1,679,050	1,666,097	1,620,520	1,657,760
IV. Working in wood	1,923,963	2,184,257	2,244,995	2,146,909	2,036,786	2,083,755
V. Metal works, machinery, etc.	5,653,033	6,072,737	6,467,224	6,587,199	6,800,296	7,137,251
VI. Connected with food and drink, etc.	8,259,066	8,656,547	9,800,457	9,852,479	10,508,926	11,209,366
VII. Clothing and textile fabrics, etc.	4,928,474	5,188,631	5,270,374	5,244,627	5,239,362	5,580,472
VIII. Books, paper, printing, and engraving	3,150,049	3,388,072	3,521,164	3,546,017	3,824,069	3,891,991
IX. Musical instruments, etc.	85,731	88,136	83,375	83,430	82,695	96,335
X. Arms and explosives	112,300	184,772	179,723	194,149	212,267	252,498
XI. Vehicles and fittings, saddlery and harness, etc.	1,654,488	1,835,221	1,824,018	1,825,999	1,822,565	1,866,859
XII. Ship and boat building and repairing	1,261,647	1,113,243	1,127,521	1,134,530	1,126,754	953,879
XIII. Furniture, bedding, and upholstery	1,043,680	1,149,120	1,117,699	1,094,646	1,075,547	1,071,635
XIV. Drugs, chemicals, and by-products	823,429	831,892	929,933	955,995	1,013,577	1,109,703
XV. Surgical and other scientific instruments	59,308	70,968	64,263	67,021	70,536	83,304
XVI. Jewellery, timepieces, and platedware	344,306	353,900	345,018	344,452	325,126	334,147
XVII. Heat, light, and power	2,511,317	2,517,179	2,717,502	2,775,148	3,150,513	3,655,063
XVIII. Leatherware, n.e.i.	120,646	133,283	132,777	137,666	137,391	150,660
XIX. Minor wares, n.e.i.	257,298	270,307	317,417	343,529	344,651	426,906
Total	35,024,471	37,099,232	39,352,432	39,535,540	40,913,199	43,212,437

^a New South Wales figures for year ended 30th June, 1915.

^b See note ^a first table this section.

^c See note ^b first table this section.

As shewn in the above table, the total net increase during the five years was £8,187,966, or an annual average of £1,637,593. The largest increases were in Classes VI., V., and XVII., and amounted to £2,950,300, £1,484,218, and £1,143,746 respectively.

(ii) *Value in each State.* The following table gives similar information for each State up to latest date :—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1917.

Class of Industry.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	£ 464,385	£ 410,759	£ 75,473	£ 95,321	£ c59,667	£ c20,899	£ 1,126,504
II. Treating oils and fats, animal, vegetable, etc.	311,176	126,035	28,093	59,045	d	d	524,349
III. Processes in stone, clay, glass, etc.	954,906	459,545	43,226	108,814	61,510	29,759	1,657,760
IV. Working in wood	975,213	413,650	223,509	159,835	239,905	71,643	2,083,755
V. Metal works, machinery, etc.	3,349,493	1,590,177	690,870	831,371	614,329	61,011	7,137,251
VI. Connected with food and drink, etc.	3,764,426	2,936,768	2,662,696	791,113	441,247	613,116	11,209,366
VII. Clothing and textile fabrics, etc.	2,453,975	2,073,475	431,969	311,356	195,725	113,972	5,580,472
VIII. Books, paper, printing, and engraving	1,761,013	1,006,125	478,272	339,995	249,292	57,294	3,891,991
IX. Musical instruments, etc.	61,095	29,290	..	a5,950	..	..	96,335
X. Arms and explosives	93,178	159,320	..	b	..	..	252,498
XI. Vehicles and fittings, saddlery and harness, etc.	718,733	552,155	192,076	216,087	122,306	65,502	1,866,859
XII. Ship and boat building and repairing	641,262	234,360	10,667	61,545	3,595	2,450	953,879
XIII. Furniture, bedding, and upholstery	445,055	342,050	110,854	80,615	67,644	25,417	1,071,635
XIV. Drugs, chemicals, and by-products	449,343	374,168	11,809	171,243	98,240	4,900	1,109,703
XV. Surgical and other scientific instruments	32,440	25,235	11,604	8,370	5,655	..	83,304
XVI. Jewellery, timepieces, and platedware	138,892	127,575	23,515	23,535	12,105	8,525	334,147
XVII. Heat, light, and power	2,057,967	936,950	229,576	174,171	205,921	50,478	3,655,063
XVIII. Leatherware, n.e.i.	70,590	62,720	8,470	5,370	3,510	..	150,660
XIX. Minor wares, n.e.i.	176,915	191,870	19,198	18,560	17,613	2,750	426,906
Total	18,920,057	12,052,227	5,251,877	3,462,296	2,398,264	1,127,716	43,212,437

a Includes Class X. b Included in Class IX. c Includes Class II. d Included in Class I.

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £11,209,366, or 25.94 per cent. on the total value. The next in order of importance were Classes V., VII., VIII., and XVII., in which the values were £7,137,251, £5,580,472, £3,891,991, and £3,655,063 respectively. The sum of the values for the five classes mentioned amounted to £31,474,143, or 72.84 per cent. on the total value for all classes.

(iii) *Total Value in each State, 1912 to 1917.* The following table shews the total value of land and buildings occupied as manufactories in each State at the end of each year from 1912 to 1917 inclusive :—

TOTAL VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1912 TO 1917.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1912	14,765,810	10,362,661	3,524,991	3,366,149	1,910,372	1,094,488	35,024,471
1913	15,792,105	10,753,309	3,923,584	3,487,754	2,036,769	1,105,711	37,099,232
1914	16,843,698a	11,248,120	4,434,336	3,272,047	2,409,517	1,144,714	39,352,432
1915	16,843,698a	11,460,123	4,446,405	3,289,628	2,363,262	1,132,424	39,535,540
1916b	17,770,517	11,460,123	5,014,824	3,289,628	2,247,505	1,130,602	40,913,199
1917c	18,920,057	12,052,227	5,251,877	3,462,296	2,398,264	1,127,716	43,212,437

a Year ended 30th June, 1915. b See note a first table this section. c See note b first table this section.

It will be seen that since 1912 there has been a general increase throughout the Commonwealth. The States shewing the largest growth were New South Wales, Queensland, and Victoria, with an annual average increase of £830,849, £345,377, and £337,913 respectively.

3. Value of Plant and Machinery.—(i) *Total Value in Commonwealth, 1912 to 1917.* The following table shews for the whole Commonwealth the approximate value of plant and machinery used in factories during each year from 1912 to 1917 inclusive :—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH, 1912 TO 1917.

Class of Industry.	1912.	1913.	1914. <i>a</i>	1915. <i>a</i>	1916. <i>b</i>	1917. <i>c</i>
	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	926,966	985,619	974,556	971,841	965,932	1,048,729
II. Treating oils and fats, animal, vegetable, etc.	417,231	444,502	469,680	545,796	576,877	597,327
III. Processes in stone, clay, glass, etc.	1,491,383	1,717,544	1,869,446	1,900,086	1,866,993	1,972,885
IV. Working in wood	2,455,436	2,664,508	2,737,527	2,611,407	2,806,653	2,784,838
V. Metal works, machinery, etc.	6,417,719	6,996,932	7,745,988	7,761,871	8,604,804	9,549,635
VI. Connected with food and drink, etc.	9,029,735	9,650,298	10,782,825	10,914,862	11,654,182	12,318,334
VII. Clothing and textile fabrics, etc.	1,620,437	1,746,713	1,774,910	1,798,554	1,846,758	1,926,718
VIII. Books, paper, printing, and engraving	2,628,039	2,814,226	2,974,120	2,987,190	3,054,941	3,070,739
IX. Musical instruments, etc.	20,960	22,630	19,030	19,119	21,191	22,841
X. Arms and explosives	158,823	190,060	216,581	228,031	228,210	308,536
XI. Vehicles and fittings, saddlery and harness, etc.	329,933	374,371	395,463	411,295	421,416	433,716
XII. Ship and boat building, and repairing	597,783	725,934	764,782	768,159	511,237	1,312,832
XIII. Furniture, bedding, and upholstery	207,211	235,068	238,547	244,796	251,822	267,180
XIV. Drugs, chemicals, and by-products	629,402	650,185	832,686	916,136	868,126	906,091
XV. Surgical and other scientific instruments	11,615	13,121	13,758	13,955	13,873	19,021
XVI. Jewellery, timepieces, and platedware	61,791	68,186	69,724	72,988	74,617	72,757
XVII. Heat, light, and power	7,135,997	7,560,198	9,044,847	9,532,800	9,970,117	10,365,297
XVIII. Leatherware, n.e.i.	27,695	28,035	30,576	31,706	34,240	33,029
XIX. Minor wares, n.e.i.	145,141	166,172	199,343	226,285	234,313	305,358
Total	34,313,297	37,054,302	41,154,389	41,956,877	44,006,302	47,315,863

a New South Wales figures for year ended 30th June, 1915.

b See note *a* first table this section.

c See note *b* first table this section.

It will be seen that during the period in question there has been a steady and substantial net increase amounting in all to £13,002,566, or an annual average of £2,600,513. Development has occurred in all classes of industry, the largest increase being in Class VI., "Connected with Food and Drink, etc.," where it amounted to £3,288,599, while the two next were in Class XVII., "Heat, Light, and Power," with an increase of £3,229,300, and Class V., "Metal Works, Machinery, etc.," £3,131,916.

(ii) *Total Value in each State, 1912 to 1917.* The figures which were given in the above table referred to the Commonwealth as a whole. In the following table they are shewn for each State, and it will be seen that the increase referred to above is general throughout the States. New South Wales shews by far the largest increase, viz., £6,568,927; while Victoria comes next with £2,636,928.

VALUE OF PLANT AND MACHINERY IN FACTORIES, 1912 TO 1917.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1912	13,795,195	9,095,134	5,442,471	2,577,942	2,241,536	1,161,019	34,313,297
1913	14,861,676	10,022,429	5,877,387	2,779,667	2,264,455	1,248,688	37,054,302
1914	16,866,982 <i>a</i>	10,727,526	6,898,673	2,985,037	2,484,793	1,191,378	41,154,389
1915	16,866,982 <i>a</i>	11,068,949	7,051,113	3,101,413	2,640,168	1,228,252	41,956,877
1916 <i>b</i>	18,211,104	11,068,949	7,543,873	3,101,413	2,817,863	1,263,100	44,006,302
1917 <i>c</i>	20,364,122	11,732,062	7,846,834	3,313,113	2,835,035	1,224,647	47,315,863

a Year ended 30th June, 1915.

b See note *c* first table this section.

c See note *b* first table this section.

(iii) *Classified Value in each State.* The following table shews the value of plant and machinery used in factories in each State, classified according to the nature of the industry in which used:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1917.

Class of Industry.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	£ 437,304	£ 338,195	£ 116,034	£ 68,022	£ 45,799	£ 43,375	£ 1,048,720
II. Treating oils and fats, animal, vegetable, etc.	362,421	146,780	45,871	42,255	d	d	597,327
III. Processes in stone, clay, glass, etc.	1,193,383	436,269	66,705	177,864	76,107	22,557	1,972,885
IV. Working in wood	854,300	539,895	457,209	85,394	686,359	161,681	2,784,838
V. Metal works, machinery, etc.	5,660,149	1,634,972	652,326	767,459	638,843	195,886	9,549,635
VI. Connected with food and drink, etc.	3,846,352	2,463,738	4,806,893	623,329	412,830	165,192	12,318,334
VII. Clothing and textile fabrics, etc.	629,116	952,094	142,836	112,876	37,173	51,723	1,926,718
VIII. Books, paper, printing, and engraving	1,281,310	1,023,278	321,224	222,721	158,903	63,303	3,070,739
IX. Musical instruments, etc.	14,511	7,310	..	a1,020	..	..	22,841
X. Arms and explosives	144,913	163,623	..	b	..	..	308,536
XI. Vehicles and fittings, saddlery and harness, etc.	166,922	134,650	39,618	55,847	22,045	14,634	433,716
XII. Ship and boat building, and repairing	1,200,586	88,905	9,405	11,510	1,226	1,200	1,312,832
XIII. Furniture, bedding, and upholstery	87,507	82,840	42,244	31,313	14,114	9,162	267,180
XIV. Drugs, chemicals, and by-products	248,776	303,748	6,762	214,465	131,603	737	906,091
XV. Surgical and other scientific instruments	7,930	5,803	1,817	2,200	1,271	..	19,021
XVI. Jewellery, timepieces, and platedware	27,913	30,565	4,213	6,561	1,765	1,740	72,757
XVII. Heat, light, and power	4,089,116	3,163,925	1,130,662	886,968	601,621	493,005	10,365,297
XVIII. Leatherware, n.e.i.	13,780	16,115	1,316	706	1,112	..	33,029
XIX. Minor wares, n.e.i.	97,833	198,457	1,699	2,603	4,314	452	305,358
Total	20,364,122	11,732,062	7,846,834	3,313,113	2,835,085	1,224,647	47,315,863

a Includes Class X.

b Included in Class IX.

c Includes Class II.

d Included in Class I.

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £12,318,334, or 26.03 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £10,365,297, or 21.91 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £9,549,635, or 20.18 per cent. on the total value. The total for these three classes amounts to £32,233,266, or 68.12 per cent. on the total value for all classes.

§ 8. Individual Industries.

1. *General.*—The preceding remarks and tables furnish a general view of the recent development of particular classes of industries in Australia treated under the nineteen categories referred to in § 1, 3 hereof. In order to make the information complete, it is necessary to furnish details of the development of individual industries. While it is not possible, within the limits of this article, to give a full and detailed account of all the manufacturing industries of the Commonwealth, it is proposed to deal herein with such particular industries as are of special importance by reason of the number of persons employed, the number of factories, the amount of capital invested therein, the value of the production, or other features of special interest. In cases where there are only one or two establishments of a particular class in any State, returns relative to output are not published, in order to avoid disclosing information as to the operations of individual factories.

2. **Tanning Industry.**—(i) In Class I. (see § 1, 3 hereof) the most important industry is tanning. Until recent years, the production of tanneries in Australia was confined to the coarser class of leathers, but lately the tanning of the finer skins has been undertaken with satisfactory results. The present position of the industry in the several States is as follows :—

TANNERIES, 1917.

Item.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917.	S.A. 1916-17.	W.A. 1917. ^a	Tas. 1917.	C'wlth.
Number of factories	75	45	17	11	4	4	156
Number of employees	1,040	1,834	236	208	60	59	3,437
Actual horse-power of engines employed	1,083	2,475	328	279	166	118	4,449
Approx. value of land and buildings £	146,762	197,236	18,711	25,344	16,320	7,938	412,311
Approx. value of plant and machinery £	98,586	149,196	19,715	14,607	16,515	8,864	307,483
Total amount of wages paid during year £	148,613	241,934	29,043	29,398	8,827	8,258	466,071
Value of fuel used	£ 10,329	£ 18,089	£ 2,029	£ 2,405	£ 938	£ 312	£ 34,102
Value of raw material worked up	£ 1,394,851	£ 1,926,154	£ 313,141	£ 171,660	£ 90,354	£ 55,106	£ 3,951,266
Total value of output	£ 1,709,689	£ 2,464,798	£ 397,446	£ 225,184	£ 103,667	£ 74,204	£ 4,979,988
Value added in process of manufacture £	£ 314,838	£ 538,644	£ 84,305	£ 53,524	£ 18,313	£ 19,098	£ 1,028,722

^a Including one wool-scouring and fellmongering establishment.

(ii) *Raw Materials used in Tanneries.* The quantity of raw materials used in tanneries in each State is shewn in the following table :—

RAW MATERIALS USED IN TANNERIES, 1917.

Particulars.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
Hides and calf skins .. No.	473,704	953,029	108,021	82,734	26,603	22,383	1,666,474
Sheep pelts	3,093,811	663,249	86,208	64,587	..	58,618	3,966,471
Other skins	303,675	364,598	270,667	19,369	16,314	1,816	978,439
Bark Tons	11,044	12,340	2,661	1,501	692	457	23,695

(iii) *Progress of Tanning Industries, 1912 to 1917.* The development of the tanning industry during the period 1912 to 1917 is shewn in the following table :—

DEVELOPMENT OF TANNING INDUSTRY IN THE COMMONWEALTH, 1912 TO 1917.

Items.	1912.	1913.	1914. ^a	1915.	1916.	1917. ^b
Number of factories	174	164	166	165	163	156
Number of employees	3,071	2,892	3,091	3,376	3,303	3,437
Actual horse-power of engines used	3,274	3,748	3,803	3,899	4,145	4,449
Approx. value of land and buildings £	366,898	366,696	392,420	389,924	387,706	412,311
Approx. value of plant and machinery £	250,495	276,610	283,499	287,856	285,956	307,483
Total amount of wages paid	£ 328,060	£ 322,747	£ 366,484	£ 418,363	£ 422,014	£ 466,071
Value of fuel used	£ 21,341	£ 19,642	£ 22,573	£ 26,140	£ 27,292	£ 34,102
Value of raw materials worked up	£ 2,216,705	£ 2,428,003	£ 2,732,525	£ 3,188,817	£ 3,284,787	£ 3,951,266
Value of final output	£ 2,834,007	£ 3,030,785	£ 3,468,475	£ 4,088,140	£ 4,233,427	£ 4,979,988
Value added in process of manufacture £	£ 617,802	£ 602,782	£ 735,950	£ 899,323	£ 949,640	£ 1,028,722

^a Including three bone milling establishments in Western Australia. ^b Including one wool-scouring and fellmongering establishment in Western Australia.

It will be seen from the above table that during the last five years the number of factories has decreased by about 10 per cent., while the number of hands employed has increased by about 12 per cent. The approximate amount of permanently invested capital shews a substantial increase, amounting to 12.38 per cent. in the value of land and buildings, and 22.75 per cent. in that of plant and machinery. The amount of wages

paid, value of materials used, and of final output, shew the large increases of 42.07, 78.25, and 75.72 per cent. respectively during the same period, while the value added in process of manufacture increased by 66.65 per cent.

3. **Fellmongering and Wool-scouring.**—(i) The next industry in importance in Class I. is that of fellmongering and wool-scouring, one of the earliest industries established in Australia. The following table gives particulars of the industry in each State :—

FELLMONGERING AND WOOL-SCOURING, 1917.

Items.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W.A. 1917. ^a	Tas. 1917.	C'wealth.
Number of factories	49	29	17	3	..	..	98
Number of employees	1,610	528	386	75	..	..	2,599
Actual horse-power of engines used	2,734	712	613	98	..	..	4,157
Approx. value of land and buildings £	148,310	73,106	50,256	4,490	..	..	276,162
Approx. value of plant and machinery £	215,720	65,700	83,458	4,850	..	..	369,728
Total amount of wages paid £	213,521	58,862	51,309	8,891	..	..	332,583
Value of fuel used	£ 32,769	11,431	8,293	1,174	..	..	53,667
Value of raw material worked up .. £	4,262,924	1,257,272	1,580,570	240,872	..	..	7,341,638
Value of final output	£ 4,928,325	1,497,404	1,878,618	268,232	..	..	8,572,579
Value added in process of manufacture £	665,401	240,132	298,048	27,360	..	..	1,230,941

^a There is one fellmongering and wool-scouring establishment in Western Australia. Particulars are included in tanneries.

(ii) *Development of Fellmongering and Wool-scouring, 1912 to 1917.* The following return furnishes particulars of fellmongering and wool-scouring establishments in the Commonwealth for the last six years :—

DEVELOPMENT OF FELLMONGERING AND WOOL-SCOURING IN THE COMMONWEALTH, 1912 TO 1917.

Items.	1912.	1913.	1914.	1915.	1916.	1917. ^a
Number of factories	120	119	108	106	100	98
Number of employees	2,544	2,375	2,298	2,337	2,379	2,599
Actual horse-power of engines used	3,831	3,966	3,772	3,754	4,463	4,157
Approx. value of land and buildings £	267,188	269,895	256,330	266,440	263,530	276,162
Approx. value of plant and machinery £	348,970	346,381	330,047	329,780	334,131	369,728
Total amount of wages paid	£ 209,352	230,445	226,509	245,362	279,128	332,583
Value of fuel used	£ 31,445	33,404	36,658	40,834	44,914	53,667
Value of raw materials worked up .. £	3,859,200	4,365,413	4,238,705	5,223,231	5,903,149	7,341,638
Value of final output	£ 4,444,938	4,940,410	4,742,531	5,919,690	6,989,122	8,572,579
Value added in process of manufacture £	585,738	574,997	503,826	696,459	1,085,973	1,230,941

^a Excluding one establishment in Western Australia, particulars of which are included in tanneries.

A decline in the number of establishments to the extent of about 18 per cent. has taken place in this industry during the last five years, and the number of hands is practically the same as five years earlier. On the other hand, the amount paid in wages shews the substantial increase of 58.86 per cent., while the values of materials used and of the final output have been nearly doubled, shewing increases amounting to 90.24 per cent. and 92.86 per cent. respectively. The added value has more than doubled during the period, and shews an increase of no less than 110.15 per cent.

4. **Soap and Candle Factories.**—(i) In Class II. (see § 1, 3 hereof) soap and candle factories are the most important establishments. The manufacture of these two products is frequently carried on in the same factory so that separate returns cannot be

obtained; it may, however, be said generally that the manufacture of soap is the more important of the two. The following table gives particulars of soap and candle factories in each State during the year 1917 :—

SOAP AND CANDLE FACTORIES, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W.A. 1917. ^a	Tas. 1917. ^a	C'wealth.
Number of factories	27	18	14	6	..	..	65
Number of employees	955	685	174	235	..	..	2,049
Actual horse-power of engines employed	377	471	135	182	..	..	1,165
Approx. value of land and buildings £	192,231	106,525	28,093	46,528	..	..	373,377
Approx. value of plant and machinery £	214,523	128,100	45,871	36,448	..	..	424,942
Total amount of wages paid during year £	95,999	84,036	19,967	28,282	..	..	228,284
Value of fuel used	23,949	18,937	3,237	5,962	..	..	52,085
Value of raw material worked up	£ 610,530	536,265	112,912	147,724	..	..	1,407,431
Total value of output	£ 857,117	802,179	168,855	208,827	..	..	2,036,978
Value added in process of manufacture £	246,587	265,914	55,943	61,103	..	..	629,547

^a Western Australia has three soap and candle establishments and Tasmania one, but separate details are not available for publication.

(ii) *Development of Soap and Candle Factories, 1912 to 1917.* The following table gives similar particulars for the last six years as regards the Commonwealth as a whole :—

DEVELOPMENT OF SOAP AND CANDLE FACTORIES IN THE COMMONWEALTH, 1912 TO 1917.

Items.	1912.	1913.	1914. ^a	1915. ^a	1916.	1917. ^b
Number of factories	77	74	75	75	72	65
Number of employees	1,776	1,755	1,801	2,141	2,009	2,049
Actual horse-power of engines used	1,274	1,314	1,434	1,420	1,477	1,165
Approx. value of land and buildings	£ 360,572	360,783	374,418	374,886	391,619	373,377
Approx. value of plant and machinery	£ 348,365	364,357	385,744	460,519	447,005	424,942
Total amount of wages paid	£ 162,551	172,247	190,349	219,865	219,398	228,284
Value of fuel used	£ 30,896	31,692	33,949	36,101	38,548	52,085
Value of raw material worked up	£ 1,030,770	1,067,001	1,117,140	1,285,950	1,318,105	1,407,431
Value of final output	£ 1,614,898	1,644,188	1,756,938	1,971,513	1,965,881	2,036,978
Value added in process of manufacture	£ 584,128	577,187	639,798	685,563	647,776	629,547

^a Including three bark milling establishments in Western Australia in 1914, and three oil establishments in 1915. ^b Excluding three soap and candle establishments in Western Australia, and one in Tasmania.

(iii) *Production of Soap and Candles, 1912 to 1917.* The subjoined statement furnishes particulars of the output of soap and candles during the past six years.

PRODUCTION OF SOAP AND CANDLES IN THE COMMONWEALTH, 1912 TO 1917.

Particulars.	1912.	1913.	1914. ^a	1915. ^a	1916. ^a	1917. ^b
Soap cwt.	688,722	700,878	697,807	729,984	727,349	584,972
Candles "	130,785	129,877	110,734	104,986	102,775	91,066

^a Exclusive of Western Australia, for which State particulars are not available for publication. ^b Exclusive of Queensland, Western Australia, and Tasmania, for which States particulars are not available for publication.

(iv) *Raw Materials Used, 1912 to 1917.* The following statement shows the quantity of certain raw materials used in soap and candle factories in the Commonwealth during the years 1912 to 1917 :—

RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1912 TO 1917.

Particulars.		1912.	1913.	1914. ^a	1915. ^a	1916. ^a	1917. ^b
Tallow	cwt.	411,701	391,133	410,235	439,402	416,649	341,707
Alkali	„	135,643	135,231	153,624	159,344	154,348	125,258
Cocoonut oil	gal.	489,329	457,693	460,561	485,851	630,298	520,684

^a Exclusive of Western Australia, for which State figures are not available for publication.
^b Exclusive of Queensland, Western Australia, and Tasmania, for which States figures are not available for publication.

5. *Saw Mills, &c.*—The most important industry in Class IV. is that of saw-milling. As separate particulars of forest saw mills are not available for some of the States, both forest and other saw mills, as well as joinery, moulding, and box factories have been combined in the following table :—

SAW MILLS, FOREST AND OTHER, JOINERY, ETC., 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917. ^a	C'wealth.
Number of factories	589	377	287	82	61	121	1,517
Number of employees	6,654	5,814	4,015	1,018	2,018	1,383	20,902
Actual horse-power of engines employed	16,560	9,481	8,932	1,505	5,588	1,767	43,833
Approximate value of land and buildings	£ 871,453	358,705	210,786	150,743	239,905	69,913	1,901,505
Approximate value of plant and machinery	£ 782,395	505,410	448,423	79,857	686,359	160,181	2,662,625
Total amount of wages paid during year	£ 802,661	689,542	467,108	140,200	315,970	142,931	2,558,412
Value of fuel used	£ 26,235	17,303	9,271	4,097	2,683	978	60,567
Value of raw material worked up	£ 2,116,485	1,047,838	690,490	430,371	95,999	82,813	4,463,996
Total value of output	£ 3,362,760	2,102,420	1,461,557	661,995	565,625	238,898	8,443,255
Value added in process of manufacture	£ 1,246,275	1,054,582	771,067	231,624	469,626	206,085	3,979,259

^a Includes one cooorage establishment.

The development of forest and other saw mills, etc., since 1912 is shewn in the following table :—

DEVELOPMENT OF SAW MILLS, FOREST AND OTHER, JOINERY, ETC., IN THE COMMONWEALTH FROM 1912 TO 1917.

Items.	1912.	1913.	1914.	1915.	1916.	1917. ^a
Number of establishments	1,609	1,670	1,623	1,567	1,526	1,517
Number of employees	29,358	30,371	28,864	24,847	22,173	20,902
Actual horse-power of engines used	40,256	45,634	47,341	46,479	44,456	43,833
Approx. value of land and buildings	£ 1,754,241	2,008,035	2,063,437	1,969,758	1,845,812	1,901,505
Approx. value of plant and machinery	£ 2,385,462	2,571,701	2,632,465	2,502,325	2,693,132	2,662,625
Total amount of wages paid	£ 3,211,625	3,383,907	3,401,045	2,780,990	2,552,197	2,558,412
Value of fuel used	£ 43,913	51,436	56,650	51,276	52,273	60,567
Value of raw material worked up	£ 4,900,612	5,273,688	5,012,211	4,602,863	4,487,201	4,463,996
Value of final output	£ 9,882,810	10,411,923	10,100,683	8,892,082	8,297,110	8,443,255
Value added in process of manufacture	£ 4,982,198	5,168,235	5,088,475	4,289,219	3,809,909	3,979,259

^a Including one cooorage establishment in Tasmania.

The great development in the building and other trades in Australia using timber during the years immediately preceding the war was reflected in the very satisfactory progress of the timber industries, in which there were large increases in wages paid, value of materials used, and final output, as well as in capital invested in land and buildings, and plant and machinery. For the past four years, however, there was, as might have been expected, a fairly considerable decline on the returns for 1913.

6. **Agricultural Implement Factories.**—The manufacture of agricultural implements is an important industry in Australia, and is of particular interest owing to the fact that it was one of the first industries to which the so-called "New Protection" system was sought to be applied. The articles manufactured include stripper harvesters, strippers, stump-jump and other ploughs, harrows, disc and other cultivators, winnowers, corn-shellers and baggers, drills, and other implements usually employed in agriculture. The stripper-harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is exported to many countries.

The following table gives particulars of the agricultural implement works of Australia for the year 1917:—

AGRICULTURAL IMPLEMENT WORKS, 1917.

Items.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917.	S.A. 1916-17.	W.A. 1917. ^a	Tas. 1917. ^a	C'wealth.
Number of factories	21	63	7	51	..	..	142
Number of employees	444	1,900	69	900	..	..	3,313
Actual horse-power of engines employed	248	1,362	92	911	..	..	2,613
Approx. value of land and buildings £	99,151	165,930	10,152	65,288	..	..	340,521
Approx. value of plant and machinery £	36,134	218,450	8,306	76,354	..	..	339,244
Total amount of wages paid during year £	61,611	250,450	6,611	108,430	..	..	427,102
Value of fuel used £	2,312	18,666	331	6,350	..	..	27,659
Value of raw material worked up .. £	303,866	359,342	6,666	128,236	..	..	798,110
Total value of output £	417,450	743,196	17,875	287,434	..	..	1,465,955
Value added in process of manufacture £	113,584	383,854	11,209	159,198	..	..	667,845

^a Western Australia has three agricultural implement establishments and Tasmania one, but separate details are not available for publication.

The following table shews the conditions of this industry during the years 1912 to 1917 to have been somewhat fluctuating. A general decline took place during 1914 and 1915, attributable to various causes, the recent drought and a reduction in the exports to other countries being the principal contributing factors. The 1916 and 1917 figures, however, shew more satisfactory results, being an advance on either of the two previous years as regards material worked up and output:—

DEVELOPMENT OF AGRICULTURAL IMPLEMENT WORKS IN THE COMMONWEALTH, FROM 1912 TO 1917.

Items.	1912.	1913.	1914.	1915.	1916.	1917. ^a
Number of factories	159	154	154	153	151	142
Number of employees	4,733	4,444	3,865	3,606	3,538	3,313
Actual horse-power of engines used ..	2,419	2,698	2,665	2,905	2,811	2,613
Approx. value of land and buildings £	331,348	348,666	360,916	363,166	355,108	340,521
Approx. value of plant and machinery £	281,923	309,015	324,292	337,459	338,397	339,244
Total amount of wages paid £	527,406	502,244	466,686	428,370	425,866	427,102
Value of fuel used £	30,961	30,408	29,892	29,167	29,067	27,659
Value of raw material worked up .. £	751,596	824,556	749,153	664,412	757,231	798,110
Value of final output £	1,538,421	1,536,378	1,413,789	1,299,308	1,457,645	1,465,955
Value added in process of manufacture £	786,825	711,822	664,636	634,896	700,414	667,845

^a Excluding three establishments in Western Australia and one in Tasmania.

7. Engineering Works, Ironworks, and Foundries.—The classification in these industries is not very satisfactory. Generally, engineering shops, ironworks, and foundries are included, as also are factories for making nails, safes, patterns, meters, and springs. Railway workshops, agricultural implement factories, cyanide, smelting, pyrites, and metallurgical works, galvanised iron, stoves and ovens, and wire working establishments are not included. The combination of industries is rendered necessary owing to the limited classification still adopted by some of the States.

ENGINEERING WORKS, IRONWORKS, AND FOUNDRIES, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917. ^a	Tas. 1917.	C'wealth.
Number of factories	326	395	86	67	68	20	962
Number of employees	10,600	8,102	1,855	1,535	1,119	332	23,543
Actual horse-power of engines empl'd ..	28,360	8,775	1,908	1,417	1,740	302	42,502
Approx. value of land and buildings £	1,387,692	676,390	185,139	137,606	167,043	27,735	2,581,605
Approx. value of plant & machinery £	2,829,786	871,770	208,429	162,889	166,268	34,925	4,274,067
Total amount of wages paid during year	1,555,851	1,054,625	250,480	195,149	167,539	42,094	3,265,738
Value of fuel used	£ 275,596	107,925	13,370	18,327	13,279	2,951	431,448
Value of raw materials worked up £	3,689,404	1,471,313	260,700	229,000	245,613	36,134	5,932,214
Total value of output	£ 6,242,237	3,130,441	630,784	512,026	486,635	94,618	11,096,741
Value added in process of m'ufacture £	2,552,833	1,659,128	370,084	283,026	241,022	58,434	5,164,527

^a Including three agricultural implement establishments.

In addition to engineering works which supply ordinary requirements, there is now a number of large and important establishments which engage in the manufacture of special classes of machinery and implements. The manufacture of mining and smelting machinery and apparatus forms an important section of this industry.

The development of engineering works, ironworks, and foundries in the Commonwealth since 1912 is shewn in the following table :—

DEVELOPMENT OF ENGINEERING WORKS, IRONWORKS, AND FOUNDRIES, FROM 1912 TO 1917.

Items.	1912.	1913.	1914.	1915.	1916.	1917. ^a
Number of factories	877	919	950	950	956	962
Number of employees	25,151	26,014	25,766	25,219	25,718	23,543
Actual horse-power of engines used	18,744	20,630	33,630	34,049	39,658	42,502
Approx. value of land and buildings £	1,792,169	1,980,453	2,264,889	2,315,984	2,424,759	2,581,605
Approx. value of plant and machinery £	1,953,478	2,188,935	2,946,347	2,988,650	3,655,662	4,274,067
Total amount of wages paid	£ 2,846,180	3,044,263	3,143,920	3,134,873	3,468,260	3,265,738
Value of fuel used	£ 195,729	217,173	357,071	369,170	420,139	431,448
Value of raw material worked up	£ 3,536,179	3,719,643	3,960,252	4,005,914	4,718,516	5,932,214
Value of final output	£ 7,930,060	3,315,320	3,881,777	3,944,601	10,205,424	11,096,741
Value added in process of manufacture £	4,393,881	4,595,677	4,921,525	4,938,687	5,486,908	5,164,527

^a Including three agricultural implement establishments in Western Australia.

The progress in these industries during late years has been very marked. Since 1912 the number of establishments has increased over 9½ per cent., the amount of wages paid 14.74 per cent., the amount of capital invested in land, buildings, plant and machinery, 83 per cent., and the output nearly 40 per cent.

8. *Railway and Tramway Workshops.*—(i) *Details for each State.* The railway workshops of Australia form an important item in the metal and machinery class, and are chiefly State institutions. The following table gives the details concerning them, but includes also private and municipal establishments for manufacturing and repairing rolling stock :—

RAILWAY AND TRAMWAY WORKSHOPS, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
Number of factories	40	17	12	10	8	7	94
Number of employees	9,342	4,180	2,459	2,917	1,380	288	20,566
Actual horse-power of engines employed	5,814	1,534	2,960	653	2,206	196	13,363
Approximate value of land and buildings	£ 1,129,568	398,920	356,964	274,388	442,517	7,075	2,609,432
Approximate value of plant and machinery	£ 1,138,214	323,798	255,014	202,682	471,084	89,449	2,480,239
Total amount of wages paid during year	£ 1,573,091	615,960	400,999	402,211	229,856	48,700	3,270,817
Value of fuel used	£ 30,807	25,087	8,531	8,594	12,923	1,959	87,701
Value of raw material worked up	£ 836,291	665,650	181,776	171,964	136,516	18,091	2,010,288
Total value of output	£ 2,507,143	1,409,770	608,158	600,766	366,456	74,647	5,566,940
Value added in process of manufacture	£ 1,670,852	744,120	426,382	428,802	229,940	56,556	3,556,652

(ii) *Northern Territory Railway Workshops.* In addition to the above, a railway workshop is in operation in the Northern Territory. The work is confined almost exclusively to repairs to rolling stock, etc., no new goods being manufactured. For the sake of convenience this establishment is not included in any of the tables in this section.

(iii) *Development of Railway and Tramway Workshops, 1912 to 1917.* The following table shews the development of railway and tramway workshops in the Commonwealth since 1912 :—

DEVELOPMENT OF RAILWAY AND TRAMWAY WORKSHOPS, ETC., FROM 1912 TO 1917.

Items.	1912.	1913.	1914.	1915.	1916.	1917.
Number of factories	73	73	75	77	92	94
Number of employees	19,662	26,014	21,745	22,224	22,995	20,566
Actual horse-power of engines used	9,637	9,581	11,025	12,571	14,350	13,363
Approximate value of land and buildings	£ 2,128,273	2,213,697	2,378,764	2,471,731	2,548,223	2,609,432
Approximate value of plant and machinery	£ 1,563,710	1,685,050	2,141,654	2,236,578	2,389,065	2,480,239
Total amount of wages paid	£ 2,702,711	3,018,988	3,086,734	3,174,946	3,409,265	3,270,817
Value of fuel used	£ 75,476	77,155	90,332	90,490	92,200	87,701
Value of raw material worked up	£ 2,574,737	2,874,535	2,492,217	2,363,785	2,234,063	2,010,288
Value of final output	£ 5,695,221	6,435,823	6,134,588	6,046,521	6,298,338	5,566,940
Value added in process of manufacture	£ 3,120,484	3,561,288	3,642,371	3,682,736	3,974,275	3,556,652

The growth of the railway and tramway systems, conjointly with heavy increases in passenger and goods traffic throughout the Commonwealth during the past few years, has resulted in corresponding activity in workshops engaged in the manufacture or repair of rolling stock, etc. The above table shews that for the period 1912 to 1916, the number of employees increased 17 per cent., the amount of wages paid 26 per cent., the final output 10½ per cent., while the value added in process of manufacture shewed an increase of over 27 per cent.

The 1917 figures, however, reveal a general reduction on the figures for 1916. This decline is the result of the policy of economy adopted by the various State Governments, which largely control this industry, in view of the financial stringency caused by the war.

9. *Smelting Works, etc.*—The subjoined table gives particulars of metal smelting, cyanide, pyrites, and metallurgical works. The classification of these works does not appear to be carried out on a uniform basis in the several States, and the combination of industries is, therefore, somewhat unsatisfactory. The returns do not include particulars of plants used on mines.

SMELTING, CYANIDE, PYRITES, ETC., WORKS, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W.A. ^a 1917.	Tasmania. 1917.	C'wealth.
Number of factories	31	30	13	6	..	3	83
Number of employes	3,675	204	167	2,252	..	567	6,865
Actual horse-power of engines employed	14,207	283	1,175	5,370	..	2,391	23,426
Approximate value of land and buildings £	288,241	11,390	16,420	266,953	..	18,911	601,915
Approximate value of plant and machinery £	1,330,852	32,140	101,002	257,228	..	68,597	1,789,819
Total amount of wages paid during year £	709,057	22,027	18,849	512,907	..	83,523	1,346,363
Value of fuel used £	233,489	6,671	9,102	284,612	..	45,291	579,165
Value of raw material worked up £	7,495,633	82,431	94,816	4,206,982	..	661,870	12,541,732
Total value of output £	10,502,882	135,048	145,507	5,797,109	..	1,425,426	18,005,972
Value added in process of manufacture £	3,007,249	52,617	50,691	1,590,127	..	763,556	5,464,240

^a See third paragraph below.

In New South Wales the above figures represent smelting works; those for Victoria include nineteen cyanide works, two metallurgical, six pyrites, and three smelting works; Queensland smelting and cyaniding; South Australia four cyanide and two smelting; and Tasmania three smelting works.

The greatest output was in New South Wales, viz., £10,502,882, or 58 per cent. on the total output for the Commonwealth. South Australia came next with £5,797,109, or 32 per cent.; this amount is largely made up of smelting. For Tasmania the output of smelting was £1,425,426. The output in Victoria was pyrites, £62,749; smelting, £50,894; and cyanide and metallurgical works, £21,405.

In Western Australia all the plants are worked on the mines, and are therefore not included.

10. *Bacon-curing Factories.*—(i) *Details for each State.* The following table gives particulars of factories engaged in bacon-curing in each State:—

BACON-CURING FACTORIES, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17 ^a	W. Aust. 1917.	Tas. 1917.	C'wealth.
Number of factories	21	23	7	14	4	5	74
Number of employes	226	433	429	230	24	19	1,361
Actual horse-power of engines employed	354	1,000	843	141	87	65	2,490
Approx. value of land and buildings £	81,767	94,505	103,238	19,281	9,676	4,886	313,353
Approx. value of plant and machinery £	27,798	59,710	54,853	11,937	5,674	1,447	161,419
Total amount of salaries and wages paid £	37,274	58,191	62,551	22,251	3,205	2,244	185,716
Value of fuel used £	6,671	7,243	7,066	2,088	388	355	23,811
Value of raw material worked up £	626,607	808,691	571,224	166,813	100,684	41,081	2,315,100
Total value of output £	719,848	972,477	956,123	235,427	104,247	46,115	3,034,237
Value added in process of manufacture £	93,241	163,786	384,899	68,614	3,563	5,034	719,137

^a Including two meat preserving establishments employing 141 hands.

(ii) *Quantity and Value of Production.* The following table shows the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State :—

PRODUCTION OF BACON-CURING FACTORIES, 1917.

Particulars.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917. ^a	Tasmania. 1917.	C'wealth.
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QUANTITY (,000 OMITTED).

Bacon and ham .. lbs.	13,551	15,376	14,032	2,598	2,011	857	48,425
Lard .. lbs.	656	728	761	131	12	51	2,339

VALUE.

Bacon and ham .. £	640,643	897,775	739,152	130,685	104,561	40,147	2,552,963
Lard .. £	27,658	33,350	27,134	5,363	432	2,036	95,973
Other products .. £	39,123	41,352	189,837	11,437	..	3,932	285,681

PIGS KILLED.

Number	158,886	167,003	158,041	32,029	<i>b</i>	9,569	525,528
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^a In Western Australia, a portion of the bacon and ham treated in factories is imported and subsequently smoked in that State. ^b Not available.

Bacon and ham and other pig products are dealt with more fully in Section IX., *Farmyard and Dairy Production.*

11. *Butter, Cheese, and Condensed Milk Factories.*—(i) *Details for each State.* The subjoined table gives particulars of butter, cheese, and condensed milk factories in each State during the year 1917 :—

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17. ^a	W. Aust. 1917.	Tasmania. 1917.	C'wealth.
Number of factories ..	164	182	135	45	4	30	560
Number of employees ..	1,085	1,445	948	197	20	106	3,801
Actual horse-power of engines employed ..	3,148	3,030	2,096	377	64	246	8,961
Approximate value of land and buildings .. £	237,940	307,078	142,147	39,417	9,385	20,487	756,454
Approximate value of plant and machinery .. £	326,660	340,050	207,133	33,495	5,160	20,588	933,086
Total amount of wages paid .. £	167,486	185,024	125,309	19,982	2,813	10,218	510,832
Value of fuel used .. £	39,365	39,141	17,187	4,091	372	1,340	101,496
Value of raw material worked up .. £	4,917,520	3,924,632	2,591,278	457,953	30,771	206,366	12,128,520
Total value of output .. £	5,363,088	4,815,833	3,180,416	509,699	34,515	247,748	14,151,299
Value added in process of manufacture .. £	445,568	891,201	589,138	51,746	3,744	41,382	2,022,779

^a Includes one margarine establishment.

(ii) *Development of Factories, 1912 to 1917.* The following table shews the progress of the factories in this industry during the past five years :—

DEVELOPMENT OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES IN THE COMMONWEALTH, 1912 TO 1917.

Items.	1912.	1913.	1914.	1915.	1916.	1917. ^a
Number of factories	530	531	528	536	559	560
Number of employees	3,518	3,507	3,568	3,300	3,287	3,801
Actual horse-power of engines used	8,156	7,726	7,895	7,948	8,329	8,961
Approx. value of land and buildings £	659,673	664,735	664,999	683,413	734,686	756,454
Approx. value of plant and machinery £	788,022	828,986	850,770	852,260	881,267	933,086
Total amount of wages paid	£ 385,793	£ 411,491	£ 439,121	£ 408,181	£ 403,136	£ 510,832
Value of fuel used	£ 70,155	£ 72,214	£ 81,809	£ 71,796	£ 70,053	£ 101,496
Value of raw material worked up	£ 8,676,346	£ 8,146,178	£ 8,709,272	£ 8,040,316	£ 7,763,596	£ 12,128,520
Value of final output	£ 9,760,205	£ 9,284,747	£ 9,898,398	£ 9,203,041	£ 8,974,067	£ 14,151,299
Value added in process of manufacture £	1,083,859	1,138,569	1,189,126	1,162,725	1,210,471	2,022,779

^a Including one margarine establishment in South Australia.

(iii) *Quantity and Value of Production.* The following table shews the quantity and value of butter, cheese, and condensed milk produced, and the quantity of milk used in butter, cheese, and condensed milk factories in each State :—

PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1917.

Particulars.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
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QUANTITY (,000 OMITTED).

Butter lbs.	75,065	54,488	36,854	6,068	483	3,478	176,436
Cheese "	5,672	4,189	10,974	2,474	..	426	23,735
Condensed and concentrated milk "	5,830	33,281	9,409	..	..	..	48,520

VALUE (,000 OMITTED).

Butter £	4,859	3,864	2,530	420	34	234	11,941
Cheese £	209	159	407	77	..	14	866
Condensed and concentrated milk £	125	705	244	..	..	..	1,074

MILK USED (,000 OMITTED).

Butter factories .. gals.	166,095	126,330	77,571	12,312	1,028	8,657	391,993
Cheese "	5,848	4,084	10,080	2,462	..	429	22,903
Condensed milk factories .. "	1,693	12,293	2,893	..	..	..	16,879

The butter, cheese, and condensed milk industries are dealt with more fully in Section IX., *Farmyard and Dairy Production.*

12. **Meat and Fish Preserving, Ice and Refrigerating Works.**—These industries are now of considerable importance in Australia. Large freezing works have been installed

at many ports in the Commonwealth for the purpose of freezing produce chiefly for export, while insulated space for the carriage of frozen produce is provided by a number of steamship companies trading between Australia and other parts of the world. Extensive meat freezing and canning works have recently been erected in the Northern Territory at Darwin at a cost of approximately £750,000. The Commonwealth Government has entered into an agreement with the proprietors in regard to the carriage of cattle at special rates provided that private owners of cattle may have their stock treated under reasonable terms and conditions. The killing season in the Northern Territory generally extends from April to August, and is necessarily short, because the drying of stock route waters precludes the travelling of stock to the freezing works. The works accommodation provides for killing and chilling 500 cattle, while 400 carcasses can be frozen and 200 canned per day. When the works are in full operation it is expected that from 400 to 500 head of stock will be treated daily, and that the annual killing will approximate 50,000 cattle. Operations were commenced early in 1917, and between April and August 18,911 cattle were treated. A dispute arose between the Company and the employees over the question of wages during the early part of 1918, and six weeks of the killing season were lost before an agreement was arrived at. Owing to the dispute, instead of from 40,000 to 50,000 bullocks being treated, only 29,011 could be handled during the 1918 season.

Particulars regarding the export of frozen beef and mutton may be found on pages 303 and 306 hereof respectively.

The particulars given in the subjoined table include ice-making and freezing works, and also meat-canning factories, separate particulars for each item for all the States not being available.

MEAT AND FISH PRESERVING, ICE AND REFRIGERATING WORKS, 1917.

Items.	N.S.W. 1916-17.	Vic. 1916-17. ^a	Q'land. 1917.	S.A. 1916-17. ^b	W.A. 1917.	Tas. 1917.	C'wealth.
Number of factories	120	38	60	15	19	7	259
Number of employees	2,241	1,150	4,929	158	113	42	8,631
Actual horse-power of engines employed	7,319	6,640	11,385	941	1,045	173	27,503
Approx. value of land and buildings £	812,056	571,380	1,425,260	177,491	46,762	11,164	3,044,113
Approx. value of plant and machinery £	633,681	316,827	877,566	84,242	56,404	8,172	1,976,892
Total amount of wages paid during year	£ 260,659	145,776	788,525	17,446	17,131	3,456	1,232,993
Value of fuel used	£ 53,148	36,363	96,304	6,729	7,814	1,668	202,026
Value of raw material worked up	£ 5,633,455	822,884	5,881,211	51,582	4,490	1,230	12,394,902
Total value of output	£ 6,279,558	1,078,294	7,539,734	82,315	39,693	10,786	15,030,380
Value added in process of manufacture £	646,103	255,410	1,658,523	30,733	35,203	9,506	2,635,478

^a Including two salt refining establishments.

^b Excluding two meat preserving establishments employing 141 hands.

The following table gives particulars, so far as available, of meat tinned during the year :—

MEAT PRESERVING WORKS—OUTPUT, 1917.

Output.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
Tinned meat .. cwt.	75,816 ^a	20,075	222,763 ^b	1,058 ^c	..	..	319,712

^a Also 9,353 cwt. tinned rabbits. ^b Also 2,540 cwt. salted meat. ^c Exclusive of large quantity of tinned rabbits, particulars of which are not available for publication.

Large quantities of rabbits, hares, and poultry, for which, however, complete returns are not available, were treated in freezing works. During 1917, about 3,000,000 rabbits and hares were treated in Victoria alone. Exclusive of Victoria, for which State particulars are not available, the returns shew that 87,535 tons of ice, valued at £178,685, were manufactured in the Commonwealth in 1917.

Full particulars of quantities and value of beef, mutton, and lamb preserved by cold process, exported from the Commonwealth during a series of years, will be found in Section VII., *Pastoral Production*.

13. **Biscuit Factories.**—The following table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1917:—

BISCUIT, ETC., FACTORIES, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917. ^a	Tas. 1917.	C'wealth.
Number of factories	9	7	23	3	6	3	51
Number of employees	1,546	1,406	561	133	145	127	3,918
Actual horse-power of engines employed	810	386	360	97	136	79	1,868
Approximate value of land and buildings	£ 123,075	£ 73,680	£ 77,400	£ 19,056	£ 14,588	£ 20,600	£ 323,399
Approximate value of plant and machinery	£ 112,089	£ 61,015	£ 52,835	£ 11,112	£ 12,767	£ 10,075	£ 259,893
Total amount of wages paid during year	£ 107,472	£ 119,628	£ 63,045	£ 9,461	£ 10,806	£ 10,299	£ 320,711
Value of fuel used	£ 11,296	£ 12,122	£ 3,827	£ 1,784	£ 1,309	£ 1,152	£ 31,490
Value of raw material worked up ..	£ 518,114	£ 499,301	£ 168,745	£ 35,190	£ 43,205	£ 32,556	£ 1,297,111
Total value of output	£ 805,940	£ 735,158	£ 303,734	£ 61,266	£ 65,318	£ 57,410	£ 2,028,826
Value added in process of manufacture	£ 287,826	£ 235,857	£ 134,989	£ 26,076	£ 22,113	£ 24,854	£ 731,715

^a Including one butterine and margarine, and one macaroni establishment.

14. **Jam and Fruit Preserving, Pickles, Sauces, and Vinegar.**—The jam and fruit preserving industry has increased in importance of late years, consequent on the extension of fruit-growing. As an exporting industry it is comparatively recent, but is of increasing value, and has shown considerable expansion during the past three years. During the year ended 30th June, 1918, 64,891,116 lbs. of jams and jellies, valued at £1,410,548, were exported from the Commonwealth. The subjoined table gives particulars of factories at which these industries were carried on in each State during the year. Separate returns for the different branches of the industry are not available for most of the States.

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR FACTORIES, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
Number of factories	41	35	22	26	8	18	150
Number of employees	1,197	2,181	377	468	71	1,029	5,323
Actual horse-power of engines employed	498	439	96	120	33	873	2,059
Approximate value of land and buildings	£ 148,696	£ 144,055	£ 23,169	£ 35,509	£ 5,162	£ 70,328	£ 426,919
Approximate value of plant and machinery	£ 69,036	£ 67,543	£ 17,335	£ 18,946	£ 2,211	£ 34,477	£ 209,548
Total amount of wages paid during year	£ 111,616	£ 180,083	£ 26,766	£ 29,262	£ 3,877	£ 92,189	£ 443,793
Value of fuel used	£ 7,691	£ 13,310	£ 1,581	£ 2,543	£ 486	£ 7,115	£ 32,726
Value of raw material worked up ..	£ 709,121	£ 836,430	£ 87,651	£ 141,106	£ 15,016	£ 482,642	£ 2,271,966
Total value of output	£ 966,829	£ 1,225,856	£ 148,838	£ 215,308	£ 24,422	£ 703,591	£ 3,284,844
Value added in process of manufacture	£ 257,708	£ 389,426	£ 61,187	£ 74,202	£ 9,406	£ 220,949	£ 1,012,878

The following table shows the quantity and value of jams, pickles, and sauces manufactured in each State:—

QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCES MANUFACTURED, 1917.

Particulars.	N.S.W. 1916-17.	Victoria, 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
QUANTITY (,000 OMITTED).							
Jams lbs.	32,932	38,810	2,113	8,057	<i>b</i>	28,268	c110,180
Fruit, preserved .. lbs.	5,310	10,651	4,304	2,417	<i>b</i>	5,163	c27,845
Pickles pints	2,077	1,803	<i>a</i>	164	93	16	4,153
Sauces pints	3,632	6,433	665	823	287	80	11,920
VALUE.							
Jams £	635,812	825,025	32,111	143,124	<i>b</i>	518,711	c2,154,783
Fruit, preserved .. £	95,100	210,038	64,875	32,940	<i>b</i>	101,305	c504,258
Pickles £	48,909	46,770	9,677	4,515	3,063	482	113,416
Sauces £	73,844	144,023	10,976	20,067	6,708	1,748	257,366

a Information not available. *b* Information not available for publication.
c Exclusive of Western Australia.

15. **Confectionery.**—The following table shows the present position of the confectionery industry. Its growth will be apparent when it is stated that at the close of 1900 there were in New South Wales only 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, the plant and machinery in the former State being valued at £2,815, and in the latter at £19,070.

CONFECTIONERY FACTORIES, 1917.

Items.	N.S.W. 1916-17.	Victoria, 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W.A. 1917.	Tas. 1917.	C'wealth.
Number of factories	58	46	8	11	4	4	131
Number of employees	1,685	2,537	511	334	176	23	5,266
Actual horse-power of engines employed	804	1,377	150	366	185	20	2,802
Approx. value of land and buildings £	246,163	144,820	28,312	38,598	26,045	11,550	495,488
Approx. value of plant and machinery £	118,313	154,730	21,717	36,207	20,359	3,213	354,539
Total amount of wages paid during year £	168,652	217,562	36,855	23,703	14,419	1,876	463,067
Value of fuel used £	15,788	23,680	1,656	2,819	1,247	114	45,304
Value of raw material worked up £	629,656	725,093	88,328	91,182	40,944	14,150	1,586,353
Total value of output £	955,757	1,156,007	168,786	139,726	65,886	18,570	2,504,732
Value added in process of manufacture £	329,101	430,914	80,458	48,544	24,942	4,420	918,379

16. **Flour Mills.**—The following table shows the position of the flour-milling industry:—

FLOUR MILLS, 1917.

Items.	N.S.W. 1916-17.	Victoria, 1916-17.	Q'land. 1917. ^a	S. Aust. 1916-17. <i>a</i>	W. Aust. 1917.	Tas. 1917. ^a	C'wealth.
Number of factories	62	54	12	44	15	14	201
Number of employees	1,097	897	239	567	325	127	3,252
Actual horse-power of engines employed	4,970	4,305	980	2,825	1,910	652	15,642
Approx. value of land and buildings £	385,674	206,450	71,972	119,152	105,245	53,050	941,543
Approx. value of plant and machinery £	342,141	292,020	81,943	154,245	108,850	28,650	1,007,849
Total amount of wages paid during year £	180,263	126,280	40,298	77,317	50,917	15,119	490,194
Value of fuel used £	32,129	28,642	4,828	19,962	10,070	2,701	98,032
Value of raw material worked up £	3,758,289	2,941,140	603,249	1,223,117	1,111,107	326,215	9,969,117
Total value of output £	4,259,361	3,458,633	717,481	1,396,770	1,308,046	346,593	11,486,884
Value added in process of manufacture £	501,072	517,493	114,232	167,653	196,939	20,378	1,517,767

a The manufacture of cornflour, oatmeal, etc., was also carried on in some of these establishments.

The production of flour by the mills in each State of the Commonwealth in the years 1912 to 1917 was as follows :—

FLOUR MILLS—PRODUCTION, 1912 TO 1917.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>
1912 ..	255,359	225,376	25,855	103,100	49,319	18,044	677,053
1913 ..	285,425	252,763	33,889	107,994	61,997	18,545	760,613
1914 ..	266,302 <i>b</i>	246,136	35,402	84,701	61,922	19,382	713,845
1915 ..	266,302 <i>b</i>	134,401	39,734	49,404	32,396	19,573	541,810
1916 <i>c</i> ..	254,393	134,401	42,559	49,404	70,912	25,369	577,038
1917 <i>d</i> ..	331,233	263,095	46,244	105,925	102,300	21,178	869,975

a Tons of 2,000 lbs. *b* Year ended 30th June, 1915. *c* See note *a* first table this section.
d See note *b* first table this section.

The total production of flour for the Commonwealth for the last year, viz., 869,975 tons, was valued at £9,468,254; in addition 370,910 tons of bran and pollard, valued at £1,850,620, were made. The total quantity of wheat ground was 41,896,892 bushels.

17. **Sugar Mills.**—The following table shews the position of the cane-crushing branch of the sugar-making industry. This industry is carried on in Queensland and New South Wales, the only States of the Commonwealth in which the sugar-cane is grown.

SUGAR MILLS, 1917.

Items.	N.S.W. 1916-17.	Queensland. 1917.	Total.
Number of factories	3	47	50
Number of employees	427	5,500	5,927
Actual horse-power of engines employed	1,491	14,095	15,586
Approximate value of land and buildings	£ 54,000	457,741	511,741
Approximate value of plant and machinery	£ 470,762	3,018,774	3,489,536
Total amount of wages paid during year	£ 48,709	814,901	863,610
Value of fuel used	£ 5,224	83,610	88,834
Value of raw material worked up	£ 225,074	4,334,563	4,559,637
Total value of output	£ 291,944	6,431,433	6,723,377
Value added in course of manufacture	£ 66,870	2,096,870	2,163,740

The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. Part of the molasses produced is used in distillation, part is prepared for human consumption, part is turned into food cake for cattle, and part is used for manuring land, but a considerable quantity is run to waste. The following tables shew the progress of this industry in each State from the dates at which information is first obtainable :—

SUGAR MILLS, NEW SOUTH WALES, 1870 TO 1917.

Items.	1870.	1877.	1886.	1896.	1901.	1911.	1913.	1914-15.	1915-16.	1916-17.
No. of factories	27	50	64	23	12	4	3	3	3	3
No. of employees	..	1,065	2,259	1,475	695	469	486	437	463	427
Cane crushed tons	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	167,799	135,910	181,606	157,748	143,558
Sugar produced tons	677	7,537	13,750	28,557	19,519	17,299	22,192	20,029	19,144	16,064
Molasses pro- duced gals.	..	345,543	507,000	2,520,580	1,300,909	796,440	966,000	1,104,000	1,099,000	781,870

a Not available.

The reduction in the number of New South Wales mills is due chiefly to the tendency towards concentration of cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. On the north coast of New South Wales some land formerly devoted to sugar-growing has been turned into pasture in connection with the dairying industry.

SUGAR MILLS, QUEENSLAND, 1868 TO 1917.

Items.	1868.	1876.	1886.	1896.	1901.	1911.	1915.	1916.	1917.
No. of factories ..	10	70	118	63	52	49	44	42	47
No. of employees ..		b	b	3,796	b	4,295	4,220	4,528	5,500
Cane crushed tons		7,245 ^c	40,756 ^c	66,640 ^c	78,160 ^c	1,534,451	1,152,516	1,579,514	2,704,211
Sugar produced tons	619	8,214	59,225	100,774	120,858	173,296	140,496	176,973	307,714
Molasses— Sold to distillers gals.						2,393,669	1,063,298	818,812	1,558,407
Used as fodder gals.						789,564	1,847,112	1,439,108	1,464,084
Used as manure gals.						223,000	64,400	54,600	627,000
Run to waste or burnt a gals.	b	b	b	b	b	1,847,333	1,892,201	3,232,835	6,086,813
In stock ..						1,197,626	869,914	797,084	878,332
Total molasses a gals.	68,622	416,415	1,784,266	2,195,470	3,679,952	6,451,192	5,736,925	6,342,439	11,514,636

a Quantity recorded; large quantities run to waste of which no record is kept. b No record.
c Acres crushed. d Includes 45,360 gallons sold to other than distillers.

Information regarding the cultivation of sugar-cane may be found in the section of this book dealing with *Agricultural Production*. (See pages 363 to 365.)

18. Sugar Refineries.—The establishment of the sugar-refining industry considerably antedates the establishment of the sugar-milling industry, the raw material operated upon being originally brought chiefly from Mauritius and the East. In 1917 there were two sugar refineries in each of the States of Victoria and Queensland, and one in each of the States of New South Wales and South Australia. The returns for the individual States cannot be disclosed.

In the six refineries in the Commonwealth, an average number of 1,689 hands was employed during the year. The approximate value of land and buildings was £460,243; of plant and machinery, £1,081,526; and the total amount of wages paid during the year was £235,060. The value of all materials used in sugar refineries was £5,855,935, while the total output reached £6,875,768. The amount of crude sugar used was 271,131 tons, and of refined sugar produced 263,145 tons, valued at £6,845,448.

19. Breweries.—(i) *Details for each State.* The following table gives particulars of breweries in each State:—

BREWERIES, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917 ^a	Tas. 1917.	C'wealth.
Number of breweries ..	22	19	10	9	13	4	77
Number of employees ..	1,003	866	430	309	459	124	3,191
Actual horse-power of engines employed ..	2,646	3,382	619	945	1,266	97	8,955
Approximate value of land and buildings ..	£ 632,628	£ 471,170	£ 134,126	£ 95,757	£ 174,857	£ 392,950	£ 1,901,488
Approximate value of plant and machinery ..	£ 678,879	£ 452,988	£ 120,555	£ 94,309	£ 174,855	£ 44,328	£ 1,565,914
Total amount of wages paid during year ..	£ 189,134	£ 168,041	£ 74,953	£ 54,532	£ 89,256	£ 18,771	£ 594,687
Value of fuel used ..	£ 36,971	£ 33,711	£ 10,690	£ 8,663	£ 11,730	£ 2,864	£ 104,629
Value of raw material worked up ..	£ 725,028	£ 505,579	£ 136,593	£ 121,452	£ 117,590	£ 31,326	£ 1,637,568
Total value of output ..	£ 1,436,733	£ 1,118,288	£ 556,175	£ 276,138	£ 444,177	£ 121,136	£ 3,952,647
Value added by processes of manufacture ..	£ 711,705	£ 612,709	£ 419,582	£ 154,686	£ 326,587	£ 89,810	£ 2,315,079

a Includes malting.

(ii) *Production and Materials Used.* The following table shews the quantity and value of ale and stout brewed and the quantity of raw materials used in each State during the year :—

PRODUCTION AND MATERIALS USED IN BREWERIES, 1917.

Particulars.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tasmania. 1917.	C'wealth.
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ALE AND STOUT BREWED.

Quantity	gallons	21,851,727	20,111,704	6,019,813	4,666,135	5,018,208	1,713,624	59,381,211
Value a ..	£	1,042,309	1,118,288	556,175	273,559	427,360	121,046	3,538,737

RAW MATERIALS USED.

Malt ..	bush.	678,206	616,630	181,067	125,513	157,024	61,505	1,819,945
Hops ..	lbs.	805,514	710,470	263,489	153,910	195,028	93,827	2,222,238
Sugar ..	cwt.	107,220	105,238	39,174	24,201	23,430	5,970	305,233

RAW MATERIALS USED PER 1,000 GALLONS OF ALE AND STOUT PRODUCED.

Malt ..	bush.	31.04	30.66	30.08	26.90	31.29	35.89	30.65
Hops ..	lbs.	36.86	35.33	43.77	32.98	38.86	54.75	37.42
Sugar ..	cwt.	4.91	5.23	6.51	5.19	4.67	3.48	5.14

a Exclusive of excise duty.

(iii) *Development of Breweries, 1912 to 1917.* The following table shews the progress of this industry during the past five years :—

DEVELOPMENT OF BREWERIES FROM 1912 TO 1917.

Items.	1912.	1913.	1914.	1915.	1916.	1917.
Number of breweries	110	101	95	90	86	77
Number of employes	3,532	3,551	3,535	3,295	3,179	3,191
Actual horse-power of engines used ..	5,078	6,930	8,313	8,430	8,882	8,955
Approx. value of land and buildings ..	£ 1,526,629	1,554,187	1,860,584	1,872,535	1,864,712	1,901,488
Approx. value of plant and machinery ..	£ 1,078,724	1,171,595	1,433,616	1,452,639	1,518,846	1,565,914
Total amount of wages paid	£ 523,812	552,843	575,446	548,632	560,004	594,687
Value of fuel used	£ 76,906	75,824	86,175	81,252	87,375	104,629
Value of raw material worked up	£ 1,494,070	1,568,620	1,534,656	1,494,974	1,548,615	1,637,568
Value of final output	£ 3,647,850	3,817,396	4,107,498	3,869,786	3,872,044	3,952,647
Value added in process of manufacture ..	£ 2,153,780	2,248,776	2,572,842	2,374,812	2,323,429	2,315,079

The main feature in the history of the brewing industry, which was established at an early date in Australia, has been the change from the small local brewery in every township of moderate size to the large centralised city brewery. This, however, has not been so much in evidence during the period embraced in the above table, the reduction of the number of establishments during recent years being mainly due to several large amalgamations. The total value of output of breweries in the Commonwealth increased from £3,647,850 in 1912 to £3,952,647 in 1917, while the quantity of ale and stout brewed during the same period decreased from 60,671,882 to 59,381,211 gallons. The average production per head of mean population likewise decreased from 13.06 gallons per head for 1912 to 12.17 gallons for 1917.

20. **Distilleries.**—The subjoined table gives particulars of distilleries in four States. There are no distilleries in Western Australia or Tasmania.

DISTILLERIES, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth
Number of distilleries	3	9	3	18	..	..	33
Number of employees	34	136	38	91	..	..	299
Actual horse-power of engines employed	132	299	77	224	..	..	732
Approx. value of land and buildings £	22,230	107,135	12,725	34,771	..	..	176,861
Approx. value of plant and machinery £	62,165	79,230	17,455	26,469	..	..	185,319
Total amount of wages paid during year £	7,369	20,117	5,701	9,845	..	..	43,032
Value of fuel used £	2,339	5,488	3,486	2,947	..	..	14,260
Value of raw materials worked up .. £	58,811	91,117	14,105	63,708	..	..	227,741
Total value of output £	83,805	147,538	86,164	87,251	..	..	404,758
Value added in process of manufacture £	24,994	56,421	72,059	23,543	..	..	177,017

The total quantity of rum distilled during the year was 889,402, of whisky 307,401, of brandy 171,042, and of other spirits 2,323,393 gill gallons. The materials used comprised 2,120,964 cwt. of molasses and sugar, and 2,991,836 gallons of wine. Particulars for the separate States are not available for publication.

21. **Tobacco, Cigars, and Cigarettes.**—(i) *Details for each State.* During the year there were thirty-five establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. There were no factories engaged in this industry in Tasmania.

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1917.

Items.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917. ^a	S.A. 1916-17.	W.A. 1917.	Tas. 1917.	C'wealth. ^b
Number of factories	15	13	5	2	3	..	36
Number of employees	1,930	1,711	137	c	36	..	3,814
Actual horse-power of engines employed	462	376	95	c	1	..	934
Approx. value of land and buildings £	217,853	176,170	27,184	c	3,045	..	424,252
Approx. value of plant and machinery £	131,878	114,760	13,201	c	533	..	260,372
Total amount of wages paid during year £	210,237	211,866	13,826	c	2,213	..	438,142
Value of fuel used £	8,815	3,796	889	c	23	..	13,523
Value of raw material worked up .. £	1,379,799	920,872	38,898	c	4,494	..	2,344,063
Total value of output £	1,983,839	1,470,715	79,367	c	9,783	..	3,543,704
Value added in process of manufacture £	604,040	549,843	40,469	c	5,289	..	1,199,641

^a Including one condiment and two malting establishments.

^b Exclusive of South Australia.

^c Not available for publication.

(ii) *Quantity of Goods Produced, and Tobacco Leaf Used.* The following table shews the quantity of goods produced in tobacco factories in each State, and the quantities of imported and Australian-grown leaf used:—

PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1917.

Particulars.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
QUANTITY (,000 OMITTED).							
Manufactured tobacco .. lbs.	5,013	6,090	a	..	4	..	511,107
.. .. f lbs.	101	297	..	a	a	..	898
Cigars { No.	8,882	26,269	..	a	a	..	535,151
.. .. { lbs.	2,791	284	..	..	a	..	83,075
Cigarettes { No.	1,245,560	123,480	..	..	a	..	51,369,040

TOBACCO LEAF USED (,000 OMITTED).

	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Australian leaf lbs.	863	656	a	a	..	..	c1,636
Imported leaf lbs.	6,240	5,254	a	a	19	..	c11,530

^a Not available for publication.

^b Incomplete.

^c Including Queensland and South Australia.

(iii) *Development of Industry.* This industry was among the first to be established in Australia. In 1861 New South Wales had eleven factories, producing 177,744 lbs. of manufactured tobacco; in the same year there was one factory in Victoria, but the quantity of tobacco manufactured is not available. The Australian market has for many years been largely supplied with local manufactures. The quantities imported into Australia during 1917-18 were—manufactured tobacco 1,044,607 lbs., cigars 140,044 lbs., and cigarettes 107,558 lbs., while the quantities manufactured in Australian factories were respectively 11,107,323 lbs., 397,507 lbs., and 3,074,727 lbs. The following tables show the development of the tobacco manufacturing industry in the Commonwealth during recent years:—

DEVELOPMENT OF TOBACCO, CIGAR, AND CIGARETTE FACTORIES IN THE COMMONWEALTH, 1912 TO 1917.

Items.	1912.	1913.	1914.	1915. ^a	1916. ^a	1917. ^b
Number of factories	35	36	36	34	35	38
Number of employes	3,484	3,566	3,658	3,547	3,739	3,814
Actual horse-power of engines used	917	1,119	808	826	914	934
Approx. value of land and buildings £	349,022	353,447	402,462	404,593	412,068	424,252
Approx. value of plant and machinery £	227,294	231,547	248,532	241,501	253,953	260,372
Total amount of wages paid	£ 358,081	£ 373,963	£ 380,821	£ 370,227	£ 394,435	£ 438,142
Value of fuel used	£ 4,267	£ 4,053	£ 7,365	£ 7,607	£ 9,720	£ 13,523
Value of raw material worked up	£ 1,622,713	£ 1,651,226	£ 1,905,489	£ 1,950,525	£ 2,124,204	£ 2,344,063
Value of final output	£ 2,696,157	£ 2,713,363	£ 3,006,482	£ 3,041,050	£ 3,223,433	£ 3,543,704
Value added in process of manufacture £	£ 1,073,444	£ 1,062,137	£ 1,100,993	£ 1,081,525	£ 1,099,229	£ 1,199,641

PRODUCTION.

Tobacco made 1,000 lbs.	10,298	9,956	9,964	9,776	10,306	11,107
Cigars "	389	406	401	365	362	398
Cigarettes "	2,606	2,768	3,197	3,175	3,351	3,075
Leaf used "	11,827	11,677	12,091	11,858	12,541	13,166

^a Including four condiment establishments in Western Australia. ^b Including one condiment and two malting establishments in Queensland, and excluding two cigar factories in South Australia. ^c Exclusive of two factories in South Australia. ^d Incomplete.

22. Woollen, Cotton, and Tweed Mills.—(i) Details for each State. The manufacture of woollens and tweeds was established in Australia at an early period in its history, and was under Government control, the first record in New South Wales dating back to 1801, when a few blankets were made by the convicts; the first record in Victoria was in 1867. The following table, which gives particulars of the mills in each State, shows that the industry is now well established:—

WOOLLEN, COTTON, AND TWEED MILLS, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917. ^a	S. Aust. 1916-17. ^b	W.A. 1917.	Tas. 1917.	C'wealth.
Number of factories	6	10	4	3	..	4	27
Number of employes	1,034	2,049	184	235	..	253	3,755
Actual horse-power of engines employed	2,478	3,215	591	324	..	245	6,853
Approx. value of land and buildings £	135,609	145,790	20,819	19,023	..	21,250	342,491
Approx. value of plant and machinery	£ 188,158	£ 276,330	£ 32,952	£ 34,064	..	£ 40,133	£ 571,637
Total amount of wages paid during year	£ 120,783	£ 181,358	£ 16,158	£ 15,510	..	£ 18,831	£ 352,640
Value of fuel used	£ 14,108	£ 24,205	£ 1,949	£ 2,188	..	£ 1,613	£ 44,063
Value of raw material worked up	£ 432,042	£ 535,409	£ 29,121	£ 34,628	..	£ 45,441	£ 1,076,641
Total value of output	£ 712,531	£ 1,006,635	£ 69,720	£ 63,956	..	£ 95,309	£ 1,948,151
Value added in process of manufacture	£ 280,489	£ 471,226	£ 40,599	£ 29,328	..	£ 49,868	£ 871,510

^a Including two dyeworks and cleaning establishments.
^b Including one ostrich feather dressing establishment.

(ii) *Progress of Industry, 1912 to 1917.* The progress of woollen and tweed manufactories in the Commonwealth during the last five years is shewn in the following table:—

**DEVELOPMENT OF WOOLLEN, COTTON, AND TWEED MILLS IN THE
COMMONWEALTH FROM 1912 TO 1917.**

Items.	1912.	1913. ^a	1914. ^a	1915. ^a	1916. ^a	1917. ^{ab}
Number of factories	32	22	22	22	23	27
Number of employees	3,379	3,090	2,290	3,620	3,927	3,755
Actual horse-power of engines used	3,692	4,358	5,072	5,364	5,538	6,853
Approx. value of land and buildings £	307,049	299,306	311,391	310,114	319,273	342,491
Approx. value of plant and machinery £	497,827	516,659	532,084	537,840	553,671	571,637
Total amount of wages paid	£ 232,561	£ 231,018	£ 257,590	£ 313,826	£ 357,137	£ 352,640
Value of fuel used	£ 22,709	£ 21,778	£ 27,306	£ 36,275	£ 40,283	£ 44,063
Value of raw material worked up	£ 468,728	£ 475,637	£ 603,387	£ 836,298	£ 971,144	£ 1,076,641
Value of final output	£ 930,485	£ 925,602	£ 1,152,657	£ 1,615,223	£ 1,888,115	£ 1,948,151
Value added in process of manufacture £	£ 461,757	£ 449,965	£ 549,270	£ 778,925	£ 916,971	£ 871,510

^a Excluding manufactures of hosiery and knitted goods, numbering 13 establishments in 1912, included in New South Wales returns previous to 1913. ^b Including two dyeworks and cleaning establishments in Queensland, and one ostrich feather dressing establishment in South Australia.

(iii) *Quantity and Value of Production.* The production of the woollen mills of Australia consists chiefly of tweed cloths, flannels, and blankets, all of which have acquired a reputation for purity and durability. Detailed particulars for the several States are not available for publication. The total length of tweed and cloth manufactured in the Commonwealth during 1917 was 4,161,069 yards. In New South Wales 2,194,955 yards of tweed and cloth, and in Victoria 1,238,363 yards were manufactured. The production of flannel in the Commonwealth amounted to 6,077,108 yards, while blankets, shawls, and rugs to the number of 810,217 were manufactured.

No cotton spinning or weaving, or linen weaving is carried on in Australia. Cotton ginning has been carried on intermittently in the northern States, and a mill was lately reopened at Ipswich in Queensland.

23. *Boots and Shoes.*—(i) *Details for each State.* Among the manufactories of Australia the boot and shoe industry holds an important place both in respect to the employment afforded and the extent of its output. The following table shews latest available particulars of this industry for each State:—

BOOT AND SHOE FACTORIES, 1917.

Items.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917.	S.A. 1916-17.	W.A. 1917.	Tas. 1917.	C'wealth.
Number of factories	115	201	26	32	15	10	399
Number of employees	4,396	8,494	1,108	792	247	249	15,286
Actual horse-power of engines employed	1,343	1,674	246	218	55	54	3,590
Approx. value of land and buildings £	311,468	311,240	38,401	51,045	22,703	15,694	750,551
Approx. value of plant and machinery £	155,947	218,710	24,506	31,127	9,769	7,330	447,389
Total amount of wages paid during year £	492,534	843,772	111,868	82,884	24,518	19,047	1,574,623
Value of fuel used	£ 12,706	£ 15,074	£ 1,086	£ 1,555	£ 637	£ 73	£ 31,131
Value of raw material worked up	£ 1,120,340	£ 2,171,812	£ 221,514	£ 150,742	£ 65,999	£ 53,931	£ 3,784,338
Total value of output	£ 1,829,323	£ 3,460,404	£ 399,246	£ 268,643	£ 103,964	£ 81,468	£ 6,143,048
Value added in process of manufacture £	£ 708,983	£ 1,288,592	£ 177,732	£ 117,901	£ 37,965	£ 27,537	£ 2,358,710

(ii) *Progress of Industry, 1912 to 1917.* The progress of the industry in the last five years is shewn in the following table :—

DEVELOPMENT OF BOOT AND SHOE FACTORIES IN THE COMMONWEALTH, 1912 TO 1917.

Items.	1912.	1913.	1914.	1915.	1916.	1917.
Number of factories	332	346	357	358	352	399
Number of employees	13,341	13,456	13,192	13,175	13,322	15,286
Actual horse-power of engines used	2,646	2,823	3,091	3,029	3,249	3,590
Approx. value of land and buildings £	598,659	629,787	656,576	677,307	692,673	750,551
Approx. value of plant and machinery £	398,014	429,994	415,695	418,529	428,837	447,389
Total amount of wages paid	£ 1,144,465	£ 1,154,658	£ 1,193,900	£ 1,220,987	£ 1,244,700	£ 1,574,623
Value of fuel used	£ 17,244	£ 18,073	£ 18,902	£ 20,713	£ 22,248	£ 31,131
Value of raw material worked up	£ 2,184,750	£ 2,308,194	£ 2,437,169	£ 2,673,016	£ 2,793,391	£ 3,784,338
Value of final output	£ 3,819,371	£ 4,004,486	£ 4,156,590	£ 4,486,885	£ 4,617,322	£ 6,143,048
Value added in process of manufacture £	£ 1,634,621	£ 1,696,292	£ 1,719,421	£ 1,813,369	£ 1,823,931	£ 2,358,710

The above table furnishes evidence of substantial and consistent development in the manufacture of boots and shoes in the Commonwealth during the period under review. Since 1912, the amount of wages paid increased from £1,144,465 to £1,574,623; the value of materials used from £2,184,750 to £3,784,338; and the final output from £3,819,371 to £6,143,048.

(iii) *Quantity and Value of Production.* The number and value of boots, shoes, and slippers made at factories in each State are shewn in the following table :—

PRODUCTION OF BOOT AND SHOE FACTORIES, 1917.

Particulars.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
QUANTITY (,000 OMITTED).							
Boots and shoes pairs	3,784	6,211	757	613	197	172	11,734
Slippers pairs	389	213	18	15	2	..	637
Uppers <i>a</i> pairs	56	20	31	9	..	6	122
VALUE.							
Boots and shoes £	1,718,177	3,427,730	362,770	233,865	89,974	77,858	5,910,374
Slippers £	53,282	26,570	3,603	2,891	715	25	87,086
Uppers <i>a</i> £	17,922	6,100	12,225	2,899	..	1,610	40,756

a Made for other than factory use.

24. *Clothing (Tailoring and Slop) Factories.*—The importance of this industry in the several States and in the Commonwealth as a whole is shewn in the following table :—

CLOTHING (TAILORING AND SLOP) FACTORIES, 1917.

Items.	N.S.W. 1916-17.	Vic. 1916-17.	Q'land. 1917.	S.A. 1916-17.	W.A. 1917. ^a	Tas. 1917.	C'wealth.
Number of factories	442	448	140	125	58	35	1,248
Number of employees	9,857	9,904	3,437	2,162	952	487	26,799
Actual horse-power of engines employed	493	496	245	104	76	12	1,426
Approx. value of land and buildings £	1,076,781	576,435	253,508	157,474	102,515	67,309	2,234,022
Approx. value of plant and machinery £	66,019	83,884	37,875	15,420	10,319	3,201	216,718
Total amount of wages paid during year £	786,743	667,228	230,983	139,020	81,327	36,366	1,941,667
Value of fuel used	£ 11,256	£ 13,881	£ 5,150	£ 3,619	£ 1,942	£ 204	£ 36,052
Value of raw material worked up	£ 1,118,572	£ 1,422,740	£ 413,798	£ 217,131	£ 132,763	£ 51,568	£ 3,356,572
Total value of output	£ 2,407,601	£ 2,448,673	£ 798,455	£ 432,852	£ 258,794	£ 115,030	£ 6,461,405
Value added in process of manufacture £	£ 1,289,029	£ 1,025,933	£ 384,657	£ 215,721	£ 126,031	£ 63,462	£ 3,104,833

^a Including two dyeworks and cleaning establishments.

The substantial development that has taken place in the tailoring and slop branch of this industry may be accepted as an indication of the general prosperity of the community. The value of the output increased from £5,807,431 in 1912 to £6,461,405 in 1917, or approximately 11½ per cent.

DEVELOPMENT OF CLOTHING (TAILORING AND SLOP) FACTORIES IN THE COMMONWEALTH FROM 1912 TO 1917.

Items.	1912.	1913.	1914.	1915.	1916.	1917. ^a
Number of factories	1,238	1,342	1,340	1,297	1,274	1,248
Number of employees	31,068	30,965	29,774	28,616	28,232	26,799
Actual horse-power of engines used	1,206	1,201	1,257	1,323	1,647	1,426
Approx. value of land and buildings £	2,155,643	2,212,346	2,219,346	2,195,419	2,053,674	2,234,022
Approx. value of plant and machinery £	173,706	191,752	209,167	214,967	221,940	216,718
Total amount of wages paid £	2,010,779	2,075,916	1,979,088	1,895,146	1,889,195	1,941,667
Value of fuel used	29,550	31,219	31,825	33,312	34,767	36,052
Value of raw material worked up £	2,696,987	2,732,241	2,864,893	3,096,134	3,403,019	3,356,572
Value of final output	5,807,431	5,878,119	5,953,001	6,125,272	6,447,853	6,461,405
Value added in process of manufacture £	3,110,444	3,145,878	3,088,108	3,029,138	3,044,834	3,104,833

^a Including two dyeworks and cleaning establishments in Western Australia.

25. **Dressmaking and Millinery.**—Particulars of dressmaking and millinery establishments are given in the following table:—

DRESSMAKING AND MILLINERY ESTABLISHMENTS, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
Number of factories	319	448	54	50	48	13	932
Number of employees	5,833	9,021	1,518	824	737	278	18,211
Actual horse-power of engines employed	223	331	18	13	15	2	602
Approximate value of land and buildings £	440,589	466,470	42,493	35,154	45,095	6,450	1,036,251
Approximate value of plant and machinery £	23,964	54,651	8,285	2,658	4,342	652	99,552
Total amount of wages paid during year	230,764	438,932	66,699	34,427	38,890	13,557	873,269
Value of fuel used	2,889	3,885	545	434	588	..	13,341
Value of raw material worked up £	452,405	912,630	104,784	48,826	55,605	21,195	1,595,495
Total value of output	905,275	1,629,543	200,088	103,398	101,680	36,741	2,976,725
Value added by process of manufacture £	452,870	716,863	95,304	54,572	46,075	15,546	1,381,230

The development of dressmaking and millinery establishments in the Commonwealth during the past five years is shewn in the following table:—

DEVELOPMENT OF DRESSMAKING AND MILLINERY ESTABLISHMENTS IN THE COMMONWEALTH FROM 1912 TO 1917.

Items.	1912.	1913.	1914.	1915.	1916.	1917.
Number of factories	994	995	991	892	890	932
Number of employees	18,476	18,217	17,318	15,616	16,383	18,211
Actual horse-power of engines used	371	376	410	428	509	602
Approx. value of land and buildings £	878,231	939,072	956,416	917,895	974,766	1,036,251
Approx. value of plant and machinery £	74,466	72,257	79,182	79,357	82,057	99,552
Total amount of wages paid £	748,222	772,748	759,221	714,131	749,377	873,269
Value of fuel used	9,143	9,238	9,164	9,440	10,746	13,341
Value of raw material worked up £	1,249,930	1,287,050	1,272,420	1,224,687	1,266,755	1,595,495
Value of final output	2,429,315	2,482,105	2,429,133	2,364,862	2,481,266	2,976,725
Value added in process of manufacture £	1,179,385	1,205,055	1,156,713	1,140,175	1,214,511	1,381,230

The amount of wages paid increased nearly 17 per cent. during the last five years, and the final output 22½ per cent. during the same period.

26. **Electroplating, Stereotyping, Printing, and Binding.**—The industries comprised under this head have long been firmly established in the Commonwealth, and they continue to make steady progress. During the past five years, the amount of wages paid has increased 14.08 per cent., the value of raw materials worked up 63.48 per cent., and the value of the final output 26.49 per cent.

The following table gives particulars of these industries in each State for the year 1917 :—

ELECTROTYPING, STEREOTYPING, PRINTING, AND BINDING ESTABLISHMENTS, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
Number of factories	410	380	139	76	64	24	1,093
Number of employees	7,952	7,309	2,823	1,268	1,000	708	21,060
Actual horse-power of engines employed	4,183	3,693	1,369	977	720	227	11,169
Approximate value of land and buildings £	1,501,957	848,105	464,433	285,512	229,707	57,294	3,387,008
Approximate value of plant and machinery £	1,067,214	887,045	313,557	181,660	151,858	63,303	2,664,637
Total amount of wages paid during year £	1,029,609	892,315	356,212	152,101	153,781	92,202	2,676,220
Value of fuel used £	32,451	26,466	15,178	6,277	5,188	1,741	87,301
Value of raw materials worked up £	1,205,287	1,162,083	323,827	175,620	169,812	75,511	3,112,140
Total value of output £	2,855,782	2,809,757	1,000,279	433,837	441,776	233,869	7,775,300
Value added in process of manufacture £	1,650,495	1,647,674	676,452	258,217	271,964	158,358	4,663,160

27. **Coach and Wagon Building Works.**—This industry forms the principal branch of manufacture in Class XI. (see § 1, 3 above). The subjoined table gives particulars of factories in this branch of industry in each State. The returns include establishments for the manufacture of wheels, spokes, etc.

COACH AND WAGON BUILDING WORKS, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
Number of factories	229	299	74	83	39	22	746
Number of employees	2,090	2,341	562	629	242	154	6,018
Actual horse-power of engines employed	1,095	727	270	450	169	56	2,767
Approximate value of land and buildings £	331,600	254,210	60,933	89,738	49,155	23,742	809,378
Approximate value of plant and machinery £	90,923	65,395	19,850	28,570	10,119	4,248	219,105
Total amount of wages paid during year £	235,436	224,354	50,922	62,275	25,277	13,485	611,749
Value of fuel used £	9,640	9,062	1,515	3,035	1,958	485	25,695
Value of raw material worked up £	230,085	249,406	62,742	70,384	35,788	17,454	665,859
Total value of output £	574,952	593,611	157,280	171,274	81,636	42,148	1,620,901
Value added in process of manufacture £	344,867	344,205	94,538	100,890	45,848	24,694	955,042

28. Furniture and Cabinet Making and Billiard Table Making.—These industries constitute the principal manufactures in Class XIII (see § 1, 3 above). The following table gives particulars for each State :—

FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
Number of factories	184	191	65	25	31	9	505
Number of employes	2,431	1,843	1,043	692	332	226	6,567
Actual horse-power of engines employed	1,424	1,142	695	800	317	166	4,544
Approx. value of land and buildings £	316,156	234,140	95,139	59,545	56,608	18,710	780,298
Approx. value of plant and machinery	£ 68,523	51,100	37,137	28,649	12,482	6,313	204,204
Total amount of wages paid during year	£ 281,969	184,379	111,385	75,623	43,138	20,091	716,585
Value of fuel used	£ 7,658	4,240	2,576	1,755	1,339	263	17,831
Value of raw material used	£ 323,035	245,034	135,419	71,804	58,954	20,725	854,971
Total value of output	£ 708,828	524,611	305,101	164,623	116,384	53,760	1,873,307
Value added in process of manufacture	£ 385,793	279,577	169,682	92,819	57,430	33,035	1,018,336

29. Electric Light and Power Works.—Particulars of the electric light and power works of the Commonwealth for latest date available are given in the subjoined table. In 1912 there were 179 establishments employing 2,663 hands, whose salaries and wages amounted to £398,380; in 1917 these had increased to 261 establishments, 3,911 hands, salaries and wages £653,261, while the value of output had increased during the five years from £1,941,421 to £3,096,546.

ELECTRIC LIGHT AND POWER WORKS, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17. ^a	W. Aust. 1917.	Tas. 1917.	C'wealth.
Number of factories	124	74	14	12	22	15	261
Number of employes	1,156	1,144	363	885	242	121	3,911
Actual horse-power of engines employed	90,302	42,144	14,234	17,439	32,970	11,762	208,851
Approx. value of land and buildings	£ 923,054	344,665	37,527	167,511	182,618	14,534	1,669,909
Approx. value of plant and machinery	£ 2,097,443	1,787,477	211,182	883,721	535,757	333,522	5,849,102
Total amount of wages paid during year	£ 213,644	178,430	54,431	136,418	46,203	24,135	653,261
Value of fuel used	£ 333,702	129,743	38,826	65,699	89,696	7,930	665,596
Total value of output	£ 1,232,775	673,769	326,774	433,810	281,914	97,504	3,096,546

^a Including five gasworks.

30. Gas and Coke Works.—There are gas works in operation in nearly all the chief towns in the Commonwealth. In New South Wales there are thirteen and in Queensland two coke factories which are worked as separate industries. The subjoined table gives particulars of gas and coke works in each State :—

GAS AND COKE WORKS, 1917.

Items.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17. ^a	W. Aust. 1917.	Tas. 1917. ^b	C'wealth. ^c
Number of factories	57	47	18	..	4	3	129
Number of employes	1,857	2,093	534	..	58	152	4,694
Actual horse-power of engines employed	4,654	1,985	174	..	43	31	6,887
Approx. value of land and buildings	£ 975,330	475,830	192,049	..	21,568	35,944	1,700,721
Approx. value of plant and machinery	£ 1,915,714	1,250,470	919,480	..	64,748	159,483	4,309,895
Total amount of wages paid during year	£ 305,204	365,777	92,896	..	11,281	27,872	803,030
Value of fuel used	£ 82,305	4,406	10,430	..	4,332	3,356	104,829
Value of raw material used	£ 631,693	383,675	92,413	..	23,744	28,270	1,159,795
Total value of output	£ 1,744,731	1,181,096	300,857	..	60,260	79,297	3,366,241
Value added in process of manufacture	£ 1,113,038	797,421	208,444	..	36,516	51,027	2,206,446

^a Excluding five gasworks, particulars of which are not available for publication. ^b Including one establishment for the manufacture of electric apparatus. ^c Exclusive of South Australia.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1917 :—

PRODUCTION OF GAS AND COKE WORKS, 1917.

Particulars.	N.S.W. 1916-17.	Victoria. 1916-17.	Q'land. 1917.	S. Aust. 1916-17.	W. Aust. 1917.	Tas. 1917.	C'wealth.
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QUANTITY.

Gas made .. 1,000 cub. ft.	6,384,429	4,449,230	952,651	<i>a</i>	160,853	<i>a</i>	612,885,051
Coke tons	650,998	200,673	54,333	<i>a</i>	6,536	<i>a</i>	6955,681

VALUE.

Gas £	1,084,265	926,000	246,528	<i>a</i>	44,894	<i>a</i>	62,523,938
Coke £	538,364	175,000	41,096	<i>a</i>	9,523	<i>a</i>	6812,174

COAL USED.

Coal tons	998,617	317,450	98,292	<i>a</i>	12,537	<i>a</i>	61,493,568
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a Not available for publication.

b Including South Australia and Tasmania.

SECTION XIV.

WATER CONSERVATION AND IRRIGATION.

§ 1. Artesian Water.

1. **General.**—In every country in which droughts are recurrent, there are few problems the solution of which is of greater importance than that of an adequate system of water conservation. Much has been done in the Commonwealth so far as the supply of water to centres of population is concerned, and a description of several of the metropolitan water works will be found herein, viz., in the section dealing with *Local Government*. In May, 1912, an Interstate Conference on artesian water was held in Sydney, at which it was agreed that combined Governmental action should be taken with reference to delimitation of the artesian basin, hydrographic survey, analyses and utilisation of artesian water, &c. (See map on page 545.)

(i) *The Great Australian Artesian Basin.* In speaking of the "Great Australian Artesian Basin," the area is understood which includes (a) considerably more than one-half of Queensland, taking in practically all that State lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; (b) a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; and (c) the north-eastern part of South Australia proper, together with the extreme south-eastern corner of the Northern Territory. This basin (shewn approximately by the map on page 545) is said to be the largest yet discovered, and measures about 569,000 square miles, of which 376,000 square miles are in Queensland, 90,000 square miles in South Australia, 83,000 square miles in New South Wales, and 20,000 square miles in the Northern Territory. The area of the intake beds is estimated at 60,010 square miles, viz., 50,000 square miles in Queensland and 10,010 square miles in New South Wales. A description of the basin and its geological formation will be found in previous issues of the Year Book (see No. 6, p. 569).

(ii) *The Western Australian Basins.* The Western Australian Basins fall naturally within five distinct groups, viz., the Eucla Basin, in the extreme south-east of the State, extending well into South Australia along the shores of the Great Australian Bight; the Coastal Plain Basin, west of the Darling Range; the North-West Basin, between the Murchison and Ashburton Rivers; the Gulf Basin, between Cambridge Gulf and Queen's Channel; and the Desert Basin, between the De Grey and Fitzroy Rivers. The boring operations in these basins are referred to hereinafter (see page 536.)

The Recent and Tertiary strata which enter Western Australia at its eastern border, and which have a prevailing dip towards the Great Australian Bight, form the Eucla artesian water area. But where boring operations have been undertaken, the water has been found to be salt or brackish, and there are other conditions affecting the supply, such as local variations in the thickness of the beds, their relative porosity, and the unevenness of the floor upon which they rest, which, so far, have not been examined with sufficient thoroughness to enable many particulars to be given in regard to this basin.

In the Coastal Plain Basin to the west of the Darling Ranges artesian boring has, on the other hand, been carried on successfully for many years.

(iii) *The Murray River Basin.* The Murray River basin extends over south-western New South Wales, north-western Victoria, and south-eastern South Australia. It is bounded on the west by the azoic and palæozoic rocks of the Mount Lofty and other ranges, extending northwards from near the mouth of the Murray to the Barrier Ranges, and on the east and north-east by the ranges of Victoria and New South Wales. This tertiary water-basin is occupied by a succession of sedimentary formations, both porous and impervious. It is of interest to note that the waters of the Murray River are partly supplied by influx from the water-bearing beds of this basin; this is proved by the fact that, at low water, springs are observed at certain places flowing into it from beneath the limestone cliffs from Pyap Bend downwards. Similar springs exist along the courses of other branches of the River Murray system, where they cut through the tertiary formation. On the Victorian side several bores have been put down, and water has been struck at various levels.

(iv) *Plutonic or Meteoric Waters.* In previous Year Books will be found the theory of Professor Gregory¹ as to the origin of the water in the Australian artesian basin, together with the objections held thereto by a former Government Geologist of New South Wales.² (See Year Book No. 6, p. 570.)

(v) *Particulars of Artesian and Sub-artesian Bores.* The following table gives particulars of artesian and sub-artesian bores in each State and in the Northern Territory:—

COMMONWEALTH AND STATES.^a—PARTICULARS OF ARTESIAN AND SUB-ARTESIAN BORES, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust. ^d	W. Aust.	N. Ter.	Total.
Bores existing .. No.	493	224	3,312	144	115	154	4,442
Total depth bored .. feet	881,934	70,000	3,129,874	109,038	121,036	43,109	4,354,991
Daily flow .. 000 gals.	695,899	<i>b</i>	429,456	2,746	32,071	<i>b</i>	<i>b</i>
Depth at which artesian water was struck—							
Maximum .. feet	4,338	1,400	6,000	5,458	4,016	1,760	6,000
Minimum .. feet	89	150	10	65	175	60	10
Temperature of flow—							
Maximum .. °Fahr.	148	<i>b</i>	210	208	140	<i>b</i>	<i>b</i>
Minimum .. °Fahr.	70	<i>b</i>	81	82	60	<i>b</i>	<i>b</i>

^a There are no artesian bores in Tasmania. ^b Not available. ^c Incomplete.
^d Government bores only. ^e Exclusive of flow from pumping bores.

2. *New South Wales.*—(i) *Artesian Water Supply.* The New South Wales portion of the great Australian basin, comprising approximately 70,000 square miles, is situated in the north-western portion of the State. Artesian boring in New South Wales dates from 1879, when a private bore was put down on the Kallara pastoral holding, between Bourke and Wilcannia. The first Government bore was that at Goonery, on the Bourke-Wanaaring road, completed in 1884.

1. See J. W. Gregory, F.R.S., D.Sc.: "The Dead Heart of Australia," London, John Murray, 1906: "The Flowing Wells of Central Australia," *Geogr. Journ.*, July and August, 1911.

2. E. F. Pittman, A.R.S.M., formerly Government Geologist of New South Wales: "Problems of the Artesian Water Supply of Australia, with special reference to Professor Gregory's Theory." (Clarke Memorial Lecture, delivered before the Royal Society of New South Wales, 31st October, 1907); "The Great Australian Artesian Basin," Sydney, 1914; "The Composition and Porosity of the Intake Beds of the Great Australian Artesian Basin," Sydney, 1915.

The following statement shews the extent of the work which has been successfully effected by the Government and by private owners up to 30th June, 1918 :—

NEW SOUTH WALES ARTESIAN BORES, 1918.

Bores.	Flowing.	Pumping.	Total.	Total Depth.
For Public Watering-places, Artesian Wells, etc.	123	31	154	319,028
For Country Towns Water Supply	2	1	3	4,354
For Improvement Leases	39	3	42	66,287
Total Government Bores	164	35	199	389,669
Private Bores	223	71	294	428,169

The average depth is 1,958 feet in the case of Government bores, and of private bores 1,456 feet, and it ranges from 89 to 4,338 feet. The two deepest wells in New South Wales are those at Bbronga, in the County of Stapylton, with a depth of 4,338 feet and a present outflow of 941,887 gallons; and at Dolgelly, in the Parish of Carenga, in County Stapylton, with a depth of 4,086 feet, and a present discharge of 563,366 gallons per day. The largest flow at the present time is that at the Wirrah bore, in the County of Benarba, which yields 1,186,950 gallons a day, and has a depth of 3,578 feet.

Of the 544 bores which have been sunk, 387 are flowing, and give an aggregate discharge of 93,852,156 gallons per day; 106 bores give a pumping supply, the balance of 51 being failures; the total depth bored represents 881,934 feet.

The flow from 72 bores is utilised for supplying water for stock on holdings served in connection with Bore Water Trusts or Artesian Districts under the Water Act of 1912. The total flow from these bores amounts to 37,143,478 gallons per day, watering an area of 4,342,247 acres by means of 2,666 miles of distributing channels. The average rating by the Bore Trusts to repay the capital cost, with 4 per cent. interest, in twenty-eight years, is 1.5d. per acre, including the cost of maintenance and administration.

In the majority of cases the remaining bores are used by pastoralists for stock watering purposes only, but in a few instances the supply is utilised in connection with country towns.

The watering of the north-western country by means of bore water has largely increased the carrying capacity of the land; and, what is of perhaps greater importance, it has made comparatively small pastoral holdings practicable in country previously confined almost entirely to the operations of companies holding immense areas.

It having been determined that multiplicity of bores is the chief factor governing the annual decrease in bore flows, and also that limiting the discharge from a bore will prolong its flowing life, action has been taken to prevent any waste by controlling the bore flow to actual requirements. It is confidently anticipated that this action will materially reduce the rate of decrease in the future.

(ii) *Shallow Boring.* The scheme described in Official Year Book No. 9 (p. 520) for assisting settlers by sinking shallow bores has met with considerable success.

Operations commenced with one plant only, but the number has been increased gradually until fifteen plants are at work.

A large number of applications from settlers wishing to take advantage of the liberal conditions offered under the regulations has been received, and further applications are coming to hand daily, consequently the plants now in use will probably be insufficient to cope with the demand. Out of 232 bores put in hand up to 30th June, 1918, 27 have proved failures.

There can be no question that the added value of the holdings represented by the bores already put down is considerably in excess of their cost, and as fairly conclusive evidence of this, it might be stated that in several instances the Government Savings Bank has, on completion of a bore, made the settler a sufficient advance to enable him to pay the total cost in cash.

In addition to the work carried out under the Shallow Boring Regulations outlined above, shallow boring plants have sunk 18 bores in the Pilliga scrub and on Crown lands for the Lands and Forestry Departments.

The fact that of the bores put down in the Pilliga scrub, 38 are giving a flowing supply, adds much to their value, and is of special interest as indicating the possibility of tapping a small and hitherto unknown artesian basin.

(iii) *Private Artesian Bores.* Much has been done in the way of artesian boring by private enterprise. As far as can be ascertained, 321 private bores have been undertaken in New South Wales, of which 27 were failures. The yield of the flowing bores is estimated at over 40 million gallons per day. No data are available regarding the pumping bores.

3. *Victoria.*—Victoria lies altogether outside the Great Australian Artesian Basin, and as water is generally available from surface or shallow underground supplies, there has not been much occasion for artesian boring. As early as 1880, however, an artesian well was bored at Sale, which gave a large supply of water of fair quality before it failed through corrosion of the casing. In 1905 a new bore was put down, which at a depth of 277 feet yielded sufficient water to fill Lake Guthridge, a local depression. But as the water was impure, and contained an excess of sulphuretted hydrogen, boring operations were continued to 520 feet, when the lowering of the casing shut off the supply of water. A further bore was then put down at some distance from the first, and this, at a depth of 238 feet, yielded a fresh and clear water supply of about 145,000 gallons per day. Corrosion troubles occurred here also, and at the end of 1912 a third bore was put down to a depth of 235 feet, artesian flows being struck at 187 feet and 235 feet. Towards the end of 1915 a flow of 200,000 gallons per day was struck at a depth of 125 feet on the Powerscourt Estate, near Maffra. Other bores are being put down in the locality.

Largely due to the failure of surface supplies in the drought of 1878 to 1886, no less than 499 bores were, before the end of 1888, put down by shire councils aided by the Government. The total depth bored was 40,000 feet; fresh water was struck in 78 instances; 47 yielded brackish but usable water; 229 were salt, while the balance were dry. The bores covered practically the whole of the settled portions of Northern and North-western Victoria and parts of Gippsland.

In the late eighties a number of bores were put down in the north-western part of the State, varying from 200 to over 2,000 feet in depth, but without any notable success. In 1897 a Board reported on boring for artesian water supply in the Mallee country, but this report was adverse, except as regards the extreme northern portion thereof. In 1906 eight bores were put down on the Overnewton Estate, Maribyrnong, to depths varying from 147 to 272 feet; small supplies of good and medium water for stock purposes were obtained, but only one of the wells yielded water fit for domestic purposes. In 1908 boring was commenced in the Mallee country near the border east of Pinnaroo in South Australia, and a line of bores from the Border to Kow Plains has proved the existence of a large sheet of underground water. Altogether, 88 bores have been successful in striking fresh water, and their depths vary from 155 to 752 feet, the water rising to within from 207 to 6 feet of the surface. In three instances the bores flow, the water rising from

4 to 17 feet above the surface. The fresh water extends nearly as far east as the 142nd meridian, and its northern limit is approximately the 35th parallel.

At 30th June, 1918, the number of existing Government bores in use in Victoria was 84, from which supplies are obtained by pumping. The total depth bored amounted to 40,262 feet, while the maximum and minimum depths at which water was struck were 1,400 and 150 feet respectively. There are also about 140 existing private bores, with a total depth of about 30,000 feet.

4. **Queensland.**—A return relating to the 30th June, 1918, classifies the Queensland artesian bores under the following headings:—

QUEENSLAND ARTESIAN BORES, 30th JUNE, 1918.

Sunk by—	Artesian Flows.	Sub-Artesian or Pumped Supplies.	In Progress, Abandoned, or Uncertain.	Total.
Government	62	73	116	251
Local governing authorities	15	21	17	53
Private owners	1,105	1,096	807	3,008
Total	1,182	1,190	940	3,312

Of the 1,182 flowing bores, 125 were of less than 10,000 gallons per day; 266 from 10,001 to 100,000 gallons; 493 from 100,001 to 500,000 gallons; 280 from 500,001 to 1,500,000 gallons; 15 from 1,500,001 to 2,000,000 gallons; and 3 from 2,000,001 gallons upwards. The deepest well was about 40 miles west of Blackall, lying east of the Barcoo River; this had a depth of 6,170 feet, and was stated to yield 107,300 gallons daily. Further sinking is in progress. The flow is, of course, a comparatively small one, many wells yielding, when uncontrolled, from one to three million gallons a day. The waters of many of the wells have been analysed, and some found suitable for wool-scouring only, others are suitable for watering stock but not for irrigation, owing to the presence of alkali; others again serve for both stock and irrigation, while some, such as those containing sulphuretted hydrogen, are not of any use. Water fit for stock may generally be said to be "safe" for domestic purposes in spite of its slightly mineral taste. The wells yielding the mineral waters known as "Helidon Spa," "Boonah Spa," and "Junot Spa," which are much in use in Queensland and New South Wales, are shallow wells from 60 to 200 feet in depth.

The following table shews particulars as to Queensland bores at the end of June, 1918:—

QUEENSLAND ARTESIAN AND SUB-ARTESIAN BORES, 30th JUNE, 1918.

Particulars.	State and Local Authorities.	Private.	Total.
Bores existing No.	304	3,008	3,312
Total depth bored feet	253,236	2,876,638	3,129,874
Daily flow gallons	33,784,650	395,671,840	429,456,490
Depth at which artesian water was struck—			
Maximum feet	4,256	6,000	..
Minimum "	167	10	..
Temperature of flow—			
Maximum °Fahr.	198	210	..
Minimum °Fahr.	84	81	..

5. **South Australia.**—There were in South Australia 144 Government bores existing at 30th June, 1918, of which 35 were artesian and 109 sub-artesian. There are 107 under 1,000 feet in depth, 23 from 1,000 to 2,000 feet; 6 from 2,000 to 3,000 feet; 5 from 3,000 to 4,000 feet, and 3 over 4,000 feet. The deepest flowing bore was at Patchawarra, on the Farina to Haddon, *via* Innamincka, route, measuring 5,458 feet, but yielding only 200 gallons per day. The maximum flow, *viz.*, 1,250,000 gallons, is obtained at Coonie Creek, east of Lake Frome.

The following table shews particulars as to South Australian bores at 30th June, 1918:—

SOUTH AUSTRALIAN BORES, 1918.

Particulars.	Artesian and Sub-artesian.
Bores existing	144
Total depth bored feet	109,038
Daily flow gallons	*
Depth at which water was struck—	
Maximum feet	5,458
Minimum feet	65
Temperature of flow—	
Maximum °Fahr.	208
Minimum °Fahr.	82
Total cost of construction of bores up to end of year	£290,275
Expenditure during year on boring operations	£4,323

* Not available.

(i) *Bores between the Murray and the Eastern Boundary of the State.* The sinking of bores across the Ninety-mile Desert between the Murray and the Victorian boundary was commenced in 1886 at Coonalpyn; with the exception, however, of salt water at 55 feet, no success was met with. Ki Ki bore was sunk in 1887, and at 361 feet a good supply of water fit for stock was struck. Tintinarra bore was sunk in 1887; it was artesian when first tapped. The water was found to be fit for locomotive engines and is still used for that purpose. The bore at Emu Flat was also sunk in 1887. In 1904 a bore was sunk at Cotton, and numerous successful bores have since been put down by the Public Works Department, and subsequently by residents of the district. The water rises to a distance from the surface of from 15 to 320 feet, and the maximum quantity obtained per diem is 48,000 gallons at the Gosden bore. Several wells, ranging in depth from 55 to 221 feet, have also been sunk in this district. The latest Government bores are Kumara in the Hundred of Kingsford, and Perponda in the Hundred of Vincent. The former has a depth of 240 feet, and the water, which is in large supply, rises to within about 96 feet of the surface. The latter is 300 feet in depth, and the water rises to within 56 feet of the surface. The water is fresh, containing about $\frac{3}{4}$ oz. salts and other solid matter per gallon.

(ii) *Bores West of Oodnadatta.* A series of bores has been sunk, beginning with Breden bore, 20 miles west of Oodnadatta, which was put down in 1911. The others since put down in this district are at Gypsum, Imbitcha, Mirackina, Raspberry Creek, Appreentina, Wintinna, and Marla. Of these, the only artesian supply is at Raspberry Creek, where 1,000,000 gallons per day of good water is obtained. The depths of these bores range from 280 feet at Mirackina to 1,122 feet at Breden, and the water from all of them is good.

(iii) *Other New Bores.* New bores are being sunk at Montecollina on the Innamincka track, about 6 miles north of Box Flat; Carraweena, on the Innamincka track, about 3 miles north of Carraweena Head Station; and Stuart's Range, about 90 miles west of William Creek.

(iv) *Eyre Peninsula*. From time to time bores have been sunk on Eyre Peninsula, but with little success. In some instances, stock water (1½ ozs. salts to the gallon) was obtained, but this only occurred on the Nullarbor plains. In all other cases the water struck was far too salt to be used. Consequently the supply of water is now principally from catchments. A number of reservoirs have been constructed to hold from 1,000,000 to 9,000,000 gallons each. Many underground tanks have been built to contain from 40,000 up to 500,000 gallons each.

6. *Western Australia*.—The work by which the Government of Western Australia provides a permanent supply of water to Kalgoorlie, Boulder and adjacent districts on the eastern goldfields comes properly under the heading of "Water Supply Works." A description of this undertaking is fully given in previous issues of the Year Book. (See No. 6, p. 576.)

In August, 1912, the administration of the Goldfields Water Supply and of the Mines, Water Supply was transferred to a newly established Water Supply, Sewerage and Drainage Department. The statistics in connection with this department will be found in the section of this book dealing with *Local Government*.

The following table shews particulars as to Western Australian artesian bores at 30th June, 1918 :—

WESTERN AUSTRALIAN ARTESIAN BORES, 30th JUNE, 1918.

Particulars.	State.	Private.	Total.
Bores existing	66	49	115
Total depth feet	81,092	39,944	121,036
Daily flow gallons	23,864,700	8,206,700	32,071,400
Depth at which artesian water was struck—			
Maximum feet	4,016	*	..
Minimum feet	175	*	..
Temperature of flow—			
Maximum °Fahr.	140	*	..
Minimum °Fahr.	60	*	..

* Not available.

To 30th June, 1918, the total number of Government bores was 66, and there were approximately 49 private bores recorded in addition. The total cost of construction of State bores to 30th June, 1918, was about £140,128, of which amount £1,537 was expended during the twelve months ended 30th June, 1918. The maximum outflow, 4,000,000 gallons per day, was obtained at Leederville in connection with the Metropolitan Water Supply at 2,097 feet.

The boring operations which have been carried out in the artesian basins along the West Australian Coast are as follows :—

(i) *The Coastal Plain Basin or Perth Area*, which, generally speaking, extends from Cape Leeuwin to Dongarra, and from which the Metropolitan Water Supply is largely drawn, yields a supply of water mostly fresh and suitable for domestic purposes, though towards the north it becomes brackish and is only suitable for stock purposes.

There are 57 bores in the Metropolitan District, several of which have been put down to augment the hills supply and the domestic supply of the suburbs, and Fremantle is largely dependent upon this source.

(ii) *The North-west Basin or Carnarvon Area* may be said to extend from Gantheaume Bay in the south to Onslow in the north, and embraces a very large tract of ideal sheep country.

Many private bores have been put down on sites which permit of the gravitation of the water for miles, and, by this means, a very considerable area has been put under stock. Some remarkable flows have been obtained and, in one case, at a depth of 300 feet a flow reputed to be 3,000,000 gallons per day was struck, the water being suitable for stock.

In all, about 27 bores have been put down.

(iii) *The Gulf Basin or Broome Area.* So far very little development work has been done. Artesian bores have been put down in the town site, and the domestic requirements of the town are entirely supplied from this source.

The area extends from Condon in the south-west to the Meda River beyond Derby in the north, and for a considerable distance inland.

So far only 5 bores have been sunk, 2 being at Broome and 2 at Derby, and 1 on the telegraph line on the road between Derby and Hall's Creek, about 67 miles inland.

(iv) *Eucla Area.* This area extends from Eucla, on the South Australian border, to west of Israelite Bay. So far, beyond the bores put down on the route of the Trans-Australian Railway, very little has been done in proving the resources of this area.

In 1902 the first bore was sunk, about 35 miles north of Madura, and sub-artesian water struck at 430 feet, at an elevation of 400 feet above sea level.

Following upon this, a deep bore was put down at Madura, below the cliff and nearer the coast, when an artesian supply of stock water was obtained at a depth of 2,101 feet, yielding 31,000 gallons per day.

This was followed later with about 20 bores along the survey line of the proposed railway, which runs east and west about 90 miles inland. These bores were put in at intervals between the 205 mile peg and the South Australian border, and ranged in depth between 323 and 1,344 feet. In most instances only stock water was struck at depths varying between 300 and 1,300 feet, and the largest estimated supply was about 10,000 gallons per day.

7. **Northern Territory.**—In the Northern Territory, bores to the number of 154 were put down up to 30th June, 1918, 45 belonging to the Commonwealth Government. This number does not include bores put down by hand-boring plants for test purposes. One bore is artesian, and 153 give a pumping supply. The cost of construction and equipment of the Government bores was £20,276. The total depth bored in State bores was 10,396 feet; in the 109 private bores, it was 32,713 feet. Maximum depths were 1,474 feet in State, and 1,760 feet in private bores, and minimum depths were 110 feet and 60 feet respectively.

§ 2. Irrigation Schemes.

1. **General.**—Australia's first experiments in irrigation were made with the object of bringing under cultivation areas in which an inadequate rainfall rendered agricultural and even pastoral occupations precarious and intermittent, and, although these original settlements have for the most part proved fairly successful, most of the States, instead of promoting new settlement in unoccupied regions, are adopting the policy of making existing settlement closer, by repurchasing big estates and large farms, subdividing them into holdings of suitable sizes for cultivation, and selling the land upon easy terms of payment. It is in connection with this Closer Settlement policy that the special value of irrigation is recognised.

2. *New South Wales.*—(i) *Water Conservation and Irrigation Works.* The provision of an adequate water supply for other than domestic purposes is essential to the well-being of all primary industries, and particularly in a country liable to dry seasons which affect extensive areas. A large portion of the State receives an adequate and regular rainfall, but there is a considerable extent of country where all the factors exist which are requisite for success in agricultural pursuits excepting only a constant water supply. The recognition of the fact that the area suitable for cultivation might be extended largely by a comprehensive system of water conservation and irrigation has induced the Government to undertake various detached works and schemes, which will constitute portion of the ultimate irrigation system necessary to serve the whole State.

The system, and the works necessary to its maintenance and development, within the State of New South Wales, are under the control of the Water Conservation and Irrigation Commission, which consists of the Minister for Agriculture for the time being as Chairman, and two other Commissioners. The works controlled by the Commission include the great Murrumbidgee Irrigation Scheme, the small irrigation settlements at Hay and Wentworth, natural works of water conservation, shallow boring for settlers, and water trusts and artesian bore trusts operating under the Water Act. The Commission has control also of storages and diversions of water by private persons for purposes of conservation and irrigation.

(ii) *Murrumbidgee Irrigation Scheme.* The main features of the scheme include the storage dam across the Murrumbidgee to retain the floodwaters, which will be released for use lower down the river during the dry summer months; a movable diversion weir, about 240 miles below the dam, to turn the required amount of water from the river into the main canal; a main canal, leaving the river near the weir; four main branch canals; and a series of subsidiary canals and distributing channels through the area to be irrigated; bridges, checks, regulators and other structures throughout the entire system, and meters for measuring the volume allowed to each farm; towns and villages, also roadways to serve each farm, and a general surface drainage system, are also included in this scheme.

The site of the storage dam is at Burrinjuck, three miles below the confluence of the Murrumbidgee and Goodradigbee Rivers. The dam wall is being constructed of cyclopean masonry and concrete, and when completed will have a maximum height of 240 feet, and will impound the waters in a lake covering 12,740 acres. Ample water is being stored to meet the requirements of the farms already occupied, and to allow of water being drawn off during the summer months to augment the natural flow of the river for the benefit of riparian holders down stream. The reservoir will have a capacity of 33,612 million cubic feet, or 771,641 acre feet, the catchment area being about 5,000 square miles, drained by three principal streams—the Murrumbidgee, Goodradigbee, and Yass Rivers—up which the water will be backed, when the dam is full, to distances of 41 miles, 15 miles, and 22 miles respectively. Direct communication between Burrinjuck and the Main Southern railway has been provided by the construction of a 2-ft. gauge line from Goondah, a distance of 26 miles.

The diversion weir is situated at Berembed, about 40 miles by river and 19 miles in a direct line above the town of Narrandera. It is founded on a solid granite bar extending across the river, and has a length over all of 270 feet between abutments, divided into a sluiceway 40 feet wide in the clear; a lock chamber, 40 feet wide, capable of taking barges up to 100 feet in length; and 55 channoiné wickets, manipulated from a punt moored up-stream. During the winter freshets the wickets are lowered, thus affording a clear water-way in the river channel.

The main canal branches from the river just above the weir, and, after passing through Narrandera, continues in a north-westerly direction, skirting the hills abutting on the plains. A scheme for enlarging the main canal to double its present capacity (1,000 cubic feet per second) has been recommended by the Public Works Committee. The principal canals are the Gogeldrie canal, which off-takes at 47 miles from Berembed, and runs approximately parallel to the Narrandera-Hay railway through

the Yanco area ; the Mirrool branch canal, which off-takes at 78 miles from Berembed and supplies portion of the Mirrool area ; and the Northern branch canal now under construction, which off-takes at 76 miles from Berembed.

The irrigation area is situated on the northern side of the Murrumbidgee River, where it is anticipated that there will ultimately be upwards of 200,000 acres under irrigation in blocks devoted to fruit and vegetable growing, dairying, stock-raising, &c. With the aid of irrigation the soil and climate of these areas are suitable for the production of apricots, peaches, nectarines, prunes, pears, plums, almonds, melons, cantaloups, and citrus fruits, also wine and table grapes, raisins, sultanas, figs, olives, and most varieties of vegetables and fodder crops. Dairying and pig-raising are already being successfully undertaken by settlers in the areas.

The first area made available for settlement was in the vicinity of Yanco Siding on the Hay railway line. The second, which is situated on the northern side of the Mirrool Creek, is served by the branch railway from Cootamundra, which now terminates at Griffith, but which it is proposed to extend to Hillston.

Further areas are being thrown open for settlement as the construction works are completed. Farms varying in size from 2 acres to over 200 acres have been made available. The "water right" or number of "acre feet" of water allotted to each holding is specified when the holding is notified as available for application. An "acre foot" of water means such a quantity, 12 inches deep, as would cover an area of one acre. The cost of water is five shillings per acre foot. The charge for water is reduced during the early years. For the first year the charge is 2s. 6d. per acre foot, thereafter increased annually by sixpence per acre foot until in the sixth and following years the full rate of five shillings becomes payable. The average "all-irrigable" farm is about 50 acres, but to suit the requirements of dairymen and other stock farmers, blocks of larger areas have been made available. These comprise non-irrigable or "dry" areas, in addition to the irrigable portion. Some of these larger farms are 200 acres or upwards in extent, but the maximum water right allowed in respect of any of these larger farms is 80 acre feet. Additional water may be obtained, if available, by arrangement.

The conditions for the disposal of irrigation blocks are contained in the Crown Lands Consolidation Act of 1913, and Amending Acts. Any person of or over the age of sixteen years, if a male, or eighteen years if a female (other than a married woman not living apart from her husband under decree of judicial separation), or two or more such persons jointly, may apply for a farm or block. A married woman, not judicially separated from her husband, may, however, if she be not subject to any other statutory disqualification, (a) acquire by way of transfer, with the consent of the Minister, out of her own moneys, a lease within an irrigation area ; (b) continue to hold a lease which she held before her marriage ; (c) hold a lease which may devolve on her by will or intestacy of a deceased person. The tenure is perpetual leasehold.

The improvement conditions attached to the farm holdings include fencing, planting of trees for windbreaks, construction of dwellings, and destruction of noxious plants.

Subject to such conditions as to security and terms of repayment as the Commission may think fit to impose, settlers may obtain an advance, or have payment of amounts owing suspended. Such advances are limited to the total amount of funds made available by Parliament for this purpose.

The Government Savings Bank Commissioners have statutory power to make loans upon mortgage of irrigation farm leases, and many settlers have already obtained help from the Bank. Concessions in railway fares and freights are made on New South Wales railways to bona fide applicants for land.

A large area of land on the Mirrool section of the areas has been specially reserved for discharged soldiers, and a camp and barracks have been established at which selected applicants are accommodated, and after satisfactory service for a period of three months, are granted farms. While in camp soldiers are employed upon clearing and other work in connection with the development of their blocks, and are paid award rates while so engaged. Sleeping accommodation and meals are provided, in respect of which a

deduction from the wages is made. Upon taking up residence on their farms these settlers will, subject to their intelligent and energetic use of the advances made, as well as their own labour, in the improvement of their farms, be provided with funds up to £625 to enable them to develop their holdings, and in addition thereto such further advances may be made from time to time as found necessary to bring the farms to a proper stage of productiveness. All payments for rent, etc., and repayments of advances will be suspended in the case of fruit farms for five years and in the case of dairy farms for two years from the date of granting of the farm. The total indebtedness including interest will then become payable by instalments extending over a period of twenty years.

Towns and villages have been established at centres of the Yanco and Mirrool Irrigation Areas. The Commission is empowered to construct streets, and to provide water supply, sanitary, and other services.

An up-to-date butter factory is in operation at Leeton. The output for the year under review was approximately 202 tons, from between 120 and 130 suppliers. The factory also supplies ice to town residents and settlers. A fruit and vegetable canning factory has also been provided, which purchases vegetables and fruits grown by the settlers, and the output is rapidly increasing. A bacon factory and abattoirs have been erected at Yanco, where about 400 pigs, including a considerable number from other districts in the Riverina outside the irrigation areas, are treated weekly, and where stock for butchers is slaughtered for local consumption.

To assist settlers on the Mirrool area, which is situated over 30 miles from Leeton, a cheese factory has been opened at Griffith. A good marketable cheese is being produced.

One of the most important departmental undertakings on the irrigation areas is undoubtedly the State Nursery. For some years past the Leeton Nursery has been supplying trees to settlers, and in 1916 a second nursery was established at Griffith. Every effort is made to supply only the very best trees, free from disease, and to ensure this, as much use as possible is being made of budding wood from proven trees in the Leeton Nursery, and at the Yanco Experiment Farm.

The Department of Agriculture, which controls the Yanco Experiment Farm, has also established at Griffith (Mirrool irrigation area), a Viticultural Nursery for the propagation of vines on phylloxera resistant stocks. These stocks are intended not only for the supply of settlers on the areas, but for vignerons in all parts of the State.

An electric power station has been erected near Yanco Siding; electric light and power are supplied to the various factories, business people, and residents of Leeton and Yanco, and the supply is also available for settlers when the number of applicants in any centre warrants the connections being made.

On the 30th June, 1918, 790 farms were held, representing a total area of 34,465 acres, and the number of town blocks held was 202.

In the matter of cultivation, the following particulars indicate the extent of the work performed by the settlers:—3,536 acres under stone fruit, 462 under pome fruit, 1,986 under citrus fruits, 1,210 under vines, and 345 acres under mixed fruits. Particulars as to the area under fodder crops in 1918 are not available. The estimated population of the areas is about 7,000.

(iii) *Other Irrigation Settlements.* Irrigation settlements have been established at Curlwaa near Wentworth, and at Hay. These were in 1913 placed under the control of the Water Conservation and Irrigation Commission.

(a) *Curlwaa Irrigation Area.* The Curlwaa Irrigation area embraces 10,600 acres, of which 1,373 acres have been subdivided into 95 irrigable blocks. On 31st December, 1918, 92 blocks, comprising 1,369 acres, had been taken up, in areas of $1\frac{1}{2}$ to 37 acres. There are also 92 non-irrigable holdings of from $\frac{1}{2}$ to 336 acres, comprising 7,119 acres, of which 89 blocks, representing an area of 7,100 acres, were in occupation on the above date. An area of 1,290 acres has been reserved as a common. The balance of the area is made up of road, channel and other reserves. During 1917-18 approximately 1,100 acres were under cultivation, the greater part being devoted to fruit, including oranges,

peaches, apricots, nectarines, pears, grapes, sultanas, and currants. It has been proved beyond doubt that the Curlwaa soil is eminently suited to the growth of citrus and other kinds of fruit. Some of the finest oranges grown in New South Wales are produced on this area.

The estimated weight of dried fruits produced on the Curlwaa area in the year 1917-18 was 6,580 cwt., the principal yields being sultanas, 2,188 cwt.; peaches, 1,315 cwt.; currants, 1,362 cwt. In the previous year the product was 7,022 cwt.; in 1915-16 it was 5,955 cwt.; in 1914-15 it was 3,178 cwt.; in 1913-14, 5,118 cwt.; and in 1912-13, 4,247 cwt. The heaviest crops have been sultanas and currants. The value of the dried fruit production for the twelve months ending 30th June, 1918, is estimated at £20,173; in addition to which the area produced fresh fruit, crops, and other produce of the value of £8,923.

The pumping machinery consists of a suction-gas plant, supplying two engines of about 55 brake horse-power each, working two centrifugal pumps, with an average combined capacity of about 4,600 gallons per minute. With five pumpings during the 1917-18 season, 98,576,280 cubic feet of water were supplied. The length of the main channels is about 8 miles 55 chains. The land may be leased for periods not exceeding 30 years, the annual rent at present varying from 1s. to 10s. per acre. The rate for water is fixed from time to time by the Commission, and is at present, except in a few special cases, 20s. per acre per annum. Each lessee is entitled to receive a quantity of water equivalent to a depth of 30 inches per annum, limited to 4 inches in any one month.

(b) *Hay Irrigation Area.* The Hay irrigation area consists of about 4,160 acres, and previous to 1913 was controlled by a Trust appointed in 1897. On 30th June, 1918, the area held and used for irrigation purposes was 1,002 acres, in 105 blocks of from 3 to 34 acres. The term of lease is generally 30 years, and the annual rental from 5s. to 12s. per acre. In addition, there was at that date an area of 2,040 acres of non-irrigated land taken up in 43 blocks as permissive occupancies. The water rate is fixed from time to time, and during 1917-18 was £1 5s. per acre per annum. The pumping machinery is of similar type to that at Curlwaa, the capacity of the pumps being 4,000 gallons per minute. During the 1917-18 season 89,907,840 cubic feet of water were pumped. Dairying is the principal industry; the cultivation of fruit is very limited.

(iv) *Projected Irrigation Schemes.* The Water Conservation and Irrigation Commission are investigating schemes for storing water for the purpose of irrigation on the Darling, Lachlan, Macquarie, Hunter, Namoi, Peel and Warragamba Rivers.

(a) *Murray River.* The effect of constructing the Upper Murray storage will be to ensure at all times sufficient flow below Albury to permit of diversions for irrigation and stock and domestic supplies, and also to make good the losses in the river due to seepage, evaporation, and lockages. The Act provides that, subject to certain conditions, New South Wales and Victoria shall have the regulated flow of the river at Albury, and shall each have the full use of all tributaries of the River Murray, within its territory below Albury, with the right to divert, store, and use the flows thereof.

It is estimated that the New South Wales regulated river flow after the construction of the Upper Murray storage will amount to at least 120,000 acre feet per month at Albury during the irrigating season, and this will permit of a considerable amount of irrigation development along the river.

An investigation is being made into the manner in which the New South Wales proportion of the Murray waters can be most profitably applied, but as yet no conclusion has been reached.

(b) *Darling River.* A preliminary investigation has been made of the Darling River, which shews that the most suitable site for the storage of large volumes of water is in the lake system to the east of the river, comprising Lakes Boolaboolka, Ratcatcher, and Victoria, and a number of other lakes (seventeen in all) fed from the river in high floods from the Talyawalka Creek, which takes off from the river about 260 miles above Menindie. Further investigation is required to determine the area which can be commanded from the storage.

(c) *Lachlan River.* The construction of a storage reservoir at Wyangala, below the confluence of the Abercrombie River, has been investigated with the intention of affording water in the river channel for pastoral purposes and for the irrigation of small areas along the river banks by pumping. A proposal is also being investigated for the increase of the storage in Lake Cudgellico, which is fed from the Lachlan River, and for the pumping thence of the water for the irrigation of an area of about 5,000 acres adjacent to the lake. The possibility of regulating the amount of water lost in numerous effluent creeks is being considered, so that the best use may be made of the Lachlan River water.

(d) *Macquarie River.* The construction of a storage reservoir has been proposed on the river at Burrendong, below the confluence of the Cudgegong River, for the purpose of affording water by gravitation for the irrigation of certain lands to the west of Narramine. Smaller schemes for the construction of storage dams at White Rock, and on Campbell's River, at Bathurst, have also received consideration. The run-off from this catchment is somewhat uncertain, and before giving consideration to the construction of any State irrigation scheme, further investigation is necessary.

(e) *Hunter, Namoi, and Peel Rivers.* Pumping by private irrigators under the Water Act is increasing at such a rapid rate that in the case of some of the rivers, such as the Peel and the Hunter, it will not be possible to supply the pumps in dry seasons until head storage works have been constructed. Surveys have been completed for storage dams on the Hunter and Peel Rivers and for a dam on the Namoi River above Manilla. Further investigations are about to be undertaken on the Hunter River with a view to the possibility of constructing low weirs on various portions of the river.

(f) *Warragamba River.* The Warragamba project will serve the dual purpose of amplifying the Sydney Water Supply and irrigating the best lands in the Nepean Valley. The rate of increase in the population of the metropolitan area during recent years, if maintained, will in a short space of time cause the consumption of water to overtake the capacity of the present catchment area of the Sydney water supply, and the next available source of supply will then be the Warragamba River, a scheme for the storage of water from which has been prepared. It is proposed to construct a large storage dam capable of supplying about 200,000,000 gallons daily for water supply, irrigation and trade purposes, and for compensation water. Surveys have been made and details are being prepared of this scheme, which has been submitted to the Public Works Committee.

(v) *Water Rights.* By Part II. of the Water Act 1912, the right to the use and flow and to the control of the water in all rivers and lakes which flow through, or past, or are situate within the land of two or more occupiers is vested in the Crown. Private rights are abolished, riparian law is simplified, and a system of licenses is established for the protection of private works of water conservation, irrigation, water supply, drainage, and the prevention of inundation of land. The enactment prevents litigation and determines the rights of riparian owners.

Despite the fact that during the year ending 30th June, 1918, the rainfall was favourable, 102 applications were received for fresh licenses, comprising 68 in respect of pumps, or pumps in conjunction with dams or other works, 32 in regard to dams, and 2 respecting races. An identical number of applications was received for the renewal of existing licenses; 60 of the applications were in respect of pumps, in some cases used in conjunction with dams or other works, 39 respecting dams, and 3 race and cuttings. Approximately, 1,186 licenses were in force on the 30th June, 1917, and in the succeeding twelve months 78 new licenses were issued and 35 were allowed to lapse, so that there were about 1,229 licenses current on the 30th June, 1918.

(vi) *Water Trusts and Bore Trusts.* Part III. of the Water Act 1912 provides for the supply of water either for irrigation, stock, or domestic purposes, and for drainage, the liabilities on which are repaid to the Crown, with interest spread over a period of years, and the works are administered by trustees appointed from among the beneficiaries under the Act; except in the case of trusts in the Western Division, where the Western Land Board is appointed as trustee. For the supply of water, trusts have been constituted in connection with (a) seventy-five artesian wells; (b) eight schemes for the improvement of natural off-takes of effluent channels, for the purpose of diverting

supplies from the main rivers; (c) in four instances for the construction of weirs across stream channels (one trust has since been dissolved); and (d) two pumping schemes, one from natural watercourses, and one from a well. The total area included within these trusts amounts to 6,726,382 acres.

3. Victoria.—(i) *Classification of Works.* The Water Conservation Works in Victoria divide themselves into irrigation works proper, and those providing mainly a domestic supply, such as the works for the supply of Melbourne, controlled by the Melbourne and Metropolitan Board of Works; the Coliban, Wonthaggi, Broken River, Kerang Lakes, Naval Base and Mornington Peninsula, and Mallee Supply Works, administered by the State Rivers and Water Supply Commission, and other works for domestic supply controlled by Water Works Trusts or Municipal Corporations. With the exception of the works administered by the Commission, particulars as to these works will be found in the section on *Local Government* in this volume.

(ii) *Works Controlled by the Commission.* All the irrigation schemes (with the exception of that of the First Mildura Irrigation and Water Supply Trust), and the more important domestic and stock water-supply works in rural districts, are vested in and controlled by the State Rivers and Water Supply Commission, a body composed of three members, which was created by the Water Act 1905, now incorporated in the Water Act 1915.

(A) IRRIGATION SCHEMES. This division comprises the schemes constructed and under construction for the supply of water to some twenty irrigation districts. Up to 1906 these schemes were controlled by local Trusts, which had obtained the moneys for their construction on loan from the State. By the Water Act 1905 all local control was abolished except in the case of Mildura, and the districts were transferred to the State Rivers and Water Supply Commission. Since that date the Government has adopted a vigorous irrigation policy, and the capital expenditure at 30th June, 1918, on water supply in the irrigation and water supply districts under the control of the Commission, and at Mildura, was £4,155,000. The irrigation works draw their supplies mainly from headworks constructed on the Murray, Goulburn, and Loddon Rivers. The cost of these headworks, which now stands at £1,123,000, is not debited to any particular districts, but is borne by the State. The extent of land under irrigated culture, for all kinds of crop, is 175,000 acres, notwithstanding the recent abnormally wet seasons, the rainfall during the last two years in the irrigation districts being generally at least 50 per cent. above the average.

The following particulars of the principal schemes will be of interest, and will convey some idea of the extent to which the one-time arid northern portion of this State is now insured against droughts like that of 1902, when the combined capacities of its storages for irrigation by gravitation were only 75,000 acre feet, and of its pumping plants, 400 acre feet per day.

(a) *Goulburn Scheme.* The Goulburn River Gravitation Scheme (see map on page 547) is the largest of Victoria's irrigation enterprises. It serves, either for irrigation or domestic and stock purposes, 867,000 acres of land in the valleys of the Goulburn, Campaspe and Loddon Rivers. The present headwork of the system is a diversion weir on the Goulburn River, near Nagambie. It is constructed of concrete masonry, with 21 flood gates, which raise the up-stream water level 10 feet above the concrete crest. These gates are lowered, during high stages of river flow, to provide a clear waterway for the discharge of floods. The weir has a total length, including channel regulators, of 925 feet, and a height of 50 feet. The water is diverted by two main channels, the eastern carrying 330 cubic feet per second (660 acre feet per day) a distance of 33 miles to the country north of the Broken River, while the western, which has a capacity of 1,700 cusecs,* and a length of 23 miles, is used to feed distributaries of the Rodney District and to fill Waranga Reservoir, the present principal storage basin of the scheme. This reservoir, formed by an earthen embankment $4\frac{1}{2}$ miles long across a natural depression, covers an area of 19 square miles to an average depth of 16 feet, and stores 197,000 acre feet. Works now in progress will raise the full supply level of this reservoir by ten feet, and increase the storage capacity to 330,000 acre feet. Two main channels issue from this reservoir, the Waranga-Rodney, of 250 cusecs* capacity, which feeds Rodney

* Cusecs = Cubic feet per second.

distributary channels, and the Waranga-Campaspe-Serpentine, which leaves the reservoir with a capacity of 1,000 cusecs, and ends at the Serpentine Creek, 92 miles westward, with a capacity of 200 cusecs. The total length of distributary channels is 1,600 miles.

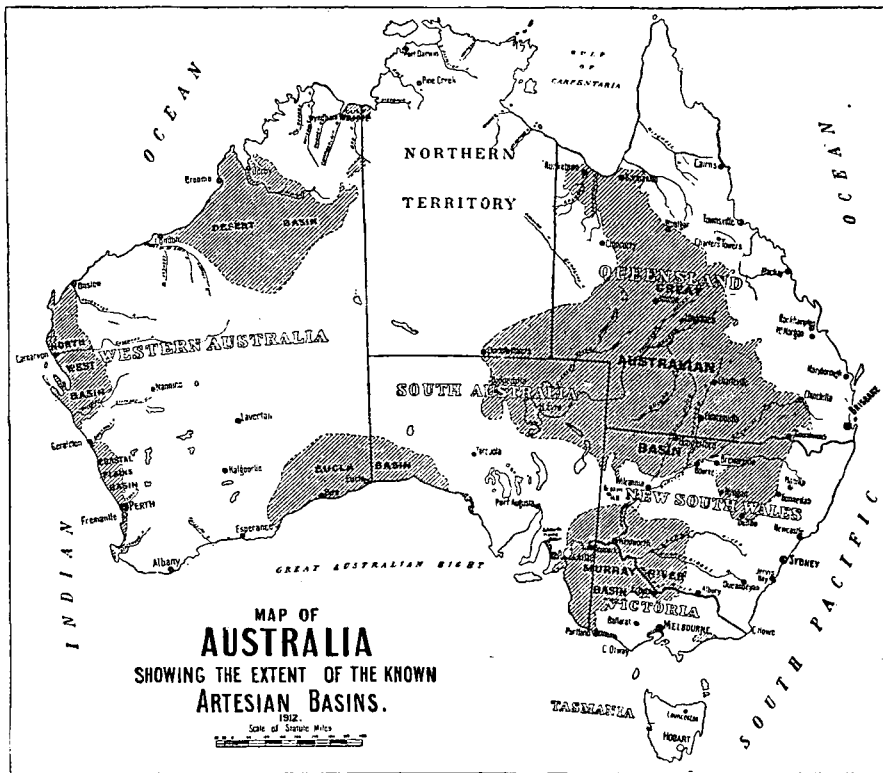
The portion of the State served by this system comprises 19,000 acres east of the Goulburn, 564,000 acres between the Goulburn and the Campaspe, and 284,000 acres between the Campaspe and the Loddon. These areas include the irrigated Closer Settlements at Shepparton, Tongala, Rochester, and Dingee (see "Closer Settlement in Irrigation Districts," page 265), in which annual water rights are allotted of not less than one acre foot of water to each acre of irrigable land. They include also the districts formerly controlled by the Rodney and Tragowel Plains Irrigation Trusts, in which districts, generally, the holdings are larger than in Closer Settlement areas. The water rights in these districts are, for lands under intense culture, one acre foot of water to each irrigable acre, and for other irrigable lands, one acre foot to four irrigable acres in the former district, and one to five in the latter. The balance of the area, including Deakin district, while not subject to a compulsory irrigation charge, is provided with a domestic and stock supply, and water is sold for occasional irrigation on application. The amount of the compulsory charge for irrigation water allotted as a "right" is at present 6s. per acre foot in the two districts—Tragowel Plains and Dingee—farthest removed from the sources of supply, and 5s. per acre foot elsewhere. With a view of meeting the increasing demand for water in dry seasons, and providing an irrigation supply for other suitable lands, the Commission is constructing a storage reservoir on the Upper Goulburn, just below its junction with the Delatite River, at what is known as the Sugarloaf site. The dam, which is 2,550 feet in length, consists of a diaphragm wall of reinforced concrete, built from bed rock (in some places 75 feet below natural surface) to crest level 135 feet above the river bed; a wall of clayey material on the upstream side of the diaphragm; and supporting masses of rock. This reservoir will submerge an area of 7,600 acres, and store about 300,000 acre feet of water, bringing the total capacity of the Goulburn storages to 630,000 acre feet. The foundations of the Sugarloaf structure will permit of the dam being raised, if necessary, to a height of 190 feet above the river bed. This would add 8,600 acres to the area submerged, and would increase the storage capacity from 300,000 to 900,000 acre feet.

(b) *Loddon River Scheme.* This also is wholly a gravitation system. The headwork is a regulating weir on the Loddon at Laanecoorie, about 22 miles westerly from Bendigo. This weir is constructed of concrete masonry with "Chaubart" automatic floodgates five feet high for a length of 320 feet, combined with an earthen embankment, the length over all being 940 feet. Its storage capacity is 14,000 acre feet. Other works of the scheme are timber diversion weirs at Serpentine and Kinypanial, 80 and 120 miles downstream respectively, also 160 miles of channels (taken over from several irrigation Trusts in the Boort district) which supply an area of 74,000 acres for domestic and stock purposes and partial irrigation.

(c) *Murray River Schemes.* These comprise both gravitation and pumping schemes. The only wholly gravitation system is that known as the Kow Swamp scheme, which supplies the Kerang irrigation district of some 85,000 acres. The off-take is at Torrumbarry headworks, from which the Gunbower channel diverts water, when the Murray River is five feet above summer level, to the Kow Swamp storage, a natural depression improved so as to hold a volume of 41,000 acre feet. From this reservoir the water is distributed by the Macorna channel (40 miles in length) and about 200 miles of distributaries.

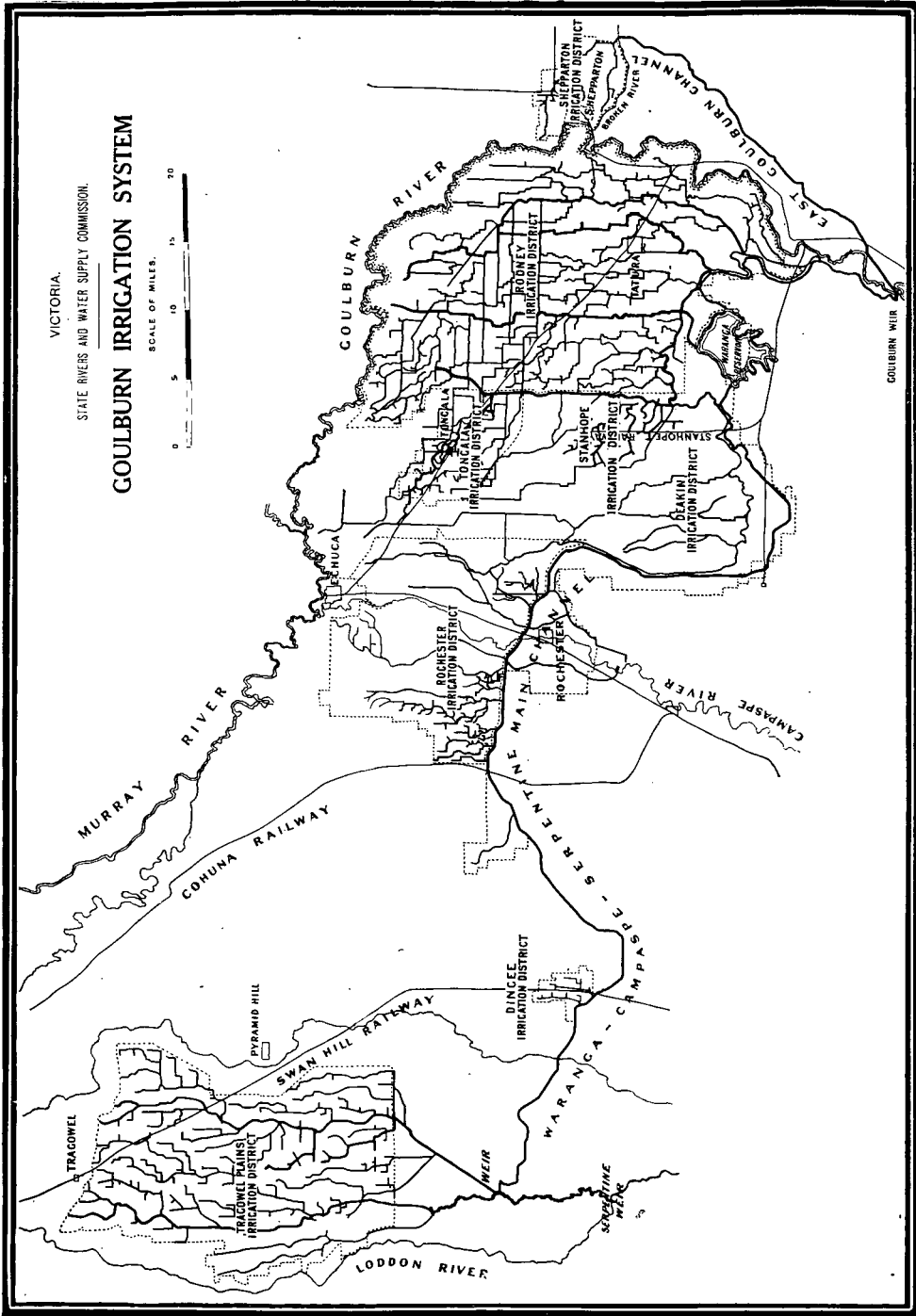
The Cohuna, Gannawarra, Koondrook and Swan Hill Schemes are combined gravitation and pumping schemes. The Cohuna-Gannawarra plant consists of two 36 inch and four 39 inch centrifugal pumps—total capacity 280 cusecs; those at Koondrook and Swan Hill, each of 100 cusecs capacity, consist each of two 39 inch centrifugal pumps. The pumped supplies are supplemented at varying stages of river level by the gravitation water.

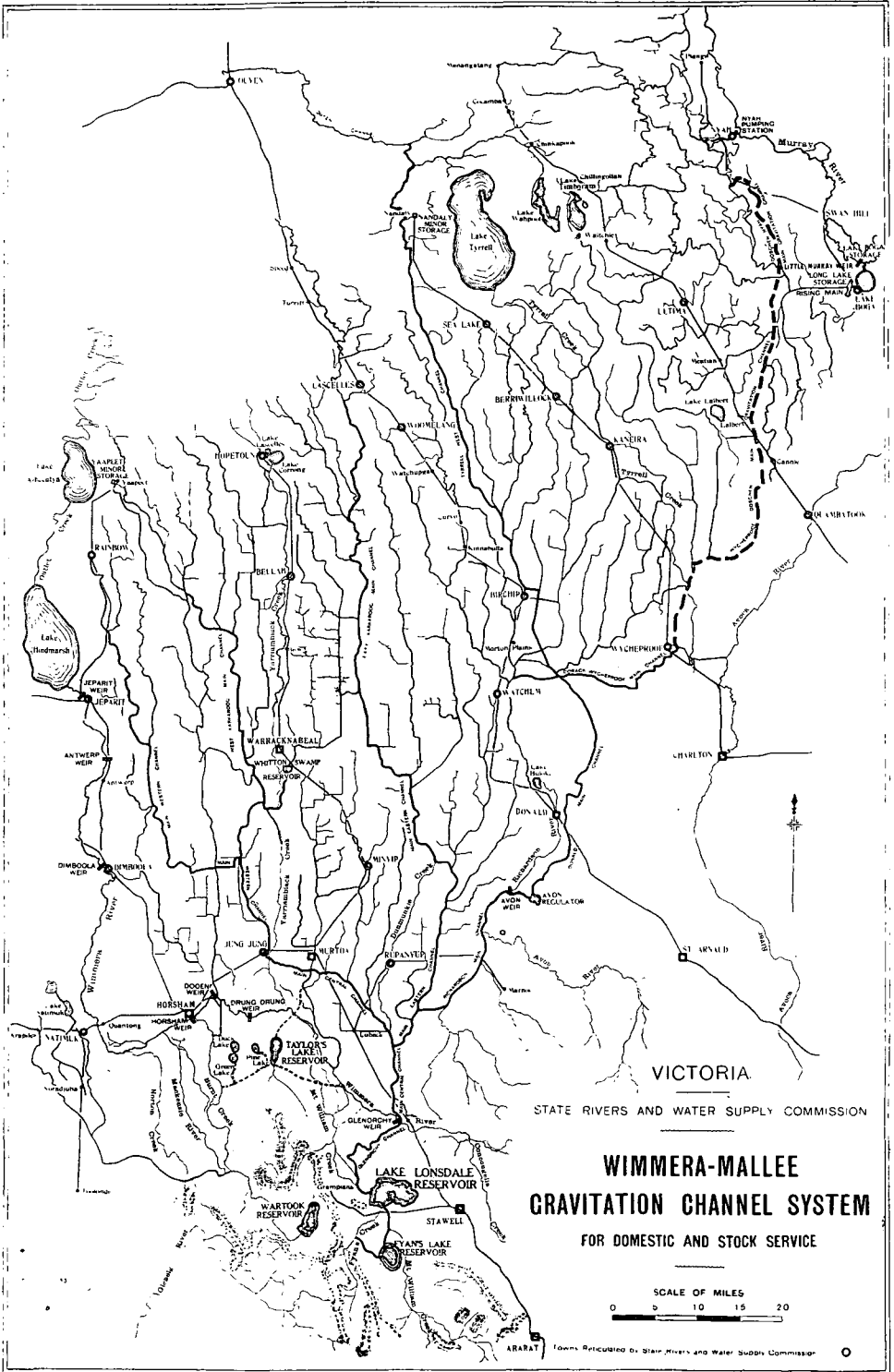
MAP SHEWING THE POSITION AND EXTENT OF THE "AUSTRALIAN ARTESIAN BASINS."



This map was prepared by the Interstate Conference on Artesian Water, held in Sydney during May, 1912. It contains the latest facts relative to the various artesian basins of the Australian continent. Of these basins the most important is the Great Australian Basin, which is about 569,000 square miles in extent, viz.:—About 376,000 square miles in Queensland, 90,000 square miles in South Australia, 83,000 square miles in New South Wales, and 20,000 square miles in the Northern Territory. The Murray River Basin extends over South-Western New South Wales, North-Western Victoria, and South-Eastern South Australia. The Western Australian Basins fall naturally within five groups, viz.:—The Eucla Basin, the Coastal Plains Basin, the North-West Basin, the Desert Basin, and the Gulf Basin. (See also pages 530 to 537.)

VICTORIA.
STATE RIVERS AND WATER SUPPLY COMMISSION.
GOULBURN IRRIGATION SYSTEM





The Cohuna, Koondrook and Swan Hill Districts, comprising 106,000 acres, embrace the irrigated Closer Settlements of the same names. In these districts and that of Gannawarra (comprising 44,000 acres) the quantity of water allotted as a "right" is one acre foot per irrigable acre. The compulsory charge is at present 5s. per acre foot of such water right. In Kerang district—not under a compulsory irrigation charge—water is sold to irrigators on application at a charge not exceeding 3s. per acre foot of water supplied.

The Nyah Irrigation Area was occupied in 1894 under village settlement conditions, settlers being allowed up to 50 acres each. Individual attempts at irrigation having proved unsuccessful, a Government scheme was prepared for the whole settlement. A number of settlers surrendered portions of their holdings, which were too large for effective working, and these portions, with adjacent Crown lands, were re-subdivided and made available, under the Murray Settlements Act 1907, on easy terms. Water is diverted from the Murray by a high lift pumping plant—capacity 25 cusecs—consisting of two coupled 24 inch turbine centrifugal pumps. The settlement now contains 149 holdings, of an average area of 19 acres, of which 139 are settled. Water rights are apportioned to these holdings on the basis of $2\frac{1}{2}$ acre feet of water for each irrigable acre, and the compulsory charge is at present 14s. per acre foot of such water rights. The land is devoted mainly to vineyards and orchards, and the settlers, taken as a whole, are making good progress.

The Merbein Irrigation Area (formerly known as White Cliffs) comprises 6,800 acres of what, nine years ago, were Crown lands. This settlement now contains 283 holdings, averaging 24 acres each, so highly improved as to sell, as orchard properties, at prices up to £250 per acre. The water is pumped from the Murray by a plant of four turbine centrifugal pumps—lift 96 feet, capacity 50 cusecs—and one 36 inch high lift centrifugal pump, capacity 50 cusecs. The land settlement conditions and water rights apportioned are the same as at Nyah, but the compulsory charge is at present 15s. per acre foot. In 1917-18, the production at Merbein comprised some 2,600 tons of dried fruits, 5,000 tons of distillery grapes, and 45,000 cases of fresh fruits, of a total value of £173,000, an average of about £28 per acre occupied.

(d) *Werribee River Schemes.—Bacchus Marsh.* The headwork of this gravitation scheme is a reservoir of 15,000 acre feet capacity on Pyke's Creek, a tributary of the Werribee, the in-take from the creek catchment being supplemented by a tunnel through a dividing spur, which taps the Werribee River near Ballan. The dam, 1,000 feet in length and 100 feet in height, is built of earth, with dwarf concrete core. The area of the district is 6,600 acres—half of which is irrigable—and includes some of the richest lucerne land in the State. The annual water right is one acre foot per irrigable acre, and the present compulsory charge is £1 per acre foot of such right. The higher portion of the district receives a supply for domestic and stock purposes.

Werribee. This is another gravitation scheme on the same river. The headwork is a reservoir at Melton, immediately below the Bacchus Marsh district. The dam is of earth, with dwarf concrete core. Its length is 600 feet; height 100 feet, and the storage capacity of the reservoir 17,000 acre feet. A diversion weir at Werribee, 71 miles downstream from the reservoir, a main channel therefrom, and the usual distributaries and appurtenant works, complete the scheme. The irrigation district comprises some 7,000 acres of first-class land, being the irrigable portion of the Werribee Closer Settlement Estate, which is within 20 miles southwesterly of Melbourne. Most of this land is settled, and the balance is held for discharged soldiers. The water right allotment is one acre foot per irrigable acre, and the charge at present is 10s. per acre foot. The non-irrigable portion of the estate, containing about 13,000 acres, is supplied with water for domestic and stock purposes.

(B) DOMESTIC AND STOCK SCHEMES. (a) *General.* The second division takes into account the schemes constructed and under construction for the supply of water for domestic and stock purposes, the capital expenditure on which at 30th June, 1918, was £5,082,000. The area of country lands artificially supplied with water for these purposes is nearly 21,000 square miles. The number of towns supplied, exclusive of the City of

NOTE.—Cusecs = Cubic feet per second.

Melbourne and its suburbs, is 157, serving an estimated population of 293,000. In addition to the Commission's districts, some large areas are still administered by local authorities.

(b) *Wimmera-Mallee System.* The principal scheme in this division is that known as the *Wimmera-Mallee Gravitation Channel System*. This comprehensive scheme of works will compare favourably, it is believed, with any similar individual scheme, for domestic and stock service, in any part of the world. The main supply is drawn from three reservoirs in the catchment area of the Wimmera River, at the foot of the Grampians Ranges, viz.:—Lake Lonsdale, Wartook, and Fyans Lake. A fourth—Taylor's Lake—now under construction, is nearing completion. The reservoirs in use have a combined storage capacity of 86,000 acre feet. The completion of the works in progress, and other minor works, will bring this total to 122,000 acre feet. The water is conveyed, partly by natural water-courses, but chiefly by artificial channels, aggregating over 3,600 miles in length, over farming districts comprising about 8,500 square miles, approximately one-tenth of the whole State (see map on page 548).

(c) *Naval Base and Mornington Peninsula Scheme.* Another scheme in this division which calls for mention here is the *Naval Base and Mornington Peninsula Scheme*. This comprehensive scheme—prepared at the request of the Naval Authorities—is for the supply of water to the Flinders Naval Base, and for the service of fifteen townships en route, including Berwick, Beaconsfield, Pakenham, Aspendale, Chelsea, Carrum, Frankston, Mornington, and Hastings. An ample supply of water is obtainable from the headwaters of the Bunyip River, which drains some 30 square miles of forest country above the point of off-take. The works are already well advanced, those portions which more directly affect the Naval Base being expedited so as to give water to that important area before the end of the present year.

(d) *Flood Protection.* The Water Acts of Victoria provide for the Constitution of Flood Protection Districts, in which the residents are rated for schemes carried out for their benefit. The works are constructed, and Districts administered by the State Rivers and Water Supply Commission. Under these provisions the Commission is carrying out extensive schemes at Koo-wee-rup and Cardinia, in the south-eastern portion of the State.

(iii) *Mildura.* The creation of an irrigation colony at Mildura was the outcome of a visit by Mr. Deakin to California in 1885, when Messrs. Chaffey Bros. were invited to visit Victoria, with the object of founding a similar settlement to those which they had been largely instrumental in establishing in California.

Active operations were commenced in 1887, since which date marvellous progress has been made, instanced in the fact that, originally used as a sheep run and carrying one sheep to every thirty acres, the dried fruit harvested from 12,000 acres in 1916 was valued at £683,000 gross.

Water is pumped and supplied under Act of Parliament by the first Mildura Irrigation Trust from the river Murray from two pumping stations, viz.:—(1) into a billabong, and thence to pumps lifting to various levels, and (2) to a comparatively small area adjacent to the town.

The length of the Trust's main and subsidiary channels is 280 miles. For the year ending 30th June, 1918, the Trust's receipts aggregated £29,499, and its expenditure £31,457. For the same period the number of water acres supplied was 22,871.

Loans (balance) advanced to the Trust by the Government for the purpose of improving the plants and channels, &c., amounted at 30th June, 1918, to £84,893, exclusive of the sum of £10,224 (balance) arrears of interest.

The area of the settlement is 45,000 acres, of which 12,000 acres are under intense culture, vines predominating.

4. *Queensland.*—The main irrigation works in Queensland are as follows:—(a) those at Ayr, which utilise the waters of the Burdekin River, and shallow wells on its banks; (b) those at Bingera, near Bundaberg, which utilise water pumped from the Burnett River just above the point of meeting of the salt and fresh waters, and (c) those

at Fairymead, which utilise water pumped from a number of shallow spear wells sunk on the alluvial flats on the north side of the Burnett River and about six miles from Bundaberg. There were 533 irrigators in the State in 1917, chiefly farmers and graziers, and the area irrigated was 4,467 acres.

5. South Australia.—(i) *The Renmark Irrigation Trust.* The Renmark Irrigation Trust was established in 1893 on similar lines to Mildura, but on a smaller scale. The area of settlement is 21,000 acres, the area under irrigation being 5,270 acres. There are also 1,000 acres under crop for hay. The dried fruit pack for 1917 was 2,350 tons, green fruit 2,300 tons, and the gross value of the production for that year was £126,000. The population of the town and settlement is 3,000. The chief products are sultanas, currants, raisins, oranges, apricots, peaches, pears, olive oil, and grape spirit. There are two distilleries for the manufacture of grape spirit.

(ii) *Other Waterworks.* A number of country water works are under the control of the Public Works Department. As, however, they are not irrigation works properly so called, but are used for supplying water for domestic purposes, &c., to several towns, no further reference will be made to them in this chapter. (See Section xxvi., *Local Government.*)

(iii) *Area under Irrigation.* Until 1910, irrigation in South Australia, with the exception of the schemes already mentioned, made little, if any, progress; but in that year an Irrigation and Reclamation Works Department was created, and the preparation of land for irrigation settlements has since been vigorously pursued.

The functions of the Department cover (a) the reclamation of the swamp lands along the lower reaches of the Murray, which are watered by gravitation, and (b) the preparation of the sandy loam highlands for intense culture, the water, after being pumped from the river, being distributed by concrete channels. A number of the small settlements along the River, originally established as village settlements, were taken over by the Department, and the areas available for reticulation extended and offered for occupation. These include Waikerie, with an irrigable area of 2,680 acres, in addition to 5,801 acres of "dry" land; Kingston with 405 acres of irrigable and 3,106 of "dry" land; and Moorook with 2,950 acres, of which 1,110 acres can be irrigated. The new areas commenced by the Department were Berri, where 3,190 acres of irrigable land and 3,100 acres of "dry" land have been allotted to 166 settlers. In this area lands now being prepared for allotment to returned soldiers comprise 3,100 acres of "irrigable" and 2,266 acres of "dry" land. Portion is already planted and being occupied by discharged soldiers. Another 1,500 acres of irrigable land is being surveyed and will be available shortly. The adjoining area of Cobdogla, the preliminary survey of which has been completed, contains approximately 30,000 acres of first-class land suitable for intense culture, in addition to 111,000 acres of "dry" land. Of the first section of this area, comprising about 2,000 acres, which can be watered from a lift of about 20 feet, 186 acres have been allotted and 1,650 acres are ready for allotment. When completed, this settlement will be supplied from four distinct pumping plants, two on the River Murray at different points, and two on Lake Bonney at the north and south ends respectively. This lake is fed from the river by means of Chambers' Creek, and comprises an area of 4,000 acres. At Cadell an area of 2,726 acres has been acquired, 1,170 acres of which are first-class irrigable land; this is now being prepared by the Department for settlement. The reclaimed swamps, which have already been completed and allotted, comprise 3,600 acres, while other swamp lands of about 3,200 acres are in course of reclamation.

A recent innovation has been the preparation of joint schemes of reclaimed and irrigable land, the swamps being reclaimed and the adjoining sandy loam highlands channelled, thus enabling the adoption of dairying, fodder growing, and stock raising in conjunction with horticulture. The areas comprise, Myppolonga, 1,627 acres of reclaimed land, 1,086 acres of irrigable, and 3,053 acres of "dry" land; Wall, 619 acres of reclaimed land, 160 acres of irrigable and 208 acres of "dry" land; Pompoota, 560 acres of reclaimed land, 250 acres of irrigable land, and 3,277 acres of "dry" land; Jervois, 960 acres of reclaimed land, 290 acres of irrigable land, and 290 acres of "dry" land; Swanport, 108 acres of reclaimed, 88 acres of irrigable, and 27 acres of "dry" land; Neeta, 946 acres of reclaimed, 866 acres of irrigable, and 1,057 acres of "dry" land;

Cowirra, 850 acres of reclaimed and 1,438 acres of "dry" land. Mypolonga and Wall have been allotted, the latter to returned soldiers, and Pompoota is being utilised as a training farm for returned soldiers. The other areas have yet to be allotted for settlement. The reclaimed lands consist of peaty soils composed of rich river silt, and are eminently suited for the growth of lucerne and other fodders, onions, potatoes, etc. The soils of the irrigable lands have already proved their suitability for the production of peaches, apricots, nectarines, oranges, lemons, figs, and grapes.

All lands are allotted under perpetual lease, and blocks are surveyed into areas varying up to 50 acres of irrigable or reclaimed land. No lessee is permitted to hold more than 50 acres of irrigable or reclaimed land or of both irrigable and reclaimed, except that in the case of a partnership 50 acres may be allotted for each member of the partnership up to a maximum of 150 acres. In addition, areas of non-irrigable land are allotted to lessees of irrigation and reclaimed blocks for dry farming. The rentals of the blocks are fixed by the Land Board immediately prior to the land being offered for application. For the reclaimed land an amount is charged sufficient to cover interest on cost of land and reclamation, while for the irrigable land the rent is based on the unimproved value of Crown lands, or to cover interest on cost of repurchased lands.

On the irrigable land, the water rate has been fixed at 40s. per acre per annum for the first four years, after which an amount will be charged sufficient to cover actual cost of supplying water, and interest on pumping plant, channels, etc. On the reclaimed lands an amount is charged to meet annual management, drainage, and maintenance expenses. A sliding scale covers the rent on all land, and water rates on the irrigable land for the first four years, *i.e.*—first year, one-quarter of the rent and water rate; second year, one-half; third, three-quarters; fourth and afterwards, full amount per acre. On the irrigable lands, each lessee is entitled for the water rate to 24 acre inches per annum, supplied in six irrigations; special irrigations and domestic supplies are supplied at times other than during the general irrigations, at a nominal cost. On the reclaimed lands, water is supplied regularly by reticulation from the river.

The Department assists settlers by fencing, clearing, grading, and constructing irrigation channels and tanks. Such improvements are undertaken up to a value not exceeding £15 per acre of the irrigable area in each lessee's block, but before the work is commenced a deposit must be paid equal to 15 per cent. of the Department's estimated value of such improvements. The total cost of the work, less deposit, is treated as a loan to the lessee, and is repayable in twenty equal annual instalments after the expiration of five years, or at any shorter period if desired by the lessee; current rate of interest being charged. Any lessee is permitted to accept the contract for carrying out his own improvements according to the specifications and estimates of the Department, up to the maximum amount per acre, as mentioned above. Advances can be obtained from the Advances to Settlers Board for the purchase of stock, discharging mortgages, erecting permanent buildings, and other improvements, the first £400 being advanced on the fair estimated aggregate value of the settler's lease, and any improvements already made on the holding, and those in course of being made thereon. Any loan beyond £400 would not exceed 15s. in the £1 of the fair estimated value of the improvements already made.

In the section dealing with Closer Settlement (page 267) the subject of irrigation areas in South Australia has already been referred to.

6. **Western Australia.**—An Irrigation Act has been brought into force providing for the constitution of irrigation districts. At Harvey the works for irrigating about 4,000 acres devoted to fruit growing, principally oranges, were contemplated, and formally opened on the 21st June, 1916. A scheme is now in preparation for irrigating a further area of about 4,600 acres in the same district.

Numerous small private irrigation schemes are in full operation on many of the south-west rivers, in connection with fruit, fodder, and potato growing.

7. **Murray Waters.**—(i) *Water Rights of States.* The relative rights of the States of New South Wales, Victoria, and South Australia to the waters of the Murray River being undetermined, negotiations which had been in progress for some considerable time resulted in the passing of the River Murray Waters Act 1915. Territorially the

south bank of the Murray River was the boundary between New South Wales and Victoria. The region of the river itself, up to the point of its entry into South Australia, was wholly within the former State. At the Federal conventions which preceded the establishment of the Commonwealth, the South Australian delegates expressed their fear lest too much irrigation on the Murray and its tributary, the Darling, might impair the navigability of the lower waters of the river. The result was the insertion of a provision in the Commonwealth Constitution, which reads as follows (Section 100):—

“The Commonwealth shall not by any law or regulation of trade or commerce abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.”

(ii) *Conferences.* After considerable controversy, a conference was held in Melbourne in January, 1911, between the Premiers of New South Wales, Victoria, and South Australia, on the Murray Waters question. The main results of the conference were that Lake Victoria and certain lands adjacent thereto situated within New South Wales territory should be handed over by New South Wales to South Australia for purposes of a storage basin, and that South Australia might lock her own portion of the Murray at her own expense; no rights of navigation were conceded by New South Wales and Victoria, who would not bind themselves to deliver any quantity of water at the point of intake into South Australia; the upper portions of the river were left free for irrigation.

In 1913 the three States appointed a Board of engineers to carry out investigations, with a view to ascertain means which would lead to a settlement of the whole question of the waters of the Murray and its tributaries. The Board in its report recorded its belief that the interests of irrigation are more important than those of navigation, and that the heavy expense of maintaining the latter is not warranted; suggestions relative to the apportionment between the three States concerned, of the river waters and of the works contemplated for their conservation, were also made. (See Official Year Book, No. 7, page 510.)

In April, 1914, further discussion took place at the Premiers' Conference in Melbourne, certain resolutions being agreed to by the Prime Minister of the Commonwealth and the Premiers of New South Wales, Victoria, and South Australia. (See Official Year Book, No. 8, page 507.)

(iii) *Legislation.* The necessary authority having been given by the Parliaments of the three States concerned, the Commonwealth River Murray Waters Act was passed in 1915, and on 31st January, 1917, was brought into operation. The procedure to be followed in the construction of works is set out. All works under the agreement will be constructed by the Constructing Authorities of the States concerned (New South Wales, Victoria, and South Australia). Each of these bodies is to prepare and to submit to the Commission a general scheme of the works to be constructed by it, with designs and estimates. The approval of the Commission is to be given before the commencement of any work embodied in the scheme. The Constructing Authority is then authorised to proceed with the work in accordance with the approved designs and estimates.

(iv) *Constitution of the Commission and its Activities.* The Commission was constituted on 31st January, 1917, and consisted of four members, representing respectively the Governments of the Commonwealth, New South Wales, Victoria, and South Australia. Steps were immediately taken to obtain information regarding investigations, surveys, works, gaugings, diversions, etc., theretofore made. The contracting State Governments were requested to expedite the submission of their general schemes, particularly with a view to providing employment to returned soldiers, and making available suitable areas for soldier settlements on the banks of the Murray.

The principal works authorised are a storage of one million acre feet, to be created by the construction of a dam on the Upper Murray above Albury. This work is to be constructed by New South Wales and Victoria conjointly. After exhaustive investigations, the Constructing Authorities of these States submitted to the Commission for its approval the site at the junction of the Murray and Mitta rivers. This site was approved, as were also the designs and estimates for the work.

From the storage dam to Echuca, the river will not be locked, but from Echuca to Blanchetown in South Australia, 26 weirs and locks will be constructed, affording a navigable depth at all times for vessels drawing 5 feet of water. Seventeen weirs and locks above Wentworth will be constructed by Victoria and New South Wales jointly, and nine below Wentworth by South Australia. The Act also provides for the construction by the Government of New South Wales of nine locks and weirs in the Murrumbidgee River from its junction with the Murray River to Hay. Prior to the constitution of the Commission, South Australia had commenced the construction of one of its locks, viz., that at Blanchetown. Despite delays due to heavy floods, the work has proceeded expeditiously, and is well advanced. Designs and estimates in regard to locks Nos. 2, 3, and 9 have also been submitted to the Commission, which, subject to certain reservations, has given its approval, and has authorised the commencement of the work. Plans and estimates of the remaining weirs and locks are in course of preparation. The New South Wales and Victorian Governments have submitted their general scheme of the works to be undertaken by them on the Murray between Wentworth and Echuca. Designs and estimates of a proposed weir and lock at Torrumbarry, near Echuca, have been submitted and approved. The ceremony of turning the first sod was performed on 14th June, 1919. Surveys and investigations are proceeding with a view to the location of the sites for the whole of the weirs and locks contemplated on this section of the river.

A system of storage is to be provided in Lake Victoria, to be constructed and controlled by South Australia. Designs and estimates have been approved by the Commission, and the work, providing for a storage of 500,000 acre feet of water, has been authorised.

The total expenditure involved by the construction of the works covered by the Act was, in 1914, estimated at £4,663,000, of which the Commonwealth Government agreed to contribute £1,000,000, and the three States interested, the balance in equal shares. It is anticipated that the estimate will be exceeded, owing to recent increases in cost of material and in wages.

The effect of constructing the River Murray storage will be to insure at all times sufficient flow below Albury to permit of diversions for irrigation, and stock and domestic supplies, and also to make good the losses in the river due to seepage, evaporation, and lockages. The Act provides that, subject to certain conditions, New South Wales and Victoria shall share the regulated flow of the river at Albury, and shall each have the full use of all the tributaries of the River Murray within its territory below Albury, with the right to divert, store, and use the flows thereof. It is estimated that the New South Wales regulated river flow after the construction of the Upper Murray storage will amount to at least 120,000 acre feet per month at Albury during the irrigation season, except in a period of phenomenal drought, such as 1902-3 and 1914-15.

(v) *Finance.* The estimates of the Commission for 1917-18 amounted to £419,972, and included the expenditure incurred by the three Constructing Authorities prior to 31st January, 1917, amounting to £193,000. The estimate for 1918-19 is £209,000.

(vi) *Plant.* Plant necessary for the construction of works will be supplied by each of the Constructing Authorities at its own cost, and charges on a uniform scale will be made for the use of such works, against the works to be constructed out of the funds of the four contracting Governments.

(vii) *Gaugings.* Steps have been taken to arrive at a uniform system of gaugings.

SECTION XV.

COMMERCE.

§ 1. Introductory.

NOTE.—From the 1st July, 1914, the Trade Year, which was formerly the Calendar Year, was altered to coincide with the Fiscal Year (July to June).

1. **Constitutional Powers of the Commonwealth in regard to Commerce.**—The powers vested in the Commonwealth Parliament by the Commonwealth Constitution Act with respect to oversea trade and commerce will be found on page 21 (sub-section 51 (i)) and pp. 27 and 28 (sub-sections 86–95) of this volume.

§ 2. Commonwealth Legislation affecting Foreign Trade.

1. **Customs Act 1901 (No. 6 of 1901).**—“An Act relating to the Customs,” assented to on the 3rd October, 1901, came into operation by proclamation on the 4th October, 1901. This provided for the establishment of the necessary administrative machinery for all matters pertaining to the Customs, and prescribed, *inter alia*, the manner in which Customs duties shall be computed and paid. It did not, however, determine the rates thereof.

During the interval between the inception of the Commonwealth, viz., on 1st January, 1901, and the coming into operation of the Customs Act 1901, the Customs Acts of the several States were administered by the Executive Government of the Commonwealth, under section 86 of the Constitution.

2. **Customs Tariff Act 1902 (No. 14 of 1902).**—The first Commonwealth Customs Tariff imposing uniform rates of Customs duty in all the States was introduced in the House of Representatives on the 8th October, 1901. “An Act relating to Duties of Customs,” assented to on the 16th September, 1902, made provision that uniform duties of Customs specified in the tariff schedule should be imposed from the 8th October, 1901. From this date trade between the States became free, with, however, the exception, under section 95 of the Constitution Act, of the right of Western Australia to levy duty on the goods from other States for five years. [Repealed by the Customs Tariff Act 1908 (No. 7 of 1908).]

3. **Sea Carriage of Goods Act (No. 14 of 1904).**—“An Act relating to the Sea Carriage of Goods,” assented to on the 15th December, 1904, to commence on the 1st January, 1905, defines the responsibility of shipowners, charterers, masters, or agents in regard to goods carried.

4. **Secret Commissions Act 1905 (No. 10 of 1905).**—“An Act relating to Secret Commissions, Rebates, and Profits,” assented to on the 16th November, 1905, provides that “Any person who, without the full knowledge and consent of the principals directly or indirectly (a) being an agent of the principal, accepts or obtains, or agrees or offers to accept or obtain, from any person, for himself, or for any person other than the principal; or (b) gives or agrees to give or offers to the agent of a principal, or to any person at the request of an agent of the principal, any gift or consideration as an inducement or reward for any act done or to be done, or any forbearance observed or to be observed, or

any favour or disfavour shewn or to be shewn in relation to the principal's affairs or business or on the principal's behalf, or for obtaining or having obtained, or aiding or having aided to obtain for any person an agency or contract for or with the principal, shall be guilty of an indictable offence."

5. **Commerce (Trade Descriptions) Act 1905 (No. 16 of 1905).**—"An Act relating to Commerce with other Countries," assented to on the 8th December, 1905, and brought into operation by proclamation on the 8th June, 1906, gives power to compel the placing of a proper description on certain prescribed goods, or on packages containing the same, being imports or exports of the Commonwealth.

6. **Australian Industries Preservation Act 1906 (No. 9 of 1906).**—"An Act for the Preservation of Australian Industries and for the Repression of Destructive Monopolies," assented to 24th September, 1906, provides that any person or any corporation making or engaging or continuing in any combination "with intent to restrain trade or commerce to the detriment of the public or with intent to destroy or injure by means of unfair competition any Australian industry the preservation of which is advantageous to the Commonwealth, having due regard to the interests of producers, workers, or consumers," or any person or corporation monopolising or attempting or conspiring to monopolise any part of the trade of the Commonwealth with intent to control, to the detriment of the public, the supply or price of any service, merchandise, or commodity, is guilty of an offence. (Amended, see Acts No. 5 of 1908 and No. 26 of 1909-1910.)

7. **Customs Tariff 1906 (No. 14 of 1906).**—"An Act relating to Duties of Customs" amended the Customs Tariff of 1902 in relation to the duties on harvesters and agricultural implements and machinery and prescribed the prices which were not to be exceeded of Australian harvesters and drills delivered to the purchaser at the railway station or port nearest to the factory where they are made. [Repealed by Customs Tariff Act 1908 (No. 7 of 1908).]

8. **Customs Tariff (South African Preference) 1906 (No. 17 of 1906).**—"An Act relating to Preferential Duties of Customs on certain goods the produce or manufacture of the British Colonies or Protectorates in South Africa which are included within the South African Customs Union," assented to 12th October, 1906, to operate from 1st October, 1906, provides for special preferential rates of duty on certain goods imported from and being the produce of any of the Colonies or Protectorates included within the South African Customs Union.

9. **Australian Industries Preservation Act 1907 (No. 5 of 1908).**—"An Act to amend the Australian Industries Preservation Act 1907," assented to 14th April, 1908, provides additional machinery for procuring evidence of offences against the principal Act.

10. **Customs Tariff 1908 (No. 7 of 1908).**—"An Act relating to Duties of Customs," assented to 3rd June, 1908, repeals section 5 of the Customs Tariff 1902 (No. 14 of 1902) and the schedule of that Act and the whole of the Customs Tariff 1906 (No. 14 of 1906) as from 8th August, 1907, and imposes new rates of Customs duties. This Act provides preference rates of Customs duties on certain "goods the produce or manufacture of the United Kingdom."

11. **Customs Tariff Amendment Act 1908 (No. 13 of 1908).**—"An Act to amend the Tariff Act of 1908," assented to 10th June, 1908. The purpose of this Act is merely to remove possible doubt as to the intention of the original Acts.

12. **Australian Industries Preservation Act 1909 (No. 26 of 1909).**—"An Act to amend the Australian Industries Preservation Acts 1906-1907" formally repeals sections 5 and 8 of the parent Act, which were declared by the High Court to be *ultra vires*. It also provides that, in relation to trade and commerce with other countries or among the States, the payment of rebates, or the refusal to sell, "either absolutely or except upon disadvantageous conditions," with the purpose of promoting exclusive dealing, shall be an offence.

13. **Customs (Interstate Accounts) Act 1910 (No. 9 of 1910).**—Repeals Sections 272 and 273 of the Customs Act 1901. These sections relate to the passing of dutiable goods from one State to another State of the Commonwealth, and their repeal was consequent on the termination of the book-keeping system of accounts between the Commonwealth Government and the Governments of the States, in favour of a system of payments based on population.

14. **Australian Industries Preservation Act 1910 (No. 29 of 1910).**—“An Act to amend the Australian Industries Preservation Act 1906–1909.” This Act removes from the principal Act the obligation to prove intent to restrain trade and detriment to the public.

15. **Customs Act 1910 (No. 36 of 1910).**—“An Act to amend the Customs Act 1901” gives the Customs control of all goods for export, the exportation of which is subject to compliance with any condition or restriction under any Act or regulation, extends the machinery provisions for the prevention of the importation or exportation of goods which are prohibited imports or exports respectively, amends the provisions for the payment of duty under protest, gives the Governor-General power to prescribe the nature, size, and material of the coverings for packages, and the maximum or minimum weight or quantity to be contained in any one package of goods imported or exported, or transported coastwise from one State to another; the condition of preparation or manufacture for export of any articles used for, or in the manufacture of, food or drink by man; the conditions as to purity, soundness, and freedom from disease to be conformed to by the goods for export.

16. **Customs Tariff 1910 (No. 39 of 1910).**—“An Act relating to Duties of Customs,” amends the Customs Tariff of 1908 by more explicit definition of certain tariff items, and by alteration of some rates of duty.

17. **Customs Tariff 1911 (No. 19 of 1911).**—“An Act relating to Duties of Customs,” amends the Customs Tariff 1908–10 by alteration of some rates of duty.

18. **Interstate Commission Act 1912 (No. 33 of 1912).**—In accordance with the provisions of the Commonwealth Constitution Act—sections 101 to 104 (see page 29 *ante*)—an Act relating to the Interstate Commission was assented to on the 24th December, 1912. This Act provides for the appointment of the Commission, and cognate matters.

19. **Trading with the Enemy Act 1914 (No. 9 of 1914).**—“An Act relating to the control of trade during the war with Germany and Austria-Hungary.” This Act was amended by Act No. 17 of 1914.

20. **Customs Act 1914 (No. 19 of 1914).**—Amends the Customs Act 1901–10 by extending the powers of the Governor-General to prohibit the exportation of goods in time of war.

21. **The Income Tax Assessment Act 1915 (No. 34 of 1915) and Amendment thereto (No. 47 of 1915).**—Provide that “In the case of a person selling goods in Australia on account of a person not resident in Australia, or on account of a company not registered in Australia, the principal shall be deemed to have derived from such sale a taxable income equal to five pounds per cent. upon the price at which the goods were sold. The person selling the goods shall be assessable on the taxable income as the agent for the principal, and shall be personally liable for the payment of the tax to the extent of the tax payable on goods sold by him after the 30th June, 1915. Goods shall be deemed to be sold in Australia on account of a person not resident in Australia, if any person in Australia receives a commission in respect of the sale of the goods or is paid a salary for obtaining orders for or for influencing the sale of the goods.”

22. **Customs Tariff Validation Act (No. 6 of 1917).**—“An Act to provide for the validation of—(1) Collections of Customs duties under tariff proposals introduced into the House of Representatives on the 3rd December, 1914; (2) the remission of Customs duty on wheat as from the 12th December, 1914; (3) the remission of Customs duty on oats as from the 27th February, 1915; and (4) the restoration of the Customs duties on wheat and oats from the 12th November, 1915.”

23. **Apple Bounty Act (No. 21 of 1918).**—This Act appropriates from the Consolidated Revenue Fund the sum of £12,000, for the payment, to the grower, of a bounty of $\frac{1}{10}$ d. per pound upon the export of apples grown and evaporated in Australia under certain prescribed conditions, and sold to the Imperial Government for delivery between the 1st April and 31st August, 1918.

§ 3. Regulation of Trade during the War.

In Official Year Book number 11 (page 559) a statement was given shewing the authority for the regulation of trade during the war. Reference was also made to the appointment of a Luxuries Board to control the imports of goods of a luxurious nature, and to the establishment of the Commonwealth Board of Trade.

§ 4. Method of Recording Imports and Exports.

1. **Value of Imports.**—The recorded value of goods imported from countries beyond the Commonwealth represents the amount on which duty is payable or would be payable if the duty were charged *ad valorem*. The value of goods is taken to be 10 per cent.* in advance of the fair market value in the principal markets of the country whence the goods were exported, the increase being intended to represent roughly the insurance, freight and other charges to the place of landing.

2. **Value of Exports.**—The recorded value of goods exported is taken to represent the value in the principal markets of the Commonwealth in the ordinary commercial acceptation of the term. Some modification of this practice has, however, been necessary in respect of products affected by the policy of price-fixing arising from the war.

3. **Records of Past Years.**—In the years preceding federation each State independently recorded its trade, and in so doing did not distinguish other Australian States from foreign countries. As the aggregation of the records of the several States is, necessarily, the only available means of ascertaining the trade of Australia for comparison with later years, it is unfortunate that past records of values and the direction of imports were not on uniform lines, admitting of the preparation of a record for Australia as a whole. On the introduction of the Customs Act 1901, the methods of recording values were made uniform throughout the States, but it was not until September, 1903, that a fundamental defect in the system of recording transhipped goods was remedied. Up to this date goods arriving in any Australian port for transshipment to a port in another Australian State were recorded at the latter port only, where they were ordinarily recorded as from the transshipping State, and not as an import from the oversea country.

In recording exports an analogous defect also existed in most of the States, since goods despatched from one Australian State for transshipment in another State to an oversea country were simply recorded in the former as an export to the transshipping State; thus no proper record of the export oversea was made. Owing to this defect the oversea trade prior to September 1903 is understated by an amount which it is impossible to estimate accurately, since it varies with the development of the shipping facilities of the States concerned. To discover the direction of the transhipped trade is not possible. The figures presented in the tables hereinafter are therefore the values as recorded, and must be taken as subject to the defects explained.

Prior to 1905 the value of ships imported or exported was not included in the returns of trade.

* Although cost of freight and insurance has risen materially in consequence of the war, no further addition has been made to the value of imports, and cognisance should be taken of this fact in regard to imports during 1914-15 and subsequent years referred to throughout this section.

4. **Ships' Stores.**—Prior to 1906 goods shipped in Australian ports on board oversea ships as ships' stores were included in the general exports. From 1906, ships' stores have been specially recorded as such, and omitted from the return of exports.

The value of these stores shipped each year, distinguishing bunker coal, is shewn below :—

VALUE OF STORES SHIPPED IN AUSTRALIAN PORTS BY OVERSEA VESSELS.

Period.			Period.		
Bunker Coal.			Bunker Coal.		
All Stores (including Coal).			All Stores (including Coal).		
£			£		
1906	575,471	875,966	1913	1,018,595	1,458,702
1907	663,724	998,897	First six months		
1908	867,707	1,196,106	1914.. ..	533,288	771,581
1909	781,113	1,071,677	1914-15 ..	829,875	1,587,757
1910	740,567	1,080,133	1915-16 ..	719,510	1,544,872
1911	858,783	1,238,446	1916-17 ..	748,852	1,676,116
1912	1,008,259	1,431,985	1917-18 ..	632,910	1,389,291

§ 5. Oversea Trade.

1. **Total Oversea Trade.**—The following table shews the total trade of the Commonwealth with oversea countries from the earliest date for which records are available. In consequence of the defects of record referred to in the preceding section, the results can be only approximate to the actual figures. The very marked rise and sudden fall in the value of imports during the period 1837 to 1842 were contemporaneous with heavy land speculation and a subsequent severe financial crisis. The great increase of trade in the early fifties was due to the discovery of gold. In the State of Victoria the value of imports from oversea countries increased from £500,000 in 1851 to nearly £11,000,000 in 1853, and to £13,000,000 in 1854; while in New South Wales similar imports rose from £1,390,000 in 1851 to £5,500,000 in 1854, when the total imports into the Commonwealth reached the sum of £34 13s. 10d. per head, and the total trade £56 3s. 10d. per head of the population. The rapid influx of persons anxious to share the good fortunes of these times, however, soon reduced the value of the trade per head, till, in 1853, it had declined to £31 19s. 6d. per head. The period 1867-1872 shewed a marked reduction in the value of trade per head. For some years prior to this period New South Wales had experienced a succession of indifferent seasons, and Victoria was suffering from a congested labour market consequent on the decline of alluvial gold-mining in that State. This congestion of the labour market during the years 1862 to 1866 gave rise to the agitation for a protective tariff to provide employment in manufactures, and in April 1866, the Tariff Act, which expressed the protective policy thenceforward adhered to in Victoria, was assented to.

OVERSEA TRADE OF THE COMMONWEALTH, 1826 TO 1917-18.

Period.	Recorded Value.			Value per Inhabitant.*			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1826-30 ..	638	153	791	10 12 5	2 10 11	13 3 4	23.9
1831-35 ..	1,144	613	1,757	11 19 10	6 8 6	18 8 4	53.6
1836-40 ..	2,283	1,112	3,395	14 15 9	7 4 1	21 19 10	48.7
1841-45 ..	1,906	1,378	3,284	9 0 5	6 10 5	15 10 10	72.3
1846-50 ..	2,379	2,264	4,643	6 18 10	6 12 2	13 11 0	95.2
1851-55 ..	11,931	11,414	23,345	19 12 5	18 15 4	38 7 9	95.7
1856-60 ..	18,816	16,019	34,835	18 6 1	15 11 8	33 17 9	85.1

* Reckoned on mean population of the year.

OVERSEA TRADE OF THE COMMONWEALTH, 1826 TO 1917-18—continued.

Period.	Recorded Value.			Value per Inhabitant.*			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1861 ..	17,651	17,413	35,064	15 5 2	15 1 1	30 6 3	98.7
1862 ..	20,599	18,065	38,664	17 7 1	15 4 5	32 11 6	87.7
1863 ..	21,248	19,336	40,584	17 4 7	15 13 7	32 18 2	91.0
1864 ..	20,503	18,977	39,480	15 17 4	14 13 6	30 10 10	92.6
1865 ..	20,660	19,706	40,366	15 4 4	14 10 4	29 14 8	95.4
1866 ..	21,311	18,972	40,283	15 0 10	13 7 10	28 8 8	89.0
1867 ..	15,964	18,384	34,348	10 18 1	12 11 2	23 9 3	115.2
1868 ..	18,436	21,650	40,086	12 3 11	14 6 6	26 10 5	117.4
1869 ..	19,910	20,066	39,976	12 14 4	12 16 4	25 10 8	103.8
1870 ..	17,833	18,012	35,845	11 0 2	11 2 5	22 2 7	101.0
1871 ..	17,017	21,725	38,742	10 3 3	12 19 6	23 2 9	127.7
1872 ..	18,833	22,518	41,351	10 18 9	13 1 7	24 0 4	119.6
1873 ..	24,567	26,370	50,937	13 17 10	14 18 2	28 16 0	107.4
1874 ..	24,554	25,646	50,200	13 9 9	14 1 8	27 11 5	104.5
1875 ..	24,939	24,978	49,917	13 6 2	13 6 7	26 12 9	100.1
1876 ..	23,963	23,540	47,503	12 8 7	12 4 2	24 12 9	98.2
1877 ..	25,797	23,107	48,904	12 18 8	11 11 8	24 10 4	89.6
1878 ..	26,181	23,773	49,954	12 14 0	11 10 8	24 4 8	90.8
1879 ..	24,233	21,184	45,417	11 7 10	9 19 2	21 7 0	87.4
1880 ..	22,939	27,255	50,194	10 8 10	12 8 1	22 16 11	118.8
1881 ..	29,067	27,528	56,595	12 16 2	12 2 8	24 18 10	94.7
1882 ..	36,103	27,313	63,416	15 7 7	11 12 9	27 0 4	75.6
1883 ..	35,454	30,058	65,512	14 9 9	12 5 8	26 15 5	84.8
1884 ..	36,988	28,708	65,696	14 9 6	11 4 8	25 14 2	77.6
1885 ..	36,862	26,637	63,529	13 18 2	10 1 3	23 19 5	72.3
1886 ..	34,179	21,700	55,879	12 9 4	7 18 4	20 7 8	63.5
1887 ..	29,572	23,421	52,993	10 8 8	8 5 3	18 13 11	79.2
1888 ..	36,881	28,900	65,781	12 11 7	9 17 2	22 8 9	78.4
1889 ..	37,577	29,553	67,130	12 8 8	9 15 7	22 4 3	78.6
1890 ..	35,168	29,321	64,489	11 6 4	9 8 9	20 15 1	83.4
1891 ..	37,711	36,043	73,754	11 16 0	11 5 6	23 1 6	95.6
1892 ..	30,107	33,370	63,477	9 4 0	10 3 10	19 7 10	110.8
1893 ..	23,765	33,225	56,990	7 2 7	9 19 4	17 1 11	139.8
1894 ..	21,897	32,131	54,028	6 9 0	9 9 4	15 18 4	146.7
1895 ..	23,195	33,644	56,839	6 14 1	9 14 6	16 8 7	145.0
1896 ..	29,658	32,964	62,622	8 8 5	9 7 2	17 15 7	111.1
1897 ..	31,958	37,783	69,741	8 18 3	10 10 9	19 9 0	118.2
1898 ..	31,481	40,165	71,646	8 12 11	11 0 7	19 13 6	127.6
1899 ..	34,330	48,599	82,929	9 6 0	13 3 5	22 9 5	141.6
1900 ..	41,388	45,957	87,345	11 1 3	12 5 9	23 7 0	111.0
1901 ..	42,434	49,696	92,130	11 3 11	13 2 2	24 6 1	117.1
1902 ..	40,676	43,915	84,591	10 11 4	11 8 3	21 19 7	108.0
1903 ..	37,811	48,250	86,061	9 14 3	12 7 10	22 2 1	127.6
1904 ..	37,021	57,486	94,507	9 7 9	14 11 7	23 19 4	155.3
1905 ..	38,347	56,841	95,188	9 11 9	14 4 1	23 15 10	148.2
1906 ..	44,745	69,738	114,483	11 0 4	17 3 6	28 3 10	155.9
1907 ..	51,809	72,824	124,633	12 11 3	17 13 2	30 4 5	140.6
1908 ..	49,799	64,311	114,110	11 17 5	15 6 8	27 4 1	129.1
1909 ..	51,172	65,319	116,491	11 19 5	15 5 7	27 5 0	127.6
1910 ..	60,014	74,491	134,505	13 14 8	17 0 10	30 15 6	124.1
1911 ..	66,968	79,482	146,450	14 18 3	17 14 0	32 12 3	118.7
1912 ..	78,159	79,096	157,255	16 16 7	17 0 7	33 17 2	101.2
1913 ..	79,749	78,572	158,321	16 12 0	16 7 2	32 19 2	98.5
First six months 1914 ..	39,777	37,930	77,707	8 2 7	7 15 0	15 17 7	95.4
1914-15 ..	64,432	69,593	125,025	13 0 10	12 5 3	25 6 1	94.0
1915-16 ..	77,521	74,778	152,299	15 14 5	15 3 3	30 17 8	96.4
1916-17 ..	76,229	97,955	174,184	15 12 7	20 1 10	35 14 5	128.5
1917-18† ..	60,822	75,035	135,857	12 6 6	15 4 1	27 10 7	123.4

* Reckoned on mean population of the year. † Exclusive of gold.

The graphs illustrating the movement of the oversea trade of Australia (see pages 581 and 582) show that periods of depressed trade have been recurrent at more or less regular intervals of from seven to nine years, and, measured by population, each succeeding depression since 1855 carried the trade per head lower than the preceding one, until the lowest point was reached in 1894.

The year 1892 marked the beginning of a period of acute financial stress, culminating in the commercial crisis of 1893. The collapse of these years is plainly reflected in the trade records of that period, the trade of 1894 falling to £54,028,227, a decline of no less than 26.75 per cent. in three years. In 1895 there was a slight recovery, and a continuous upward movement until 1901, when the trade reached £92,130,183, or £24 6s. 1d. per head. A decline, due to drought, in the exports of agricultural, pastoral, and dairy produce, reduced the trade of 1902 to £84,591,037, but although in the next year there was a further shrinkage in the exports of agricultural produce, the increase in the value of the exports of metals, specie, butter, and wool was so large as to effect an increase in the total trade. From 1902 the increase in the value of trade continued, till in 1907 it reached the amount of £124,633,280, equal to £30 4s. 5d. per inhabitant.

The imports during 1907 were, doubtless, to some extent inflated by the importation of goods in anticipation of the tariff revision of that year. The trade of 1908 shows a decline of £10,523,000 as compared with 1907, of which £8,513,000 was in the value of exports, notwithstanding an increase of £3,447,767 in the export of gold and specie. This decline in the value of exports was largely due to reduced prices ruling for wool and metals in consequence of the financial crisis in the United States during the previous year, and in lesser degree to the smaller exports of agricultural and pastoral produce, due to the unfavourable season experienced in some of the States.

The trade of 1909 per head of population was slightly more than in 1908, notwithstanding that the gold exports were less by £5,193,587. In 1910 the value of imports per head was higher than in any year since 1885, and the value of exports was—excepting in the years 1906 and 1907—the highest since 1857. The high value of exports is particularly striking when considered in conjunction with the exceptionally small exports of gold. The exports of gold, already much reduced in 1909 as compared with 1908, were in 1910 still further reduced by £4,264,368 to £4,108,783, the smallest recorded since 1892. During 1911 the exports of gold bullion and specie again increased to £11,540,782. The continued increase in the value of imports during 1912 and 1913, while the value of exports remained stationary, is referred to on the next page.

The trade of 1914–15 was, of course, materially affected by the war. Of the £18,000,000 decrease in the value of exports during 1914–15 as compared with 1913, about £13,500,000 was mainly due to the dry season throughout the Commonwealth. From this cause the exports of wheat and flour were reduced by about £8,500,000, and of butter by £1,000,000. The reduction by £4,000,000 of the exports of wool was the joint result of the war and the drought, for although the clip was much reduced by the latter cause, the dislocation of the sales by the war was responsible for a considerable quantity being held over for shipment till the next year. The influence of the war in restricting exports was most pronounced with regard to metals and coal, which, together, were nearly £6,000,000 below 1913, while skins and tallow declined by £2,500,000. On the other hand, the war was responsible for increased exports of meats, leather, and horses, amounting to over £4,500,000.

The increased value of the trade of 1915–16 over that of the previous year was due mainly to deferred shipments and to increased prices. The vagaries of the seasons, too, led to a large increase in both imports and exports during this year, inasmuch as the failure of the 1914–15 crops necessitated large imports of grain in the earlier part of the trade year, whereas in the latter part of the same year large exports were provided from the bountiful harvest of 1915–16. The exports of meat were much diminished by the unfavourable weather conditions of the previous season.

Notwithstanding that large quantities of wheat already sold to the Imperial Government could not be sent away because of the shortage of shipping tonnage, the value of exports during 1916–17 was much greater than for any previous year. This result, however, was due to increased prices. On the basis of uniform prices, the value of exports during 1916–17 would have been much below that of the years immediately preceding the war. The reduction of the trade of 1917–18 was owing to the shortage of shipping tonnage.

The variations in the composition of the trade will be seen from the tables in § 8 following.

2. **Alteration of Trade Year.**—The desirability had long been felt of bringing the trade year into conformity with the seasons for the export of agricultural and pastoral products, but a disinclination to break the continuity of records had, hitherto, prevented the change. As it was obvious that trade itself, and not merely the records, would be seriously disturbed by the war, the time appeared to be peculiarly opportune for making the alteration. The trade returns were, therefore, closed as on the 30th June, 1914, and the new year started from the 1st July. The year 1914–15 thus includes nearly eleven months under war conditions.

3. **Ratio between Exports and Imports.**—The foregoing table shews the percentage of exports on imports for each year.† From this it will be seen that, with few exceptions, due to temporary dislocations of trade, prior to 1892 the balance of trade has been on the side of imports, but from 1891 to 1912 the reverse has been the case. The excess of imports in the earlier years represents the introduction of capital in the form of Government loans and for investment in private undertakings, and the excess of exports represents mainly the interest and profit on the earlier investments, repayment of loans to foreign bondholders, and also freight on trade, which is carried mainly by ships of the United Kingdom and foreign countries. As the introduction of new capital and the payments for interest on existing investments and for shipping and other services are continually operating in opposite directions at the same time in the statistics of trade, it follows that it is the balance only of these transactions which is reflected in the excess of imports or exports.

The marked change in the balance of trade, which is in the direction of that of twenty years ago, is a striking feature of the trade returns for 1912. The decline in the ratio of exports to imports has been due, mainly, to loans raised in London by the Governments of the various States of the Commonwealth. The proceeds of these loans, of course, swell the import returns, but, as no immediate payment beyond an instalment of interest has to be made in return, the export figures are affected to a very minor degree, until such time as the principal of the debt is repaid. The larger number of immigrants had, also, to some extent affected the balance of trade by the introduction of capital. The following table presents the balance of trade of the Commonwealth as shewn by the records of imports and exports for each year from 1902, and, also, the modification of these figures as affected by loans raised in London by the Governments of the States and the Commonwealth :—

**EFFECT OF LOANS ON THE RECORDED BALANCE OF COMMONWEALTH
TRADE, 1902 TO 1918.**

Year.	Excess of Exports as Recorded.		Net Amount of Debt Raised or Redeemed (–) in London.‡	Excess of Exports Modified by Elimination of Loans to Commonwealth and States' Governments.	
	Amount.	Per cent.	Amount.	Amount.	Per cent.
	£1,000.		£1,000.	£1,000.	
1902	3,239	100	5,014	8,253	100
1903	10,439	322	1,658	12,097	146
1904	20,465	632	753	21,218	257
1905	18,494	571	1,968	20,462	248
1906	24,993	771	– 5,308	19,685	238
1907	21,015	649	– 2,259	18,756	227.
1908	14,512	448	6,088	20,600	249
1909	14,147	436	2,562	16,709	202
1910	14,477	447	– 2,904	11,573	140
1911	12,514	386	3,123	15,637	189
1912	937	29	12,205	13,142	159
1913	– 1,178	– 36	19,666	18,488	225
1914 (January to June) ..	– 1,847	*	*	– 1,847	*
1914–15	– 3,839	– 119	5,151	1,312	16
1915–16	– 2,743	– 85	2,827	84	1
1916–17	21,726	670	11,695	33,421	405
1917–18	14,213§	439	17,373	31,586	383

* Prior to June, 1914, the figures relating to debt were six months in advance of the trade figures; since that date the periods to which the figures relate are identical.

† For individual years 1826 to 1860 see Official Year Book, No. 7, and previous issues.

‡ See note to the following table. § Exclusive of gold, the shipments of which cannot be disclosed.

The trade balances would be further modified by the loans of local governing bodies, by the imports of capital for private enterprises, and by the addition to or absorption of bank balances held in London on Australian account. Particulars of such transactions are, however, not available.

The general relationship between the balance of trade of the Commonwealth and the borrowing of money abroad is demonstrated by the following figures :—

COMMONWEALTH BALANCE OF TRADE AND PUBLIC DEBT, 1867 TO 1918.

Period.	Annual Average.					
	Imports.	Exports.	Recorded Excess of		New Debt.	Excess of Exports modified by elimination of Loans.
			Imports.	Exports.		
	Mill. £.	Mill. £.	Mill. £.	Mill. £.	Mill. £.	Mill. £.
1867-1871	17.8	20.0	..	2.2	1.7	3.9
1872-1876	23.4	24.6	..	1.2	2.6	3.8
1877-1881	25.6	24.6	1.0	..	5.2	4.2
1882-1886	35.8	26.8	9.0	..	10.6	1.6
1887-1891	35.4	29.4	6.0	..	7.4	1.4
1892-1896	25.6	33.0	..	7.4	3.8	11.2
1897-1901	36.2	44.4	..	8.2	3.2	11.4
1902-1906	39.6	55.2	..	15.6	0.8	16.4
1907-1911	56.0	71.2	..	15.2	1.3	16.5
1912-1915-16 (4½ years)	75.5	73.5	2.0	..	10.0	8.0
1916-1917	76.2	97.9	..	21.7	11.7	33.4
1917-1918	60.8	75.0	..	14.2	17.4	31.6

* Subsequent to 1897 these figures relate to moneys raised outside of Australia only. Prior to 1893 the amounts raised locally were insignificant, but it is probable that the amount of new debt raised during 1892-6 is somewhat overstated. Loans raised by Local Government Bodies are not included. Loans for redemption purposes are not included, nor are loans from the Imperial Government for war purposes, the proceeds of which were spent abroad, and consequently did not affect Australian Imports.

The dislocation of the trade of the Commonwealth during the war period must be taken into account in any consideration of the "balance of trade." Large accumulations of wool and wheat, which under normal conditions would have appeared in the export returns, to balance a corresponding value of imports, are still in this country, so that the trade records present the position in a less favourable light than would have been the case had it been possible to ship these goods. The exclusion of gold shipments from the exports of 1917-18 further accentuates the position. The financial arrangements by which loans and advances have been made by the Imperial Government to the Commonwealth Government for war purposes abroad have also obscured the balance of trade. The above table shows that prior to the war an annual excess of exports equal to about 16 millions sterling was necessary to meet the obligations of this community for interest and for shipping and other services performed for it by persons outside the Commonwealth. Recent loans and advances from the Imperial Government have increased this annual liability by about £6,000,000 for interest, while the higher shipping charges have also increased our obligations, though to what extent it is impossible to say. After eliminating the effect of new loans the average annual excess of exports during the four years ended 30th June, 1918, amounted to £16,600,000. If this amount be supplemented by the value of wool and wheat, which under normal circumstances would have been exported during that period, the result would shew an excess of exports of about £25,000,000.

§ 6. Direction of Trade.

1. Country of Shipment and Country of Origin.—The following table shews, for the years 1908 and 1917-18, the value of imports recorded as direct from the principal countries, and also the disposition of the value of imports against the countries where they were produced or manufactured. A similar comparison for earlier years will be found in the previous issues of this work.

COMMONWEALTH IMPORTS FROM COUNTRIES OF SHIPMENT AND COUNTRIES OF ORIGIN, 1908 AND 1917-18.

Country.	Imports according to—							
	Country of Shipment.				Country of Origin.			
	1908.		1917-18.		1908.		1917-18.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
United Kingdom ..	£ 29,930,157	60.10	£ 24,871,090	40.89	£ 25,274,661	50.75	£ 22,074,661	36.29
BRITISH POSSESSIONS—								
Canada ..	321,041	0.64	1,778,320	2.92	532,752	1.07	1,667,058	2.74
Ceylon ..	683,813	1.37	1,353,436	2.23	681,950	1.37	1,302,118	2.14
Hong Kong ..	247,689	0.50	396,531	0.65	7,321	0.01	10,030	0.02
India ..	1,630,246	3.28	4,641,276	7.63	1,658,140	3.33	4,798,624	7.89
New Zealand ..	2,276,597	4.57	1,631,682	2.68	2,196,433	4.41	1,377,892	2.27
Straits Settlements	384,567	0.77	1,141,873	1.88	158,603	0.32	475,269	0.78
Other British Possessions ..	845,671	1.70	1,332,262	2.19	994,755	2.00	1,590,095	2.61
Total British Possessions ..	6,389,624	12.83	12,275,380	20.18	6,229,954	12.51	11,221,096	18.45
Total British Countries ..	36,319,781	72.93	37,146,470	61.07	31,504,615	63.26	33,295,757	54.74
FOREIGN COUNTRIES—								
Austria-Hungary* ..	16,947	0.03	..	..	265,345	0.53	537	0.00
Belgium ..	970,187	1.95	1,346	0.00	636,450	1.28	21,397	0.03
China ..	69,362	0.14	249,293	0.41	315,887	0.63	708,498	1.16
France ..	479,642	0.97	106,377	0.18	1,775,389	3.56	1,219,270	2.00
Germany* ..	3,509,120	7.05	11,553	0.02	4,482,394	9.00	18,055	0.03
Japan ..	543,789	1.09	5,017,860	8.25	574,906	1.15	4,977,085	8.18
Java ..	316,441	0.64	701,435	1.15	333,684	0.68	593,333	0.98
Netherlands ..	173,523	0.35	14,596	0.02	311,832	0.63	162,424	0.27
Norway ..	314,685	0.63	388,069	0.64	420,470	0.85	395,665	0.65
Spain ..	12,131	0.02	3,519	0.01	108,104	0.22	64,240	0.11
Sweden ..	206,614	0.41	519,565	0.85	348,666	0.70	538,236	0.89
Switzerland ..	38,498	0.08	70,078	0.12	754,110	1.51	855,560	1.41
United States ..	6,039,753	12.13	15,193,316	24.98	6,581,846	13.22	15,453,855	25.41
Other Foreign Countries ..	788,795	1.58	1,398,687	2.30	1,385,575	2.78	2,518,252	4.14
Total Foreign Countries ..	13,479,492	27.07	23,675,694	38.93	18,294,658	36.74	27,526,407	45.26
Total Imports from all Countries ..	49,799,273	100.00	60,822,164	100.00	49,799,273	100.00	60,822,164	100.00

* The imports shewn as from enemy countries during 1917-18 were on board German ships interned in South Africa and elsewhere and were subsequently forwarded to Australia.

The only country from which the value of direct imports exceeds by any large amount the value of the imports of goods which were manufactured or produced therein, that is to say, the only country which shews a balance of any magnitude as a distributor of the goods of other countries to Australia, is the United Kingdom. The records of imports therefrom during the year 1917-18 shew that while the total direct imports from that country amounted to £24,871,090, the value of the manufactures or produce of the United Kingdom itself, imported from all countries whatsoever during the same year, was £22,074,661. From the foregoing figures it appears that goods to the value of at least £2,796,429 were received from other countries through the United Kingdom.

Other countries which prior to the war shewed balances as distributors to Australia, though absolutely of much less amount, were Belgium, Canada, Hong Kong, New Zealand, Straits Settlements, and Ceylon. The countries mentioned were, of course,

not the only countries through which goods were indirectly imported into Australia, for the direct imports from other countries included considerable values which were not the produce of those countries. Prior to the war large quantities of goods not manufactured in France or Germany were shipped to Australia from those countries. Such transactions were, however, more than balanced by French and German goods received through the United Kingdom and other countries.

2. *Direct Imports according to Country of Shipment.*—The following table shews the average yearly value of imports from each of the principal countries during each succeeding quinquennial period from 1894 to 1913, and for the year 1917-18. The countries mentioned in this table are those in which the goods were shipped or whence they were directly consigned to Australia.

**IMPORTS INTO THE COMMONWEALTH FROM VARIOUS COUNTRIES,
1894 TO 1917-18.**

Country.	Yearly Average of Quinquennial Periods.				Year 1917-18.
	1894-8.	1899-1903.	1904-8.	1909-13.	
	£	£	£	£	£
United Kingdom ..	18,957,688	23,107,178	26,789,801	40,171,599	24,871,090
British Possessions—					
Canada	145,655	285,312	292,801	857,133	1,778,320
Ceylon	292,653	481,627	679,572	816,220	1,353,436
Fiji	110,167	91,918	89,425	389,276	460,364
Hong Kong	374,974	299,872	279,030	297,127	396,531
India	655,090	993,326	1,563,604	2,350,599	4,641,276
Mauritius	225,459	156,485	51,239	69,533	7,429
New Zealand	1,030,079	2,096,004	2,441,722	2,647,942	1,631,682
Papua	25,010	67,655	63,746	80,179	125,071
Union of South Africa	3,944	5,626	50,232	137,911	187,398
Straits Settlements	184,628	234,001	270,550	625,079	1,141,873
Other British Possessions	8,548	49,334	168,318	298,640	552,000
Total British Possessions	3,056,207	4,766,160	5,950,239	8,569,639	12,275,380
Total British Countries	22,013,895	27,873,338	32,740,040	48,741,238	37,146,470
Foreign Countries—					
Belgium	264,743	428,305	815,228	1,724,846	1,346
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and other South Sea Islands	114,816	149,889	167,665	230,838	409,872
Chile and Peru	3,894	32,956	22,611	47,818	43,433
China	271,799	249,940	70,887	83,628	249,293
France	324,368	504,558	455,301	545,071	106,377
Germany	1,423,498	2,521,486	3,112,897	4,329,681	11,553
Italy	93,774	157,502	197,464	343,894	222,347
Japan	116,716	290,835	460,514	804,346	5,017,860
Java	310,423	648,729	314,745	848,213	701,435
Netherlands	18,548	59,576	133,191	234,650	14,596
Norway	*207,296	*425,664	312,357	599,801	388,069
Philippine Islands	22,807	84,660	79,056	113,156	273,653
Sweden	*	*	105,828	489,113	519,565
United States of America	2,368,737	5,342,307	5,124,191	7,643,641	15,193,316
Other Foreign Countries	84,253	553,542	232,183	432,463	524,325
Total Foreign Countries	5,625,672	11,440,949	11,604,118	18,471,159	23,675,694
Total	27,639,567	39,323,287	44,344,158	67,212,397	60,822,164

* Norway and Sweden combined in these years.

Expressing each item as percentage on the total of the imports, the following results are obtained :—

COMMONWEALTH IMPORTS.—PERCENTAGES OF IMPORTS FROM EACH COUNTRY ON THE TOTAL IMPORTS, 1894 TO 1917-18.

Country.	1894-8.	1899-1903.	1904-8.	1909-13.	1917-18.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	68.59	58.76	60.41	59.77	40.89
British Possessions—					
Canada	0.53	0.73	0.66	1.28	2.92
Ceylon	1.06	1.22	1.53	1.21	2.23
Fiji	0.40	0.23	0.20	0.58	0.75
Hong Kong	1.36	0.76	0.63	0.44	0.65
India	2.37	2.54	3.53	3.50	7.63
Mauritius	0.81	0.40	0.12	0.10	0.01
New Zealand	3.73	5.33	5.51	3.94	2.68
Papua	0.09	0.17	0.14	0.12	0.21
Union of South Africa	0.01	0.01	0.11	0.21	0.31
Straits Settlements	0.67	0.60	0.61	0.93	1.88
Other British Possessions	0.03	0.13	0.38	0.44	0.91
Total British Possessions	11.06	12.12	13.42	12.75	20.18
Total British Countries	79.65	70.88	73.83	72.52	61.07
Foreign Countries—					
Belgium	0.96	1.09	1.84	2.57	0.00 ✓
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides, and other South Sea Islands	0.42	0.38	0.38	0.34	0.67 ✓
Chile and Peru	0.01	0.08	0.05	0.07	0.07
China	0.98	0.64	0.16	0.12	0.41 ✓
France	1.18	1.28	1.02	0.81	0.18
Germany	5.15	6.41	7.02	6.44	0.02 ✓
Italy	0.34	0.40	0.45	0.52	0.37 ✓
Japan	0.42	0.74	1.04	1.20	8.25
Java	1.12	1.65	0.71	1.26	1.15 ✓
Netherlands	0.07	0.15	0.30	0.35	0.02
Norway	0.75*	1.08*	0.70	0.89	0.64
Philippine Islands	0.08	0.22	0.18	0.17	0.45
Sweden	*	*	0.25	0.73	0.85
United States of America	8.57	13.59	11.55	11.37	24.98
Other Foreign Countries	0.30	1.41	0.52	0.64	0.87
Total Foreign Countries	20.35	29.12	26.17	27.48	38.93
Total	100	100	100	100	100

* Norway and Sweden combined in these years.

3. Imports from the United Kingdom.—The foregoing table shews broadly the extent to which the export trade of the United Kingdom to this country has been affected by the concentration of British industry on the war, and it also shews the increased value of imports from the United States of America and from Japan. The

diversion of Australian trade from Great Britain is more fully dealt with in paragraph 12 of this section. The values of the principal imports of United Kingdom origin during the year 1917-18 are as follows :—

Ale and beer, £56,799; apparel and textiles—apparel, £1,875,463, textiles, £10,350,931; arms, ammunition and explosives, £179,799; bags, baskets, &c., £48,416; books and periodicals, £459,341; brushware, £46,401; earthenware, &c., £137,091; clocks and watches, £4,914; cocoa and chocolate, £1,298; confectionery, £11,380; cordage, metal, £48,237; cordage, other, £134,547; cutlery, £179,932; drugs and chemicals—alkalis (soda), £207,133, medicines, £133,077, other drugs and chemicals, £768,540; electrical and gas appliances, £87,884; electrical materials, £53,830; fancy goods, £74,584; fish, fresh and preserved, £4,026; furniture, £13,880; glass and glassware, £69,030; glue, gelatine, £59,343; indiarubber and manufactures, £203,108; instruments, musical, £73,028; instruments, surgical and dental, £53,191; iron and steel—pig iron, £1,793, bar, hoop, ingot, &c., £174,290; girders, beams, &c., £3,063, plate and sheet, galvanized or corrugated, £203,843, not galvanized or corrugated, £26,413, pipes and tubes, £182,763, rails, fishplates, &c., £4,117, tinned plates, plain, £747,617; wire, £5,026; jewellery and precious stones, £108,772; kinematographs and films, £24,346; leather and leather manufactures, £114,477; machines and machinery, £563,590; live animals, £30,415; metals, manufactures of, £753,169; matches and vestas, £56,003; mustard, £43,744; oils (not essential), £39,785; paints and colours, £166,794; paper, £370,183; photographic materials, £43,945; pickles, sauces, &c., £80,053; pipes, smoking, £55,962; soap, £29,159; spirits, £1,044,212; stationery, £160,920; tobacco, £58,529; tools of trade, £129,058; varnishes, £21,810; vehicles—bicycles, &c., £50,758; motors, £35,300; other vehicles, £71,399; yarns, £589,223.

4. **Imports shipped from British Possessions.**—The growth of the value of imports from other British possessions during the past twenty years has been such as to increase the proportion to total imports from 11.06 per cent. in the years 1894-8 to 20.18 per cent. in 1917-18, the actual values being respectively £3,056,207 in the earlier period and £12,275,380 in 1917-18. Of the total imports from British possessions during 1917-18, 13.29 per cent., or 2.68 per cent. of all imports, was from New Zealand; 37.81 per cent., or 7.63 per cent. of all imports, from India; 14.49 per cent., or 2.92 per cent. of all imports, from Canada; and 11.03 per cent., or 2.23 per cent. of all imports, from Ceylon. The imports from Canada shew an increase of £619,487, or 53.46 per cent. over those of 1913, and an increase of £921,187, or 107.47 per cent., over the average of the period 1909-13.

5. **Principal Imports, the Produce of British Possessions, 1917-18.**—These are as follows :—

(i) *Canada.* Apparel and textiles—corsets, £64,296, other, £34,252, boots and shoes, £13,898; carbide of calcium, £3,551; fish, £278,243; fruit—apples, £12,368; indiarubber and manufactures, £18,350; agricultural implements and machinery, £169,786; other machines and machinery, £18,849; metal manufactures, £145,375; medicines, £9,629; musical instruments, £11,619; paper, £425,928; spirits and alcoholic liquors, £56,839; timber, £92,768; motor chassis, £173,120; motor bodies, £6,632; other vehicles, £21,481.

(ii) *Ceylon.* Coir fibre, £10,956; nuts, £37,226; rubber and manufactures, £116,022; tea, £1,004,059. The large increase in the imports from Ceylon—from an average of £292,653 per year during the years 1894-8, to £1,353,436 in 1917-18—is due to the displacement of China teas in the Australian markets by those of India and Ceylon. Of the total imports of tea during the year 1917-18, 64.70 per cent. of the value was the produce of Ceylon.

(iii) *Fiji*. Bananas, £125,083; copra, £15,180; sugar—produce of cane, £271,198; molasses, £20,324; crude rubber, £9,852.

(iv) *India*. Bags and sacks, £2,654,836; hessians, £438,456; bronze specie, £24,000; cameos, precious stones, unset, £12,806; carpets, mats, &c., £27,650; coffee and chicory, £21,951; cordage and twine, £33,848; cotton, raw, £17,126; other unmanufactured fibres, £31,194; grain—beans and peas, £26,214; iron, pig, £10,306; linseed, £251,644; oils—castor, £12,116, linseed, £28,709; rice, £311,371; shellac, £29,033; skins and hides, £205,031; spices, £13,949; tea, £383,793; timber, £5,113; wax, paraffin, £112,210; yarns, £26,097.

(v) *New Zealand*. Apparel and textiles, £9,260; animals—horses, £29,602, sheep, £9,238; beans and peas, £12,140; cheese, £2,412; coal, £24,653; flax and hemp fibre, £210,750; fish, £27,892; implements and machinery (agricultural), £2,917; machines and machinery, £5,867; meats, £36,951; milk and cream, £31,602; seeds, £52,999; skins and hides, £112,197; timber, £573,563; twine, reaper and binder, £16,329.

(vi) *Papua*. Copra, £46,812; fibres, flax and hemp, £15,620; copper ore, £4,719; india-rubber, £36,794.

(vii) *Union of South Africa*. Bark, tanning, £19,615; brandy, £9,688; explosives, £66,868; feathers, £5,440; precious stones, £193,635; skins, £3,932.

(viii) *Straits Settlements*. Bamboo, clouded, £7,691; copra, £124,491; rubber and rubber manufactures, £156,508; spices, £48,865; sago and tapioca, £106,964.

6. Imports Shipped from Foreign Countries.—The imports direct from foreign countries during the year 1917–18 represented 38.93 per cent. of the total imports, as compared with 20.35 per cent. during the years 1894–8. Of the total imports into Australia shipped from foreign countries during 1917–18, 64.17 per cent.—24.98 per cent. of all imports—was from the United States, and 21.19 per cent.—8.25 per cent. of all imports—was from Japan. The small imports from Germany were, of course, due to the war, and consisted of goods in transit on board German ships on the outbreak of war, and of goods received from the captured German possessions in the Pacific.

7. Principal Imports the Produce of Foreign Countries, 1917–18.—(i) *Austria-Hungary*. Apparel and textiles, £394; paper and stationery, £143.

(ii) *Belgium*. Apparel, £327; textiles, £1,116; drugs, chemicals, and fertilisers, £128; glass and glassware, £9,986; metals—partly manufactured, £370; paper, £9,024.

(iii) *Brazil*. India-rubber, £129,041; nuts, £13,270; tobacco, £5,729; waxes, £4,649.

(iv) *Chile*. Soda nitrate, £43,264.

(v) *China*. Apparel and textiles, £313,558; cotton, raw, £45,124; drugs, £10,223; fireworks, £6,310; fish, £18,319; fruit, £12,134; ginger, £25,759; rice, £59,641; nuts, £39,092; oils, £36,627; tea, £29,845.

The decline of the value of imports from China during the past twenty years is due to the loss of the tea trade, which now draws its supplies mainly from India and Ceylon.

(vi) *Denmark*. Ale and beer and spirits, £3,029; rennet, £4,342; whiting, £2,402.

(vii) *France*. Apparel and textiles, £706,400; cream of tartar, £116,517; tartaric acid, £2,901; other drugs and chemicals, £55,340; fancy goods, £20,274; jewellery, £10,860; liquorice, £9,131; musical instruments, £8,187; pipes, smoking, &c., £41,837; paper and stationery, £36,256; perfumery, £33,934; rubber manufactures, £29,042; leather, £1,469; machinery and manufactures of metal, £15,487; seeds, £4,755; spirits, £97,035; wine, £23,511.

(viii) *Germany*. Acid, tartaric, £243; apparel and textiles, £1,006; arms, ammunition, and explosives, £307; cream of tartar, £499; fertilisers, £480; fancy goods, £456; metals and manufactures of metals—iron and steel: bar, hoop, ingot, &c., £123; pipes and tubes, £69; wire, £1,610; machines and machinery, £6,999; other manufactures of metals, £3,130; motors and parts, £226; musical instruments, £1,144; stationery, £285; tobacco, £798.

(ix) *Italy*. Apparel and textiles, £235,095; flax and hemp, £63,936; matches and vestas, £2,286; marble and stone, £14,535; oils—olive, £3,986, essential, £19,950; nuts, £40,519; motors and parts, £1,510; rubber manufactures, £8,270; cream of tartar, £24,763; tartaric acid, £11,973; wines, still, in bottle, £4,843.

(x) *Japan*. Apparel and textiles, £2,493,878; bags, baskets, &c., £41,372; brushware, £58,642; cable and wire, covered, £123,776; carbide of calcium, £120,064; chinaware, £104,952; earthenware, £51,952; fancy goods, £173,461; fibres—cotton waste, £60,110; fish, £24,765; furniture, £17,149; glass and glassware, £175,828; grass straw for hats, £96,333; linseed, £13,779; machinery and metal manufactures, £279,609; matches, £88,810; nuts, £31,048; oils and waxes, £103,918; paper and stationery, £85,020; rice, £2,922; spices, £8,380; sulphate of copper, £50,142; sulphur, £310,315; tea, £36,065; timber, £40,843.

Further reference is made in a later page to the imports from Japan.

(xi) *Java*. Bananas, £11,914; coffee, raw, £32,795; copra, £124,205; flax and hemp, £29,067; hides, cattle, £32,621; kapok, £133,505; oils, £30,949; rice, £2,383; sago and tapioca, £18,007; tobacco, £10,208; tea, £96,213.

(xii) *Netherlands*. Apparel and textiles, £15,734; cocoa and chocolate, £8,144; cameos and precious stones, £5,850; drugs and chemicals, £4,248; metal manufactures, £72,477; paper, £7,294; spirits, £41,901.

(xiii) *Norway*. Calcium carbide, £3,153; drugs and chemicals, £18,142; fish, £51,507; machinery and manufactures of metals, £2,201; matches, £3,139; milk, preserved, £10,654; paper, £285,235; wood pulp, £21,988.

(xiv) *Peru*. Imports from Peru during 1917–18 amounted to only £436.

(xv) *Philippine Islands*. Flax and hemp, £240,215; cigars, £22,039; tobacco, unmanufactured, £12,928.

(xvi) *Russia*. Furs, £14,801; pitch and tar, £1,426.

(xvii) *Spain*. Arc lamp carbons, £4,498; corks, &c., £31,163; liquorice, £5,295; nuts, £5,374; olive oil, £3,253; quicksilver, £6,807; wine, £2,304.

(xviii) *Sumatra*. Oils—benzine, £621,992, other oils, £32,604; rubber, £8,931; spices, £19,222; tobacco, £26,031.

(xix) *Sweden*. Calcium carbide, £7,901; earthenware, glassware, &c., £340; electrical machinery and fittings, £6,795; cream separators, £152,728; other machinery, £15,316; manufactures of metals, £33,949; matches and vestas, £55,820; paper, £245,568; wood pulp, £7,809.

(xx) *Switzerland*. Apparel and textiles, £652,988; cigars, £1,594; confectionery, £11,255; drugs and chemicals, £17,022; grass straw for hats, £26,806; machinery and metal manufactures, £31,352; talking machines, £7,528; watches, £94,992.

(xxi) *United States of America*. Apparel and textiles—boots, shoes, &c., £63,654, corsets, £144,379, gloves, £84,000, hats and caps, £43,220, socks and stockings, £218,958, other apparel, £197,359, textiles, £824,309; arms, £30,048; ammunition and explosives, £179,252; bags, baskets, &c., £36,857; brushware, £21,514; cameras, £48,528; clocks and watches, £86,228; confectionery, £28,135; drugs and chemicals—cream of tartar, £133,570, medicines, £131,789, other, £381,139; electrical articles and materials, £96,927; fancy goods, £55,697; fish, £414,849; fruit, £75,757; furniture, £23,624; glass and glassware, £169,662; indiarubber manufactures, £391,176; jewellery and precious stones, £63,328; kinematograph films, £264,942; leather, £373,409; meats, £104,929; metal manufactures—iron and steel: bars, ingots, hoops, &c., £239,847, girders, beams, &c., £65,384; pipes and tubes, £131,188; plate and sheet, £556,851; tools of trade, £235,667; wire, £435,908; machines and machinery, agricultural, £238,131; other machines and machinery, £1,160,590; other metal manufactures, £1,221,849; musical instruments, £279,240; oils, fats, and waxes—benzine and gasoline, £684,828, kerosene, £404,964, lubricating oils and greases, £451,734, waxes, £33,728; turpentine, £91,747; paints and varnishes, £218,614; paper, £694,380; perfumery, £95,280; resin, £145,167; soda—caustic, £48,818; stationery, £184,696; surgical and dental instruments, £71,296; timber, £679,871; tobacco, cigars, &c., £436,944; vehicles, motors and parts, £1,043,394; other vehicles and parts, £214,307; wood and wicker manufactures, £72,590.

The imports from America are again referred to in a later page.

8. *Direction of Exports*.—The following tables shew that, prior to the war, a constantly decreasing proportion of Australian exports was being consigned to the United Kingdom. This was not entirely due to the relatively smaller purchases of Australian produce by the United Kingdom, but was in some measure the effect of an increasing tendency towards direct shipment of wool, skins, etc., to the consuming countries—notably to Belgium, France, and Germany—instead of distributing the trade through London as formerly. The figures given below, however, do not, even for the later pre-war years, denote the total purchases by European countries of Australian produce, as large quantities were still distributed from London. It should be noted, too, that the exports to India and Ceylon consisted largely of gold shipped on London account, and which was, therefore, virtually an export to the United Kingdom. The reservation to the United Kingdom of the first call on our primary products increased the proportion

of our exports which was shipped to that country during the war period, and, to a greater extent, the proportion shipped to other parts of the Empire, notably to Egypt and to India.

TRADE OF THE COMMONWEALTH WITH VARIOUS COUNTRIES, 1894 TO 1917-18.

EXPORTS (INCLUDING BULLION AND SPECIE).

Country.	Yearly Average of Quinquennial Periods.				Year 1917-18.
	1894-8.	1899-1903.	1904-8.	1909-13.	
	£	£	£	£	£
United Kingdom ..	23,610,267	23,432,513	30,114,565	34,028,258	37,637,844
British Possessions—					
Canada	32,362	67,776	201,832	125,942	785,130
Ceylon	635,626	2,223,487	4,050,826	3,194,757	62,211
Fiji	124,453	205,731	284,636	402,877	597,710
Hong Kong	414,326	403,776	747,025	741,365	391,525
India	440,062	2,348,420	2,828,280	2,231,306	4,507,156
Mauritius	43,158	40,425	46,378	32,424	3,376
New Zealand	961,817	1,432,227	2,060,900	2,385,078	4,009,960
Papua	27,609	48,720	50,174	120,401	209,139
Union of South Africa	217,047	4,276,976	2,065,014	1,799,435	1,092,430
Straits Settlements	92,663	105,824	391,409	834,156	882,913
Other British Possessions	11,841	41,941	70,843	75,913	†3,840,034
Total British Possessions	3,000,964	11,195,303	12,797,317	11,943,654	16,381,584
Total British Countries	26,611,231	34,627,816	42,911,882	45,971,912	54,019,428
Foreign Countries—					
Argentine Republic	609	25,398	40,094	126,142	76,246
Belgium	1,289,242	1,667,396	3,930,612	6,172,958	..
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and other South Sea Islands	383,179	789,966	442,050	631,465	873,066
Chile and Peru	159,501	299,097	624,168	616,704	97,618
China	25,030	237,376	340,726	161,527	225,828
France	2,289,284	2,754,889	5,686,867	8,183,825	1,926,375
Germany	1,678,313	2,549,266	5,140,556	6,938,358	..
Italy	102,495	159,017	207,218	525,903	1,278,725
Japan	91,630	198,434	869,350	1,194,271	3,340,064
Java	72,204	153,439	209,310	480,984	1,028,973
Netherlands	24,718	107,914	299,231	298,879	..
Norway	*2,765	*1,192	4,624	2,039	..
Philippine Islands	40,422	229,414	463,283	525,443	826,722
Spain	1,698	15,383	59,264	23,540	186
Sweden	*	*	4,219	4,888	..
United States of America	2,511,255	3,270,940	2,483,637	2,067,313	10,650,034
Other Foreign Countries ..	52,912	194,127	522,911	1,456,269	691,957
Total Foreign Countries	8,725,257	12,653,248	21,328,120	29,410,508	21,015,794
Total	35,336,488	47,281,064	64,240,002	75,382,420	75,035,222

* Norway and Sweden combined for these years. † Includes Egypt, which prior to 1914-15 was included with "Other Foreign Countries."

If each item be expressed as a percentage on the total export, the results will be as follows:—

COMMONWEALTH EXPORTS.—PERCENTAGES OF THE EXPORTS TO EACH COUNTRY ON THE TOTAL EXPORTS, 1894 TO 1917-18.

Country.	1894-8.	1899-1903.	1904-8.	1909-13.	1917-18.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom ..	66.82	49.56	46.88	45.14	50.16
British Possessions—					
Canada	0.09	0.14	0.31	0.17	1.05
Ceylon	1.80	4.70	6.32	4.24	0.08
Fiji	0.35	0.44	0.44	0.53	0.80
Hong Kong	1.17	0.85	1.16	0.98	0.52
India	1.25	4.97	4.40	2.96	6.01
Mauritius	0.12	0.09	0.07	0.04	0.00
New Zealand	2.72	3.03	3.21	3.16	5.34
Papua	0.08	0.10	0.08	0.16	0.28
Union of South Africa	0.62	9.05	3.21	2.39	1.45
Straits Settlements	0.26	0.22	0.61	1.11	1.18
Other British Possessions	0.03	0.09	0.11	0.10	5.12†
Total British Possessions	8.49	23.68	19.92	15.84	21.83
Total British Countries	75.31	73.24	66.80	60.98	71.99
Foreign Countries—					
Argentine Republic.. ..	0.00	0.05	0.06	0.17	0.10
Belgium	3.65	3.53	6.12	8.19	..
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and other South Sea Islands	1.08	1.67	0.69	0.84	1.16
Chile and Peru	0.45	0.63	0.97	0.82	0.13
China.. ..	0.07	0.50	0.53	0.20	0.30
France	6.49	5.83	8.85	10.86	2.57
Germany	4.75	5.39	8.00	9.21	..
Italy	0.29	0.34	0.32	0.70	1.71
Japan	0.26	0.42	1.35	1.58	4.45
Java	0.20	0.32	0.33	0.64	1.37
Netherlands	0.07	0.23	0.47	0.40	..
Norway	0.01*	0.00*	0.01	0.00	..
Philippine Islands	0.11	0.49	0.72	0.70	1.10
Spain	0.00	0.03	0.09	0.03	0.00
Sweden	*	*	0.01	0.01	..
United States of America	7.11	6.92	3.87	2.74	14.20
Other Foreign Countries..	0.15	0.41	0.81	1.93	0.92
Total Foreign Countries	24.69	26.76	33.20	39.02	28.01
Total	100	100	100	100	100

* Norway and Sweden combined for these years. † See note to preceding table.

9. Exports to the United Kingdom.—The principal exports to the United Kingdom during the year 1917-18 were as follows:—Butter, £4,364,400; cheese, £263,499; eucalyptus oil, £50,381; other drugs, £48,049; fibres—rags, £6,949; grain and pulse—wheat, £1,486,723, flour, £1,601,392, other, £79,257; hair, £3,186; jams and jellies, £406,701; jewellery and precious stones, £42,355; leather, £226,422; meat—frozen beef, £2,976,301; mutton, £188,900; lamb, £24,810; rabbits and hares, £799,875; other

frozen meat, £191,488, potted meat, £189,504, meat preserved in tins, £895,205; milk, preserved, £189,268; minerals and metals—copper—ingots, £2,353,662; silver—bullion, £27,542, in matte, £162,488; lead—pig, £2,249,154, in matte, £372,718; tin—ingots, £3,190; zinc, concentrates, £45,757; ores, £311,774; metals, scrap—exclusive of iron and steel, £4,434; oils, £13,463; skins—hides, £335,562, rabbit and hare, £37,538, sheep, £741,686, other skins, £31,941; tallow, £441,807; wine, £36,405; wool—greasy, £9,903,520; scoured, £5,745,140.

10. Principal Exports to British Possessions, 1917–18.—(i) *Canada*. Dried fruits, £53,481; flour, £42,810; meats, £18,735; oil—cocoanut, £45,007; hides and skins, £159,441; wheat, £55,665; tin—ingots, £27,148; wool, £338,087.

(ii) *Ceylon*. Butter, £6,870; cheese, £2,906; lard, £3,707; meats, £23,201; milk, £4,486; silver, bullion, £8,808; sugar, £1,088.

(iii) *Egypt*. Apparel and attire, £9,656; butter, £1,397; cheese, £28,226; copper, £164,109; flour, £116,742; jams and jellies, £267,001; leather, £42,743; meats—frozen, £993,435, other, £80,201, preserved in tins, £252,447; milk, £324,021; tallow, £86,536; tin, £30,800; tobacco, cigars, &c., £20,113; wool—greasy, £848,965, scoured, £90,184.

(iv) *Fiji*. Apparel and textiles—apparel, including boots and shoes, £34,849, textiles, £42,826; bags, sacks, and cordage, £26,122; biscuits, £31,180; coal, £33,824; drugs and chemicals—fertilisers, £14,565; other, £10,669; grain, prepared—bran, pollard, and sharps, £37,407, flour, £28,900, rice, cleaned, £13,595, machines and machinery, £21,076; metal manufactures, £37,754; meat, preserved in tins, £7,203; oils, fats, and waxes, £10,837; silver specie, £55,400; spirits and alcoholic liquors, £25,537; soap, £9,257; timber, undressed, £12,638; tobacco, £16,714; vehicles, £4,214.

(v) *Hong Kong*. Butter, £33,298; fish, £59,983; flour, £49,567; lead, pig, £76,968; leather, £26,768; meats, £19,883; sandalwood, £76,093; soap, £8,356.

(vi) *India*. Biscuits, £204,953; coal, £16,043; copper, ingots, £595,877; fruits, preserved, in liquid, £214,134; horses, £479,520; hay and chaff, £7,472; wheat, £54,346; oatmeal, £37,319; jams and jellies, £250,711; leather, £49,794; meats, £1,242,912; piece goods, flannels, £55,068; other, £67,808; sandalwood, £1,275; silver, bullion, £864,536; wool, £66,780.

(vii) *New Zealand*. Apparel and textiles, etc. :—apparel—boots and shoes, £109,897, other apparel, £50,322, textiles, £114,192, bags and sacks, £8,089; arms, ammunition, etc., £37,094; bark, tanning, £45,007; books and periodicals, £53,169; cameras, kinematographs and films, talking machines, etc., £52,952; photographic goods, £28,549; coal, £143,155; drugs and chemicals—fertilisers, £220,458, medicines, £61,613, other drugs, etc., £137,001; electrical materials, £6,729; fodders, £8,412; fruit—fresh, £30,535, dried, £112,654, preserved in liquid, £30,157; glass and glassware, £20,274; grain—barley, £38,342, flour, £73,877, oats, £46,867, rice, £82,530; wheat, £319,192; horses, £16,360; indiarubber manufactures, £181,034; jewellery and precious stones, £32,165; lead, pig, £9,784; leather and leather manufactures, £134,236; matches, £28,428; metals, manufactures of—agricultural implements and machinery, £15,552, other machines and machinery, £108,367, other manufactures of metals, £191,043; motor vehicles and parts, £18,829; milk, £33,654; oils, &c., £101,828; onions, £16,897; paints, varnishes, £58,113; plants, trees and bulbs, £4,533; paper, £36,847; salt, £32,135; seeds, £35,124; soap; £67,835; specie, silver, £22,000; spirits, £90,882; stationery, £68,094; sugar, £6,827, tea, £139,493; timber, £68,270; tin, ingots, £43,844; tobacco, £149,354; wine, £36,938.

(viii) *Papua*. Ale and beer, £3,747; apparel and textiles, £22,906; biscuits, £3,497; butter, £2,779; coal, £2,407; fish, £5,868; flour, £3,924; machinery and manufactures of metal, £21,543; meats, £14,807; oils, &c., £15,202; rice, £26,879; timber, £3,501; tobacco, £21,142.

(ix) *Union of South Africa.* Animals, living—sheep, £9,716; butter, £1,444; fruits—dried, £12,374; glycerine, £37,091; grain—wheat, £376,193; flour, £109,341; jams and jellies, £5,453; leather, £61,771; machinery and manufactures of metal, £120,889; meats, preserved, in tins, £54,674; milk and cream, £24,285; soap, £2,499; tallow, unrefined, £55,168; timber, £43,330.

(x) *Straits Settlements.* Butter, £78,195; coal, £8,595; grain, flour, £357,443; jams and jellies, £11,843; leather, £15,747; machines and machinery, £57,504; meats, £108,509; milk and cream, £78,514; tin ore, £28,385; sandalwood, £12,236; soap, £15,462.

11. Principal Exports to Foreign Countries, 1917-18.—These are as follows:—

(i) *Argentine Republic.* Agricultural implements and machinery, £2,860; wheat, £73,384.

(ii) *Bismarck Archipelago.* Ale, beer, £10,990; apparel, £13,907; textiles, £25,790; fibres, £12,403; machinery and manufactures of metals, £19,982; meats, £13,374; oils, £11,900; rice, £40,130; silver, specie, £25,822; tobacco, £22,857.

(iii) *China.* Butter, £77,743; flour, £14,812; jams and jellies, £8,328; lead—pig, £27,568, sheet and piping, £12,547; leather, £17,645; sandalwood, £9,857; stearine, £23,745.

(iv) *Dutch East Indies: Java.* Apparel and attire, £13,985; butter, £179,948; biscuits, £13,956; cattle, £5,917; coal, £8,133; fertilisers, £172,996; flour, £231,865; fruits, fresh, £7,680; milk and cream, £67,315; machinery and metal manufactures, £55,356; meats, £19,667; leather and manufactures, £35,444; jams and jellies, £15,916; iron and steel, £84,399; soap, £3,176.

(v) *Other East Indies.* Butter, £15,896; biscuits, £7,175; flour, £60,714; meats, £5,318; soap, £16,752.

(vi) *France.* Frozen beef, £15,006; flour, £310,875; wheat, £1,190,855; wool, £372,453.

(vii) *Italy.* Flour, £67,841; leather, £19,272; tallow, £62,730; wheat, £123,699; wool, £1,005,058.

(viii) *Japan.* Bones, £23,757; concentrates, zinc, £236,465; glue pieces and sinews, £7,415; hides, £10,807; lead, pig, £454,118; manures, £27,104; milk and cream, £31,243; oils, £19,297; pearlshell, £53,276; tallow, £182,215; wool, £1,796,089; wheat, £204,141; barley, £25,337; flour, £47,109.

(ix) *New Caledonia.* Apparel, £21,305; textiles, £16,704; coal, £17,236; coke, £48,541; flour, £45,185; machinery and manufactures of metal, £40,916; oils, greases, etc., £16,224; potatoes, £6,877; rice, £8,708; sugar, £16,655.

(x) *Peru.* Wheat, £94,210.

(xi) *Philippine Islands.* Butter, £26,504; cattle, £1,535; flour, £518,650; fodder, £8,749; jams and jellies, £158,448; leather, £6,964; meats—bacon and hams, £17,432; beef, £31,449; other meats, £5,138; milk, concentrated, £3,033.

(xii) *United States of America.* Concentrates—zinc, £69,096; copra, £204,588; hair, £9,010; leather, £92,609; sausage casings, £65,181; oils—cocoanut, £80,209; eucalyptus, £16,763; pearlshell, £286,376; skins, £1,531,916; timber, £75,674; tin—ingots, £957,196; wheat, £1,728,720; wool, £4,389,755.

§ 7. Development of Export Trade to Eastern Countries.

1. Trade with Eastern Countries.—The following tables shew the value of exports from the Commonwealth to Eastern countries during the last five years in comparison with the year 1901. The principal countries concerned in this trade are China, India, Ceylon, Japan, East Indies, Philippine Islands, Straits Settlements, and Hong Kong, and the particulars given in the tables apply to these countries only:—

VALUE OF PRINCIPAL ITEMS OF MERCHANDISE EXPORTED FROM THE COMMONWEALTH TO EASTERN COUNTRIES, 1901 AND 1913 TO 1917-18.

Article.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
Antimony .. .. .	..	194	..	25,161	19	1,834
Butter	64,838	230,640	198,782	219,058	358,760	420,551
Coal	155,120	285,853	225,221	121,997	66,811	41,496
Concentrates—						
Silver and silver-lead .. .. .	..	..	..	82,544	30,850	..
Zinc .. .. .	..	..	..	186,703	419,282	236,465
Copper	39,375	84,758	127,959	230,879	279,520	595,877
Grain and Pulse—						
Wheat	46,685	22,641	43,169	1,373	399	258,641
Flour	135,092	825,112	162,262	316,931	540,757	1,286,979
Other (prepared and unprepared)	4,806	15,927	16,531	10,202	11,753	113,807
Hay, chaff, and compressed fodder	13,081	45,679	56,556	28,678	20,227	23,281
Horses	101,866	146,741	389,719	262,917	323,876	481,370
Lead	10,454	445,294	440,999	448,892	592,623	560,100
Leather	13,197	55,497	45,365	111,695	122,530	144,950
Meats	191,071	354,557	368,208	386,265	531,509	1,483,663
Pearl shell	20,440	735	1,612	25,064	48,124	53,363
Sandalwood	77,237	57,560	92,400	71,493	88,049	99,943
Skins, hoofs, horns, bones, sinews, tallow	16,419	108,479	134,443	64,912	205,372	235,320
Sulphate of ammonia .. .. .	..	19,142	26,361	80,059	104,991	194,921
Tin ore	4,096	447,875	179,962	269,561	222,281	28,385
Timber, undressed	79,915	180,329	142,157	427	37,047	12,817
Wool	56,618	765,604	1,533,525	2,619,533	2,558,274	1,862,869
Other merchandise	192,903	566,342	543,807	573,899	*1,190,961	*2,429,915
Total merchandise	1,226,213	4,862,959	4,729,038	6,008,243	7,752,015	10,566,547
Specie and gold and silver bullion	3,339,953	2,425,024	1,217,174	1,322,096	1,241,460	†873,344
Total exports	4,566,166	7,287,983	5,946,212	7,330,339	8,993,475	11,439,891

* The unusually large amount of other merchandise is due to shipments of jams, biscuits, cheese, fruits, milk, etc., to the order of the Imperial Government for military purposes. † Silver specie and bullion only.

The following tables shew the value of the principal articles exported to each of the undermentioned Eastern countries during each of the years 1901 and 1913 to 1917-18:—

VALUE OF COMMONWEALTH EXPORTS OF MERCHANDISE TO PRINCIPAL EASTERN COUNTRIES, 1901 AND 1913 TO 1917-18.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China	33,906	147,056	117,098	124,337	105,993	225,828
East Indies	204,315	817,987	433,481	567,863	866,784	1,203,472
Hong Kong	31,853	277,941	251,842	374,728	303,965	391,525
India and Ceylon	417,291	688,924	1,042,412	927,510	1,779,250	3,696,023
Japan	123,355	1,429,310	1,966,944	3,287,979	3,726,788	3,340,064
Philippine Islands	302,086	545,080	375,547	189,480	224,435	826,722
Straits Settlements	113,407	958,861	541,714	536,340	744,800	882,913
Total	1,226,213	4,862,959	4,729,038	6,008,243	7,752,015	10,566,547

BUTTER.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China	1,987	30,993	21,227	25,532	35,096	77,743
East Indies	12,172	91,365	102,894	133,596	234,999	196,594
Hong Kong	8,555	21,711	19,489	13,632	23,333	33,298
India and Ceylon	9,696	13,830	10,730	10,990	11,265	7,526
Japan	1,504	4,864	1,986	2,076	2,868	691
Philippine Islands	21,061	34,091	17,319	6,998	18,499	26,504
Straits Settlements	9,863	33,786	25,137	26,234	30,700	78,195
Total	64,838	230,640	198,782	219,058	356,760	420,551

The exports of butter given above for the year 1917-18 were shipped from the several States as follows:—New South Wales, £112,132; Victoria, £243,039; Queensland, £43,988; Western Australia, £21,392.

COAL.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China .. ..	..	940	..	..	..	..
East Indies	43,280	144,185	90,453	50,727	16,355	8,133
Hong Kong	7,653	..	635	..	..	..
India and Ceylon	17,639	33,018	40,446	40,703	22,421	16,043
Japan	1	..	..	..	..	..
Philippine Islands	59,936	25,939	48,936	5,361	..	8,725
Straits Settlements	26,611	81,771	44,751	25,206	28,035	8,595
Total	155,120	285,853	225,221	121,997	66,811	41,496

These exports of coal are chiefly from New South Wales.

COPPER.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China .. ..	..	8,275	..	..	..	..
Hong Kong .. ..	..	1,638	..	14,794	..	..
India and Ceylon	39,375	71,097	127,959	216,085	279,520	595,877
Japan .. ..	..	3,748	..	..	..	..
Total	39,375	84,758	127,959	230,879	279,520	595,877

The copper exported to the East during 1917-18 was shipped from New South Wales, £559,877; and South Australia, £36,000.

GRAIN AND PULSE.—WHEAT.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
East Indies	9	6	14	7	5	..
India and Ceylon	35,660	316	201	91	377	54,500
Japan	11,016	226,287	42,933	..	..	204,141
Philippine Islands .. ..	..	28	12	1	17	19
Straits Settlements .. ..	..	4	9	1,274	..	..
Total	46,685	226,641	43,169	1,373	399	258,660

The exports of wheat given for the year 1917-18 were shipped from the following States:—New South Wales, £148,731; and Victoria, £109,929.

GRAIN AND PULSE.—FLOUR.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China	1,147	19,780	5,244	5,142	3,463	14,812
East Indies	82,566	416,302	67,560	183,466	266,925	299,398
Hong Kong	4,489	20,440	1,283	17,162	7,971	49,567
India and Ceylon	22,275	47,534	21,632	4,579	1,248	11
Japan	7,206	5,246	17	633	3,715	47,109
Philippine Islands	4,046	128,311	33,528	42,169	129,015	513,650
Straits Settlements	13,363	187,499	32,998	63,780	128,420	357,443
Total	135,092	825,112	162,262	316,931	540,757	1,286,990

The flour exported during 1917-18, as above, was shipped from the several States as follows:—New South Wales, £812,830; Victoria, £272,287; Western Australia, £201,873.

GRAIN AND PULSE, OTHER THAN WHEAT AND FLOUR.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China	43	677	3	..	1,946	1,474
East Indies .. ..	..	1,623	1,117	1,319	3,173	3,680
Hong Kong	777	3	20	3	21	1,867
India and Ceylon	3,033	10,448	14,010	7,128	4,404	42,722
Japan	7	67	18	130	..	47,354
Philippine Islands	946	2,167	573	1,211	1,280	16,001
Straits Settlements .. ..	..	942	790	411	929	9,748
Total	4,806	15,927	16,531	10,202	11,753	122,846

The exports given above for 1917-18 were shipped from the following States:—New South Wales, £36,453; Victoria, £76,511; Queensland, £35; Western Australia, £8,847.

HAY AND CHAFF, AND COMPRESSED FODDER.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China	2,934	69	..	..	..	..
East Indies	14	920	920	702	613	323
Hong Kong	28	1,350	373	642	164	680
India and Ceylon	5,848	15,077	44,277	17,267	14,037	12,711
Japan	57	79	24	87	10	..
Philippine Islands	2,582	24,254	7,644	8,251	3,861	8,771
Straits Settlements	1,618	3,930	3,318	1,729	1,444	1,078
Total	13,081	45,679	56,556	28,678	20,129	23,563

The exports given above for the year 1917-18 were shipped from the several States as follows:—New South Wales, £149; Victoria, £22,855; Western Australia, £559.

HORSES.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China	4,460	..	..	..	..	..
East Indies	2,105	21,465	1,243	5,352	3,818	..
Hong Kong	775	..	..	..	..	..
India and Ceylon	78,723	108,765	387,046	250,710	312,721	479,520
Japan	100	2,836	875	1,900	850	750
Philippine Islands	190	2,061	..	1,200	60	200
Straits Settlements	15,513	11,614	555	3,755	6,427	900
Total	101,866	146,741	389,719	262,917	323,876	481,370

The horses exported to the above countries during 1917-18 were shipped from the following States:—New South Wales, £81,715; Victoria, £117,318; Queensland, £198,998; South Australia, £82,939; Western Australia, £400.

LEAD, PIG.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China	6,102	50,902	30,695	18,564	19,941	27,568
East Indies	18	1,381	..	..	..	1,146
Hong Kong	1,257	101,230	105,140	165,643	45,414	76,968
India and Ceylon	315	39,156	72,317	56,658	92,020	..
Japan	2,750	250,978	232,637	206,261	435,248	454,118
Philippine Islands	12	547	77	61	..	300
Straits Settlements .. ..	..	1,050	133	1,705	..	..
Total	10,454	445,294	440,999	448,892	592,623	560,100

The above lead is almost entirely from the Broken Hill mines of New South Wales.

MEATS.—PRESERVED BY COLD PROCESS.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China .. ..	..	..	354	6	..	..
East Indies	98	6,118	8,875	18	..	131
Hong Kong	3,195	10,347	7,502	5,715	9,481	6,501
India and Ceylon	5,907	9,072	9,570	8,102	10,483	14,270
Japan	19	433	4	1	..	4
Philippine Islands	153,250	199,199	177,696	89,408	13,143	36,587
Straits Settlements .. ..	..	45,845	58,753	52,123	66,983	65,206
Total	162,469	271,014	262,754	155,373	100,090	122,699

The exports to the above-mentioned Eastern countries during 1917-18 of meats preserved by cold process were shipped from the following States:—New South Wales, £45,769; Queensland, £76,930.

MEATS.—OTHER THAN MEATS PRESERVED BY COLD PROCESS.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China	491	7,138	2,885	1,075	1,646	9,317
East Indies	15,035	20,272	16,679	9,263	19,476	25,177
Hong Kong	571	4,633	5,665	1,859	3,096	13,325
India and Ceylon	11,464	8,279	50,159	100,901	382,150	1,251,929
Japan	393	1,292	656	975	853	338
Philippine Islands	2,617	28,758	18,395	10,590	14,645	17,575
Straits Settlements	531	13,171	11,015	6,229	9,553	43,303
Total	31,602	83,543	105,454	130,892	431,419	1,360,964

The exports given above for the year 1917-18 were shipped from the following States :—New South Wales, £864,606 ; Victoria, £161,368 ; Queensland, £316,020 ; South Australia, £12,399 ; Western Australia, £383 ; Northern Territory, £6,188.

SANDALWOOD.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China	7,905	5,593	27,544	9,316	5,554	9,857
Hong Kong	53,991	41,476	48,338	51,087	71,460	76,093
India and Ceylon .. ..	..	4,560	6,424	4,602	4,429	1,275
Japan .. ..	..	..	240	78	102	482
Straits Settlements	15,341	5,931	9,854	6,410	6,504	12,236
Total	77,237	57,560	92,400	71,493	88,049	99,943

The exports of sandalwood in 1917-18 were shipped from New South Wales, £4,295 ; Victoria, £4,516 ; Queensland, £18,546 ; and Western Australia, £72,586.

SKINS, HOOFS, HORNS, BONES, SINEWS, AND TALLOW.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China .. ..	..	6	..	128	..	..
East Indies .. ..	..	1,149	2,048	318	2	6
Hong Kong	1,234	333	150	8	427	1,183
India and Ceylon	2,761	17,523	17,369	6,736	6,647	78
Japan	11,829	88,193	113,169	57,015	198,040	233,941
Philippine Islands	165	562	987	312	91	..
Straits Settlements	430	713	720	395	165	112
Total	16,419	108,479	134,443	64,912	205,372	235,320

The above exports of skins, &c., in 1917-18 were shipped from the several States as follows :—New South Wales, £139,434 ; Victoria, £14,522 ; Queensland, £31,311 ; South Australia, £51 ; Western Australia, £2.

TIN ORE.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
Japan .. ..	..	..	..	104	..	..
Straits Settlements ..	4,096	447,875	179,962	239,457	222,281	28,385
Total ..	4,096	447,875	179,962	239,561	222,281	28,385

The export of tin ore to the Straits Settlements—the centre of the world's tin production—was for the purpose of treatment, and was shipped from the several States during 1917-18 as follows:—New South Wales, £7,359; Queensland, £17,926; Northern Territory, £3,100.

TIMBER, UNDRESSED.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
China	4,090	2	17,869	..	2	..
East Indies	22	554	252	31	3	83
Hong Kong .. ..	..	2,155	142	..	..	8
India and Ceylon ..	61,246	175,757	123,692	233	36,041	..
Japan	418	959	73	63	967	11,827
Philippine Islands ..	9,278	449	..	..	..	..
Straits Settlements ..	4,861	453	129	100	34	899
Total ..	79,915	180,329	142,157	427	37,047	12,817

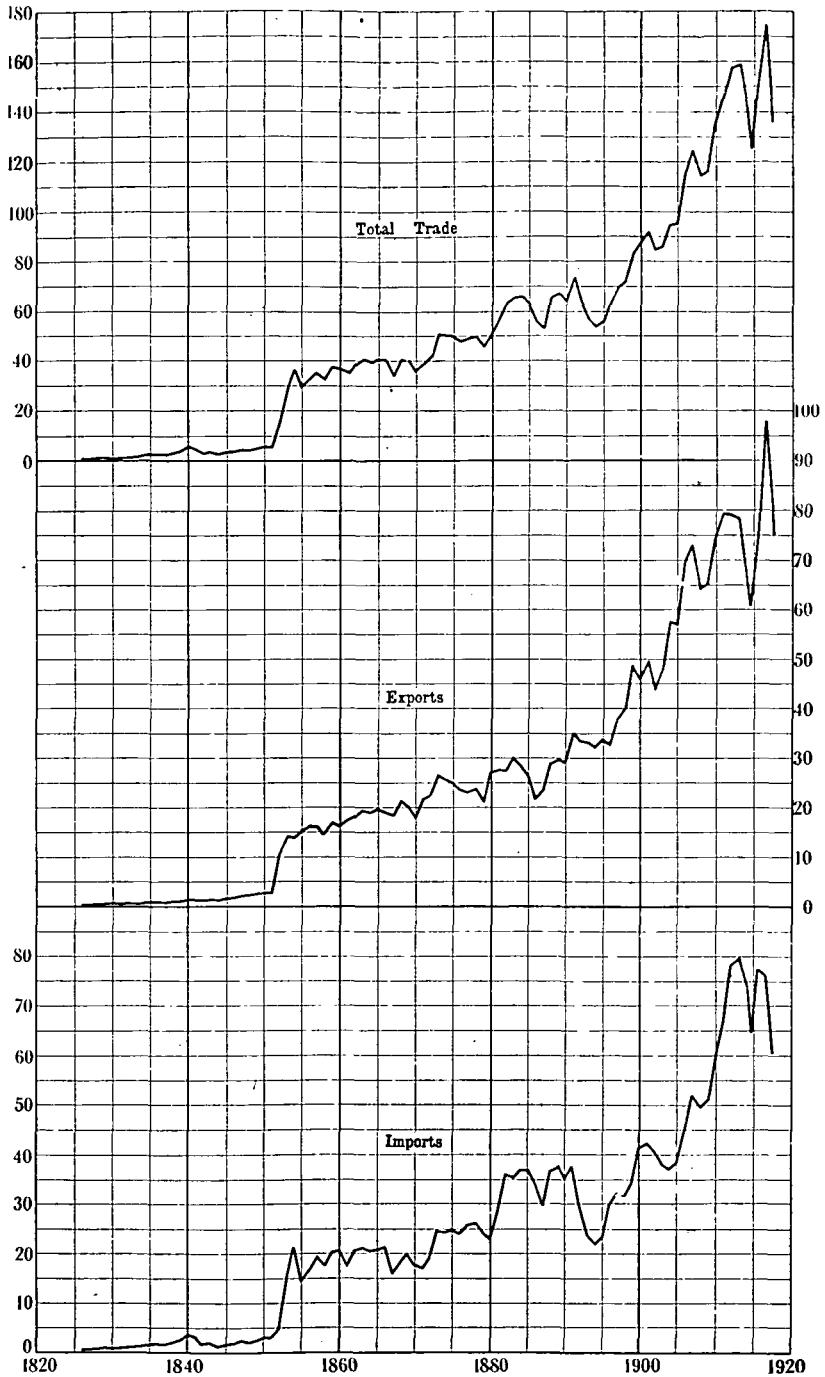
The above exports of timber during 1917-18 from the several States were shipped as follows:—New South Wales, £12,690; Victoria, £83; Western Australia, £44.

WOOL.

Country.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
East Indies	112	..	..	..	..	..
India and Ceylon ..	7,853	30,586	30,739	32,442	87,860	66,780
Japan	48,653	735,018	1,502,576	2,587,091	2,470,414	1,796,089
Philippine Islands ..	..	..	210	..	..	..
Total ..	56,618	765,604	1,533,525	2,619,533	2,558,274	1,862,869

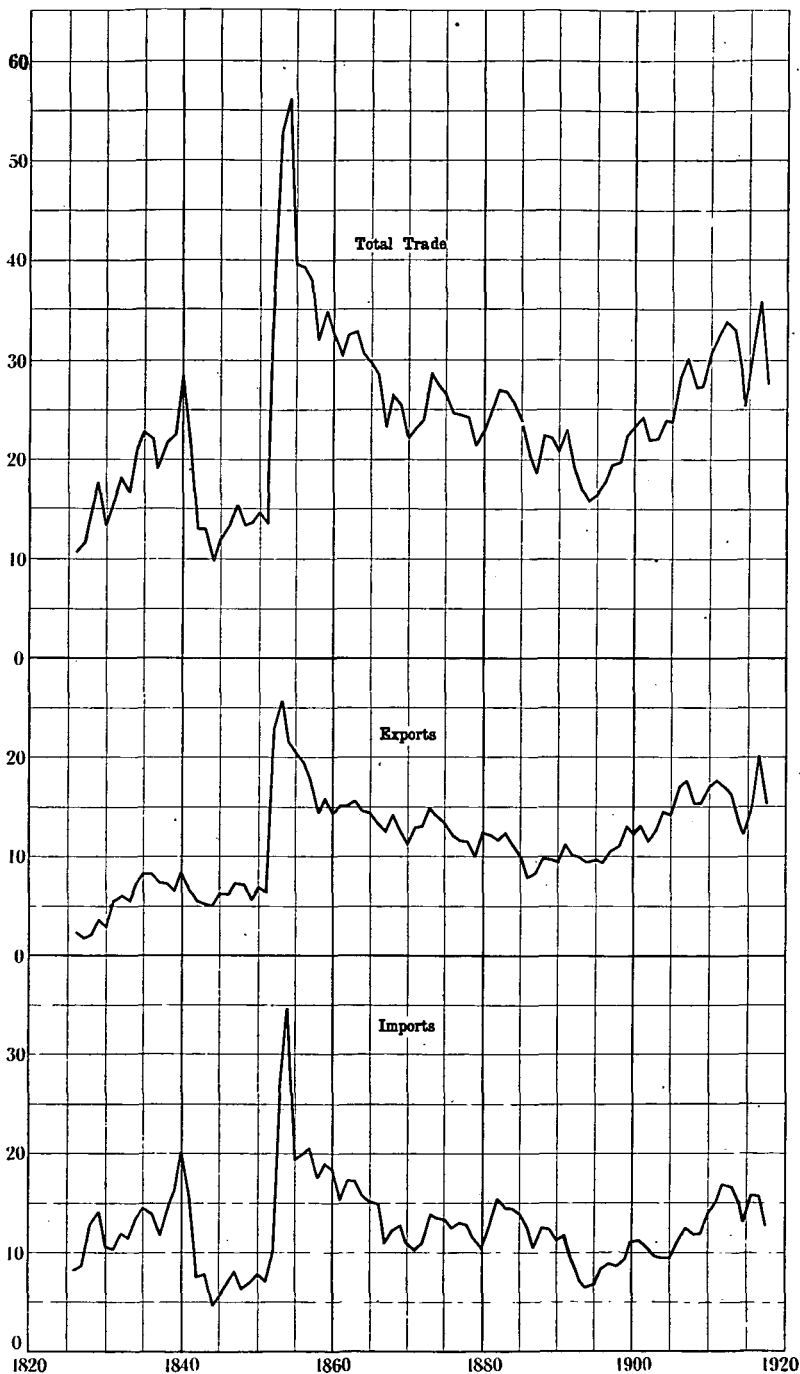
The wool exported to the East by the several States during 1917-18 was shipped as follows:—New South Wales, £1,748,978; Victoria, £66,780; Queensland, £47,111.

GRAPH SHEWING VALUES OF TOTAL TRADE, EXPORTS, AND IMPORTS OF COMMONWEALTH, 1826 TO 1917-18.



EXPLANATION OF GRAPH—The base of each square represents an interval of five years, and the vertical height five million pounds sterling for Imports and Exports, and ten million pounds sterling for Total Trade.

GRAPH SHEWING THE VALUES PER HEAD OF POPULATION OF TOTAL TRADE, EXPORTS,
AND IMPORTS OF COMMONWEALTH, 1826 TO 1917-18.



(See pages 559 and 560.)

EXPLANATION OF GRAPH.—The base of each square represents an interval of five years, and the vertical height five pounds per head of the population.

§ 8. Trade of Commonwealth since Federation.

1. Classified Summary of Australian Trade.—The following tables present the trade of the Commonwealth during each of the years 1901 and 1913 to 1917-18, arranged in classes according to the nature of the goods:—

STATISTICAL CLASSIFICATION OF IMPORTS AND EXPORTS.

Class.	Articles.
I.	FOODSTUFFS of animal origin, excluding, however, living animals.
II.	FOODSTUFFS of vegetable origin, and common salt.
III.	BEVERAGES, non-alcoholic only, and the substances used in making them.
IV.	SPIRITS AND ALCOHOLIC LIQUORS, including spirits for industrial purposes, and such pharmaceutical preparations as are dutiable as spirits.
V.	TOBACCO, and all preparations thereof.
VI.	LIVE ANIMALS.
VII.	ANIMAL SUBSTANCES, mainly unmanufactured, which are not foodstuffs.
VIII.	VEGETABLE SUBSTANCES and non-manufactured fibres.
IX.	APPAREL, TEXTILES, and various manufactured fibres.
X.	OILS, FATS, AND WAXES.
XI.	PAINTS AND VARNISHES.
XII.	STONES AND MINERALS, used industrially.
XIII.	SPECIE—gold, silver, and bronze.
XIV.	METALS, UNMANUFACTURED, and ORES.
XV.	METALS, PARTLY MANUFACTURED.
XVI.	METALS, MANUFACTURED, including machinery.
XVII.	LEATHER AND MANUFACTURES of leather, together with all substitutes therefor, and also INDIARUBBER and INDIARUBBER MANUFACTURES.
XVIII.	WOOD AND WICKER, both raw and manufactured.
XIX.	EARTHENWARE, CEMENTS, CHINA, GLASS, AND STONWARE.
XX.	PAPER AND STATIONERY.
XXI.	JEWELLERY, TIMEPIECES, AND FANCY GOODS.
XXII.	OPTICAL, SURGICAL, AND SCIENTIFIC INSTRUMENTS.
XXIII.	DRUGS, CHEMICALS, AND FERTILISERS.
XXIV.	MISCELLANEOUS.

COMMONWEALTH IMPORTS ARRANGED IN CLASSES, 1901 AND 1913 TO 1917-18.

Classes.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
I. Animal foodstuffs, &c. . .	793,365	947,697	1,265,068	1,797,407	1,156,816	1,080,249
II. Vegetable foodstuffs, &c. . .	2,925,985	3,315,825	3,686,926	7,984,132	3,655,149	1,930,247
III. Beverages (non-alcoholic), &c. . .	1,054,324	1,833,235	1,987,878	2,669,042	2,170,450	1,843,990
IV. Alcoholic liquors, &c. . .	1,845,438	2,095,806	1,780,927	1,488,987	1,985,895	1,445,217
V. Tobacco, &c. . .	717,915	1,114,949	902,471	969,043	1,115,010	646,746
VI. Live animals . . .	40,306	145,215	135,259	158,588	81,765	88,316
VII. Animal substances, &c. . .	124,017	417,039	309,959	684,479	923,112	508,527
VIII. Vegetable substances, &c. . .	459,361	1,344,204	1,386,802	2,295,608	2,579,789	3,114,991
IX. Apparel, &c. . .	12,065,367	19,705,768	17,577,422	21,272,545	24,134,756	21,824,720
X. Oils, &c. . .	1,290,252	1,969,628	2,100,177	2,796,560	3,128,710	2,996,478
XI. Paints, &c. . .	385,049	609,859	610,113	595,905	666,983	423,397
XII. Stones, &c. . .	131,095	218,332	162,071	155,383	172,633	131,648
XIII. Specie . . .	172,395	377,220	433,301	235,244	74,203	176,003
XIV. Metals, unmanufactured, ores, &c. . .	984,327	1,575,734	788,872	846,918	466,848	†221,030
XV. Metals, partly manufactured . . .	1,082,309	1,500,436	955,791	1,123,726	1,210,572	477,862
XVI. Metals, manufactured . . .	7,491,636	16,623,135	13,455,001	13,013,699	11,084,538	7,966,937
XVII. Leather, &c. . .	523,565	1,749,046	1,234,057	1,892,940	1,867,696	1,643,647
XVIII. Wood, &c. . .	1,814,382	3,573,753	2,565,473	2,107,949	1,819,227	1,697,836
XIX. Earthenware, &c. . .	925,101	1,580,615	1,208,186	1,355,299	1,112,987	781,978
XX. Paper, &c. . .	1,731,330	3,134,750	2,745,827	2,961,310	4,462,040	3,003,538
XXI. Jewellery, &c. . .	1,065,348	1,410,555	1,102,462	1,125,101	1,126,320	1,065,432
XXII. Instruments, &c. . .	218,437	754,589	543,463	607,530	702,268	701,420
XXIII. Drugs &c. . .	1,472,162	2,493,162	2,425,689	3,000,984	3,130,397	3,217,933
XXIV. Miscellaneous . . .	3,140,345	*11,258,981	5,068,642	6,382,763	7,377,215	3,934,022
Grand total . . .	42,433,811	79,749,653	64,431,837	77,521,142	76,228,679	†80,822,164

* Includes warships, £2,495,000. † Excluding gold.

The exports are shewn according to the same classification, and the usual distinction is made between exports of Australian produce and re-exports. It will be seen what a small proportion of the total exports is made up by re-exports.

COMMONWEALTH EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES, 1901 AND 1913 TO 1917-18.

Classes.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
AUSTRALIAN PRODUCE.						
	£	£	£	£	£	£
I. Animal foodstuffs, &c. . .	4,104,196	11,459,049	14,491,163	5,531,331	15,265,677	14,827,125
II. Vegetable foodstuffs, &c. . .	4,633,926	10,648,506	2,022,397	11,247,704	19,073,950	13,568,979
III. Beverages (non-alcoholic), &c. . .	2,598	5,742	16,635	17,415	18,814	44,343
IV. Alcoholic liquors, &c. . .	134,630	114,973	125,938	152,450	158,539	206,705
V. Tobacco, &c. . .	5,030	72,374	79,796	162,140	115,376	175,021
VI. Live animals . . .	473,601	297,312	536,613	326,251	392,161	535,760
VII. Animal substances, &c. . .	16,754,006	32,322,945	25,903,510	29,358,579	31,248,788	27,827,953
VIII. Vegetable substances, &c. . .	142,060	194,982	193,457	185,819	197,558	234,337
IX. Apparel, &c. . .	42,142	72,307	104,260	194,578	330,886	508,488
X. Oils, &c. . .	843,755	2,512,265	2,052,692	835,015	1,549,259	1,259,884
XI. Paints, &c. . .	620	6,188	2,735	3,069	6,933	62,977
XII. Stones, &c. . .	1,041,974	1,133,528	741,996	541,855	470,845	322,332
XIII. Specie . . .	8,884,816	710,180	1,485,736	8,938,742	11,255,271	*27,493
XIV. Metals, unmanufactured, ores, &c. . .	8,016,269	12,689,990	7,238,886	11,251,174	11,760,190	*9,104,642
XV. Metals, partly manufactured . . .	3,802	43,262	142,657	218,878	317,682	124,229
XVI. Metals, manufactured . . .	117,662	380,299	176,344	287,135	262,823	533,367
XVII. Leather, &c. . .	660,692	688,373	1,267,985	1,244,062	1,291,349	925,333
XVIII. Wood, &c. . .	666,024	1,014,973	808,816	395,754	314,078	266,162
XIX. Earthenware, &c. . .	6,600	12,481	15,539	47,839	46,331	49,180
XX. Paper, &c. . .	22,171	66,806	55,597	60,178	61,202	76,412
XXI. Jewellery, &c. . .	67,973	170,147	34,708	31,247	41,337	78,712
XXII. Instruments, &c. . .	507	5,929	9,179	15,257	13,994	39,115
XXIII. Drugs, &c. . .	86,299	269,387	313,860	477,832	436,413	733,874
XXIV. Miscellaneous . . .	130,418	235,649	302,074	270,221	410,467	522,543
Total . . .	47,741,776	75,138,147	58,122,573	71,792,525	95,039,973	*72,054,916

OTHER PRODUCE.

	£	£	£	£	£	£
I. Animal foodstuffs, &c. . .	35,291	19,642	27,675	129,112	115,744	73,095
II. Vegetable foodstuffs, &c. . .	80,371	161,886	476,367	217,415	189,456	299,589
III. Beverages (non-alcoholic), &c. . .	43,308	65,030	104,993	117,493	181,766	187,026
IV. Alcoholic liquors, &c. . .	55,732	39,086	71,255	83,905	68,318	77,079
V. Tobacco, &c. . .	61,753	55,155	61,825	70,010	86,243	105,815
VI. Live animals . . .	105	2,806	4,637	1,749	6,900	8,199
VII. Animal substances, &c. . .	10,070	6,892	1,315	191,228	448,815	70,632
VIII. Vegetable substances, &c. . .	17,625	28,262	17,733	85,200	121,278	250,581
IX. Apparel, &c. . .	171,014	197,971	240,351	288,323	344,569	686,233
X. Oils, &c. . .	42,292	62,687	57,914	75,017	103,990	119,650
XI. Paints, &c. . .	15,186	7,818	6,222	7,897	9,259	11,095
XII. Stones, &c. . .	2,043	1,296	1,125	1,316	1,514	2,472
XIII. Specie . . .	846,921	1,481,765	508,664	611,219	265,065	*95,240
XIV. Metals, ores, &c. . .	9,744	34,136	40,481	5,941	9,608	82,057
XV. Metals, partly manufactured . . .	13,806	7,748	10,831	22,694	16,894	29,032
XVI. Metals, manufactured . . .	196,334	269,001	248,497	260,743	292,246	278,501
XVII. Leather, &c. . .	13,074	71,532	42,146	45,863	74,514	66,862
XVIII. Wood, &c. . .	32,135	34,305	23,266	38,391	25,861	14,850
XIX. Earthenware, &c. . .	23,337	16,846	16,172	19,946	20,342	13,398
XX. Paper, &c. . .	52,171	79,512	71,276	70,555	62,501	72,037
XXI. Jewellery, &c. . .	54,431	89,845	30,331	39,073	28,976	33,520
XXII. Instruments, &c. . .	13,555	65,944	67,941	72,791	82,547	83,266
XXIII. Drugs, &c. . .	42,976	60,026	66,014	101,269	101,854	122,074
XXIV. Miscellaneous . . .	121,122	574,431	272,922	428,146	257,243	197,953
Total . . .	1,954,396	3,433,622	2,470,003	2,985,796	2,915,509	*2,980,306

* Excluding gold.

COMMONWEALTH EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES, 1901 AND 1913 TO 1917-18—*continued.*

Classes.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
TOTAL EXPORTS.						
	£	£	£	£	£	£
I. Animal foodstuffs, &c. . .	4,139,487	11,478,691	14,518,838	5,660,442	15,381,421	14,900,220
II. Vegetable foodstuffs, &c. . .	4,714,297	10,810,392	2,498,764	11,465,119	19,263,406	13,868,568
III. Beverages (non-alcoholic), &c. . .	45,906	70,772	121,628	134,908	200,530	231,369
IV. Alcoholic liquors, &c. . .	190,362	154,059	197,193	236,355	226,857	233,784
V. Tobacco, &c. . .	66,783	127,529	141,621	232,150	201,619	280,836
VI. Live animals . . .	473,706	300,618	541,300	328,000	399,067	543,959
VII. Animal substances, &c. . .	16,764,076	32,339,837	25,904,825	29,549,807	31,697,603	27,898,585
VIII. Vegetable substances, &c. . .	159,685	223,244	211,190	269,019	318,836	484,918
IX. Apparel, &c. . .	213,156	270,278	344,611	482,901	675,455	1,194,771
X. Oils, &c. . .	886,047	2,574,952	2,110,606	910,032	1,653,249	1,379,484
XI. Paints, &c. . .	15,806	14,006	8,957	10,966	16,192	74,072
XII. Stones, &c. . .	1,044,017	1,134,824	743,121	543,171	472,359	324,804
XIII. Specie . . .	9,731,737	2,191,945	1,994,400	9,549,961	11,520,336	*122,733
XIV. Metals, unmanufactured, ores, &c. . .	8,926,013	12,724,126	7,279,367	11,257,115	11,769,798	*9,186,699
XV. Metals, partly manufactured . . .	17,608	51,010	153,488	241,572	334,576	153,261
XVI. Metals, manufactured . . .	313,996	649,300	424,841	547,878	555,069	811,868
XVII. Leather, &c. . .	673,766	759,905	1,310,131	1,289,925	1,365,863	992,195
XVIII. Wood, &c. . .	698,159	1,049,278	832,082	434,645	339,939	231,012
XIX. Earthenware, &c. . .	29,937	29,327	31,711	67,785	66,723	62,578
XX. Paper, &c. . .	74,342	146,318	126,873	130,733	123,703	148,449
XXI. Jewellery, &c. . .	122,409	259,992	65,039	70,320	70,313	112,232
XXII. Instruments, &c. . .	14,062	71,873	77,120	88,048	96,541	122,381
XXIII. Drugs, &c. . .	129,275	329,413	379,874	579,101	538,267	855,948
XXIV. Miscellaneous . . .	251,540	810,080	574,996	698,367	667,710	720,496
Total . . .	49,696,172	78,571,769	60,592,576	74,778,321	97,955,482	*75,035,222

* Excluding gold.

§ 9. Movement of Specie and Bullion.

In previous issues of this work it has been customary to publish a detailed statement of the imports and exports of bullion and specie. Owing to circumstances connected with the war, however, it is not now permissible to publish any information relating to the movements of gold.

§ 10. Effects of Prices on the Values of Exports.

1. **Significance of Price in Totals.**—In comparing the value of exports from, and also imports into, any country for a series of years, the question naturally arises as to how much any variation in the aggregate value is due to fluctuations in prices, and how much to increase or decrease of actual quantities, for, in aggregates expressed only in value—the only possible method when the commodities differ—the two sources of variation are confused.

The scheme of comparison adopted has been to take an annual average, for an extended period, of the quantities of all such articles of export as are recorded by quantity, and to apply to the average quantities so obtained the average prices in each year. The quantities used to produce the following results are the averages for 19½ years, viz., from 1st January, 1897, to 30th June, 1916, which it is considered may be taken as representing

the general quantitative composition or norm of the exports from the Commonwealth. The results published in previous issues of this work were ascertained by applying to the quantities exported during each year the average price per unit ruling in some year arbitrarily taken for the purposes of comparison as the basic year. The advantage of the method now adopted is that the results are comparable throughout, whereas under the method previously followed each year was comparable with the basic year only.

2. *Effect of Prices.*—The following table shews the values of exports as actually recorded in each year, together with the values computed on the assumption that the prices of 1901 were maintained. The table also shews the yearly "price-levels" based upon the results so ascertained.

This table obviously furnishes a measure of the influence of prices on the value of exports of each year since 1901. Column IV.—values computed on 1901 prices—represents the volume of exports (less specie and gold bullion), expressed in the common denomination of value, and from the figures therein it will be seen that, had the prices of 1901 remained constant, the value of the exports of merchandise during the year 1917-18 for example, would have been £35,946,491 only, instead of £74,912,489—the value actually recorded. The difference between these amounts (£38,965,998) results from a rise of 108.4 per cent. (i.e., from 1,000 to 2,084) in the price of commodities for the period intervening between 1901 and 1917-18.

It will be seen from the column of "Price-Levels" that prices as indicated by the Commonwealth exports rose steadily from the beginning of the decade to the year 1907. The financial crisis in the United States of America caused a pronounced fall in the prices of 1908. Owing to the large proportion of the aggregate value of exports represented by wool and wheat, any change in the price of these commodities has a marked effect on the index-numbers for the total group of exports, and it is to their influence that the fall of prices in 1911 is mainly due.

EFFECT OF PRICES ON THE VALUE OF COMMONWEALTH EXPORTS, AND EXPORT PRICE LEVELS FOR THE PERIOD 1901 TO 1917-18.

Year.	Exports of Specie and Gold Bullion.	Other Exports.		Total Exports (including Specie and Gold Bullion).		Price-Levels.* Year 1901 = 1,000.
		Values as Recorded.	Values Computed on Mass Prices of 1901.	Values as Recorded.	Values Computed on Mass Prices of 1901.	
I.	II. £	III. £	IV. £	V. £	VI. £	VII.
1901 ..	14,347,776	35,348,396	35,348,396	49,696,172	49,696,172	1000
1902 ..	14,568,640	29,346,447	26,948,068	43,915,087	41,516,708	1089
1903 ..	18,408,702	29,841,410	25,881,535	48,250,112	44,290,237	1153
1904 ..	16,914,691	40,571,224	35,620,038	57,485,915	52,534,729	1139
1905 ..	10,977,111	45,863,924	38,219,936	56,841,035	49,197,047	1200
1906 ..	16,895,059	52,842,704	42,005,330	69,737,763	58,900,389	1258
1907 ..	10,571,263	62,252,984	47,594,024	72,824,247	58,165,287	1308
1908 ..	13,608,531	50,702,527	42,607,165	64,311,058	56,215,696	1190
1909 ..	8,390,376	56,928,460	47,718,742	65,318,836	56,109,118	1193
1910 ..	4,178,097	70,313,053	57,351,593	74,491,150	61,529,690	1226
1911 ..	11,561,639	67,920,619	58,501,825	79,482,258	70,063,464	1161
1912 ..	11,881,216	67,214,874	53,218,427	79,096,090	65,099,643	1263
1913 ..	3,164,105	75,407,664	58,455,553	78,571,769	61,619,658	1290
1914-15 ..	2,474,197	58,118,379	44,740,861	60,592,576	47,215,058	1299
1915-16 ..	10,391,019	64,387,302	40,469,705	74,778,321	50,860,724	1591
1916-17 ..	11,521,815	86,433,667	43,985,398	97,955,482	55,507,213	1965
1917-18 ..	†	74,912,489	35,946,491	†	†	2084
						2033

* These are index-numbers for the total group of exports, excluding specie and gold bullion.

† See § 9 ante.

The following table of index-numbers shews the variations in price of the different classes of goods exported grouped according to their industrial origin :—

PRICE-LEVELS OF COMMONWEALTH EXPORTS, 1901-18.

Year.	Agricultural Produce.	Pastoral Produce.	Dairy Produce.	Mineral Produce.	Miscellaneous.
1901	1,000	1,000	1,000	1,000	1,000
1902	1,161	1,117	1,165	842	1,108
1903	1,201	1,200	944	819	1,167
1904	1,127	1,232	906	851	946
1905	1,193	1,291	995	920	920
1906	1,155	1,344	1,021	1,113	991
1907	1,184	1,403	1,044	1,148	1,035
1908	1,445	1,212	1,115	896	1,002
1909	1,461	1,219	1,031	891	1,079
1910	1,436	1,266	1,072	900	1,195
1911	1,243	1,193	1,085	944	1,227
1912	1,388	1,268	1,198	1,133	1,254
1913	1,324	1,334	1,124	1,114	1,329
1914-15 ..	1,480	1,323	1,176	1,066	1,221
1915-16 ..	1,927	1,589	1,488	1,393	1,106
1916-17 ..	1,726	2,131	1,690	1,650	1,357
1917-18 ..	1,954	2,250	1,624	1,760	1,401
<i>1918-19</i>	<i>1864</i>	<i>2166</i>	<i>1855</i>	<i>1692</i>	<i>1775</i>

The high index-numbers for mineral produce during 1906 and 1907 reflect the world's prices for that period, when prices registered for all the principal industrial metals touched a point higher than any previously recorded for many years.

The lower index for agricultural produce exported during 1916-17 is due to the lower price registered for wheat, viz., 4s. 10d. per bushel as against 5s. 6d. per bushel for 1915-16.

§ 11. External Trade of Australia and other Countries.

1. Essentials of Comparisons.—Direct comparisons of the external trade of any two countries are possible only when the general conditions prevailing therein, and the scheme of record, are sensibly identical. For example, in regard to the mere matter of record, it may be observed that in one country the value of imports may be the value at the port of shipment, while in another the cost of freight, insurance, and charges may be added thereto. Or again, the values of imports and exports in the one may be declared by merchants, whereas in the other they may be the official prices, fixed from time to time by a commission constituted for the purpose. The figures relating to the external trade of any country are also affected in varying degree by the extent to which they include transit or re-export trade. Including bullion and specie, the transit trade of Belgium, for example, represented, prior to the war, approximately 40 per cent. of the gross trade recorded; of Switzerland, 45 per cent.; of France, 20 per cent.; and of the United Kingdom, 15 per cent.; whereas in Australia the same element represents only 4 per cent., and in New Zealand even less.

2. "Special Trade" of Various Countries.—Special trade may be defined, agreeably to the practice of the British Board of Trade, as (a) imports entered for consumption in the country (as distinguished from imports for transshipment or re-export) and (b) exports of domestic products.

TRADE OF VARIOUS COUNTRIES (IMPORTS FOR HOME CONSUMPTION AND EXPORTS OF DOMESTIC PRODUCTS, INCLUDING BULLION AND SPECIE) FOR LATEST AVAILABLE YEAR.

Country.	Year ended.	Trade.			Trade per Inhabitant.		
		Imports.	Exports.	Total.	Imports.	Exports.	Total.
		£	£	£	£ s. d.	£ s. d.	£ s. d.
C'wealth of	30/6/18	59,896,000	72,055,000	131,951,000	12 2 8	14 12 0	26 14 8
Australia	31/12/13	76,323,000	75,113,000	151,436,000	15 17 11	15 12 10	31 10 9
United Kingdom	31/12/17	994,487,000	527,080,000	1,521,567,000	21 11 7	11 8 8	33 0 3
	31/12/13	671,265,000	525,461,000	1,196,726,000	14 11 8	11 8 4	26 0 0
Canada	31/3/17	179,471,000	236,602,000	416,073,000	21 9 4	23 5 11	49 15 3
	31/3/14	132,019,000	89,915,000	221,934,000	16 13 6	11 7 2	28 0 8
New Zealand	31/12/17	21,023,000	31,043,000	52,066,000	19 2 5	23 4 10	47 7 3
	31/12/13	21,879,000	22,578,000	44,457,000	20 10 7	21 3 8	41 14 3
United States of America	30/6/17	548,070,000	1,279,581,000	1,827,651,000	5 5 11	12 7 3	17 13 2
	30/6/14	391,780,000	493,182,000	884,962,000	4 0 0	5 0 8	9 0 8
Argentine Republic..	31/12/15	45,018,000	110,770,000	155,788,000	5 12 9	13 17 5	19 10 2
Austria-Hungary..	31/12/12	149,026,000	121,345,000	270,371,000	2 19 4	2 8 4	5 7 8
Belgium ..	"	210,211,000	160,054,000	370,265,000	27 15 3	21 2 10	48 18 1
Brazil ..	"	63,425,000	74,649,000	138,074,000	2 12 1	3 1 2	5 13 3
Denmark ..	"	41,954,000	33,940,000	75,894,000	14 19 8	12 2 5	27 2 1
France ..	"	350,482,000	281,495,000	631,977,000	8 16 9	7 1 11	15 18 8
German Empire ..	"	541,675,000	447,392,000	989,067,000	8 3 9	6 15 3	14 19 0
Italy ..	"	149,113,000	97,536,000	246,649,000	4 5 2	2 15 8	7 0 10
	"	66,007,000	57,972,000	123,979,000	1 5 3	1 2 2	2 7 5
Japan ..	31/12/17	105,144,000	161,750,000	266,894,000	1 17 0	2 16 11	4 13 11
	31/12/12	28,756,000	18,147,000	46,903,000	11 15 9	7 8 10	19 4 7
Norway ..	"	17,035,000	7,867,000	24,902,000	3 0 10	1 8 2	4 9 0
Portugal ..	"	42,089,000	41,826,000	83,915,000	2 2 9	2 2 6	4 5 3
Spain ..	"	44,095,000	42,257,000	86,352,000	7 17 4	7 10 10	15 8 2
Sweden ..	"	81,577,000	55,629,000	137,206,000	21 6 7	14 10 11	35 17 6
Switzerland	"	9,333,000	8,840,000	18,173,000	7 18 6	7 10 1	15 8 7
Uruguay ..	31/12/11						

In the above table the figures relate, as nearly as is possible, to imports entered for consumption in the various countries quoted, and to exports of their domestic products. It is to be noted, however, that these figures do not unequivocally denote the same thing throughout, since, in the United Kingdom and other manufacturing countries, raw or partly manufactured materials are imported as for home consumption, and, after undergoing some process of manufacture or further modification, are re-exported as domestic production, and further, the statistical records of many countries do not distinguish between bullion and specie imported for the use of the particular country (home consumption) and the amount in transit, nor between the exports of that produced within the country and that re-exported. Nevertheless, a comparison of this character reveals approximately the extent of the external trade which otherwise would not be manifest.

3. External Trade as a Measure of Prosperity.—External trade is not necessarily a measure of the prosperity of a country. It is, for example, obvious that the external trade of a community depends not only upon the aggregate of its requirements, but also upon the extent to which it fails to supply requirements from its own resources. A community largely self-contained, for example, may have but a small external trade per head, and yet, by virtue of its capacity to produce and manufacture its own raw material, may

actually enjoy greater prosperity and a higher standard of living than another country whose external trade per head is much greater. The same observation applies equally to comparisons of the trade of the same country at different periods. A young country, the industries and export trade of which are mainly connected with raw or natural products, may, for example, through internal development, find the growth of its external trade diminishing per head of population without necessarily suffering any real diminution in the well-being of its people. In this regard it is interesting to contrast the trade per head of say, Belgium, New Zealand, and the United States of America. Prior to the war trade per unit of population for any year was greatest in Belgium (£48 18s. 1d. in 1912), with New Zealand next (£41 14s. 3d.), whereas for the United States the trade was only £9 0s. 8d. per inhabitant. Belgium and New Zealand represent conditions almost directly opposite to one another in the scheme of industrial development, yet the trade per head of each was abnormally high in comparison with that of most other countries. The large trade of Belgium was attained by the export of the products of highly organised manufacturing industries, based on the supplies of coal and iron within the country, in exchange for the raw materials for those industries and for food. In New Zealand the circumstances are reversed, inasmuch as in that country the energies of the people are mainly applied to primary industries, the produce of which, being largely in excess of local requirements, is exported in exchange for manufactured goods. The relatively small trade per head of population of the United States, as compared with Belgium or New Zealand, does not indicate that the people of the United States are in an inferior condition, but rather that their industries are more nearly balanced, with the result that a large proportion of the requirements of the nation is supplied from within its own territory, and consequently a smaller foreign trade is sufficient to supply the fewer remaining wants of the people, or, in other words, it indicates that as a nation the United States is more nearly self-contained.

The small foreign trade per inhabitant of Japan, Spain, and Portugal is, undoubtedly, due in some measure to a lower standard of living, but to what extent this factor is responsible, and how much is due to the capacity to supply all kinds of material wants from their own resources, could be ascertained only from a consideration of the general social and industrial conditions prevailing in each country. It is further obvious that circumstances may arise when enlargement of both imports and exports is actually a consequence of temporary economic difficulties. For example, in 1903, owing to shortage in the local supply, it became necessary to import wheat and flour into Australia to the value of £2,556,968, and to meet the charges for this by equivalent exports, the effect, considered *per se*, being to enlarge both. In this case the increase is not an evidence of prosperity, nor can the increase of imports into the United Kingdom during 1915, due to purchases of war material, be considered as an advantage to that country.

§ 12. Trade of the United Kingdom with Australia, compared with Competing Countries.

1. Proportion of Trade from United Kingdom and Competing Countries.—The failure of the United Kingdom to maintain the position formerly held in the import trade of Australia has been a matter of more than ordinary interest for some years. Since 1908, a permanent resident Commissioner, appointed by the British Board of Trade, has been established in Australia for the purpose of advising manufacturers and merchants in the United Kingdom with regard to Australian trade affairs. From the 8th August, 1907, the Commonwealth Customs Tariffs have provided special rates in

favour of goods from the United Kingdom, with the object of assisting the British manufacturer to retain or improve his position in this market. The percentages given in the following table shew the proportions of the imports into Australia from the United Kingdom, and from other countries mentioned, during each of the years 1886 to 1917-18 :-

**PROPORTION OF COMMONWEALTH IMPORT TRADE FROM VARIOUS COUNTRIES,
1886 TO 1917-18.**

Year.	Percentage Proportions from—					Year.	Percentage Proportions from—				
	United K'dom.	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.		United K'dom.	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.
1886 ..	73.37	11.23	2.05	6.11	15.40	1902 ..	58.64	13.22	6.53	12.27	28.14
1887 ..	72.26	12.50	2.23	5.37	15.24	1903 ..	52.51	13.17	6.24	16.84	34.32
1888 ..	71.62	12.03	2.71	6.48	16.35	1904 ..	60.68	12.22	7.17	12.40	27.10
1889 ..	68.98	13.45	3.65	6.67	17.57	1905 ..	60.17	14.04	6.42	11.70	25.79
1890 ..	68.08	12.66	4.77	6.54	19.26	1906 ..	59.39	15.09	7.16	10.36	25.52
1891 ..	70.15	11.40	4.53	6.79	18.45	1907 ..	61.59	12.93	6.85	11.33	25.48
1892 ..	70.74	11.37	4.32	6.04	17.89	1908 ..	60.16	12.33	7.05	12.13	27.07
1893 ..	72.78	12.14	3.40	4.98	15.08	1909 ..	60.92	13.45	6.51	9.78	25.63
1894 ..	71.92	11.96	3.78	5.39	16.12	1910 ..	61.06	13.11	6.30	10.82	25.83
1895 ..	71.62	11.46	4.42	5.95	16.92	1911 ..	58.98	12.86	6.63	11.57	28.16
1896 ..	68.28	10.74	5.31	8.59	20.98	1912 ..	58.76	12.26	6.58	12.09	23.98
1897 ..	66.22	10.72	5.75	10.10	23.06	1913 ..	59.70	12.42	6.22	11.94	27.88
1898 ..	66.62	10.88	5.86	10.16	22.50	1914-15	58.82	14.64	2.02	14.89	26.54
1899 ..	61.85	11.75	6.07	13.00	26.40	1915-16	51.26	16.39	0.65	19.81	32.35
1900 ..	61.28	11.23	6.54	12.16	27.44	1916-17	52.47	16.03	0.06	20.37	31.50
1901 ..	59.47	11.22	6.59	13.80	29.31	1917-18	40.89	20.18	0.02	24.98	38.93

In order to draw accurate conclusions from the above table, however, special attention must be given to the nature of imports from the United States, since the imports from that country have in some years been increased by imports of breadstuffs, a trade in which the United Kingdom could not participate. The years affected by the imports of breadstuffs were 1886, 1889, 1896, 1897, 1903 and 1914-15. Increased imports of such items as kerosene oil and timber also tend to increase the proportion of imports from the United States without any prejudicial effect on the trade of the United Kingdom. Similar modification is not necessary in regard to Germany, as the nature of the imports from that country was substantially the same as from the United Kingdom.

It has already been pointed out in this chapter that, prior to the year 1905, imports into the Commonwealth were recorded only against the country whence they were directly imported. Although the values of direct imports do not afford satisfactory data, it is necessary for any comparison extending further back than 1905 to use such figures. These figures are unsatisfactory on account of the varying proportions of indirect trade.

In order to furnish a comparison free from such trade as, from its nature, is not open to the United Kingdom, the following table, shewing the direct imports during the years 1886, 1906, 1913, and 1917-18 of the principal classes of goods which enter largely into the trade of the countries named, has been prepared. It may be mentioned that the imports for the year 1886 were extracted from the "Statistical Registers" of the several States for a comparison—published in a previous issue—with the year 1906, and as their compilation involved a large amount of labour they are again utilised for comparison with the later years.

PRINCIPAL DIRECT IMPORTS INTO THE COMMONWEALTH FROM THE UNITED KINGDOM, GERMANY, AND THE UNITED STATES, 1886, 1906, 1913, AND 1917-18.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries.
		£	£	£	£
Foodstuffs of animal origin . .	1886	348,950	5,603	70,959	674,296
	1906	293,950	24,319	146,781	697,830
	1913	385,307	61,096	269,826	947,697
	1917-18	8,199	..	535,235	1,080,249
Alcoholic liquors ..	1886	1,801,200	82,185	82,730	2,126,877
	1906	1,053,154	109,426	24,367	1,388,671
	1913	1,571,425	228,028	15,965	2,095,896
	1917-18	1,237,168	6	77,969	1,445,217
Apparel, textiles, &c. (including boots) ..	1886	9,845,182	54,350	15,336	10,316,989
	1906	11,066,201	418,776	221,362	13,508,844
	1913	15,494,151	578,096	394,783	19,705,768
	1917-18	13,964,792	548	1,559,692	21,824,720
Metals unmanufactured and partly manufactured* ..	1886	403,809	2,241	..	430,950
	1906	696,331	62,945	34,927	927,785
	1913	1,191,583	113,152	106,731	1,899,846
	1917-18	223,258	123	309,169	602,513
Manufactures of metal (including machinery) ..	1886	4,616,924	94,832	311,342	5,190,901
	1906	5,144,912	926,314	1,379,662	7,932,675
	1913	11,281,207	1,235,493	2,849,083	16,623,135
	1917-18	3,128,963	8,090	3,957,901	7,966,937
Paper and stationery ..	1886	1,260,531	21,038	39,700	1,340,627
	1906	1,207,729	261,684	288,509	1,838,474
	1913	2,083,736	255,234	230,803	3,134,750
	1917-18	1,058,763	16	965,022	3,003,538
Jewellery, timepieces, fancy goods ..	1886	659,833	24,206	57,477	789,127
	1906	740,850	140,950	59,151	1,045,164
	1913	964,966	182,040	90,508	1,410,555
	1917-18	479,229	393	219,893	1,065,432
Earthenware, cements, &c.	1886	755,907	78,762	24,711	938,476
	1906	316,252	227,390	37,344	688,510
	1913	700,561	459,090	60,203	1,580,615
	1917-18	253,661	94	176,507	781,978
Drugs, chemicals, fertilisers, &c. ..	1886	511,216	8,660	33,382	766,243
	1906	887,325	193,615	82,789	1,732,543
	1913	941,113	233,792	103,308	2,493,192
	1917-18	1,341,440	236	571,893	3,217,533
Leather, and mfs. thereof (excluding boots) and substitutes therefor, including indiarubber ..	1886	285,601	6,357	53,588	363,332
	1906	682,238	70,028	116,356	924,968
	1913	889,870	243,471	289,285	1,749,046
	1917-18	471,137	..	616,821	1,643,647
Total above-mentioned imports ..	1886	20,489,153	378,234	689,225	22,937,818
	1906	22,088,942	2,435,447	2,391,248	30,685,464
	1911	32,038,457	3,282,974	4,103,528	45,826,196
	1913	35,503,919	3,589,492	4,410,495	51,640,500
	1914-15	30,826,905	931,983	5,156,535	44,104,547
	1915-16	32,445,939	27,823	7,652,931	49,333,917
	1916-17	31,932,680	29,744	8,915,953	51,541,094
1917-18	22,166,610	9,506	8,990,102	42,631,764	
Total imports (less bullion and specie) ..	1886	24,974,939	699,075	2,087,213	33,885,284
	1906	26,437,768	3,202,990	4,633,331	42,413,995
	1911	39,145,829	4,427,153	7,747,470	64,934,538
	1913	47,422,225	4,956,828	9,522,502	78,196,109
	1914-15	37,466,500	1,296,861	9,584,665	63,563,781
	1915-16	39,508,832	1,296,917	15,358,433	76,740,899
	1916-17	39,983,227	47,675	15,526,998	75,956,405
1917-18	24,825,067	11,553	15,193,157	60,649,782	

* Mainly pig iron and bar and rod iron. Gold and silver bullion is not included.

PERCENTAGE ON TOTAL COMMONWEALTH IMPORTS OF PRINCIPAL *DIRECT* IMPORTS FROM UNITED KINGDOM, GERMANY, AND UNITED STATES, 1886, 1906, 1913, AND 1917-18.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries.
Foodstuffs of animal origin ..	1886	51.75	0.83	10.52	100
	1906	42.12	3.48	21.02	100
	1913	40.66	6.45	28.47	100
	1917-18	0.76	..	49.55	100
	1886	84.69	3.86	3.89	100
Alcoholic liquors	1906	75.84	7.88	1.75	100
	1913	74.98	10.88	0.76	100
	1917-18	85.64	0.00	5.39	100
	1886	95.44	0.53	0.15	100
	1906	81.93	3.10	1.64	100
Apparel, textiles, &c. (including boots)	1913	78.62	2.93	2.00	100
	1917-18	63.99	0.00	7.15	100
	1886	93.72	0.52	..	100
	1906	75.06	6.78	3.76	100
	1913	62.73	5.96	5.62	100
Metals unmanufactured and partly manufactured ..	1917-18	36.90	0.02	51.31	100
	1886	88.93	1.83	6.00	100
	1906	64.85	11.68	17.39	100
	1913	67.86	7.43	17.14	100
	1917-18	39.27	0.10	49.68	100
Manufactures of metals ..	1886	94.03	1.57	2.96	100
	1906	65.69	14.23	15.69	100
	1913	66.47	8.14	7.36	100
	1917-18	35.25	0.00	32.13	100
	1886	83.62	3.07	7.28	100
Paper and stationery	1906	70.89	13.48	5.66	100
	1913	68.42	12.91	6.42	100
	1917-18	44.98	0.04	20.64	100
	1886	80.55	8.39	2.63	100
	1906	45.93	33.03	5.42	100
Earthenware, cements, &c. ..	1913	44.32	29.05	3.81	100
	1917-18	32.44	0.01	22.57	100
	1886	66.71	1.13	4.36	100
	1906	51.22	11.18	4.78	100
	1913	37.75	9.38	4.14	100
Drugs, chemicals, fertilisers, &c.	1917-18	41.69	0.01	17.77	100
	1886	78.60	1.75	15.30	100
	1906	73.75	7.60	12.58	100
	1913	50.88	13.92	16.54	100
	1917-18	28.66	..	37.53	100
Leather and mfs. thereof, and substitutes therefor, including indiarubber	1886	89.31	1.65	3.01	100
	1906	71.98	7.94	7.79	100
	1911	69.91	7.16	8.95	100
	1913	68.73	6.95	8.54	100
	1914-15	69.89	2.11	11.69	100
	1915-16	65.76	0.06	15.51	100
	1916-17	61.96	0.06	17.30	100
	1917-18	50.80	0.02	20.60	100
Total above-mentioned imports	1886	73.71	2.06	6.16	100
	1906	62.34	7.55	10.92	100
	1911	60.28	6.82	11.93	100
	1913	60.66	6.34	12.18	100
	1914-15	58.95	2.04	15.08	100
	1915-16	51.47	1.69	20.01	100
	1916-17	52.64	0.06	20.38	100
	1917-18	40.93	0.02	25.05	100
Total imports (less bullion and specie)	1886	73.71	2.06	6.16	100
	1906	62.34	7.55	10.92	100
	1911	60.28	6.82	11.93	100
	1913	60.66	6.34	12.18	100
	1914-15	58.95	2.04	15.08	100
	1915-16	51.47	1.69	20.01	100
	1916-17	52.64	0.06	20.38	100
	1917-18	40.93	0.02	25.05	100

The foregoing table shews that the share of the United Kingdom, as indicated by the records according to "Country of Shipment," in the trade of those classes of goods enumerated—representing about 90 per cent. of the total imports from that country—has declined from 89.31 per cent. of the whole in 1886 to 50.80 per cent. in 1917-18. The value of these imports from the United Kingdom has increased from £20,489,153 in 1886 to

only £31,932,680 in 1916-17, or by 55.85 per cent., while the total value of similar imports had increased from £22,937,818 to £51,541,094, or by 124.72 per cent. The figures for 1917-18 are so seriously affected by war conditions that they are of no value for comparison.

The following table gives an analysis of the imports during the quinquennium 1908-12, and the years 1913 to 1917-18, according to the countries of origin of the goods, and has been extended to include the products of Japan.

IMPORTS INTO THE COMMONWEALTH OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, FRANCE, GERMANY, JAPAN, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1908-12 TO 1917-18.

Nature of Imports.	Year.	United Kingdom.	France.	Germany.	Japan.	U.S. of America.	All Countries.
		£	£	£	£	£	£
Foodstuffs of animal origin ..	1908-12	269,073	4,269	8,253	5,747	242,640	862,778
	1913 ..	301,025	3,093	12,071	6,988	289,229	947,697
	1915-16	239,196	2,925	315	17,214	668,726	1,797,407
	1916-17	208,010	2,024	189	16,262	344,306	1,156,816
	1917-18	6,576	102	..	29,903	521,020	1,080,249
Alcoholic liquors, &c.	1908-12	1,095,700	310,485	104,655	931	18,573	1,734,030
	1913 ..	1,298,717	361,734	171,055	1,755	22,313	2,095,896
	1915-16	1,113,030	166,394	896	2,599	38,479	1,488,987
	1916-17	1,528,027	205,261	816	2,074	47,818	1,985,895
	1917-18	1,107,386	120,549	6	668	56,019	1,445,217
Apparel (including boots), textiles, &c.	1908-12	10,579,504	820,626	1,505,804	396,687	454,184	16,677,058
	1913 ..	12,057,643	860,479	1,702,145	475,354	324,332	19,765,755
	1915-16	13,784,546	851,086	28,289	1,132,222	1,266,449	21,272,545
	1916-17	15,382,173	796,051	11,289	1,612,222	1,703,481	24,124,756
	1917-18	12,412,939	706,577	1,106	2,520,750	1,599,467	21,824,720
Metals unmanufactured or partly manufactured*excluding gold and silver bullion ..	1908-12	859,907	2,550	185,496	239	56,685	1,309,453
	1913 ..	1,202,514	3,674	302,466	..	108,000	1,899,846
	1915-16	800,089	19,364	771	4,551	438,639	1,425,545
	1916-17	708,697	2,725	2,285	22,819	553,185	1,479,649
	1917-18	212,936	12	123	18,362	320,427	602,513
Manufactures of metals ..	1908-12	8,029,953	53,297	1,447,043	3,324	2,500,239	12,763,023
	1913 ..	10,874,005	44,713	1,735,452	7,601	3,078,610	16,623,135
	1915-16	8,424,701	31,801	28,141	75,292	3,731,020	13,013,699
	1916-17	6,286,665	21,263	17,420	171,935	3,872,922	11,084,538
	1917-18	2,981,601	15,487	11,739	279,609	4,005,568	7,966,937
Paper and stationery	1908-12	1,463,233	18,665	279,868	7,902	293,820	2,547,761
	1913 ..	1,789,577	21,930	266,433	10,656	403,679	3,134,750
	1915-16	1,664,894	30,313	4,705	20,852	401,390	2,961,310
	1916-17	2,050,520	25,474	2,670	52,680	845,780	4,462,400
	1917-18	990,444	36,256	291	85,020	879,076	3,903,538
Jewellery, timepieces, and fancy goods ..	1908-12	532,749	133,828	263,526	17,129	152,454	1,472,740
	1913 ..	506,608	85,430	250,846	19,192	136,965	1,410,555
	1915-16	395,097	93,720	4,512	87,213	193,044	1,125,101
	1916-17	368,712	90,419	5,512	128,658	193,378	1,126,320
	1917-18	244,232	73,738	481	185,624	226,615	1,065,432
Earthenware, cements, glass, &c.	1908-12	490,818	31,081	271,406	16,220	55,039	1,067,217
	1913 ..	655,778	40,504	458,007	21,493	64,482	1,580,615
	1915-16	674,576	12,205	7,048	230,229	220,424	1,355,299
	1916-17	501,243	8,024	3,410	263,056	248,796	1,112,987
	1917-18	235,708	3,508	207	333,937	182,571	781,978
Drugs, chemicals, fertilisers ..	1908-12	864,243	212,344	192,785	106,997	146,088	2,083,895
	1913 ..	902,343	226,917	266,811	129,188	178,501	2,493,192
	1915-16	1,151,039	285,676	11,557	189,357	414,288	3,000,984
	1916-17	1,168,860	208,027	6,320	366,405	471,255	3,130,397
	1917-18	1,108,750	174,758	1,307	584,637	646,498	3,217,533
Leather and manufactures thereof and substitutes therefor including indiarubber (excluding boots)	1908-12	472,166	59,356	221,768	1,581	324,991	1,338,033
	1913 ..	515,169	68,746	347,550	692	435,071	1,749,046
	1915-16	496,747	52,272	2,492	5,040	782,272	1,892,940
	1916-17	426,546	20,228	290	16,243	978,588	1,867,696
	1917-18	317,585	30,511	148	11,890	764,585	1,643,647
Total above-mentioned imports ..	1908-12	24,657,346	1,646,501	4,480,604	556,757	4,244,713	41,855,993
	1913 ..	30,103,379	1,817,220	5,512,886	673,519	5,341,532	51,640,500
	1915-16	28,743,915	1,545,756	88,726	1,764,569	8,154,731	49,333,917
	1916-17	28,629,453	1,379,496	50,201	2,652,354	9,259,509	51,541,094
	1917-18	19,618,157	1,161,498	15,403	4,050,405	9,201,846	42,631,764
Total imports (less bullion and specie)	1908-12	30,371,178	2,015,324	5,547,984	760,616	7,987,532	59,777,620
	1913 ..	40,948,803	2,222,631	7,029,325	950,300	10,907,512	78,196,109
	1915-16	34,914,908	1,792,525	113,232	2,909,696	15,863,766	76,740,899
	1916-17	36,236,491	1,492,552	70,396	3,373,682	15,873,483	75,956,405
	1917-18	24,827,008	1,219,270	18,055	4,977,095	15,453,665	60,649,782

* Mainly pig iron and bar and rod iron.

Note.—Figures for the years 1905-10 will be found in previous issues.

PERCENTAGE ON TOTAL COMMONWEALTH IMPORTS OF IMPORTS [OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, FRANCE, GERMANY, JAPAN, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1908-12 TO 1917-18.

Nature of Imports.	Year.	United Kingdom.	France.	Germany.	Japan.	U.S. of America.	All Countries.
Foodstuffs of animal origin ..	{ 1908-12	31.19	0.49	0.96	0.67	28.12	100
	{ 1913 ..	31.77	0.33	12.74	0.74	30.52	100
	{ 1915-16	13.31	0.16	0.02	0.96	37.20	100
	{ 1916-17	17.98	0.17	0.02	1.40	29.77	100
	{ 1917-18	0.61	0.01	..	2.77	48.23	100
Alcoholic liquors, &c.	{ 1908-12	63.18	17.90	6.03	0.05	1.07	100
	{ 1913 ..	61.96	17.26	8.16	0.08	1.06	100
	{ 1915-16	74.75	11.18	0.06	0.17	2.58	100
	{ 1916-17	76.95	10.34	0.04	0.10	2.40	100
	{ 1917-18	76.62	8.34	0.00	0.05	3.88	100
Apparel (including boots), textiles, &c.	{ 1908-12	63.45	4.92	9.03	2.38	2.72	100
	{ 1913 ..	61.18	4.87	8.64	2.42	3.17	100
	{ 1915-16	64.84	4.00	0.13	5.32	5.95	100
	{ 1916-17	63.73	3.30	0.05	6.68	7.06	100
	{ 1917-18	56.88	3.24	0.00	11.55	7.33	100
Metals unmanufactured or partly manufactured, excluding gold and silver bullion ..	{ 1908-12	65.67	0.19	14.16	0.02	4.33	100
	{ 1913 ..	63.29	0.19	15.92	..	5.69	100
	{ 1915-16	56.12	1.36	0.05	0.32	30.77	100
	{ 1916-17	47.90	0.18	0.15	1.54	37.39	100
	{ 1917-18	35.34	0.00	0.02	3.05	53.18	100
Manufactures of metals ..	{ 1908-12	62.91	0.42	11.34	0.03	19.59	100
	{ 1913 ..	65.41	0.27	10.44	0.05	18.52	100
	{ 1915-16	64.60	0.24	0.21	0.58	28.60	100
	{ 1916-17	56.71	0.19	0.16	1.55	34.94	100
	{ 1917-18	37.42	0.19	0.15	3.51	50.28	100
Paper and stationery	{ 1908-12	57.43	0.73	10.98	0.31	11.53	100
	{ 1913 ..	57.41	0.70	8.50	0.34	12.88	100
	{ 1915-16	56.62	1.03	0.22	0.80	14.20	100
	{ 1916-17	45.95	0.57	0.06	1.18	18.95	100
	{ 1917-18	32.98	1.21	0.01	2.83	29.27	100
Jewellery, timepieces, and fancy goods	{ 1908-12	36.18	9.09	17.90	1.16	10.35	100
	{ 1913 ..	35.92	6.06	17.77	1.36	9.71	100
	{ 1915-16	35.14	8.34	0.37	7.76	17.18	100
	{ 1916-17	32.74	8.03	0.49	11.41	17.17	100
	{ 1917-18	22.92	6.92	0.05	17.42	21.27	100
Earthenware, cements, glass, &c.	{ 1908-12	46.99	2.91	25.43	1.52	5.16	100
	{ 1913 ..	41.49	2.56	28.98	1.36	4.08	100
	{ 1915-16	49.77	0.90	0.52	16.99	16.27	100
	{ 1916-17	45.05	0.72	0.31	23.64	22.36	100
	{ 1917-18	30.14	0.45	0.03	42.70	23.35	100
Drugs, chemicals, and fertilisers ..	{ 1908-12	41.48	10.19	9.25	5.13	7.01	100
	{ 1913 ..	36.19	9.10	10.70	5.18	7.16	100
	{ 1915-16	38.36	9.52	0.39	6.32	13.83	100
	{ 1916-17	37.33	6.64	0.20	11.71	15.05	100
	{ 1917-18	34.46	5.43	0.04	18.17	20.09	100
Leather and manufactures thereof, and substitutes therefor including indiarubber (excluding boots)	{ 1908-12	35.29	4.43	16.57	0.12	24.29	100
	{ 1913 ..	29.45	3.93	19.87	0.04	24.88	100
	{ 1915-16	26.36	2.76	0.13	0.26	41.34	100
	{ 1916-17	22.84	1.08	0.02	0.87	52.40	100
	{ 1917-18	19.32	1.86	0.01	0.72	46.51	100
Total above-mentioned articles	{ 1908-12	58.90	3.93	10.71	1.33	10.14	100
	{ 1913 ..	58.30	3.52	10.67	1.30	10.34	100
	{ 1915-16	58.27	3.13	0.18	3.58	16.53	100
	{ 1916-17	55.54	2.68	0.10	5.15	17.96	100
	{ 1917-18	46.02	2.72	0.04	9.50	21.58	100
Total imports (less bullion and specie)	{ 1908-12	50.81	3.37	9.28	1.27	13.36	100
	{ 1913 ..	52.37	2.84	8.99	1.21	13.95	100
	{ 1915-16	45.52	2.36	0.15	3.79	20.69	100
	{ 1916-17	47.71	1.96	0.09	4.44	20.90	100
	{ 1917-18	40.94	2.01	0.03	8.21	25.48	100

In previous issues this table has included Belgian imports. As it will be some time before Belgian trade will regain its pre-war dimensions, figures relating to the imports from Japan have been substituted.

As already stated in connection with the preceding table, the imports from the United Kingdom during 1917-18 were, obviously, so affected by the war that the trade of that year affords no indication of what the tendencies will be when international trade again finds its readiest channels.

Apart from the decline of imports from the United Kingdom and the collapse of the trade with Belgium and Germany in consequence of the war, the most striking feature of the figures given above, perhaps, is the increased proportion of the trade which has fallen to the United States and to Japan. With regard to the greater shares of the trade taken by these two countries, it is noticeable that while the value of imports from Japan has increased steadily year by year, the value of the imports from the United States has been practically stationary since 1915-16. In the latest pre-war year (1913), the share of the United States in the "competitive" groups was £5,341,532, or 10.34 per cent., whereas in 1917-18 it was £9,201,846, or 21.58 per cent. The following are some of the principal lines in which United States' sales to Australia during 1917-18 were increased over those of 1913, and the amount of such increases:—Fish, £113,434; cocoa and chocolate, and confectionery, £44,288; potable spirits, £24,417; apparel and textiles, £974,785; mixed metals—aluminium, bronze, &c., £44,527; iron and steel unmanufactured or partly manufactured, £141,058; manufactured metals and machinery, £926,958; glass and glassware, £136,016; indiarubber and manufactures thereof, £265,637; leather and manufactures of, £66,744; paper and stationery, £475,397; fancy goods, £38,643; jewellery, £55,000; drugs and chemicals, £467,997; ammunition and explosives, £127,319; brushware, £9,133; electrical materials, £65,139; pianos and parts thereof, £203,263; motor vehicles and parts thereof, £607,080; bicycles, tricycles, and parts, £37,442; paints and varnishes, £137,628.

The more prominent position taken by Japan in the supply of these competitive goods is also a noticeable development during the war period. Although the value of the imports of competitive goods from Japan is much less than from America, the rate of increase has been far greater—from £673,519 in 1913 to £4,050,405 in 1917-18, equal to 501 per cent. The classes of goods chiefly responsible for this increase and the amount of the increase due to each are as follows:—Apparel and textiles, £2,044,796; metal manufactures and machinery, £290,371; china and porcelain ware, £95,051; earthenware, £49,726; glass and glassware, £167,563; paper, £51,755; stationery, £22,609; fancy goods, £159,486; optical, surgical, and scientific instruments, £18,985; sulphur, £229,702; brushware, £40,265; matches, £88,440; electric cable and wire, covered, £123,776; nuts, edible, £30,333; cotton waste, £53,796; oils in bulk, £50,326; rubber manufactures, £11,198.

2. Preferential Tariff.—The Tariff Act of 1908 provided preferential tariff rates in favour of goods produced or manufactured in the United Kingdom. Subsequent amendments of the tariff have extended the list of articles to which the preferential rates apply. In the schedule submitted to Parliament on the 3rd December, 1914, the extension of the number of preferential rates has been very material, and has been accompanied in many instances by an increase of the margin in favour of the United Kingdom. On the introduction of the preferential treatment of British goods, it was required that British material or labour should represent not less than one-fourth the value of such goods. From the 1st September, 1911, it has been required, in regard to goods only partially manufactured in the United Kingdom, that the final process or processes of manufacture shall have been performed in the United Kingdom, and that the expenditure in material of British production and/or British labour shall have been not less than one-fourth of the factory or works' cost of the goods in the finished state.

Number 8 and previous editions of this Year Book contained exhaustive analyses of the imports into the Commonwealth, for the purpose of measuring the effect of the preferential treatment of British goods. The method adopted was to contrast the relative proportion of the trade supplied by the United Kingdom in respect to goods subject to preferential tariff rates with the proportion of goods of the same class supplied in unrestricted competition under the general tariff. The most satisfactory data for the purpose were furnished by two classes of goods, viz., "Apparel and Textiles" and "Machinery and Manufactures of Metals." Under the existing tariff, preferential treatment has been so extended as to cover practically all goods of these classes, and consequently the basis of comparison no longer exists. Prior to the existing tariff, just about one-half

of all imports and about 60 per cent. of imports from the United Kingdom were affected by the preferential tariff, whereas, under the tariff now in operation, nearly 80 per cent. of all imports, and about 90 per cent. of imports of United Kingdom origin are affected by the preferential tariff.

3. **Preferential Tariffs of the British Empire.**—In the Official Year Book No. 11, pages 601–3, will be found an outline of the systems of preferential tariffs within the British Empire and the tariff arrangements between British Dominions or Colonies and Foreign Countries, together with a list of countries with whom Great Britain had concluded commercial treaties for “Most-Favoured-Nation” treatment.

§ 13. Rates of Duty in Australia and other Countries.

The following table shows the proportion of the total imports of merchandise entered for “home consumption” free of duty, in the undermentioned countries, and also the equivalent *ad valorem* rates of duty charged :—

PROPORTION OF FREE GOODS AND RATES OF IMPORT DUTY.

Particulars.	Australia.			Canada. (a)	New Zealand.	U.S. of America.
	31/12/06	30/6/18	Tariff of 1914 ^e applied to Imports of 1913.	31/3/17	31/12/17	30/6/17
Percentage of free merchandise ..	35.18	34.24	34.83	45.38	54.87	68.64
Equivalent <i>ad val.</i> rates of duty on—	%	%	%	%	%	%
Spirits, wines and malt liquors ..	153.23	115.67	242.58	130.21	113.62	94.32
Tobacco, and preparations thereof ..	168.65	112.26	246.70	17.40b	154.91	87.29d
Other dutiable merchandise ..	17.04	18.21	22.56	30.93	21.19	26.17
Other merchandise dutiable and free	10.75	11.70	14.37	16.91	8.94	7.83
Total dutiable merchandise ..	27.14	24.46	36.52	31.97	33.59	30.67
Total merchandise dutiable and free	17.59	16.08	23.79	17.46	15.16	9.62
Customs duty per head	£ s. d. 1 15 10	£ s. d. 1 19 2	£ s. d. —	£ s. d. 3 12 7	£ s. d. 2 17 8c	£ s. d. 0 8 6

(a) The rates of duty given in relation to imports are exclusive of war tax, £7,773,482, which, however, is included in the duty per head of population. (b) Unmanufactured tobacco is admitted to Canada free of duty. (c) Exclusive of Maoris. (d) Tobacco is admitted free of Customs duty from the Philippine Islands. (e) Including amendments of the 10th August, 1917, and the 25th September, 1918.

The figures given for the year ended 30th June, 1906, represent the results of the last full year of operation of the tariff of 1902.

From the results given in the above table, it will be seen that the scheme of taxation, by means of import duties, varies materially between the countries named. In Australia and Canada, taxation is spread more widely over imported commodities than in New Zealand or the United States of America. In the latter country, 68 per cent. of all imports are free of duty, whereas under the tariff at present in force in the Commonwealth, about 34 per cent. only of the total imports are exempt from taxation. A considerable restriction of the free list in this country was necessary to raise the revenue required by the exigencies of the war, though even prior to the war (in 1913) free goods represented only 42 per cent. of the total imports, while in New Zealand they comprised 52 per cent. It will be noticed that the equivalent average *ad valorem* rates of duty on imports, other than drink and tobacco, during 1917–8 are lower than those obtained by applying the same tariff to the imports of 1913. This result is mainly the effect of increased prices lowering the equivalent *ad valorem* incidence of fixed rate duties.

VALUE OF GOODS (EXCLUDING BULLION AND SPECIE) ENTERED FOR CONSUMPTION IN THE COMMONWEALTH, AND DUTY COLLECTED THEREON, 1917-18.

Classification of Imports.	Value Entered for Consumption.			Duty Collected, less Refunds.	Equivalent <i>ad valorem</i> Rate per cent. on—	
	Dutiable.	Free (Net Imports).	Total.		Dutiable Imports.	All Imports.
	£	£	£	£	%	%
I. Foodstuffs of animal origin, excluding living animals ..	863,817	113,954	977,771	121,085	14.02	12.38
II. Foodstuffs of vegetable origin and salt ..	1,591,402	207,193	1,798,595	447,471	28.12	24.88
III. Beverages (non-alcoholic) and substances used in making ..	165,514	1,515,414	1,680,928	47,025	28.41	2.80
IV. Spirits and alcoholic liquors, including industrial spirits and pharmaceutical preparations dutiable as spirits ..	1,462,036	..	1,462,036	1,691,195	115.67	115.67
V. Tobacco and preparations thereof ..	1,102,541	..	1,102,541	1,237,677	112.26	112.26
VI. Live animals ..	21,323	70,680	92,003	51	0.24	0.06
VII. Animal substances (mainly unmanufactured) not foodstuffs ..	106,735	401,787	508,522	10,321	9.67	2.03
VIII. Vegetable substances and fibres ..	333,826	2,549,358	2,883,184	39,864	11.94	1.38
IX. Apparel, textiles, and manufactured fibres ..	12,265,647	9,368,064	21,633,711	2,558,296	20.86	11.83
X. Oils, fats, and waxes ..	2,434,660	427,812	2,862,472	243,651	10.01	8.51
XI. Paints and varnishes ..	416,128	27,334	443,462	53,183	12.78	11.99
XII. Stones and minerals used industrially ..	43,163	83,298	131,461	9,587	22.21	7.29
XIII. Specie (omitted) ..	..	..	..	..	..	..
XIV. Metals (unmanufactured) and ores, excluding gold and silver bullion ..	44,980	94,153	139,133	2,131	4.74	1.53
XV. Metals partly manufactured ..	281,250	59,291	340,541	15,128	5.39	4.44
XVI. Metals manufactured, including machinery ..	6,133,498	1,634,232	7,772,730	997,602	16.25	12.83
XVII. Leather and manufactures of leather and substitutes therefor, also indiarubber and indiarubber manufactures ..	1,042,336	560,258	1,602,594	291,802	28.00	18.21
XVIII. Wood and wicker, raw and manufactured ..	1,584,672	48,822	1,633,494	208,889	13.18	12.79
XIX. Earthenware, cements, china, glass, and stoneware ..	744,412	19,667	764,079	154,173	20.71	20.18
XX. Paper and stationery ..	2,115,588	793,203	2,908,796	302,518	14.30	10.40
XXI. Jewellery, timepieces and fancy goods ..	778,715	271,457	1,050,172	227,252	29.18	21.64
XXII. Optical, surgical, and scientific instruments ..	386,061	225,186	611,247	95,945	24.85	15.70
XXIII. Drugs, chemicals and fertilisers ..	1,898,944	1,450,761	3,349,705	172,803	9.10	5.16
XXIV. Miscellaneous ..	3,563,340	583,673	4,147,013	705,858	19.81	17.02
Total merchandise ..	39,385,588	20,510,602	59,896,190	9,633,507	24.46	16.08
Merchandise, excluding stimulants and narcotics ..	36,821,023	20,510,602	57,331,625	6,704,635	18.21	11.70

SECTION XVI.

SHIPPING.

§ 1. General.

NOTE.—Owing to the general disorganisation of shipping in consequence of the war, the figures relating to the war period given in the following tables are of little comparative significance.

1. **Record of Shipping before Federation.**—Prior to Federation it was customary for each State to regard the matter of shipping purely from the State standpoint, and vessels arriving from or departing to countries beyond Australia, *via* other Australian States, were recorded as if direct from or to the oversea country. Thus, a mail steamer from the United Kingdom, which made Fremantle her first port of call in Australia, would be recorded not only there, but again in Adelaide, Melbourne, and Sydney, as an arrival from the United Kingdom. Consequently, any aggregation, especially of the recent shipping records of the different States, would repeatedly include a large proportion of the shipping visiting Australia. In earlier years, when many vessels sailed from the various State ports direct for their destination, the error of repeated inclusion was less serious, but as the commerce of Australia developed, more and more ports of call were included in the voyage of each vessel, and the mere aggregation of State records hence became correspondingly misleading. Failure to recognise this was at times responsible for erroneous deductions from the statistical records as then compiled.

2. **Shipping since Federation.**—With the inauguration of the Commonwealth, the statistics of its shipping, especially of its oversea shipping, became of greater intrinsic importance. As an index of the position of Australia among the trading countries of the world, such statistics had a constitutional importance commensurate with Commonwealth interests, and correspondingly greater than those of individual States, and the nationality of the shipping trading with Australia became also a matter of greater moment.

3. **Difficulties of Comparisons of Total Shipping.**—From what is said in sub-section 1 above, it is obviously impossible to obtain results for Australia for pre-federal years not subject to the defect of repeated inclusions of the same vessels. Unfortunately, the statistical records of the first three years of Federal history are also subject to the same defect, and do not admit of direct comparison with those now kept. A careful estimate of the extent and effect of repeated inclusion has, however, been made and applied to the records of the earlier years, so as to extend the comparative results to those years. The error of such estimation will be negligible for comparative purposes.

4. **Present System of Record.**—The present system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each visit to the Commonwealth. Repeated voyages of any vessel are, of course, included.

On arrival of every vessel at a port in the Commonwealth, whether from an oversea country or from another port within the Commonwealth, the master is required to deliver to the Customs officer a form giving all particulars necessary for statistical purposes in regard to the ship, passengers, and crew. Similarly, on departure from a port, a form

containing corresponding information is lodged. These forms, which provide a complete record of the movements of every vessel in Commonwealth waters, are at the end of each month forwarded by the Customs officer at each port to the Commonwealth Bureau of Statistics, and furnish the material for the compilation of the Shipping and Migration Returns.

Under the system previously in force it was found that the estimates of population, in so far as they were based on seaward movement, were very unsatisfactory, and it is believed that the method referred to above gives decidedly better results.

From the 1st July, 1914, the statistical year for the record of Trade and Shipping of the Commonwealth was altered from the calendar year to agree with the fiscal year.

In all instances the tonnage quoted is the net tonnage.

§ 2. Oversea Shipping.

1. Total Oversea Shipping.—In order to extend, as indicated, the comparison of the oversea shipping to the earliest years for which any records are available, an estimate of its probable amount has been made. This estimate is based on a comparison of the results obtained by merely aggregating State statistics, with the defect of multiple records, and the results obtained under the present system, which avoids the multiple record. From the nature of the case it is obvious that the ratio of repeated inclusion to the total traffic has been continually advancing, and this fact has been duly taken into account in deducing the results in the following table:—

TOTAL OVERSEA SHIPPING ENTERED AND CLEARED THE COMMONWEALTH, 1822 TO 1917-18 (MULTIPLE RECORD EXCLUDED BY ESTIMATION PRIOR TO 1904).

Year.	Vessels.	Tons.	Year.	Vessels.	Tons.	Year.	Vessels.	Tons.
1822	73	30,683	1854	3,781	1,744,251	1886	3,793	3,853,246
1823	76	30,543	1855	3,239	1,449,857	1887	3,454	3,764,430
1824	71	29,029	1856	2,669	1,195,794	1888	3,933	4,464,895
1825	80	30,786	1857	2,842	1,530,202	1889	3,897	4,460,428
1826	65	23,587	1858	2,607	1,378,050	1890	3,363	4,150,027
1827	95	29,301	1859	2,759	1,403,210	1891	3,778	4,726,307
1828	124	38,367	1860	2,464	1,288,518	1892	3,432	4,239,500
1829	185	56,735	1861	2,466	1,149,476	1893	3,046	4,150,433
1830	195	56,135	1862	2,917	1,389,231	1894	3,397	4,487,546
1831	185	52,414	1863	3,378	1,564,369	1895	3,331	4,567,883
1832	206	59,628	1864	3,344	1,537,433	1896	3,309	4,631,266
1833	241	72,647	1865	3,005	1,317,934	1897	3,279	4,709,697
1834	249	77,068	1866	3,378	1,470,728	1898	3,222	4,681,398
1835	310	96,928	1867	2,927	1,277,679	1899	3,356	5,244,197
1836	310	93,974	1868	3,080	1,350,573	1900	3,719	5,894,173
1837	442	113,432	1869	3,107	1,472,837	1901	4,028	6,541,991
1838	471	132,038	1870	2,877	1,351,678	1902	3,608	6,234,460
1839	652	191,507	1871	2,748	1,312,642	1903	3,441	6,027,843
1840	915	277,355	1872	2,788	1,380,466	1904	3,700	6,682,011
1841	900	278,738	1873	3,159	1,609,067	1905	4,088	7,444,417
1842	862	232,827	1874	3,153	1,728,269	1906	4,155	7,866,658
1843	736	183,427	1875	3,437	1,914,462	1907	4,594	8,822,866
1844	629	155,654	1876	3,295	1,863,343	1908	4,051	8,581,151
1845	735	164,221	1877	3,157	1,930,434	1909	3,910	8,518,751
1846	888	211,193	1878	3,372	2,127,518	1910	4,048	9,333,146
1847	1,033	245,358	1879	3,344	2,151,338	1911	4,174	9,984,801
1848	1,182	305,840	1880	3,078	2,177,877	1912	4,052	10,275,314
1849	1,137	355,886	1881	3,284	2,549,364	1913	3,985	10,601,948
1850	1,300	425,206	1882	3,652	3,010,944	1914-15	3,211	8,599,258
1851	1,376	515,061	1883	3,857	3,433,102	1915-16	3,324	8,538,322
1852	1,896	844,243	1884	4,315	4,064,947	1916-17	2,986	7,694,442
1853	3,364	1,490,422	1885	4,052	3,999,917	1917-18	2,197	5,031,750

It will be borne in mind that while the above figures in themselves have no absolute significance, nevertheless, on the assumption that the element of duplication has been in fairly constant ratio, they furnish the best available indication of the growth of Australian oversea shipping.

2. **Comparison with other Countries.**—The place of Australia among various countries in regard to oversea shipping, in normal times, is indicated in the following table, both absolutely and in respect of tonnage per head of population :—

OVERSEA SHIPPING OF VARIOUS COUNTRIES.

Country.	Year.	Tonnage Entered and Cleared.	
		Total.	Per Inhabitant.
Argentine Republic	1915	19,337,191	2.4
Belgium	1912	32,672,989	4.3
Canada	1916	29,267,074*	3.5
Commonwealth	1917-18	5,031,750	1.0
"	1913	10,601,948	2.2
Denmark	1912	18,537,064	6.6
France	1912	62,775,775	1.6
Germany	1912	51,065,940	0.8
Italy	1912	56,889,048	1.6
Japan	1912	43,492,604	0.8
New Zealand	1917	2,787,658	2.5
"	1913	3,438,792	3.2
Norway	1912	10,806,050	4.4
Sweden	1912	25,511,890	4.6
Union of South Africa	1914	9,961,583	1.5
United Kingdom	1913	164,809,581	3.6
United States	1916	76,682,845*	0.7

* Exclusive of vessels trading on lakes and rivers between Canada and the United States.

3. **Shipping Communication with various Countries.**—Particulars of the number and tonnage of vessels recorded between Australia and various countries, distinguishing British from foreign countries, are given in the following tables—the next table shewing the tonnage of vessels which were recorded as having entered the Commonwealth from the particular countries mentioned; that on page 602 shews the tonnage of vessels which were recorded as having cleared the Commonwealth for the particular countries, while on page 603 is shewn the total tonnage of vessels recorded as entered and cleared from and to the countries named.

The smaller tonnage which entered and cleared Commonwealth ports during the last four years, together with its altered distribution among the various countries, was, of course, almost entirely due to the war. The principal factor in reducing shipping tonnage was the immediate withdrawal of ships of enemy countries. During 1913, German ships to and from the Commonwealth aggregated a tonnage of 1,211,404 tons, whereas the figures for 1914-15 include only 172,679 tons of German shipping. This latter tonnage represents vessels which arrived and departed between the 1st July, 1914, and the outbreak of war, together with a few vessels that arrived later in ignorance of the opening of hostilities. Any German ships now entering the Commonwealth are operated under the British or Allied flags, and are classified accordingly.

The control of shipping by the Imperial Government for war purposes materially lessened the number of voyages of mail boats to and from England, and the tonnage of the Messageries Maritimes line was reduced from similar causes, whereas the increase shewn in the tonnage to and from India and Ceylon and "Other British Countries" represents vessels engaged in war transport services.

**SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM
AND TO VARIOUS COUNTRIES, 1913 TO 1917-18.**

ENTERED.

Country.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
United Kingdom ..	1,607,943	1,285,791	1,193,044	1,234,526	456,420
Canada	118,604	144,229	143,275	114,246	107,923
Fiji	86,442	85,442	72,612	67,981	67,463
Hong Kong ..	33,156	19,898	16,740	26,879	17,672
India and Ceylon ..	107,721	265,273	232,019	253,157	196,001
Mauritius	36,092	19,569	17,198	26,585	4,036
New Zealand ..	908,484	771,656	758,622	654,747	471,234
Papua	74,943	72,837	66,134	76,063	25,031
South Sea Islands ..	58,498	24,279	44,191	27,552	39,321
Straits Settlements ..	100,238	106,534	105,531	78,433	65,326
Union of South Africa ..	198,505	84,365	93,262	86,465	65,678
Other British Countries ..	10,826	134,057	300,958	73,547	152,397
Total British Countries ..	3,341,452	3,013,930	3,043,586	2,720,181	1,668,502
Africa, Portuguese East ..	63,870	14,391	4,812	34,517	8,668
Belgium	9,563	6,871	..	..	..
Chile	108,121	38,288	19,165	6,581	5,703
Dutch East Indies ..	87,428	87,245	83,648	107,311	47,126
France	63,632	34,633	40,652	32,779	87,635
Germany	414,294	74,208	..	..	..
Hawaiian Islands ..	10,101	..	1,653	..	..
Japan	160,241	125,789	189,200	164,383	116,438
Mexico	9,973	..	..	..	..
New Caledonia	86,702	41,398	30,906	30,782	46,551
Norway	26,200	47,649	29,530	15,967	7,705
Peru	21,504	5,973	5,790	3,953	..
Philippine Islands ..	47,220	26,943	8,399	..	..
South Sea Islands (foreign)	66,651	73,762	77,309	73,530	46,469
Sweden	80,546	37,504	19,576	20,861	6,904
United States	509,922	426,513	570,918	470,624	332,966
Other Foreign Countries ..	264,111	119,858	144,340	169,823	82,090
Total Foreign Countries ..	2,030,079	1,161,025	1,225,898	1,131,111	788,255
Total all Countries ..	5,371,531	4,174,955	4,269,484	3,851,292	2,456,757

SHIPPING TONNAGE ENTERED AND CLEARED, ETC.—*continued.*

CLEARED.

Country.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
United Kingdom	1,455,018	1,031,279	894,628	1,862,460	322,344
Canada	82,849	90,105	101,485	95,215	84,586
Fiji	94,958	91,343	81,731	83,514	78,077
Hong Kong	27,959	30,566	17,047	18,742	14,240
India and Ceylon	126,656	210,688	112,989	108,928	112,655
Mauritius	3,505	7,681	2,817	1,558	1,040
New Zealand	1,198,837	916,809	894,618	640,703	438,288
Papua	73,923	63,962	58,378	82,816	28,070
South Sea Islands	58,267	24,484	74,027	43,828	46,287
Straits Settlements	155,364	115,894	114,831	74,538	55,527
Union of South Africa	136,986	67,278	90,546	79,054	46,667
Other British Countries	2,270	522,870	807,481	30,982	721,726
Total British Countries	3,416,592	3,172,959	3,250,578	3,122,338	1,949,507
Africa, Portuguese East	5,447	2,691	..	..	..
Belgium	151,718	34,245	..	..	..
Chile	398,322	255,547	159,797	80,832	24,178
Dutch East Indies	189,499	180,649	112,912	95,283	56,917
France	81,240	54,642	29,591	35,820	7,828
Germany	385,752	38,358	..	..	..
Hawaiian Islands	45,634	37,770	16,286	7,014	..
Japan	117,472	73,228	135,876	119,198	103,729
Mexico	25,735	4,461	..	..	..
New Caledonia	86,321	43,581	51,893	52,297	54,747
Peru	52,626	24,431	18,584	21,698	8,826
Philippine Islands	46,746	72,272	18,385	2,032	9,791
South Sea Islands (foreign)	36,826	52,785	55,855	50,615	46,314
United States	148,754	266,133	337,179	173,052	242,398
Other Foreign Countries	41,733	110,551	81,902	82,971	70,758
Total Foreign Countries	1,813,825	1,251,344	1,018,260	720,812	625,486
Total all Countries	5,230,417	4,424,303	4,268,838	3,843,150	2,574,993

The figures in the above table represent the tonnage of shipping recorded as having cleared the Commonwealth for the particular countries named. In the following sub-section countries have been grouped according to larger geographical divisions with the purpose of depicting more clearly the general trend of Australian shipping.

Beyond the immediate military control of shipping, tonnage was further affected by the prohibition by the Government of the export of certain commodities. For instance, the restrictions placed on the export of coal were mainly responsible for the relatively small tonnage between this country and Chile and Peru.

**SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM
AND TO VARIOUS COUNTRIES, 1913 TO 1917-18.**

Country.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
United Kingdom	3,062,961	2,317,070	2,087,672	3,096,986	778,764
Canada	201,453	234,334	244,760	209,461	192,509
Fiji	181,400	176,785	154,343	151,495	145,540
Hong Kong	61,115	50,464	33,787	45,621	31,912
India and Ceylon	234,377	475,961	345,008	362,085	308,656
Mauritius	39,597	27,250	20,015	28,143	5,076
New Zealand	2,107,321	1,688,465	1,653,240	1,295,450	909,522
Papua	148,866	136,799	124,512	158,879	53,101
South Sea Islands	116,765	48,763	118,218	71,380	85,608
Straits Settlements	255,602	222,428	202,362	152,971	120,853
Union of South Africa	335,491	151,643	183,808	165,519	112,345
Other British Countries	13,096	656,927	1,108,439	104,529	874,123
Total British Countries	6,758,044	6,186,889	6,294,164	5,842,519	3,618,009
Africa, Portuguese East	69,317	17,082	4,812	34,517	8,668
Belgium	161,281	41,116	..	..	..
Chile	506,443	293,835	178,962	87,413	29,881
Dutch East Indies	276,927	267,894	196,560	202,594	104,043
France	144,872	89,275	70,243	68,599	95,463
Germany	800,046	112,566	..	..	..
Hawaiian Islands	55,735	37,770	17,939	7,014	..
Japan	277,713	199,017	325,076	283,581	220,167
Mexico	35,708	4,461	..	..	..
New Caledonia	173,023	84,979	82,799	83,079	101,298
Norway	26,289	47,649	32,222	15,967	7,705
Peru	74,130	30,404	24,374	25,651	8,826
Philippine Islands	93,966	99,215	26,784	2,032	9,791
South Sea Islands (foreign)	103,477	126,547	133,164	124,145	92,783
Sweden	80,546	37,504	19,576	20,861	6,904
United States	658,676	692,646	908,097	643,676	575,364
Other Foreign Countries	305,755	230,409	223,550	252,794	152,848
Total Foreign Countries	3,843,904	2,412,369	2,244,158	1,851,923	1,413,741
Total all Countries	10,601,948	8,599,258	8,538,322	7,694,442	5,031,750

In respect of these tables it may be pointed out that the statistics for any country do not fully disclose the extent of its shipping communication with particular countries. The reason for this is that vessels are recorded as arriving from, or departing to, a particular country, whereas, as a matter of fact, many regular lines of steamers call and transact business at the ports of several countries in the course of a single voyage. The lines of steamers trading between Australia and Japan, for example, often call at New Guinea, the Philippine Islands, China, &c., but, being intermediate ports, these countries are not referred to in the statistical records. Similarly, in the case of the large mail steamers passing through the Suez Canal, a steamer may call at Colombo, Aden, Port Said, Genoa, Marseilles, London, and in ordinary times, Antwerp and Bremerhaven, yet obviously can only be credited as cleared for one of these ports, to the consequent exclusion of all the other ports from the records.

4. **General Trend of Shipping.**—A grouping of countries into larger geographical divisions, as in the following tables, shews more readily the general direction of Australian shipping, and, to some extent, avoids the limitations of the records in relation to particular countries, by covering more closely the main trade routes.

**GENERAL DIRECTION OF THE SHIPPING OF THE COMMONWEALTH,
1913 TO 1917-18.**

Countries.	—	1913.	1914-15.	1915-16.	1916-17.	1917-18.
TONNAGE ENTERED.						
United Kingdom and European Countries	Cargo	2,216,449	1,509,237	1,267,819	1,004,820	436,867
	Ballast	28,087	16,282	81,649	374,380	188,347
New Zealand	Cargo	681,650	649,252	648,733	559,604	394,986
	Ballast	226,834	122,404	109,889	95,143	76,248
Asiatic Countries and Islands in the Pacific	Cargo	785,031	799,811	817,141	782,563	641,756
	Ballast	163,620	217,666	151,296	206,671	62,419
Africa	Cargo	38,174	50,315	114,914	38,373	80,574
	Ballast	269,181	154,550	288,216	163,096	85,260
North and Central America	Cargo	624,275	568,329	714,193	584,870	440,889
	Ballast	14,224	4,065	..	..	..
South America	Cargo	23,876	26,798	61,940	9,294	5,703
	Ballast	300,130	56,246	13,694	32,478	43,708
	Cargo	4,369,455	3,603,742	3,624,740	2,979,524	2,000,775
	Ballast	1,002,076	571,213	644,744	871,768	455,982
Total .. ..	..	5,371,531	4,174,955	4,269,484	3,851,292	2,456,757

TONNAGE CLEARED.						
United Kingdom and European Countries	Cargo	2,102,203	1,169,592	961,961	1,878,530	884,418
	Ballast	162	..	2,699	37,211	34,444
New Zealand	Cargo	1,166,598	865,780	817,827	612,509	427,512
	Ballast	32,239	51,029	76,791	28,194	10,776
Asiatic Countries and Islands in the Pacific	Cargo	995,644	966,549	767,700	706,062	606,504
	Ballast	66,414	99,715	126,921	79,535	34,878
Africa	Cargo	148,750	559,540	851,543	126,071	198,806
	Ballast	237	6,130	32,148	156	4,463
North and Central America	Cargo	251,739	305,835	342,332	225,580	332,000
	Ballast	5,599	56,762	100,842	43,306	2,976
South America	Cargo	460,832	210,292	158,696	100,148	38,216
	Ballast	..	133,079	29,378	5,848	..
	Cargo	5,125,766	4,077,588	3,900,059	3,648,900	2,487,456
	Ballast	104,651	346,715	368,779	194,250	87,537
Total .. ..	..	5,230,417	4,424,303	4,268,838	3,843,150	2,574,993

TONNAGE ENTERED AND CLEARED.						
Countries.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	1917-18 Compared with 1913.
United Kingdom and European Countries	4,346,901	2,695,111	2,314,128	3,294,941	1,544,076	-2,802,825
New Zealand	2,107,321	1,688,465	1,653,240	1,295,450	909,522	-1,197,799
Asiatic Countries and Islands in the Pacific	2,010,709	2,083,741	1,863,058	1,774,831	1,345,557	-665,152
Africa	456,342	770,535	1,286,821	327,696	369,103	-87,239
North and Central America	895,837	934,991	1,157,367	853,756	775,865	-119,972
South America	784,838	426,415	263,708	147,768	87,627	-697,211
Cargo	9,495,221	7,681,330	7,524,799	6,628,424	4,488,231	-5,006,990
Ballast	1,106,727	917,928	1,013,523	1,066,018	543,519	-563,208
Total	10,601,948	8,599,258	8,538,322	7,694,442	5,031,750	-5,570,198

From these tables it would appear that the tonnage between Australia and Africa was greater during 1915-16 than in 1913. This, however, is merely the effect of the diversion of shipping from its usual occupation to military transport between this country and Egypt.

5. Nationality of Oversea Shipping.—As will be seen from the following table; the greater part of the shipping visiting the Commonwealth is of British nationality. The proportion which British shipping represented of the total tonnage which entered and cleared the Commonwealth rose, mainly by the withdrawal of German ships, from 72.83 per cent. during 1913 to 82.41 per cent. in 1914-15, but receded to 75.08 per cent. in 1917-18.

The relatively large amount of French tonnage shewn in 1917-18 was engaged in the carriage of wheat.

NATIONALITY OF ALL VESSELS WHICH ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO OVERSEA COUNTRIES, 1913 TO 1917-18.

Nationality.	Tonnage.				
	1913.	1914-15.	1915-16.	1916-17.	1917-18.
BRITISH—					
Australian ..	851,931	1,107,402	1,118,470	887,577	967,178
United Kingdom ..	5,590,966	4,897,452	5,304,683	4,980,205	2,501,028
New Zealand ..	1,247,742	1,017,721	515,187	335,467	229,271
Other British ..	30,459	64,040	42,808	69,701	80,342
Cargo ..	6,915,261	6,406,393	6,189,524	5,448,832	3,386,991
Ballast ..	805,837	680,222	791,624	824,118	390,828
Total British ..	7,721,098	7,086,615	6,981,148	6,272,950	3,777,819
Per cent. on total ..	72.83	82.41	81.76	81.53	75.08
FOREIGN—					
Austro-Hungarian ..	32,940	..	..	..	..
Danish ..	10,138	..	47,259	18,950	40,137
Dutch ..	193,880	198,223	279,291	285,508	150,448
French ..	366,730	199,619	180,144	120,269	305,123
German ..	1,211,404	172,679	..	..	..
Italian ..	55,898	39,147	8,886	79,925	17,176
Japanese ..	224,293	257,709	362,266	272,460	252,614
Norwegian ..	471,914	302,767	173,343	100,394	106,865
Russian ..	75,303	56,528	9,199	26,352	15,893
Swedish ..	59,484	60,600	56,234	43,866	41,641
United States ..	154,486	178,620	397,017	424,628	311,753
Other Foreign ..	24,380	46,751	43,535	49,140	12,281
Cargo ..	2,579,960	1,274,937	1,335,275	1,179,592	1,101,240
Ballast ..	300,890	237,706	221,899	241,900	152,691
Total Foreign ..	2,880,850	1,512,643	1,557,174	1,421,492	1,253,931
Per cent. on total ..	27.17	17.59	18.24	18.47	24.92
Cargo ..	9,495,221	7,681,330	7,524,799	6,628,424	4,488,231
Per cent. on total ..	89.56	89.33	88.13	86.15	89.20
Ballast ..	1,106,727	917,928	1,013,523	1,066,018	543,519
Per cent. on total ..	10.44	10.67	11.87	13.85	10.80
Grand Total ..	10,601,948	8,599,258	8,538,322	7,694,442	5,031,750

The tonnage of Australian-owned vessels engaged in the oversea trade represents in normal times about 8 per cent. of the total, and the tonnage of New Zealand vessels about 12 per cent. Both are ordinarily engaged mainly in the trade with New Zealand and eastern countries. The increase shewn above in Australian tonnage during the years 1914-15 and 1915-16 was a consequence of the diversion of vessels from the interstate trade to military purposes in transporting troops, &c., abroad. Several of these vessels have since been lost by enemy operations, and others have been further diverted from the Australian trade.

The relative proportion of British and foreign tonnage which entered and cleared the Commonwealth during the last five years, apart from tonnage in ballast, is given below. From these figures, which may be considered to indicate more closely the proportion of the actual carrying trade done than does the total tonnage, it will be seen that the proportion of British tonnage was lower during 1913 than in any other year shewn. In fact, since 1904, when the shipping statistics were first compiled in their present form, the proportion of British ships entered and cleared with cargo has never been so low as in 1913. From what has already been said it will be understood that the figures for 1914-15 and subsequent years are the result of abnormal conditions, and are, therefore, of little comparative significance.

PROPORTION OF TONNAGE OF BRITISH AND FOREIGN NATIONALITY ENTERED AND CLEARED THE COMMONWEALTH WITH CARGO, 1913 TO 1917-18.

Nationality.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
British	72.83	83.40	82.26	82.20	75.46
Foreign	27.17	16.60	17.74	17.80	24.54
Total	100.00	100.00	100.00	100.00	100.00

The principal increases in foreign tonnage in the Australian trade prior to the war, were German, Japanese, United States of America, Norwegian, and Dutch. The greater amount of German and Japanese tonnage has been due to the extension of services between those countries and the Commonwealth, whereas, the trade development between this country and the United States accounts for the large increase of American shipping during the later years under review. The Norwegian tonnage, which was largely composed of sailing ships, was chiefly engaged under charter in the carriage of coal, wheat, ore, &c. The Norwegian shipping in the Australian trade has been, however, much affected by the war. The apparent increase in Dutch tonnage requires special explanation. During recent years the vessels of the Royal Dutch-Packet Company, on their voyages between Java and the eastern Australian ports, have been frequently, but unavoidably, counted twice on what was practically the same voyage, first on arrival from Java and again on arrival from Papua. As in the case of the United States of America, the increase of Japanese shipping tonnage has been the corollary of increased Japanese trade with Australia.

The following table shews the direction of the activities of the principal foreign countries engaged in the oversea carrying trade of the Commonwealth. A similar analysis with regard to German ships will be found in previous issues.

SHIPPING OF PRINCIPAL FOREIGN NATIONS BETWEEN AUSTRALIA AND OTHER COUNTRIES DURING 1917-18.

Countries.	Nationality.					
	French.		Japanese.		United States.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
EUROPEAN COUNTRIES--						
United Kingdom ..	7,842	..	..	..	..	..
France ..	85,311	..	..	..	..	..
Other European Countries..	1,976	..	..	..	..	..
NEW ZEALAND ..	762	..	..	..	1,139	..
ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC--						
Dutch East Indies ..	..	..	..	2,666	..	..
Japan ..	..	..	116,438	103,729	..	..
New Caledonia ..	28,000	28,201	..	3,268	..	4,964
Pacific Islands ..	900	932	..	1,885	..	8,404
Straits Settlements ..	..	..	..	1,659	..	..
Other Asiatic Countries ..	2,316	..	7,643	7,771	..	6,292
AFRICAN COUNTRIES ..	12,102	28,745	..	..	861	..
NORTH AMERICAN COUNTRIES--						
United States ..	..	28,379	..	..	151,365	124,911
Other N. American Countries	..	..	..	..	1,194	2,079
SOUTH AMERICAN COUNTRIES--						
Argentine Republic ..	7,809	..	..	..	..	..
Chile ..	1,779	..	2,666	2,666	..	502
Peru ..	..	..	..	..	..	6,964
OVERSEA COUNTRY UNSPECIFIED ..	1,991	68,078	..	2,223	..	3,078
With Cargo ..	43,510	154,335	123,127	120,664	152,559	142,881
In Ballast ..	107,278	..	3,620	5,203	2,000	14,313
Total ..	150,788	154,335	126,747	125,867	154,559	157,194

A further analysis is appended, distinguishing between steam and sailing vessels of British and foreign nationality, which entered and cleared the Commonwealth during the years 1913 to 1917-18.

STEAM AND SAILING VESSELS ENTERED AND CLEARED, 1913 TO 1917-18.

Description and Nationality of Vessels.	1913.		1914-15.		1915-16.		1916-17.		1917-18.	
	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.
Steam--										
British ..	7,375,109	77	6,939,087	86	6,760,751	86	6,154,313	85	3,600,197	82
Foreign ..	2,173,491	23	1,103,092	14	1,106,465	14	1,068,404	15	771,304	18
Total Steam	9,548,600	100	8,042,179	100	7,867,216	100	7,222,717	100	4,371,501	100
		(90)		(94)		(92)		(94)		(87)
Sailing--										
British ..	345,989	33	147,528	26	220,397	33	118,637	25	177,622	27
Foreign ..	707,359	67	409,551	74	450,709	67	353,088	75	482,627	73
Total Sailing	1,053,348	100	557,079	100	671,106	100	471,725	100	660,249	100
		(10)		(6)		(8)		(6)		(13)
Steam and Sailing--										
British ..	7,721,098	73	7,086,615	82	6,981,148	82	6,272,950	82	3,777,819	75
Foreign ..	2,880,850	27	1,512,643	18	1,557,174	18	1,421,492	18	1,253,931	25
Total ..	10,601,948	100	8,599,258	100	8,538,322	100	7,694,442	100	5,031,750	100

6. **Tonnage in Ballast.**—The following table shows the tonnage of oversea vessels which entered and cleared the Commonwealth in ballast during the years 1911 to 1917-18 :—

TONNAGE ENTERED AND CLEARED IN BALLAST, 1911 TO 1917-18.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1911	668,599	409,837	1,078,436	81,120	41,448	122,568
1912	503,041	378,614	881,655	62,069	30,379	92,448
1913	721,124	280,952	1,002,076	84,713	19,938	104,651
1914-15 ..	441,908	129,305	571,213	238,314	108,401	346,715
1915-16 ..	595,591	49,153	644,744	196,033	172,746	368,779
1916-17 ..	720,040	151,728	871,768	104,078	90,172	194,250
1917-18 ..	322,807	133,175	455,982	68,021	19,516	87,537

PROPORTION OF TOTAL BRITISH AND FOREIGN TONNAGE WHICH ENTERED AND CLEARED IN BALLAST, 1911 TO 1917-18.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1911	18.09	31.61	21.60	2.19	3.23	2.46
1912	13.31	27.34	17.08	1.66	2.21	1.81
1913	18.39	19.37	18.66	2.23	1.39	2.00
1914-15 ..	12.88	17.36	13.68	6.51	14.12	7.84
1915-16 ..	17.02	6.38	15.10	5.63	21.95	8.64
1916-17 ..	22.95	21.25	22.64	3.32	12.75	5.05
1917-18 ..	17.65	21.23	18.56	3.49	3.11	3.40

The tonnage which entered each State of the Commonwealth, in ballast, during 1917-18, was as follows :—

TONNAGE OF OVERSEA VESSELS IN BALLAST WHICH ENTERED EACH STATE AND THE NORTHERN TERRITORY DURING 1917-18.

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
Tonnage ..	106,099	84,878	3,115	85,352	176,130	408	..	455,982
Percentage of total ..	23.27	18.61	.68	18.72	38.63	.09	..	100.00

In normal times the large exports of coal from New South Wales afford special inducements to vessels in search of freights. During 1913, 600,050 tons, or 59.88 per cent. of all ballast tonnage arriving in Australia, entered in New South Wales, 463,134 tons having entered at the coal port of Newcastle. The tonnage in ballast into New South Wales is mainly for coal cargo, into Victoria for wheat, into South Australia for wheat and ore, and into Western Australia for timber and wheat. War conditions have, however, completely deranged the shipping of the Commonwealth, and the relatively large tonnage entering Western Australian ports in ballast was largely vessels on military transport service.

§ 3. Shipping of Ports.

1. **Shipping of Ports.**—Appended is an abstract of the total shipping tonnage—oversea and coastwise—which entered the more important ports of Australia during the year 1917–18, together with similar information in regard to some of the ports of New Zealand for the year 1917 and of the United Kingdom for the year 1913 :—

SHIPPING OF PORTS, AUSTRALIA, NEW ZEALAND, AND THE UNITED KINGDOM.

Port.	Tonnage Entered.	Port.	Tonnage Entered.
AUSTRALIA—		ENGLAND AND WALES—	
Melbourne	5,337,881	London	20,088,071
Sydney	5,320,400	Liverpool (inc. Birkenhead)	15,574,989
Newcastle	2,991,679	Cardiff	12,603,349
Brisbane	1,424,060	Tyne Ports	11,701,605
Adelaide	960,759*	Southampton	8,268,860
Fremantle	892,300	Hull	5,904,698
Townsville	862,653	Plymouth	4,717,738
Mackay	495,495	Newport	3,630,681
Rockhampton	417,565	Middlesbrough	3,416,582
Port Pirie	389,660	Swansea	3,374,439
Cairns	384,727	Sunderland	3,288,949
Albany	370,331	Grimsby	3,056,578
Bowen	359,527	Bristol	2,732,832
Hobart	279,058	Manchester	2,685,184
Burnie	272,762	Dover	2,606,277
Geelong	229,627	SCOTLAND—	
Wallaaroo	210,088	Glasgow	6,101,819
NEW ZEALAND—		Leith	2,344,195
Wellington	2,542,412	IRELAND—	
Auckland	1,480,477	Cork (inc. Queenstown) ..	4,317,966
Lyttelton	1,411,614	Belfast	3,345,779
Dunedin	593,366	Dublin	2,495,854

* Exclusive of coastal shipping, particulars of which are not available.

§ 4. Vessels Built and Registered.

1. **Vessels Registered.**—The following table shews the number and net tonnage of steam, sailing, and other vessels on the registers of the various States and of the Northern Territory of the Commonwealth of Australia :—

VESSELS ON THE REGISTER, 31st DECEMBER, 1918.

State.	Steam.				Sailing.				Barges, Hulks, Dredges, etc., not Self-propelled.		Total.	
	Dredges and Tugs.		Other.		Fitted with Auxiliary Power.		Other.		No.	Net Tons.	No.	Net Tons.
	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.				
New South Wales ..	44	1,335	561	92,635	331	22,418	97	1,839	48	11,167	1,081	129,394
Victoria	25	2,992	157	123,227	82	5,234	25	1,018	73	23,902	362	161,379
Queensland	22	3,369	74	13,705	127	2,265	23	225	38	4,298	284	23,862
South Australia .. .	23	983	92	48,722	75	3,926	10	401	64	10,422	264	64,454
Western Australia ..	11	176	37	22,433	336	5,199	11	191	26	6,912	421	34,911
Tasmania	5	302	56	13,273	84	2,701	47	1,137	2	563	194	17,976
Northern Territory ..	..	..	1	53	31	378	1	17	..	..	33	448
Total	130	9,157	978	314,048	1,066	42,121	214	4,828	251	62,264	2,639	432,418

2. **Vessels Built.**—The following tables shew the number and tonnage of vessels built in the Commonwealth during each of the years 1901–1918, so far as such information can be ascertained from the Shipping Registers of the various States. The Merchant Shipping Act, under which vessels are registered in Australia, however, does not make it compulsory to register vessels under 15 tons burthen if engaged in river or coastal trade. Larger vessels are also exempt from registration if not engaged in trade. Yachts and small trading vessels may be, and frequently are, registered at the request of the owners. As the Shipping Registers have been, and are the source of information, it follows that the figures given below will be subject to additions in the future, inasmuch as vessels already built may be added to the register at some future date.

VESSELS BUILT IN THE COMMONWEALTH, 1901 TO 1918.

NUMBER.

Year.	Steamers built of—					Oil Motor Vessels.	Sailing.	Pontoons, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Com- posite.	Total.				
1901 ..	18	..	1	..	19	4	45	..	68
1902 ..	29	..	..	1	30	8	78	1	117
1903 ..	15	1	2	..	18	17	158	2	195
1904 ..	14	..	1	1	16	13	76	..	105
1905 ..	15	..	4	..	19	22	17	2	60
1906 ..	12	1	1	..	14	22	20	3	59
1907 ..	17	..	..	1	18	12	37	1	68
1908 ..	13	..	3	..	16	18	18	2	54
1909 ..	10	..	..	..	10	12	36	1	59
1910 ..	9	3	2	..	14	11	35	4	64
1911 ..	14	1	2	1	18	8	37	4	67
1912 ..	9	..	3	2	14	12	30	2	58
1913 ..	17	..	2	..	19	13	29	..	61
1914 ..	17	..	..	..	17	9	28	2	56
1915 ..	4	..	2	..	6	5	3	..	14
1916 ..	2	..	..	..	2	4	2	..	8
1917 ..	3	..	..	1	4	1	5	..	10
1918 ..	1	..	..	..	1	3	..	..	4

TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1901 ..	2,270	1,251	41	33	1,169	1,027	..	..	3,480	2,311
1902 ..	3,166	1,849	96	82	2,482	2,148	64	64	5,808	4,143
1903 ..	1,569	956	624	455	3,211	2,758	285	350	5,789	4,519
1904 ..	2,094	1,240	161	125	1,641	1,416	..	..	3,896	2,781
1905 ..	2,444	1,462	291	214	338	290	967	896	4,040	2,862
1906 ..	1,426	735	268	189	498	425	546	536	2,738	1,885
1907 ..	2,381	1,305	108	93	840	778	152	145	3,481	2,321
1908 ..	2,492	1,317	265	199	510	428	260	260	3,527	2,204
1909 ..	1,351	735	184	151	805	677	98	98	2,438	1,661
1910 ..	1,944	1,105	137	124	807	691	688	646	3,576	2,566
1911 ..	2,123	1,130	143	115	779	694	762	720	3,807	2,659
1912 ..	2,592	1,592	391	304	673	579	612	287	4,268	2,762
1913 ..	2,227	1,189	322	226	510	484	..	..	3,059	1,899
1914 ..	3,041	1,595	142	119	510	452	148	148	3,841	2,314
1915 ..	914	385	178	115	186	176	..	..	1,278	676
1916 ..	125	63	55	44	39	28	..	..	219	135
1917 ..	619	300	18	12	229	161	..	..	866	473
1918 ..	257	145	448	349	..	..	..	..	705	494

§ 5. Interstate Shipping.

1. Total Vessels and Tonnage.—In the following tables are shown the number and tonnage of vessels recorded as having entered each State of the Commonwealth from any other State therein, and similarly, the number and tonnage cleared from each State to other Commonwealth States. The table gives results since 1891 and for 1917-18. The shipping on the Murray River, between the States of New South Wales, Victoria, and South Australia, is not included :—

INTERSTATE SHIPPING, 1891 TO 1917-18.—NUMBER OF VESSELS.

State.	1891.	1906.	1911.	1915-16.	1916-17.	1917-18.
ENTERED.						
New South Wales	1,692	1,575	1,791	1,947	1,607	1,469
Victoria	1,525	1,561	1,648	1,736	1,423	1,335
Queensland	376	478	567	570	525	524
South Australia	611	752	789	631	539	429
Western Australia	149	335	415	350	385	144
Tasmania	680	840	864	864	728	761
Northern Territory	*	*	39	39	29	29
Total	5,033	5,541	6,113	6,137	5,236	4,691

CLEARED.						
New South Wales	1,415	1,417	1,728	1,871	1,572	1,438
Victoria	1,733	1,610	1,765	1,906	1,580	1,430
Queensland	389	431	572	547	479	498
South Australia	716	802	900	657	579	464
Western Australia	158	363	394	325	310	168
Tasmania	679	809	836	845	717	751
Northern Territory	*	*	40	42	23	26
Total	5,090	5,432	6,235	6,193	5,260	4,775

TOTAL.						
New South Wales	3,107	2,992	3,519	3,818	3,179	2,907
Victoria	3,258	3,171	3,413	3,642	3,003	2,765
Queensland	765	909	1,139	1,117	1,004	1,022
South Australia	1,327	1,554	1,689	1,288	1,118	893
Western Australia	307	698	809	675	695	312
Tasmania	1,359	1,649	1,700	1,709	1,445	1,512
Northern Territory	*	*	79	81	52	55
Total	10,123	10,973	12,348	12,330	10,496	9,466

* Included with South Australia.

INTERSTATE SHIPPING, 1891 TO 1917-18.—TONNAGE.

State.	1891.	1906.	1911.	1915-16.	1916-17.	1917-18.
ENTERED.						
New South Wales	1,617,559	2,456,269	3,318,605	3,563,812	3,104,717	2,502,174
Victoria ..	1,392,818	2,473,771	2,959,551	2,800,103	2,254,634	1,665,921
Queensland ..	267,753	692,354	840,052	995,373	963,931	768,769
South Australia ..	658,600	1,582,802	1,970,490	1,628,771	1,302,537	796,627
Western Australia ..	237,708	968,664	1,378,800	1,305,537	1,373,625	475,840
Tasmania ..	371,205	721,240	895,546	749,494	525,862	432,208
Northern Territory	*	*	64,518	80,090	52,663	61,464
Total ..	4,545,643	8,895,100	11,427,562	11,123,180	9,577,969	6,703,003

CLEARED.						
New South Wales	1,314,339	2,177,496	3,209,723	3,378,270	2,994,899	2,397,160
Victoria ..	1,692,189	2,617,966	3,233,531	3,285,036	2,755,961	2,031,503
Queensland ..	302,723	578,561	855,776	871,544	779,017	648,207
South Australia ..	829,616	1,772,356	2,343,269	1,751,044	1,490,529	939,485
Western Australia ..	269,256	1,051,629	1,303,359	1,187,222	1,162,325	646,071
Tasmania ..	352,406	636,944	728,170	652,450	479,182	408,497
Northern Territory	*	*	66,357	83,798	43,607	50,961
Total ..	4,760,529	8,834,952	11,740,185	11,209,364	9,705,520	7,121,884

TOTAL.						
New South Wales	2,931,898	4,633,765	6,528,328	6,942,082	6,099,616	4,899,334
Victoria ..	3,085,007	5,091,737	6,193,082	6,085,139	5,010,595	3,697,424
Queensland ..	570,476	1,270,915	1,695,828	1,866,917	1,742,948	1,416,976
South Australia ..	1,488,216	3,355,158	4,313,759	3,379,815	2,793,066	1,736,112
Western Australia ..	506,964	2,020,293	2,682,159	2,492,759	2,535,950	1,121,911
Tasmania ..	723,611	1,358,184	1,623,716	1,401,944	1,005,044	840,705
Northern Territory	*	*	130,875	163,888	96,270	112,425
Total ..	9,306,172	17,730,052	23,167,747	22,332,544	19,283,489	13,824,887

* Included with South Australia.

The figures presented in the above table include oversea vessels—largely mail boats—passing from one State to another. This renders the results somewhat unsatisfactory.

In the earlier part of this chapter attention was drawn to the custom in vogue prior to Federation of recording vessels from or to "oversea countries *via* other Commonwealth States" as *direct* from or to the oversea country. At each port in Australia these vessels were, on the inward voyage (to Australia), entered as from the oversea country, and

cleared to the next Australian port as "interstate"; on the return journey—the outward voyage—they were entered as "interstate," and cleared as for the oversea country. In order to preserve the continuity of the records of the shipping communication of the several States with oversea countries this method has been followed in continuation of the pre-existing practice, excepting that vessels arriving or departing *via* other Commonwealth States are now so recorded instead of as "direct."

From the above it will be seen that while certain movements of the vessels referred to are included in the interstate shipping, other movements of the same vessels, between the same ports, are not so included.

To ascertain the aggregate movement of shipping between the States during the year 1917-18, including the total interstate movements of oversea vessels, the figures in the following table must be added to those of the preceding one:—

SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA OTHER COMMONWEALTH STATES, 1917-18.

State.	Entered.		Cleared.		Total.		
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	
New South Wales ..	248	984,599	202	724,613	450	1,709,212	
Victoria ..	200	747,736	145	491,891	345	1,239,627	
Queensland ..	55	251,595	68	338,905	123	590,500	
South Australia ..	74	246,085	53	145,595	127	391,680	
Western Australia ..	5	12,730	6	18,896	11	31,626	
Tasmania ..	41	113,182	46	126,352	87	239,534	
Northern Territory ..	..	..	..	..	..	..
Total	1917-18	623	2,355,927	520	1,846,252	1,143	4,202,179
	1907 ..	1,148	3,681,684	1,176	3,832,405	2,324	7,514,089

2. **Vessels Engaged Solely in Interstate Trade.**—The elimination of the element of oversea vessels, included in the interstate shipping returns, cannot be accurately effected; nevertheless, a close approximation is furnished if it be assumed that vessels *entered* in the several States as from "oversea countries *via* other Commonwealth States" have really been *cleared* from other States as "interstate," and further, that the vessels *cleared* to "oversea countries *via* other Commonwealth States" have likewise been *entered* as "interstate." Applying this suggestion, and so eliminating all interstate movements of oversea vessels, the number and tonnage of vessels engaged solely in the interstate trade during the years 1911 to 1917-18 will be found to be as follows:—

NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1911 TO 1917-18.

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1911 ..	4,794	6,548,069	4,811	6,570,019
1912 ..	5,000	6,809,428	4,990	6,809,426
1913 ..	5,174	8,080,267	5,187	8,105,988
1914-15 ..	5,143	8,140,155	5,142	8,112,005
1915-16 ..	5,121	7,175,175	5,112	7,139,451
1916-17 ..	4,303	6,093,634	4,311	6,127,726
1917-18 ..	4,171	4,856,751	4,152	4,765,957

This treatment cannot be extended to the individual States, as the records do not disclose the particular relationship of the States concerned.

3. Total Interstate Movement of Shipping.—From the foregoing it is apparent that the interstate movement of shipping includes two very different elements, viz. :— (i) Oversea ships moving from State to State, and (ii) the movement of ships engaged solely in the interstate carrying trade. These two elements are approximately as follows :—

TOTAL INWARD INTERSTATE MOVEMENT OF SHIPPING, 1912 TO 1917-18.

Vessels.	1912.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate	10,711,434	11,472,490	8,737,804	8,017,918	7,062,129	4,202,179
Vessels solely interstate	6,809,428	8,080,267	8,140,155	7,175,175	6,093,634	4,856,751
Total	17,520,862	19,552,757	16,877,959	15,193,093	13,155,763	9,058,930

The following table shows the number and tonnage of vessels which entered and cleared each State during 1917-18, including the coastal movements of oversea vessels :—

INTERSTATE SHIPPING OF EACH STATE, 1917-18.

State.	Entered.		Cleared.		Total.		
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	
New South Wales ..	1,469	2,502,174	1,438	2,397,160	2,907	4,899,334	
Victoria	1,335	1,665,921	1,430	2,031,503	2,765	3,697,424	
Queensland	524	768,769	498	648,207	1,022	1,416,976	
South Australia ..	429	796,627	464	939,485	893	1,736,112	
Western Australia ..	144	475,840	168	646,071	312	1,121,911	
Tasmania	761	432,208	751	408,497	1,512	840,705	
Northern Territory ..	29	61,464	26	50,961	55	112,425	
Total	1917-18	4,691	6,703,003	4,775	7,121,884
	1907 ..	5,873	9,428,835	5,800	9,276,493

4. **Interstate and Coastal Services.**—The foundation of the coastal steamship services in Australia dates back to the year 1851, when a regular trade was established between Melbourne and Geelong by the small screw steamer *Express*. Early in the fifties a company was formed in Tasmania with a capital of £40,000 for the purpose of purchasing steamboats, and employing them in the carriage of passengers and goods between Hobart and Melbourne. This service was commenced in 1852, and was thus the first regular interstate service in Australia. About this time the great influx of population and the increase in commerce, caused chiefly by the gold discoveries, emphasised the desirability of establishing more regular and quicker means of communication between the principal ports of Australia, and in 1862 the regular interstate service between New South Wales and Victoria was inaugurated by the s.s. *You Yangs*, which was put into commission in regular service between Melbourne, Sydney, and Newcastle. In 1875 a company was formed in Adelaide for the purpose of supplying suitable steamers for the requirements of the trade between Adelaide and Melbourne. The first two steamers of the company were named the *South Australian* and the *Victorian*, and were small vessels of only 400 tons burthen. From the start, success attended these enterprises, and the services thus initiated were rapidly extended and their operations broadened. Numerous other companies were formed to cope with the increasing trade between ports in the Commonwealth, and the companies engaged from time to time added to their fleets of steamers by the acquisition of more modern and faster vessels, until at the end of the year 1915 the total net tonnage owned by the 23 companies from whom returns have been received amounted to over 205,000 tons. Owing to the war this tonnage has been temporarily reduced by the withdrawal of vessels from the coastal trade for transport and other deep-sea services. A summary of the various mail services carried on during the year 1919 is given in Section XVIII. of this work.

The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each of the years 1901 and 1914 to 1918. The figures for 1914 and subsequent years include particulars relating to a number of smaller companies which did not supply returns for 1901, though they were, for the most part, carrying on business in that year.

PARTICULARS OF STEAMSHIPS ENGAGED IN REGULAR INTERSTATE AND COASTAL SERVICES IN THE COMMONWEALTH, 1901 AND 1914 TO 1918.

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.
Number of companies making returns	11	23	23	23	23	23
Number of steamships	113	174	174	169	148	142
Tonnage { Gross	184,574	340,852	340,443	337,068	241,611	208,700
{ Net	114,080	206,424	205,795	204,357	145,424	126,444
Horse-power { Nominal	18,237	35,723	35,787	34,038	26,430	25,073
{ Indicated	122,519	288,856	289,488	283,471	207,150	182,404
Number of passengers for which licensed to carry { 1st class	4,617	8,068	9,557	9,077	5,459	4,674
{ 2nd class and steerage	4,490	8,666	6,808	6,578	5,029	4,325
Complement of Crew { Masters and officers	403	622	623	606	510	480
{ Engineers	332	527	532	519	415	378
{ Crew	2,875	5,493	5,508	5,385	3,910	3,365

5. **Lighthouses and Lights on the Coast of the Commonwealth.**—See Year Book No. 2.

6 **Ports of the Commonwealth.**—See Year Book No. 3.

§ 6. Shipwrecks.

The following statement shows the number and tonnage of vessels wrecked, or otherwise lost, on the coast or elsewhere under the jurisdiction of the several States, during the years 1901 and 1910 to 1918 :—

NUMBER AND TONNAGE OF VESSELS WRECKED,* 1901 AND 1910 TO 1918.

Year.	Class of Vessel.	Number and Tonnage of Vessels.										Passengers and Crew.	Lives Lost.
		Under 50 tons.		50 to 500 tons.		500 to 2,000 tons.		Over 2,000 tons.		Total.			
		No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.		
1901	Steam ..	7	189	5	949	2	2,811	..	..	14	3,949	250	40
	Sailing ..	11	217	6	785	5	5,800	..	..	22	6,802	172	10
	Total ..	18	406	11	1,734	7	8,611	..	..	36	10,751	422	50
1910	Steam ..	1	34	5	941	1	958	2	9,307	9	11,240	624	2
	Sailing ..	5	115	2	205	2	3,095	..	..	9	3,415	94	20
	Total ..	6	149	7	1,146	3	4,053	2	9,307	18	14,655	718	22
1911	Steam ..	4	109	5	681	3	5,194	..	..	12	5,984	275	161
	Sailing ..	7	103	4	642	4	5,100	..	..	15	5,845	128	25
	Total ..	11	212	9	1,323	7	10,294	..	..	27	11,829	403	186
1912	Steam ..	1	11	6	866	..	..	1	2,182	8	3,059	227	151
	Sailing ..	4	44	3	407	5	7,836	..	..	12	8,287	111	19
	Total ..	5	55	9	1,273	5	7,836	1	2,182	20	11,346	338	170
1913	Steam ..	1	25	2	237	..	..	..	..	3	262	23	..
	Sailing ..	10	175	5	359	..	..	..	..	15	534	51	7
	Total ..	11	200	7	596	..	..	..	..	18	796	74	7
1914	Steam ..	3	130	4	926	2	2,721	1	3,558	10	7,335	205	18
	Sailing ..	10	184	11	1,124	2	2,297	..	..	23	3,605	160	34
	Total ..	13	314	15	2,050	4	5,018	1	3,558	33†	10,940	365	52
1915	Steam ..	1	38	3	792	1	1,057	..	..	5	1,887	90	1
	Sailing ..	12	245	4	600	..	..	..	..	16	845	82	13
	Total ..	13	283	7	1,392	1	1,057	..	..	21	2,732	172	14
1916	Steam ..	3	107	6	582	..	..	1	2,529	10	3,218	87	6
	Sailing ..	10	240	1	114	..	..	1	3,087	12	3,441	78	19
	Total ..	13	347	7	696	..	..	2	5,616	22	6,659	165	25
1917	Steam ..	4	72	4	551	1	1,015	2	8,763	11	10,401	415	18
	Sailing ..	14	293	4	378	2	1,296	..	..	20	1,967	88	8
	Total ..	18	365	8	929	3	2,311	2	8,763	31	12,368	503	26
1918	Steam ..	2	68	6	867	1	648	..	..	9	1,583	130	12
	Sailing ..	13	239	4	548	..	..	..	..	17	787	109	25
	Total ..	15	307	10	1,415	1	648	..	..	26	2,370	239	37

* In some cases the vessels included in the above return were subsequently recovered.

† Not including two dredges, particulars of tonnage of which are not available.

§ 7. Control of Commonwealth Shipping.

A brief statement relating to the control of Commonwealth shipping will be found in Year Book No. 11, page 637.

§ 8. Commonwealth Government Shipping Activities.

1. Local Building Programme.—The original programme of the Commonwealth Government for building ships in Australia provided for the construction of 48 vessels as follows:—

STEEL VESSELS.

Locality.	Number.	Builders.	Type.
Williamstown ..	6	Commonwealth Ship Construction Branch	Steel Cargo Steamers
Walsh Island ..	6	New South Wales Government ..	" "
Cockatoo Island	2	Commonwealth Navy Department	" "
Maryborough (Q.)	4	Walkers Limited	" "
Adelaide ..	4	Poole and Steel	" "
Tasmania ..	2	Mersey Shipbuilding Company Ltd.	" "

WOODEN VESSELS.

Sydney ..	6	Hughes, Martin and Washington Ltd.	Auxiliary Schooner
Fremantle ..	6	W.A. Shipbuilding Company ..	" "
Sydney ..	6	Wallace Power Boat Company ..	Auxiliary Barquentine
" ..	6	Kidman and Mayoh	" "

The contracts for the construction of the wooden vessels, with the exception of two five-masted auxiliary schooners (originally intended to be barquentines), which are under construction by Messrs. Kidman and Mayoh, have been cancelled. These two vessels will be built of Australian hardwoods, and their dimensions will be:—Length, 250 feet; beam, 45 feet; and moulded depth, 24 ft. 5 in. Their dead-weight capacity will be about 2,600 tons on a load draught of about 19 ft. 10 in. The propelling machinery will consist of two sets of semi-Diesel Bolinder engines, developing about 240 h.p. at about 240 revolutions per minute, which it is estimated will drive the vessels between 7 and 8 knots per hour.

With regard to the steel steam vessels, the first part of the programme to be put into execution consisted of six vessels, of the three island or well deck type, 331 feet long by 48 feet by 26 ft. 1 in. deep, moulded to the upper deck, with a dead-weight capacity of about 5,500 tons on a 21 ft. 9½ in. draught and a cubic capacity of about 282,000 feet. These vessels are fitted with single-screw engine and Babcock and Wilcox boilers, with an indicated horse-power of about 2,200, which will give a speed of 10½ knots at sea. The names of these ships and the places of construction are:—*Dromana* and *Dumosa*, Commonwealth Dockyard, Williamstown; *Delungra*, *Divioga*, and *Dilga*, Government Dockyard, Walsh Island, Newcastle; *Dundula*, Commonwealth Dockyard, Cockatoo Island, Sydney.

The *Delungra* was launched on 25th March, 1919, the *Dromana* on 11th April, and the *Dundula* on 9th July.

The second part of the programme, consisting of fourteen steel steamships, has been commenced. These will be built in the following yards:—

- 2 at Commonwealth Dockyard, Williamstown;
- 3 at Government Dockyard, Walsh Island;
- 1 at Commonwealth Dockyard, Cockatoo Island;
- 4 at Walkers Limited, Maryborough, Queensland; and
- 4 at Poole and Steel's, Adelaide, South Australia.

These vessels will be of the shelter-deck type and will be 331 feet long B.P., by 48 feet, by 33 ft. 7 in. in depth, moulded to the shelter deck. They will carry about 6,000 tons dead-weight on 23 ft. 8½ in. draught, and the total cubic capacity of each will be about 338,000 feet. The driving machinery will be the same as for the vessels referred to under the first part of the programme. Provision will be made for the carriage of oil fuel, and the boilers will be suitable for burning either oil or coal. Steel plate material for these vessels has been ordered from England, and about 2,500 to 3,000 tons have already been delivered into the building yards. A portion of steel sectional material also has been delivered from the Broken Hill Company. Work has actually commenced on three of these ships, and it is anticipated that six will be completed in eighteen months, six others in two years, and the balance in two and a-half years. These vessels will cost approximately £155,000 each. All the above-mentioned steel vessels will be built on the Isherwood system of longitudinal framing.

Negotiations have been completed for the construction, at the Cockatoo Island and Walsh Island yards, of four larger vessels, with the option of two more, the dimensions being:—Length over all, 520 feet; breadth, 62 ft. 3 in.; moulded depth, 45 feet. These vessels will be of the shelter-deck type, with a long bridge and fore-castle above the shelter deck and three complete decks laid. It is estimated that they will carry about 12,800 tons dead-weight on a load draught of 30 feet. Twin-screw quadruple engines, with cylinders 23½ inches, 34 inches, 48 inches, and 73 inches, and stroke 51 inches will be fitted, and steam will be generated by an ample installation of water-tube or Scotch boilers. The machinery will develop 7,300 horse-power, with a speed of 15 knots under trial conditions, and a speed at sea, fully loaded over a long voyage, of 13 knots. The total cubic capacity will be about 700,000 tons, which will include about 250,000 cubic feet of insulated space for the carriage of frozen meat or chilled produce. Liberal accommodation will be provided for officers and crew. The cargo arrangements will be of the most modern description to facilitate rapid loading and discharge. Provision will also be made in these vessels for the carriage of oil fuel, and the boilers will be suitable for burning either oil or coal. It is anticipated that two of these vessels will be in commission in two years, to be followed by two more at intervals of six months. The cost of these larger vessels will be about £423,000 each.

2. Steel Vessels to be Built in Great Britain.—In addition to the foregoing, a contract has been signed with Vickers, in Great Britain, for the building of three vessels of 12,000 tons dead-weight capacity, and 900,000 cubic feet, of which 370,000 cubic feet is to be insulated. The length of these vessels will be 520 feet by 68 feet beam. They are to be built to burn oil or coal as required. The speed is to be 15 knots. These vessels are due for delivery in January, June, and October, 1921, respectively.

A similar contract has been entered into with Beardmore's for two steamers alike in all respects to those referred to above as being built by Vickers.

3. Wooden Vessels Built and being Built in America.—A contract was arranged with the Sloan Shipyards Corporation at Seattle for the construction of four wooden, full-powered motor vessels. These vessels were completed and delivered as follows:—*Cethana*, 18th July, 1918; *Culburra*, 26th August, 1918; *Challamba*, 2nd October, 1918; *Coolcha*, 26th October, 1918.

A further contract was arranged with the Patterson McDonald Shipbuilding Company for the construction of ten wooden steamers. Of these, the *Bellata* was delivered on 8th October, 1918; the *Bundarra* on 11th December, 1918; and the *Bethanga* on 5th May, 1919. The *Birriwa* was to be delivered about the end of July, and the *Berringa* about the beginning of September. With regard to the remaining vessels, an alteration in the motive power was decided upon, Diesel engines being substituted for steam engines originally provided for. Of these vessels, the *Benowa* was delivered on 15th June, 1919; the *Babinda* was to be delivered about the middle of August; and the *Balcatta* in September; whereas the dates of the delivery of the *Boobyalla* and *Borrika* are indefinite.

4. **Vessels Purchased.**—In July, 1916, the Right Honourable W. M. Hughes, P.C., K.C., Prime Minister, purchased the following vessels for the Commonwealth of Australia :—

VESSELS PURCHASED.

Class.	Old Name.	New Name.	D.W. Capacity.
100 *A1	<i>Strathendrick</i> ..	<i>Australdale</i> ‡ ..	7180
.. ..	<i>Strathspey</i> ..	<i>Australpeak</i> ..	7180
.. ..	<i>Strathdee</i> ..	<i>Australrange</i> ..	7180
†B.C.	<i>Strathbeg</i> ..	<i>Australmount</i> ..	7180
100 *A1	<i>Strathleven</i> ..	<i>Australcrag</i> ..	7180
†B.C.	<i>Strathesk</i> ..	<i>Australbrook</i> ..	7180
100 *A1	<i>Strathavon</i> ..	<i>Australford</i> ..	7180
.. ..	<i>Strathgarry</i> ..	<i>Australbush</i> ‡ ..	7180
.. ..	<i>Strathairly</i> ..	<i>Australpool</i> ..	7180
.. ..	<i>Strathora</i> ..	<i>Australglen</i> ..	7180
.. ..	<i>Daltonhall</i> ..	<i>Australstream</i> § ..	5723
.. ..	<i>Kirkoswald</i> ..	<i>Australmead</i> ..	7740
†B.C.	<i>Ardangorm</i> ..	<i>Australport</i> ..	6650
.. ..	<i>Ardammhor</i> ..	<i>Australplain</i> ..	7180
.. ..	<i>Vermont</i> ..	<i>Australfield</i> § ..	6800

* Classed at Lloyd's. † British Corporation. ‡ Lost through enemy action. § Sold.

The sailing vessels *John Murray* (1,600 tons), *Shandon* (2,200 tons) and *Speedway* (1,100 tons) were also acquired by the Commonwealth Government, but the former was totally wrecked on Malden Island on the 22nd May, 1918, her crew being saved.

5. **Control of Enemy Vessels.**—In addition to the above, the management of the Commonwealth Government line of steamers controls eighteen ex-enemy vessels of a dead-weight capacity of approximately 133,545 tons, and one ex-enemy sailing vessel of 2,300 tons capacity.

6. **Managing Staff.**—The principal officers on the managing staff operating the line are as follows :—General manager, Mr. H. B. G. Larkin ; assistant manager, Mr. G. H. Kneen ; head office, Australia House, Strand, London, W.C. 2. Manager for Australia, Mr. E. A. Eva ; traffic superintendent, Mr. S. A. Hosgood, 447 Collins Street, Melbourne.

SECTION XVII.

ROADS AND RAILWAYS.

§ 1. Roads and Bridges.

1. **Introduction.**—In Year Books No. 1 (pages 541 to 551) and No. 2 (pages 675 to 685), a brief historical account was given of the construction and development of roads in Australia. It is not proposed to repeat that account in the present issue of the Year Book.

In the publication "Local Government in Australia," issued by the Commonwealth Statistician in 1919, the subject of roads is also fully discussed.

2. **Expenditure on Roads and Bridges.**—Figures showing the total expenditure on roads and bridges in the States are not available. The subjoined statement, however, gives the amounts of total loan expenditures by the State Governments up to the 30th June, 1918 :—

ROADS AND BRIDGES.—TOTAL GOVERNMENT LOAN EXPENDITURE TO THE 30th JUNE, 1918.

State.	N.S.W. ^a	Victoria.	Q'land. ^b	S. Aust.	W. Aust.	Tasmania. ^c	All States.
Expenditure ..	£ 1,821,457	£ 1,581,938	£ 931,775	£ 1,721,342	£ 369,401 ^d	£ 4,859,897	£ 11,285,810 ^e

(a) Including punts. (b) Including amounts from surplus revenue on which no interest is payable. (c) Including harbours, jetties, and lighthouses. (d) To 30th June, 1917. (e) Including W.A. to 30th June, 1917.

The following table shews the annual expenditure from loans on roads and bridges by the central Governments in each State during the year 1901-2, and from 1913 to 1918 :—

ROADS AND BRIDGES.—LOAN EXPENDITURE BY STATE GOVERNMENTS, 1901-2 AND 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
1901-2 ..	£ 150,777	£ 47,104	£ ..	£ 185	£ 740	£ 77,536 ^a	£ 276,342
1912-13 ..	53,263	..	..	..	37,037	183,625 ^b	273,925
1913-14 ..	23,553	..	..	17,838	..	191,428 ^b	232,819
1914-15 ..	8,609	274,362	..	37,910	31,974	208,584	561,439
1915-16 ..	421	495,062	..	102,226	18,450	165,701 ^b	781,860
1916-17 ..	5,428	252,836	..	54,939	5,878	148,698 ^b	467,779
1917-18 ..	22,374	241,892	..	43,693	(c)	124,363	432,322 ^d

(a) For the calendar year 1902.

(b) See note (c) to previous table.

(c) Not available.

(d) Exclusive of W.A.

The two tables given above shew only a small proportion of the actual expenditure upon roads and bridges in the different States, for the reason that (a) there have been large expenditures from revenue, both by the central Governments and by local authorities, and (b) the State Governments have in many cases voted grants and subsidies on the amount of rates collected, and have issued loans to local authorities either for the express purpose of the construction of roads and bridges or for the general purpose of public works construction. Returns of expenditure, where available, are given below for each

State. Although no revenue is now derived directly from roads and bridges, they are indirectly of great value to the community, forming, next to railways and public lands, the most considerable item of national property.

3. **New South Wales.**—The control of all roads, bridges, and ferries in New South Wales is now regulated by the Local Government Act 1906, which came into force on the 1st January, 1907, and its subsequent amendments in 1908 and 1915. Under the provisions of this Act, the eastern and central divisions of the State are divided into shires and municipalities for the general purposes of local government, for the endowment of which a sum of not less than £150,000 is payable annually out of the consolidated revenue on the basis of a percentage subsidy on the proceeds of the general rates received by the local governing bodies concerned. The control of all roads, bridges, and ferries (except those proclaimed "National" and those in the unincorporated areas of the Western Division) has been transferred from the Roads Department to the respective shires and municipal councils, who are now responsible for their construction and maintenance. Up to December, 1915, 31 miles of roads, 275 bridges, 55 wharves, 99 jetties, and 16 ferries have been proclaimed as "National" works. Power is given to construct new roads, to widen or close existing roads, to make by-laws for the regulation of traffic, etc.; and in the case of the acquisition of land for the purpose of constructing new roads or of widening existing roads, the provisions of the Roads Act 1902 are incorporated. The Minister for Works is empowered to pay subsidies to the local authorities to maintain the roads. The roads leading to and within areas of lands which are made available for closer settlement will be constructed by the Government prior to transfer to the shires, as also will roads required mainly for tourists in districts not likely to produce revenue in rates to the local authorities.

(i) *Principal Main Roads.* The four principal main roads in New South Wales run in the same direction as, and are roughly contiguous to, the four State-owned main railway lines. (a) *The Southern Road*, 385 miles in length, runs from Sydney to Albury, and before the days of railway construction formed part of the highway over which the interstate traffic between Melbourne and Sydney used to flow. (b) *The South Coast Road*, 250 miles long, runs from Campbelltown along the top of the coast range and across the Illawarra district as far as Bega, from which place it extends as a minor road to the southern limits of the State. (c) *The Western Road*, 513 miles long, runs through Bathurst, Orange, and many other important towns as far as Bourke, on the Darling River. (d) *The Northern Road*, 405 miles in length, runs from Morpeth, near Maitland, as far as Maryland, on the Queensland border.

(ii) *Length and Classification of Roads and Bridges.* The length of roads in the State (exclusive of 31 miles proclaimed as "National" works) in 1915 was approximately 97,811 miles, of which 10,261 miles were controlled by municipalities, 81,075 by shires, and 6,475 miles were in the unincorporated areas of the Western Division. The following table gives particulars for the year 1915 (the latest year for which figures are available), of roads classified according to whether metalled, etc., formed only, cleared only, or natural surface:—

NEW SOUTH WALES.—APPROXIMATE LENGTH OF ROADS, 1915.

Classification.	Metalled, Ballasted, Gravelled, etc.	Formed only.	Cleared only.	Natural surface.	Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
Metropolitan	1,400	330	246	196	2,172
Country municipalities	2,676	1,638	1,897	1,878	8,089
Shires	14,342	10,404	24,731	31,598	81,075
Western Division (unincorporated)	100	196	2,752	3,427	6,475
Total	18,518	12,568	29,626	37,099	97,811

(iii) *Bridges, Culverts, and Ferries.* The more important bridges have been proclaimed under the provisions of the Local Government Act as "National" works (see above), and these, together with the bridges, etc., in the Western Division, remain under the control of, and are maintained by the Public Works Department. Particulars of bridges, culverts, and ferries in the State in 1915, the latest year for which figures are available, are given in the following table:—

NEW SOUTH WALES.—BRIDGES, CULVERTS, AND FERRIES, 1915.

Particulars.	Bridges.		Culverts.		Ferries.
	No.	Length.	No.	Length.	No.
		Feet.		Feet.	
"National" works	275	105,330	..	..	16
Metropolitan	130	6,133	844	78,117	3
Country municipalities	636	34,493	3,541	99,183	11
Shires	3,523	211,770	34,668	317,189	96
Western Division (unincorporated) ..	93	12,530	153	1,709	..
Total	4,657	370,256	39,206	496,198	126

(iv) *Expenditure on Roads and Bridges.* Since the year 1857 the total expenditure by the Roads Department and Road Trusts on roads and bridges is £25,361,123. In this expenditure is included the cost of administering the Department, services for other Departments, and payments on account of punt approaches and similar works incidental to the road traffic of the country. The amount expended from 1857 to the 30th June, 1900, for the next decennium, and for each succeeding financial year up to 1918, is given below. Until recent years, the expenditure on these works increased at a much faster rate than the population.

NEW SOUTH WALES.—EXPENDITURE BY ROADS DEPARTMENT AND ROAD TRUSTS, 1857 TO 1918.

Period.	Expenditure by Roads Department.	Expenditure by Trustees.	Total.
	£	£	£
1857 to 30th June, 1900	18,714,078	1,258,027	19,972,105
1900-10	4,605,766	30,664	4,636,430
1910-11	125,326	..	125,326
1911-12	126,111	..	126,111
1912-13	120,719	..	120,719
1913-14	73,192	..	73,192
1914-15	92,729	..	92,729
1915-16	65,928	..	65,928
1916-17	74,124	..	74,124
1917-18	74,459	..	74,459
Total	24,072,432	1,288,691	25,361,123

The expenditure by the Department is now limited to the construction of roads in closer settlement areas and to the construction and maintenance of national bridges and ferries, and of works in the unincorporated areas of the Western Division.

4. *Victoria.*—Under the Local Government Act 1915, the control, construction, and maintenance of all roads, streets, and bridges are in the hands of Municipal Councils, which are empowered to open new roads, and to close, divert, or increase the width of any existing street or road, provided that no new road less than one chain in width may be opened without the consent of the Minister. The councils are also authorised to make and repair streets, lanes, or passages on private property, or to form means of back access to private property, and may compel the owners of such property to pay the cost of so doing. Footways in front of houses or grounds may be kerbed, flagged, paved, or asphalted, and the owners of such houses or grounds must bear half the cost of so doing. The revenue of the councils is derived from rates, which may be either ordinary or special. The councils are empowered to raise loans for the purpose of making or opening new streets and roads, and for diverting, altering, or increasing the width of streets and roads, provided that the amount of such loan must not exceed ten times the average income of the council during the three years immediately preceding from general rates not exceeding 1s. 6d. in the pound of annual value.

(i) *Country Roads Board.* With the object of improving the main roads of the State, an Act (No. 2415) was passed on 23rd December, 1912, which empowers the Governor in Council to appoint a board, to consist of three members.

The duties of the board are to ascertain by survey and investigation what roads are main roads; the nature and extent of the resources of Victoria in metals, minerals, and materials suitable for the purposes of road-making and maintenance, and the most effective and economical methods for dealing with the same, and for supplying and utilising the material in any part of Victoria; the most effective methods of road construction and maintenance; what deviations (if any) in existing roads or what new roads should be made so as to facilitate communication and improve the conditions of traffic; and to record, publish, and make available for general information the results of all such surveys and investigations. The duty of furnishing information that may be required is imposed on the municipal authorities.

The construction of permanent works and the maintenance of main roads are likewise to be carried out by the municipalities to the satisfaction of the board. The total cost of the works, in the first instance, is to be paid by the Treasury, but subsequently one-half to two-thirds of the amount expended on permanent works and maintenance is to be refunded by the municipalities affected.

For the construction of developmental or feeder roads to the main road system the Developmental Roads Act (No. 2944) was passed in 1918. Under the authority of this Act the Country Roads Board is empowered to spend a sum of £500,000 over a period of five years on some of the more important roads in the less developed and neglected parts of the State. It is intended that a further sum of £1,500,000 for the same purpose will be provided later on.

For the purpose of making permanent works, power is given to the Governor in Council to issue stock or debentures to the amount of £400,000 a year for five years, and the principal and interest are a charge upon the Consolidated Revenue of the State. The money so raised is to be placed to the credit of an account to be called "the Country Roads Board Loan Account," which will be debited with all payments made by the Treasurer towards the cost of permanent works. A sinking fund of 1 per cent. per annum on half the amount borrowed is authorised to be paid out of the Consolidated Revenue until half of the amount borrowed is redeemed. An annual payment to the Treasurer of 6 per cent. on the amount due by each municipality in respect of permanent works is provided for, and the cost of maintenance allocated to each municipality must be paid before the 1st July in each year. A special rate, not to exceed 6d. in the £1 on the net annual value of ratable property, to meet the cost of permanent works and maintenance, may be levied in any ward or riding of a municipality as the council may direct. In the event of default of payment by a municipality, the board may levy a rate to meet the

amount owing. All fees and fines paid under the Motor Car Act, all moneys standing to the credit of the Municipal Fees and Fines Trust Fund, all fees paid on the registration or renewal of the registration of traction engines, and all fees received by the Crown after the 30th June, 1912, under the Unused Roads and Water Frontages Act 1903 (which has been incorporated in the Local Government Act 1915), are to be credited to the Country Roads Board Fund.

Up to the 30th June, 1918, there were 6,500 miles of declared main roads, agreed to by the councils, and gazetted. The total amount expended during 1917-18 for permanent works was £226,599, and for maintenance work £173,757, a total of £400,356. The net receipts for the year were £116,521, of which amount the chief items were motor registration and license fees, £58,485, unused roads and water frontages license fees, £23,736, and contributions by municipalities for permanent works, £30,256.

(ii) *General and Local Government Expenditure.* The gross amount expended directly by the State Government of Victoria on roads and bridges was £8,785,974 up to the end of June, 1918. The annual expenditure from ordinary revenue by municipalities is not returned separately, but is included in Public Works Construction and Maintenance (see Section xxvi., *Local Government*). The subjoined table shews the cost from general revenue of municipalities of private streets, roads, etc., and also shews the amounts of municipal loan expenditure in 1901 and from 1914 to 1918 :—

VICTORIA.—EXPENDITURE ON ROADS AND BRIDGES, 1901 AND 1914 TO 1918.

Financial Year.(a)	Annual Expenditure by State Government.	Municipal Loan Expenditure.		Formation of Private Roads, Streets, Lanes, etc.(b)	
		Cities, Towns, and Boroughs.	Shires.	Cities, Towns, and Boroughs.	Shires.
	£	£	£	£	£
1901	72,890	16,844	12,928	18,829	4,521
1914	56,649	57,411	23,749	59,093	11,372
1915	47,898	103,124	40,129	53,365	8,647
1916	25,651	92,198	44,945	64,481	3,543
1917	16,514	41,686	7,279	60,277	3,222
1918	19,782	(c)	(c)	(c)	(c)

(a) The financial years of Melbourne and Geelong end on the 31st December and the 31st August respectively; those of all other municipalities on the 30th September.

(b) Including the cost of flagging, asphaltting footpaths, etc., but exclusive of loan expenditure.

(c) Not available.

5. **Queensland.**—In Queensland the construction and maintenance of public roads are controlled under a system of local self-government, for the purposes of which the whole State is divided into (a) cities, (b) towns, and (c) shires. The duties, rights, and responsibilities of the local authorities with regard to roads, streets, and bridges are regulated by the Local Authorities Act of 1902 and subsequent amendments. The councils are invested with full powers to open, close, divert, or widen streets, roads, and bridges, and to make by-laws for the regulation of traffic, etc. The members of the councils are elected by the ratepayers, and with the aid of executive officers they undertake the supervision and control of all necessary constructions and improvements of roads and bridges within their district. The rates which the councils are empowered to levy are supplemented by Government grants. Separate returns as to the expenditure by towns and shires on roads and bridges are not available, the amounts being included in the returns of expenditure on public works, particulars as to which expenditure may be found in Section XXVI., *Local Government*, hereinafter.

6. *South Australia.*—Of the several Australian States, South Australia has by far the largest unincorporated area, no less than 88 per cent. of the whole area of the State being in this condition. This area is, however, very sparsely populated and much of it is entirely unoccupied. The remainder of the State is for purposes of local government under the control of Municipal Corporations and District Councils. Under the provisions of the District Councils Act 1914, the Municipal Corporations Acts 1890 to 1915, and of the Roads Acts 1884 to 1915, the councils are invested with full powers as to the opening and making of new streets and roads, and the diverting, altering, or increasing the width of existing roads; as to raising, lowering, or altering the ground or soil of any street or road; and as to the construction, purchase, and management of bridges, culverts, ferries, and jetties.

(i) *Main Roads and District Roads.* All the roads in each district are classified either as main roads or as district roads. Both classes of roads are under the direct control either of Municipal Corporations or of District Councils, but in the case of main roads the expenditure on construction and maintenance is chiefly provided for by Government grants, which are paid into a Government grants account, while the expenditure on district roads is paid for out of general rates, and out of subsidies on the amount of such rates granted by the central Government. Under the Main Roads Act 1915, a number of roads were declared to be main roads.

The total estimated length of streets and roads in the incorporated area in South Australia up to the 30th June, 1918, was as follows:—

SOUTH AUSTRALIA.—ESTIMATED LENGTH OF ROADS AND STREETS IN THE INCORPORATED AREA, 1918.

Particulars	Woodblocked.	Macadamised.	Other.	Total.
Miles	10	10,529	32,855	43,394

(ii) *Expenditure by Corporations on Main and District Roads.* The following table shews the expenditure by municipal corporations on both main and district roads during 1901, and each year from 1913 to 1918 inclusive:—

SOUTH AUSTRALIA.—EXPENDITURE BY CORPORATIONS ON STREETS, ROADS AND BRIDGES, 1901 AND 1913 TO 1918.

Year.(a)	District Roads.		Main Roads Fund.			
	Expenditure.		Receipts.		Expenditure.	
	Con- struction.	Main- tenance.	From Main Road Grants.	Total.	Con- struction.	Main- tenance.
	£	£	£	£	£	£
1901	4,906	50,628	7,403	8,738	159	7,745
1913	31,797	89,830	11,817	13,128	463	13,142
1914	8,909	95,970	12,573	13,516	361	11,949
1915	31,732	74,887	12,084	12,820	26	11,502
1916	25,483	73,118	9,669	12,098	88	13,679
1917	15,952	80,106	14,299	15,787	619	13,073
1918	13,983	89,657	10,490	13,033	1,990	12,524

(a) Up to and including the year 1903 the financial year ended on the 31st December, but after that date ends on the 30th November.

(iii) *Expenditure of District Councils on Main and District Roads.* The following table gives similar information with respect to main and district roads under the control of District Councils:—

SOUTH AUSTRALIA.—EXPENDITURE BY DISTRICT COUNCILS ON STREETS, ROADS, AND BRIDGES, 1901 AND 1913 TO 1918.

Year ended 30th June.	District Roads.		Main Roads Fund.			
	Expenditure.		Receipts.		Expenditure.	
	Con- struction.	Main- tenance.	From Main Road Grants.	Total.	Con- struction.	Main- tenance.
	£	£	£	£	£	£
1901	18,026	47,379	72,980	100,077	11,861	67,487
1913	56,128	76,880	106,482	108,489	14,915	96,673
1914	48,133	80,181	124,528	130,299	18,538	97,599
1915	51,625	85,119	114,722	114,781	15,571	102,679
1916	41,283	79,515	83,264	84,738	12,493	61,172
1917	47,337	79,377	109,044	111,567	18,809	72,644
1918	62,280	103,219	126,682	126,865	41,319	103,312

7. *Western Australia.*—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State are under the control of Municipalities, constituted by the Municipal Corporation Acts 1906–1915, and District Road Boards, constituted by the Roads Acts 1911–1915.

(i) *District Roads and Bridges.* Under the provisions of the Roads Acts any part of the State, not within a municipality, may be constituted by the Governor in Council into a Road District, under the control of a board of not less than five nor more than eleven members elected by the ratepayers. The board is invested with full powers for controlling and managing all roads and bridges within the district, and is empowered to make by-laws for the general regulation of traffic, to control the weight of engines and machines permitted to cross any bridge or culvert, to regulate the speed limits of vehicles, lights to be carried by vehicles, the lighting of streets and roads, and the licensing of bicycles and motor cars. A District Road Board may not, however, construct any road or street less than sixty-six feet wide, nor any bridge or culvert at a greater cost than £100, without the consent of the Minister. The construction of the more important bridges and culverts is generally carried out by the Government, the work, after completion, being handed over to the Road Board for maintenance. In case of land being required for the purpose of constructing a new street or road, or for widening an existing street or road, the provisions of the Public Works Act of 1902 are incorporated in the Roads Act. A board may levy general rates within its district not exceeding two shillings nor less than ninepence in the £ on the annual ratable value, and, if valued on the basis of unimproved values of lands, the general rate must not be over threepence nor under one penny in the £ on the capital unimproved value. Boards are also empowered to raise loans for works or undertakings or to liquidate existing loans, but the amount of such loans must not be greater than seven times the average ordinary revenue of the board for the two preceding years. In the case, however, of boards already indebted, borrowing power to the extent of ten times the said average is given, less the amount of existing loan indebtedness at time of borrowing. For the purpose of paying the interest on money borrowed a board may levy a special rate. District Road Boards may also exercise the powers of Drainage Boards under the provisions of the Land Drainage Act of 1900.

(ii) *Municipal Streets, Roads, and Bridges.* As regards roads, streets, and bridges within municipalities, these are under the control of local authorities elected under the provisions of the Municipal Corporations Acts 1906-15. The municipal councils are invested with full powers for making, maintaining, and managing all streets, roads, and bridges within the municipal area, and may request the Governor to declare any such land reserved, used, or by purchase or exchange acquired for a street or way, to be a public highway, and on such request the Governor may, by notice in the *Gazette*, proclaim such highway absolutely dedicated to the public.

(iii) *Length of Roads, Number of Bridges, and Expenditure on Roads and Bridges.* The following table gives particulars of the operations of the District Road Boards since the 1st January, 1913 :—

WESTERN AUSTRALIA.—PARTICULARS OF ROADS UNDER CONTROL OF DISTRICT ROAD BOARDS, 1913 TO 1917.

Year ended the 30th June.	Area.	Revenue.				Expenditure.	Length of Cleared Roads.(d)				No. of Bridges and Culverts.	
		From Rates.	From Grants and Subsidies.	From other Sources.	Total.		Cleared only.	Cleared and Formed.	Metalled or otherwise Constructed.	Total.	Bridges.	Culverts.
1913	975,815	80,551	60,687	29,770	171,008	184,587	19,236	4,429	3,651	27,316b	721c	6,157c
1914	974,476	93,700	63,668	46,031	203,399	187,800	19,921	4,626	3,804	28,351b	731d	6,450d
1915	974,476	88,569	27,753	47,571	163,893	193,033	19,641	4,674	4,038	28,354b	761	6,649
1916	975,827	104,345	24,397	39,820	167,562	166,340	19,258	5,363	4,216	28,837	760	6,907
1917	975,828	113,686	30,226	55,383	199,295	189,177	19,903	5,680	4,359	29,942	957	7,315

(a) Exclusive of two Boards which have not supplied the information. (b) Exclusive of four Boards.
(c) Exclusive of three Boards. (d) Approximate only.

The following table gives similar information with reference to roads controlled by municipalities under the Municipal Institutions Act 1900 and the Municipal Corporations Act 1906 :—

WESTERN AUSTRALIA.—PARTICULARS OF STREETS, ROADS, AND BRIDGES UNDER THE CONTROL OF MUNICIPALITIES, 1901 AND 1913 TO 1917.

Year ended the 31st October.	No. of Municipalities.	Length of Streets and Roads.(a)					Revenue.		Expenditure.		
		Paved, Metalled, or Gravelled.	Formed only.	Cleared only.	Not Cleared.	Total.	From Rates.	From Grants.	Works and Improvements.	Street Lighting and Watering.	
											Miles.
1901	..	42	195	30	149	137	511	78,021	66,850	111,256	15,969
1913	..	33	544	95	267	299	1,205	153,966	19,382	159,445	26,089
1914	..	33	550	95	258	290	1,193	153,686	13,142	223,098	19,056
1915	..	31	570	92	254	279	1,195	170,675	10,309	190,739	24,959
1916	..	30	559	88	253	238	1,138	166,617	9,462	120,411	24,952
1917	..	30	562	94	244	238	1,138	167,997	7,813	73,991	23,481

(a) Approximate only.

8. *Tasmania.*—In 1906 the Roads Act 1884 with its amendments was to a great extent repealed by the Local Government Act 1906, the parts referring to Main Roads being excepted. Under the 1906 Act it is provided that the councils of all municipalities constituted under the Act should exercise all powers conferred upon and should be liable to all the obligations imposed upon Road District Trusts by the Roads Act of 1884. The whole State is divided into municipal districts, 48 rural and 2 city, each rural district being under the control of a warden and councillors.

In 1918 the Main Roads Maintenance Act was passed and incorporated with the unrepealed portions of the Road Act of 1884. Under this Act a Board known as the Main Roads Advisory Board is appointed, consisting of seven members, of whom three,

called municipal members, are appointed on the nomination of the Municipal Association of Tasmania, two, called motorist members, appointed by the Governor, and two, called Government members, also appointed by the Governor. The revenue of the Board consists of the sum of £5,000 from the consolidated revenue, and of a sum equal to the total amount of motor taxes collected and paid into the Treasury, less 5 per centum. The Board's functions relate to the proclamation of main roads and their maintenance, etc., by the Municipal Councils out of the funds allocated to them by the Board for the purpose.

(i) *Mileage of Roads and Number of Bridges.* The following table gives particulars for the year 1917 as to length of roads and number of bridges and culverts under the control of the municipalities :—

TASMANIA.—ROADS AND BRIDGES IN MUNICIPALITIES, 1917.

Roads.			Bridges.	Culverts.
Macadamised or Gravelled.	Other.	Total.		
Miles. 5,952	Miles. 5,467	Miles. 11,419	No. 1,120(a)	No. 19,702(a)

(a) Last available figures.

(ii) *Revenue and Expenditure.* The following table gives particulars for the year 1917 of the revenue and expenditure of municipal councils in respect of roads and bridges :—

TASMANIA.—ROADS AND BRIDGES, REVENUE AND EXPENDITURE, 1917.

Revenue.				Expenditure.(b)
From Government.	Rates.	All other.(a)	Total.	
£ 18,527	£ 58,499	£ 243,411	£ 320,437	£ 345,500(c)

(a) Including current receipts from loans. (b) Municipal "Works and Services."

(c) Including £60,807 on trams.

§ 2. Railways.

(A) General.

1. *Introduction.*—In the issues of the Commonwealth Year Book, Nos. 1–7, the statistics of all Government railway systems were treated under the head of *Government Railways*. In the following issues, Nos. 8 to 11, the greater part of those statistics relating to State-owned lines was dealt with separately from those under the control of the Commonwealth Government. This arrangement is continued in the present issue. The State railways are referred to throughout as "State" and the Commonwealth railways as "Federal" railways. There is, however, a summary of the working of the Federal and States' railways in part (E) of the present section.

2. *Railway Statistics.*—In some of the earlier issues of the Year Book will be found a condensation of the report issued in 1909 by the Commonwealth Statistician to the Minister for Home Affairs on the subject of *The Desirability of Improved Statistics of Government Railways in Australia* (see Year Book No. 7, page 598).

3. *Railway Communication in the Commonwealth.*—An account of the progress in railway construction in Australia since the opening of the first line in 1854 will be found in Year Book No. 6, p. 681. In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral and mining districts towards the principal ports, which are themselves connected by systems of lines running approximately parallel to the

coast. These are shewn on the map on page 647. In the east, lines radiating from Cairns, Townsville, Rockhampton, Brisbane, and Sydney extend inland in various directions for distances ranging up to over 600 miles; in the south-east there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are four main lines, with numerous branches, running from Melbourne, while from Adelaide one main line, with several branches to the coastal towns, runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to various ports, meeting the main line from Melbourne on the border of South Australia and Victoria near Serviceton. The South Australian and Victorian railway systems also meet on the border at two other points, one near Pinnaroo, and the other at Rennick near Mount Gambier. By the opening, in 1917, of the Trans-Australian railway from Port Augusta to Kalgoorlie, through communication by rail has been established between the eastern States and the Western Australian railway system. The main interstate line (indicated by a heavier line in the map), which permits of direct communication between the five capital cities—Brisbane, Sydney, Melbourne, Adelaide, and Perth—covers a distance from end to end of 3,471.25 miles, or 3,476.27 miles *via* Newcastle. The scheduled time for the journey from Brisbane to Perth is six days, three hours and forty minutes. In the opposite direction the journey is scheduled to occupy five days, twenty-three hours and forty minutes. Both of these are the times taken over all.

In the following tables particulars are given of the gauges of lines, changing stations and duration of stops thereat, arrival and departure times, distances and average speeds on the journey from Brisbane to Perth, and *vice versa* :—

BRISBANE TO PERTH.

Gauge of Line.	Terminal or Changing Stations.	Times.		Day on Journey. (a)	Actual Time.	Duration of Stops at Changing Stations.	Intermediate Distance.	Total Distance from Brisbane.	Average Speed. (b)
		Arr.	Dep.						
ft. in.	Brisbane ..	—	8.5 a.m.	Monday ..	h. m.	h. m.	miles.	miles.	m.p.h.
3 6	Wallangarra ..	5.55 p.m.	6.17 p.m.	" ..	9 50	0 22	223.46	223.46	22.72
4 8½	Sydney ..	11.25 a.m.	7.25 p.m.	Tuesday ..	17 8	8 00	c497.38	720.84	29.03
4 8½	Albury ..	7.23 a.m.	7.47 a.m.	Wednesday	11 58	0 24	598.11	1,118.95	33.27
5 3	Melbourne ..	12.51 p.m.	4.30 p.m.	" ..	5 4	3 39	190.50	1,309.45	37.60
5 3	Adelaide ..	9.55 a.m.	10.45 a.m.	Thursday	17 55	0 50	483.05	1,792.50	26.96
5 3	Terowie ..	3.36 p.m.	4.0 p.m.	" ..	4 51	0 24	139.75	1,932.25	28.81
3 6	Port Augusta ..	9.55 p.m.	10.30 p.m.	" ..	5 55	0 35	119.50	2,051.75	20.20
4 8½	Kalgoorlie ..	10.20 a.m.	5.40 p.m.	Saturday	37 20	7 20	1,051.30	3,103.05	28.16
3 6	Perth ..	9.45 a.m.	—	Sunday	16 5	—	373.22	3,476.27	23.21
				Total ..	126 6	21 34	3,476 27	—	27.57

PERTH TO BRISBANE.

Gauge of Line.	Terminal or Changing Stations.	Times.		Day on Journey. (a)	Actual Time.	Duration of Stops at Changing Stations.	Intermediate Distance.	Total Distance from Perth.	Average Speed (b)
		Arr.	Dep.						
ft. in.	Perth ..	—	5.0 p.m.	Monday ..	h. m.	h. m.	miles.	miles.	m.p.h.
3 6	Kalgoorlie ..	9.15 a.m.	10.0 a.m.	Tuesday	16 15	0 45	373.22	373.22	22.97
4 8½	Port Augusta ..	1.0 a.m.	4.55 a.m.	Thursday	37 30	3 55	1,051.30	1,424.52	28.03
3 6	Terowie ..	10.50 a.m.	11.15 a.m.	" ..	5 55	0 25	119.50	1,544.02	20.20
5 3	Adelaide ..	3.37 p.m.	4.30 p.m.	" ..	4 22	0 53	139.75	1,683.77	32.00
5 3	Melbourne ..	9.59 a.m.	5.0 p.m.	Friday ..	16 59	7 1	483.05	2,166.82	28.44
5 3	Albury ..	10.21 p.m.	10.40 p.m.	" ..	5 21	0 19	190.50	2,357.32	35.61
4 8½	Sydney ..	10.45 a.m.	3.30 p.m.	Saturday	12 5	4 45	393.11	2,750.43	32.95
4 8½	Wallangarra ..	9.7 a.m.	9.30 a.m.	Sunday	17 37	0 23	c497.38	3,252.81	28.23
3 6	Brisbane ..	6.40 p.m.	—	" ..	9 10	—	223.46	3,476.27	24.38
				Total ..	125 14	18 26	3,476.27	—	27.76

(a) The days here given are for the purposes of time table interpretation. They are not the only days on which the service is provided. (b) Inclusive of stops between changing stations. (c) Runs *via* Newcastle.

The time allowed for the journey from Port Augusta to Kalgoorlie, 37 hours 20 minutes (actual), gives an average speed of 28.16 miles per hour throughout inclusive of stoppages. Exclusive of stoppages, which aggregate slightly under three hours, the average speed is about 30.5 miles per hour. In the opposite direction the gross time is 37 hours 30 minutes (actual), which gives an average speed of 28.03 miles per hour. Exclusive of stoppages, which aggregate about 3 hours 10 minutes, the average speed is 30.6 miles per hour.

The average speed inclusive of all stops is 23.54 miles per hour on the journey from Brisbane to Perth, and 24.20 miles per hour on the return journey.

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Longreach in Queensland to Meekatharra in Western Australia, a total distance of 4,756.76 miles.

In Western Australia there is a connected system of main or trunk lines between the ports of the State and the agricultural, pastoral, and mining districts, while there are also two short lines, one on the north-west, the other on the south coast, which are unconnected with the main system. In the northern parts of Queensland and in the Northern Territory there are also several disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.

4. **Standard Times in Australia.**—In Year Book No. 11, pp. 1201-2, a short account was given as to the introduction of the standard times now in use in the Australian States. Particulars of these times are set out in the following table:—

STANDARD TIMES IN AUSTRALIA.

Colony.	Date when Act came into operation.	Meridian selected.	Time ahead of Greenwich.
		° ' "	h. m.
New South Wales	1st February, 1895 ..	150 0 E.	10 0
Victoria	"	150 0 "	10 0
Queensland	1st January, 1895 ..	150 0 "	10 0
South Australia	1st February, 1895 ..	135 0 "	9 0
"	1st May, 1899 ..	142 30 "	9 30
Western Australia	1st December, 1895 ..	120 0 "	8 0
Tasmania	1st September, 1895 ..	150 0 "	10 0

Consequent upon the opening of the Trans-Australian Railway an arrangement has been made by which the difference of time between South Australia and Western Australia (viz., 1½ hours) is divided into two changes of 45 minutes each. Going east from Kalgoorlie the first change is made at Rawlinna, 235.18 miles out, where the time is put forward by 45 minutes. The second change of the same amount is made at Tarcoola, 794.05 miles out. Thenceforward South Australian standard time is kept.

5. **Non-conformity of Gauge.**—With but few exceptions, all the railway lines in the Commonwealth open for general traffic are now owned and managed by the respective States in whose territory they run, or by the Commonwealth Government, but,

unfortunately for the purpose of interstate traffic, the construction of the various systems in different parts of Australia has proceeded without uniformity of gauge. In 1846 Mr. Gladstone, then Colonial Secretary, recommended in a despatch to the Governor of New South Wales that the 4-ft. 8½-in. gauge should be adopted. In 1850, however, the engineer to the Sydney Railroad and Tramway Company strongly advocated the adoption of the 5-ft. 3-in. gauge, and in 1852 an Act was passed making it compulsory that all railways in New South Wales should be constructed to the wider gauge, the Governors of Victoria and South Australia being duly advised of the step that had been taken. In 1852, however, the company mentioned having changed its engineer, also changed its views as to the gauge question, and in the following year succeeded in obtaining the repeal of the Act of 1852 and in securing the passing of another, under the provisions of which the narrower gauge was made imperative. This step was taken without the concurrence of the other States concerned, and a considerable amount of ill-feeling arose, especially in Victoria, where two private companies had already placed large orders for rolling stock to be constructed to the broad gauge originally chosen. The result was that it was decided in Victoria to adhere to the 5-ft. 3-in. gauge as the standard gauge for the State, while the Sydney Railroad and Tramway Company proceeded with the construction of its lines to the 4-ft. 8½-in. gauge, and these two gauges have since been adhered to as the standard gauges of the respective States. The Queensland Government had, at the outset, adopted a gauge of 3-ft. 6-in. as being best suited to the requirements of the colony, and has since adhered to that gauge throughout the State, so that all goods requiring conveyance into New South Wales or *vice versa* have to be transhipped at the boundary between the two States. In June, 1914, however, the Queensland Government purchased two short lengths of line laid on a 2-ft. gauge. In South Australia the 5-ft. 3-in. gauge was adopted, but in 1870, however, on the grounds of economy, the 3-ft. 6-in. gauge was introduced, and many of the lines in South Australia have been constructed with that gauge. The interstate line between Adelaide and Melbourne was opened as a through route in January, 1887, and is of the 5-ft. 3-in. gauge throughout. At the 30th June, 1918, of the 2,242.33 miles of State Government railways in South Australia 1,209.59 miles were of 3-ft. 6-in. gauge, exclusive of 477.96 miles of the same gauge from Port Augusta to Oodnadatta belonging to the Federal Government. In the Northern Territory the line from Darwin to Katherine, 199.56 miles in length, is of 3-ft. 6-in. gauge. In Western Australia the 3-ft. 6-in. gauge was also adopted. In Tasmania the first line made had a gauge of 5-ft. 3-in., but after a short time it was converted to 3-ft. 6-in., which, with the exception of three short lines with a 2-ft. gauge, is the present gauge of the Government and most of the privately-owned lines. It was recognised in both these States that the construction of railways was essential to their proper development, but as their financial resources would not bear a heavy initial expenditure in connection with the establishment of railway lines, it was decided to adopt the narrow gauge. In Victoria, short lengths of light railways have been constructed in recent years to a gauge of 2-ft. 6-in.

6. Interstate Communication.—Until the railway systems of the eastern States were connected at the common boundaries, the inconvenience of non-conformity of gauge was not felt. Since then, however, the necessary transshipments of both passengers and goods have been a source of trouble, delay, and expense. On the 14th June, 1883, a railway bridge over the River Murray at Wodonga was opened for traffic, and railway communication was then established between Melbourne and Sydney. On the 19th January, 1887, the last section of the Victorian line to Serviceton, on the South Australian border, was completed, and a junction was thus effected with the South Australian line to Adelaide. On the 16th January, 1888, a junction was effected between the New South Wales and Queensland lines at Wallangarra, but there was still a break in the line from Sydney at the Hawkesbury River, thirty-six miles from Sydney. This last link was, however, completed on the 1st May, 1889, by the opening of the Hawkesbury River bridge, 2,900 feet in length, and railway communication was thus established between the four capital cities, Brisbane, Sydney, Melbourne, and Adelaide.

By the opening of the Trans-Australian railway, to which reference has already been made, Western Australia is now linked to the other States, and an unbroken line of communication established from one side of the continent to the other. The construction,

moreover, of lines recently decided upon, connecting Victoria with the Riverina district in New South Wales and with the wheat-growing districts of South Australia, will undoubtedly facilitate interstate exchange and will allow the produce of inland areas to find its natural outlet at the nearest port.

7. Unification of Gauge.—The development of the railway systems of the Commonwealth has shewn that the adoption of different gauges on the main lines in the several States was a serious error. As already mentioned, the extra cost, delay, and inconvenience incurred by the necessity of transferring through-passengers and goods at places where there are breaks of gauge are becoming more serious as the volume of business increases. As an indication of the extra cost thus involved, the junction charges on interstate traffic between New South Wales and Victoria range from 1s. 6d. to 2s. 6d. per ton.

Although the cost of alteration to a uniform gauge would be great, many propositions have from time to time been put forward with the object of securing such a gauge, and attention has been drawn to the importance of the unification of gauges before further expenditure on railway construction is incurred by the States. The problem is, however, one which is by no means easy of solution, and the difficulties are increased by the introduction of what may be called questions of local or State policy.

The first question that naturally arises in considering the problem is as to which gauge should be adopted as the universal gauge of the Commonwealth. As regards State Government railways, the 4-ft. 8½-in. gauge has a mileage of 4,639.22, all in New South Wales; Victoria and South Australia have a combined mileage of 5,062.48 of 5-ft. 3-in. gauge; while New South Wales, Queensland, South Australia, Western Australia have together 10,006.56 miles of 3-ft. 6-in. gauge. In addition, the Commonwealth Government has (i) of 4-ft. 8½-in. gauge 4.94 miles in the Federal Territory, 597.36 miles in South Australia, and 453.94 miles in Western Australia, and (ii) of 3-ft. 6-in. gauge 477.96 miles in South Australia, and 199.56 miles in the Northern Territory. By far the greater part of the mileage of private railways open for general traffic has also been constructed to the 3-ft. 6-in. gauge. The mere question of preponderance of mileage, therefore, indicates the 3-ft. 6-in. gauge for adoption. But this question is obviously subordinate to those involving engineering and economic considerations. Thus, the relative efficiency from the widest point of view, the relative costs of alterations of the permanent way and rolling stock, of carrying capacity and speed, that is to say, questions of a technical nature about which figures are not available, enter into the grounds for decision. As regards the unification of the New South Wales and Victorian gauges, the advantage of reducing the broad gauge to the 4-ft 8½-in. gauge instead of increasing the 4-ft. 8½-in. gauge to the broad gauge is that, under the former method, there would be no necessity for the alteration of tunnels, cuttings, bridges, or viaducts.

Many conferences on the subject of the unification of gauge have taken place from time to time both between the Railways Commissioners and also between the Premiers of the States concerned, and references to these conferences have been made in previous issues of the Year Book (see No. 11, pp. 657-8). The last conference, that between the engineers of the Commonwealth and States Railways, was held in Melbourne in August, 1918. Much consideration was given to the devices to deal with the break-of-gauge question which had been submitted to the conference, but all of them failed to meet the requirements of the conditions laid down by the conference in order to ensure both safety and celerity of action in train working.

8. Rolling Stock Gauges.—Allied to the question of the gauges of the railways of Australia is that of the rolling stock gauges which are in use, the rolling stock gauge being the maximum transverse dimensions to which the rolling stock may be constructed. In

the following table will be found particulars of the rolling stock gauges, together with maximum length and weights of vehicles, at present in use on the Government railways, State and Federal :—

ROLLING STOCK GAUGES IN USE ON STATE AND FEDERAL GOVERNMENT RAILWAYS, 1918.

PASSENGER ROLLING STOCK.

Railway.	Gauge of Track.	Maximum Rolling Stock Gauge.			Maximum Tare.
		Width.	Height above Rail Level.	Length over all.	
	ft. in.	ft. in.	ft. in.	ft. in.	T. c. q.
New South Wales	4 8½	9 8	14 0	74 4½	44 2 1
Victoria	5 3	9 11½	14 0½	74 1½	46 17 2
"	2 6	7 0¼	10 4¼	31 8	8 11 0
Queensland	3 6	9 4	12 9	53 5	26 14 0
"	2 0	6 3¾	10 0	22 0	3 0 0
South Australia	5 3	10 4¼	14 1¾	74 1¼	37 11 2
"	3 6	9 4¾	12 1	62 6	24 18 0
Western Australia	3 6	8 10	12 7	60 9	31 10 0
Tasmania	3 6	9 6	12 5	64 0	30 0 0
"	2 0	6 6	10 0	30 2	5 10 1
Federal—					
Trans-Australian	4 8½	10 6	14 6	78 9½	50 0 0
Northern Territory	3 6	9 4	12 9	33 6	11 0 0
Oodnadatta	3 6	10 2	12 4	33 6	11 0 0

GOODS ROLLING STOCK.

Railway.	Gauge of Track.	Maximum Rolling Stock Gauge.			Maximum—	
		Width.	Height above Rail Level.	Length over all.	Tare.	Carrying Capacity.
	ft. in.	ft. in.	ft. in.	ft. in.	T. c. q.	T. c. q.
New South Wales	4 8½	9 8	13 6	60 11	20 10 3	40 0 0
Victoria	5 3	9 7½	13 5	55 4½	20 6 0	30 0 0
"	2 6	6 5½	9 7¼	27 3¾	7 12 2½	10 0 0
Queensland	3 6	8 0	12 0	45 5	11 10 0	21 8 0
"	2 0	6 6	9 0	22 0	4 10 0	16 0 0
South Australia	5 3	10 0¼	12 10¾	43 6	16 0 0	30 0 0
"	3 6	8 6	12 1	38 9	11 15 0	25 0 0
Western Australia	3 6	8 8	12 6	44 9	17 18 0	25 0 0
Tasmania	3 6	8 6	11 0	40 10	12 5 0	30 0 0
"	2 0	6 0	6 6	27 0	5 15 2	20 0 0
Federal—						
Trans-Australian	4 8½	10 6	14 6	45 0	15 0 0	40 0 0
Northern Territory	3 6	9 4	12 9	32 6	6 0 0	10 0 0
Oodnadatta	3 6	10 2	12 4	18 0	5 0 0	12 0 0

In the above tables the transverse dimensions given are not necessarily those of one particular vehicle, but are the greatest employed on any vehicle.

9. **Mileage Open for Traffic.**—In all the States of the Commonwealth the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of the Commonwealth, lines have been constructed and managed by private companies, but at the present time nearly the whole of the railway traffic in the Commonwealth is in the hands of the various State Governments or of the Commonwealth Government. A large proportion of the private lines which are at present running have been laid down for the purpose of opening up forest lands, mining districts, or sugar areas, and are not generally used for the conveyance of passengers or the public conveyance of goods. (See (F) *Private Railways*, hereinafter.)

Mileage of Government and Private Lines, 1855 to 1918. The subjoined table shows the mileage of Commonwealth Government, State Government, and private lines open for traffic (exclusive of sidings and cross-overs) in each State at different periods since the inauguration of railways in Australia in 1854 up to the year 1918. The railway mileage given for each State includes both Commonwealth and State Government railways in that State, and in this table and in those on the following page, is estimated from the geographic point of view and not from that of ownership. The figures from 1855 to 1881 are given to the end of the calendar year; the later figures are to the end of the financial year ended on the 30th June, unless otherwise stated, excepting the mileages for private lines, which are in most cases taken for the calendar year:—

GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OPEN, 1855 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1855 ..	14	2½	..	6¾ ^a	..	..	..	23¼
1861 ..	73	114	..	56	..	..	..	243
1871 ..	358	276	218	133	12	45	..	1,042
1881 ..	1,040	1,247	800	845	92	168	..	4,192
1890-1 ..	2,263	2,763	2,205	1,666	656 ^b	425 ^b	145	10,123
1900-1 ..	2,926	3,238	2,904	1,736	1,984	618 ^c	145	13,551
1910-11 ..	4,027	3,574	4,390	1,993	3,208	675	145	18,012
1913-14 ..	4,251	3,886	5,213	2,357	3,910	766½	146	20,529½
1914-15 ..	4,444	3,936½	5,449½	2,955	4,553	779½	146	22,263½
1915-16 ..	4,496¾	4,152½	6,452½	3,060½	4,707½	758½	146	23,773¾
1916-17 ..	4,786¾	4,176½	6,702½	3,241½	4,878½	783¾	199½	24,769
1917-18 ..	5,030	4,222¾	6,769½	3,356½	4,904½	781¾	199½	25,264½

^a The line between Goolwa and Port Elliot was opened in 1854 as a horse tramway, but now forms part of the railway system. ^b To the 31st December, 1891. ^c To the 31st December, 1901.

It will be seen from the above table that the rate of construction up to the year 1871 was very slow, the average annual length of lines opened from 1861 to 1871 being only 80 miles for the whole Commonwealth. By the middle of the following decade, however, the principal mountain ranges had been crossed, and the work of construction could be proceeded with at a greater rate, and at a less cost per mile. A great period of activity was from 1881 to 1891, when the average annual length opened for traffic was 593 miles for the whole Commonwealth; the corresponding figures for the periods from June, 1891, to June, 1901, and from June, 1901, to June, 1911, were 343 and 446 miles respectively. Since June, 1911, the average annual length opened for traffic has been 1,036 miles.

10. **Comparative Mileage of Government and Private Lines, 1918.**—The subjoined table shews for each State (a) the length of lines owned by the State Government, and by the Commonwealth Government in that State, all of which lines are open for general use by the public, (b) the length of private lines available for general use by the public, and

(c) the length not so available. The mileages specified in the case of Government lines are to the 30th June, 1918; those given for private lines are as nearly as possible to the 31st December, 1917:—

GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OF GOVERNMENT LINES, OF PRIVATE LINES AVAILABLE FOR GENERAL TRAFFIC, AND OF PRIVATE LINES NOT SO AVAILABLE, 1917-18.

State or Territory.	Government Lines—		Private Lines available for General Traffic.	Total Open for General Traffic.	Private Lines used for Special Purposes only.	Grand Total.
	State.	Federal.				
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	4,679.31	..	185.02	4,864.33	160.83	5,025.16
Victoria ..	4,151.64	..	24.94	4,176.58	46.12	4,222.70
Queensland ..	5,295.15	..	555.77	5,788.92	918.48	6,769.40
South Australia	2,242.33	1,075.32	33.80	3,351.45	5.00	3,356.45
Western Australia	3,491.08	453.94	278.35	4,223.37	680.96	4,904.33
Tasmania ..	588.00	..	162.86	750.86	30.85	781.71
Northern Territory	..	199.56	..	199.56	..	199.56
Federal Territory	..	4.94	..	4.94	..	4.94
Total ..	20,447.51	1,733.76	1,240.74	23,360.01	1,842.24	25,264.25

11. **Comparative Railway Facilities in Different States and Territories, 1918.**—The relations to populations and areas respectively of the mileage of line open to the public for general traffic (including both Government and private lines) on the 30th June, 1918, are shown in the subjoined statement for each State, the Northern Territory, and also for the Commonwealth:—

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARISON OF RAILWAY FACILITIES IN DIFFERENT STATES AND TERRITORIES, 1918.

State or Territory.	Population, 30th June, 1918.	Area.	Mileage of Railway.	
			Per 1,000 of Population.	Per 1,000 sq. miles of Territory.
	Number.	Sq. miles.	Miles.	Miles.
New South Wales ..	1,910,389	309,432	2.63	16.24
Victoria ..	1,416,791	87,884	2.98	48.05
Queensland ..	692,214	670,500	9.78	10.10
South Australia ..	439,466	380,070	7.64	8.83
Western Australia ..	311,121	975,920	15.76	5.03
Tasmania ..	202,842	26,215	3.85	29.82
Northern Territory ..	5,269	523,620	37.87	0.38
Federal Territory ..	2,473	940	2.00	5.26
Commonwealth ..	4,980,565	2,974,581	5.07	8.49

12. **Classification of Lines according to Gauge, 1917-18.**—The subjoined table gives a classification, according to gauge, of the total mileage, exclusive of sidings and cross-overs, of (i) Commonwealth Government railways, given in the State or Territory in which situated; (ii) State Government railways; (iii) Private railways open to the public for general traffic; and (iv) Private lines open for special purposes. Particulars of Government railways are up to the 30th June, 1918, of private railways open for general traffic to the 31st December, 1917, and of private railways open for special purposes to the 31st December, 1917, as nearly as possible.

GOVERNMENT AND PRIVATE RAILWAYS.—CLASSIFICATION ACCORDING TO GAUGE, 1917-18.

State or Territory in which situated.	Mileage having a Gauge of—						Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	3 ft. 0 in.	2 ft. 6 in.	2 ft. 0 in.	
FEDERAL RAILWAYS.							
South Australia ..	..	597.36	477.96	..	..	..	1,075.32
Western Australia ..	..	453.94	..	..	..	..	453.94
Northern Territory ..	..	..	199.56	..	..	..	199.56
Federal Territory ..	..	4.94	..	..	..	..	4.94
Total ..	..	1,056.24	677.52	..	..	..	1,733.76
STATE RAILWAYS.							
New South Wales ..	..	4,639.22	40.09	..	..	..	4,679.31
Victoria ..	4,029.74	..	..	..	121.90	..	4,151.64
Queensland ..	..	..	5,265.80	..	..	29.35	5,295.15
South Australia ..	1,032.74	..	1,209.59	..	..	..	2,242.33
Western Australia ..	..	..	3,491.08	..	..	..	3,491.08
Tasmania ..	..	..	564.42	..	..	23.58	588.00
Total ..	5,062.48	4,639.22	10,570.98	..	121.90	52.93	20,447.51
PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.							
New South Wales ..	45.00	77.10	36.67	..	..	26.25	185.02
Victoria ..	13.94	..	..	11.00	..	..	24.94
Queensland ..	..	..	367.14	..	7.00	181.63	555.77
South Australia ..	..	..	33.80	..	..	..	33.80
Western Australia ..	..	..	278.35	..	..	..	278.35
Tasmania ..	..	..	152.87	..	..	9.99	162.86
Total ..	58.94	77.10	868.83	11.00	7.00	217.87	1,240.74
PRIVATE RAILWAYS OPEN FOR SPECIAL PURPOSES.							
New South Wales ..	..	157.33	3.50	..	..	..	160.83
Victoria ..	28.83	..	..	4.29	..	13.00	46.12
Queensland ..	..	..	202.97	..	10.00	705.51	918.48
South Australia ..	..	..	..	..	..	5.00	5.00
Western Australia ..	..	..	616.96	..	..	664.00	680.96
Tasmania ..	..	..	29.10	..	..	1.75	30.85
Total ..	28.83	157.33	852.53	4.29	10.00	789.26	1,842.24
ALL RAILWAYS.							
New South Wales ..	45.00	4,873.65	80.26	..	..	26.25	5,025.16
Victoria ..	4,072.51	..	..	15.29	121.90	13.00	4,222.70
Queensland ..	..	..	5,835.91	..	17.00	916.49	6,769.40
South Australia ..	1,032.74	597.36	1,721.35	..	..	5.00	3,356.45
Western Australia ..	..	453.94	4,386.39	..	..	664.00	4,904.33
Tasmania ..	..	..	746.39	..	..	35.32	781.71
Northern Territory ..	..	..	199.56	..	..	..	199.56
Federal Territory ..	..	4.94	..	..	..	..	4.94
GRAND TOTAL ..	5,150.25	5,929.89	12,969.86	15.29	138.90	1,060.06	25,264.25

a Including 28 miles of 1-ft. 8-in. gauge.

(B) Federal Railways.

1. **General.**—On the 1st January, 1911, the Commonwealth Government took over the Northern Territory from the South Australian Government, and at the same time the railways from Darwin to Pine Creek, in the Northern Territory, and from Port Augusta to Oodnadatta, in South Australia, came under its control. Subsequently, the construction of a transcontinental line from Port Augusta, in South Australia, to Kalgoorlie, in Western Australia, was undertaken by the Commonwealth Government, while a line has been constructed in the Federal Territory, connecting Canberra with the New South Wales railway system at Queanbeyan. In 1917 an Act was passed by which all the Commonwealth railways are vested in a Commissioner.

2. **Northern Territory Railway (Darwin to Katherine).**—On the 1st January, 1911, the line from Darwin to Pine Creek came under the jurisdiction of the then Department of External Affairs, and was worked under the Administrator of the Northern Territory. As mentioned above, the management of this railway is now vested in the Commissioner.

Particulars as to the working of this line for the year 1901–2 prior to its passing under the control of the Commonwealth Government will be found in sub-section C, State Government Railways.

In the Northern Territory Acceptance Act, the construction of a transcontinental line from South Australia is provided for. The extension of the line from Pine Creek to Katherine River has been completed, and the first train ran through to Katherine on 13th May, 1917.

3. **Oodnadatta Line.**—This line was taken over by the Commonwealth Government from 1st January, 1911, but was held under lease by the South Australian Government until 31st December, 1913. From the 1st January, 1914, the line has been worked by the South Australian Government for and on behalf of the Commonwealth. It is provided in the Northern Territory Acceptance Act that the Commonwealth shall annually reimburse the State with the interest payable on the amount of loans raised by the State for the purpose of constructing the railway, and the agreement for working the line prescribes that the Commonwealth is responsible to the State for any financial loss incurred by the State in the working and management of the railway, but is entitled to receive from the State any profit made in such working and management.

4. **Trans-Australian Railway (Kalgoorlie to Port Augusta).**—A Federal Act passed in 1907 provided for the expenditure of a sum of £20,000 for a preliminary survey of a railway line connecting Western Australia with the eastern States. This survey was commenced in 1908, and was completed in March, 1909. The route *via* Tarcoola was, for several reasons, chosen in preference to that *via* Gawler Range and Fowler's Bay. The estimated cost of construction and equipment of the line on the basis of a 4-ft. 8½-in. gauge, from Port Augusta in South Australia to Kalgoorlie in the Western Australian goldfields, a distance of 1,063 miles, was £4,045,000. In September, 1911, a Bill was introduced into the Commonwealth Parliament to authorise the construction of the line, and it became law in December following. In South Australia an Act was passed enabling the Commonwealth to acquire lands for the railway in South Australia not exceeding one-eighth of a mile wide on either side of the line, but no town lands are to be included at any time. In Western Australia, an Act was also passed by which all necessary lands are to be granted to the Commonwealth for railway purposes. A Railway Construction Department was created by the Federal Government to carry out the work, which was commenced at Port Augusta in September, 1912. On 12th September the ceremony of cutting the first sod was performed at Port Augusta by the Governor-General, Lord Denman, in the presence of a representative gathering, and on the 12th February, 1913, a like ceremony was performed at Kalgoorlie by the Prime Minister of the Commonwealth (the Right Hon. Andrew Fisher), and the line was thus commenced at both ends.

On the 17th October, 1917, the eastern and western divisions met at 621 miles 58 chains *ex* Kalgoorlie, and railway communication between Western Australia and the eastern States was thus established.

In the last issue of the Year Book (No. 11, pp. 663 to 666 and p. 1213) a short description was given of the country through which the line passes between Kalgoorlie and Port Augusta, together with particulars of the rate of construction, permanent way, water supply, rolling stock, etc. Owing to considerations of space it has not been possible to repeat the information in this issue.

On the 22nd October, 1917, the first through train left Port Augusta with an official party on board for Kalgoorlie. It should be mentioned that owing to deviations from the original route, the length of this line was reduced from 1,063.39 miles to 1,051.30 miles, a saving of 12.09 miles.

5. **Federal Territory Railway—Queanbeyan-Canberra.**—This line was built by the Railway Construction Branch of the Public Works Department, New South Wales, and was completed and taken over by the Chief Commissioner of Railways for that State, who has since worked the line for and on behalf of the Commonwealth Government. The line was opened for departmental goods traffic on 25th May, 1914. It connects with the New South Wales railway system at Queanbeyan, is 4.94 miles in length, and has sidings of an aggregate length of 2.75 miles.

6. **Summary of Federal Railways.**—The following table shews the railway lines open for traffic under the control of the Commonwealth at 30th June, 1918, together with the lines which have been or are being surveyed :—

FEDERAL GOVERNMENT RAILWAYS, 30th JUNE, 1918.

Terminals.	Miles.
OPEN FOR TRAFFIC.	
Darwin to Katherine (Northern Territory)	199.56
Port Augusta to Oodnadatta (South Australia)	477.96
Canberra to Queanbeyan (Federal Territory)	4.94
Trans-Australian—Port Augusta to Kalgoorlie	1,051.30
Total opened for traffic	1,733.76
SURVEYED, OR BEING SURVEYED.	
Katherine River to Mataranka (Northern Territory)	64.50
Mataranka to Daly Waters (Northern Territory)	95.00
Kingoonya to Boorthanna (South Australia)	176.44
Canberra to Jervis Bay (Federal Territory)	140.23
Canberra (Federal Territory) to Federal Territory Border in the direction of Yass (New South Wales)	11.67
Daly Waters (Northern Territory) to Oodnadatta (South Australia)	851.50
Port Augusta to Crystal Brook (South Australia)	69.25
Total surveyed or being surveyed	1,408.59

7. **Average Miles Worked, Cost of Construction, Revenue, Expenditure, Train Mileage, Number of Passenger Journeys, and Tonnage of Goods and Live Stock carried on Federal Railways.**—In the following table will be found particulars of the average

miles worked, cost of construction, revenue, working expenses, train mileage, number of passenger journeys, and tonnage of goods and live stock carried on the Federal lines during the undermentioned periods :—

FEDERAL RAILWAYS.—AVERAGE MILES WORKED, COST OF CONSTRUCTION, REVENUE, WORKING EXPENSES, TRAIN MILEAGE, NUMBER OF PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE STOCK, 1911 TO 1918.

Year ended June 30.	Average Miles Open.	Cost of Construction.	Revenue.	Working Expenses.	Train Miles run.	No. of Pass. Journeys.	Tonnage of Goods and Live Stock.
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TRANS-AUSTRALIAN.

		£	£	£			
1915	370	2,846,090	142,159	147,846	497,553	12,324	282,471
1916	668	4,747,062	273,959	273,959	622,919	7,667	248,744
1917	865	6,079,313	290,750	290,750	570,493	4,160	583,250
1918	1,051	6,674,278	175,039	232,468	475,936	17,934	124,806

ODNADATTA.

1911	(c)240	2,151,309	(c)29,954	(c)33,150	(c)90,031	(a)	(a)
1912	478	2,151,710	57,939	69,367	214,321	(a)	14,071
1913	478	2,153,323	75,869	77,926	281,739	(a)	15,302
1914	478	2,153,438	76,317	86,102	296,094	(a)	(a)
1915	478	2,155,156	66,664	95,871	273,488	(a)	(a)
1916	478	2,158,355	64,518	95,069	276,690	(a)	(a)
1917	478	2,281,271	66,429	102,298	254,927	(a)	(a)
1918	478	2,281,939	69,231	94,458	259,838	(a)	(a)

FEDERAL TERRITORY.

1914	0.5	45,486	..	..	(b)6,000	..	..
1915	5	46,108	1,088	1,635	(a)	(a)	(a)
1916	5	47,103	1,040	1,638	1,080	1,079	12,114
1917	5	52,591	592	1,446	1,169	1,578	6,586
1918	5	47,883	705	1,496	1,127	300	7,261

NORTHERN TERRITORY.

1911	(c)73	1,040,734	(c)5,614	(c)5,882	(c)15,046	(c)1,130	(c)935
1912	146	1,040,702	13,267	18,769	30,916	1,791	1,895
1913	146	1,040,702	14,398	17,963	30,683	1,249	2,781
1914	146	1,040,702	17,819	22,991	30,229	2,739	3,615
1915	146	1,040,702	22,143	27,796	39,652	3,857	11,995
1916	146	1,055,754	31,518	47,953	52,424	4,718	30,007
1917	187	1,664,370	28,695	39,771	87,652	8,034	27,529
1918	200	1,695,556	32,511	53,482	112,648	11,546	40,862

TOTAL ALL LINES.

(c)1911	313	3,192,043	35,568	39,032	105,077	(d)1,130	(d)935
1912	624	3,192,412	71,206	88,136	245,237	(d)1,791	15,966
1913	624	3,194,025	90,267	95,889	312,422	(d)1,249	18,083
1914	(e)624	3,239,626	(e)94,136	109,093	e326,323	(f)2,739	(f)3,615
1915	999	6,088,056	232,054	273,148	816,693	(f)16,181	(f)294,466
1916	1,297	8,008,274	371,035	418,619	953,113	(d)13,464	(d)290,865
1917	1,535	10,077,545	386,466	434,265	914,241	(d)13,772	(d)617,365
1918	1,734	10,699,656	277,486	381,904	849,549	(d)29,780	(d)72,929

(a) Not available. (b) Estimated. (c) For six months only. (d) Exclusive of Oodnadatta line.
 (e) Exclusive of Federal Territory line. (f) Exclusive of Oodnadatta and Federal Territory lines.

8. Number and Description of Rolling Stock, 1918.—The following table shews the numbers of locomotives and rolling stock in use on the Federal railways, classified according to gauge:—

CLASSIFICATION OF LOCOMOTIVES AND ROLLING STOCK ON FEDERAL RAILWAYS, 1917-18.

Railway.	Gauge.		Total.
	4 ft. 8½ in.	3 ft. 6 in.	
LOCOMOTIVES.			
Trans-Australian	45	1	46
Oodnadatta .. .. .	..	(a)	..
Federal Territory	(b)	..	..
Northern Territory .. .. .	..	12	12
Total	45	13	58
PASSENGER VEHICLES.			
Trans-Australian	31	..	31
Oodnadatta .. .. .	..	(a)	..
Federal Territory	(b)	..	..
Northern Territory .. .. .	..	4	4
Total	31	4	35
VEHICLES OTHER THAN PASSENGER.			
Trans-Australian	742	31	773
Oodnadatta .. .. .	..	(a)	..
Federal Territory	(b)	..	..
Northern Territory .. .. .	..	306	306
Total	742	337	1,079

(a) South Australian Government railway locomotives and rolling stock used.
 (b) New South Wales Government railway locomotives and rolling stock used.

9. Number of Railway Employees.—The following table shews the number of employees on the Federal railways at 30th June, 1918, classified according to (a) salaried staff, and (b) wages staff.

FEDERAL RAILWAYS.—NUMBER OF EMPLOYEES ON RAILWAYS, 1917-18.

Railway.	1917-18.	
	Salaried Staff.	Wages Staff.
Trans-Australian	201	913
Oodnadatta	(a)	(a)
Federal Territory	(b)	(b)
Northern Territory	12	164
Total	213	1,077

(a) Worked by South Australian Government railways.
 (b) Worked by New South Wales Government railways.

10. Accidents.—Number of Killed and Injured.—The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock since the 1st January, 1911, on the Federal railways :—

FEDERAL RAILWAYS.—TOTAL NUMBER OF PERSONS KILLED AND INJURED ON FEDERAL RAILWAYS, 1911-18.

Railway.	1911.a	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
NUMBER OF PERSONS KILLED.							
Trans-Australian ..	..	..	2	13	1	1	3
Oodnadatta ..	1	..	..	2	..	..	1
Federal Territory ..	..	..	..	..	..	..	..
Northern Territory ..	..	..	..	..	1	..	..
Total ..	1	..	2	15	2	1	4
NUMBER OF PERSONS INJURED.							
Trans-Australian ..	..	..	3	34	16	37	139
Oodnadatta ..	1	2	13	2	6	4	12
Federal Territory ..	..	..	..	..	..	..	..
Northern Territory ..	1	..	..	..	1	2	7
Total ..	2	2	16	36	23	43	158

a To 30th June.

11. Passenger Fares, Goods Rates, and Parcel Rates.—(i) *Passenger Fares.* In the following table the fares for certain specified distances on the Trans-Australian and Northern Territory Railways are set out :—

ORDINARY PASSENGER MILEAGE RATES ON THE UNDERMENTIONED FEDERAL RAILWAYS, 1918.

TRANS-AUSTRALIAN RAILWAY.

Class.	For a Journey of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
First single fare	<i>s. d.</i> 8 4	<i>s. d.</i> 16 8	<i>s. d.</i> 33 4	<i>s. d.</i> 50 0	<i>s. d.</i> 64 7	<i>s. d.</i> 77 1
Average per passenger mile ..	2.00	2.00	2.00	2.00	1.94	1.85
Second single fare	5 7	11 1	22 3	33 4	43 1	51 5
Average per passenger mile ..	1.34	1.33	1.34	1.33	1.29	1.23
	600 Miles.	700 Miles.	800 Miles.	900 Miles.	1,000 Miles.	1,051 Miles.
First single fare	<i>s. d.</i> 89 7	<i>s. d.</i> 102 1	<i>s. d.</i> 110 5	<i>s. d.</i> 117 9	<i>s. d.</i> 122 11	<i>s. d.</i> 125 0
Average per passenger mile ..	1.79	1.75	1.66	1.57	1.48	1.43
Second single fare	59 9	68 1	73 8	78 6	81 11	83 4
Average per passenger mile ..	1.20	1.17	1.11	1.05	0.98	0.95

ORDINARY PASSENGER MILEAGE RATES ON FEDERAL RAILWAYS,
1918—continued.

NORTHERN TERRITORY RAILWAY.

Class.	For a Journey of—		
	50 Miles.	100 Miles.	200 Miles.
First single fare	<i>s. d.</i> 10 5	<i>s. d.</i> 20 10	<i>s. d.</i> 41 8
Average per passenger mile	2 50	2 50	2 50
Second single fare	6 7	13 0	27 9
Average per passenger mile	1 58	1 56	1 67

In the case of the Trans-Australian railway through passengers have to pay for sleeping berths in addition to the ordinary fares. For the first class the charge is ten shillings for a night or part of a night, the corresponding charge for the second class being five shillings. There is also a fixed scale of charges made in respect of the meals served between Port Augusta and Kalgoorlie. It will be observed that both the first and second class fares on the Trans-Australian railway have a constant rate for distances up to 300 miles and then have a tapering character beyond that distance.

(ii) *Goods Rates.* The rates for agricultural produce and ordinary goods on the Trans-Australian and Northern Territory railways are set out in the following tables:—

RATES FOR AGRICULTURAL PRODUCE IN TRUCK LOADS ON THE
UNDERMENTIONED FEDERAL RAILWAYS, 1918.

TRANS-AUSTRALIAN RAILWAY.

	Charge per Ton in Truck Loads for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
Rate	<i>s. d.</i> 5 4	<i>s. d.</i> 9 6	<i>s. d.</i> 15 9	<i>s. d.</i> 20 9	<i>s. d.</i> 25 9	<i>s. d.</i> 29 9
Average per ton mile	1 28	1 14	0 95	0 83	0 77	0 71
	600 Miles.	700 Miles.	800 Miles.	900 Miles.	1,000 Miles.	1,051 Miles.
Rate	<i>s. d.</i> 33 9	<i>s. d.</i> 37 9	<i>s. d.</i> 41 9	<i>s. d.</i> 45 3	<i>s. d.</i> 48 9	<i>s. d.</i> 50 0
Average per ton mile	0 68	0 65	0 63	0 60	0 59	0 57

NORTHERN TERRITORY RAILWAY.

	Charge per Ton in Truck Loads for a Haul of—		
	50 Miles.	100 Miles.	200 Miles.
Rate	<i>s. d.</i> 7 8	<i>s. d.</i> 11 10	<i>s. d.</i> 20 3
Average per ton mile	1 84	1 42	1 22

ORDINARY GOODS MILEAGE RATES, 1918.

HIGHEST CLASS FREIGHT.

Trans-Australian Railway.

		Charge per Ton for a Haul of—					
		50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
Rate		<i>s. d.</i> 32 1	<i>s. d.</i> 58 2	<i>s. d.</i> 105 0	<i>s. d.</i> 144 1	<i>s. d.</i> 183 2	<i>s. d.</i> 211 9
Average per ton mile		7.70	6.98	6.30	5.76	5.50	5.08
		600 Miles.	700 Miles.	800 Miles.	900 Miles.	1,000 Miles.	1,051 Miles.
Rate		<i>s. d.</i> 240 5	<i>s. d.</i> 269 1	<i>s. d.</i> 297 9	<i>s. d.</i> 317 6	<i>s. d.</i> 337 4	<i>s. d.</i> 343 9
Average per ton mile		4.81	4.61	4.47	4.23	4.05	3.92

Northern Territory Railway.

		Charge per Ton for a Haul of—		
		50 Miles.	100 Miles.	200 Miles.
Rate		<i>s. d.</i> 34 9	<i>s. d.</i> 66 0	<i>s. d.</i> 128 6
Average per ton mile		8.34	7.93	7.71

LOWEST CLASS FREIGHT.

Trans-Australian Railway.

		Charge per Ton for a Haul of—					
		50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
Rate		<i>s. d.</i> 5 4	<i>s. d.</i> 9 6	<i>s. d.</i> 15 9	<i>s. d.</i> 20 9	<i>s. d.</i> 25 9	<i>s. d.</i> 29 9
Average per ton mile		1.28	1.14	0.95	0.83	0.77	0.71
		600 Miles.	700 Miles.	800 Miles.	900 Miles.	1,000 Miles.	1,051 Miles.
Rate		<i>s. d.</i> 33 9	<i>s. d.</i> 37 9	<i>s. d.</i> 41 9	<i>s. d.</i> 45 3	<i>s. d.</i> 48 9	<i>s. d.</i> 50 0
Average per ton mile		0.68	0.65	0.63	0.60	0.59	0.57

Northern Territory Railway.

		Charge per Ton for a Haul of—		
		50 Miles.	100 Miles.	200 Miles.
Rate		<i>s. d.</i> 7 8	<i>s. d.</i> 11 10	<i>s. d.</i> 20 3
Average per ton mile		1.84	1.43	1.22

In the above tables it will be seen that the average rates per ton mile are of a tapering character.

(iii) *Parcel Rates.* On the Trans-Australian railway parcels weighing between 85 and 112 lbs. are taken by passenger train 500 miles for thirteen shillings and threepence.

(C) State Railways.

1. Mileage Open, 1901 to 1918.—The following table shows the length of State railways open for traffic on the 30th June in the years 1901–2 and 1913 to 1918 :—

STATE RAILWAYS.—MILEAGE OPEN FOR TRAFFIC, 1901–2 AND 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1901–02 ..	3,026	3,302	2,801	1,736	1,360	6462	145	12,832
1912–13 ..	3,930	3,647	4,381	1,690	2,854	507	..	17,009
1913–14 ..	3,967	3,835	4,570	1,845	2,967	519	..	17,703
1914–15 ..	4,134	3,875	4,838	2,157	3,332	533	..	18,869
1915–16 ..	4,188	4,100	4,967	2,187	3,332	562	..	19,336
1916–17 ..	4,437	4,123	5,214	2,221	3,425	581	..	20,001
1917–18 ..	4,679	4,152	5,295	2,242	3,491	588	..	20,447

a Including the mileage (478) of the Oodnadatta line.

b To the 31st December, 1902.

The following statement shows the actual mileage opened for traffic in the year 1917–18, and also the annual average increase in mileage opened since 1908 in each State :—

STATE RAILWAYS.—MILEAGE OPENED ANNUALLY.

Mileage.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total all States.
Mileage opened during 1917–18 ..	242.23	29.00	30.46 ^a	21.84	65.98	6.35	395.86
Average annual mileage increase in 10 years to 30th June, 1918 ..	120.70	75.60	193.60	36.30	154.80	12.40	593.40

(a) Exclusive of 50.90 miles acquired by purchase.

(i) *New South Wales.* During the year ended 30th June, 1918, the following lines were opened for traffic :—Wardell Road Fork (0.41 mile); Denman to Merriwa (35.07 miles); Wyalong to Cargelligo (70.45 miles); Wauchope to Kempsey (30.65 miles); Cobar to C.S.A. Mines (7.05 miles); Meeks' Road Goods Loop (0.57 mile); Troy Junction to Merrygoen (59.37 miles); and Caragabal to Forbes (38.66 miles); making a total of 242.23 miles.

(ii) *Victoria.* The following lines were opened for traffic during 1917–18 :—Dartmoor to Mumbannar (12.80 miles); Mumbannar to South Australian border (5.65 miles); and Toolando to Kanagulk (10.55 miles); a total of 29.00 miles.

(iii) *Queensland.* The increase of 81.36 miles in the mileage opened for traffic in 1917–18 was due to the opening of the following lines :—Rifle Range to Mitchelton (0.81 mile); Rannes to Baralaba (22.46 miles); Mackay to Farleigh (7.19 miles); and by purchase of the Proserpine Tramway (38.34 miles); and of the Woongarra Tramway (12.56 miles).

(iv) *South Australia.* The lines opened for traffic in this State during the year 1917–18 were on the 5-ft. 3-in. gauge, from Nuriootpa to Truro (10.05 miles); and Mount Gambier to Victorian boundary (11.79 miles); a total of 21.84 miles.

By the transfer on 1st January, 1911, to the Commonwealth Government of the line from Port Augusta to Oodnadatta, the railways of the State were reduced to the extent of 478 miles. This line, however, was leased to the State by the Commonwealth Government until 31st December, 1913, since which date it has been worked on behalf of the Commonwealth under agreement. (See page 637.)

(v) *Western Australia.* In the year 1917–18 the following new lines were opened for traffic :—Wagin to Bokal (34.35 miles); and Kondinin to Naremben (31.63 miles); making a total of 65.98 miles.

(vi) *Tasmania.* During the year 1917–18 the line from National Park to Fitzgerald (6.35 miles) was opened for traffic.

2. Average Mileage Worked, Train Miles Run, Number of Passenger Journeys, and Tonnage of Goods and Live Stock Carried, on State Government Railways.—The table on page 644 gives the total mileage open for traffic at the end of each financial year, but, in considering the returns relating to revenue and expenditure, and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shews the average number of miles worked, the total number of train miles run, the number of passenger journeys, and the tonnage of goods and live stock carried by the Government railways of each State during the years 1901-2 and 1913 to 1918 inclusive :—

STATE RAILWAYS.—AVERAGE MILEAGE WORKED, TRAIN MILES RUN, NUMBER OF PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE STOCK CARRIED, 1901-2 AND 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. (b)	W. Aust.	Tasmania.	N. Ter. (f)	All States.
AVERAGE MILEAGE WORKED.								
1901-2	2,953	3,265	2,801	1,736	1,356	2468	145	12,724
1913-14	3,959	3,747	4,507	1,815	2,910	525	..	17,463
1914-15	4,057	3,848	4,730	2,026	3,096	536	..	18,293
1915-16	4,169	3,955	4,939	2,185	3,332	552	..	19,132
1916-17	4,313	4,104	5,067	2,193	3,370	577	..	19,624
1917-18	4,551	4,139	5,281	2,235	3,463	591	..	20,260

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. (b)	W. Aust.	Tasmania.	N. Ter. (f)	All States.
TRAIN MILES RUN.								
1901-2	11,649,059	11,284,944	5,666,058	4,196,138	4,507,919	2902,918	30,275	38,237,311
1913-14	20,549,695	15,028,649	11,346,334	6,731,284	5,565,062	1,000,740	..	60,221,764
1914-15	20,420,023	15,303,209	11,988,521	5,580,679	5,404,814	1,005,145	..	59,702,391
1915-16	21,556,034	13,826,538	11,571,746	5,630,984	5,149,289	1,051,511	..	58,786,102
1916-17	20,300,717	14,022,040	10,729,187	5,730,539	4,500,211	1,080,459	..	56,363,153
1917-18	18,143,267	13,626,371	10,319,694	5,440,515	4,094,510	1,056,373	..	52,680,730

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. (b)	W. Aust.	Tasmania.	N. Ter. (f)	All States.
NUMBER OF PASSENGER JOURNEYS.								
1901-2	30,885,214	57,465,077	28,421,258	9,643,058	8,158,299	2761,345	3,755	115,338,006
1913-14	86,328,421	116,611,448	22,252,476	19,809,533	19,208,420	1,708,334	..	265,918,632
1914-15	88,774,451	117,259,926	24,257,552	18,831,273	18,635,327	1,750,905	..	269,509,434
1915-16	92,850,338	115,771,238	24,438,905	20,512,753	18,884,541	2,078,228	..	274,536,503
1916-17	96,709,846	108,341,540	24,837,714	18,107,015	17,466,744	1,971,888	..	267,434,747
1917-18	94,304,516	105,753,073	25,682,368	18,936,104	16,081,695	1,874,029	..	262,631,785

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. (b)	W. Aust.	Tasmania.	N. Ter. (f)	All States.
TONNAGE OF GOODS AND LIVE STOCK CARRIED.								
1901-2	6,467,552	3,433,627	1,881,570	1,392,257	1,888,146	2407,505	2,436	15,473,993
1913-14	13,245,842	5,816,088	4,301,410	3,103,471	3,170,144	408,864	..	30,045,819
1914-15	11,920,881	5,410,045	4,970,873	2,076,230	2,523,859	408,069	..	27,310,007
1915-16	11,915,500	5,829,835	4,570,833	2,396,938	2,554,358	388,782	..	27,656,796
1916-17	11,732,864	5,962,602	4,035,379	2,822,401	2,400,246	401,076	..	27,354,568
1917-18	11,293,060	6,231,093	4,154,441	2,767,734	2,259,070	407,405	..	27,112,803

(a) These figures are partly estimated, the actual returns excluding journeys by season ticket holders. (b) Exclusive of the Oodnadatta line (473 miles) as from the 1st January, 1911. (c) Exclusive of live stock returns for Tasmania. (d) For the calendar year 1902. The average mileage worked in some cases is greater than the actual mileage open, owing to the fact that the Government railways have running powers over certain private lines. (e) Exclusive of live stock. (f) Taken over by Commonwealth Government, 1st January, 1911.

3. Length and Gauge of Railway Systems in each State.—A map shewing the State railway lines, and also some private lines open to the public for general traffic, in the different States of the Commonwealth is given on page 647 hereinbefore. In all the States the Government railways are grouped, for the convenience of administration and management, into several divisions or systems, some of which have already been briefly referred to in dealing with the history of construction of the railways. The

subjoined summary shews concisely the gauge and length of the main and branch lines included in each division or system of the different States of the Commonwealth for the year ended the 30th June, 1918 :—

STATE RAILWAYS, 1917-18.

Particulars.	Length, including Suburban Lines, and Gauge.		Suburban (1)
	4 ft. 8½ in.	3 ft. 6 in.	4 ft. 8½ in.
I. NEW SOUTH WALES.	Miles.	Miles.	Miles.
(i) The Northern line and branches—			
(a) Main line. Strathfield-Wallangarra ..	488.48	..	98.84
(b) Branch lines	620.23	..	5.21
(ii) The North Coast line and branches—			
(a) Main line. West Maitland-Murwillumbah	383.21	..	12.85
(b) Branch lines	17.89	..	..
(iii) The Western line and branches—			
(a) Main line. Sydney-Bourke	508.80	..	34.25
(b) Branch lines	1,034.76	..	24.58
(iv) The Southern line—			
(a) Main line. Granville-River Murray ..	386.25	..	20.69
(b) Branch lines	1,090.73	..	..
(v) The South Coast (Illawarra) line—			
(a) Main line. Sydney-Nowra	94.94	..	34.23
(b) Branch lines	13.93	..	9.99
(vi) Broken Hill line. Broken Hill-Tarrawingee	..	40.09	..
Total length all lines, 4,679.31 miles ..	4,639.22	40.09	240.64

(1) Including lines 34 miles from Sydney and Newcastle respectively, and the Richmond line.

Particulars.	5 ft. 3 in.	2 ft. 6 in.	(1) 5 ft. 3 in.
	2. VICTORIA.		
(i) The South-eastern system—			
(a) Main lines. Dandenong-Port Albert ..	117.27	..	..
Caulfield-Stony Point	38.72	..	13.50
(b) Branch lines	47.49	3.23	..
(ii) The Eastern system—			
(a) Main lines. South Yarra-Sale	125.27	..	16.00
Traralgon-Orbost	132.12	..	..
(b) Branch lines	74.69	26.06	1.60
(iii) The North-eastern system—			
(a) Main line. Essendon Junc.-River Murray	187.44	..	14.75
(b) Branch lines	575.20	30.49	1.50
(iv) The Northern system—			
(a) Main line. Melbourne-Echuca	156.00	..	20.25
(b) Branch lines	491.77	..	..
(v) The Midland system—			
(a) Maryborough-Merbein	246.49	..	..
(b) Branch lines	337.85	..	..
(vi) The Western and South-western systems—			
(a) Main lines. Sunshine-Warrenheip ..	61.95	..	10.75
Newport-Port Fairy	180.24	..	13.00
N. Geelong Junc.-Serviceton	267.57	..	..
(b) Branch lines	827.79	43.90	..
(vii) Metropolitan District—			
(a) Richmond-Healesville	37.27	..	17.00
(b) Branch lines	41.15	18.22	12.99
(c) Princes Bridge-Hurst Bridge	22.70	..	19.50
(d) Whittlesea Junction-Whittlesea ..	22.07	..	16.25
(e) Suburban lines—Port Melbourne, St. Kilda, Sandringham, Burnley-Darling, Deep- dene-Burwood, Fawkner, Williamstown, etc.	38.69	..	38.69
Total length all lines, 4,151.64 miles ..	4,029.74	121.90	195.78

(1) Within 20 miles of Melbourne.

THE GOVERNMENT RAILWAY SYSTEMS OF THE COMMONWEALTH
AS AT 30TH JUNE, 1918.



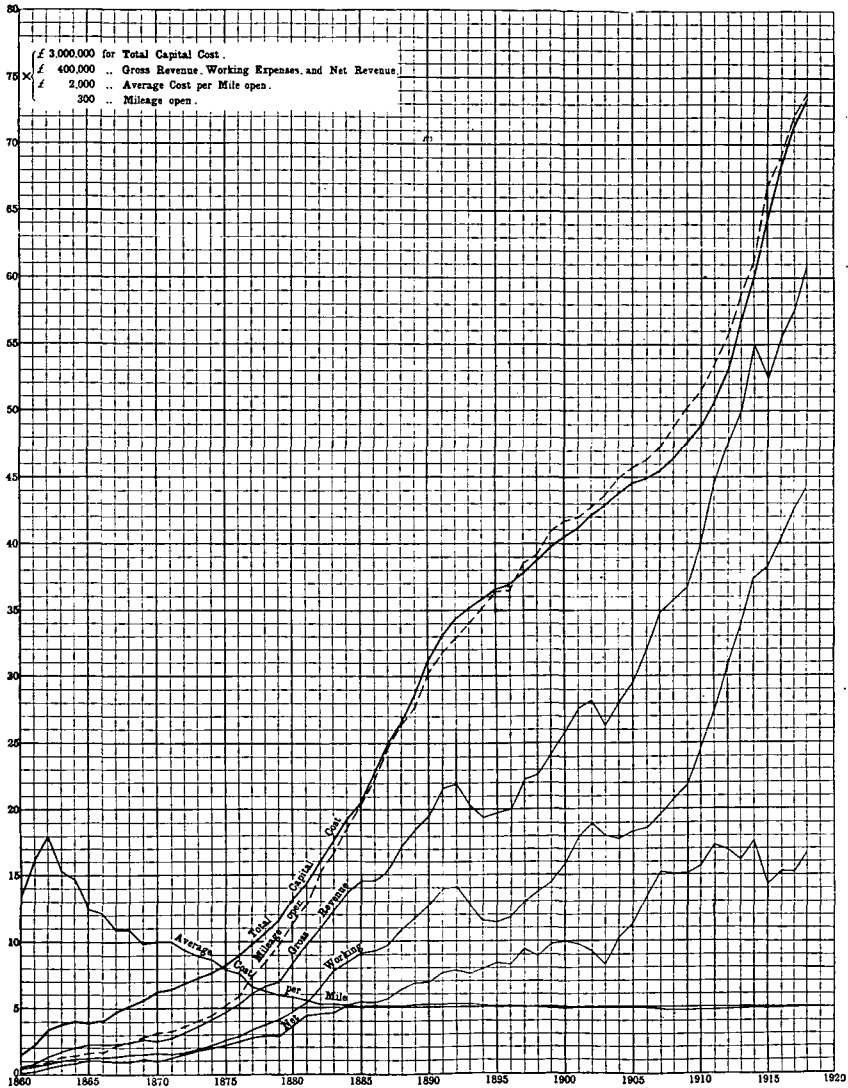
EXPLANATION OF MAP.—The continuous lines denote the existing railway lines of Australia, the heavier lines being the main routes.

Of the two transcontinental lines, viz., one joining the railways of South and Western Australia, thus connecting continuously by railway Queensland, New South Wales, Victoria, South Australia, and Western Australia, and one connecting Oodnadatta in South Australia with Katherine in the Northern Territory, the former has been constructed, and is shewn *-----*; while the latter, the construction of which is to be deferred for the present, is shewn *.....*.

LIST OF PRINCIPAL SECTIONS OF RAILWAYS.

	Miles.		Miles.		Miles.
Townsville to Winton	.. 368	Sydney to Nimmitabel	.. 291	Adelaide to Broken Hill	.. 334½
Townsville to Selwyn	.. 552	Sydney to Melbourne (17½ hours)	.. 588½	Adelaide to Oodnadatta	.. 688
Rockhampton to Longreach	.. 428	Adelaide to Melbourne (17 hours)	.. 482½	Perth to Laverton	.. 586
Brisbane to Cunnamulla	.. 604	Melbourne to Merbein	.. 358½	Perth to Meekatharra	.. 600
Sydney to Brisbane (27½ hours)	.. 715½	Melbourne to Swan Hill	.. 214½	Perth to Albany	.. 341
Newcastle to Inverell	.. 410	Melbourne to South Australian border via Murrayville	.. 369½	Hobart to Launceston	.. 133
Sydney to Bourke	.. 511				
Sydney to Hay	.. 466				

GRAPH SHEWING THE FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF THE COMMONWEALTH, 1860 TO 1918.



(See page 655.)

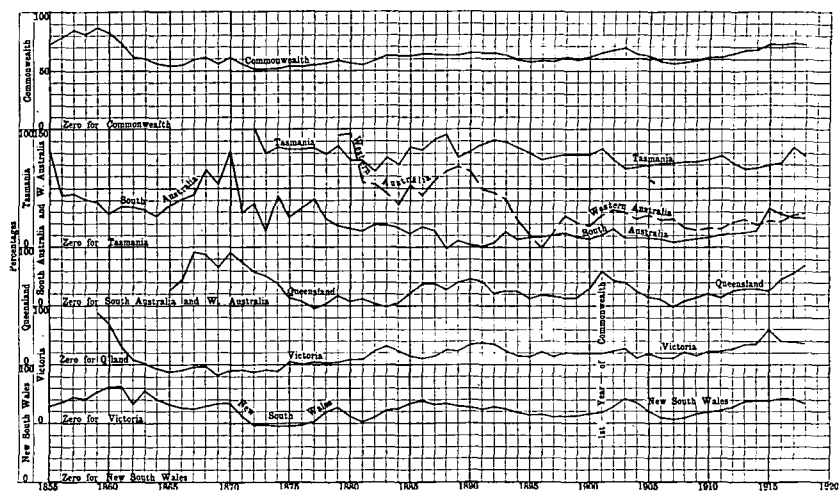
EXPLANATION OF GRAPH.—In the above diagram the base of each small square represents throughout one year. The significance of the vertical height of each square varies, however, according to the nature of the several curves.

In the heavy curve denoting the total capital cost of the railways of the Commonwealth, the vertical side of each square denotes £3,000,000.

In the three lighter curves, representing (i) gross revenue, (ii) working expenses, and (iii) net revenue, the vertical height of each small square denotes £400,000. For the curve of average cost per mile open, the vertical side of the small square denotes £2,000. The mileage open is shewn by a dotted curve, the vertical side of each square representing 300 miles.

For the curves shewing the percentage of working expenses to gross revenue, and the percentage of net revenue to capital cost, see graphs on pages 649 and 650 respectively.

GRAPH SHEWING PERCENTAGES OF WORKING EXPENSES TO GROSS REVENUE OF GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1918.

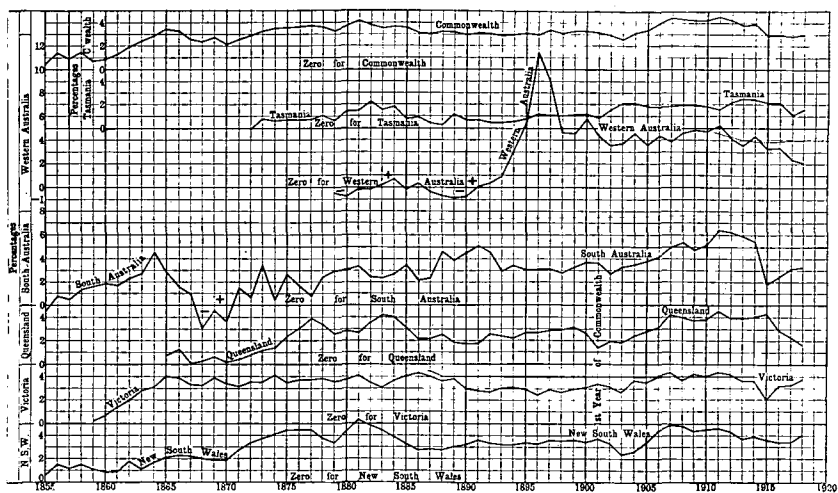


(See page 662.)

EXPLANATION OF GRAPH.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent., the heavy zero lines being different for each State and the Commonwealth, with, however, one exception, viz., that the zero line for South Australia and Western Australia is identical.

The curve for New South Wales commences in 1855; that for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government Railway systems of the several States were inaugurated.

GRAPH SHEWING PERCENTAGES OF NET REVENUE TO CAPITAL COST OF GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1918.



(See page 664.)

EXPLANATION OF GRAPH.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and for the Commonwealth being different. This was necessary to avoid confusion of the curves.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

The curve for New South Wales commences in 1855; that for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government railway systems of the several States were inaugurated.

STATE RAILWAYS—continued.

Particulars.	Length, including Suburban Lines, and Gauge.		Suburban.
	3 ft. 6 in.	2 ft. 0 in.	3 ft. 6 in.
	Miles.	Miles.	Miles.
3. QUEENSLAND.			
(i) The Southern Division—			
(a) South Coast line. Yeerongpilly to Tweed Heads	68.13	..	¹ 19.93
(b) South Metropolitan lines and branches	78.86	..	28.09
(c) Main line. Brisbane to Toowoomba	102.20	..	² 24.09
(d) Branch lines	170.07	..	..
(e) Southern line. Toowoomba to Wallangarra	122.70	..	..
(f) Branch lines	113.70	..	..
(g) South-western line. Warwick to Dirranbandi	256.44	..	..
(h) Western line. Toowoomba to Cunnamulla	503.12	..	..
(i) Branch lines	408.28	..	..
(j) North Coast line. Northgate Junction to Maryborough	161.59	..	³ 10.95
(k) Croydon Junction to 235 miles 14 chains	70.42	..	..
(l) Branch lines	431.88	..	..
(m) Suburban lines	25.24	..	25.24
(ii) The Central division—			
(a) North Coast line (south of Rockhampton)— 235 miles 14 chains to Rockhampton Glenmore Junction (near Rockhampton) to Marlborough	160.58	..	..
(b) Central line. Rockhampton to Longreach	62.60	..	..
(c) Branch lines	424.54	..	..
	518.33	..	..
(iii) The Northern Division—			
(a) North Coast line (portions north of Rockhampton)— Koumala to Paget Junction (Mackay line)	33.60	..	..
Mackay to Farleigh	7.19	..	..
Proserpine to Don	38.34	..	..
Bowen to Carstairs (Bowen line)	65.32	..	..
Carstairs to Stewart's Creek (Gt. N. line)	49.16	..	..
Townsville to Moongobulla	38.96	..	..
Mooliba to Cairns (Cairns line)	41.71	..	..
(b) Mackay line (exclusive of North Coast line) and Branches	63.13	..	..
(c) Bowen line (see North Coast line)			
(d) Great Northern Railway— Townsville to Cloncurry	479.98	..	..
Branch lines	390.23	..	..
(e) Geraldton and Mourilyan Tramway .. .. .	..	29.35	..
(f) Cairns line. Cairns to Ravenshoe	104.46	..	..
Branch lines	48.40	..	..
(g) Cooktown line. Cooktown to Laura	68.33	..	..
(h) Normanton line. Normanton to Croydon	95.96	..	..
(i) Mount Mulligan line	29.80	..	..
(j) Mount Garnet line	32.55	..	..
Total length all lines, 5,295.15 miles	5,265.80	29.35	108.30

1. To Beenleigh. 2. To Ipswich. 3. To Petrie.

STATE RAILWAYS—continued.

Particulars.	Length, including Suburban Lines, and Gauge.		Suburban 1.
	5 ft. 3 in.	3 ft. 6 in.	5 ft. 3 in.
	Miles.	Miles.	Miles.
4. SOUTH AUSTRALIA.			
(i) Midland system—			
(a) Main line. Adelaide—Terowie	139.81	..	24.51
(b) Branch lines	187.60	..	22.91
(ii) The Northern system—			
(a) Terowie—Quorn .. ..	..	94.41	..
(b) Other lines	5.15	477.81	..
(iii) The Southern system—			
(a) Main line. Adelaide—Serviceton (near) ..	194.93	..	23.50
(b) Branch lines	195.32	..	34.14
(iv) Murray Lands lines	298.14	..	..
(v) South-eastern system—			
(a) Wolsley—Mount Gambier .. ..	..	112.26	..
(b) Branch lines	11.79	112.73	..
(vi) Port Broughton line .. ..	..	10.01	..
(vii) Eyre Peninsula system—			
(a) Port Lincoln—Cape Thevenard .. ..	..	269.53	..
(b) Branch lines .. ..	..	132.84	..
Total length all lines, 2,242.33 miles ..	1,032.74	1,209.59	105.06

1. Within 25 miles of Adelaide.

Particulars.	3 ft. 6 in.	
	3 ft. 6 in.	3 ft. 6 in.
	Miles.	Miles. 1.
5. WESTERN AUSTRALIA.		
(i) Eastern railway—		
(a) Main line. Fremantle—Northam	78.13	40.78
(b) Branch lines	93.71	34.70
(ii) South-western railway—		
(a) East Perth—Picton Junction	110.11	18.20
(b) Branch lines	498.80	19.96
(iii) Great Southern railway—		
(a) Main line. Spencer's Brook—Albany Jetty ..	280.05	..
(b) Branch lines	622.73	..
(iv) Eastern Goldfields railway—		
(a) Main line. Northam—Laverton and Leonora ..	533.35	..
(b) Branch lines	156.51	..
(v) East Northern—Mullewa railway—		
(a) Main line	262.86	..
(b) Branch lines	164.84	..
(vi) Northern railway—		
(a) Main line. Geraldton—Meekatharra	333.97	..
(b) Branch lines	207.84	..
(vii) Hopetoun—Ravensthorpe railway	33.78	..
(viii) Port Hedland—Marble Bar	114.40	..
Total length all lines, 3,491.08 miles ..	3,491.08	113.64

1. Suburban included in preceding column.

STATE RAILWAYS—*continued.*

Particulars.	Length, including Suburban Lines, and Gauge.		Suburban. 1.
	3 ft. 6 in.	2 ft. 0 in.	3 ft. 6 in.
	Miles.	Miles.	Miles.
6. TASMANIA.			
(i) Main line—			
(a) Hobart—Evandale Junction	121.80	..	9.69
(b) Branch lines	120.12	..	..
(ii) Western line—			
(a) Launceston to Myalla	135.00	..	..
(b) Branch lines	71.14	..	..
(iii) North Eastern line—			
(a) Launceston to Branxholm	71.01	..	..
(b) Branch line	0.60	..	..
(iv) Sorell line	14.65	..	..
(v) Strahan—Zeehan line and Branch line	30.10	..	..
(vi) North-east Dundas tramway .. ..	..	19.38	..
(vii) Comstock tramway .. ..	..	4.20	..
Total length all lines, 588.00 miles ..	564.42	23.58	9.69

1. Within 10 miles of Hobart.

GRAND TOTAL OF STATE RAILWAYS, 20,447.51 MILES.

4. **Administration and Control of State Railways.**—In each State of the Commonwealth the policy has been established that the railways should be under the control of the Government. This policy, as has been shewn, was actualised early in the railway history of Australia, and, excepting in cases presenting unusual circumstances, may be regarded as the settled policy of the country. In earlier issues of the Year Book (see No. 6, p. 693) will be found a description of the methods adopted by the various State Governments in the control and management of their railways.

5. **Lines under Construction, and Authorised Lines, 1918.**—The following statement gives particulars up to the 30th June, 1918, of the mileage of State railways (a) under construction, and (b) authorised for construction but not commenced:—

STATE RAILWAYS.—MILEAGE UNDER CONSTRUCTION AND AUTHORISED,
30th JUNE, 1918.(a)

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction	462.94	112.19	(b) 496.00	122.03	160.75	40.30	1,394.21
Mileage authorised but not commenced	374.15	32.25	1,335.00	117.50	92.50	..	1,951.40

(a) For similar statistics of Federal railways see page 638. (b) Exclusive of 97 miles on which work was suspended.

(i) *Lines under Construction.* In spite of the great extension of State railways which has taken place since the year 1875 throughout the Commonwealth, there are still, in some of the States, tracts of country of immense area which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished; the general policy in the States is to extend the existing lines inland,

in the form of light railways, as settlement increases, and although it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time, for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view. (a) In *New South Wales* the lines under construction are chiefly of the "pioneer" class, and are made with a view to affording railway communication over level country to districts in which the traffic would not warrant the expenditure necessary to provide thoroughly equipped lines. As the traffic increases, the permanent way is strengthened in order to allow the heavy types of engines to run over it. It is probable that railway extension in New South Wales, in the near future, will be mainly confined to lines of the "pioneer" class. The line under construction on 30th June, 1918, from Kempsey to Macksville (29.79 miles), when completed, will form part of an alternative main route between Newcastle and Brisbane. Other lines under construction at that date were as follow:—Henty to Billa-bong (33.00 miles), Craboon to Coolah (23.95 miles), Matakana to Mount Hope (10.25 miles), Tottenham to the Mines (6.55 miles), Condobolin to Menindie (285.70 miles), and Broken Hill to Menindie (73.70 miles), a total distance of 462.94 miles. The following lines have also been under construction, but further work thereon has been suspended for the present:—Nimitabel to Bombala (37.85 miles), Sydenham to Botany (6.20 miles), Werris Creek to Binnaway (88.11 miles), Macksville to Raleigh (20.68 miles), Coff's Harbor to Glenreagh (26.37 miles), and Glenreagh to Dorrigo (44.25 miles), a total distance of 223.46 miles. (b) *Victoria*. In this State the following lines were under construction by the Board of Land and Works on the 30th June, 1918:—5-ft. 3-in. gauge: Shelley to Cudgewa (19.64 miles), Cavendish to Toolondo (33.45 miles), Nayook to Toorong River (5.98 miles), Koo-wee-rup to McDonald's Track (30.75 miles), North Geelong to Fyansford (2.87 miles), and Nandaly to Kulwin (19.50 miles), making in all 112.19 miles. An electric tramway of 4-ft. 8½-in. gauge was also under construction from Sandringham to Black Rock, a distance of 2.38 miles. (c) *Queensland*. In December, 1910, the North Coast Railway Act was passed. Under this Act a series of lines, when constructed, will link up a number of existing lines in such a way that a through line will be obtained from Rockhampton to Cairns, *via* Mackay and Townsville, a total distance of 569 miles. By the completion of this line it will be possible to travel from Cairns to the southern border of the State at Wallangarra, a total distance of about 1,189 miles. At the same time the Great Western Railway Act was passed. Under this Act provision is made for the extension in a westerly or south-westerly direction of the lines already constructed to Quilpie, Yaraka, Winton, and Dajarra, in such a manner that they will form junctions with a line to be made running north-westerly from Eromanga to Camooweal. These extensions, together with the north-westerly line, will make an aggregate distance of 990 miles to be constructed. With the completion of both these schemes, the railways of this State will be brought into direct communication with each other on both their east and west boundaries. On the 30th June, 1918, the following lines, of an aggregate length of 496 miles, were under construction:—Rifle Range to Dayborough (24 miles), Goonoon to Kalliwa (31 miles), Murgon to Proston (26 miles), Branch to Windera (12 miles), Evanslea to Cecil Plains (20 miles), Orallo to Injune Creek (33 miles), Dawson Valley line, Rannes to Baralaba (23 miles), and Longreach to Winton (109 miles). Of the Great Western Railway the following part has been under construction but operations have been suspended:—Section C: From Winton to Elderslie (37 miles). The following parts of the North Coast Railway were under construction:—Section A: Marlborough towards St. Lawrence (43 miles); Section B: Koumala to Carmila Creek (25 miles); Mackay northwards towards Proserpine (31 miles); Sections B and C: Proserpine southwards towards Mackay (21 miles); Section D: From Moongobulla to Ingham (28 miles); Section E: From Mooliba to Innisfail (12 miles). In the northern division the line from Merinda to Bowen coalfields, 50 miles long, and the second section of the line from Milanda to Millaa Millaa, 8 miles long, were also under construction. The following lines were under construction during the year, but work was suspended:—Kalbar to Mount Edwards (10 miles), and Tara to Surat (50 miles). (d) *South Australia*. In this State the lines under construction on the 30th June, 1918, were as follow:—Riverton to Spalding (51.25 miles), Balhannah to Mount Pleasant (22 miles), New Palmer to Sedan (20 miles), and Palmer to Monarto (28.78 miles), 5-ft. 3-in. gauge—an aggregate distance of 122.03 miles. (e) In *Western Australia* the following lines were in course of construction by the Public Works Department on the 30th June, 1918:—Bokal to Bowelling (28 miles), Calingiri

to Piawaning (19.50 miles), Esperance northward (60 miles), and Naremben to Merredin (53.25 miles), a total distance of 160.75 miles. (f) *Tasmania*. At 30th June, 1918, the following lines were under construction :—Branxholm to Moorina (13.75 miles), and Stanley to Trowutta (26.55 miles), a total distance of 40.30 miles.

(ii) *Lines Authorised for Construction.* (a) *New South Wales*. At the 30th June, 1918, the following lines had been authorised for construction but not commenced :—Mirrool to Hillston (62.18 miles), Barmedman to Rankin Springs (70.91 miles), Coonabarabran to Burren Junction (95.36 miles), Gilgandra to Collie (24 miles), Canowindra to Eugowra (26.70 miles), Grafton to South Grafton (2.34 miles), Roslyn to Taralga (15.82 miles), and Molong to Dubbo (76.84 miles), a total distance of 374.15 miles. (b) In *Victoria* the following lines were authorised, but their construction had not been commenced up to the end of June, 1918 :—5-ft. 3-in. gauge: White Cliffs to Yelta (10 miles), Alberton to Won Wron (12.25 miles), and Bittern to Red Hill (10 miles), a total of 32.25 miles. (c) *Queensland*. In addition to the new lines upon which work has been commenced, Parliament has also authorised the construction of the following parts of the Great Western Railway: Section A, from Quilpie to Eromanga (120 miles); Section B, from Yaraka (251 miles); Section C, from 37 miles to Springvale (324 miles); and Section D, from Dajarra (258 miles); and on the North Coast Railway, Section B, from Carmila Creek to St. Lawrence (33 miles), Mackay northwards towards Prosperine (25 miles); Section D, from beyond Moongobulla to Cardwell (33 miles); Section E, from Innisfail southwards to Cardwell (57 miles). The following lines were also authorised for construction: Inglewood to Texas and Silverspur (44 miles), Mount Edwards to Maryvale (28 miles), Lanefield to Rosevale (17 miles), Gatton to Mount Sylvia (11 miles), Juandah to Taroom (42 miles), Dirranbandi extension (52 miles), Mundubbera to the Northern Burnett (32 miles), and Mount Molloy extension (8 miles), a total of 1,335 miles. (d) In *South Australia*, Parliament has authorised the construction of lines on the 5-ft. 3-in. gauge (i) from Paringa to Renmark, a distance of 2.50 miles, and (ii) from Long Plains to Red Hill, a distance of 61 miles, and also of lines on the 3-ft. 6-in. gauge (i) from Wandana to Penong (54 miles), and (ii) from Kielpa to Mangalo Hall (26.25 miles). The latter line, however, cannot be proceeded with except by resolution of both Houses of Parliament. (e) In *Western Australia* the following lines were authorised for construction up to the 30th June, 1918 :—Busselton-Margaret River (37.75 miles), Dwarda-Narrogin (33 miles), and Nyabing-Pingerup (21.75 miles), a distance of 92.50 miles. (f) In *Tasmania* there were no lines authorised for construction which were not being proceeded with at the 30th June, 1918.

6. *Cost of Construction and Equipment of State Railways.*—The total cost of construction and equipment of the State railways of Australia at the 30th June, 1918, amounted to £209,602,066, or to an average of £10,263 per mile open for traffic. Particulars as to the capital expenditure incurred in each State on lines open for traffic are given in the following table :—

STATE RAILWAYS.—MILEAGE AND COST TO 30th JUNE, 1918.

State.	Length of Line Open (Route).	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.	Mileage per 1,000 of Population.
	Miles.	£	£	£	Miles.
New South Wales (a) ..	4,679.31	75,050,450	16,039	39.29	2.45
Victoria	4,151.64	(b) 56,535,414	(b) 13,659	39.90	2.93
Queensland	5,295.15	37,301,889	7,045	53.89	7.65
South Australia (a) ..	2,242.33	(c) 17,974,348	(c) 8,058	40.90	5.10
Western Australia (a) ..	3,491.08	17,760,566	5,087	57.09	11.22
Tasmania	588.00	4,979,399	8,470	24.55	2.90
All States	20,447.51	209,602,066	10,263	42.15	4.11

(a) Exclusive of Federal railways.

(b) Exclusive of cost of line from Murrayville to South Australian border (12.53 miles).

(c) Exclusive of cost of line from Mount Gambier and Victorian border (11.79 miles).

It will be seen that the lowest average cost per mile open is in Western Australia, and is only £5,087, which is slightly less than one-third of the highest average cost, namely, £16,039 in New South Wales, compared with an average of £10,263 for all the State Government railways. In Western Australia there have been comparatively few engineering difficulties to contend with; moreover, the system was adopted in several instances in that State of giving contractors the right to carry traffic during the period of their contracts, with the result that, at least in all goldfields railway contracts, the cost of construction was considerably lessened.

In the above table the figures relating to cost of construction and equipment do not include the discounts and flotation charges on loans allocated to the railways. This will explain the reason for the differences between the amounts shewn above for Queensland and South Australia and those shewn in the railway reports for these States.

(i) *Reduction of Cost per Mile in Recent Years.* The average cost per mile of the lines constructed lately in the Commonwealth is very much less than the figure given in the above table, in consequence of the construction of light "pioneer" lines, which have already been referred to, and which it was originally considered in New South Wales could be laid down at a cost of £1,750 per mile (exclusive of stations and bridges). It should also be remembered that in the early days of railway construction there were considerable engineering difficulties to overcome, and that labour was scarce and dear. Since 1892 many hundreds of miles of the "pioneer" lines have been opened in New South Wales, the average cost ranging from about £2,000 to £7,500 per mile, according to the difficulties met in the country traversed. The lowest cost per mile for any line previously constructed had been that of the line from Nyngan to Cobar and the Peak, the average cost of which, to the end of June, 1918, was £3,786. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost to the 30th June, 1918, of the narrow gauge (2 ft. 6 in.) lines, having a length of one hundred and twenty-two miles, was only £341,443, which gives an average cost per mile of only £2,801. In the other States the cost of construction per mile has been similarly reduced by building light railways as cheaply as possible. Fairly substantial permanent way is laid down with reduced ballast, and, as settlement progresses and traffic increases, the road is strengthened, and the stations and siding accommodation enlarged. The subjoined table gives examples of some of the more expensive lines, most of which were built in the early days of railway construction in Australia:—

STATE RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT LARGE CAPITAL EXPENDITURE PER MILE OPEN.

Line.	Gauge.	Length.			Total Cost.	Average Cost per Mile.	Date of Opening.
		Double Lines and over.	Single Line.	Total.			
	ft. in.	Miles.	Miles.	Miles.	£	£	
NEW SOUTH WALES—							
Penrith to Bathurst ..	4 8½	88.50	22.55	111.05	4,105,278	36,968	1876
Sydney to Kiama ..	4 8½	39.90	57.79	97.69	4,321,536	44,237	1887
Homebush to Waratah ..	4 8½	95.71	..	95.71	3,577,826	37,380	1889
VICTORIA—							
Melbourne to Bendigo ..	5 3	100.89	..	100.89	4,950,548	49,069	1862
North Geelong to Ballarat ..	5 3	41.45	11.98	53.43	1,957,262	36,632	1862

The next table gives instances of lines which have been constructed in more recent years at a comparatively small cost per mile.

The average cost per mile of the 458.77 miles comprised in the above table was £41,224, whereas the average cost of the 351.24 miles referred to in the next table was £1,913.

STATE RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT SMALL CAPITAL EXPENDITURE PER MILE OPEN.

Line.	Gauge.	Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft. in.	Miles.	£	£	
NEW SOUTH WALES—					
Parkes to Condobolin ..	4 8½	62.75	132,787	2,116	1898
Burren Junction to Collarenebri ..	4 8½	42.55	104,509	2,455	1906
VICTORIA—					
Wangaratta to Whitfield ..	2 6	30.49	40,135	1,316	1899
Wycheproof to Sea Lake ..	5 3	47.89	85,236	1,780	1895
Ultima to Chillingollah ..	5 3	20.14	34,254	1,701	1909
QUEENSLAND—					
Dalby to Bell ..	3 6	23.50	38,520	1,639	1906
Mahar to Jandowae ..	3 6	28.24	61,291	2,170	1914
SOUTH AUSTRALIA—					
Wandilo to Glencoe ..	3 6	9.13	11,733	1,286	1904
Tailem Bend to Pinnaroo ..	5 3	86.55	163,394	1,888	1906

The comparisons afforded in the two preceding tables are subject to certain limitations, inasmuch as the cost is naturally greater in the case of the older lines. Further, the figures given represent the cost of construction only (*i.e.*, are exclusive of cost of equipment), and cannot therefore be directly compared with the average cost per mile open given in the table on page 655.

(ii) *Capital Cost of Construction and Equipment, Total and per Mile Open.* The increase in the total capital cost of construction and equipment of Government railways in each State for 1901–2 and for each year from 1913 to 1918 is shewn in the following table :—

STATE RAILWAYS.—CAPITAL COST OF CONSTRUCTION AND EQUIPMENT, 1901-2 AND 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Terr. (c)	All States.
TOTAL COST OF LINES OPEN.								
1901-2	£ 40,565,073	£ 40,613,784	£ 20,119,143	£ 12,769,899	£ 7,410,426	£ 3,840,747	£ 1,018,700	£ 126,337,772
1913-14	60,128,491	49,216,744	31,817,792	15,240,779	15,873,852	4,496,634	..	176,771,292
1914-15	64,008,436	51,518,792	33,405,877	16,597,139	16,980,712	4,628,911	..	187,139,887
1915-16	68,825,592	54,428,148	34,787,623	17,236,543	17,118,195	4,798,646	..	197,194,747
1916-17	72,006,621	55,652,275	36,476,000	17,687,344	17,466,302	4,913,395	..	204,202,437
1917-18	75,050,450	56,535,414	37,301,889	17,974,348	17,760,566	4,979,399	..	209,602,066

COST PER MILE OPEN.

1901-2	13,405	12,300	7,183	(a)7,428	5,449	(b)8,313	7,124	9,860
1913-14	15,157	12,834	6,962	8,260	5,350	8,663	..	9,986
1914-15	15,483	13,295	6,905	7,695	5,096	8,663	..	9,918
1915-16	16,434	13,275	7,004	7,881	5,138	8,554	..	10,198
1916-17	16,229	13,498	6,996	7,964	5,100	8,447	..	10,210
1917-18	16,039	(d)13,659	7,045	(e)8,058	5,087	8,470	..	10,263

(a) Including the Oodnadatta line. (b) To the 31st December, 1902. (c) Transferred to Commonwealth Government, 1st January, 1911. (d) Exclusive of cost of line from Murrayville to South Australian border (12.53 miles). (e) Exclusive of cost of line from Mount Gambier to Victorian border (11.79 miles).

(iii) *Loan Expenditure on Railways.* The subjoined table shews the total loan expenditure on Government railways and tramways (including lines both open and unopen) in each State during the financial year 1901–2, and on railways only for all States except Western Australia in 1913–14, and Tasmania for the years 1913–14 to 1917–18.

STATE RAILWAYS.—LOAN EXPENDITURE, 1901-2 AND 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1901-2a	2,243,672	483,325	751,451	121,907	578,985	680,948	4,260,288
1913-14	4,903,328	2,361,660	1,679,482	1,489,168	a1,227,711	a146,055	11,807,404
1914-15	4,394,318	2,809,926	1,739,156	1,285,431	670,209	a228,285	11,127,325
1915-16	4,787,669	2,440,317	2,034,614	929,143	414,026	a233,601	10,839,370
1916-17	3,706,422	1,266,352	1,342,249	413,095	308,027	a133,056	7,169,201
1917-18	2,294,547	761,705	984,147	500,441	181,394	a55,561	4,777,795

(a) Including tramways. (b) For the calendar year 1902.

The following statement shows the total loan expenditure on railways to the 30th June, 1918 :—

STATE RAILWAYS.—TOTAL LOAN EXPENDITURE IN EACH STATE TO 30th JUNE, 1918.

State	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.a	All States.
	£	£	£	£	£	£	£
Expenditure	79,553,656	54,644,702	39,217,225	20,584,860	17,178,590	5,466,600	216,649,633

(a) Including tramways.

7. Gross Revenue ; Total, per Average Mile Worked, and per Train-mile Run.—The following table shows the total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run in each State during 1901-2 and each financial year from 1913 to 1918 inclusive :—

STATE RAILWAYS.—GROSS REVENUE, TOTAL, PER AVERAGE MILE WORKED, AND PER TRAIN-MILE RUN, 1901-2 AND 1913-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr. (b)	All States.
TOTAL GROSS REVENUE.								
	£	£	£	£	£	£	£	£
1901-2 ..	3,668,686	3,367,843	1,382,179	1,085,175	1,521,429	a233,211	12,522	11,271,046
1913-14 ..	7,742,241	5,560,958	3,660,022	2,337,251	2,257,011	330,168	..	21,887,651
1914-15 ..	7,616,511	5,161,073	3,832,003	1,745,378	2,058,244	323,265	..	20,736,474
1915-16 ..	8,006,078	5,705,163	3,745,350	1,965,410	2,088,110	348,028	..	21,858,139
1916-17 ..	8,380,084	5,952,719	3,831,967	2,273,530	1,877,382	340,505	..	22,656,187
1917-18 ..	8,954,880	6,562,259	4,023,921	2,331,549	1,816,388	356,735	..	24,045,732

GROSS REVENUE PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£.	£
1901-2 ..	1,242	1,031	493	625	1,122	(a)498	86	886
1913-14 ..	1,956	1,484	812	1,288	776	629	..	1,253
1914-15 ..	1,877	1,341	810	861	665	603	..	1,134
1915-16 ..	1,920	1,443	758	899	627	630	..	1,142
1916-17 ..	1,943	1,450	756	1,037	557	591	..	1,155
1917-18 ..	1,968	1,585	762	1,043	524	604	..	1,166

GROSS REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.	d.
1901-2 ..	75.58	71.62	58.55	62.07	81.00	(a)61.99	99.27	70.74
1913-14 ..	90.42	88.81	77.42	83.33	97.34	79.18	..	87.23
1914-15 ..	89.52	80.94	76.71	75.06	91.40	77.18	..	83.36
1915-16 ..	89.14	99.03	77.68	83.77	97.32	79.43	..	89.24
1916-17 ..	99.07	101.89	85.72	95.22	100.12	75.64	..	96.47
1917-18 ..	118.46	115.58	93.58	102.85	106.47	81.05	..	109.55

(a) For the calendar year 1902. (b) Federal railway since 1st January, 1911.

8. Coaching, Goods, and Miscellaneous Receipts.—The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains ; (b) receipts from the carriage of goods and live stock ; and (c) rents

and miscellaneous items. The subjoined table shews the gross revenue for 1901-2 and 1913-18, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph.

**STATE RAILWAYS.—COACHING, GOODS, AND MISCELLANEOUS RECEIPTS,
1901-2 AND 1913 TO 1918.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.(b)	W. Aust.	Tas.(a)	N. Ter. (c)	All States.
COACHING TRAFFIC RECEIPTS.								
	£	£	£	£	£	£	£	£
1901-2	1,367,796	1,580,218	435,434	369,677	442,719	110,196	3,032	4,309,072
1913-14	3,236,512	2,868,705	1,257,100	752,493	666,665	165,909	..	8,947,384
1914-15	3,315,294	2,795,673	1,284,595	668,403	617,553	157,726	..	8,839,244
1915-16	3,574,063	3,003,263	1,339,753	721,555	646,566	179,784	..	9,464,984
1916-17	3,637,656	2,918,557	1,308,896	739,483	607,537	171,220	..	9,383,349
1917-18	3,932,936	3,254,274	1,396,803	819,197	617,606	177,854	..	10,198,670
GOODS AND LIVE STOCK TRAFFIC RECEIPTS.								
	£	£	£	£	£	£	£	£
1901-2	2,263,837	1,719,462	862,234	681,045	1,037,099	116,061	7,996	6,687,734
1913-14	4,397,997	2,603,415	2,359,786	1,534,187	1,483,862	154,564	..	12,533,811
1914-15	4,206,234	2,268,375	2,516,380	1,049,074	1,350,740	153,845	..	11,544,648
1915-16	4,329,971	2,610,210	2,364,364	1,211,465	1,356,452	156,860	..	12,029,322
1916-17	4,542,619	2,934,259	2,433,868	1,502,363	1,176,058	158,162	..	12,747,329
1917-18	4,652,113	3,137,547	2,516,564	1,480,469	1,105,836	168,095	..	13,060,624
MISCELLANEOUS RECEIPTS.								
	£	£	£	£	£	£	£	£
1901-2	37,053	68,163	84,511	34,453	41,611	6,954	1,494	274,239
1913-14	107,732	88,838	43,136	50,571	106,484	9,695	..	406,456
1914-15	94,983	97,025	31,028	27,901	89,951	11,694	..	352,582
1915-16	102,044	91,690	41,233	32,390	85,092	11,384	..	363,833
1916-17	199,809	99,903	89,203	31,684	93,787	11,123	..	525,509
1917-18	369,831	170,438	110,554	31,883	92,946	10,786	..	786,438

(a) Tasmanian figures for 1902 are for year ended the 31st December. (b) Exclusive of Oodnadatta line as from 1st January, 1911. (c) Federal railway since 1st January, 1911.

(i) *New South Wales.* The total earnings for the year 1917-18 amounted to £8,954,880, an increase of £574,796 as compared with the previous year. Increases of £295,280, £109,494, and £170,022 took place in the coaching traffic, goods and live stock traffic, and miscellaneous respectively.

(ii) *Victoria.* In Victoria, traffic receipts shewed an increase of £609,540, as compared with the previous year. This was due to increases of £335,717, £203,288, and £70,535 in the receipts from coaching traffic, goods and live stock traffic, and miscellaneous respectively.

(iii) *Queensland.* In Queensland, there was an increase of £191,954 in 1917-18 relatively to 1916-17. There were increases of £87,907, £82,696 and £21,351 in respect of coaching traffic, goods and live stock traffic, and miscellaneous receipts respectively.

(iv) *South Australia.* In this State there were increases of £79,714 and £199 in coaching traffic and miscellaneous receipts respectively, and a decrease of £21,894 in the goods and live stock receipts, the net increase for the year 1917-18 being £58,019 in advance of the receipts for the previous year.

(v) *Western Australia.* In this State the earnings in 1917-18 shewed a decrease of £60,994 as compared with 1916-17. There was an increase of £10,069 in the coaching traffic, but decreases of £70,222 and £841 in the goods and live stock traffic, and miscellaneous receipts respectively.

(vi) *Tasmania*. The gross revenue in 1917-18 showed an increase of £16,230 as compared with the previous year. In the coaching traffic and goods and live stock traffic receipts there were increases of £6,634 and £9,933 respectively, and a decrease of £337 in the miscellaneous receipts.

The following table shews for the two years 1916-17 and 1917-18 the percentage which each class of receipts bears to the total gross revenue :—

**STATE RAILWAYS.—PERCENTAGE OF REVENUES FROM VARIOUS SOURCES
ON TOTAL REVENUE, 1916 TO 1918.**

Particulars.	1916-17.						
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Coaching	43.41	49.03	34.16	32.53	32.36	50.28	41.70
Goods and live stock	54.21	49.29	63.51	66.08	62.64	46.45	56.27
Miscellaneous	2.38	1.68	2.33	1.39	5.00	3.27	2.03

Particulars.	1917-18.						
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Coaching	43.92	49.59	34.71	35.13	34.00	49.86	42.41
Goods and live stock	51.95	47.81	62.54	63.50	60.88	47.12	54.32
Miscellaneous	4.13	2.60	2.75	1.37	5.12	3.02	3.27

9. **Coaching Traffic Receipts per Average Mile Worked, and per Passenger-train Mile.**—The subjoined table shews the receipts from coaching traffic per average mile of line worked, and per passenger-train mile, in each State and for all States for the year ended the 30th June, 1918 :—

**STATE RAILWAYS.—COACHING TRAFFIC RECEIPTS PER MILE WORKED,
AND PER PASSENGER-TRAIN MILE, 1917-18.**

State.	Number of Passenger- Train Miles.(a)	Coaching Traffic Receipts.		
		Gross.	Per Average Mile Worked.	Per Passenger- Train Mile.
	No.	£	£	d.
New South Wales	9,440,720	3,932,936	864	99.98
Victoria	7,279,999	3,254,274	786	107.28
Queensland	3,598,543	1,396,803	264	93.16
South Australia	2,596,950	819,197	367	75.71
Western Australia	1,734,674	617,606	178	85.45
Tasmania	447,807	177,854	301	95.32
Total	25,098,693	10,198,670	503	97.52

(a) The returns include the undermentioned mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively in the case of the following States :—

New South Wales	1,447,202	Western Australia	925,204
Victoria	2,513,111	Tasmania	658,345

The preceding table shews that, amongst the States, there is a considerable difference in the amount of the average receipts per average mile worked. In this case New South Wales leads with a maximum of £864, and Western Australia has a minimum of £178, the average for all States being £503. In the case of the receipts per passenger-train mile the maximum occurs in Victoria with 107.23 pence and the minimum in South Australia, 75.71 pence, the average for all States being 97.52 pence.

With regard to the number of passenger journeys in the various States, it will be seen from the table on page 645 *ante* that there has been a large preponderance in favour of Victoria for years past, though it has been a declining one during the years 1915-18.

This preponderance in Victoria is accounted for, to a great extent, by the large number of metropolitan suburban passengers in that State. Of the total number of passengers carried in Victoria in 1917-18, 97,410,850 were metropolitan suburban passengers, *i.e.*, were carried between stations within twenty miles of Melbourne, while in New South Wales the number of suburban passenger journeys between stations within thirty-four miles of Sydney, including the Richmond line, and of Newcastle, including Greta, was 84,750,703. In Sydney a large proportion of the metropolitan suburban traffic is carried on the electric and steam tramways, the number of passenger journeys during the year 1917-18 being 242,629,241. In Melbourne, on the other hand, the number of passengers carried on the two cable tramway systems during the same period was 118,438,599; and the number carried on the St. Kilda-Brighton, Prahran-Malvern Trust, Melbourne-Brunswick-Coburg Trust, Hawthorn Trust, and the North Melbourne tramways, 50,540,955, making a total of 168,979,554. This matter is referred to hereinafter. (See subsection 14.)

10. Goods and Live-Stock Traffic Receipts per Mile Worked, per Goods-train Mile, and per Ton Carried.—The following table shews the gross receipts from goods and live-stock traffic per mile worked, per goods-train mile, and per ton carried, for the year ended the 30th June, 1918 :—

STATE RAILWAYS.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS PER MILE WORKED, PER GOODS-TRAIN MILE, AND PER TON CARRIED, 1917-18.

State.	Number of Goods-Train Miles. (a)	Goods and Live-Stock Tonnage.	Goods and Live-Stock Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Goods-Train Mile.	Per Ton Carried.
	No.	Tons.	£	£	d.	d.
New South Wales ..	8,702,547	11,293,060	4,652,113	1,022	128.30	98.87
Victoria ..	6,346,372	6,231,093	3,137,547	758	118.65	120.85
Queensland ..	6,721,151	4,154,441	2,516,564	477	89.86	145.38
South Australia ..	2,843,565	2,767,734	1,480,469	662	124.95	128.38
Western Australia ..	2,359,836	2,259,070	1,105,836	319	112.47	117.48
Tasmania ..	608,566	407,405	168,095	284	66.29	99.02
Total ..	27,582,037	27,112,803	13,060,624	645	113.64	115.61

(a) The returns include the undermentioned mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively in the case of the following States :—

New South Wales ..	1,447,202	Western Australia ..	925,204
Victoria ..	2,513,111	Tasmania ..	658,345

From the preceding table it will be seen that the average cost of freight per ton ranges from 98.87 pence in New South Wales to 145.38 pence in Queensland, the average for all States being 115.61 pence.

11. **Working Expenses.**—In order to make an adequate comparison of the working expenses of the Government railways in the several States, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—*i.e.*, a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little back-loading. Further, though efforts have been made from time to time to obtain a uniform system of accounts in the several States, the annual reports of the Commissioners do not yet comprise fully comparable data of railway expenditure.

The following table shews the total annual expenditure, comprising expenses on (a) maintenance of way, works, and buildings; (b) locomotive power—repairs and renewals; (c) carriages and wagons—repairs and renewals; (d) traffic expenses; (e) compensation; and (f) general and miscellaneous charges; and the percentage of the total of these expenses upon the corresponding gross revenues in each State for 1901-2 and for each year 1913 to 1918:—

STATE RAILWAYS.—TOTAL WORKING EXPENSES AND PERCENTAGES OF WORKING EXPENSES ON GROSS REVENUE, 1901-2 AND 1913 TO 1918.

Year.	N.S.W.	Victoria. (a)	Q'land.	S. Aust. (d)	W. Aust.	Tasmania.	Nor. Ter. (c)	All States.
TOTAL WORKING EXPENSES.								
	£	£	£	£	£	£	£	£
1901-2	2,342,369	2,072,374	992,751	689,517	1,256,370	(b)173,292	34,649	7,561,322
1913-14	5,409,820	3,752,643	2,371,261	1,505,765	1,572,008	222,713	..	14,834,210
1914-15	5,311,162	4,114,973	2,401,679	1,448,495	1,497,826	225,995	..	15,000,130
1915-16	5,661,168	3,997,412	2,745,061	1,545,459	1,511,655	248,651	..	15,709,436
1916-17	5,915,360	4,154,040	2,994,187	1,725,341	1,448,451	289,186	..	16,526,565
1917-18	5,940,447	4,451,092	3,410,157	1,747,055	1,451,334	277,952	..	17,278,037

PERCENTAGE OF WORKING EXPENSES ON GROSS REVENUE.

	%	%	%	%	%	%	%	%
1901-2	63.85	61.53	71.83	63.54	82.58	(b)74.31	276.70	67.09
1913-14	69.87	67.48	64.79	64.43	69.65	67.45	..	67.77
1914-15	69.73	79.73	62.67	82.99	72.77	69.91	..	72.34
1915-16	70.71	70.07	73.29	78.63	72.39	71.45	..	71.87
1916-17	70.59	69.78	78.14	75.89	77.15	84.93	..	72.95
1917-18	66.34	67.83	84.75	74.93	79.90	77.92	..	71.85

(a) Including amounts paid for special expenditure and charges for belated repairs and in reduction of deficiencies. (b) For the calendar year 1902. (c) Federal railway since 1st January, 1911. (d) Exclusive of the Oodnadatta line as from 1st January, 1911.

(i) *New South Wales.* In this State the total working expenses in 1917-18 amounted to £5,940,447, an increase of £25,087 as compared with the previous year.

(ii) *Victoria.* In Victoria the increase of £297,052 in working expenses was owing mainly to certain special and abnormal changes, increments to staff, and to the higher price of coal.

(iii) *Queensland.* In this State the working expenses increased £415,970 from £2,994,187 in 1916-17 to £3,410,157 in 1917-18. The increase was mainly due to the additions to the wages of the staff, expenditure in respect of damages caused by floods and cyclones, and the rise in price of stores.

(iv) *South Australia.* In South Australia the working expenses in 1917-18 showed an increase of £21,714 over 1916-17, viz., from £1,725,341 to £1,747,055. It should be mentioned that the average mileage worked during the year was 42 miles greater than in the previous year.

(v) *Western Australia.* In this case the expenditure in 1917-18 was £2,883 greater than in the previous year. As the train mileage run was 405,701 less than in the previous year, the locomotive and rolling stock charges were considerably lower, but maintenance and traffic expenses were greater, mainly owing to the higher cost of stores.

(vi) *Tasmania.* In 1917-18 the working expenses were £11,234 lower than in the previous year. This was rendered possible by reductions in the train mileage run.

In the preceding table it will be observed that the percentages of the total working expenses to the total gross earnings of the States railways have varied but slightly during the period 1914-18, after a sudden rise in the year 1914-15.

(vii) *Working Expenses per Average Mile Worked and per Train-mile Run.* The following table shows the working expenses per average mile worked and per train-mile run in each State for the years 1901-2 and 1913 to 1918 :—

STATE RAILWAYS.—WORKING EXPENSES PER AVERAGE MILE WORKED AND PER TRAIN-MILE RUN, 1901-2 AND 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. (b)	W. Aust.	Tas.	N. Ter.	All States.
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WORKING EXPENSES PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£	£
1901-2	793	634	354	397	927	(a)370	238	594
1913-14	1,367	1,001	526	830	540	424	..	849
1914-15	1,309	1,069	508	715	484	422	..	820
1915-16	1,358	1,011	556	707	454	450	..	821
1916-17	1,372	1,012	591	787	430	502	..	842
1917-18	1,305	1,075	646	782	419	470	..	838

WORKING EXPENSES PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.	d.
1901-2	48.26	44.07	42.05	39.44	66.89	a46.06	274.67	47.46
1913-14	63.18	59.93	50.16	53.69	67.80	53.41	..	59.12
1914-15	62.42	64.53	48.08	62.29	66.51	53.96	..	60.30
1915-16	63.03	69.39	56.93	65.87	70.45	56.75	..	64.14
1916-17	69.93	71.10	66.98	72.26	77.25	64.24	..	70.37
1917-18	78.58	78.40	79.31	77.07	85.07	63.15	..	78.72

(a) For the calendar year 1902. (b) Excluding the Oodnadatta line as from the 1st of January, 1911.

12. Distribution of Working Expenses.—The subjoined table shews the distribution of working expenses, among four chief heads of expenditure, for the years 1901-2 and 1913 to 1918 :—

STATE RAILWAYS.—DISTRIBUTION OF WORKING EXPENSES, 1901-2 AND 1913 to 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tasmania.	N. Terr.	All States.
MAINTENANCE.								
	£	£	£	£	£	£	£	£
1901-2 ..	554,483	501,938	355,793	166,691	246,931	(b)58,612	29,001	1,913,449
1913-14 ..	1,109,749	935,652	649,925	308,244	382,517	57,685	..	3,423,772
1914-15 ..	918,790	1,107,310	626,793	250,062	346,771	58,253	..	3,337,984
1915-16 ..	895,526	998,619	738,160	306,420	361,627	66,618	..	3,366,970
1916-17 ..	932,999	927,315	774,933	391,334	349,714	82,571	..	3,458,757
1917-18 ..	996,502	1,049,270	851,525	304,462	371,411	72,515	..	3,645,685
LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.								
1901-2 ..	1,102,314	855,464	389,746	343,572	670,485	(b)63,792	3,210	3,428,583
1913-14 ..	2,687,079	1,636,480	1,015,522	803,421	746,882	96,676	..	6,986,060
1914-15 ..	2,755,669	1,789,836	1,051,683	793,997	714,173	99,829	..	7,205,187
1915-16 ..	2,917,299	1,747,319	1,198,160	859,334	714,802	108,887	..	7,545,801
1916-17 ..	2,926,231	1,953,262	1,326,902	909,660	681,243	125,889	..	7,923,187
1917-18 ..	2,755,183	2,042,846	1,515,121	982,298	656,576	125,190	..	8,077,214
TRAFFIC EXPENSES.								
1901-2 ..	588,938	640,442	226,745	162,626	306,409	(b)41,734	2,108	1,969,002
1913-14 ..	1,491,423	1,066,738	656,406	365,954	415,836	57,731	..	4,054,088
1914-15 ..	1,502,945	1,099,026	671,622	347,437	392,628	57,814	..	4,071,472
1915-16 ..	1,638,942	1,127,568	744,229	350,472	393,033	58,571	..	4,312,815
1916-17 ..	1,763,466	1,137,703	821,941	391,309	375,655	64,247	..	4,554,321
1917-18 ..	1,727,861	1,225,479	974,513	426,775	379,991	63,728	..	4,798,347
OTHER CHARGES.								
1901-2 ..	96,634	74,530	20,467	16,628	32,545	(b)9,154	330	250,288
1913-14 ..	121,569	113,773	49,408	28,146	46,773	10,621	..	370,290
1914-15 ..	133,758	118,801	51,576	26,999	44,254	10,099	..	385,487
1915-16 ..	209,401	123,906	64,512	29,263	42,193	14,575	..	483,850
1916-17 ..	292,673	135,760	70,511	33,038	41,839	16,479	..	590,300
1917-18 ..	460,991	133,497	68,998	33,520	43,356	16,519	..	756,791

(a) Excluding the Oodnadatta line as from the 1st of January, 1911. (b) For the calendar year 1902.

13. Net Revenue.—The following table shews the net sums available to meet interest charges, also the percentage of such sums upon the capital cost of construction and equipment of lines opened for traffic in each State for the years 1901-2 and 1913 to 1918 :—

STATE RAILWAYS.—NET REVENUE AND PERCENTAGE OF NET REVENUE ON CAPITAL COST OF LINES OPEN, 1901-2 AND 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tasmania.	N. Terr.	All States.
NET REVENUE.								
	£	£	£	£	£	£	£	£
1901-2 ..	1,326,317	1,295,469	389,428	395,658	265,059	659,919	-22,127	3,709,723
1913-14 ..	2,332,421	1,808,315	1,283,761	831,486	685,003	107,455	..	7,053,441
1914-15 ..	2,305,349	1,046,100	1,430,324	296,883	560,418	97,270	..	5,736,344
1915-16 ..	2,344,910	1,707,751	1,000,289	419,921	576,455	99,377	..	6,148,703
1916-17 ..	2,464,724	1,798,679	837,780	548,189	428,931	51,319	..	6,129,622
1917-18 ..	3,014,433	2,111,167	613,764	584,494	365,054	78,783	..	6,767,695
PERCENTAGE OF NET REVENUE ON CAPITAL EXPENDITURE.								
	%	%	%	%	%	%	%	%
1901-2 ..	3.27	3.19	1.94	3.10	3.58	61.56	-2.17	2.94
1913-14 ..	3.88	3.67	4.05	5.46	4.32	2.39	..	3.99
1914-15 ..	3.60	2.03	4.28	1.79	3.30	2.10	..	3.07
1915-16 ..	3.41	3.14	2.88	2.44	3.27	2.07	..	3.12
1916-17 ..	3.42	3.23	2.30	3.10	2.46	1.04	..	3.00
1917-18 ..	4.02	3.73	1.65	3.25	2.06	1.58	..	3.23

Note.—The minus sign (—) denotes net loss.

(a) Exclusive of Oodnadatta line as from the 1st of January, 1911. (b) For the calendar year 1902.

(i) *Net Revenue per Average Mile Worked and per Train-mile Run.* Tables showing the gross earnings and the working expenses per average mile worked and per train-mile run have been given above. The net earnings, *i.e.*, the excess of gross earnings over working expenses, per average mile worked and per train-mile run are shown in the following table:—

STATE RAILWAYS.—NET REVENUE PER AVERAGE MILE WORKED AND PER TRAIN-MILE RUN, 1901-2 AND 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	N. Terr.	All States.
NET REVENUE PER AVERAGE MILE WORKED.								
	£	£	£	£	£	£	£	£
1901-2 ..	449	397	139	228	195	(b)128	-153	292
1913-14 ..	589	483	286	458	235	205	..	404
1914-15 ..	568	272	302	147	181	181	..	314
1915-16 ..	562	432	202	192	173	180	..	321
1916-17 ..	571	438	165	250	127	89	..	312
1917-18 ..	663	510	116	261	105	133	..	328

NET REVENUE PER TRAIN-MILE RUN.								
	d.	d.	d.	d.	d.	d.	d.	d.
1901-2 ..	27.32	27.55	16.50	22.53	14.11	(b)15.93	-175.40	23.28
1913-14 ..	27.24	28.88	27.26	29.64	29.54	25.77	..	28.11
1914-15 ..	27.10	16.41	28.63	12.77	24.89	23.23	..	23.06
1915-16 ..	26.11	29.64	20.75	17.90	26.87	22.68	..	25.10
1916-17 ..	29.14	30.79	18.74	22.96	22.87	11.40	..	26.10
1917-18 ..	39.88	37.18	14.27	25.78	21.40	17.90	..	30.83

Note.—The minus sign (—) denotes net loss.

(a) Exclusive of Oodnadatta line as from the 1st of January, 1911. (b) For the calendar year 1902.

14. **Traffic Conditions.**—Reference has already been made to the difference in the traffic conditions on many of the lines of the Commonwealth (see sub-sections 9, 10, and 11 hereof). These conditions differ not only in the several States, but also on different lines in the same State, and this is true with regard to both passenger and goods traffic. By far the greater part of the population of Australia is confined to a fringe of country near the coast, more especially in the eastern and southern districts. A large proportion of the railway traffic between the chief centres of population is therefore carried over lines in the neighbourhood of the coast, and is thus, in some cases, open to sea-borne competition. On most of the lines extending into the more remote interior districts, traffic is light; the density of population diminishes rapidly as the coastal regions are left behind; and there is a corresponding diminution in the volume of traffic, while, in comparison with other more settled countries, there is but little back-loading.

As an indication of the different traffic conditions prevailing in the several States, the following table is given shewing the numbers of passenger journeys and the tons of goods carried (a) per 100 of the mean population; and (b) per average mile worked in each State during the financial year 1917-18:—

STATE RAILWAYS.—PASSENGER JOURNEYS AND TONNAGE OF GOODS AND LIVE STOCK, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
(a) PER 100 OF MEAN POPULATION.							
Passenger journeys .. No.	5,028	7,524	3,810	4,381	5,212	942	5,365
Goods and live stock .. Tons	602	443	616	640	732	205	554
(b) PER AVERAGE MILE OF LINE WORKED.							
Passenger journeys .. No.	20,722	25,551	4,863	8,473	4,644	3,171	12,963
Goods and live stock .. Tons	2,481	1,505	787	1,238	652	689	1,338

Particulars of the actual numbers of passengers and tons of goods and live stock carried have already been given (see sub-section 2 hereof).

(i) *Metropolitan and Country Passenger Traffic.* A further indication of the difference in passenger traffic conditions might be obtained from a comparison of the volume of metropolitan, suburban, and country traffic in each State. Particulars are, however, available only for the States of New South Wales and Victoria. The subjoined table shows the number of metropolitan and country passengers carried in each of the States mentioned and the revenue derived therefrom during the year 1917-18 :—

STATE RAILWAYS.—METROPOLITAN, SUBURBAN, AND COUNTRY PASSENGER TRAFFIC, 1917-18.

Particulars.	Number of Passenger Journeys.			Revenue.		
	Metropolitan.	Country.	Total.	Metropolitan.	Country.	Total.
N.S.W. ..	a84,750,703	9,553,813	94,304,516	£ 1,100,149	£ 2,373,191	£ 3,473,340
Victoria ..	b97,410,850	8,342,223	105,753,073	1,205,721	1,686,835	2,892,556

(a) Within 34 miles of Sydney and Newcastle, and including the Richmond line.
(b) Within 20 miles of Melbourne.

From this table it will be seen that the number of passenger journeys in country districts in Victoria was less than the corresponding number in New South Wales, while the number of metropolitan passenger journeys in Victoria was greater than in New South Wales, although in the latter State both Sydney and Newcastle are included. In Sydney a larger proportion of the suburban traffic is carried by the tramway systems than in Melbourne. The Sydney ferries also carry a large number of suburban passengers (see § 3. Tramways).

For several years it has been recognised that the suburban passenger transport, both in Sydney and in Melbourne, was increasing so rapidly that it must eventually become impossible to cope with it under the existing systems. A scheme for the electrification of the Melbourne suburban lines was under the consideration of the Victorian Government in 1908, but owing chiefly to a doubt as to its success from a financial standpoint, its adoption was for a time deferred. In November, 1912, however, a Commission was appointed by Parliament to again consider the 1908 scheme, and, acting on its report, the Government decided to proceed at once with the electrification of the suburban lines. Contracts for the construction of power-houses and the necessary equipment were put in hand at an estimated cost of £2,250,299. It was anticipated that a portion of the suburban railway system would be electrically operated by the end of 1915, but owing to delays in the delivery of plant, due to the war, the date of opening had to be postponed. On the 28th May, 1919, the electric service was inaugurated by a train conveying certain Ministers of the Crown, officials, and others, running from Melbourne to Essendon, thence to Sandringham, and back to Melbourne. On the following day a limited number of electric trains commenced running between Essendon and Sandringham regularly, but on the old steam service times. It is anticipated that the service between Sandringham and Essendon will be wholly electric and run on the faster schedules at an early date. In Sydney, a Metropolitan Railway Construction Branch of the Railway Department has been created to deal specially with electrical transport in the city area. The Minister has approved of the construction of an underground city railway, and plans have been prepared and a commencement made with the preliminary works. The preliminary work in the location of a system of electric railways for the eastern, western, and northern suburbs has also been in hand. Further progress with this work has, however, for financial reasons, been deferred for the present.

(ii) *Goods Traffic.* The differing conditions of the traffic in each State might also, to some extent, be analysed by an examination of the tonnage of various classes of commodities carried and of the revenue derived therefrom. Comparative particulars regarding the quantities of some of the leading classes of commodities carried on the Government railways are available for all the States; corresponding information regarding the revenue derived from each class of commodity is not, however, generally

available in a comparable form. In this connection it may be stated that the following resolution was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May, 1909:—"That in view of the variations in the character and classification of the goods traffic in the different States, the subdivisions of tonnage carried and revenue in each State shall be those which best suit local conditions."

The following table shows the number of tons of various representative commodities carried, and the percentage of each class on the total tonnage carried during the financial year 1917-18:—

STATE RAILWAYS.—CLASSIFICATION OF COMMODITIES CARRIED, 1917-18.

State.	Minerals.	Fire-wood.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Com-modities.	Total.
TONS CARRIED.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	a6,329,566	215,701	c1,398,994	341,720	120,612	523,683	2,163,518	11,093,794
Victoria ..	b1,120,246	538,133	1,636,690	311,443	70,059	451,704	2,102,818	6,231,093
Queensland ..	1,355,101	281,167	d37,261	f459,849	64,640	439,196	1,517,227	4,154,441
South Australia ..	742,346	159,494	775,744	60,456	28,967	112,118	888,609	2,767,734
Western Australia	424,493	575,851	496,419	79,641	25,593	73,095	583,978	2,259,070
Tasmania ..	109,736	42,403	(e)	34,627	4,981	18,775	196,883	407,405
All States ..	10,081,488	1,812,749	4,345,108	1,287,736	314,852	1,618,571	7,453,033	26,913,537

PERCENTAGE ON TOTAL TONNAGE CARRIED.

	%	%	%	%	%	%	%	%
New South Wales	57.05	1.95	12.61	3.08	1.09	4.72	19.50	100.00
Victoria ..	17.98	8.63	26.27	5.00	1.12	7.25	33.75	100.00
Queensland ..	32.62	6.77	0.90	11.07	1.55	10.57	36.52	100.00
South Australia ..	28.82	5.76	28.03	2.18	1.05	4.05	32.11	100.00
Western Australia	18.79	25.49	21.07	3.53	1.13	3.24	25.85	100.00
Tasmania ..	26.93	10.41	(e)	8.50	1.22	4.61	48.33	100.00
All States ..	37.46	6.74	16.14	4.79	1.17	6.01	27.69	100.00

(a) Exclusive of 199,266 tons of coal on which only shunting and haulage were collected. (b) Coal, stone, gravel, and sand (c) Up journey only. (d) Flour only. (e) Included in all other commodities. (f) Sugar-cane.

15. **Passenger-Mileage and Ton-Mileage.**—In earlier issues of the Year Book reference has been made to the resolution on the subject of passenger-mileage and ton-mileage statistics, passed at the Interstate Conference of Railway Commissioners held in Melbourne in May, 1909; and to the Report [Cd. 4697] on the same subject by a Committee appointed by the President of the Board of Trade in the United Kingdom (see Year Book No. 10, p. 654).

In the Commonwealth, information regarding "passenger-miles" and "ton-miles" is available, either wholly or in part, for three of the States only, viz., New South Wales, South Australia, and Tasmania, but is not available at all for either Victoria, Queensland, or Western Australia. Of the three States which give particulars of the nature indicated, New South Wales furnishes the information in a classified form according to class of passengers and nature of commodities carried. South Australia supplies particulars for all classes of passengers and goods together, and Tasmania supplies particulars for all classes of passengers together and a classification of nature of commodities carried. Western Australia furnished particulars as to ton-miles for the years 1907-12, but has since discontinued to record them.

(i) **Passenger-Miles.** Particulars for the whole of the Commonwealth period regarding total "passenger-miles" are available for one State only, namely, Tasmania. For New South Wales to the end of 1909-10, particulars are available for suburban and extended suburban traffic only—i.e., for all stations within 34 miles of Sydney

(including the Richmond line), and of Newcastle (including Greta), but since that date all passenger traffic is included. For South Australia particulars are available for each year since 1904. No particulars are available for other States. In the tables given below the average number of passengers carried per "train," is obtained by dividing the number of "passenger-miles" by the number of "passenger-train-miles." Similarly the "density of traffic" is obtained by dividing the number of "passenger-miles" by the "average miles worked."

STATE RAILWAYS.—SUMMARY OF "PASSENGER-MILES," 1902 AND 1914 TO 1918.

Year ended 30th June—	Passenger Train Mileage.	Number of Passenger Journeys.	Total Passenger-miles.	Amount Received from Passengers.	Average Number of Passengers carried per Train.	Average Mileage per Passenger-journey.	Average Receipt per Passenger-mile.	Average Fare per Passenger-journey.	Density of Traffic per Average Mile Worked.
	Miles. (000 omitted.)	No. (000 omitted.)	No. (000 omitted.)	£	No.	Miles.	d.	d.	No.
NEW SOUTH WALES.									
1914	10,081	86,328	1,235,025	2,832,450	123	14.30	0.55	7.87	311,954
1915	10,099	88,774	1,230,901	2,910,684	122	13.87	0.57	7.87	303,402
1916	10,283	92,851	1,321,491	3,147,041	129	12.85	0.57	8.13	316,980
1917	10,435	96,710	1,473,707	3,202,167	141	15.24	0.52	7.95	341,690
1918	9,441	94,305	1,384,766	3,473,340	147	14.67	0.60	8.84	304,277
SOUTH AUSTRALIA.(a)									
1914	2,952	19,809	236,764	635,967	80	11.95	0.63	7.70	130,449
1915	2,815	18,831	215,489	560,012	77	11.44	0.60	7.14	106,362
1916	2,786	20,513	218,609	603,203	78	10.66	0.66	7.06	100,050
1917	2,635	18,107	210,303	615,909	80	11.61	0.70	8.16	95,897
1918	2,597	18,936	234,197	703,221	90	12.37	0.72	8.91	104,786
TASMANIA.									
1902 <i>b</i>	336	761	19,444	88,541	58	25.60	1.09	27.91	42,086
1914	446	1,708	36,028	140,185	81	21.09	0.91	19.69	68,624
1915	454	1,751	36,051	132,680	79	20.59	0.88	18.19	67,260
1916	465	2,078	46,719	154,225	100	22.48	0.79	17.81	84,567
1917	471	1,972	40,164	145,941	85	20.37	0.87	17.76	69,607
1918	448	1,874	40,385	151,874	90	21.55	0.90	19.45	68,324

(a) Exclusive of the returns of the Oodnadatta line.

(b) To 31st December, 1902.

(ii) *Ton-miles.* Particulars regarding total "ton-miles" are available for each year since 1901 for the States of New South Wales, South Australia, and Tasmania. Corresponding particulars for Western Australia are available for the years 1907 to 1912, but not for subsequent years. (See Year Book No. 11, p. 691.) The average freight-paying load carried per "train" is obtained by dividing the total "ton-miles" in the fourth column by the goods-train mileage in the second column. In New South Wales the tonnage carried is exclusive of coal, on which only shunting and haulage charges are collected, and the amount of earnings specified excludes terminals. In South Australia and Tasmania terminals are included.

STATE RAILWAYS.—SUMMARY OF "TON-MILES," 1902 AND 1914 TO 1918.

Year ended the 30th June—	Goods Train Mileage.	Total Tons Carried.	Total "Ton-miles."	Earnings.	Average Freight-paying Load carried per "Train."	Average Miles per Ton.	Earnings per "Ton-mile."	Density of Traffic per Average Mile Worked.
	No. (,000 omitted.)	No. (,000 omitted.)	No. (,000 omitted.)	£	Tons.	Miles.	d.	Tons.

NEW SOUTH WALES. (a)

1902	6,586	6,164	436,814	1,947,305	66.32	70.87	1.07	148,464
1914	10,469	12,901	1,037,911	3,760,384	99.14	80.45	0.87	262,165
1915	10,321	11,660	916,923	3,633,613	88.84	78.64	0.95	226,010
1916	11,273	11,614	1,028,760	3,738,227	91.26	88.58	0.87	246,764
1917	9,866	11,468	1,136,485	3,936,639	115.19	99.10	0.83	263,502
1918	8,703	11,094	1,044,437	4,051,655	120.02	94.14	0.93	229,496

SOUTH AUSTRALIA. (b)

1902	2,468	1,392	170,523	681,045	69.09	122.48	0.96	98,803
1914	3,780	3,103	402,356	1,534,187	106.45	129.65	0.92	221,684
1915	2,766	2,076	237,014	1,049,074	85.70	114.15	1.06	116,986
1916	2,845	2,397	278,942	1,211,465	98.04	116.37	1.04	127,662
1917	3,095	2,822	298,442	1,502,363	96.41	105.74	1.21	136,089
1918	2,844	2,768	270,104	1,480,469	94.99	97.59	1.32	120,852

TASMANIA. (c)

1902 ^d	567	407	14,331	109,266	25.26	35.30	1.82	31,019
1914	554	389	18,709	142,642	33.76	48.06	1.82	35,826
1915	551	388	19,809	141,049	35.90	51.09	1.70	37,000
1916	586	367	20,105	145,094	34.29	54.81	1.73	36,392
1917	609	380	21,288	146,248	34.93	55.98	1.65	36,894
1918	609	389	21,539	153,577	35.39	55.42	1.71	36,444

(a) Exclusive of tonnage on which only shunting and haulage charges are collected. (b) Exclusive of the returns of the Oodnadatta line on and after 1st January, 1911. (c) Exclusive of live stock. (d) To 31st December.

(iii) *Classification of Commodity Ton-mileage.* As previously mentioned New South Wales and Tasmania are the only States for which particulars, specifying the ton-mileage and the earnings per ton-mile for various classes of commodities, are available.

The subjoined statement gives particulars for the last financial year in respect of New South Wales. Miscellaneous traffic consists of timber, bark, bricks, drain-pipes in six-ton lots, and cement in full truck loads, agricultural and vegetable seeds in five-ton lots, and traffic of a similar nature. A and B classes consist of lime, vegetables, tobacco leaf, caustic soda and potash, copper ingots, fat and tallow, water and mining plant in six-ton lots, leather in one and three-ton lots, agricultural implements in five-ton lots, and other

traffic of a similar nature. The table does not include 199,266 tons of coal on which only shunting and haulage charges were collected, nor does it include £63,292 for haulage, tonnage dues, etc.

**NEW SOUTH WALES.—SUMMARY OF TON-MILEAGE FOR THE YEAR ENDED
30th JUNE, 1918.**

Particulars.	Total Tons Carried.	Total "Ton-miles."	Average Miles per Ton.	Earnings (exclusive of Terminals).	Earnings per "Ton-mile."	Per cent. on Total Tonnage.
	No.	No.	No.	£	d.	%
Coal, coke, and shale	5,497,564	232,407,386	42.27	593,810	0.61	49.56
Other minerals	621,824	41,562,674	66.84	98,359	0.57	5.60
Crude ores	210,178	23,695,801	112.74	56,652	0.57	1.89
Miscellaneous	696,287	68,078,457	97.77	213,575	0.75	6.28
Firewood	215,701	6,536,108	30.29	29,557	1.09	1.94
Fruit	101,846	16,033,848	157.43	78,804	1.18	0.92
Grain, flour, etc. (Up journey)	1,398,994	263,643,668	188.45	443,028	0.40	12.61
Hay, straw, and chaff	341,720	75,953,324	222.27	139,256	0.44	3.08
Frozen meat	37,214	7,376,122	198.20	37,686	1.23	0.34
A class	638,439	57,369,813	89.86	281,712	1.18	5.75
B class	309,937	36,391,706	117.41	279,587	1.84	2.79
C class	27,657	1,581,095	57.16	19,288	2.93	0.25
1st class	153,730	14,008,243	91.12	187,858	3.22	1.39
2nd class	198,408	31,495,775	158.74	561,202	4.28	1.79
Wool	120,612	35,960,230	298.15	325,093	2.17	1.09
Live stock	523,683	132,343,125	252.71	706,188	1.28	4.72
Total	11,093,794	1,044,437,375	94.14	4,051,655	0.93	100.00

In the following table will be found particulars of the ton-mileage and earnings per ton-mile in the case of Tasmania :—

**TASMANIA.—SUMMARY OF TON-MILEAGE FOR THE YEAR ENDED
30th JUNE, 1918.**

Particulars.	Total Tons Carried.	Total "Ton-miles."	Average Miles per Ton.	Earnings.	Earnings per "Ton-mile."	Per cent. on Total Tonnage.
	No.	No.	No.	£	d.	%
Agricultural produce ..	63,810	3,730,642	58.46	22,883	1.47	16.42
Hay, straw, chaff, and horse feed	34,627	2,197,534	63.46	12,632	1.37	8.91
Manures	11,210	353,570	31.54	1,522	1.03	2.89
Native coal	61,807	6,285,719	101.69	20,796	0.79	15.90
Minerals, other than native coal	47,929	1,149,811	23.98	7,240	1.51	12.33
Bark	2,142	82,518	38.52	703	2.04	0.55
Firewood	42,403	1,273,755	30.03	5,546	1.04	10.91
Timber	61,052	2,407,290	39.43	14,770	1.47	15.71
Wool	4,981	389,372	78.17	5,712	3.52	1.28
Miscellaneous goods ..	58,669	3,668,360	62.52	61,773	4.04	15.10
Total	388,630	21,538,571	55.42	153,577	1.71	100.00

16. **Interest Returned on Capital Expenditure.**—In the table in sub-section 13 hereof, it will be seen that the State Government railways in the year 1901-2 made a profit of 2.94 per cent. on the capital expenditure at that time. In the subsequent years up to and including the year 1910-11, the percentages were 2.56, 3.11, 3.36, 3.98, 4.45, 4.32, 4.22, 4.26, and 4.63 respectively, rates which shew substantial increases with one exception on that for the first-named year. Since 1910-11, the rates have oscillated and have shewn a decreasing tendency, the rate for the year 1917-18 being 3.23, or 1.40 less than that for the year 1910-11. The reasons for this reduction are to be found in the increases of the charges in respect of working expenses, brought about by the opening of new lines, the higher cost of materials, and the raising of the rate of wages, while in the last four years additional expenses have been incurred in consequence of the war. The return on the capital invested as at the 30th June, 1918, was not equal to the interest payable for that year, the rate of which was 3.93 per cent. This average, however, does not accurately express the position. At an early period the necessity for the construction of railways to open up undeveloped districts was recognised, and the money had to be raised at a very high rate of interest. It may be noted, however, that although the loans made for expenditure on railway construction and equipment very largely increase the amount of the public debt of the States, forming, in fact, nearly three-fifths of the total debt, the money borrowed has not been sunk in undertakings which give no return, but has been expended on works which are increasingly reproductive, yielding in most cases a direct return on the capital expended, and representing a greater value than their original cost. In Europe the national debts of various countries have been incurred principally through the expenses of prolonged wars, and the money has gone beyond recovery; but in Australia the expenditure by the States up to a recent period is represented to a large extent by public works which yield a direct return. In addition to the purely commercial aspect of the figures relating to the revenue and expenditure of the State railways, it is of great importance that the object with which many of the lines were constructed should be kept clearly in view; the anticipated advantage in building these lines has been the ultimate settlement of the country rather than the direct returns from the railways themselves, and the policy of the State Governments has been to use their railway systems for the development of the country's resources to the maximum extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges.

(i) *Profit or Loss after Payment of Working Expenses and Interest.* The net revenue of the Government railways of each State after payment of working expenses is shewn in sub-section 13 hereof. The following table shews the amount of interest payable on expenditure from loans on the construction and equipment of the railways of each State, the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment.

It will be seen that during the year ended 30th June, 1914, all the States, with the exception of Tasmania, shew a net profit after paying working expenses and interest. In the year ended 30th June, 1915, only two States, New South Wales and Queensland, shew a profit, while in the three years ended 30th June, 1918, all the States shew a loss.

The losses during the last three years for all the States are due to the causes to which allusion has already been made in the remarks as to increases in the working expenses of the railways (see pp. 662 and 663 *ante*). It will be observed in the following table that the interest charges in 1918 were £1,578,427 higher than they were in 1915.

STATE RAILWAYS.—INTEREST ON LOAN EXPENDITURE, PROFIT OR LOSS,
AND PERCENTAGE OF PROFIT OR LOSS ON TOTAL COST, 1901-2. AND
1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.(a)	W. Aust.	Tasmania.	Nor. Ter.	All States.
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AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE.

	£	£	£	£	£	£	£	£
1901-2	1,434,638	1,492,695	837,205	469,787	252,891	149,550	47,012	4,674,776
1913-14	2,089,495	1,674,036	1,250,598	566,497	556,843	169,208	..	6,306,737
1914-15	2,279,070	1,764,379	1,312,196	584,812	586,069	172,349	..	6,998,875
1915-16	2,568,659	1,922,410	1,418,280	663,588	625,250	180,772	..	7,378,959
1916-17	2,858,789	2,006,197	1,500,800	673,985	643,765	181,617	..	7,865,153
1917-18	3,043,349	2,120,547	1,559,136	716,234	654,059	183,977	..	8,277,302

PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER
CHARGES.(b)

	£	£(c)	£	£	£	£	£	£
1901-2	- 108,321	- 197,226	- 447,777	- 74,129	+ 12,168	- 80,631	- 69,139	- 965,055
1913-14	+ 242,926	+ 134,279	+ 38,163	+ 261,989	+ 128,160	- 61,813	..	+ 746,704
1914-15	+ 26,279	+ 718,279	+ 118,128	- 287,929	- 25,651	- 75,079	..	+ 962,531
1915-16	- 223,749	- 214,659	- 417,991	- 243,667	- 48,795	- 81,395	..	- 1,230,256
1916-17	- 394,064	- 207,518	- 663,020	- 125,796	- 214,834	- 130,298	..	- 1,735,531
1917-18	- 28,916	- 9,380	- 945,372	- 131,740	- 289,005	- 105,194	..	- 1,509,607

PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND
EQUIPMENT.(b)

	%	%(c)	%	%	%	%	%	%
1901-2	-0.27	-0.49	-2.22	-0.58	+0.16	-2.10	-6.71	-0.76
1913-14	+0.40	+0.27	+0.12	+1.74	+0.81	-1.37	..	+0.42
1914-15	+0.04	-1.39	+0.35	-1.73	-0.15	-1.62	..	-0.51
1915-16	-0.33	-0.39	-1.20	-1.41	-0.29	-1.70	..	-0.62
1916-17	-0.55	-0.37	-1.82	-0.71	-1.23	-2.65	..	-0.85
1917-18	-0.03	-0.02	-2.53	-0.73	-1.63	-2.11	..	-0.72

(a) Inclusive of Oodnadatta line to 31st December, 1910. (b) + Indicates a profit; - indicates a loss.
(c) Allowing for payment of special expenditure and charges (see sub-section 11 above).

17. *Passenger Fares and Goods Rates.*—Fares and rates are changed from time to time to suit the convenience and varying necessities of the railways, but, as traffic is developed and revenue increases, they are in many cases reduced to an extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges.

(i) *Passenger Fares.* On the Australian Government railways two classes are provided for passenger traffic. The fares charged may be classified as follows:—
(a) Fares between specified stations (including suburban fares). (b) Fares computed according to mileage rates. (c) Return, periodical, and excursion fares. (d) Special fares for workmen, school pupils, and others. Fares in class (a) are issued at rates lower than the ordinary mileage rates. Fares in class (b) are charged between stations not included in class (a). On the average, mileage-rate fares run about 1.8 pence per mile for first-class and about 1.2 pence per mile for second-class single tickets. In New South Wales, Victoria, and Queensland the mileage rates are based upon a tapering principle, i.e., a lower charge per mile is made for a long journey than for a short journey. In Victoria and Western Australia, return fares are generally about $1\frac{1}{2}$ to $1\frac{3}{4}$ times the single fare, and the second-class are about 30 to 45 per cent. lower than the first-class fares. In New South Wales, Queensland, South Australia, and Tasmania the issue of ordinary return tickets outside the suburban areas has now been discontinued. Special excursion return tickets are, however, issued at certain times of the year, subject to restrictions as to break of journey and trains available for such tickets.

The following table shews the passenger fares for different distances charged in each State, between stations for which specific fares are not fixed:—

ORDINARY PASSENGER MILEAGE RATES ON STATE RAILWAYS, 1918.

State.	For a Journey of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
FIRST-CLASS SINGLE FARES.						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
New South Wales (a) ..	5 5	13 3	28 11	44 4	59 9	71 11
Victoria ..	8 6	16 8	33 2	49 4	64 4	79 6
Queensland ..	8 2	15 4	29 10	43 4	56 0	68 8
South Australia ..	7 6	15 0	30 0	45 0	60 0	75 0
Western Australia (b) ..	6 8	15 0	31 8	48 4	65 0	81 8
Tasmania ..	8 3	16 3	32 3	..	..	..
Average ..	7 5	15 3	31 0	46 1	60 10	75 4
Average per passenger-mile <i>d.</i>	1.78	1.83	1.86	1.84	1.83	1.81

SECOND-CLASS SINGLE FARES.

	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
New South Wales (a) ..	3 7	8 9	18 4	27 4	35 7	41 7
Victoria ..	5 8	11 2	22 2	32 10	43 0	53 0
Queensland ..	5 5	9 11	19 0	27 1	34 3	41 6
South Australia ..	5 0	10 0	20 0	30 0	40 0	50 0
Western Australia (b) ..	4 0	9 3	19 8	30 1	40 6	50 11
Tasmania ..	5 6	10 9	21 6	..	..	..
Average ..	4 10	10 0	20 1	29 6	38 8	47 5
Average per passenger-mile <i>d.</i>	1.16	1.20	1.20	1.18	1.16	1.14

(a) Inclusive of suburban rates up to 34 miles.
 (b) Inclusive of suburban rates up to 41 miles.

(ii) *Parcel Rates.* In all the States parcels may be transmitted by passenger train upon payment of the prescribed rates, which are based upon weight and distance carried. The rates vary slightly in the different States. In New South Wales they range from threepence for a parcel not exceeding 3 lbs. for any distance up to 25 miles, to thirteen shillings and fourpence for a parcel weighing from 85 lbs. to 112 lbs., for a distance of 500 miles. In Victoria the charge for a parcel weighing from 84 lbs. to 112 lbs. for a distance over 450 miles is twelve shillings and fivepence. The rate in Queensland for a parcel weighing from 85 to 112 lbs. for 500 miles is thirteen shillings; in South Australia for 550 miles thirteen shillings and sixpence; in Western Australia for 500 miles fourteen shillings; and in Tasmania for a distance of 250 miles the rate is eight shillings.

(iii) *Goods Rates.* The rates charged for the conveyance of goods and merchandise may generally be divided into three classes, viz. :—(a) Mileage rates, (b) District or "development" rates, and (c) Commodity rates. In each of the States there is a number—ranging from eight in Victoria to fifteen in Tasmania—of different classes of freight. Most of the mileage rates are based upon a tapering principle, i.e., a lower charge per ton-mile is made for a long haul than for a short haul; but for some classes of freight there is a fixed rate per mile irrespective of distance. District rates are charged between specified stations and are somewhat lower than the mileage rates. In addition to the ordinary classification of freights under class (a), certain commodities, such as wool, grain, agricultural produce, and crude ores, are given under class (c) *Special rates*, lower than the mileage rates.

Space will not permit of exhibiting a complete analysis of goods rates in the several States. As an indication of the range and amount of such rates the subjoined tables are given. The first table shows for each State the truck-load rates charged for hauls of different distances in respect of agricultural produce not otherwise specified; these special rates are here given for this class of produce, since it is generally forwarded in truck-loads.

RATES FOR AGRICULTURAL PRODUCE IN TRUCK-LOADS ON STATE RAILWAYS, 1918.

State.	Charge per Ton in Truck-loads for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
New South Wales	5 11	8 10	11 2	12 5	13 5	14 2
Victoria	5 10	9 2	12 2	14 0	15 10	17 6
Queensland	4 10	9 2	11 0	12 0	13 0	14 0
South Australia (a)	6 9	9 8	14 3	18 10	23 5	28 0
Western Australia	6 3	8 11	12 1	17 0	22 0	24 0
Tasmania	7 1	11 3	12 6	..	..	..
Average	6 1	9 6	12 2	14 10	17 6	19 6
Average per ton-mile	<i>d.</i> 1.46	1.14	0.73	0.59	0.52	0.47

(a) Wheat is carried at a lower rate than that specified above for agricultural produce.

The next table shows for each State the ordinary mileage rates charged per ton for hauls of different distances in respect of (a) the highest-class freight, and (b) the lowest-class freight :—

ORDINARY GOODS MILEAGE RATES ON STATE RAILWAYS, 1918.

State.	Charge per Ton for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
HIGHEST-CLASS FREIGHT.						
New South Wales	29 11	58 5	101 9	128 11	139 9	150 7
Victoria	23 9	46 6	87 9	120 0	147 6	175 3
Queensland	44 2	80 7	145 2	a209 9	a242 0	a255 7
South Australia	29 10	57 4	107 9	148 1	183 4	213 7
Western Australia	41 1	71 1	125 10	171 9	209 4	240 8
Tasmania	33 9	54 0	100 0	..	..	..
Average	35 5	61 4	111 5	155 8	184 5	207 2
Average per ton-mile	<i>d.</i> 8.50	7.36	6.68	6.23	5.53	4.97

LOWEST-CLASS FREIGHT.

	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
New South Wales	4 4	5 7	6 5	8 4	10 7	12 10
Victoria	3 0	4 6	6 8	8 10	9 10	10 8
Queensland	4 10	9 2	15 9	20 1	24 6	28 10
South Australia	3 8	6 11	11 0	12 4	14 0	15 8
Western Australia	5 0	8 4	14 2	19 2	23 4	27 6
Tasmania	2 10	5 7	8 6	..	..	..
Average	3 11	6 8	10 5	13 9	16 5	19 1
Average per ton-mile	<i>d.</i> 0.95	0.80	0.63	0.55	0.49	0.46

(a) Maximum freight on highest class goods to Western stations is 200 shillings per ton.

The classification of commodities varies in the several States. Generally, the highest-class freight includes expensive, bulky, or fragile articles, while the lowest-class comprises many ordinary articles of merchandise, such as are particularly identified or connected with the primary industries of each State.

In New South Wales, for example, the highest-class freight comprises such articles as boots, drapery, drugs, groceries, furniture, liquors, crockery and glassware, cutlery, ironmongery, confectionery, and carpets. In the same State the lowest-class freight includes agricultural produce, ores, manures, coal, coke, shale, firewood, limestone, stone, slates, bricks, screenings, rabbit-proof netting, timber, and posts and rails.

18. Numbers and Description of Rolling Stock, 1917-18.—The following table shews the rolling stock in use on the State Government railways in each State, classified according to gauge:—

**ROLLING STOCK ON STATE GOVERNMENT RAILWAYS IN EACH STATE,
CLASSIFIED ACCORDING TO GAUGE, 1917-18.**

State.	Gauge.					Total.
	5 ft. 3 in.	4ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft. 0 in.	
LOCOMOTIVES.						
New South Wales ..	..	1,282	..	..	..	1,282
Victoria ..	797	..	..	17	..	814
Queensland ..	..	..	654	..	4	658
South Australia ..	241	..	244	..	..	485
Western Australia ..	..	..	424	..	..	424
Tasmania ..	..	..	73	..	7	80
Total ..	1,038	1,282	1,395	17	11	3,743

PASSENGER VEHICLES.										
	Ordinary.			Ordinary.				Ordinary.		
	..	Motors.		..	Motors.			..	Motors.	
New South Wales ..	..	1,659	..	..	..	..	1,659	..	..
Victoria ..	1,599	3	..	..	34	..	1,633	3	..
Queensland ..	..	..	780	10	..	7	787	10	..
South Australia ..	375	1	..	137	3	..	512	4	..	
Western Australia ..	..	..	..	378	..	..	378	..	..
Tasmania ..	..	..	..	167	2	..	173	2	..
Total ..	1,974	4	1,659	1,462	15	34	13	5,142	19	

VEHICLES, OTHER THAN PASSENGER.						
New South Wales ..	..	22,859	..	..	..	22,859
Victoria ..	20,035	..	..	254	..	20,289
Queensland ..	..	..	14,255	..	134	14,389
South Australia ..	4,085	..	5,506	..	..	9,591
Western Australia ..	..	..	10,100	..	..	10,100
Tasmania ..	..	..	1,739	..	77	1,816
Total ..	24,120	22,859	31,600	254	211	79,044

19. Number of Railway Employees.—The following table shews the number of employees in the Railway Department of each State in the year 1901 and in each year from 1913 to 1918 inclusive, classified according to (a) salaried staff, and (b) wages staff.

From these figures it will be seen that there was an increase in the number of persons engaged in the Railway Departments of the several States up to 1914-15, since which year the numbers have fallen. During the period from 1901 to 1918, the total has increased from 42,270 to 85,837, an increase of 43,567, or over 103 per cent. The largest numerical increase for the individual States was that of New South Wales, viz., 21,121. It will be observed, however, that the numbers of employees in 1917-18 were less in all the States, excepting Queensland and Western Australia, than they were in the previous year, the difference amounting to 1,023.

Separate returns for salaried and wages staff are not available for South Australia prior to 1916-17; the number of salaried staff is therefore included in the wages staff.

STATE RAILWAYS.—NUMBER OF EMPLOYEES IN RAILWAY DEPARTMENTS, 1901 AND 1913 TO 1918.

State.	1900-1.		1913-14.		1914-15.		1915-16.		1916-17.		1917-18.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
	(a)											
New South Wales	1,372	11,747	3,422	31,810	3,649	33,096	4,148	34,634	4,500	30,726	4,870	29,370
Victoria ..	1,432	10,524	2,598	22,169	2,661	24,314	2,428	20,500	2,344	17,126	2,380	16,859
Queensland ..	994	4,633	2,301	8,502	2,403	8,236	2,889	9,877	3,024	10,734	3,251	11,090
South Australia ^b	..	3,855	..	8,995	..	10,182	..	10,460	1,057	9,241	1,099	8,904
Western Australia	876	5,407	1,079	6,913	1,054	7,093	1,011	6,204	961	5,623	972	5,675
Tasmania ..	178	1,252	224	1,180	218	1,277	222	1,203	233	1,151	221	1,146
All States.	4,852	37,418	9,624	79,569	9,985	84,248	10,698	82,878	12,209	74,651	12,793	73,044

(a) Exclusive of gate-keepers with free house only in New South Wales. (b) Prior to 1916-17, separate returns for salaried and wages staffs are not available; the number of salaried staff in the earlier years is included with the wages staff.

20. Accidents.—Number of Killed and Injured.—The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for the year 1900-1, and for each of the years 1913-14 to 1917-18 inclusive:—

STATE RAILWAYS.—NUMBER OF PERSONS KILLED AND INJURED, 1901 AND 1913 TO 1918.

State.	1900-1.		1913-14.		1914-15.		1915-16.		1916-17.		1917-18.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	(a)	(a)	112	570	78	645	87	710	63	572	59	496
Victoria ..	45	371	45	564	48	558	54	534	32	465	44	561
Queensland ..	13	100	32	454	30	102	26	181	30	280	21	205
South Australia	8	50	19	202	20	172	14	193	11	247	17	189
Western Australia	..	5 ^b	25	154	14	131	18	131	20	106	13	86
Tasmania ..	1	8	1	42	..	39	10	89	1	4	2	7
All States	..	..	234	1,986	190	1,647	209	1,838	157	1,674	156	1,544

(a) Not available. (b) Including all accidents which occurred on railway premises as well as those caused through train accidents and movement of rolling stock.

(D) Graphical Representation of Government Railway Development.

1. General.—Railways are so important a factor in the development of Australia that it has been deemed desirable to graphically represent the main facts of their progress from 1860 onwards. To this end the graphs shewn on pages 648 to 650 have been prepared. The distribution of the railways is shewn on the map on page 647.

2. **Capital Cost and Mileage Open** (page 648).—The graph shows that the ratio between these elements was, naturally enough, very variable from 1860 to 1870, consequent upon progressive decrease in cost of construction. It then became subject to a more regular change, implying reduction of average cost, though in recent years a slight increase has been in evidence.

3. **Cost per Mile Open**.—The fluctuations in cost per mile open from 1860 are clearly indicated by the graph on page 648. In 1855 the cost per mile open was no less than £28,430; by 1858 it had fallen to £17,752, when it rose again to a maximum of £35,958 in 1862. It then diminished rapidly till 1885—when it reached £10,074 per mile—rose to £10,244 in 1886, then fell slowly till 1888, when it amounted to £10,092 per mile. Again rising, this rate attained to £10,481 in 1892, since when it has, on the whole, been declining, reaching its lowest value, £9,466, in 1911. In 1912, 1913, and 1914 it rose to £9,544, £9,665, and £9,820 respectively, but fell in 1915 to £9,632. In 1916 it rose to £9,895, in 1917 was £9,901, and in 1918 £9,943.

4. **Gross Revenue**.—This graph (page 648) exhibits considerable irregularities, the most striking of which are the maxima at 1892, 1902, 1914, and 1916. The fall commencing in 1892 was in consequence partly of the commercial crisis and partly of the then droughty conditions of several of the States, while that of 1902–3 was due to drought. In the latter case the recovery was very rapid, and there has been a continuous rise up to the year 1914. In 1915, there was a fall amounting to £1,016,421. Since 1915 each year has given an increase over the previous year's figures, those for 1916, 1917, and 1918 being £1,260,646, £813,479, and £1,280,565 respectively.

5. **Working Expenses**.—In this case the graph (page 648) has the same characteristics as those of gross revenue. It should be noted, however, that working expenses have been increasing during the last four years at a greater rate than gross revenue, owing to increases in wages and the higher cost of materials.

6. **Net Revenue**.—This graph (page 648) shows a fairly constant rate of increase up to 1900. Thence to 1903 there was a continuous fall, which was followed by a rapid rise to 1907. In 1911 and 1914 there were maxima, followed by a fall in 1915 and a rise in 1916. In 1917 there was a slight fall, and a substantial rise in 1918.

7. **Percentage of Working Expenses on Gross Revenue**.—This is shewn for each State and for the Commonwealth, from the year 1855, on page 649. The curve for the Commonwealth shows considerable fluctuations, but points also to the fact that, although a slight rise occurred in 1908, there was from 1903 to 1907 a rapid decline in the percentage of working expenses to gross revenue; since 1907, however, there has been a steady increase up to 1915. In 1916 the percentage slightly declined, rose again in 1917, but declined in 1918. In the case of the individual States it will be seen that the curves shew considerable fluctuations, particularly in the early years of the period under review.

8. **Percentage of Net Revenue on Capital Cost**.—For the Commonwealth and States, from the year 1855, this graph is shewn on page 650. After exhibiting somewhat remarkable oscillations in the earlier years, and less marked ones between 1885 and 1900, and also a rapid fall to 1903, the curve for the Commonwealth from that year shews a well-marked increase until the year 1908, a slight fall occurring in that year and in 1909. Maxima were reached in 1865, 1877, 1881, 1907, and 1911—viz., 3.44, 3.71, 4.12, 4.45, and 4.54 per cent. Since 1911 the rate has varied considerably, that for 1918 being 1.52 lower than 1911.

For the individual States the results are in general very satisfactory up to 1911. The greatest maximum percentage attained by each of the States in any year during the period under review is as follows:—New South Wales 5.31 in 1881, Victoria 4.18, Queensland 4.51, and South Australia 6.47 in 1911, Western Australia 11.48 in 1896, and Tasmania 2.49 in 1913. Since 1911 (1913 in the case of Tasmania) the States have shewn varying and declining rates. The effect of the drought of 1915 is discernible, also the rise of wages and higher cost of materials, to which allusion has already been made.

The remarkable maximum for Western Australia in 1896 is consequent upon the large use made of the railways at the time of the development of the Western Australian goldfields.

9. **General Indications of Graphs.**—Reviewing the cost of railways, as a whole, it may be noted that at the undermentioned dates the average cost per mile open was as follows:—

STATE RAILWAYS.—AVERAGE COST PER MILE OF LINE OPEN, 1858 TO 1918.

COMMONWEALTH.

Date	1858.	1868.	1878.	1888.	1898.	1908.	1918.
Cost per mile	£ 17,752	£ 21,742	£ 12,558	£ 10,092	£ 9,906	£ 9,500	£ 9,943

While the sinister influence of the drought of 1902 is strikingly shewn in the curves (a) by the fall in the gross and net revenue in 1902-3, (b) by the fall in the percentage of net revenue on capital cost, and (c) by the increase of working expenses on gross revenue, the rapidity of recovery is even more striking, and serves to indicate the great elasticity of the economic condition of the Commonwealth. Although the percentage of net revenue on capital cost during the year 1917-18 has been exceeded in previous years, nevertheless it is satisfactory that the State Government railways, necessarily constructed largely in accordance with a policy of widespread development of Australia's resources rather than as mere commercial enterprises, and costing so large a sum as £209,602,066 for construction and equipment up to the 30th June, 1918, should yield a return of no less than 3.23 per cent. It should be mentioned that the graphs for the Commonwealth include the Federal railways.

(E) Government Railways Generally.

1. **Rolling Stock.**—In the following table particulars of the numbers of the rolling stock employed on both the Federal and State Government railways are set out, classified according to gauge, as at the 30th June in the years 1901, 1911, 1917, and 1918 respectively, together with the percentage of the numbers for each gauge on the total for the mainland. For geographical reasons the figures for Tasmania are shewn separately from those for the mainland.

ROLLING STOCK EMPLOYED ON THE FEDERAL AND STATE GOVERNMENT RAILWAYS AS AT 30th JUNE, 1901, 1911, 1917, AND 1918.

LOCOMOTIVES.

Gauge.	1901.		1911.		1917.		1918.	
	No.	%	No.	%	No.	%	No.	%
Mainland—								
5 ft. 3 in. . .	688	35.23	705	26.84	1,035	28.00	1,038	27.89
4 ft. 8½ in. . .	495	25.34	903	34.37	1,317	35.63	1,327	35.66
3 ft. 6 in. . .	765	39.17	1,009	38.41	1,323	35.80	1,335	35.88
2 ft. 6 in. . .	5	0.26	10	0.38	17	0.46	17	0.46
2 ft. 0 in. . .	..	..	..	..	4	0.11	4	0.11
Total . . .	1,953	100.00	2,627	100.00	3,696	100.00	3,721	100.00
Tasmania—								
3 ft. 6 in. . .	64	..	72	..	73	..	73	..
2 ft. 0 in. . .	7	..	7	..	7	..	7	..
Grand Total	2,024	..	2,706	..	3,776	..	3,801	..

ROLLING STOCK EMPLOYED ON THE FEDERAL AND STATE GOVERNMENT
RAILWAYS—*continued.*

PASSENGER VEHICLES, INCLUDING THOSE FITTED WITH MOTORS.
(See below.)

Gauge.	1901.		1911.		1917.		1918.	
	No.	%	No.	%	No.	%	No.	%
Mainland—								
5 ft. 3 in. ..	1,365	49.71	1,618	42.50	1,985	39.84	2,025	39.67
4 ft. 8½ in. ..	610	22.21	1,136	29.84	1,634	32.80	1,690	33.10
3 ft. 6 in. ..	761	27.71	1,032	27.11	1,324	26.58	1,349	26.42
2 ft. 6 in. ..	10	0.37	21	0.55	34	0.68	34	0.67
2 ft. 0 in. ..	..	..	..	..	5	0.10	7	0.14
Total ..	2,746	100.00	3,807	100.00	4,982	100.00	5,105	100.00
Tasmania—								
3 ft. 6 in. ..	163	..	170	..	169	..	169	..
2 ft. 0 in. ..	8	..	6	..	6	..	6	..
Grand Total	2,917	..	3,983	..	5,157	..	5,280	..

PASSENGER VEHICLES FITTED WITH MOTORS, INCLUDED IN TABLE OF PASSENGER VEHICLES
ABOVE.

Gauge.	1901.	1911.	1917.	1918.
Mainland—				
5 ft. 3 in. ..	2	..	4	4
3 ft. 6 in. ..	..	2	10	13
Total ..	2	2	14	17
Tasmania—				
3 ft. 6 in. ..	..	..	..	2
Grand Total	2	2	14	19

VEHICLES, OTHER THAN PASSENGER.

Gauge.	1901.		1911.		1917.		1918.	
	No.	%	No.	%	No.	%	No.	%
Mainland—								
5 ft. 3 in. ..	12,204	31.05	15,430	27.80	23,940	31.00	24,073	30.78
4 ft. 8½ in. ..	11,540	29.36	17,112	30.83	23,109	29.92	23,601	30.17
3 ft. 6 in. ..	15,481	39.38	22,775	41.03	29,812	38.60	30,161	38.56
2 ft. 6 in. ..	82	0.21	190	0.34	252	0.33	254	0.32
2 ft. 0 in. ..	..	..	..	..	119	0.15	134	0.17
Total ..	39,307	100.00	55,507	100.00	77,232	100.00	78,223	100.00
Tasmania—								
3 ft. 6 in. ..	1,389	..	1,618	..	1,721	..	1,739	..
2 ft. 0 in. ..	50	..	71	..	77	..	77	..
Grand Total	40,746	..	57,196	..	79,030	..	80,039	..

In the seventeen years under review the percentages of the numbers of locomotives for each gauge on the total number of locomotives on all Government railways on the mainland have undergone the following changes : on the 5-ft. 3-in. gauge the percentage has fallen by 7.34 per cent., the 4-ft. 8½-in. gauge increased by 10.32, and the 3-ft. 6-in. gauge fallen by 3.29 per cent.

As regards passenger vehicles the alterations are as follow : on the 5-ft. 3-in. gauge the percentage has fallen by 10.04 per cent., the 4-ft. 8½-in. gauge increased by 10.89, and the 3-ft. 6-in. gauge fallen by 1.29 per cent.

In the case of vehicles other than passenger the changes have been small, the 5-ft. 3-in. gauge percentage having fallen 0.27, the 4-ft. 8½-in. gauge risen by 0.81, and the 3-ft. 6-in. gauge fallen by 0.82 per cent.

2. **Railway Mileage Open for Traffic.**—The Government railway mileages open for traffic, classified according to gauge, as at the 30th June in each of the years 1901, 1911, 1917, and 1918, are set out in the following table, which gives as well the percentages of each mileage on the total on the mainland, the figures for Tasmania being shewn separately, as in the case of the preceding table relating to rolling stock :—

RAILWAY (ROUTE) MILEAGE OF THE FEDERAL AND STATE GOVERNMENT RAILWAYS, CLASSIFIED ACCORDING TO GAUGE, AS AT 30th JUNE IN EACH OF THE YEARS 1901, 1911, 1917, AND 1918, WITH PERCENTAGES ON TOTAL FOR MAINLAND.

Gauge.	1901.		1911.		1917.		1918.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
Mainland—								
5 ft. 3 in. ..	3,696.77	30.50	4,023.61	25.78	5,011.81	23.80	5,062.48	23.44
4 ft. 8½ in. ..	2,805.34	23.14	3,717.17	23.82	5,360.13	25.45	5,695.46	26.38
3 ft. 6 in. ..	5,571.02	45.96	7,742.96	49.62	10,536.74	50.03	10,684.08	49.48
2 ft. 6 in. ..	48.25	0.40	121.90	0.78	121.90	0.58	121.90	0.56
2 ft. 0 in. ..	..	..	..	..	29.35	0.14	29.35	0.14
Total ..	12,121.38	100.00	15,605.64	100.00	21,059.93	100.00	21,593.27	100.00
Tasmania—								
3 ft. 6 in. ..	439.33	..	448.93	..	558.08	..	564.42	..
2 ft. 0 in. ..	18.72	..	23.57	..	23.57	..	23.58	..
Grand Total	12,579.43	..	16,078.14	..	21,641.58	..	22,181.27	..

From the above table it will be seen that in the seventeen years from 1901 to 1918 the 5-ft. 3-in. gauge percentage has fallen by 7.06 per cent., the 4-ft. 8½-in. gauge increased by 3.24 per cent., and the 3-ft. 6-in. gauge increased by 3.52 per cent.

3. Summary of Working of Federal and State Government Railways.—In the following table a summary is given of the working of all Government railways, both Federal and State, for the year ended 30th June, 1918, fuller particulars of which have been given in the sections B and C of this chapter:—

SUMMARY OF THE WORKING OF THE FEDERAL AND STATE GOVERNMENT RAILWAYS FOR THE YEAR ENDED 30th JUNE, 1918.

Particulars.	Federal Railways.	State Railways.	Total for Commonwealth.
Total mileage open Miles	1,733.76	20,447.51	22,181.27
Average miles open during the year "	1,733.76	20,260.00	21,993.76
Total train mileage "	849,549	52,680,730	53,530,279
Total cost of construction of lines open £	10,699,656	a209,602,066	a220,301,722
Cost per mile £	6,171	a10,263	a9,943
Gross revenue £	277,486	24,045,732	24,323,218
Working expenses £	381,904	17,278,037	17,659,941
Percentage of working expenses on gross revenue %	137.63	71.85	72.61
Net revenue £	-- 104,418	6,767,695	6,663,277
Interest payable £	346,842	8,277,302	8,624,144
Number of passenger journeys .. No.	b29,780	262,631,785	b262,661,565
Tonnage of goods and live stock carried Tons	b172,929	27,112,803	b27,285,732
Number of employees at 30th June, 1918—			
Salaried No.	213	12,793	13,006
Wages "	1,077	73,044	74,121
Number of persons killed and injured during the year through train accidents and movement of rolling stock—			
Killed "	4	156	160
Injured "	158	1,544	1,702

(a) Exclusive of lines from Mount Gambier to Victorian border, and from Murrayville to Victorian border. (b) Exclusive of Oodnadatta line.
Note.—The sign — denotes a loss on working.

4. Government Railway Facilities.—On page 635 *ante* the population per mile of line open for general traffic is given in respect of the States' railways for each State. In the following table is given the mileage of all Government railways, State and Federal, in each State and Territory, per 1,000 of population:—

MILEAGE OF ALL GOVERNMENT RAILWAYS, FEDERAL AND STATE, PER 1,000 OF POPULATION IN EACH STATE AND TERRITORY AS AT 30th JUNE, 1918.

State or Territory.	Population 30th June, 1918.	Length of Line Open (Route).			Mileage per 1,000 of Population.
		State.	Federal.	Total.	
	No.	Miles.	Miles.	Miles.	Miles.
New South Wales	1,910,389	4,679.31	..	4,679.31	2.45
Victoria	1,416,791	4,151.64	..	4,151.64	2.93
Queensland	692,214	5,295.15	..	5,295.15	7.65
South Australia	439,466	2,242.33	1,075.32	3,317.65	7.55
Western Australia	311,121	3,491.08	453.94	3,945.02	12.68
Tasmania	202,842	588.00	..	588.00	2.90
Northern Territory	5,269	..	199.56	199.56	37.87
Federal Territory	2,473	..	4.94	4.94	2.00
Commonwealth	4,980,565	20,447.51	1,733.76	22,181.27	4.45

(F) Private Railways.

1. **Total Mileage Open, 1917-18.**—As has been stated in a previous part of this section (see A. 8) a number of private railway lines have from time to time been constructed in the Commonwealth. By far the greater proportion of such lines, however, has been laid down for the purpose of hauling timber, sugar-cane, coal, or other minerals, and is not generally used for the conveyance of passengers or for public traffic; in many cases the lines are often practically unballasted and are easily removable, running through bush and forest country in connection with the timber and sugar-milling industries, and for conveying firewood for mining purposes. Many of these lines may perhaps be said to be rather of the nature of tramways than of railways. Private railways referred to herein include (a) lines open to the public for general passenger and goods traffic; and (b) branch lines from Government railways and other lines which are used for special purposes and which are of a permanent description. Other lines are referred to in the part of this section dealing with Tramways (see § 3, *Tramways*).

The following table gives particulars of private railways in the Commonwealth open for traffic during 1917-18. A classification of these lines according to their gauge has already been given (see page 635).

MILEAGE OF PRIVATE RAILWAYS OPEN, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
For general traffic ..	185.02	24.94	555.77	33.80	278.35	162.86	1,240.74
For special purposes	160.83	46.12	918.48	5.00	680.96	30.85	1,842.24
Total ..	345.85	71.06	1,474.25	38.80	959.31	193.71	3,082.98

2. **Classification of Private Railways.**—The subjoined statement gives particulars regarding private railways, so far as returns are available, in each State for the year 1917-18. In this statement the lines inset are sub-branches from the main branches specified.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1917-18.

NEW SOUTH WALES.

Railway Lines.	Length and Gauge.				Nature of Traffic Carried, etc.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 0 in.	
	Miles.	Miles.	Miles.	Miles.	
1. MAIN SUBURBAN LINE, N.S.W. GOVT. RLYS.—					
Two branch lines	1.50	..	..	Goods
One branch line (Carlingford line)	0.98	..	..	..
Total	2.48			
2. SOUTH COAST LINE, N.S.W. GOVT. RLYS.—					
Bulli Coal Co.	2.64	..	..	Coal
Bellambi Coal Co., Woonona Pit	3.06	..	..	..
" Bellambi Pit	2.88	..	..	..
Corrimal-Balgownie Colliery	1.07	..	..	..
Mount Keira Colliery	1.65	..	..	..
Mount Kembla Coal Co.	7.43	..	..	..
Hoskin's Wongawilli Colliery	2.89	..	..	..
Mount Pleasant Colliery	3.50	..	..
Two branches, Metropolitan and Tunnel Collieries	1.27	..	..	..
Total	22.89	3.50		

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1917-18—*continued.*NEW SOUTH WALES—*continued.*

Railway Lines.	Length and Gauge.				Nature of Traffic Carried, etc.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 0 in.	
	Miles.	Miles.	Miles.	Miles.	
3. SOUTHERN LINE, N.S.W. GOVT. RLYS.—					
Warwick Farm	0.83	..	..	Race-course traffic
Goondah-Burrinjucka	26.25	General
Total	0.83	..	26.25	
4. WESTERN LINE, N.S.W. GOVT. RLYS.—					
Prospect Gravel Co., two branches	4.54	..	..	Metal
Commonwealth Oil Corporation's line from Newnes Junction	33.00	..	..	General
Three colliery branches at Eskbank	1.85	..	..	Coal
Two branches at Eskbank	1.04	..	..	Goods
Two colliery branches at Lithgow	1.25	..	..	Coal
Cadia branch	10.79	..	..	Ore and goods
Branch colliery line at Irondale	0.47	..	..	Coal
Commonwealth Portland Cement Co.'s branch lines	5.00	..	..	Goods
Branch colliery line at Cullen Bullen	1.40	..	..	Coal
Two branch lines to mines (Tallawong and Coombing)	2.70	..	..	Ore
Total ^a	62.04	..	..
5. NORTHERN LINE, SYDNEY TO NEWCASTLE, N.S.W. GOVT. RLYS.—					
Seven branch colliery lines, Fassifern, Teralba, Cockle Creek, South Wallsend Junction and Adamstown	7.60	..	..	Coal
West Wallsend and Seaham Colliery	5.75	..	..	General
Branch line	2.41	..	..	Coal
Redhead Railway, Adamstown to Belmont	9.09	..	..	General
Four branch lines	2.91	..	..	"
Branch lines at Teralba and Sulphide Junction	2.64	..	..	Gravel, coal and ore
Total	30.40	..	..
5a. NORTHERN LINE, NEWCASTLE TO MURRUMBUNDI, N.S.W. GOVT. RLYS.—					
Newcastle Coal Mining Co.	2.82	..	..	Coal
Old Burwood Colliery	6.35	..	..	"
A.A. Co.'s Sea Pit	2.27	..	..	"
Lambton Colliery	2.18	..	..	"
Waratah Coal Co.	4.55	..	..	"
Newcastle Wallsend Coal Co.	4.56	..	..	"
Two branch lines	1.89	..	..	"
Six branch lines	5.13	..	..	Goods
Hexham-Minni	6.08	..	..	General
Five branch lines	16.94	..	..	Coal
Ashton Fields Colliery	3.67	..	..	"
South Maitland Railways Ltd., East Greta Junction to Stanford Merthyr	7.36	..	..	General
Two branch lines	1.74	..	..	Coal
Aberdare Rly., Aberdare Junction to Cessnock	12.08	..	..	General
Twelve branch lines	24.14	..	..	Coal
Rutherford Race-course	0.87	..	..	Race-course traffic
Six branch lines at Greta, Branxton, Rix's Creek, Rosedale Siding and Nundah	5.21	..	..	Coal
Branch line at Temple Court	0.66	..	..	Goods
Three branch colliery lines at Wilga, Curlewis and Gunnedah	7.29	..	..	Coal
Total	115.79	..	..
6. SILVERTON TRAMWAY—					
Broken Hill and Cockburn	36.67	..	General
7. DENILQUIN-MOAMA LINE ..	45.00	..	..	..	"
Total for State, 345.85 miles. Total	45.00	234.43	40.17	26.25	

^a Owned and worked by the Public Works Department.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1917-18—*continued.*

VICTORIA.

Railway Lines.	Length and Gauge.			Nature of Traffic Carried, etc.
	5 ft. 3 in.	3 ft. 0 in.	2 ft. 0 in.	
	Miles.	Miles.	Miles.	
1. KERANG TO KOONDRICK TRAMWAY	13.94	..	..	General
2. ALTONA BAY RAILWAY— Williamstown Race-course and pit at Altona	2.83	..	..	General
3. MCIVOR TIMBER AND FIREWOOD CO., TOOBORAC	26.00	..	..	Firewood
4. YARRA JUNCTION TO POWELLTOWN .. ..	..	11.00	..	General
5. ALEXANDRA TO KUBICON FOREST .. ..	..	..	13.00	Merchandise and timber
6. LA LA EXTENSION TO BIG PAT'S CREEK ..	..	4.29	..	Timber
Total for State, 71.06 miles. Total ..	42.77	15.29	13.00	

QUEENSLAND.

Railway Lines.	Length and Gauge.			Nature of Traffic Carried, etc.
	3 ft. 6 in.	2 ft. 6 in.	2 ft. 0 in.	
	Miles.	Miles.	Miles.	
BRANCHES FROM GOVERNMENT RAILWAYS.				
1. SOUTH COAST LINE—				
Beaudesert Tramway to Rathdowney and Tabooba Junction to Lamington	33.00	..	11.00	General Sugar
Nerang Central Mill .. ..	..	..	..	Mineral
Blue Metal Co.	2.46	..	..	Timber
Lahey's Ld. from Canungra	14.50	..	..	General
Belmont Shire Council	4.39	..	..	Live stock and meat
Australian Meat Export Co.	1.64	..	..	Building materials
Public Works Department	0.28	..	..
2. MAIN LINE—				
Mount Crosby Water Supply (Tivoli) ..	5.00	..	..	Coal
Fifteen colliery branches	13.36	..	..	Timber
Three timber branches	3.74	..	..	Meat
Redbank Freezing Works	0.45	..	..	Sugar
Marburg Sugar Mill	1.04	..	0.50	Various
Five branch lines	1.28	..	..
3. SOUTHERN LINE AND BRANCHES—				
Tannymorel Colliery	3.50	..	..	Coal
Queensland Cement and Lime Co. ..	3.90	..	..	Limestone
4. WESTERN LINE AND BRANCHES—				
Three colliery branches	1.44	..	..	Coal
Munro's Tramway to Perseverance ..	..	10.00	..	Timber and farm produce
Pechey's Siding	0.25	..	..	Timber
5. NORTH COAST LINE (south of Rockhampton)—				
Buderim Tramway .. ..	..	7.00	..	General
Mapleton Tramway .. ..	..	..	13.00	"
Moreton Central Sugar Mill .. ..	..	..	12.00	"
Mount Bauple Sugar Mill	9.44	..	8.00	Sugar
Maryborough Sugar Factory	0.31	..	..	"
Walkers' Limited	0.66	..	..	Ironwork
Harbours and Rivers Dept. (Urangan) ..	0.70	..	..	Building materials
Goodwood Sugar Mill .. ..	..	..	2.25	Sugar
Millaquin Sugar Mill and Refinery ..	2.25	..	9.35	"
Woongarra Tramway	12.19	..	..	General
Qunaba Sugar Mill .. ..	..	..	10.47	Sugar
Doolbi Sugar Mill .. ..	..	..	14.00	"
Isis Central Sugar Mill	2.97	..	14.50	"
Childers Sugar Mill .. ..	..	..	33.75	"
Waterview Plantation	1.05	..	..	"
Miara Sugar Mill .. ..	..	..	0.50	"
Fairymead Sugar Mill	7.17	..	2.40	"
Avondale Sugar Mill	3.39	..	..	General and sugar
Invicta Sugar Mill	8.70	..	14.50	Sugar
Bingera Sugar Mill	8.50	..	26.50	"
Gin Gin Sugar Mill .. ..	..	..	22.56	"
Three colliery lines	3.36	..	..	Coal
Ten branch lines	3.76	..	..	Various
6. CENTRAL LINE AND BRANCHES—				
Mount Morgan G. M. Co. (eight branches) ..	5.00	..	..	Mineral
Central Queensland Meat Export Co. ..	0.85	..	..	Meat
Gladstone Meat Works Ld.	0.29	..	..	"
Ambrose Limeworks Ld.	1.10	..	..	Cement
Treasury Department	1.09	..	..	Explosives
D. McLaughlin Co.	0.93	..	..	Wool, etc.
W. Queensland Meat Co.	0.43	..	..	Meat
Six branches	3.85	..	..	Coal
Fifteen branches	1.66	..	..	Various
Aramac Tramway from Barcaldine ..	41.00	..	..	General

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1917-18—continued.

QUEENSLAND—continued.

Railway Lines.	Length and Gauge.			Nature of Traffic Carried, etc.
	3 ft. 6 in.	2 ft. 6 in.	2 ft. 0 in.	
7. MACKAY LINE AND BRANCHES—	Miles.	Miles.	Miles.	
Racecourse Central Mill (four branches) ..	1.99	..	5.00	Sugar
Melbourne-Mackay Sugar Co. ..	0.52	..	10.00	"
Pleystowe Central Mill ..	1.24	..	35.00	"
Marian Central Mill ..	0.93	..	37.50	"
Cattle Creek Central Mill ..	0.30	..	5.00	"
North Eton Central Mill ..	0.98	..	21.00	"
Homebush Sugar Mill ..	..	..	29.00	"
Farleigh Sugar Mill ..	1.24	..	40.00	"
Plane Creek Central Mill ..	0.58	..	44.50	"
Mackay Harbour Board ..	0.87	..	..	General
Colonial Sugar Co. ..	0.23	..	..	Sugar
Crocker's Wharf Line ..	0.12	..	..	Goods
8. GREAT NORTHERN RAILWAY—				
Townsville to Cloncurry—				
Queensland Meat Export and Ag. Co. ..	2.25	..	..	Meat
Burdekin Meat Preserving Co. ..	1.16	..	..	"
Mills Day Dawn United G.M. Co. ..	1.16	..	..	Mining
Ten branch lines ..	1.38	..	..	Various
Three branch lines ..	1.04	..	..	Mining
Kalamia Sugar Mill ..	..	..	17.50	Sugar
Hughenden to Winton—				
Three branch lines ..	0.71	..	..	Various
Cloncurry to Selwyn—				
Hampden-Cloncurry Copper Mines ..	5.37	..	..	Mining
Macgregor Tramway to Ballara ..	22.13	..	..	General and minerals
Seven branch lines ..	0.68	..	4.00	Mining
Malbon to Dajarra—				
Four branch lines ..	0.40	..	..	Various
Cloncurry to Mount Cuthbert—				
Three branch lines ..	1.88	..	..	Mining
Oona to Dobbyn—				
Mt. Cuthbert Co. (2 lines) ..	4.92	..	..	"
Mt. Elliott Co. (2 lines) ..	1.76	..	..	"
Townsville Jetty Branch—				
Four branch lines ..	0.94	..	..	Various
Townsville Gas Co. ..	0.68	..	..	Coal and coke
9. NORTH COAST RAILWAY (portions north of Rockhampton)—				
Proserpine to Bowen—				
Proserpine Central Sugar Mill ..	0.83	..	50.00	Sugar and cane
Bowen to Townsville—				
Pioneer and Inkerman Sugar Mills ..	38.50	..	18.50	"
Australian Meat Export Co. ..	5.75	..	..	Meat
Drysdale Brothers ..	1.01	..	..	"
Four branch lines ..	1.04	..	..	Various
Mooliba to Cairns (Cairns line)—				
Babinda Sugar Mill ..	1.20	..	27.00	Sugar
Mulgrave Central Mill (4 lines) ..	0.40	..	15.50	"
Hambleton Sugar Mill ..	1.75	..	37.50	"
Three branch lines ..	0.42	..	..	Various
10. INNISFAIL RAILWAY—				
Goondi Sugar Mills ..	..	..	35.25	Sugar
South Johnstone Sugar Mill ..	..	..	35.50	"
Mourilyan Sugar Mill ..	..	..	21.00	"
Twenty-six branch lines ..	..	..	0.86	Various
11. CAIRNS RAILWAY AND BRANCHES—				
Cairns to Ravenshoe line—				
Chillagoe Railway ..	102.73	..	..	General
Cairns Harbour Board ..	0.71	..	..	"
Nine branch lines ..	0.95	..	..	Various
Tolga-Tarzali line—				
One branch line ..	0.06	..	..	"
Chillagoe Railway—				
Stannary Hills Tramway ..	..	..	21.00	General
Irvinebank Tramway ..	..	..	14.00	"
Etheridge Railway ..	143.00	..	..	"
Four branch lines ..	4.84	..	..	Various
12. NORMANTON RAILWAY—				
Forsythe's Siding ..	0.58	..	..	"
LINES NOT CONNECTED WITH GOVERNMENT RAILWAYS—				
Victoria Sugar Mill (Ingham) ..	..	..	69.75	General and sugar
Macnade Sugar Mill (Ingham) ..	..	..	52.50	"
Port Douglas to Mossman and Mowbray River ..	..	..	19.00	General
Mossman Central Mill ..	..	..	24.00	Sugar
Total for State, 1,474.25 miles. Total ..	570.11	17.00	537.14	

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1917-18—*continued.*

SOUTH AUSTRALIA.

Railway Lines.	Length and Gauge.		Nature of Traffic Carried, etc.
	3 ft. 6 in.	2 ft. 0 in.	
BROKEN HILL PROPRIETARY CO.'S LINE— Iron Knob to Hummock's Hill, Spencer's Gulf	Miles. 33.80	Miles. ..	General and carriage of ironstone
MARION BAY LINE— Jetty to mine .. .. .	..	5.00	Mining products
Total for State 33.80 miles. Total	33.80	5.00	

WESTERN AUSTRALIA.

Railway Lines.	Length and Gauge.			Nature of Traffic Carried, etc.
	3 ft. 6 in.	2 ft. 0 in.	1 ft. 8 in.	
1. MIDLAND RAILWAY— Joining Government lines at Midland Junction and Walkaway	Miles. 278.35	Miles. ..	Miles. ..	General
2. W.A. GOLDFIELDS FIREWOOD SUPPLY CO.'S LINE— From Kurrawang into bush	102.00	..	..	Firewood
3. KALGOORLIE AND BOULDER FIREWOOD CO.'S LINE— Goodwood Railway, from Lake Side into bush Lancefield Railway into bush	50.00	36.00	..	"
4. W.A. TIMBER AND FIREWOOD CO. LD. LINE— Kurtamba Railway, from Kalgoorlie— Kawarna Railway into bush	70.00	..	..	"
5. SONS OF GWALLA GOLD MINING CO.'S LINE— Railway into bush .. .. .	..	..	28.00	"
6. KARRI TIMBER CO.— W.A. Jarrah Sawmills Line	43.00	..	..	Timber
7. TIMBER CORPORATION CO.'S LINE— From Greenbushes to mills and into bush	17.50	..	..	"
8. S.-WEST TIMBER HEWERS' CO-OP. SOCIETY'S LINE— From Holyoake into bush	10.00	..	..	"
9. MILLAR'S TIMBER TRADING CO.'S LINES— Upper Darling Range Railway, from Pickering Brook to Canning mills and bush	12.00	..	..	"
Jarrahdale and Rockingham Railway, from Mundijong to Rockingham and bush	61.00	..	..	"
Yarloop Railway to Mills and bush	54.00	..	..	"
Mornington Mills Railway, from Wokalup to mills and bush	40.00	..	..	"
Ferguson River Railway, from Dardanup to mills and into bush	35.00	..	..	"
Kirrup Saw Mills into bush	21.00	..	..	"
Marrinup Saw Mills into bush	9.00	..	..	"
Jarrahdale Woods Saw Mills into bush	14.85	..	..	"
10. BUNNING BROS. LD. LINES— Argyle Mill	11.00	..	..	"
Collie	16.00	..	..	"
Freston Valley	5.50	..	..	"
Perth Jarrah Lion Mills	8.25	..	..	"
Wandoo Line, Muja	0.86	..	..	"
11. NORTH DANDALUP S.M. RAILWAY— To mill and bush	12.00	..	..	"
12. SWAN SAW-MILL RAILWAY— From Lowden to mill and bush	11.00	..	..	"
13. BUCKINGHAM BROS. S.M. RAILWAY— From Muja to bush	4.50	..	..	"
14. WILGARRUP KARRI AND JARRAH CO.'S LINE— Railway into bush	8.50	..	..	"
Total for State, 959.31 miles. Total	895.31	36.00	28.00	

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1917-18—*continued.*

TASMANIA.

Railway Lines.	Length and Gauge.		Nature of Traffic Carried, etc.
	3 ft. 6 in.	2 ft. 0 in.	
	Miles.	Miles.	
1. EMU BAY RAILWAY CO.'S LINES—			
Burnie to Waratah	47.66	..	General
Gulfdord to Zeehan	49.68	..	..
Rayna to Dundas	5.60	..	..
2. MOUNT LYELL MINING AND RAILWAY CO.'S LINES—			
Regatta Point to Queenstown	22.13	..	..
Linda to Kelly Basin	27.80	..	..
3. HUON TIMBER CO.'S LINE	29.10	..	Timber
4. ZEEHAN TRAM CO.'S LINE—			
Emu Bay Railway to British Queen .. .. .	..	1.75	Minerals and occasionally passengers
5. MAGNET SILVER MINING CO.'S LINES—			
Magnet Junction to Magnet .. .. .	..	9.99	Minerals and passengers
Total for State, 193.71 miles. Total ..	181.97	11.74	

SUMMARY OF MILEAGE OF PRIVATE RAILWAYS ACCORDING TO GAUGE, 1917-18.

PRIVATE RAILWAYS.

State.	Gauge.							Total for States.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	3 ft. 0 in.	2 ft. 6 in.	2 ft. 0 in.	1 ft. 8 in.	
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	
New South Wales	45.00	234.43	40.17	..	..	26.25	..	345.85
Victoria ..	42.77	..	..	15.29	..	13.00	..	71.06
Queensland ..	..	..	570.11	..	17.00	887.14	..	1,474.25
South Australia	..	..	33.80	..	..	5.00	..	38.80
Western Australia	..	..	895.31	..	..	36.00	28.00	959.31
Tasmania ..	..	..	181.97	..	..	11.74	..	193.71
Total ..	87.77	234.43	1,721.36	15.29	17.00	979.13	28.00	3,082.98

3. New South Wales.—In this State the mileage of private railways open to the public for general traffic at the end of 1917 was 185.02, and of lines used for special purposes, 160.83 miles. Most of these lines were constructed primarily for the purpose of conveying coal from the mines to the Government railway systems. Particulars for the year 1917-18 of the operations of lines open for general traffic are given, so far as available, in the table on page 690.

(i) *Private Railways Open for General Traffic.* The most important of the lines open for general traffic are as follows:—(a) *The Deniliquin-Moama Line.* In 1874 permission was granted by the New South Wales Government to the Deniliquin and Moama Railway Company to construct a line forty-five miles long from Deniliquin in the Riverina district, to Moama, connecting with the Victorian Railway system at the Murray Bridge, near Echuca. The line was opened in 1876, the land required being granted by the Government. (b) *The Cockburn-Broken Hill Line.* This line is owned by the Silvertown Tramway Company. It was opened in 1888, and connects Broken Hill with the South Australian railway system, having a total length of 36.67 miles. (c) *East Greta Lines.* These lines, belonging to the East Greta Coal Mining Company, run from

East Greta Junction, on the Northern line of the Government railways, to Stanford Merthyr, a distance of 7.36 miles, and from Aberdare Junction to Cessnock, 12.08 miles—a total of 19.44 miles. (d) *The New Redhead Coal Company's Railway*. The lines owned by this company branch from the Northern line of the Government railways, and run from Adamstown to Burwood Extended Colliery, thence to Belmont, and from Burwood Junction to Dudley Boundary and branches, a total distance of 12.00 miles. The lines are worked by the Railway Department, coal wagons being supplied in part by the coal companies using the line. The colliery companies using the line pay a way-leave for right to run their coal over the line, and the Railway Commissioners allow the New Redhead Company a proportion of the revenue from the passenger and goods traffic. (e) *The Seaham Coal Company's Railway*. This line runs from Cockle Creek to West Wallsend and Seaham Collieries, and has a total length of 5.13 miles. (f) *Hexham-Minmi Railway*. This line branches from the Northern line of the Government railways at Hexham, and has a length of 6.08 miles. (g) *The Commonwealth Oil Corporation's Railway*. This line runs from Newnes Junction on the Great Western line of the Government railways to the company's refinery, a distance of 33 miles. The Shay geared type of locomotive is in use on this line. (h) *The Warwick Farm Line* is a short line, 0.83 of a mile in length, connecting the Government line near Liverpool with the Warwick Farm Racecourse. Government rolling stock is used. (i) *The Goondah-Burrinjuck Line* is a line 26.25 miles in length built and worked by the Public Works Department in connection with the reservoir at Burrinjuck.

In addition to the lines referred to above, legislative sanction was obtained in 1890 for the construction of a private line from the flux quarries at Tarrawingee to the Broken Hill line, a distance of 40.09 miles. The line was purchased by the Government in 1901, and is operated by the Silvertown Tramway Company under lease from the Chief Commissioner, who pays the working expenses and receives the ordinary earnings and one-half the net receipts on special and holiday traffic. The mileage of this line is included in that of the Government railways, and it has a gauge of 3 feet 6 inches.

4. **Victoria.**—In Victoria there are two private railways open for general traffic. (a) Kerang-Koondrook tramway, opened in 1889. The cost of construction of this line to the end of September, 1918, was £39,229, paid out of a loan advanced by the Victorian Government. The total length is 13.94 miles. The line is at present controlled by the Kerang Shire Council, but proposals have been made for its transfer to the Railway Department. (b) Yarra Junction to Powelltown. This line has a length of 11 miles, and is worked mainly for timber purposes.

A line running from Elsternwick to Oakleigh, a distance of about 5 miles, was constructed by a private company many years ago. It was never in general use, having only an occasional train running over it on special occasions, and has since been partially dismantled.

5. **Queensland.**—In this State private railways open for general traffic may be grouped under two heads:—(i) Lines constructed primarily for mining purposes or for the transport of sugar-cane, and (ii) Shire tramways.

(i) *Mining Railways.* (a) *The Chillagoe Railway*. The most important of these is the Chillagoe railway, constructed under the Mareeba to Chillagoe Railway Act 1897, and opened in 1901. This line runs from Mareeba, on the Cairns railway, to Mungana, a distance of 102.73 miles. (b) *The Stannary Hills Line*. This line branches from the Chillagoe railway at Boonmoo and runs to Rocky Bluff, via Stannary Hills, a total distance of 21 miles. The gradients on this line, which has a gauge of 2 feet, range as high as 1 in 27, while the radius of some of the curves is as low as $1\frac{1}{4}$ chains. An additional length of 8 miles has been surveyed with a view to extending the line.

(ii) *Shire Tramways.* Under Part XV. of the Local Authorities Act of 1902 provision is made whereby not less than one-third of the ratepayers in any district may petition the local authority to apply to the Governor for the constitution of a tramway.

area. The Governor may define the area and may also approve of the plans and specifications of the proposed tramway. The amount which may be advanced by the Government for the construction or purchase of a tramway may not exceed a sum equal to £5,000 for every mile of its length. As regards repayment of loans, no sum need be paid during the first three years, but after the expiration of that period the principal and interest must be repaid by half-yearly instalments on the basis provided for by the "Local Works Loans Act 1880 to 1899." For the purpose of raising the money to pay these instalments the local authority may levy a rate upon all ratable property within the tramway area. The money required for the tramway may be raised by the local authorities by the issue of debentures.

6. *South Australia.*—In this State there is one private railway open for general traffic, that owned by the Broken Hill Proprietary Company, running from Iron Knob to the seaboard near the head of Spencer's Gulf, a distance of 33.80 miles. The line is utilised for the carriage of ore for use in connection with the smelting works at Port Pirie and the steel works at Newcastle. There is also a line from Marion Bay, having a length of 5 miles, used for mining purposes.

7. *Western Australia.*—Owing to the difficulty experienced at one time by the Government in constructing lines urgently required for the development of the country, private enterprise was encouraged to undertake the work of construction on the land-grant principle, and two trunk lines were thus constructed. The greater part of the private lines now open, however, have been constructed in connection with the timber industry. (i) *The Midland Railway.* This line is 278.35 miles in length, and runs from the Midland Junction, ten miles from Perth, to Walkaway, where it joins the Government line running to Geraldton. It was constructed under a concession of 12,000 acres of land per mile of line constructed, to be selected along the entire route of the railway. (ii) *The Great Southern Railway.* This line, which was built by private enterprise under the land-grant system, is 242 miles in length, and was acquired by the Government by purchase on the 1st January, 1897. The total price paid for all the interests of the private company and of the original concessionaire, was £1,100,000, which was divided by the Government for book-keeping purposes into £300,000 for the land and £800,000 for the railway. (iii) *Millar's Timber Trading Company's Lines.* These lines have mostly been built under special timber concessions and leases. There were, at latest date available, in all eight lines situate in various parts of the State extending into the bush, whence logs are brought to the mills. The total length of these lines was approximately 256.85 miles. (iv) *Other Lines.* There are also several other lines in various parts of the State used chiefly in connection with the timber industry. These are specified in the tabular statement on page 686.

8. *Tasmania.*—In this State there are three private lines open for general traffic, all of which are situated in the western part of the island.

(i) *The Emu Bay Railway Company.* The lines owned by this company run from Burnie to Waratah, from Guildford to Zeehan, and from Rayna to Dundas, and have a total length of 102.94 miles.

(ii) *The Mount Lyell Mining and Railway Company.* The Mount Lyell railway runs from Regatta Point, Strahan, to Queenstown, and the North Mount Lyell line from Kelly Basin to Linda. The former line, 22.13 miles in length, was constructed in 1895-6, while the latter line, 27.80 miles long, was taken over from the North Mount Lyell Copper Company on the amalgamation of the two companies in 1903. The line from Kelly Basin to Linda is now worked only intermittently.

(iii) *The Magnet Silver Mining Company's Railway.* This line runs from Magnet Junction, near Waratah, on the Emu Bay Company's line, to Magnet, a distance of 9.99 miles.

9. Operations of Private Railways, 1917-18.—The tabular statement given below shows particulars, so far as returns are available, for the year 1917-18, of all private railways open to the public for general traffic in the Commonwealth:—

PARTICULARS OF PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC, 1917-18.

Line	Miles Open (include).	Capital Cost.	Gross Revenue.	Expenses.		Train Miles.	Passenger Journeys.	Tons of Goods, etc.	No of Employees.	Rolling Stock.		
				Working.	Interest, etc.					Locos.	Coaches.	Other Vehicles.
	No.	£	£	£	£	No.	No.	Tons.	No.	No.	No.	No.
NEW SOUTH WALES.												
C'wealth Oil Corp'n	33.00	194,500	4,984	5,728	(b)	14,403	1,382	12,281	18	(d)5	3	69
Deniliquin-Moama..	45.00	162,672	20,363	11,107	(b)	38,266	12,689	51,822	44	4	6	63
East Greta Railway	19.44	394,135	75,935	54,553	23,269	317,846	705,914	69,654	210	19	28	40
Goond'h-Burrinj'k(g)	26.25	80,756	2,751	(f)7,950	(h)	39,120	4,225	8,873	34	4	3	28
Hexham-Minmi ..	6.08	(b)	470	590	..	3,072	5,630	1,040	6	1	4	1
New Redhead Co.	12.00	102,000	(b)	(b)	(b)	(b)	(b)	(b)	..	..	..	..
Seaham Colliery Co.	5.75	25,000	927	786	..	7,196	14,524	9,320	9	2	..	2
Silverton Tramway	36.67	476,887	132,468	65,153	..	95,695	47,852	590,619	234	20	1	676
Warwick Farm ..	0.83	5,700	(b)	(b)	(b)	(b)	(b)	(b)	(c)	(c)	(c)	(c)
Total(a) ..	185.02	1,441,650	237,898	145,867	23,269	515,598	792,216	743,609	555	55	47	879
VICTORIA.												
Kerang-Koondrook(e)	13.94	39,229	4,137	2,613	1,789	20,440	17,124	20,750	14	2	2	9
Yarra J.-Powelltown	11.00	46,684	4,099	3,617	..	(b)	(b)	(b)	8	2	2	32
Total(a) ..	24.94	85,913	8,236	6,230	1,789	20,440	17,124	20,750	22	4	4	41
QUEENSLAND.												
Aramac-Barcaldine	41.00	86,206	8,891	4,806	3,307	24,000	6,058	1,607	14	2	2	2
Beaudesert(k)	33.00	93,559	12,337	10,651	..	(b)	14,090	11,585	27	1	3	1
Belmont Tramway	4.39	18,006	1,601	1,824	834	10,165	36,959	23,451	(c)	(c)	(c)	(c)
Buderim ..	7.00	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Irvinebank ..	14.00	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Chillagoe Railway	102.73	420,276	21,118	16,371	..	51,222	13,589	25,572	67	8	2	86
Douglas-Mossman	19.00	48,166	5,460	4,884	2,078	12,000	7,800	8,846	12	2	3	21
Etheridge ..	143.00	457,175	12,336	15,619	11,250	24,490	3,123	4,562	(c)	(c)	(c)	(c)
Invicta Mill ..	8.70	20,067	1,717	933	1,016	2,648	1,749	..	(c)	(c)	(c)	(c)
Lucinda Pt. to Stone R. and Lg. Pocket	53.50	(b)	(b)	(b)	(b)	(b)	15,496	46,417	(b)	3	3	84
Green Hills to Ham- bledon Junc. ..	4.13	(b)	(b)	(b)	(b)	(b)	15,496	46,417	(b)	3	3	84
Macgregor ..	22.13	66,328	3,941	3,156	1,213	7,947	2,763	21,283	9	(c)	(c)	(c)
Mapleton ..	15.00	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Moreton Central S.M.	8.50	14,337	753	403	166	1,674	8,228	684	2	1	2	1
South Johnstone Central S.M. ..	46.50	170,000	4,108	2,400	..	5,472	14,400	5,200	8	4	3	6
Stannary Hills ..	21.00	64,320	1,840	2,763	..	6,331	1,196	4,153	7	1	2	76
Woongarra ..	12.19	36,828	1,133	1,245	717	(b)	17,527	7,045	4	(c)	(c)	(c)
Total(a) ..	555.77	1,495,268	75,235	65,055	20,581	145,949	142,978	160,405	150	22	20	277
SOUTH AUSTRALIA.												
Iron Knob ..	33.80	(b)	(b)	(b)	(b)	63,426	570	304,963	37	5	3	110
WESTERN AUSTRALIA.												
Midland Railway(g)	278.35	2,036,855	92,845	64,619	(b)	257,625	49,299	76,254	235	17	18	402
TASMANIA.												
Emu Bay Railway	102.94	616,878	47,526	32,263	20,423	88,547	36,192	33,791	111	10	6	155
Magnet Railway ..	9.99	18,750	319	2,380	(b)	3,120	1,119	417	7	3	1	6
Mt. Lyell Railway..	22.13	216,086	32,480	25,502	(b)	37,271	21,493	72,186	100	7	7	117
Nth Mt. Lyell Rly.	27.80	316,638	5,157	5,718	(b)	10,676	4,039	17,669	20	4	4	56
Total(a) ..	162.86	1,168,352	85,482	65,863	20,423	139,614	62,843	124,063	238	24	18	334
Total for C'wealth	1,240.74	6,228,038	499,696	347,634	66,062	1,142,652	1,065,030	1,430,044	1,237	127	110	2,043

(a) Incomplete. (b) Not available. (c) Worked by Government. (d) Including one motor car.
(e) For year ended 30th September, 1918. (f) Including interest. (g) For year ended 30th June, 1918.
(h) Included in working expenses. (i) Including 47.66 miles owned by the Emu Bay and Mount Bischoff
Railway Company. (j) Rent. (k) For year ended 31st December, 1916.

10. Comparative Railway Statistics.—On page 634 *ante* a table is given showing the railway facilities in 1917-18 in the States, in the Northern Territory, and in the Commonwealth, the railway mileage open for traffic being compared both with the area and population.

In the table below, the comparative railway statistics of a like character are given in respect of the principal countries of the world at certain dates. The latter have been taken so that the latest accurate figures for both population and railway mileage could be brought into relation.

COMPARATIVE RAILWAY STATISTICS IN RESPECT OF CERTAIN COUNTRIES IN EUROPE, ASIA, AFRICA, NORTH AND SOUTH AMERICA, AND AUSTRALASIA, AT THE UNDERMENTIONED DATES.

Country.	Year.	Miles of Railway.	Population.	Area in Square Miles.	Miles of Railway.	
					Per 1,000 of Population.	Per 1,000 Sq. Miles of Territory.
Europe—						
United Kingdom ..	1915	23,709	44,481,494	121,633	0.53	194.93
Austria ..	1913	14,512	29,193,293	115,882	0.50	125.23
Belgium ..	1912	5,401	7,571,387	11,373	0.71	474.90
Denmark ..	1916	2,550	2,921,362	(c)15,042	0.87	169.53
France ..	1911	30,709	39,602,258	207,054	0.78	148.31
Germany ..	1914	39,439	67,812,000	208,780	0.58	188.90
Greece ..	1914	1,365	4,821,300	41,933	0.28	32.55
Hungary ..	1912	13,333	21,134,862	125,609	0.63	106.15
Italy ..	1916	11,722	36,546,437	110,632	0.32	105.95
Netherlands ..	1916	2,382	6,583,227	12,582	0.36	189.32
Norway ..	1914	1,967	2,440,500	124,643	0.81	15.78
Portugal ..	1911	1,780	5,957,985	35,490	0.30	50.16
Russia ..	1913	35,987	143,114,300	1,997,309	0.25	18.02
Spain ..	1914	9,377	20,500,287	(b)190,050	0.46	49.34
Sweden ..	1916	9,297	5,757,566	173,035	1.61	53.73
Switzerland ..	1915	3,537	3,880,500	15,976	0.91	221.40
Asia—						
India ..	1911	32,839	315,156,396	1,802,629	0.10	18.22
Russia ..	1913	10,586	27,787,800	6,641,587	0.38	1.59
Africa—						
Egypt ..	1917	2,874	12,569,000	350,000	0.23	8.21
Union of South Africa	1911	7,848	5,973,394	473,100	1.31	16.59
America, North—						
Canada ..	1914	30,795	8,075,000	3,729,665	3.81	8.26
Mexico ..	1912	15,804	15,501,684	785,881	1.02	20.11
United States	1916	264,378	102,017,312	2,973,890	2.59	88.90
America, South—						
Argentina ..	1914	21,880	7,885,237	1,153,119	2.70	18.97
Brazil ..	1915	16,294	26,542,402	3,290,564	0.61	4.95
Chile ..	1915	5,015	3,641,477	289,829	1.38	17.30
Australasia—						
Australia ..	1918	25,264	4,980,565	2,974,581	5.07	8.49
New Zealand	1918	3,012	1,104,783	104,751	2.73	28.75

(a) Including lines of "local" interest. (b) Exclusive of Balearic and Canary Islands.
(c) Exclusive of Faroe Islands.

It will be seen from the above table that per 1,000 of population the Commonwealth of Australia had the greatest mileage (in 1918), 5.07 miles; the next in magnitude being Canada (1914) with 3.81 miles, New Zealand (1918) with 2.73 miles, Argentina (1914) with 2.70 miles, and the United States (1916) with 2.59 miles.

The least mileage per 1,000 of population is shown in the case of India (1911) with 0.10 mile, followed by Egypt (1917) with 0.23 mile of railway.

With regard to the mileage per 1,000 square miles of territory, Belgium (1912) with 474.90 miles was easily first, followed by Switzerland (in 1915) with 221.40 miles, the United Kingdom (in 1915) with 194.93 miles, the Netherlands (in 1915) with 189.32 miles, and Germany (in 1914) with 188.90 miles.

The least mileage open per 1,000 square miles is that of Asiatic Russia (in 1913) with 1.59 miles, the next being 4.95 miles in the case of Brazil (1915).

The mileages in the Commonwealth of Australia and the Dominion of Canada per 1,000 square miles of territory are very close to each other, being 8.49 miles (1918) and 8.26 miles (1914) respectively, the latter being less than a tenth of the United States, 88.90 miles (in 1916).

§ 3. Tramways.

1. **General.**—Tramway systems are in operation in all the States of the Commonwealth, and in recent years considerable progress has been made in the adoption of electrical traction, the benefit of which is now enjoyed by a number of the principal towns of the Commonwealth.

In many parts of Australia private lines used for special purposes, in connection with the timber, mining, sugar, or other industries are often called tramways, but they are really private railways, the traffic on which has nothing in common with that of the street tramways for the conveyance of passengers, which are dealt with in the present section.

(i) *Total Mileage Open and Classification of Lines.* The following tables shew the total mileage of tramway lines open for general passenger traffic in each State and in the Commonwealth for the year 1917-18, and also in the Commonwealth as a whole for the years 1908-9 to 1917-18, classified (a) according to the motive power utilised and (b) according to the nature of the authority by which the lines are controlled :—

TRAMWAYS.—CLASSIFICATION OF MILEAGE OPEN FOR PASSENGER TRAFFIC IN EACH STATE AND IN THE COMMONWEALTH, 1917-18.

Nature of Motive Power and Controlling Authority.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	C'wealth.
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ACCORDING TO MOTIVE POWER.

	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	154.37	92.17	41.58	65.66	50.62	22.00	426.40
Steam	74.48	1.15	6.00	..	12.17	26.81	120.61
Cable .. ..	..	46.04	..	..	..	..	46.04
Horse .. ..	..	0.62	..	a17.36	14.39	8.75	41.12
Total	228.85	139.98	47.58	83.02	77.18	57.56	634.17

ACCORDING TO CONTROLLING AUTHORITY.

Government	225.35	49.46	..	a17.36	53.77	26.50	372.44
Municipal .. ..	..	55.71	6.00	65.66	8.66	22.00	158.03
Private	3.50	34.81	41.58	..	14.75	9.06	103.70
Total	228.85	139.98	47.58	83.02	77.18	57.56	634.17

(a) 16.36 miles included in South Australian Government railway mileage.

**TRAMWAYS.—CLASSIFICATION OF MILEAGE OPEN FOR PASSENGER TRAFFIC
IN THE COMMONWEALTH, 1908-9 TO 1917-18.**

Nature of Motive Power and Controlling Authority.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
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ACCORDING TO MOTIVE POWER.

	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	238.76	272.57	297.34	322.24	345.07	365.39	386.30	404.76	422.89	426.40
Steam	62.97	76.41	96.66	91.78	91.65	108.65	112.50	112.50	113.06	120.61
Cable	46.04	46.04	46.04	46.04	46.04	46.04	46.04	46.04	46.04	46.04
Horse	79.79	70.00	60.61	51.44	50.51	54.51	53.05	42.97	44.11	41.12
Total	427.56	465.02	500.65	511.50	533.27	574.59	597.89	606.27	626.10	634.17

ACCORDING TO CONTROLLING AUTHORITY.

Government ..	196.74	217.69	241.72	247.61	256.96	309.44	319.50	322.75	371.58	372.44
Municipal ..	55.80	68.79	78.69	82.86	102.85	114.55	129.86	143.32	158.13	158.03
Private ..	175.02	178.54	180.24	181.03	173.46	150.60	148.53	140.20	96.39	103.70
Total ..	427.56	465.02	500.65	511.50	533.27	574.59	597.89	606.27	626.10	634.17

2. *New South Wales.*—In this State the tramways, with but few comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners.

(i) *Government Tramways.* In Sydney and suburbs the Government tramways are divided into distinct systems. There were in June, 1918, seven such systems in operation within the metropolitan area, the most important being the city and suburban lines, 112.78 miles in length (206.30 miles single track); the North Shore line, 21.14 miles in length (36.41 miles single track); the Ashfield to Mortlake line, 8.48 miles in length (15.12 miles single track); Manly to the Spit, Brookvale, and Narrabeen, 10.72 miles in length (15.47 miles single track); and Rockdale to Brighton-le-Sands, 1.25 miles in length (single track). The last-mentioned line was purchased from a private company and opened for traffic on 7th June, 1914. All of these systems are now operated by electricity. There are two systems on which the motive power used is steam, namely—(a) from Kogarah to Sans Souci, 5.56 miles in length (6.98 miles single track), and (b) from Arncliffe to Bexley, 2.62 miles long (single track).

There are also Government steam tramways in operation at Newcastle, Broken Hill, Parramatta, from East to West Maitland, and from Sutherland to Cronulla. The gauge of line on all the Government tramways is 4 ft. 8½ in.

(a) *Sydney Tramways.* In October, 1862, a horse tramway, 1½ miles long, was opened for traffic in Sydney. Owing to the rails being laid higher than the road surface, the inconvenience thus caused to other traffic necessitated its removal under the authority of an Act passed in November, 1865, and it was not until the 15th September, 1879, that the first steam tramway was opened, running from Bridge-street to Hay-street *via* Elizabeth-street. In the following few years the steam tramways were considerably extended. The electric system was commenced by the opening of a section of the North Sydney lines on the 20th September, 1893. This was followed by the opening of the Ocean-street-Rose Bay line on the 4th October, 1898, and by the opening of the George-street-Pyrmont line on the 8th September, 1899, which introduced the electric system into the city. The tramways in the heart of the city, running along King-street to the suburb of Woollahra, as well as those in North Sydney, were originally worked by underground cables, and have since been converted into electric lines on the overhead trolley system. As already stated the whole of the steam tramways in Sydney and suburbs, with the exception of the Kogarah-Sans Souci and the Arncliffe-Bexley lines, have now been converted into electric lines, and provision for the extra power required for the electrification of the former of these lines has been made at the central power station.

(b) *Other Tramway Systems.* In Newcastle the first section of the tramways, from Perkins-street to Plattsburg, was opened on 31st December, 1887; the total length open on the 30th June, 1918, was 34.07 miles (44.42 miles single track). At Broken Hill and Parramatta the first sections of the tramways were opened in 1902. On the 30th June, 1918, the mileage open at Broken Hill amounted to 10.05 miles (11.44 miles single track), and at Parramatta to 6.69 miles (single track). The line from East to West Maitland, 4.59 miles long (single track), was opened in February, 1909, and the line from Sutherland to Cronulla, 7.40 miles long (single track), on the 12th June, 1911. Further particulars are given below.

(c) *Particulars of all Government Tramways.* The following table shews the total length, the capital cost, the gross revenue, working expenses, net earnings, and the percentages of working expenses on gross revenue, and of net earnings on capital cost, for the financial years 1901-2 and 1913 to 1918:—

NEW SOUTH WALES.—PARTICULARS OF WORKING OF GOVERNMENT TRAMWAYS, 1901-2 AND 1913 TO 1918.

Year ended 30th June—	Total Length of Lines Open (Route).	Capital Expended on Lines Open.	Gross Revenue.	Working Expenses.	Net Earnings.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.
	Miles.	£	£	£	£	%	%
1901-2 ..	103.94	2,829,363	631,757	541,984	89,773	85.79	3.19
1913-14 ..	212.16	7,628,653a	1,934,164	1,669,033	265,131	86.29	3.66
1914-15 ..	219.81	7,970,293a	1,986,060	1,611,287	374,773	81.13	4.70
1915-16 ..	220.83	8,166,423a	1,991,628	1,602,650	388,978	80.47	4.76
1916-17 ..	223.98	8,309,629a	2,008,539	1,691,367	317,172	84.21	3.82
1917-18 ..	225.35	8,470,091a	1,992,641	1,603,260	389,381	80.46	4.60

(a) £47,455 of this sum has been paid from the Consolidated Revenue, and no interest is payable thereon.

The net result, after providing for all working expenses and £348,546 for interest on the capital invested, was a profit of £40,835 in 1917-18 as compared with a loss of £18,189 in the preceding year. During the year 1917-18, 255,740,808 passengers were carried, a decrease of 39,562,906 as compared with the previous year. This large decrease was owing to the strike on the railways and tramways, which extended from 2nd August to 8th September, 1917.

(d) *Particulars of Different Systems of Government Tramways.* In the subjoined statement particulars are given of the working of the electric and steam tramways in Sydney, and of other tramways under Government control in 1917-18 :—

NEW SOUTH WALES.—PARTICULARS OF WORKING OF VARIOUS GOVERNMENT TRAMWAYS, 1917-18.

Line.	Length.		Total Cost.	Gross Revenue.	Working Expenses.	Interest.	Profit or Loss.(a)	Percentage of Working Expenses on Gross Revenue.
	Route.	Track.						
	Miles.	Miles.						
Sydney and Suburban—								
Electric	154.37	274.55	7,738,377	1,847,868	1,457,349	318,794	+ 71,725	78.87
Steam	8.18	9.61	51,134	12,915	14,953	2,127	- 4,165	115.78
Total	162.55	284.16	7,789,511	1,860,783	1,472,302	320,921	+ 67,560	79.12
Parramatta .. Steam	6.69	6.69	40,214	8,476	9,115	1,675	- 2,314	107.54
Sutherland to Cronulla ..	7.40	7.40	51,379	10,411	10,080	2,141	- 1,810	94.69
Newcastle	34.07	44.42	458,630	93,993	89,003	18,408	- 13,418	89.01
East to West Maitland ..	4.59	4.59	38,906	4,324	5,072	1,620	- 2,368	117.30
Broken Hill	10.05	11.44	91,451	14,654	17,688	3,781	- 6,815	120.70
Total	225.35	358.70	8,470,091	1,992,641	1,603,260	348,546	+ 40,835	80.46

(a) + indicates a profit; - indicates a loss.

The total capital cost shewn in the preceding table was made up as follows :—

CAPITAL COST OF NEW SOUTH WALES GOVERNMENT TRAMWAYS AS AT 30th JUNE, 1918.

Permanent Way.	Rolling Stock.	Power-houses, Sub-stations, and Plant.	Machinery.	Work-shops.	Furniture.	Store Advances Account.	Total.
£	£	£	£	£	£	£	£
4,237,612	1,821,213	1,824,217	137,195	223,462	2,392	224,000	8,470,091

The average cost per mile open was £18,804 for permanent way and £18,782 for all other charges, making a total of £37,586 per mile.

During the year 1917-18, two new extensions, amounting in all to a length of 1.37 miles, were opened for traffic.

(e) *Sydney Electric Tramways.* The current for the operation of the city and suburban tramways is generated at the power-houses at Ultimo and White Horse Bay, which have been erected at a total cost of £1,824,217, including the cost of the sub-stations and plant. The total output of the power-houses, for both lighting and traction purposes, during the year 1917-18 was 83,224,507 kilowatt-hours, of which the direct-current supply was 170,940, and the alternating current 83,053,567 kilowatt-hours. The following table gives particulars of the working of the electric tramways for the financial years 1913-14 to 1917-18 :—

NEW SOUTH WALES.—PARTICULARS OF SYDNEY ELECTRIC TRAMWAYS,
1913-14 TO 1917-18.

Year ended 30th June—	Mileage Open for Traffic.		Total Cost of Construction and Equipment.	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.
	Route.	Track.				
	Miles.	Miles.				
1914 ..	145.74	252.34	7,054,832	86,187,367	26,973,702	290,547,553
1915 ..	150.04	261.09	7,349,866	81,591,224	25,406,807	269,633,638
1916 ..	151.05	266.18	7,526,701	81,688,434	25,008,055	272,048,293
1917 ..	152.99	270.84	7,615,110	80,608,220	23,955,722	275,180,334
1918 ..	154.37	274.55	7,738,377	73,384,629	20,618,808	239,442,696

Year ended 30th June—	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Working Expenses on Gross Revenue.	Number of Cars in Use.	Number of Persons Employed.
	£	£	£	%		
1914 ..	1,781,063	1,520,185	260,878	85.35	1,396	9,195
1915 ..	1,834,022	1,469,227	364,795	80.11	1,430	8,743
1916 ..	1,838,708	1,452,470	386,238	78.99	1,402	9,308
1917 ..	1,853,399	1,535,423	317,976	82.84	1,398	9,295
1918 ..	1,847,868	1,457,349	390,519	78.87	1,398	8,463

(ii) *Private Tramways.* A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of 3½ miles, where it connects with the Parramatta River steamers, conveying passengers and goods to and from Sydney. This line, the gauge of which is 4 ft. 8½ in., was opened for traffic in 1883. In 1917 the number of tram miles run was 18,200, and the number of passengers conveyed 99,354.

(iii) *Sydney Harbour Ferries.* As the ferry services on the waters of Port Jackson are mainly supplementary to the suburban railway and tramway systems, it has been thought advisable to include them here rather than under Shipping. Returns for the year 1917-18

were received from three companies, and show that these companies had 67 boats in commission, which were licensed to carry a total of 45,336 passengers, or an average of 677 per boat and per trip. The total number of passengers carried during the year is stated as 32,201,753, an average of 88,224 per day. In addition to the ordinary passenger traffic there are two lines providing for vehicular traffic, which afford the only rapid means of transit for such traffic between the city and the northern suburbs. The three companies employed during the year a total of 1,081 persons. The gross revenue during 1917-18 amounted to £361,821, and the expenditure to £292,701, thus giving a net revenue of £69,120. The services are well managed, and the boats constructed during recent years—double-ended screwboats—are claimed to be superior in size and equipment to boats employed on similar service in any part of the world.

3. Victoria.—In Melbourne there are several tramway systems carried on under the control of various authorities, the most important being the cable system worked by the Melbourne Tramway and Omnibus Company up to the 1st July, 1916, and since that date by the Melbourne Tramway Board, to which reference will be made further on. There are also six lines of electric tramways, viz. :—(a) St. Kilda to Brighton, belonging to the Government and under the control of the Railway Commissioners; (b) an electric tramway between Sandringham and Black Rock, 2.38 miles in length, which has been constructed by the Railway Department and was opened for traffic on 11th March, 1919; (c) Flemington Bridge to the Saltwater River and Keilor-road, owned by a private company; (d) lines connecting Prahran, Windsor, St. Kilda and Elsternwick with Glen Huntly, Caulfield, Malvern, Glenferrie and Kew, controlled by the Prahran and Malvern Tramways Trust; (e) lines from Queensberry-street, Melbourne, to Bell-street, Coburg, and Moreland-road to Baker's-road, Fawkner, owned by the Melbourne, Brunswick, and Coburg Tramways Trust, and (f) Prince's-bridge to Burwood; Burke-road to Boundary-road, Wattle Park; and Bridge-road, Richmond, to Power-street, owned by the Hawthorn Tramways Trust. There is also a cable tramway, 2½ miles in length, between Clifton Hill and Preston, owned by the Northcote municipality. There is a short steam tramway, about 1 mile long, at Sorrento, and there are also systems of electric tramways at Ballarat, Bendigo, and Geelong, constructed and run by private companies. A number of tramways has been constructed for special purposes in various parts of the State under the provisions of the Tramway Act 1890. These, however, correspond to the description of private railways referred to in sub-section 1 hereof. A tramway to the Zoological Gardens, with horse traction, is operated by the Melbourne Tramway Trust.

(i) *Melbourne Cable Tramways.* A short account of the formation of the Melbourne Tramway and Omnibus Company, and of the Tramway Trust, will be found in previous issues of this book. (See Year Books No. 7, page 652, and No. 9, page 679.) The company was required by the original Act, as amended in 1892, to complete the tramways by the end of the year 1893, and in return a thirty-two years' lease of the tramways was granted to it, dating from the 1st July, 1884—when the liability for interest on the loans commenced—and expiring on the 1st July, 1916. The total amount the Trust was empowered to borrow was £1,650,000, which was raised in London by means of debentures bearing interest at 4½ per cent. The premiums received amounted to £55,794, making a total of £1,705,794. This amount had been expended by the end of the year 1893, when further loan expenditure ceased. Up to the 30th June, 1918, the total cost of construction and equipment of the tramways amounted to £1,991,720. The first line—that to Richmond—was opened to traffic on the 11th November, 1885, and the work being rapidly pushed on, the other lines were opened at short intervals, and the whole system was completed in 1891. The complete system consisted of 43.68 miles of double-track cable lines, using constantly over 90 miles of wire rope, and 4.47 miles of horse tram line. Of the latter, 1.79 miles were transferred to the Kew Council in November, 1914, and 2.06 miles to the Hawthorn Tramway Trust in January, 1916, for electrification, leaving 0.62 mile of horse tramway at Royal Park. The gauge of track is 4 feet 8½ inches. The company also had omnibuses at work for many years down to 3rd May, 1916, when the East Brunswick line of omnibuses ceased running owing to the construction of an electric tramway along the route.

(a) *Particulars of Working.* The subjoined statement shows the tram mileage, the number of passengers carried, and the revenue and expenditure for the years 1901-2 and 1914 to 1918 :—

MELBOURNE CABLE TRAMWAYS.(b)—PARTICULARS OF WORKING, 1901-2 AND 1914 TO 1918.

Year ended 30th June—	Mileage Open (Route).			Mileage Run during Year.				Number of Passengers Carried.			
	Cable	Horse.	Total.	Tram.		Omni- bus.	Total.	Tram.		Omni- bus.	Total.
				Cable.	Horse.			Cable.	Horse.		
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	No.	No.	No.	No.
1902	43.68	4.47	48.15	8,878,222	348,661	9,226,883	46,443,016	818,556	47,261,572		
1914	43.68	4.47	48.15	12,056,510	95,528	12,152,038	91,438,777	430,008	91,868,785		
1915	43.68	2.68	46.36	11,887,462	90,458	11,977,920	87,707,934	352,189	88,060,123		
1916	43.68	0.62	44.30	11,977,916	68,569	12,046,485	96,290,131	412,812	96,702,943		
1917	43.68	0.62	44.30	12,413,485	..	12,423,929	(a)	..	103,118,377		
1918	43.68	0.62	44.30	12,822,147	..	12,833,029	112,754,979	279,178	113,034,157		

Year ended 30th June—	Traffic Revenue.				Working Expenses.				Percentage of Working Expenses on Revenue.	No. of Employees at end of Year.
	Tram.		Omni- bus.	Total.	Tram.		Omni- bus.	Total.		
	Cable.	Horse.			Cable.	Horse.				
	£	£	£	£	£	£	£	£		
1902	..	447,548	8,779	456,327	(a)	(a)	269,554	59.07	(a)	
1914	..	766,426	1,794	768,220	423,156	1,186	424,342	55.37	2,004	
1915	..	734,177	1,468	735,645	(a)	(a)	425,831	57.89	1,959	
1916	..	807,356	1,721	809,077	(a)	(a)	435,423	53.82	1,992	
1917	..	(a)	(a)	841,784	(a)	(a)	462,132	54.90	2,104	
1918	..	902,471	549	903,020	513,717	735	514,452	56.97	2,273	

(a) Not available. (b) Exclusive of Northcote Cable Tramway.

(b) *Transfer of Cable Trams.* On the 30th December, 1915, the Victorian Government appointed a Tramway Board of five members to take over the tramways as from 1st July, 1916, and in due course the Board entered into possession of the tramway properties. The amount of compensation to be paid to the company in respect of the rolling-stock, car-houses, and other assets handed over by it to the Tramway Board was the subject of arbitration and of an eventual appeal to the Privy Council, which upheld the award by Mr. Justice Cussen under which a sum of £335,000 with interest at 5 per cent. from the 1st July, 1916, was payable to the company.

An action by the Tramway Board against the company to recover a sum of £587,915, for alleged breaches of the terms of the lease of the cable tramways was, after several days had been spent in part hearing the case, settled out of court by agreement between the parties.

(c) *Metropolitan Tramway Board.* On the 7th of January, 1919, the Royal assent was given to the Melbourne and Metropolitan Tramways Act 1918. Under this Act the tramways will be controlled by a Board consisting of seven members to be

appointed by the Governor in Council, one of such members to be chairman of the Board, who will be appointed for a term of five years, the rest of the members of the Board being appointed for a term of three years.

On the day appointed by Order of the Governor in Council for the first meeting of the Board the old Tramway Board of 1916 will cease to exist, and the new Board will take over the Melbourne cable tramway system and the Royal Park horse tramway.

On a day to be proclaimed by the Governor in Council within six months of the first meeting of the new Board, the following Tramway Trusts will be dissolved and cease to exist and the new Board will succeed to them :—

- (i) The Prahran and Malvern Tramways Trust.
- (ii) The Hawthorn Tramways Trust.
- (iii) The Melbourne, Brunswick, and Coburg Tramways Trust.
- (iv) The Fitzroy, Northcote, and Preston Tramways Trust.
- (v) The Footscray Tramways Trust.

In addition, the new Board is to take a transfer of the Northcote Council cable tramway, and power is given for the acquisition of the North Melbourne electric tramway by agreement or compulsorily.

The whole of the staff exclusively employed by the various tramway bodies will be taken over together with all the liabilities and assets at the date on which the various undertakings are vested in the Board.

Under the Act power is given to the new Board for the following purposes, and others :—

- (a) Issue of a loan by way of Inscribed Stock or Debentures of a sum not exceeding £750,000.
- (b) Preparation of a general scheme for the future development of tramways in the metropolis.
- (c) Provision of public parks and places of recreation.
- (d) Payment to the consolidated revenue of certain sums in respect of the Queen's Memorial Infectious Diseases Hospital, the Metropolitan Fire Brigades Board, and the Licensing Act 1916.
- (e) Disposal of any available surpluses from year to year.
- (f) Levying a rate upon the property of the metropolis in the event of a deficit in the operations of the Tramway Board.
- (g) Acquisition of land for tramway purposes.

In June, 1919, appointments of the Chairman and other members of the Metropolitan Tramway Board were made by the Governor in Council, and 1st November, 1919, fixed as the day appointed for the Board to take over control of the tramways.

(ii) *Electric Tramways.* As already mentioned, there are in Melbourne six electric tramway systems, namely (a) the St. Kilda-Brighton line, (b) the Sandringham-Black Rock line, (c) the North Melbourne tramways, (d) the Prahran-Malvern Tramways Trust system, (e) the Melbourne, Brunswick and Coburg Tramways Trust system, and (f) the Hawthorn Tramways Trust system.

(a) *The St. Kilda-Brighton Line.* Under the St. Kilda and Brighton Electric Street Railway Act 1904, the Board of Land and Works was authorised to construct a tramway from St. Kilda to Brighton. The amount of interest payable on the cost of the

land acquired for the tramway was guaranteed by the municipalities of St. Kilda and Brighton for a period of twenty years, and authority was given by the Act to the municipalities to levy either a general or special rate not exceeding one shilling in the pound for the purpose of paying the guarantee. The profit, if any, during the first twenty years is to be set off in reduction of the guarantee. The line was opened for traffic between St. Kilda and Park-street, Middle Brighton, on the 7th of May, 1906, and the extension to Brighton Beach was opened on the 22nd of December following. The capital cost to the 30th June, 1918, exclusive of rolling stock, was £109,970, and of rolling stock £49,016, making a total of £158,986. The gauge of track is 5 ft. 3 in. The subjoined statement gives particulars of the working of this line for the financial years ended the 30th June, 1914 to 1918 :—

ST. KILDA-BRIGHTON ELECTRIC STREET TRAMWAY, 1914 TO 1918.

Year ended 30th June	Mileage Open (Route).	Capital Cost.	Car Mileage.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit or Loss. <i>a</i>
		£			£	£	£	£
1914	5.16	95,494	541,449	2,390,949	20,516	20,850	3,333	— 3,667
1915	5.16	101,726	577,468	2,718,972	22,614	19,905	3,428	— 719
1916	5.16	132,300	597,819	3,126,984	25,580	22,844	4,697	— 1,961
1917	5.16	156,242	572,735	3,450,442	27,919	20,502	6,250	+ 1,167
1918	5.16	158,986	521,525	3,854,677	31,614	23,653	6,359	+ 1,602

a Profit is indicated by +, loss by —.

The average fare paid per passenger was 1.96 pence in 1917–18 as against 1.93 pence in 1916–17. The gross revenue in 1917–18 was 14.55 pence per passenger car mile and £3,063 per mile of single track open.

(b) *The Sandringham-Black Rock Line.* This line has a length of 2.38 miles and, as already mentioned, was opened for traffic on 11th March, 1919. No further particulars as to it are at present available.

(c) *The North Melbourne Tramways,* extending through the northern suburbs to the Saltwater River and to Keilor-road, were constructed by a private company, and were opened for traffic on the 11th October, 1906. The route and track mileage for year ended 30th September, 1918, were 7.51 and 11.43 miles respectively, the gauge of line being 4 feet 8½ inches. The number of passengers carried during the same period was 3,542,092. The current used during the year for traction purposes was 799,750 kilowatt-hours, while the number of persons employed was 119.

(d) *The Prahran and Malvern Tramways Trust.* The lines have been constructed under the control of a trust, which now consists of seven members appointed from the councils of Prahran, Malvern, St. Kilda, Caulfield, Hawthorn, Kew, and Camberwell. At the 30th September, 1918, the total route mileage open was 35.15 miles, the total track mileage being 68.38 miles, and the total capital cost £793,342. The gauge of the track is 4 ft. 8½ in. The current is supplied by the Melbourne Electric Supply Company Limited at a price varying according to the consumption of current and the price of fuel. Any surplus revenue, after providing for operating expenses, interest, sinking fund and renewal reserve, is to be paid to the municipal councils interested in proportion to the car mileage run in their respective districts. The first section of the lines was opened for traffic on 31st May, 1910. During the year ended 30th September, 1918, the current used for traction purposes was 6,485,745 kilowatt-hours, and the number of tram miles

run was 3,021,021, the number of passengers carried 28,370,193, the gross revenue £204,692, and the working expenses £148,428. The number of cars in use was 89, and the number of persons employed 508.

(e) *The Melbourne, Brunswick and Coburg Tramways Trust.* The first section of these tramways, that between Moreland-road and Bell-street, was opened for traffic on 27th April, 1916. At the 30th September, 1918, the route and track mileages open for traffic were 7.03 and 12.29 miles respectively. During the year ended 30th September, 1918, the current used for traction purposes was 1,146,599 kilowatt-hours, the tram miles run 659,296, the number of passengers carried 5,404,247, the gross revenue £36,075, and the working expenses £24,786. Eighteen cars were in use, and the number of persons employed was 94.

(f) *The Hawthorn Tramways Trust.* The first section of these tramways, that from Princes Bridge to Power Street, Hawthorn, was opened for traffic on 6th April, 1916, and on 30th September, 1918, the route and track mileages in operation were 11.17 and 18.00 miles respectively. During the year ended 30th September, 1918, the current used for traction purposes was 2,491,644 kilowatt-hours, the tram miles run 958,684, number of passengers carried 9,369,746, the gross revenue £69,348, and the working expenses £51,286. The number of cars in use was 32, and the number of persons employed 186.

(g) *The Ballarat and Bendigo Electric Tramways* are under the control of a private company, and run along the main streets and to and from the outlying suburbs of the two cities. The total length of lines open for traffic is 21.25 route miles and 25.86 track miles, the gauge being 4 ft. 8½ in. During the year ended 31st December, 1918, 5,020,872 passengers were carried, the gross revenue being £47,475, and the working expenses £34,833. The number of cars in use was 55, and the number of persons employed 136.

(h) *The Geelong Electric Tramways*, which are privately owned, were opened for traffic on the 14th March, 1912, and up to the 31st August, 1918, the cost of construction and equipment, exclusive of generating plant, totalled £60,645. The system has a route and track mileage of 4.90 and 5.67 miles respectively, the gauge being 4 ft. 8½ in. The car mileage for the year ending on the last-mentioned date was 229,203 miles, and the number of passengers carried 1,458,899. For the same period the revenue was £16,034, and the expenditure £12,500.

(i) *Particulars of Working of all Electric Tramways.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1914 to 1918 inclusive:—

VICTORIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS, 1914 TO 1918.

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Generated at Central Stations for Traction Purposes.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Employees.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1914	61.85	1,082,824	6,591,628	4,110,787	28,071,661	212,036	156,404	181	735
1915	69.47	1,299,786	7,445,978	4,358,030	30,150,912	223,056	184,313	193	811
1916	83.91	1,765,854	9,553,034	5,327,895	30,928,454	288,206	206,367	235	1,009
1917	89.08	1,861,771	11,910,707	6,462,318	51,586,576	373,594	271,315	255	1,074
1918	92.17	1,939,887	13,169,343	6,775,538	57,020,726	432,921	318,163	268	1,167

4. *Queensland.*—In this State there is a system of electric tramways running through the streets of the city and suburbs of Brisbane and controlled by a private company which has its head office in London. The total length of the Brisbane system was 41.58 route miles at the end of the year 1918. There is also a steam tramway in operation at Rockhampton having a length of 6 route miles.

(i) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. The total cost of construction and equipment to the end of the year 1916 was £1,468,906, the gauge of line being 4 ft. 8½ in. The following table gives particulars of these tramways for the calendar years 1901 and 1914 to 1918.

QUEENSLAND.—BRISBANE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING, 1901, AND 1914 TO 1918.

Year.	Mileage Open for Traffic (Route).	Cost of Construction and Equipment.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1901	25.00	(a)	3,192,955	2,756,443	16,183,801	111,483	64,710	79	375
1914	38.20	1,437,550	10,002,034	4,111,908	48,162,065	345,406	194,960	154	825
1915	40.20	1,476,866	11,563,696	4,339,863	49,695,313	372,383	233,761	161	803
1916	40.45	1,468,906	9,272,709	4,286,802	51,029,868	364,745	216,607	172	921
1917	41.58	(b)1,468,906	8,964,113	4,377,104	51,860,308	371,850	257,035	172	1,121
1918	41.58	(b)1,468,906	9,453,441	4,379,679	57,456,832	412,569	264,858	173	1,103

(a) Not available. (b) Figures for 1916.

(ii) *Rockhampton Municipal Tramways.* These tramways were opened for traffic in 1909, the motive power being steam. The length of line is 6 route miles, and the gauge 3 ft. 6 in. The capital cost to 31st December, 1918, was £42,000. During the year 1,650,242 passengers were carried, the revenue being £12,415, and working expenses £9,410. The number of the staff at end of year was 38.

(iii) *Sugar-Mill Tramways.* In various parts of Queensland there are tramways used in connection with the sugar-milling industry, chiefly for the purpose of hauling cane to the mills. Some of these lines are of a permanent nature, running through sugar-cane plantations, while others are portable lines running to various farms.

5. *South Australia.*—Up to the year 1906 the tram service in the principal streets of Adelaide and suburbs was a horse system run by various private companies. Power to acquire these lines, and to provide for their extension and management by means of a Trust, was given to the Government by the Municipal Tramways Trust Act 1906. In accordance with the provisions of the Act, a Trust consisting of eight members, of whom two were nominated by the Governor, two elected by the City Corporation, and two each by the Suburban Corporations and the District Councils involved, was formed in 1907, and a length of 49 route miles of horse traction tramways was purchased from the private companies for a sum of £282,582. On the 10th March, 1909, the electric car system was inaugurated on the Kensington route. At the end of July, 1918, a length of 65.66 route miles had been electrified and opened for traffic, the corresponding length of track opened being 111.97 miles. The cost of construction and equipment on the 31st July, 1918, was £1,751,943. The following table gives particulars of the tramways for the years ended 31st July, 1914 to 1918 :—

SOUTH AUSTRALIA.—ADELAIDE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING, 1914 TO 1918.

Year.	Mileage Open for Traffic (Route).	Capital Cost.	Current Used for Traction Purposes.	Car Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1914	51.86	1,396,638	9,838,252	5,325,660	43,797,227	328,810	202,503	170	1,073
1915	54.42	1,451,989	9,428,315	4,914,357	42,287,503	309,915	191,070	170	1,045
1916	54.42	1,486,546	9,286,910	4,719,043	43,141,885	322,759	193,965	170	1,120
1917	64.46	1,703,151	10,382,667	4,954,848	45,431,691	338,361	211,662	170	1,200
1918	65.66	1,751,943	10,758,897	5,359,776	46,466,258	414,836	250,586	174	1,099

There are also in South Australia 19½ miles of Government horse tramways in country districts, worked in connection with the railway system, and used for passenger service. The subjoined statement gives various particulars of these lines:—

SOUTH AUSTRALIA.—PARTICULARS OF HORSE TRAMWAYS, 1917 TO 1918.

GOVERNMENT TRAMWAYS.

Particulars.	Length.	Gauge.	Nature of Traffic.
	Miles.	ft. in.	
Moonta, Moonta Bay, and Hamley Flat	(a)5.15	5 3	Passengers and goods
Gawler	(a)1.20	5 3	” ”
Victor Harbour and Breakwater	1.00	5 3	” ”
Dry Creek and Magazine	1.00	2 0	Explosives
Magazine and Broad Creek	1.50	2 0	”
Port Broughton and Mundoora	(a)10.01	3 6	Passengers and goods

(a) Included in mileage of Government railways.

6. *Western Australia.*—Apart from the electric tramways, there are in this State several tramways, amounting in all on the 30th June, 1918, to a length of 26½ miles, which are the property of the Government. Of these the most important is the line between Roebourne and Cossack, constructed on a 2-ft. gauge and under the control of the Colonial Secretary's Department. The length of this line is 12¼ miles, and it is worked by steam. The remaining 14¼ miles belonging to the Government are made up of several short lengths, worked by steam or horses, in connection with the jetties at certain ports for the purpose of providing the necessary communication between such jetties and the goods sheds or warehouses. Most of these lines are leased at annual rentals, and are under the supervision of the Harbour Master. Their maintenance and improvement is in the hands of the Public Works Department. In addition to these Government lines there are electric tramway systems at Perth, under Government control; at Kalgoorlie and Boulder City, carried on by private companies; and at Fremantle, under municipal control.

(i) *Steam and Horse Tramways.* Particulars as to the working of the Government steam or horse tramways or as to the rents received therefrom are not generally available. The returns of the Roebourne-Cossack steam tramway for the year ended 30th June, 1918, shew that the capital cost of the line to that date was £34,177, the gross revenue for the year being £2,937, and the working expenses £2,241.

(ii) *Electric Tramways.* There are now four towns in Western Australia which enjoy the benefits of electric tramway systems, namely, Perth, Fremantle, Kalgoorlie, and Boulder.

(a) *The Perth Electric Tramways* were opened for traffic by a private company on the 24th September, 1899, and the system has since been extended to many of the suburbs. This tramway system was taken over by the Government on 1st July, 1913, and is now running in conjunction with the Government railways. On the 30th June, 1918, the route and track miles open for traffic were 27.21 and 36.06 miles respectively, the total cost of construction and equipment to that date being £586,900. During the year, 13,979,112 passengers were carried, the gross revenue being £141,470 and the working expenses £108,903. Seventy-three motors were in use, and the number of employees was 321. The gauge of line is 3 ft. 6 in.

(b) *The Fremantle Tramways* were opened in November, 1905, under the control of the municipality. On the 31st August, 1918, there were 8.64 route and 11.55 track miles of line open for traffic, the cost of construction and equipment at that date being

£113,199. This line has a gauge of 3 ft. 6 in. During the year 5,193,974 passengers were carried, the gross revenue being £39,853 and the working expenses £34,080. Twenty-five cars were in use, and the number of employees was 118.

(c) *The Kalgoorlie and Boulder Tramways* are run by a private company, the first line being opened in 1902. At the beginning of 1904 legislative authority was given for the construction of lines in Boulder and suburbs, and in November, 1904, the last section of the Boulder system was completed. At the end of the year 1918 the total mileage of the whole system—in Kalgoorlie and Boulder—amounted to 14½ route or 20½ track miles, the total cost of construction and equipment being £452,318. During the year 2,044,933 passengers were carried, the gross revenue being £33,688 and the working expenses £26,075. Twenty-five motors and seven trailers were in use, and the number of employees was 64. The gauge of this line is 3 ft. 6 in.

(d) *The Leonora-Gwalia Tramway*, two and a quarter route miles in length, was initially a steam tramway. It was opened for traffic by electrification under municipal control on 5th October, 1908, but is now worked with a petrol motor by a private syndicate. It has a gauge of 3 ft. 6 in.

(e) *Particulars of Working of all Electric Tramways.* The subjoined table shows so far as returns are available, particulars of the working of all electric tramway systems in the State for the years 1901 and 1914 to 1918.

WESTERN AUSTRALIA.—PARTICULARS OF ELECTRIC TRAMWAYS,
1901 AND 1914 TO 1918.

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1901	(a)16.50	367,037	(b)	721,056	(b)	46,270	26,673	30	(b)
1914	48.83	1,068,058	(c)4,924,038	2,716,707	17,331,979	184,072	126,586	121	453
1915	50.75	1,092,289	(c)5,045,163	2,793,519	17,568,161	182,935	130,868	121	471
1916	52.98	1,132,169	(c)5,191,398	2,861,959	18,315,719	189,140	139,633	123	573
1917 ^c	51.61	1,161,478	5,799,337	2,955,503	19,178,047	197,880	153,847	122	526
1918	50.62	1,152,417	6,118,637	3,127,284	21,218,019	215,011	169,058	130	503

(a) For the year 1901 the figures represent miles of single track. (b) Not available.
(c) Exclusive of Leonora tramway.

(iii) *Perth Ferries.* As the Perth ferry services are mainly used for suburban passenger traffic, they are referred to in this section rather than under *Shipping*. Of the twelve boats in service, four are under the control of the Western Australian Government, the other eight belonging to a private company. The number of passengers carried during the year 1917-18 was 910,198, the revenue and expenditure for the same period £10,574 and £9,931 respectively, and the number of persons employed 24.

7. *Tasmania.*—(i) *Tramways.* In Hobart there is a system of electric tramways, the first line of which was opened for traffic in 1893, amounting in all to a length of 13 and 16.24 route and track miles respectively. This was originally owned by a private company, but is now the property of the Hobart Municipal Council. Under the authority of the Launceston Tramway Act of 1906 the Launceston City Council entered into an agreement with a private company for the construction of a system of electric tramways in the city and suburbs of Launceston. The agreement provided that the company was to run the tramways for a period of 25 years, when the council could purchase the lines and stock at cost price; the electric power required was to be supplied by the Council. This agreement, however, lapsed, and the Council has constructed the tramways, and is running them as a municipal undertaking. The system, which was opened on the 16th August, 1911, has a route and track mileage of 9.00 and 11.63 miles respectively. The gauge of track in both these systems is 3 ft. 6 in.

The following table gives particulars of the working of the two systems for the years 1901 and 1914 to 1918 :—

**TASMANIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS,
1901 AND 1914 TO 1918.**

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1901a	9.00	90,000	(b)	321,633	1,734,120	16,097	11,735	20	90
1914	18.91	325,239	1,345,918	908,862	7,147,543	60,885	38,946	49	259
1915	21.43	347,214	1,493,183	999,315	7,462,782	68,170	46,568	60	314
1916	21.95	373,812	1,576,839	1,058,979	7,963,040	73,424	46,758	60	250
1917	21.95	383,219	1,687,407	1,115,090	8,349,789	79,693	49,930	60	259
1918	22.00	389,659	1,913,720	1,192,955	9,785,155	81,918	56,103	60	253

(a) Hobart tramways only. (b) Not available.

There is also a tramway from Smithton to Marrawah, 26.50 miles in length, operated by the Government. Of this distance 8.75 miles are worked as a horse tram, the rest being for steam traction. In the year ended 30th June, 1918, 400 passengers and 6,000 tons of goods were conveyed, the number of employees being 7.

A private steam tram at Zeehan, 2.06 miles in length, is also in operation. In 1918, 1,321 passengers and 7,176 tons of goods were conveyed, the number of persons employed being 4. There is also a private steam tram running from Tullah to Farrell's Siding, a distance of 7 miles. In 1918, 1,476 passengers and 3,040 tons of goods were conveyed, the number of persons employed being 4.

(ii) *Ferries.* The Hobart ferry service, being of a suburban character, is referred to here rather than under *Shipping*. There is one company controlling a fleet of five boats, and also a ferry operated by the Public Works Department with two boats. In the year 1917-18 the number of passengers carried was 833,103, the revenue £11,301, the working expenses £10,071, and the number of persons employed 37.

8. *Electrical Traction in Commonwealth, 1917-18.*—The subjoined table gives particulars of electric tramways for each State and the Commonwealth. The returns for the Hobart tramways in Tasmania, for the Ballarat and Bendigo tramways in Victoria, for the Kalgoorlie tramways in Western Australia, and for the Brisbane tramways, are for the calendar year 1918; and for other tramways the returns are, generally, for the financial year 1917-18 :—

ELECTRIC TRAMWAYS IN THE COMMONWEALTH, 1917-18.

State.	Mileage open for Traffic (Route).	Capital Cost.	Current Generated.	Tram Miles Run.	No. of Passengers Carried.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Gross Revenue.	No. of Cars, Motors and Trailers.	No. of Employees.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	%	No.	No.
N.S.W. . .	154.37	7,738,377	73,384,629	20,618,808	239,442,696	1,847,868	1,457,349	78.87	1,398	8,463
Victoria. . .	92.17	1,939,887	13,169,343	6,775,538	57,020,726	432,921	318,163	73.49	268	1,167
Q'land . . .	41.53	1,468,906	9,453,441	4,379,679	57,456,832	412,569	264,858	64.20	173	1,103
S. Aust. . .	65.66	1,751,943	10,756,897	5,359,776	40,466,258	414,836	250,586	60.41	174	1,099
W. Aust. . .	50.62	1,152,417	6,118,037	3,127,284	21,218,019	215,011	169,058	78.63	130	503
Tasmania . .	22.00	389,659	1,913,720	1,192,955	9,785,155	81,918	56,103	68.49	60	253
C'wealth . .	426.40	14,441,189	114,798,667	41,454,040	431,389,686	3,405,123	2,516,117	73.89	2,203	12,588

(a) For year 1916.

The percentage of working expenses on gross revenue for all electric tramways in the Commonwealth was 73.89, the range for the States being 60.41 in the case of South Australia and 78.87 in the case of New South Wales. The latter rate was, however, only slightly higher than that for Western Australia, viz., 78.63.

In the following table particulars are shown as to the operations of electric tramways in the Commonwealth for the period 1909 to 1918 :—

ELECTRIC TRAMWAYS IN THE COMMONWEALTH, 1909 TO 1918.

Year.	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.
	Miles.	£	Kilowatt-hours.	No.	No.
1908-9	238.76	7,062,667	(b)55,140,437	26,435,716	232,066,948
1909-10	272.24	7,954,192	(b)62,178,735	30,482,066	268,251,284
1910-11(a)	297.47	8,747,597	(b)80,804,252	33,625,344	312,857,166
1911-12	322.24	9,669,805	93,897,694	37,256,203	363,959,404
1912-13	345.07	11,147,493	106,967,982	41,258,696	405,480,511
1913-14	365.39	12,365,142	(b)118,894,845	44,147,626	435,058,028
1914-15	386.30	13,018,010	(b)116,567,559	42,811,891	416,798,309
1915-16	404.76	13,753,988	(b)116,569,324	43,262,733	432,427,059
1916-17(b)	421.68	14,197,194	119,352,451	43,820,585	451,586,745
1917-18	426.40	14,441,189	114,798,667	41,454,040	431,389,686

Year.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Gross Revenue.	No. of Cars, Motors and Trailers.	No. of Employees.
	£	£	%	No.	No.
1908-9	1,474,802	1,072,390	72.71	1,355	7,420
1909-10	1,731,637	1,297,379	74.92	1,401	8,372
1910-11(a)	2,030,533	1,512,473	74.49	1,506	9,329
1911-12	2,345,428	1,775,927	75.72	1,628	11,068
1912-13	2,635,526	2,092,810	79.41	1,804	12,208
1913-14	2,915,272	2,239,584	76.82	2,071	12,548
1914-15	2,990,481	2,235,806	74.76	2,135	12,077
1915-16	3,076,982	2,255,800	73.31	2,162	13,181
1916-17(b)	3,214,777	2,479,212	77.12	2,177	13,475
1917-18	3,405,123	2,516,117	73.89	2,203	12,588

(a) Exclusive of Leonora tramway (W.A.), with exception of mileage.

(b) Exclusive of Leonora tramway.

During the ten years included in the last table the percentage of working expenses on the gross revenue of all electric tramways in the Commonwealth varied from 72.71 in 1908-9 to 79.41 in 1912-13. It then fell each year to 1915-16, when it was 73.31, rose in 1916-17 to 77.12, and fell in 1917-18 to 73.89.

SECTION XVIII.

POSTS, TELEGRAPHS AND TELEPHONES.

§ 1. Posts.

1. **The Commonwealth Postal Department.**—Under the provisions of section 51 of the Commonwealth Constitution Act the Commonwealth Parliament was empowered to make laws with respect to the control of the postal, telegraphic, and telephonic services in Australia, and by proclamation, made under section 69 of the same Act, the six separate State Post and Telegraph Departments were amalgamated and taken over by the Federal Executive on the 1st March, 1901. On the 1st December following, the Commonwealth Post and Telegraph Act 1901 came into operation, and the provisions of the various State Acts referring to the postal and telegraphic services thereby ceased to apply; it was, however, specially provided by the Act of 1901 that, until such provisions should be revoked by the Governor-General, all regulations in force, and all rates and charges levied under any State Act, should continue in force and be applied in the same manner as if such State Act were not affected by the Commonwealth Act. The administration of the Act of 1901 was placed in the hands of a Postmaster-General, a responsible Minister with Cabinet rank, and of a Secretary having chief control of the Department throughout the Commonwealth under the Postmaster-General, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General. The rates and charges levied in each State for the transmission of letters, telegrams, and postal articles at the date of Federation remained in force until the Post and Telegraph Rates Act came into operation on the 1st November, 1902. This Act secured uniformity throughout the Commonwealth in the rates charged for the conveyance of newspapers by post, and for the transmission of telegrams, but did not alter the charges made in the individual States for the transmission of letters, cards, parcels, and packets. Uniform postage rates now exist in all the States under the Postal Rates Act of 1910, which came into operation by proclamation on the 1st May, 1911. (See paragraph 6 hereof.)

For a brief description of the postal services in the earlier period of Australian history, see Year Book No. 5, page 754.

2. **Development of Postal Services.**—In 1841 the number of post offices open in Australia was 102, situated mainly in New South Wales and Tasmania. At the end of ten years 101 post offices were open in New South Wales, 44 in Victoria, 72 in South Australia, and 51 in Tasmania. From the year 1851 onwards a remarkable increase in the number of post offices in Australia took place, until, in 1891, the number open totalled 4,463, of which 1,384 were situated in New South Wales, 1,729 in Victoria, 307 in Queensland, 629 in South Australia, 86 in Western Australia, and 328 in Tasmania. The number continued to increase until the end of the financial year 1916, when there were 6,082 post offices open in the Commonwealth. In the following year, however, the number in operation had fallen to 5,980, a decrease of 102 for the twelve months. A further reduction of 107 was made in 1917-18, with the result that the number of offices in the several States at 30th June, 1918, was New South Wales 2,031, Victoria 1,726, Queensland 643, South Australia 670, Western Australia 407, Tasmania 396, giving a total for the Commonwealth of 5,873.

3. State, Interstate, and Oversea Postages for whole Commonwealth.—In the following table the matter dealt with from 1912 to 1917-18 is divided into (i) matter posted in the Commonwealth for delivery within the Commonwealth, (ii) matter received from places outside the Commonwealth, (iii) matter despatched to places outside the Commonwealth, and (iv) total postal matter dealt with by the Commonwealth Postal Department. Although mail matter posted in the Commonwealth for delivery therein is necessarily handled at least twice, only the numbers despatched are included in the table following, which consequently gives the number of distinct articles handled. The large increase in oversea mail matter despatched and received in 1916-17 and 1917-18 is mainly attributable to postages in connection with the Australian troops abroad.

STATE, INTERSTATE, AND OVERSEA POSTAGES FOR THE COMMONWEALTH,
1912 TO 1917-18.

Year.	Letters and Post-cards.		Newspapers.		Packets.		Parcels.		Registered Articles.	
	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.

POSTED WITHIN THE COMMONWEALTH FOR DELIVERY THEREIN.

1912 ..	431,906	93,005	122,373	26,346	60,439	13,012	3,583	771	3,701	797
1913 ..	449,923	93,664	115,662	24,078	62,731	13,059	3,976	828	3,750	781
1914 ..	467,114	94,957	122,534	24,909	59,989	12,195	4,163	846	3,855	784
1915-16	461,167	93,505	128,923	26,141	51,498	10,442	4,366	885	4,165	844
1916-17	478,287	98,104	124,939	25,627	45,926	9,420	4,337	890	4,399	902
1917-18	483,048	97,876	116,899	23,686	42,455	8,602	4,421	896	4,677	948

OVERSEA RECEIVED.

1912 ..	24,266	5,224	13,565	2,920	5,275	1,136	196	42	394	85
1913 ..	37,986	7,908	13,043	2,715	4,424	921	213	44	462	96
1914 ..	30,952	6,292	11,068	2,250	2,316	471	191	39	390	79
1915-16	32,292	6,547	8,603	1,744	2,115	429	220	45	470	95
1916-17	59,301	12,163	10,209	2,094	3,007	617	245	50	468	96
1917-18	48,961	9,920	7,152	1,449	2,099	425	278	56	537	109

OVERSEA DESPATCHED.

1912 ..	24,146	5,198	9,364	2,016	3,357	723	89	19	309	67
1913 ..	30,569	6,364	10,658	2,219	4,131	860	108	22	350	73
1914 ..	26,724	5,433	7,517	1,528	2,227	453	86	17	301	61
1915-16	33,668	6,826	10,011	2,080	2,955	599	466	94	334	68
1916-17	47,464	9,736	12,095	2,481	3,226	662	1,173	241	365	75
1917-18	44,942	9,106	10,896	2,208	2,826	573	1,179	239	357	72

TOTAL POSTAL MATTER DEALT WITH BY THE COMMONWEALTH POSTAL DEPARTMENT.

1912 ..	480,408	103,428	145,302	31,282	69,071	14,870	3,868	833	4,404	948
1913 ..	518,483	107,935	139,363	29,012	71,286	14,840	4,297	895	4,562	950
1914 ..	524,790	106,682	141,119	28,687	64,532	13,118	4,440	903	4,546	924
1915-16	527,127	106,879	147,542	29,915	56,568	11,470	5,052	1,024	4,969	1,008
1916-17	585,052	120,003	147,243	30,202	52,159	10,699	5,755	1,180	5,232	1,073
1917-18	576,951	116,903	134,947	27,343	47,380	9,600	5,878	1,191	5,571	1,129

4. State, Interstate, and Oversea Postages for each State.—The following table shows separately for each State the postal matter dealt with in 1917-18 under the classification adopted in the preceding paragraph. The returns given for South Australia in this and all succeeding tables include those for the Northern Territory. Similarly, the returns for the Federal Territory are included in those for New South Wales:—

STATE, INTERSTATE, AND OVERSEA POSTAGES FOR EACH STATE, 1917-18.

State.	Letters and Post-cards.		Newspapers.		Packets.		Parcels.	
	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.
POSTED FOR DELIVERY WITHIN COMMONWEALTH.								
New South Wales	194,497	103,343	51,139	27,172	21,277	11,305	2,166	1,151
Victoria ..	145,737	103,286	29,023	20,569	8,504	6,027	799	566
Queensland ..	58,630	85,153	19,236	28,010	6,674	9,693	893	1,296
South Australia	38,442	87,146	6,729	15,254	3,438	7,794	273	619
Western Australia	25,888	83,667	4,861	15,709	1,566	5,061	215	693
Tasmania ..	19,854	97,717	5,861	28,846	996	4,904	75	369
Commonwealth	483,048	97,876	116,899	23,686	42,455	8,602	4,421	896

OVERSEA RECEIVED.

New South Wales	20,840	11,073	2,856	1,517	840	446	90	48
Victoria ..	16,473	11,675	1,588	1,126	446	316	80	57
Queensland ..	3,974	5,771	1,111	1,614	264	354	51	75
South Australia	3,231	7,323	445	1,008	92	208	30	69
Western Australia	3,070	9,920	817	2,640	325	1,052	17	56
Tasmania ..	1,373	6,759	335	1,650	132	648	10	47
Commonwealth	48,961	9,920	7,152	1,449	2,099	425	278	56

OVERSEA DESPATCHED.

New South Wales	20,287	10,779	4,556	2,420	1,543	820	478	254
Victoria ..	13,615	9,649	3,504	2,483	956	677	358	253
Queensland ..	3,924	5,700	1,302	1,890	132	192	114	165
South Australia	3,428	7,771	801	1,816	103	232	120	273
Western Australia	2,393	7,733	470	1,519	33	107	72	234
Tasmania ..	1,295	6,372	263	1,296	59	291	37	183
Commonwealth	44,942	9,106	10,896	2,208	2,826	573	1,179	239

5. Postal Facilities.—The subjoined statement shews the number of post and receiving offices, the area in square miles and the number of inhabitants to each post office (including receiving offices) in each State and in the Commonwealth at the end of the year 1917-18. In order to judge clearly the relative postal facilities provided in each State, the area of country to each office, as well as the number of inhabitants per office, should be taken into account.

SQUARE MILES OF TERRITORY AND NUMBER OF INHABITANTS TO EACH POST AND RECEIVING OFFICE ON 30th JUNE, 1918.

State.	N.S.W. (a)	Vic.	Q'land.	S.A. (b)	W.A.	Tas.	C'wth.
Number of post and receiving offices	2,579	2,604	1,302	813	619	481	8,398
Number of square miles of territory to each post office in State ..	120	34	515	1,112	1,577	55	354
Number of inhabitants to each office	742	544	532	547	503	422	593
Number of inhabitants per 100 square miles	616	1,612	163	49	32	774	167

(a) Including Federal Territory. (b) Including Northern Territory.

6. **Rates of Postage.**—Prior to the operation of the Postal Rates Act of 1910, the charges made for the postage of newspapers and parcels, and of interstate and foreign letters, were the same in all the States of the Commonwealth. The rates for the transmission of letters within the borders of a State, however, were not uniform, the Post and Telegraph Act 1901 having specially provided that the rates and charges levied in any State should continue in force. The last-mentioned provision, however, was repealed by the Postal Rates Act of 1910, which came into force by proclamation on 1st May, 1911, and uniform rates are now applicable throughout the Commonwealth.

On 28th October, 1918, $\frac{1}{2}$ d. War Postage, in addition to ordinary postage, was imposed. An exception was made in the case of letters for members of the Australian Imperial Force abroad and for men serving on ships of the Australian Navy. The war postage to be affixed is indicated hereunder:—

WAR POSTAGE.

Postal Articles.	Rates of Postage.
(a) For delivery within the Commonwealth—	
Letters	$\frac{1}{2}$ d. each.
Letter-cards	Single, $\frac{1}{2}$ d. each; reply, $\frac{1}{2}$ d. each half.
Post-cards	Single, $\frac{1}{2}$ d. each; reply, $\frac{1}{2}$ d. each half.
Packets, namely—Commercial papers, printed papers, patterns, samples, merchandise, books, catalogues, magazines, <i>Hansard</i>	$\frac{1}{2}$ d. each packet.
Newspapers posted by newspaper proprietors or newsvendors, or returned by an agent or newsvendor to the publishing office	$\frac{1}{2}$ d. per 20 oz. on the aggregate weight posted by one person at one time.
Other newspapers	$\frac{1}{2}$ d. each newspaper.
(b) For delivery outside the Commonwealth—	
Letters (except letters for members of the A.I.F. abroad, and those serving on ships of the Australian Navy)	$\frac{1}{2}$ d. each.
Letter-cards	$\frac{1}{2}$ d. each.
Post-cards addressed to places in the British Empire and the United States of America, New Hebrides, Banks and Torres Islands	Single, $\frac{1}{2}$ d. each; reply, $\frac{1}{2}$ d. each half.
Newspapers addressed to New Zealand and Fiji posted by newspaper proprietors or newsvendors, in parcels containing not fewer than four newspapers of the same issue	$\frac{1}{2}$ d. per 16 oz. on the aggregate weight posted by one person at one time.
Other newspapers exceeding 2 oz. in weight ..	$\frac{1}{2}$ d. for each newspaper.

The following rates on letters, newspapers, and certain other postal articles posted in the Commonwealth for delivery therein came into force on the 1st May, 1911, the date of proclamation of the operation of the Postal Rates Act of 1910. War postage as shewn in the preceding table must be added.

POSTAL RATES ON CERTAIN ARTICLES POSTED IN THE COMMONWEALTH FOR DELIVERY THEREIN ON AND AFTER 1st MAY, 1911.

Postal Articles.	Rates of Postage (Exclusive of War Postage).
LETTERS	1d. per $\frac{1}{2}$ ounce
LETTER-CARDS	{ Single, 1d. each Reply, 1d. each half
POST-CARDS	{ Single, 1d. each Reply, 1d. each half
PRINTED PAPERS.—As prescribed	$\frac{1}{2}$ d. per 2 ounces or part of 2 ounces
BOOKS.—Printed outside Australia	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces
BOOKS.—Printed in Australia	$\frac{1}{2}$ d. per 8 ounces or part of 8 ounces
CATALOGUES.—Set up and printed in Australia, for each catalogue	$\frac{1}{2}$ d. per 4 ounces
MAGAZINES.—Printed in Australia, for each magazine	$\frac{1}{2}$ d. per 8 ounces or part of 8 ounces
MAGAZINES.—Printed outside Australia, for each magazine	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces
HANSARD.—Reports of Parliamentary Debates..	$\frac{1}{2}$ d. per 12 ounces or part of 12 ounces
COMMERCIAL PAPERS, PATTERNS, SAMPLES, AND MERCHANDISE.—As prescribed	1d. per 2 ounces or part of 2 ounces
NEWSPAPERS (in bulk), posted by registered news- paper proprietors, or by newsvendors, or re- turned by an agent or newsvendor to the publishing office	1d. per 20 ounces on the aggregate weight of newspapers
NEWSPAPERS.—Printed outside Australia ..	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces
ALL OTHER NEWSPAPERS	For each newspaper, $\frac{1}{2}$ d. per 10 ounces or part of 10 ounces

Whilst the bookkeeping sections of the Constitution Act were in force, each State had necessarily to use its own postage stamps, and stamps sold in one State were only allowed to be used on letters posted in that State. The necessity for this arrangement disappeared with the change in the keeping of the Commonwealth accounts, and since the 14th October, 1910, stamps of any State can be affixed to letters, irrespective of the State in which they are posted. Stamps of a uniform design are now used throughout the Commonwealth.

(i) *Letters.* Under the Postal Rates Act of 1910, the charge (1d. for every $\frac{1}{2}$ -oz.) for letters posted for delivery within the Commonwealth is now uniform throughout all States. Previous to 1st May, 1911, various local and interstate rates were in operation within the States. The postage to the United Kingdom was reduced in January, 1891, from sixpence per half-ounce *via* the Red Sea, and fourpence *via* the Cape of Good Hope, to the uniform rate of twopence halfpenny. In 1891 the States were represented at the Congress of the Universal Postal Union held in Vienna, and on the 4th July a convention was signed on their behalf, by which they joined the Union from the 1st October of that year. On that date the rate of postage to all British possessions and to foreign countries included in the Union was reduced to twopence halfpenny. The present charge for postage of interstate letters and of letters to the United Kingdom and to British possessions, including the captured (formerly German) islands in the Pacific, is uniformly one penny per half-ounce throughout the Commonwealth; and the rate on letters to foreign countries (with the exception of New Hebrides, Banks and Torres Islands, where the rate is a penny per half-ounce) is twopence halfpenny for each half-ounce. In addition to the above rates, one halfpenny (war postage) must be affixed to each article.

(ii) *Newspapers.* The different rates charged for the carriage of newspapers in the various States, prior to Federation, continued after the control of the Postal Departments had been taken over by the Commonwealth, until the 1st November, 1902, when a uniform rate was imposed by the Post and Telegraph Rates Act 1902. At present the rate on all newspapers posted for delivery in the Commonwealth or for transmission to Papua (without condition as to the number contained in each addressed wrapper posted) by registered newspaper proprietors, or by newsvendors, or returned by newsvendor or agent to the publishing office, is one penny, plus one halfpenny (war postage), per twenty ounces on the aggregate weight. The rate to New Zealand, the islands annexed thereto, and Fiji is one penny, plus one halfpenny (war postage), per sixteen ounces on the aggregate weight, which must not exceed 20 lbs. On all other registered newspapers posted within the Commonwealth for delivery therein or for transmission to New Zealand and the islands annexed thereto, Fiji, and Papua, the charge is a halfpenny per ten ounces for each newspaper. In addition each newspaper must bear one halfpenny (war postage). At the end of the year 1918 there were in all 1,451 publications registered in the Commonwealth under section 29 of the Post and Telegraph Act 1901 for transmission by post as newspapers. The rates on registered newspapers for transmission to the United Kingdom are, by the ordinary route, for each newspaper not exceeding eight ounces one penny, exceeding eight ounces but not exceeding ten ounces twopence halfpenny, every additional two ounces one halfpenny. By the all-sea route the rate for each newspaper exceeding eight ounces is one penny per sixteen ounces. To other parts of the world the rate is one penny up to four ounces and one halfpenny for every additional two ounces. An additional one halfpenny (war postage) is charged on each newspaper exceeding two ounces. The limit of weight allowed is 5 lbs. Newspapers which are not registered are charged at the same rates as other printed papers.

(iii) *Parcels.* Parcels may not exceed 11 lbs. in weight, 3 ft. 6 in. in length, or 6 feet in length and girth combined. The rate for the inland postage of parcels is sixpence up to 1 lb., and then threepence for every additional pound. For interstate transmission the rate is eightpence up to 1 lb., and then sixpence per lb., and for transmission to the United Kingdom the rate is one shilling up to 1 lb., and sixpence for every additional pound. Various rates are charged for the conveyance of parcels to other parts of the world.

(iv) *Packets.* The following articles are classed as packets and are accepted for oversea destinations at the rates given. A table of charges for delivery within the Commonwealth is to be found on page 711:—Commercial Papers: For New Zealand (including islands annexed thereto) and Fiji, penny per two ounces (*a*); for all other places, two ounces threepence, each additional two ounces up to ten ounces halfpenny, each two ounces thereafter penny. Printed Papers: For New Zealand, Fiji, New Hebrides, and Solomon Islands, two ounces penny (*a*), each additional two ounces halfpenny; for all other places, two ounces penny. Patterns and Samples: For New Zealand (including islands annexed thereto) and Fiji, penny per two ounces (*a*) (up to 1 lb.); for United Kingdom, penny per two ounces (up to 5 lbs.); for all other places, penny per two ounces (up to twelve ounces). Merchandise: For New Zealand (including islands annexed thereto) and Fiji, penny per two ounces (*a*) (up to 1 lb.); to all other places parcels rates are charged. Books: For New Zealand (including islands annexed thereto), Fiji, New Hebrides, and Solomon Islands, penny per four ounces; for all other places, penny per two ounces. Catalogues: Rates applicable Commonwealth only. Magazines: For New Zealand (including islands annexed thereto), Fiji, New Hebrides, and Solomon Islands, penny per eight ounces, each additional four ounces halfpenny; for all other places, penny per two ounces. Packets for transmission within the Commonwealth must not as a rule exceed 2 feet in length, 1 foot in breadth or depth; or, if in a roll, 2 ft. 6 in. in length, while the maximum weights allowed are—commercial and printed papers, 5 lbs.; patterns, samples, and merchandise, 1 lb.

7. *Registered Letters.*—Under section 38 of the Post and Telegraph Act 1901, provision is made for the registration of any letter, packet, or newspaper upon payment of a fee of threepence, and any person who sends a registered article by post may obtain an acknowledgment of its due receipt by the person to whom it is addressed by paying an additional fee of twopence halfpenny in advance at the time of registration.

(*a*) An additional halfpenny (war postage) must be affixed to each packet.

Number of Registered Articles Posted. The subjoined table shews the number of registered articles posted in each State during the year 1917-18, classified according to the places to which they were despatched for delivery :—

NUMBER OF REGISTERED ARTICLES POSTED DURING 1917-18.

State.	Posted in each State for Delivery within that State.		Posted in each State for Delivery in other States.		Posted in each State for Delivery in Places outside the C'wealth.		Total.	
	Number (<small>'000 omitted</small>).	Per 1,000 of Population.	Number (<small>'000 omitted</small>).	Per 1,000 of Population.	Number (<small>'000 omitted</small>).	Per 1,000 of Population.	Number (<small>'000 omitted</small>).	Per 1,000 of Population.
New South Wales	1,492	793	209	111	149	79	1,850	983
Victoria	1,120	794	179	127	93	66	1,392	986
Queensland	628	912	90	132	53	77	771	1,121
South Australia	290	658	55	124	19	43	364	825
Western Australia	349	1,127	41	132	33	107	423	1,366
Tasmania	187	921	37	181	10	47	234	1,149
Commonwealth	4,066	824	611	124	357	72	5,034	1,020

8. *Ocean Mail Services.*—Regular steamship communication between Australia and Europe was established in 1852 by a service run by the Peninsular and Oriental Company between Singapore and Sydney, *via* King George's Sound, Adelaide, and Melbourne. This service was inaugurated in September, 1852, by the arrival at Melbourne of the *Chusan*, and was continued until 1854, when it was stopped in consequence of the Crimean War; in 1856 a line of steamers was again started, and the service was carried on by the Peninsular and Oriental Company, in conjunction with the Royal Mail Company, for some years.

(i) *Mail Route via San Francisco.* The service *via* the Red Sea did not at first give much satisfaction to the public, and was looked upon with a certain amount of disfavour in New South Wales and New Zealand. The effect was to stimulate the colonists to agitate for an improved service, and proposals were made for the establishment of a line of mail packets from Sydney to Panama *via* Wellington, by rail across the isthmus, and thence to Great Britain. The result was that in 1866 the line was started, and continued in operation until the end of 1868, when it was terminated through the failure of the company by which it had been carried out. The completion of the railway across the American continent in 1869, with its western terminus at San Francisco, opened up a new and agreeable route, and in that year a monthly service was inaugurated by the Union Steamship Company, in conjunction with the Pacific Steamship Company, from Sydney to San Francisco *via* Auckland. This service was subsidised to the extent of £37,000 per annum, of which New South Wales paid £25,750 and New Zealand £11,250, and was continued until November, 1890, when a new contract was entered into and the amount of the subsidy largely reduced, the amount of the contribution being based upon the weight of mail matter carried. Various extensions of the contract were made, but the last agreement made between the New Zealand Government and the Oceanic Steamship Company of San Francisco expired on the 10th November, 1906, and has not since been renewed. From that date mails were carried at Postal Union rates until the 12th April, 1907, when the service was discontinued. At present mails to and from Europe are carried by the Union Steamship Company, which receives a subsidy from the New Zealand

Government, with a four-weekly service; and by the Oceanic Company, with a three-weekly service. Postal Union rates are charged in respect of Australian mails conveyed by the Union Company, and poundage rates in the case of the Oceanic Company.

(ii) *Route via Suez Canal.* The establishment of a mail route *via* America had the effect of stimulating the steamship owners who were engaged in the service *via* Suez, and from that time there was a marked improvement in the steamers, as well as in the punctuality and speed with which the mails were delivered. Almost since the inception of ocean steam services, the Peninsular and Oriental Company, and, at a little later date, the Orient-Pacific Company, have carried mails to and from Australia. Postal matter was carried by contract until 1905, when the contract between the Peninsular and Oriental Company and the Commonwealth Government ceased, although that between the company and the Imperial Post Office is still in force. Until discontinued, owing to the war, mails were carried from Australia by the Peninsular and Oriental Company, but at Postal Union rates and not under contract with the Commonwealth. On the 25th April, 1905, the Orient-Pacific Company concluded a new contract with the Commonwealth Government for a fortnightly service between England and Australia. The subsidy was at the rate of £124,880 per annum. This contract has now been replaced by the present mail contract referred to in the next sub-section hereof. Fremantle has, since the year 1900, been the first and last port of call for European mail steamers, in lieu of Albany, the original port of call. The Peninsular and Oriental and Orient Steam Navigation Companies' steamers, before the outbreak of war in 1914, sailed alternately every week, both from London and Australia, conveying the outward and homeward mails. As before stated, the Peninsular and Oriental service was entirely suspended as a result of the war, while a very limited service was carried on for a greater part of the time by the Orient line *via* the Cape route. With the conclusion of peace, however, it is confidently anticipated that an early though partial resumption of both services *via* the Suez Canal will be arranged.

(a) *Present Mail Contract.* On the 1st January, 1906, tenders were invited by the Commonwealth Postmaster-General for a fortnightly mail service between Adelaide and Brindisi, to alternate with a similar service to be provided by the Imperial Government, and a contract was entered into with Sir James Laing and Company Limited, providing for a service at an annual subsidy of £125,000. This contract, however, fell through, and new tenders were accordingly called for. On the 15th November, 1907, an agreement was entered into with the Orient Steam Navigation Company Limited providing for a fortnightly service for a period of ten years, commencing in February, 1910. The mail service was to be carried out by existing vessels belonging to the company and by five new mail ships, which had been specially built, and which were each over 12,000 tons gross registered tonnage and of not less than seventeen knots speed. An additional new vessel was to be added within eighteen months, and another within six years, from February, 1910, and the first of these—the *Orama*—entered into running during November, 1911. War conditions have, however, delayed the addition of the later vessel to the mail fleet. The vessels were to call at Fremantle, Adelaide, Melbourne, Sydney, and Brisbane, and, during the months of February to May inclusive, at least six of them at Hobart. The voyage from Taranto to Adelaide was to be completed within twenty-six days, fourteen hours, and from Adelaide to Taranto within twenty-seven days, two hours, but the latter period might be exceeded by thirty-six hours during the prevalence of the south-west monsoon. The amount of the subsidy was fixed at £170,000 per annum; but, if the earnings of the company were decreased, or the expenses increased, by reason of any Commonwealth shipping legislation passed subsequently to the date of the agreement, to the extent of not less than £5,000 a year, the contractors had the right to terminate the agreement unless the subsidy were increased. Insulated space of not less than 2,000 tons of forty cubic feet per ton was to be provided in each of the new vessels, and the freights were not to exceed one halfpenny per lb. for butter and sixty shillings per ton for fruit. White labour only was to be employed, and no discrimination was to be made between unionists and non-unionists. If before or during the sixth year of the period of the contract an accelerated service were provided by any competing line of mail ships, the contractors had, if so required by the Postmaster-General, to provide a service equal to the

competing service, at an increased subsidy, to be determined by agreement or arbitration. With the expiration of the period in 1916, this clause in the agreement lapsed. The Commonwealth flag had to be flown on the mail ships, which the Commonwealth had the right to purchase at a valuation at any time. Within six months of the Postmaster-General establishing a permanent wireless telegraphy station at Rottnest Island, or at any point on the coast between Fremantle and Brisbane, the company was required to fit the mail ships with wireless telegraphy installations. The new service was inaugurated on the 11th February, 1910.

(b) *French and German Subsidised Mail Services.* Vessels belonging to the Messageries Maritimes and the Norddeutscher Lloyd, which were under contract respectively with the French and German Governments to convey mails monthly between Marseilles and New Caledonia and between Bremen and Sydney, via Genoa, also carried mails for the Commonwealth Government from Australia to Europe at Postal Union rates. The Messageries Maritimes service commenced in November, 1882; the amount of the annual subsidy granted by the French Government being £120,000. The vessels have, however, for the time being, been withdrawn from the Australian service. The first contract for the establishment and maintenance of a mail steamship line between Germany and Australia was made between the Imperial German Government and the Norddeutscher Lloyd in 1885, and the service was inaugurated in July, 1886, with the steamer *Salier*. The service afforded by German vessels was, of course, discontinued on the outbreak of hostilities in Europe in 1914.

(iii) *Route via Vancouver and Canadian-Pacific Railway.* During the year 1893 a direct monthly service was started between Sydney and Vancouver, in British Columbia, via Wellington in New Zealand, and thence to Liverpool via the Canadian-Pacific Railway, the New South Wales Government paying an annual subsidy of £10,000 for the maintenance of this service for a period of three years. In 1896 the agreement was renewed for a further period of three years, and in 1899 was again renewed for four years, subject to the same terms and conditions, except that the route was via Brisbane instead of Wellington. The contract was further extended, at an increased subsidy, from time to time until the 31st July, 1911, at a subsidy of £26,626 per annum. This subsidised service has now been discontinued. Mails for Canada are forwarded via New Zealand through Sydney at poundage rates.

(iv) *Other Ocean Mail Services.* In addition to the mails via the Suez Canal, a number of other services, both regular and irregular, are maintained between the Commonwealth and various parts of the world, and also between the principal ports in the various States and a number of small ports in the less settled parts of the Commonwealth which are inaccessible by rail. The following statement gives a summary, in so far as returns are available, of all mail services maintained between the Commonwealth and other countries and between ports in the Commonwealth. The amounts of subsidies specified are the amounts payable per annum unless otherwise stated :—

SUMMARY OF COMMONWEALTH MAIL SERVICES, 1919.

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
1. <i>To and from Europe, via Suez—</i> (a) Orient Steam Navigation Co.	Irregular intervals	Adelaide, Fremantle and London, via Suez	Subsidised. Date of agreement, 15th Nov., 1907. Term, from Feb., 1910. Amt. of subsidy, £170,000
(b) Peninsular and Oriental S.N. Co. Ltd.	"	" " "	Poundage rates

SUMMARY OF MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
2. <i>To and from Europe, via Vancouver</i> (1)— Union Steamship Co. . .	Every four weeks	Sydney and Vancouver, B.C., via Auckland, Fiji, Honolulu, and once every four weeks to Fanning Island	Poundage rates
3. <i>To and from Europe, via San Francisco</i> — (a) Union Steamship Company	"	Sydney, Wellington, and San Francisco	Subsidised by New Zealand Govt. Mails from Aust. at Postal Union rates
(b) Oceanic Steamship Co. . .	Every three weeks	Sydney, 'Apia, Honolulu, and San Francisco	Poundage rates
4. <i>To and from New Zealand</i> — (a) Conjointly by Union S.S. Co. and Huddart, Parker Ltd.	Weekly	Sydney and Wellington, Sydney and Auckland	" "
(b) Other steamers . . .	Irregularly, when convenient	Sydney, Wellington, Auckland, and Lyttelton	" "
5. <i>To and from ports in New South Wales</i> — (i) NORTHERN PORTS— (a) North Coast S.N. Co.	Weekly Twice weekly	Sydney, Macleay River Coff's Harbour, Clarence River, Byron Bay and Richmond River	" "
(b) Langley Bros. . .	Weekly	Sydney and Coff's Harbour	" "
(c) Cain's Co-operative S.S. Co.	Twice a month	Sydney and Port Macquarie	" "
(ii) SOUTH COAST PORTS— Illawarra and S. Coast S.N. Co.	Bi-weekly	Sydney, Montague Island	" "
6. <i>To and from Northern Ports of Queensland</i> — (a) Australian Steamships Limited	Weekly	Gladstone, Mackay, Bowen, Townsville, Cairns, Cardwell, Mourilyan, Innisfail, Port Douglas, and Cooktown	Subsidised by agreement dated 5th Dec., 1914, for three years. Extended two years from 5th Dec., 1917. Amount of subsidy, £17,950
(b) Australian United Steam Navigation Co. Ltd.	Once every four weeks	Brisbane, Normanton and Burketown, via Townsville, Cooktown, and Thursday Island	Subsidised by agreement dated 16th Jan., 1915, for five years. Amount of subsidy, £6,500. Frequency altered from once in three to once in four weeks from 4th Oct., 1917, and Subsidy reduced to £6,000.
(c) Other steamers . . .	Irregularly	Various . . .	Poundage rates
7. <i>To and from Ports in South Australia</i> — (a) Coast Steamship Co. Ltd.	Weekly	Port Adelaide and Kingscote	Subsidised to 31st December, 1919. Amount of subsidy, (a) £900; (b) £350; (c) 450; (d) £350
(b) " "	Twice a week	Port Adelaide and Edithburgh	
(c) " "	"	Port Adelaide and Stansbury	
(d) " "	"	Port Adelaide and Port Vincent	
(e) Adelaide Steamship Co. . .	Weekly	Port Adelaide and Port Lincoln	Subsidised for three years from 1st January, 1917. Amount of subsidy, £3,000
(f) Adelaide Steam Tug Co. . .	As required	Port Pirie and Hummocks Hill	Subsidised without agreement. Amount of subsidy, £120.

(1) Carries also mails to Canada and the United States.

SUMMARY OF MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
8. Western Australia—			
(i) TO AND FROM PORTS ON N.W. COAST—			
(a) State Steamship Service	Monthly ..	Fremantle and Derby ..	} Subsidised by agreement dated 28th February, 1913, for three years. Later extended to a date three months after expiration of war. Amount of subsidy, £5,500.
(b) " " "	Once each sixty days	Fremantle and Darwin ..	
(c) West Australian S.N. Co.	Fortnightly	Fremantle and Broome	Poundage rates
(d) Ausn. United S. Navigation and State S.S. Co. and Melbourne S.S. Coy.	Irregularly, during the cattle season	Fremantle, Derby, and Wyndham	" "
(ii) TO AND FROM PORTS ON S. COAST—			
(a) State Steamship Service	Fortnightly	Albany and Esperance ..	} Subsidised by agreement for three years, dating from 1st July, 1918. Amount of subsidy, £1,500
(b) " " "	About every eight weeks	Albany and Israelite Bay	
(c) " " "	Every six months	Albany and Eucla ..	
9. Tasmania—			
(a) Union S.S. Co. and Huddart, Parker Proprietary	Three times a week	Melbourne and Launceston	} Subsidised by agreement dated 27th October, 1913, for five years from date on which a new steamer similar to <i>t.s. Loongana</i> is run on Launceston - Melbourne service. £13,000 only to be paid prior to running of new steamer and £15,000 thereafter
(b) " " "	Twice a week	Melbourne and Burnie	
(c) " " "	Weekly ..	Sydney, Hobart, and Wellington	Poundage rates
(d) Union Steamship Co. . .	Fortnightly	Sydney, Launceston, and Devonport	" "
(e) To and from ports in Western Districts	Weekly . . .	Hobart and Strahan ..	" "
(f) Holyman and Sons Ltd.	" ..	Melbourne, Burnie, etc	" "
(g) Huon Channel and Peninsular Co.	Twice a week	Hobart and Kelly's Point, via Pearson's Point	Subsidised by agreement dated 1st January, 1919, for three years. Amount of subsidy, £40 per annum
(h) C. A. Coghlan	Every three weeks	Launceston and Furneaux group of islands	Subsidised by agreement dated 1st January, 1919, for three years. Amount of subsidy, £800 per annum, of which £300 contributed by State Government, contract terminable by month's notice either side
(i) King Island Steamers Ltd.	Fortnightly	Launceston and King Island	Subsidised by agreement dated 1st January, 1919, for three years. Amount of subsidy, £300 per annum
10. To and from Northern Territory—			
(a) The Eastern and Ausn. and the China Navigation Co.	Irregularly	{ To and from Adelaide, Melbourne and Sydney, via Queensland ports, extending to China and Japan	} Poundage rates
(b) Burns, Philp and Co. . .	Monthly ..		
(c) Royal Dutch Packet S.N. Co	Irregularly	Melbourne to Darwin, via Queensland Ports <i>en route</i> to Java	" "
(d) State Steamship Service of Western Australia	Every two months	Fremantle and Darwin..	Subsidised by Western Australian Government

SUMMARY OF MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
11. <i>To Eastern Ports</i> —(1)			
(a) Burns, Philp and Co. . .	Monthly . .	Sydney, Sourabaya, Samarang, Batavia, and Singapore, <i>via</i> Queensland Ports	Subsidised by N.S.W. Govt. Mails at poundage rates
(b) China Navigation, Eastern and Ausn., and Burns, Philp Co.'s	About three times a month	Sydney to Hong Kong, Manila, etc., <i>via</i> Queensland Ports	Poundage rates
(c) Nippon Yusen Kaisha	Every four weeks	Sydney to Manila, China, and Japan, <i>via</i> Queensland Ports	Postal Union rates
(d) Royal Dutch Packet S.N. Co.	Irregularly	Melbourne to Java, <i>via</i> Sydney and Queensland Ports	Poundage rates
(e) Various other steamers	About monthly	Sydney or Newcastle and ports in Borneo, Java, Sumatra, and Malay Peninsula	" "
(f) W.A.S.N. Co. . .	Fortnightly	W.A. Ports, Java, and Singapore	" "
12. <i>South Africa</i> — White Star, P. and O. Branch Service, and other Companies	Irregularly	Various	" "
13. <i>North America</i> —			
(a) Various steamers . .	Irregularly	Sydney or Newcastle to San Francisco	" "
(b) " " . .	"	Sydney to Guaymas (Mexico)	" "
(c) Union S.S. Co. . .	13 voyages yearly	Sydney, Wellington, Tahiti and San Francisco	" "
(d) " " . .	Every four weeks	Sydney, Auckland, Fiji and Vancouver	" "
(e) Oceanic S.S. Co. . .	Every three weeks	Sydney, Samoa, Pago Pago and San Francisco	" "
14. <i>South America</i> — Oceanic S.S. Co. } Union S.S. Co. . . }	Four times a month	Sydney or Newcastle, <i>via</i> San Francisco to ports in Chile, Brazil, Peru, Uruguay, and Argentina	" "
15. <i>Pacific Islands</i> —			
(a) Burns, Philp and Co. . .	Every two months	Sydney to Lord Howe and Norfolk Islands and New Hebrides	Subsidised by Commonwealth at £31,050 per annum
(b) " " . .	Every eight weeks	Sydney to Nauru and Ocean Islands, Gilbert and Ellice Groups	
(c) " " . .	Every twelve weeks	Sydney to Marshall Islands	
(d) " " . .	Two sailings in five weeks	Sydney to Papua and Rabaul	
(e) " " . .	Every five weeks	Sydney to Rabaul . .	
(f) " " . .	Every seven weeks	Sydney to Solomon Islands	
16. <i>Noumea</i> —			
(a) Messageries Maritimes	Monthly . .	Sydney and Noumea and to Vila (New Hebrides)	Postal Union rates
(b) Other steamers . .	About fortnightly	Sydney and Noumea . .	Poundage rates
17. <i>Fiji</i> —			
(a) Union S.S. Co. . .	Every four weeks	Sydney and Suva . .	" "
(b) " " . .	"	Sydney, Auckland, Suva, Tonga and Samoa	" "
(c) A.U.S.N. Co. . .	"	Sydney and Suva . .	" "
(d) Burns, Philp and Co. . .	"	Sydney and Suva . .	" "

(1) Frequency of services not maintained owing to exigencies of war.

9. **Amount of Mail Subsidies Paid.**—The following table shews the amounts of subsidies paid by the Commonwealth Postal Department for ocean and coastal mail services during the year ended 30th June, 1918 :—

MAIL SUBSIDIES.—OCEAN AND POSTAL SUBSIDIES DURING YEAR 1917-18.

Service.	Orient S. N. Co.	Queensland Ports.	South Australian Ports.	Western Australian Ports.	Tasmanian Ports.
	£	£	£	£	£
Annual subsidy	9,193	23,950	5,050	7,513	(a)13,890

(a) Including £290 paid by Tasmania.

During the year 1917-18 the amount paid by the Commonwealth for conveyance of mails at poundage rates by non-contract vessels was £89,998 ; by road services, £469,582 ; and by railway services, £283,260. The total expenditure in 1917-18 on the carriage of mails, including the items and subsidies specified and sundry other payments, was approximately £900,000. The payment shewn for railway services scarcely represents the true position as certain sums due have been withheld pending a basis of settlement.

10. **Average and Fastest Time of Mails to and from London.**—Great progress has been made in regard to the means of postal communication with the United Kingdom and the continents of Europe and America. In 1857 there was an unsatisfactory ocean mail service, which nominally brought monthly mails, with news nearly sixty days old ; before the outbreak of the war there were three lines of modern ocean steamships, which brought the mails from the United Kingdom in about twenty-nine days to Adelaide, in addition to services by way of New Zealand, *via* San Francisco and Vancouver. Upon the arrival of oversea mails at Fremantle, letters for the eastern States and New Zealand are now landed, and the Australian letters are conveyed to their several destinations by rail. By landing at Fremantle instead of as formerly at Adelaide, a saving of approximately sixty-six hours is effected. It is probable that all future mails arriving by P. & O. and Orient steamers will be landed at Fremantle for despatch overland. In consequence of the war in Europe, steamers belonging to the Orient S. N. Co. were diverted from the Suez Canal to the Cape route, but arrangements are in train with a view to the partial resumption of both the Orient and P. & O. Companies' services by the Suez route at an early date. The subjoined table shews the average and the fastest times occupied in the conveyance of mails from London to Adelaide and vice versa during the year 1916-17. In 1917-18 the bulk of the mails was despatched *via* America.

AVERAGE AND FASTEST TIME OCCUPIED IN CONVEYANCE OF MAILS VIA SOUTH AFRICA AND SUEZ CANAL BETWEEN LONDON AND ADELAIDE, AND VICE VERSA, DURING 1916-17.

Service.	London to Adelaide.(a)				Adelaide to London.			
	Average Time.		Fastest Time.		Average Time.		Fastest Time.	
	Days.	Hours.	Days.	Hours.	Days.	Hours.	Days.	Hours.
Orient S. N. Co., <i>via</i> South Africa	44	20	40	6	49	19	41	7
Peninsular and Oriental S. N. Co., <i>via</i> Marseilles ..	41	15	33	14	41	11	33	22

(a) Letters for eastern States now landed at Fremantle.

At present a mail leaving Perth by train for the eastern States, say, at 5 p.m. on Monday, arrives at Adelaide at 3.37 p.m. on Thursday, at Melbourne at 9.55 a.m. on Friday, at Sydney at 10.45 a.m. on Saturday, and at Brisbane at 6.40 p.m. on Sunday. The time over all between Perth and Brisbane is 143 hours 40 minutes, of which the stops at changing stations take 18 hours 31 minutes. The journey from Melbourne to Hobart occupies about 26 hours *via* Launceston, and about 32 hours direct.

The average time occupied in the conveyance of mails from London to Sydney *via* Vancouver is a little over 37 days, and from Sydney to London by the same route nearly 35. A table showing the average and fastest times of this service was given in earlier issues (see Year Book No. 5, p. 766), but the discontinuance of the contract with the company operating between Australia and Vancouver renders the table no longer of value.

11. **Money Orders and Postal Notes.**—The issue of money orders and postal notes in the Commonwealth is regulated by sections 74 to 79 of the Post and Telegraph Act 1901. A money order may be issued for payment of sums up to £20 within the Commonwealth and not exceeding £40 (in some cases £30, £20, or £10) in places abroad. A postal note, which is payable only within the Commonwealth, cannot be issued for a larger sum than twenty shillings. Money orders are sent direct from the Commonwealth to the United Kingdom, and to most of the British colonies and possessions; to the British Solomon Islands Protectorate and the Gilbert and Ellice Islands Protectorates; to Italy; and to the United States of America. Money orders, payable in Japan and China, are sent *via* Hong Kong; orders payable in all other countries are sent through the General Post Office in London, where new orders are issued and forwarded to the addresses of the payees, less threepence for every £5, or part thereof. To secure the full amount of the original order being forwarded to the payee, this extra commission must be paid by the sender.

(i) *Value of Orders Issued and Paid and of Notes Sold.* The following table shews the total value of money orders issued and paid, and of postal notes sold in each State and in the Commonwealth during the year 1917-18, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department. The results under each head, with the exception of the value of postal notes sold and the poundage thereon, are in excess of the corresponding figures for 1916-17:—

**VALUE OF MONEY ORDERS ISSUED AND PAID AND OF POSTAL NOTES SOLD,
AND TOTAL AMOUNTS OF COMMISSION AND POUNDAGE RECEIVED IN EACH
STATE DURING 1917-18.**

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ..	4,595,389	4,574,808	27,558	1,397,636	27,702
Victoria ..	2,297,313	2,524,316	10,102	896,753	17,739
Queensland ..	1,661,485	1,372,629	11,907	400,250	7,878
South Australia ..	737,462	657,142	4,969	224,021	4,569
Western Australia ..	1,157,001	971,895	7,144	217,655	4,185
Tasmania ..	452,790	408,983	2,805	115,910	2,358
Commonwealth ..	10,901,440	10,509,773	64,485	3,252,225	64,429

(ii) *Rates of Commission on Money Orders.* The rates of commission chargeable for the issue of money orders are as follows :—

RATES OF COMMISSION, MONEY ORDERS.

If Payable in—	For sums—							
	Not exceeding £2.	Exceeding £2, but not exceeding £5.	Exceeding £5, but not exceeding £7.	Exceeding £7, but not exceeding £10.	Exceeding £10, but not exceeding £12.	Exceeding £12, but not exceeding £15.	Exceeding £15, but not exceeding £17.	Exceeding £17, but not exceeding £20.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Commonwealth of Australia	0 6	0 6	1 0	1 0	1 6	1 6	2 0	2 0
New Zealand and Fiji ..	0 6	1 0	1 6	2 0	2 6	3 0	3 6	4 0
Papua	0 9	0 9	1 6	1 6	2 3	2 3	3 0	3 0
United Kingdom and other countries ..	Sixpence for any amount up to £2 and 3d. for each additional £1 or fraction thereof							

Remittances may also be made by telegraph to and from money order offices in the Commonwealth which are also telegraph or telephone offices, and to New Zealand. The charge for a telegraph money order is the cost of the telegram of advice in addition to the ordinary commission. Where payment is to be made within the Commonwealth the remitter must also send a telegram advising the transmission of the money, which telegram must be produced by the payee when applying for payment. In the case of New Zealand a second telegram is not required, but an additional charge of sixpence is made by the Department to cover the cost of notifying the payee.

(iii) *Rates of Poundage on Postal Notes.* The values of the notes issued have been so arranged that any sum of shillings and sixpences up to £1 can be remitted by not more than two of these notes. The poundage or commission charged on notes of different denominations is as follows :—

POUNDAGE RATES, POSTAL NOTES.

Denomination of Note ..	6d. to 1s. 6d.	2s. to 4s. 6d.	5s.	7s. 6d.	10s. to 20s.
Poundage charged ..	½d.	1d.	1½d.	2d.	3d.

12. *Number and Value of Money Orders and Postal Notes Issued and Paid.*—The following table shows the total number and value of money orders and postal notes issued and paid in the Commonwealth during 1901 and from 1912 to 1917-18. The payment of military allotments by money order was chiefly responsible for the increase in business recorded in 1915-16. Payment of military allotments by this method was discontinued in 1916-17.

NUMBER AND VALUE OF MONEY ORDERS AND POSTAL NOTES ISSUED AND PAID, 1901 AND 1912 TO 1917-18.

Year.	Money Orders.				Postal Notes.			
	Issued.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1901 ..	1,318	4,193	1,339	4,081	3,515	1,292	3,522	1,293
1912 ..	1,822	7,417	1,557	6,886	8,608	3,259	8,533	3,235
1913 ..	2,091	8,750	1,814	8,133	9,425	3,551	9,341	3,527
1914 ..	2,062	8,858	1,823	8,326	9,881	3,680	8,893	3,671
1915-16 ..	(a)3,007	12,336	2,904	11,815	9,536	3,292	9,517	3,316
1916-17 ..	2,293	10,285	2,105	9,757	9,663	3,273	9,549	3,265
1917-18 ..	2,196	10,901	2,138	10,510	9,842	3,252	9,814	3,221

(a) Increases due to payment by money order of military allotments.

13. Classification of Money Orders Issued and Paid.—The following table shows the number and value of money orders issued in each State during the year 1917-18, classified according to the country where payable :—

MONEY ORDERS ISSUED IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY WHERE PAYABLE, 1917-18.

State in which Issued.	Where Payable.				Total.
	In the Commonwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales ..	804,021	16,593	68,716	14,763	904,093
Victoria ..	383,314	8,435	37,009	10,139	438,897
Queensland ..	313,754	2,839	29,009	3,108	353,710
South Australia ..	151,292	1,310	13,265	3,087	168,954
Western Australia ..	208,311	1,428	17,524	2,434	229,697
Tasmania ..	93,345	1,822	4,185	1,172	100,524
Commonwealth ..	1,954,037	32,427	169,708	39,703	2,195,875
VALUE.					
New South Wales ..	£ 4,289,526	£ 52,964	£ 179,423	£ 73,476	£ 4,595,389
Victoria ..	2,145,871	22,061	84,322	45,059	2,297,313
Queensland ..	1,513,653	8,758	77,613	61,461	1,661,485
South Australia ..	683,939	4,290	33,938	15,295	737,462
Western Australia ..	1,096,306	4,827	42,508	13,360	1,157,001
Tasmania ..	431,938	7,413	10,840	2,599	452,790
Commonwealth ..	10,161,233	100,313	428,644	211,250	10,901,440

The following table shews the number and value of money orders paid in each State during the year 1917-18, classified according to the country where issued :—

MONEY ORDERS PAID IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY OF ISSUE, 1917-18.

State in which Paid.	Where Issued.				Total.
	In the Commonwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales ..	896,466	29,579	14,416	11,254	951,715
Victoria ..	441,766	18,748	8,593	6,199	475,306
Queensland ..	273,949	2,088	4,122	2,294	282,453
South Australia ..	143,855	1,614	2,387	1,031	148,887
Western Australia ..	182,868	2,245	3,500	1,294	189,907
Tasmania ..	83,486	3,561	1,088	1,235	89,370
Commonwealth ..	2,022,390	57,835	34,106	23,307	2,137,638
VALUE.					
	£	£	£	£	£
New South Wales ..	4,384,387	95,791	48,655	45,975	4,574,808
Victoria ..	2,420,485	53,858	27,910	22,063	2,524,316
Queensland ..	1,343,371	7,537	14,021	7,700	1,372,629
South Australia ..	639,739	6,000	7,404	3,999	657,142
Western Australia ..	949,871	5,567	10,906	5,551	971,895
Tasmania ..	390,705	11,865	3,418	2,995	408,983
Commonwealth ..	10,128,558	180,618	112,314	88,283	10,509,773

In the above tables money orders payable or issued in foreign countries, which have been sent from or to the Commonwealth through the General Post Office at London, are included in those payable or issued in the United Kingdom.

14. Classification of Postal Notes Paid.—The subjoined table shews the number and value of postal notes paid during the year 1917-18 in each State and in the Commonwealth, classified according to the State in which they were issued.

Particulars regarding the total number and value of postal notes issued and paid during 1901, the first year after the inauguration of the Commonwealth, and for the last six years are given in paragraph 12 hereof.

NUMBER AND VALUE OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO STATE OF ISSUE, 1917-18.

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
NUMBER.							
Issued in same State ..	2,988,237	2,080,231	897,786	501,209	511,009	279,560	7,258,032
Issued in other States ..	340,240	361,835	71,264	60,135	22,070	1,700,354	2,555,898
Total ..	3,328,477	2,442,066	969,050	561,344	533,079	1,979,914	9,813,930

**NUMBER AND VALUE OF POSTAL NOTES PAID, CLASSIFIED ACCORDING
TO STATE OF ISSUE, 1917-18—continued.**

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	VALUE.						
	£	£	£	£	£	£	£
Issued in same State ..	1,090,582	681,955	312,096	156,187	189,741	89,031	2,519,592
Issued in other States ...	122,419	123,709	26,341	23,885	8,456	396,784	701,594
Total ..	1,213,001	805,664	338,437	180,072	198,197	485,815	3,221,186

15. **The Value Payable Post.**—This is a system under which the Postal Department undertakes to deliver registered articles sent by parcel post within the Commonwealth, or between Papua and the Commonwealth, and to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order, for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, and also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment. In addition to the ordinary postage, commission on the value of the articles transmitted at the rate of twopence on sums not exceeding ten shillings, and one penny for each additional five shillings or part thereof, must be prepaid by postage stamps affixed to the articles, distinct from the postage, and marked "commission." The registration fee (threepence) and the proper postage must also be prepaid. If the addressee refuse delivery, the parcel is returned to the sender free of charge. Any article that can be sent by parcel post may be transmitted as a value-payable parcel. Letters may also be sent as value-payable parcels, if prepaid at the letter rate of postage and handed to the parcels clerk, in the same manner as in the case of parcels. The subjoined statement gives particulars of the number and value of parcels sent through the Value Payable Post in each State during the years 1911 to 1917-18. From these figures it will be seen that the business in Queensland is in excess of the combined transactions of all the other States, owing to the fact that the system has been established in that State for some years, but was only extended to the whole Commonwealth with the advent of Federal control of the post office. The system has also found favor for a number of years in Western Australia, and the figures for 1917-18 furnish evidence that its popularity is rapidly growing in New South Wales. On the other hand the amount of business transacted under this head in Victoria, South Australia, and Tasmania continues negligible.

**VALUE PAYABLE PARCELS POST.—NUMBER POSTED, VALUE COLLECTED,
AND REVENUE, 1911 TO 1917-18.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF PARCELS POSTED.							
	No.	No.	No.	No.	No.	No.	No.
1911	9,198	1,142	37,803	195	21,391	66	69,795
1912	10,210	1,072	44,973	395	21,821	41	78,512
1913	12,175	1,691	39,434	255	22,335	8	75,898
1914	12,987	1,698	37,657	251	22,759	26	75,378
1915-16 ..	13,979	1,395	45,467	206	22,108	35	83,190
1916-17 ..	16,794	1,530	53,585	318	22,427	28	94,682
1917-18 ..	21,962	1,204	63,523	473	23,421	37	110,620

VALUE PAYABLE PARCELS POST.—NUMBER POSTED, VALUE COLLECTED,
AND REVENUE, 1911 TO 1917-18—*continued.*

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
VALUE COLLECTED.							
	£	£	£	£	£	£	£
1911	15,314	2,312	52,628	413	35,659	165	106,491
1912	13,053	2,160	53,061	827	37,307	92	106,500
1913	14,881	2,857	53,461	435	35,945	20	107,599
1914	20,181	3,412	51,205	872	36,972	27	112,669
1915-16	20,214	2,095	50,917	451	35,239	61	108,977
1916-17	24,268	2,704	74,418	463	35,496	56	137,405
1917-18	37,813	2,310	88,388	1,089	37,155	97	166,852

REVENUE, INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND MONEY
ORDER COMMISSION.

	£	£	£	£	£	£	£
1911	1,087	225	5,241	28	2,943	9	9,533
1912	1,147	143	5,418	54	3,027	6	9,795
1913	1,343	261	5,113	30	3,124	1	9,872
1914	1,618	304	4,901	47	3,108	3	9,981
1915-16	1,715	183	5,793	33	3,022	3	10,749
1916-17	2,154	190	6,779	39	3,060	4	12,226
1917-18	3,338	153	8,839	70	3,165	5	15,570

In 1905, the first year for which complete figures for the Commonwealth are available, the number of value-payable parcels posted was 24,920, of an aggregate value of £34,990. By 1917-18 the increase in number was 85,700 and in value £131,862. The States chiefly responsible for the increase are Queensland, Western Australia, and New South Wales. The average value collected on parcels in 1905 was £1 8s., and in 1917-18, £1 10s. These averages are fairly representative of the intervening years, the fluctuations throughout being inappreciable. The average value payable by the addressees in each State for the seven years 1911 to 1917-18 was in order of value South Australia and Tasmania £2 3s., Victoria £1 17s., Western Australia £1 12s., New South Wales £1 10s., and Queensland £1 6s. The average for the Commonwealth for the same period was £1 9s.

16. **Agricultural Produce Parcels Post.**—On the 1st July, 1914, the Postal Department, acting in conjunction with the Railway Department, inaugurated a system under which parcels of agricultural produce, fish, cut flowers, &c., might be transmitted at cheap rates from places in the country to persons living within six miles of the General Post Office, Melbourne. The service was introduced, by way of experiment, into the State of Victoria only, but as a loss of £3,000 per annum was incurred, the service has been discontinued.

17. **Transactions of the Dead Letter Office.**—Under sections 45 to 53 of the Post and Telegraph Act 1901, the Postmaster-General may cause to be opened all unclaimed and undelivered postal articles originally posted within the Commonwealth which have been returned from the places to which they were forwarded. Every unclaimed letter and postal article must be kept for the prescribed period at the office to which it has been transmitted for delivery, and must then be sent to the General Post

Office. Letters and packets originally posted elsewhere than in the Commonwealth are returned to the proper authorities in the country in which they were so posted, or, if originally posted in the Commonwealth are returned to the General Post Office in the State where posted; but unclaimed or undelivered newspapers may be forthwith sold, destroyed, or used for any public purpose. Opened postal articles not containing anything of value are returned to the writer or sender if his name and address can be ascertained, but may otherwise be destroyed forthwith. As regards an opened letter or packet containing valuable or saleable enclosures, a list and memorandum of the contents are kept, and a notice is sent to the person to whom the letter or packet is addressed if he be known, or otherwise to the writer or sender thereof if he be known. Upon application within three months of the date of such notice the letter or packet may be claimed by the addressee, or, failing him, by the writer or sender. If unclaimed within three months, the letter and contents may be destroyed or sold, and the proceeds paid into the consolidated revenue fund. The following table shows the total number of letters, postcards, and packets dealt with by the Dead Letter Offices in the Commonwealth during the year 1917-18, together with the number of inland, interstate, and international letters either returned to writers, delivered, destroyed, or returned as unclaimed.

The greater part of the Australian Expeditionary Force mails undelivered is dealt with by Military Dead Letter Offices attached to the Defence headquarters in the different States, and is not included herein.

TRANSACTIONS OF DEAD LETTER OFFICES IN THE COMMONWEALTH, 1917-18.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
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LETTERS (,000 OMITTED).

Returned to writers, delivered, etc...	609	482	263	157	258	76	1,845
Destroyed in accordance with Act	111	54	26	24	29	12	256
Returned to other States or Countries as unclaimed	117	57	50	22	30	14	290
Total	837	593	339	203	317	102	2,391

POSTCARDS (,000 OMITTED).

Returned to writers, delivered, etc...	5	7	5	9	19	2	47
Destroyed in accordance with Act	3	3	1	..	1	..	8
Returned to other States or Countries as unclaimed	4	2	1	1	1	..	9
Total	12	12	7	10	21	2	64

PACKETS (,000 OMITTED).

Returned to writers, delivered, etc...	418	65	88	23	144	3	741
Destroyed in accordance with Act	95	391	6	28	1	..	521
Returned to other States or Countries as unclaimed	18	8	31	14	10	5	86
Total	531	464	125	65	155	8	1,348
Grand total (letters, postcards, and packets)	1,380	1,069	471	278	493	112	3,803

18. Post Offices and Receiving Offices and Employees.—The following tables show the numbers of post and receiving offices and the corresponding numbers of employees in each State and in the Commonwealth at the end of the year 1901, and from 1913 to 1917-18 inclusive :—

NUMBER OF POST AND RECEIVING OFFICES, 1901 AND 1913 TO 1918.

State.	1901.		1913.		1914.		1915-16.		1916-17.		1917-18.	
	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.
New South Wales	1,684	524	2,025	571	2,049	574	2,074	566	2,040	548	2,031	548
Victoria	1,637	18	1,749	883	1,815	871	1,787	872	1,782	856	1,726	878
Queensland(a) ..	411	823	614	772	629	728	642	680	643	685	643	659
South Australia(b)	699	..	672	124	680	131	730	105	705	125	670	143
Western Australia	187	..28	398	146	418	158	431	182	412	206	407	212
Tasmania (b) ..	376	..	395	60	400	63	409	69	398	83	396	85
Commonwealth	4,904	1,393	5,853	2,556	5,991	2,525	6,082	2,483	5,980	2,503	5,873	2,525

(a) For the year 1901 the number of Receiving Offices is included in Post Offices in the official returns and separate figures here given are estimated. (b) The return for 1901 includes both Post Offices and Receiving Offices.

NUMBER OF EMPLOYEES(a) AND NUMBER OF MAIL CONTRACTORS, 1901 AND 1913 TO 1918.

State.	1901.		1913.		1914.		1915-16.		1916-17.		1917-18.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
New South Wales	5,636	984	10,823	2,376	11,131	2,512	13,166	1,899	12,902	1,915	12,884	1,972
Victoria	3,962	890	8,437	1,123	8,614	1,132	8,840	1,152	8,828	1,137	8,458	1,105
Queensland ..	2,616	..	4,134	812	4,343	813	4,051	806	4,442	801	3,959	794
South Australia	1,945	..	2,364	382	2,432	307	2,816	348	2,942	352	2,862	368
Western Australia	1,303	140	2,444	355	2,327	351	2,558	284	2,693	279	2,466	271
Tasmania ..	865	..	1,141	294	1,176	281	1,275	224	1,313	221	1,326	250
Commonwealth	16,327	2,014	29,343	5,342	30,023	5,896	32,706	4,713	33,118	4,705	31,957	4,760

(a) The figures in this table are exclusive of casual and exempt officers employed intermittently.

19. Gross Revenue of Postal Department.—The following table shows the gross revenue of the Postal Department for the years ended 30th June, 1902 and 1913 to 1918 inclusive, under three heads, viz., the Postal, the Telegraph, and the Telephone branches. In the Postal branch is included the revenue derived from money-order commissions, poundage on postal notes, private boxes and bags, and miscellaneous sources. The following figures and also those for expenditure are supplied by the Treasury and represent the actual collections and payments for the periods mentioned :—

GROSS REVENUE OF POSTAL DEPARTMENT, 1901-2 AND 1912-13 TO 1917-18.

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1902	1,743,662	(a) 629,199	(b)	2,372,861
1913	2,553,995	811,592	860,726	4,226,313
1914	2,680,944	834,316	996,047	4,511,307
1915	2,616,887	878,238	1,099,417	4,594,542
1916	2,938,837	893,904	1,220,855	5,053,596
1917	2,997,714	950,842	1,549,961	5,498,517
1918	2,992,559	1,031,885	1,731,278	5,755,722

(a) Including telephone revenue. (b) Included in telegraph revenue.

The following table gives an analysis of the actual collections of the Postal Department in each State and in the Commonwealth during the year ended 30th June, 1918 :—

ANALYSIS OF GROSS REVENUE OF POSTAL DEPARTMENT, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
Postage	1,028,649	750,878	376,406	225,380	150,274	92,447	2,624,034
Telegraphs	358,258	203,646	175,553	176,392	87,101	30,935	1,031,885
Telephones	706,919	474,328	251,496	152,230	99,140	47,165	1,731,278
Money order commission	55,635	27,941	19,165	9,118	11,330	5,218	128,407
Poundage on postal notes							
Private boxes and bags	13,581	6,340	7,174	3,938	2,473	1,414	34,920
Miscellaneous	64,809	53,880	26,413	17,778	31,007	11,311	205,198
Total	2,227,851	1,517,013	856,207	584,836	381,325	188,490	5,755,722

20. **Expenditure in respect of the Postal Department.**—The subjoined table represents the actual payments made as shewn by records kept for Treasury purposes in respect of the Postal Department in the Commonwealth for each of the years ended 30th June, 1902 and 1913 to 1918 inclusive. The figures given include certain items of expenditure, such as rent, repairs and maintenance of buildings, fittings and furniture, sanitation, water supply, new buildings and additions which are under the control of the Department of Home Affairs, and interest on transferred properties.

TOTAL EXPENDITURE IN RESPECT OF POSTAL DEPARTMENT, 1901-2 AND 1912-13 TO 1917-18.

Year	1901-2.	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
Expenditure	£ 2,478,796	6,435,039	6,597,123	6,315,744	6,366,431	5,879,768	5,678,145

The following table shews, as far as possible, the distribution of expenditure on various items in each State during the year ended 30th June, 1918. The table is not to be regarded as a statement of the working expenses of the Department, since items relating to new works, interest, etc., are included therein.

DISTRIBUTION OF EXPENDITURE OF POSTAL DEPARTMENT, 1917-18.

Particulars.	Central Office.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£	£
Salaries and contingencies—								
Salaries	18,889	1,078,971	683,562	344,156	230,671	222,229	81,767	2,660,245
Conveyance of mails		378,425	194,242	199,424	80,657	78,860	42,418	974,026
Contingencies	2,605	468,024	320,469	189,983	132,770	113,385	51,470	1,278,706
Cables	3,851	..	..	..	..	..	..	3,851
Ocean mails	9,808	..	..	..	..	..	..	9,808
Miscellaneous	466	6,461	4,680	2,234	1,271	482	459	16,053
Pensions and retiring allowances .. .. .	..	22,801	29,732	1,713	..	4,927	..	59,173
Rent, repairs, maintenance	95	26,974	16,377	6,752	3,380	5,446	929	59,953
Supervision of works .. ..	..	740	555	271	173	122	79	1,940
Proportion of Audit Office expenses .. .. .	..	1,055	791	386	247	173	115	2,767
Unforeseen expenditure .. ..	..	42	37	19	..	1	..	99
New works—								
Telegraph and telephone .. .. .	..	122,360	64,535	37,209	28,540	12,415	6,055	271,114
New buildings, etc. .. ..	..	13,633	11,629	295	2,151	26,137	4	53,849
Interest on transferred properties .. .. .	..	81,759	46,710	32,331	29,321	19,972	7,502	217,595
Purchase of sites .. .. .	..	..	..	..	..	..	..	(a) 2,808
Other .. .. .	..	..	..	..	..	..	..	(a) 66,158
Total	35,714	2,201,245	1,373,319	814,773	509,181	484,149	190,798	5,678,145

(a) Particulars of apportionment to each State not available.

21. **Balance Sheet of the Postmaster-General's Department.**—The first complete balance sheet and profit and loss account of the Postmaster-General's Department was presented in November, 1913, for the year ending 30th June, 1913. The balance sheet for the year 1917-18 as shown hereunder discloses the fact that the working of the Postmaster-General's Department for that year resulted in a surplus of £964,383, after providing for depreciation, pension and retiring allowances. From this amount must be deducted £577,001 for interest on capital, leaving a profit, the first on record, of £387,382.

Tables shewing the results of the working of the Department for the years 1914-15 to 1917-18 are appended:—

**GENERAL PROFIT AND LOSS ACCOUNT, POSTMASTER-GENERAL'S DEPARTMENT,
1914-15 TO 1917-18.**

Items.	1914-15.	1915-16.(b)	1916-17.(b)	1917-18.(b)
	£	£	£	£
Total earnings	4,620,061	5,049,569	5,515,769	5,773,954
Total working expenses	4,761,714	4,841,667	5,134,533	4,809,571
Deficit	141,653	(a)207,902	(a)381,236	(a)964,383
Interest on capital	488,069	523,892	558,382	577,001
Total deficit	629,722	315,990	177,146	(a)387,382

(a) Profit. (b) Excluding Wireless Telegraphy Branch, which was transferred to the Department of the Navy as from 1st July, 1915.

Although the revenue received in 1914-15 exceeded by £96,693 the amount received in 1913-14, the deficit on the year's working was greater than that of 1913-14 by no less than £128,266. A marked improvement was effected in 1915-16, the deficit for the twelve months being £315,990, a reduction of £313,732 as compared with the previous year. A still more satisfactory result was obtained in 1916-17 when the year's operations closed with a loss of only £177,146. All previous achievements, however, were eclipsed in 1917-18, for which period the statement of accounts, after providing for all contingencies, disclosed a profit, the first in the history of the Department, amounting to £387,382. The reasons furnished by the Department for the excess of expenditure over revenue in the years 1913-14 to 1916-17 were increases in wages and salaries, higher rates for the conveyance of inland mails, and increased prices for stores, etc., while in 1914-15 the prevailing drought and the effect of the war upon earnings were also contributing factors.

The following tables shew the yearly results of the working of the various branches, and the Department as a whole, and in each State from 1912-13 to 1917-18:—

**PROFIT OR LOSS OF THE VARIOUS BRANCHES OF THE POSTAL DEPARTMENT,
1912-13 TO 1917-18.**

Year ended 30th June—	Postal.		Telegraph.		Telephone.		All Branches.	
	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.
	£	£	£	£	£	£	£	£
1913 .. ..	..	23,132	164,108	..	221,757	..	a407,102	..
1914 .. ..	..	24,155	151,446	..	296,424	..	b501,457	..
1915	81,296	..	114,555	..	390,704	..	c629,722	..
1916 .. ..	..	42,131	86,426	..	271,695	..	315,990	..
1917	168,896	..	25,484	..	..	17,234	177,146	..
1918 .. ..	..	237,421	..	28,116	..	121,845	..	387,382

(a) Includes wireless £11,599, pensions and interest on assets £32,770. (b) Includes wireless £35,656 pensions and interest on assets £42,086. (c) Includes wireless £43,167.

In the period of six years covered by the foregoing table it will be observed that the operations of the Postal branch closed with a profit in each of the years 1913, 1914, 1916, and 1918, the Telephone branch in 1917 and 1918, and the Telegraph branch for the first time in 1918.

**PROFIT OR LOSS OF THE POSTAL DEPARTMENT IN THE VARIOUS STATES,
1914-15 TO 1917-18.**

State.	1914-15.	1915-16.		1916-17.		1917-18.	
	Loss.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.
	£	£	£	£	£	£	£
New South Wales ..	238,612	170,800	..	102,434	..	..	140,354
Victoria ..	32,555	..	59,412	..	86,330	..	177,805
Queensland ..	97,480	68,594	..	33,037	..	..	68,929
South Australia ..	7,226	..	34,446	..	31,969	..	104,868
Western Australia ..	224,065	154,874	..	146,909	..	102,409	..
Tasmania ..	29,784	15,580	..	13,065	..	2,165	..
Commonwealth	629,722	409,848	93,858	295,445	118,299	104,574	491,956

22. **Royal Commission on Postal Services.**—In 1908 a Royal Commission was appointed to report on the Postal, Telegraphic, and Telephonic services of the Commonwealth. An account of the work done by the Commission will be found in earlier issues of the Year Book. (See Year Book No. 6, p. 766.)

§ 2. Telegraphs.

1. **First Lines Constructed.**—The electric telegraph was first introduced into Australia for use by the public in the year 1854, when a line from Melbourne to Williamstown was opened. The first line in South Australia, from Adelaide to Port Adelaide, was opened in 1856, while the first line in New South Wales was brought into operation in 1858, when the line from Sydney to Liverpool, 22 miles in length, was opened. In Tasmania the first telegraph line was completed in 1857, while in the following year communication was established between Sydney, Melbourne, and Adelaide. The first lines to be constructed in Queensland were those between Brisbane and Warwick, and Brisbane and Lytton, distances of 169 and 12 miles respectively. These lines were working in 1861. In Western Australia the first telegraph constructed was from Perth to Fremantle, a distance of 12 miles, which was brought into use in 1869, and in the same year the cable joining Tasmania with the continent of Australia was completed.

2. **Development of Services.**—During the period from 1871 to 1881 great progress was made throughout Australia in the way of telegraphic construction, over 14,000 miles of line, exclusive of railway telegraph lines, being opened for use, making the total length of the line open at the end of the year 1881, 25,470 miles. At the present time the systems of telegraph lines throughout Australia are well developed. The longest line extends from Thursday Island, in Torres Strait, by submarine cable to Paterson, on the mainland of Cape York Peninsula; from Paterson the line runs in a southerly direction as far as Brisbane, where it joins the main interstate line to Sydney, Melbourne, and Adelaide; from Adelaide it runs to Port Augusta, then on to Port Lincoln, on Eyre's Peninsula, and thence to Eucla, on the Western Australia boundary; from Eucla the line extends along the coast of the Great Australian Bight to Albany, and thence it runs adjacent

to the west coast of Western Australia as far as Onslow, *via* Perth, Geraldton, and Carnarvon. From Onslow connection extends to Broome, in Roebuck Bay. From Roebuck Bay the line crosses the Kimberley district in an easterly direction, and then runs north as far as the terminus at Wyndham. In Queensland a line runs to Burketown, near the coast of the Gulf of Carpentaria, *via* Normanton; another line extends to Cloncurry and Urandangi, in the extreme west of the State. Branch lines extend to all important coastal and inland towns, while considerable networks of lines converge from the country districts towards the centres of population. From Adelaide the transcontinental line runs in a northerly direction to Darwin, from which place communication is provided with Europe by submarine cable by way of Batavia, Singapore, and Madras. In Western Australia a line runs from Eucla to the Coolgardie goldfields *via* Balladonia and Dundas, and from Coolgardie communication is provided with Perth, and with Sir Samuel in the East Murchison district.

3. Number of Telegraph Offices and Length of Lines and Wire Open.—The following table shews the number of telegraph offices and the length of telegraph lines and of telegraph wire available for use in the Commonwealth from 1915 to 1918 inclusive. It will be noticed that 74,682 miles of wire are available for both telegraph and telephone purposes :—

**NUMBER OF TELEGRAPH OFFICES AND LENGTH OF LINE AVAILABLE
FOR USE, 1915 TO 1918.**

Particulars.	1915.	1916.	1917.	1918.
Number of offices	5,812	6,119	6,189	6,196
Length of wire (miles)—				
Telegraph purposes only	71,680	62,224	62,804	62,981
Telegraph and telephone purposes	60,061	71,267	73,663	74,682
Length of line (miles)—				
Conductors in Morse cable	2,883	2,959	3,232	3,254
Conductors in submarine cable	1,080	1,196	1,680	1,708
Pole routes	57,424	58,889	59,706	59,849

The following table gives corresponding particulars for each State for the year 1917-18 :—

**NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE, IN
EACH STATE, 1917-18.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Number of offices	2,237	1,695	810	524	493	437	6,196
Length of wire (miles)—							
Telegraph purposes only	21,413	5,634	14,889	11,999	8,910	136	62,981
Telegraph and telephone purposes	28,963	15,934	12,446	5,389	6,823	5,127	74,682
Length of line (miles)—							
Conductors in Morse cable	695	2,108	416	..	21	14	3,254
Conductors in submarine cable	1,089	437	66	67	..	49	1,708
Pole routes	23,257	7,199	11,888	6,594	8,313	2,598	59,849

4. **Revenue and Expenditure.**—Particulars as to the revenue from the telegraph systems for the years 1902 and 1913 to 1918 are given on page 727.

5. **Number of Telegrams Despatched.**—The following table shows the total number of telegrams despatched to destinations within the Commonwealth in 1901 and in each of the years 1912 to 1917-18 inclusive :—

NUMBER OF TELEGRAMS DESPATCHED (,000 OMITTED), 1901 AND 1912 TO 1918.

Year	1901.	1912.	1913.	1914.	1915-16.	1916-17.	1917-18.
Number (a) ..	8,003	13,343	13,556	13,918	13,939	14,089	14,634

(a) Including interstate cablegrams.

The following table shows the number of telegrams despatched in each State in 1917-18 for delivery in that State, and the number despatched in each State for delivery in other States, and also the total number of telegrams—exclusive of cablegrams for places outside the Commonwealth—despatched in each State :—

NUMBER OF TELEGRAMS DESPATCHED IN EACH STATE, 1917-18 (,000 OMITTED).

State, etc. ..	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Inland	4,035	2,296	1,959	893	1,262	365	10,810
Interstate (a) ..	1,181	1,099	573	426	358	187	3,824
Total	5,216	3,395	2,532	1,319	1,620	552	14,634

(a) Including interstate cablegrams.

6. **Rates for Transmission of Telegrams.**—The present rates for the transmission of telegrams within the Commonwealth were fixed by section 7 of the Post and Telegraph Rates Act 1902, and came into force on the 1st November, 1902. Under this Act charges are made for telegrams according to whether they are "ordinary" or "press" telegrams. "Press" telegrams are defined to mean those the text of which consists of political, commercial, etc., information, and of news intended for publication in a newspaper. The telegram must be sent by an authorised correspondent, and must be addressed to a registered newspaper or recognised news agency. The subjoined tables shew the scales of charges :—

SCALE OF CHARGES FOR ORDINARY TELEGRAMS.

Particulars.	Town and Suburban, within Prescribed Limits, or within 15 miles from the Sending Station.	Other Places within the State, except Town and Suburban.	Interstate.
	s. d.	s. d.	s. d.
Including address and signature—			
Not exceeding 16 words	0 6	0 9	1 0
Each additional word	0 1	0 1	0 1

Double the foregoing rates are imposed for the transmission of telegrams on Sunday, Christmas Day, and Good Friday, and between the hours of 8 p.m. and 9 a.m., and for telegrams lodged for "urgent" transmission.

SCALE OF CHARGES FOR PRESS TELEGRAMS.

Particulars.	Within any State.	Interstate.	Relating to Parli- amentary, Executive, Departmental, and other Common- wealth Proceedings as may be prescribed.(a).
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Not exceeding 25 words	0 6	1 0	1 0
From 26 to 50 words	0 9	1 6	1 6
From 51 to 100 words	1 6	3 0	
Every additional 50 words	0 6	1 0	0 6

(a) Within the Commonwealth.

7. **Letter-telegrams.**—Commencing in February, 1914, the Postal Department instituted a system of letter-telegrams between all telegraph offices which are open between 7 p.m. and midnight. The letter telegrams are forwarded during the night by telegraph to the office of destination and are delivered as ordinary letters by the first letter delivery, or are despatched by mail to the address in the ordinary way. The rates charged throughout the Commonwealth are one shilling for the first 40 words, and one halfpenny for each additional word, double these rates being charged on Sundays. At the end of 1918 the service applied to 102 offices throughout the Commonwealth.

8. **Wireless Telegraphy.**—The information dealing with wireless telegraphy, which appeared in earlier issues of the Year Book, has, for the present, been discontinued.

§ 3. Submarine Cables.

1. **First Cable Communication with the Old World.**—In earlier issues of the Year Book will be found a detailed account of the connection of Australia with the old world by means of submarine cables. (See No. 6, p. 770.)

2. **The Tasmania-Victoria Cables.**—A submarine cable joining Tasmania to the continent of Australia was opened for use in 1869, the total length being 170 miles. The line was owned by the Eastern Extension Telegraph Company, and was subsidised by the Tasmanian Government until the year 1909. On the 28th February, 1908, the Postmaster-General entered into an agreement with Messrs. Siemens Brothers and Company Ltd., of London, for the manufacture and laying of two submarine cables between Tasmania and Victoria. The new cables were taken over on the 24th March, 1909, and opened to the public on the 1st May, 1909, the day following the expiration of the agreement with the Eastern Extension Company. Their aggregate length is

approximately 350 nautical miles of main cable, and 20 nautical miles each of intermediate and shore-end cable, making a total of 390 nautical miles. The contract price was £52,447.

3. The Eastern Extension Company's Cables.—In addition to the first Victoria-Tasmania cable and the original cable from Darwin (see Year Book No. 6, p. 770), the Eastern Extension Company has constructed several other cables connecting with various places in the Commonwealth. (a) In 1879 the original cable *via* Banjoewangie was duplicated, the States of New South Wales, Victoria, South Australia, Western Australia, and Tasmania having agreed to pay the above company a subsidy of £32,400 per annum for a period of twenty years, the amount to be divided between the States on a population basis. (b) In 1881 a cable was constructed connecting Broome, in Roebuck Bay, W.A., with Banjoewangie, and remained in operation until 1914, in which year it was taken up. (c) In July, 1899, the company offered to lay a cable direct to Great Britain *via* the Cape of Good Hope, and also offered reductions in the rates charged, if the States would agree to certain conditions giving the company the right of direct dealing with the public. The States of South Australia, Western Australia, and Tasmania accepted the terms offered, and New South Wales entered into the agreement in January, 1901. The cable was opened *via* Fremantle and Durban in October, 1901. (d) Another submarine cable from Fremantle to Adelaide forms an alternative line of communication between the eastern States and Western Australia. (e) There is an alternative route, partly belonging to the Eastern Extension Company and connecting the Port Darwin-Singapore cable with London, *via* Hong Kong, Shanghai, Possiet Bay (Pacific Russia), Libau (Russian Baltic), and Newbiggin (England). (f) In 1909 a cable was laid from Java to Cocos Island, thus affording another route from Australia to South Africa, whilst in April, 1911, a radio-telegraphic station was opened at Cocos Island, thus strengthening the line of communication between Australia and the East.

4. The Pacific Cable.—In July, 1898, a conference of representatives of Great Britain, Canada, New South Wales, Victoria, Queensland, South Australia, and New Zealand was held for the purpose of considering a project for a cable to be laid across the Pacific Ocean, touching only British territory on its way from Australia to Canada, thus providing an "All Red" route, as it is termed, for a cable system between England and Australia. In the following year it was agreed at a meeting held by representatives of the countries interested that the cable should be laid and that Great Britain and Canada should each pay five-eighteenths of the cost, and the States of New South Wales, Victoria, Queensland, and the Dominion of New Zealand should each pay one-ninth. The construction and management of the cable were placed under the control of a Board composed of seven members—two each from Great Britain, Canada, and Australia, and one from New Zealand—called the Pacific Cable Board. The Australian shore-end of the cable was landed at Southport, Queensland, in March, 1902, and the cable was completed on the 31st October, 1902, and opened for traffic on the 7th December of the same year. There are cable stations at Norfolk Island, Fiji, and Fanning Island, and a branch cable runs from Norfolk Island to New Zealand. In 1910 the Board leased a wire from Bamfield, British Columbia, to Montreal, thus extending the Pacific cable system from Queensland to Montreal. The traffic is then carried across the Atlantic to the United Kingdom by the cables of the Anglo-American and Commercial Companies. The receipts for the year ended 31st March, 1918, after providing for working expenses, interest, sinking fund, etc., shewed a surplus of £25,393, of which the Commonwealth's share is £8,464. The excess of receipts over expenditure for the financial year ended 31st March, 1918, was greater by £21,162 than for the previous year. The comparison would be much more in favour of 1918 but for the fact that the amount contributed to the renewal fund was £137,000 as against £90,000 in 1917. It is recognised that the expenditure on renewals, etc., must continue to be much greater than before the war. As in the two previous years, the surplus must be applied in reduction of the outstanding balance of the original loan of £2,000,000 in accordance with the Pacific Cable Act of 1901. The following table shews particulars of the revenue, expenditure, total profit or loss, and the proportion of the loss payable by the Commonwealth for the financial years 1903 and 1911-15, and the proportion of profit credited to the Commonwealth for the years 1916-18.

**REVENUE, EXPENDITURE, AND PROFIT OR LOSS ON WORKING OF PACIFIC
CABLE, 1903 AND 1911 TO 1918.**

Year ended the 31st March—	Revenue.	Expenditure (including Annuities and Renewal Fund).	Profit or Loss.	Commonwealth Proportion of Loss, or Profit.(a)
	£	£	£	£
1903 ..	..	..	Loss 90,518	Loss 30,514
1911 ..	138,678	186,888	.. 48,210	.. 16,071
1912 ..	159,150	199,649	.. 40,499	.. 13,500
1913 ..	167,901	200,171	.. 32,270	.. 10,757
1914 ..	197,848	217,798	.. 19,950	.. 6,650
1915 ..	225,045	232,961	.. 7,916	.. 2,638
1916 ..	310,516	292,592	Profit 17,924	Profit 5,975
1917 ..	336,774	332,543	.. 4,231	.. 1,410
1918 ..	411,061	385,668	.. 25,393	.. 8,464

(a) To 30th June in each year.

5. **New Zealand Cables.**—A submarine cable joining New Zealand to the Australian Continent was laid in 1876. The line is 1,191 miles in length. The Australian shore-end of the cable is at Botany Bay, while the New Zealand terminus is at Wakapuaka, near Nelson, in the Middle Island, from which place another cable, 109 miles in length, is laid to Wanganui, in the North Island. For a period of ten years after its opening the cable was subsidised by the New South Wales and New Zealand Governments, the total contributions amounting to £10,000 a year. The branch from Norfolk Island to New Zealand of the Pacific cable was opened on the 23rd April, 1902. The length of this cable is 597 miles, the New Zealand terminus being at Doubtless Bay in the north of the North Island. During 1911 a scheme to lay a second cable between New Zealand and Australia (Auckland to Sydney) was adopted by the various Governments concerned, and the laying of the new cable was completed on the 24th December, 1912, the cable being opened for traffic on the 31st December, 1912.

6. **The New Caledonian Cable.**—In April, 1892, a French company, known as the Compagnie Française des Câbles Télégraphiques, entered into an agreement with the French, the New South Wales, and the Queensland Governments to lay down a submarine cable between New Caledonia and Queensland in return for guarantees by the French Government to the extent of £8,000, and by the Governments of New South Wales and Queensland to the amount of £2,000 each annually for a period of 30 years. The cable was opened for use in October, 1893, the Australian shore-end being at Burnett Heads, near Bundaberg. The guarantees of the Governments of New South Wales and Queensland have now been transferred to the Commonwealth Government.

7. **Number of Cablegrams Received and Despatched.**—The subjoined table shows the number of cablegrams received and despatched in the Commonwealth from 1915–16 to 1917–18 :—

**CABLEGRAMS RECEIVED AND DESPATCHED, COMMONWEALTH,
1915–16 TO 1917–18.**

Particulars	Cablegrams Received.			Cablegrams Despatched.			Total Cablegrams Received and Despatched.		
	1915–16.	1916–17.	1917–18.	1915–16.	1916–17.	1917–18.	1915–16.	1916–17.	1917–18.
Number ..	437,151	533,055	522,746	387,402	392,381	407,293	824,553	925,436	930,039

The following table shows the total number of cablegrams received and despatched in each State during the year 1917-18. The figures given are exclusive of interstate cablegrams, which are classed as interstate telegrams (see § 2 hereof) :—

**NUMBER OF CABLEGRAMS RECEIVED AND DESPATCHED IN EACH STATE,
1917-18.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.(a)	C'wealth.
Number received ..	251,919	169,047	35,818	30,692	23,052	12,218	522,746
Number despatched	192,467	137,758	25,813	21,331	22,045	7,879	407,293
Total ..	444,386	306,805	61,631	52,023	45,097	20,097	930,039

(a) Exclusive of interstate cablegrams, which are included with interstate telegrams (see § 2 ante).

8. Lengths of Cable Routes.—The following table gives the lengths of various cable routes :—

LENGTHS OF CABLE ROUTES.

<i>Via Darwin.</i>		<i>Via South Africa.</i>	
	Miles.		Miles.
Adelaide to Darwin ..	2,134	Perth to Mauritius ..	4,417
Darwin to Banjoewangle ..	1,150	Mauritius to Durban ..	1,786
Banjoewangle to London ..	9,841	Durban to Cape Town ..	800
		Cape Town to Madeira ..	5,715
		Madeira to Penzance ..	1,341
		Penzance to London ..	260
Total ..	13,125	Total ..	14,319
<i>Via Vancouver.</i>		<i>Via Russia.</i>	
	Miles.		Miles.
Southport (Queensland) to Norfolk Island ..	963	Sydney to Darwin ..	2,992
Norfolk Island to Suva (Fiji) ..	1,129	Darwin to Hong Kong ..	4,237
Suva to Fanning Island ..	2,351	Hong Kong to Possiet Bay ..	2,647
Fanning Island to Bamfield (Canada) ..	3,980	Possiet Bay to Libau ..	6,399
Across Canada ..	3,450	Libau to Newbiggin (England) ..	1,657
Canada to Ireland ..	2,450		
Total ..	14,323	Total ..	17,932

9. Cable Rates.—In 1872 the cable rate to England was nine guineas for twenty words, but when word rates were brought into general use in 1875, the rate between Great Britain and Australia was fixed at ten shillings and sixpence, subsequently altered to ten shillings and eightpence. In 1886 the Eastern Extension Telegraph Company reduced the rate to nine shillings and fourpence a word for ordinary messages, to seven shillings and a penny for Government messages, and to two shillings and eightpence a word for press messages. At a conference of the postal and telegraphic authorities held in March, 1891, the proposal to reduce the rates to four shillings a word for ordinary messages, three shillings and eightpence for Government, and one shilling and tenpence for press messages was agreed to, the States of New South Wales, Victoria, South Australia,

Western Australia, and Tasmania undertaking to make good half the loss which the Eastern Company might suffer through such reductions. The States guaranteed to the company one-half of the amount of receipts short of the sum of £237,736—the amount received by the company in 1889 in respect of cable charges—the other half to be borne by the company. The Government of South Australia was also guaranteed by the other contracting States against any loss to the revenue which the lower cable rates might cause in the working of the overland lines. Queensland subsequently joined the other States in these guarantees. In 1893, however, owing to the heavy losses incurred, the rate for ordinary messages was increased to four shillings and ninepence per word, and at the same time New Zealand joined in the guarantees to the company and to South Australia.

(i) *Present Rates to Great Britain.* On the acceptance by three of the States of the terms offered by the Eastern Extension Telegraph Company for the construction of a cable *via* South Africa, the rate for ordinary messages was reduced in May, 1900, to four shillings a word. It was further reduced to three shillings and sixpence in January, 1901, and to three shillings in January, 1902, at which amount the standard rate for all routes for cablegrams to Great Britain has since remained. The scale for future reductions was to be based on a revenue standard and provided that the rate should be reduced to two shillings and sixpence per word, when the revenue averaged £330,000 per annum. In consequence of the abnormal conditions created by the war, which involved a large increase in expenditure, this provision has been abrogated, but its restoration is anticipated with a return to normal conditions. In September, 1912, the "through" charge for press cables was reduced from ninepence to sevenpence-halfpenny per word.

(ii) *Deferred Cablegrams.* With a view to affording additional cable facilities and to keeping the Pacific cable fully occupied during the whole 24 hours, proposals were made by the Postmaster-General's Department for the adoption of a system of deferred cablegrams. A meeting of representatives of the administrations and companies concerned was held in London in November, 1910, and the new rates came into force on the 1st January, 1912. Under this system a reduction of 50 per cent. in the charges is made, providing the message is written in plain language, and conveys no other meaning than that which appears on the face of it. Messages can only be transmitted after non-urgent private cablegrams and press cablegrams. Those which have not reached their destination within a period of 24 hours from the time of handing in are transmitted in turn with cablegrams charged full rate. They may be sent *via* the Pacific or Eastern routes to all countries to which the ordinary rate exceeds tenpence per word. The arrangement, previous to the war, extended to some 60 countries, and became very popular. In 1917-18, 6,000,531 words were transmitted to and from Australia, the Commonwealth revenue from this source amounting to £62,970, a slight decrease on the figures for 1916-17, but this decrease was due entirely to the suspension of the service for a considerable part of the year by the Pacific Cable Board. This service, together with that of the week-end cable letters, has affected the ordinary cable business to a large extent. Deferred press cablegrams, subject to a delay of eighteen hours, may be exchanged between the Commonwealth and the United Kingdom at the rate of fourpence halfpenny per word, and between the Commonwealth and Vancouver at the rate of one penny three farthings per word. Since the commencement of the war, it has been found necessary on several occasions, owing partly to the interruption to the Pacific cable from September to November, 1914, and partly to the pressure of other cable matter, to temporarily suspend the operation of the deferred cablegram service, as well as that of the week-end cable messages.

(iii) *Week-end Cable Letters.* The service of the week-end cable letters between the Commonwealth and the United Kingdom was introduced on the 4th January, 1913. Under this arrangement, messages written in plain language might be lodged at any post office in the Commonwealth or the United Kingdom in time to reach the forwarding cable office by post or telegraph by midnight on Saturday. The messages, which were deliverable by post on Tuesday morning, were charged at the rate of ninepence per word, plus ordinary telegraph rates if required to be forwarded by land telegraph in either the country of despatch or destination.

The system has since been extended to apply to messages between the Commonwealth and the Union of South Africa, India, Ceylon, Burma, Canada, Portugal, and Newfoundland. A further benefit has been conferred on users, as week-end cables to the countries enumerated may now be transmitted by telegraph throughout without extra charge. The rates to these countries and to the United Kingdom are shewn hereunder :—

RATES FOR WEEK-END CABLE LETTERS.

Country.	Rate per Word.	Minimum Charge per Telegram.
United Kingdom	9d.	15/-
Union of South Africa	7d. (plus $\frac{1}{4}$ d. for those lodged in Tasmania)	11/8
India, Ceylon, and Burma	7 $\frac{1}{2}$ d.	12/6
Canada (ordinary rate 2s. 4d.)	7d.	11/8
Other parts of Canada	8d. to 10d.	12/11 to 16/8
Newfoundland	8 $\frac{1}{2}$ d.	13/9
Portugal	9d.	15/-

Week-end cable letters may also be sent to the United Kingdom or Canada for transmission by registered post to other countries at an extra charge of 5d. per message. As in the case of deferred cablegrams, the pressure on the cables during the war has, on several occasions, necessitated the temporary suspension of this service.

(iv) *Rates to New Zealand.* As a result of the completion of the New Zealand branch of the Pacific cable in 1902, the rates charged for cablegrams between Australia and New Zealand, except to and from Tasmania, were uniformly reduced to fourpence-halfpenny per word. Between New Zealand and Tasmania the charge was fixed at fivepence-halfpenny a word, but it has since been reduced to fourpence-halfpenny. The charge for ordinary cablegrams from New Zealand to Great Britain was reduced from the 1st June, 1902, from five shillings and twopence to three shillings and fourpence a word, and has since been further reduced to three shillings a word.

10. *Subsidised Press Cable Service.*—In October, 1909, a Select Committee of the Commonwealth Senate was appointed to report upon the question of the supply, conditions of sale, and distribution, which control the Press Cable Service within and from outside the Commonwealth. A majority report of this Committee was issued in December, 1909, and recommended (a) the completion of an "All Red" cable route *via* Canada, (b) the conditional subsidisation of a press cable association, (c) the utilisation of the High Commissioner's office for the dissemination in Australia of Empire news, and (d) the amendment of the Copyright Act in regard to cables.

In accordance with the recommendations of this Committee the Commonwealth granted a total subsidy of £6,000, extending over a period of three years, to the Independent Press Cable Service, on the conditions that at least 6,000 cable words were supplied each week, to be sent *via* Pacific, and that any newspaper proprietary in the Commonwealth was permitted to become a subscriber at rates approved by the Government. This terminated on the 1st July, 1912, and a new arrangement was entered into under which the Commonwealth agrees to grant a subsidy of £2,000 per annum, providing that not less than 26,000 words are sent each month. This agreement has been extended for a period of three years from 1st October, 1916, with an annual grant of £1,500.

11. *Cable Subsidies Paid.*—The agreement between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. From the year 1895 onwards the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—were met by the receipts.

The following table shews the total amounts paid by way of cable subsidies for the years 1911-12 to 1917-18 :—

TOTAL AMOUNT OF CABLE SUBSIDIES PAID, 1911-12 TO 1917-18.

Year	1911-12.	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
Amount £	17,522	14,779	10,650	6,638	4,860	3,929	3,851

As the agreement in connection with the Tasmanian cable expired in 1909, and as new cables were laid by the Commonwealth Government, the guarantees were, in the course of the year 1910, reduced to those in connection with the New Caledonia and Pacific cables. The amount of cable subsidies paid by the Commonwealth in 1917-18 was £3,851 in respect of the New Caledonian cable guarantee.

§ 4. Telephones.

1. **Development of Telephone Services.**—The Postal Department has established telephone services in all the capital towns and in many of the important centres of population throughout the Commonwealth. Particulars as to the revenue from telephone services for the years 1902 and 1913-18 are given on page 727 *ante*.

2. **Telephone Rates.**—On the 10th December, 1915, revised charges for telephone services came into operation. Under the new scale, ground-rent for telephones is calculated on the number of subscribers connected with the exchange or network, instead of being based on the total population residing within the telephone network, as formerly. The smallest and greatest rental charges remain the same as under the old system, but between these a more gradual scale was introduced. Previously the charge for calls made by a subscriber was at the rate of two calls for one penny up to 2,000 calls per half-year; above that number, three calls for one penny. This charge was increased to one penny per call, without any progressive reduction. At the same time, the public telephone charge per call was increased from one penny to twopence. The charges mentioned in the table hereunder are payable for the different classes of telephone services specified therein :—

TELEPHONES.—RENTAL CHARGES, 30th JUNE, 1918.

Exchanges or Networks with Subscribers' Lines Connected, as shewn hereunder.	Radius of Network with Main Exchange as Centre.	Annual Ground Rent, within Two-mile Radius.		
		For an Exclusive Service.	For each Subscriber or Instrument on a Two-party Service.	For each Subscriber or Instrument on a Three or more party Service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 300	5	3 0 0	2 10 0	2 0 0
„ 301 to 600	5	3 5 0	2 10 0	2 0 0
„ 601 to 1,500	5	3 10 0	2 15 0	2 5 0
„ 1,501 to 4,000	10	3 15 0	3 0 0	2 10 0
4,001 and upwards	10	4 0 0	3 0 0	2 10 0

It is provided that for each effective call originating from a subscriber's instrument the charge shall be one penny.

3. Particulars of Telephone Services.—On 30th June, 1918, there were in the Commonwealth 147,509 telephone lines connected to 2,178 exchanges, as compared with 137,652 lines connected to 2,044 exchanges a year previously. The following tables show the mileage of lines, etc., for telephone purposes, shewing trunk lines separately, on 30th June, 1917 and 1918 :—

MILEAGE OF LINES, ETC., FOR TELEPHONE PURPOSES (EXCLUSIVE OF TRUNK LINES), 1917 AND 1918.

Particulars.	1917.	1918.
Conduits duct miles	2,297	2,433
Conductors in aerial cables loop mileage	40,306	38,747
Conductors in underground cables "	194,029	200,277
Conductors in cables for junction circuits "	23,673	25,117
Open conductors single wire mileage	169,383	177,185

MILEAGE OF WIRES, TELEPHONE TRUNK LINES, 1917 AND 1918.

Particulars.	1917.	1918.
Telephone trunk lines only Miles.	27,055	27,858
Telegraph and telephone purposes Miles.	73,663	74,682

Particulars relating to the telephone service in each State will be found in the following table :—

PARTICULARS OF TELEPHONE SERVICE, 1905, 1917, AND 1918.

Particulars.	Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
No. of Exchanges ..	1905	64	23	19	11	16	16	149
	1917	765	622	256	189	111	101	2,044
	1918	825	662	270	196	111	114	2,178
No. of lines connected ..	1905	14,338	9,269	3,864	2,335	(a)3,462	1,523	(a) 34,791
	1917	57,553	38,025	18,562	10,742	8,470	4,300	137,652
	1918	62,123	40,754	19,923	11,598	8,574	4,537	147,509
No. of instruments connected	1905	18,616	14,299	4,235	3,246	(a)4,357	1,751	(a) 47,004
	1917	72,884	51,820	22,616	14,521	10,760	5,136	177,737
	1918	78,886	55,839	24,421	15,780	10,995	5,454	191,375
No. of subscribers' instruments	1917	70,058	49,358	21,474	13,916	10,135	5,000	169,941
	1918	75,793	53,320	23,216	15,125	10,338	5,272	183,064
No. of public telephones ..	1917	1,421	1,278	748	402	328	106	4,233
	1918	1,521	1,321	793	421	329	74	4,459
No. of other local instruments	1917	1,405	1,184	394	203	297	30	3,513
	1918	1,572	1,198	412	234	323	103	3,852
Instruments per 100 of population	1905	1.3	1.2	.8	.9	1.9	.9	1.2
	1917	3.9	3.7	3.3	3.3	3.5	2.6	3.6
	1918	4.2	3.9	3.5	3.6	3.5	2.7	3.9
Earnings		£	£	£	£	£	£	£
	1917	648,850	447,120	231,180	137,579	94,219	44,159	1,603,107
1918	715,566	479,684	257,226	152,496	99,905	47,692	1,752,569	
Working expenses ..	1917	538,832	317,026	166,525	84,436	101,020	38,987	1,246,826
	1918	536,741	330,587	168,238	99,987	98,648	40,853	1,275,054
Percentage of working expenses to earnings	1917	%	%	%	%	%	%	%
	1918	83.04	70.90	72.03	61.37	107.22	88.29	77.78
		75.01	68.92	65.40	65.57	98.74	85.66	72.75

Note.—For 1905 the figures are shown as on 31st December, and for the subsequent years on 30th June (the close of the financial year). (a) Approximate.

The subjoined table gives the number of subscribers' lines and the daily calling rate at Central, Suburban, and Country telephone exchanges in the several States for the year 1917-18. Taking each class separately, New South Wales shows the highest average of central exchanges with 11.42 outward calls for each line, Western Australia of suburban exchanges with 5.01 calls, and Queensland of country exchanges with 2.92 calls. Queensland also ranks highest in the case of all lines, with an average of 4.58 calls.

NUMBER OF SUBSCRIBERS' LINES AND DAILY CALLING RATE AT TELEPHONE EXCHANGES, 1917-1918.

State.	Central Exchanges.		Suburban Exchanges.		Country Exchanges.		Total.	
	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.
New South Wales	9,444	11.42	27,372	4.36	25,307	1.73	62,123	4.36
Victoria ..	10,399	8.67	17,054	4.10	13,226	1.71	40,679	4.49
Queensland ..	5,366	8.73	2,511	3.69	12,046	2.92	19,923	4.58
South Australia..	6,375	4.64	1,772	5.00	3,312	.92	11,459	3.62
Western Australia	3,047	6.37	1,826	5.01	3,177	2.20	8,050	4.42
Tasmania ..	1,753	4.70	200	2.75	2,337	2.05	4,290	3.17
Commonwealth	36,384	8.30	50,735	4.28	59,405	1.96	146,524	4.34

SECTION XIX.

COMMONWEALTH FINANCE.

§ 1. General.

1. **Financial Provisions of the Constitution.**—The main provisions of the Constitution relating to the initiation and development of the financial system of the Commonwealth are those contained in Chapter IV., "Finance and Trade," being sections 81 to 105 of the Constitution Act. Two other sections which have a most important bearing on questions of Commonwealth finance are sections 69 and 51. For subsequent modification of, and addition to, the original clauses, the enquirer is referred to sub-sections 5 and 6 hereunder.

2. **Departments Transferred or Transferable under the Constitution.**—In section 69 it was provided that the Departments of Customs and Excise in each State should become transferred to the Commonwealth on its establishment, and that on a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments should become transferred :—

- (i) Posts, telegraphs, and telephones.
- (ii) Naval and military defence.
- (iii) Lighthouses, lightships, beacons and buoys.
- (iv) Quarantine.

Under proclamation dated 12th February, 1901, and published in the *Commonwealth Gazette* of the 14th of that month, the Departments of Posts, Telegraphs, and Telephones in each State became transferred to the Commonwealth as from the 1st March, 1901, while under a similar proclamation dated 19th February, 1901, and gazetted on the 20th, the Departments of Naval and Military Defence in each State also became transferred to the Commonwealth as from 1st March, 1901. In the case of Quarantine, an Act (No. 3 of 1908) has been passed and control was assumed by the Commonwealth on 1st July, 1909.

The requisite proclamation of transfer in the case of departments dealing with "Lighthouses, lightships, beacons, and buoys," was made so as to effect the transfer on 1st July, 1915, although legislation relative thereto was passed by the Federal Parliament very much earlier (Act No. 14, 1911).

3. **Departments Transferable by Means of Commonwealth Legislation.**—In addition to the departments here mentioned which pass to the Commonwealth either automatically or by proclamation, there are several others whose duties the Commonwealth is empowered to undertake after the passing by the Commonwealth of the legislation necessary to authorise the assumption of such duties. These are referred to in section 51 of the Constitution, which contains a statement of all matters respecting which power is (subject to the Constitution) conferred on Parliament "to make laws for the peace, order and

good government of the Commonwealth." The matters contained in this section include those already mentioned as being covered by section 69. The principal matters involving for the due performance of the duties connected therewith the creation or transfer of departments of the Public Service are:—

- (i) Trade and commerce.
- (ii) Taxation.
- (iii) Bounties on production or export of goods.
- (iv) Postal, telegraphic, telephonic, and other like services.
- (v) Naval and military defence.
- (vi) Lighthouses, lightships, beacons, and buoys.
- (vii) Astronomical and meteorological observations.
- (viii) Quarantine.
- (ix) Census and statistics.
- (x) Bankruptcy and insolvency.
- (xi) Copyrights, patents, and trade marks.
- (xii) Naturalisation and aliens.
- (xiii) Marriage.
- (xiv) Divorce and matrimonial causes.
- (xv) Invalid and old-age pensions.
- (xvi) Immigration and emigration.
- (xvii) Conciliation and arbitration.

4. Commonwealth Departments.—As a result of legislation passed from time to time in accordance with section 51, various departments and sub-departments have been transferred from the States to the Commonwealth, whilst other departments necessary for the due performance of the Commonwealth functions have been brought into existence. In the former class are such departments as those of Patents, Trade Marks, Copyrights, Designs, Naturalisation, and Meteorology, while in the latter are the Ministerial Departments of Treasury, Trade and Customs, Defence, Navy, Attorney-General, Postmaster-General, Home and Territories, and Works and Railways, as well as such general departments as Public Service Commissioner's Office, Audit Department, Crown Law Department, Bureau of Census and Statistics, Federal Taxation Office, Prime Minister's Office, and Interstate Commission. It may, therefore, be said that, so far as its financial aspect is concerned, the effect of Federation up to the present time has been the transfer from States to Commonwealth of the revenue obtainable from the great revenue-producing Departments of Customs and Excise, and of the expenditure connected with various departments, whose number is gradually increasing, and that, in addition, the various increasing functions of the Commonwealth have necessitated further new expenditure.

5. Financial Relations between Commonwealth and States.—For the first ten years after Federation the financial relations between the Commonwealth and State Governments were regulated by section 87 of the Constitution, known generally as the "Braddon Clause." This provided that the Commonwealth should, until 31st December, 1910—and thereafter so long as Parliament should decide—retain for its own use an amount not exceeding one-fourth of the net revenue from Customs and Excise duties, the balance being returned to the States. The framers of the Constitution only contemplated a moderate Federal expenditure, and doubtless considered that one-fourth of the

Customs and Excise revenue would be sufficient, as, indeed, it was in the earlier years. It began to be realised, however, later on, that if the Commonwealth was to undertake large national duties such as Defence, a greatly increased expenditure must be faced. Consequently, on the expiry of the "Braddon Clause" in 1910, it was replaced by an agreement much more favourable to the Commonwealth. This agreement, known as the "Commonwealth Surplus Revenue Act 1910" was passed by the Fisher Administration for a period of ten years, after which time it would be subject to revision. It provided that the Commonwealth was to retain the whole of the Customs and Excise revenue, and to make to the Government of each State (by monthly instalments) an annual payment equal to 25s. per head of the population of the State. The population of a State in any financial year was considered, for the purposes of this Act, to be the number estimated by the Commonwealth Statistician as existing in the State on the 31st December falling in that financial year.

In view of the early expiry of the "Commonwealth Surplus Revenue Act," the whole subject of the financial relations between Commonwealth and States was discussed at a conference of Commonwealth and State Ministers, held in January, 1919, at Melbourne. The Commonwealth Treasurer made the following tentative proposal as the basis of a new arrangement:—In 1920–21 the States were to receive 22s. 6d. per head of population, and in each succeeding year an amount diminishing by 2s. 6d. per head until 1925–26, when they would receive 10s. per head; then the arrangement would come up for further revision. This represents a further serious decline in the amount of the Commonwealth subsidy to the States, but it seems to be unavoidable in view of the heavy national commitments of the Federal Government. In fact the Commonwealth Treasurer foreshadowed a time when the States might have to make their way without Commonwealth assistance at all.

6. **Special Assistance.**—By the terms of the "Commonwealth Surplus Revenue Act" provision was made that, during the period of ten years succeeding 1st July, 1910, a special payment should be made to Western Australia of an annual sum, starting at £250,000 for the first year, and progressively diminishing by £10,000 each subsequent year. One half of the amount was to be debited to all the States (including Western Australia) in proportion to population.

Assistance has also been granted to Tasmania, partly by means of the "Tasmania Grant Act of 1912," and partly by means of a special sum allocated by the Budget of 1913. According to the "Grant Act" a sum of £500,000 was set aside to be paid to Tasmania by ten annual instalments, starting at £95,000, and progressively diminishing by £10,000 until £5,000 is reached. In the Budget of 1913 a further sum of £400,000 was allotted to Tasmania, to be paid in nine annual instalments, starting at £5,000 and progressively increasing by £10,000 until the last payment, which will, however, be £80,000 instead of £85,000. As the result of these two grants Tasmania will have a first annual instalment of £95,000, then eight instalments of £90,000 each, and a final one of £85,000.

These concessions to Western Australia and Tasmania were granted in consideration of the sacrifices made by these States, when yielding control of their Customs revenue to the Commonwealth. The whole question of the financial relations between the Commonwealth and States since Federation has been fully treated in the chapters on Commonwealth Finance in previous issues of the Year Book, up to and including No. 6.

7. **Accounts of Commonwealth Government.**—The Commonwealth Government, like the States Governments, operates nearly all its accounts by means of three funds, the Consolidated Revenue Fund, the Trust Fund, and the Loan Fund. The latter only came into existence in the financial year 1911–12, but on the outbreak of war became so important that it is now treated in two parts: a General Loan Fund mainly for purposes of Public Works, and a War Loan Fund for purely military purposes. The

accounts of these funds are now so interwoven that a proper conspectus of the Commonwealth Accounts can hardly be obtained by an analysis of each of them singly. Two tables are therefore appended, showing receipts and disbursements from all sources for the last five years. The different funds will then be treated in detail in the subsequent sections.

COMMONWEALTH RECEIPTS, 1913-14 TO 1917-18.

Heading.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Consolidated Revenue ..	21,741,775	22,419,798	30,762,216	34,067,434	36,839,868
Trust Funds in aid of Revenue ..	1,418,958	1,224,347	..	3,000,000	2,077,427
Total	23,160,733	23,644,145	30,762,216	37,067,434	38,917,295
General Loan Fund	2,100,000	2,058,201	2,859,341	..	1,803,447
Unexpended Balance of General Loan Fund from previous years ..	151,498	96,237	..	..	..
Total	2,251,498	2,154,438	2,859,341	..	1,803,447
War Loan Fund in aid of Revenue ..	..	(a)14,471,118	57,656,683	(b) 70,844,925	(c) 78,595,883
Grand Total	25,412,231	40,269,701	91,278,240	107,912,359	119,316,625

(a) Credited by the Treasury to Consolidated Revenue. (b) Including £20,233,115 unexpended balance from previous year. (c) Including £17,730,688 unexpended balance from previous year.

COMMONWEALTH EXPENDITURE, 1913-14 TO 1917-18.

Heading.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Expenditure from Consolidated Revenue	15,458,776	16,056,023	21,415,221	(b)25,719,588	26,573,674
Expenditure from Trust Funds ..	1,418,958	1,224,347	..	3,000,000	2,077,427
Subsidy to States	6,282,999	6,363,775	6,346,995	6,270,419	6,340,374
Balance paid into Trust Funds ..	..	..	3,000,000	2,077,427	3,925,820
Total	23,160,733	23,644,145	30,762,216	37,067,434	38,917,295
General Loan Fund Expenditure ..	2,155,261	2,154,438	2,859,341	..	1,803,447
Unexpended Balance from General Loan Fund	96,237	..	..	..	..
Total	2,251,498	2,154,438	2,859,341	..	1,803,447
War Expenditure from War Loan Fund .. ..	..	(a)14,471,118	37,423,568	53,114,237	55,095,109
Unexpended Balance from War Loan Fund .. ..	..	..	20,233,115	17,730,688	23,500,774
Total .. ..	..	14,471,118	57,656,683	70,844,925	78,595,883
Grand Total	25,412,231	40,269,701	91,278,240	107,912,359	119,316,625

(a) See footnote (a) to previous table. (b) Includes £371,118 repayment of advance from Notes Fund in 1914-15. See footnote (a) to previous table.

§ 2. Consolidated Revenue Fund.

(A) Nature of Fund.

The provisions made for the formation of a Commonwealth Consolidated Revenue Fund, and the means to be adopted for operating on that fund, are contained in sections 81, 82, and 83 of the Constitution. In section 81 it is provided that "All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution." A strictly literal interpretation of this section would appear to require all loan and trust moneys received by the Commonwealth Executive to be paid to Consolidated Revenue. It is, however, held by Quick and Garran, in their "Annotated Constitution," that the "generic word *moneys* must be controlled by the preceding specific word *revenues*, and limited to moneys in the nature of revenue." This is the view of the matter which has been adopted by the Commonwealth Treasury in the preparation of its accounts. At present certain moneys received by the Commonwealth, which are not of the nature of revenue, are paid to Trust Account. As regards expenditure from the Consolidated Revenue Fund, section 82 provides that the costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund should form the first charge thereon, while section 83 stipulates that "no money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law." Such appropriations are either special, and as such are provided for by means of a permanent Act, or are annual, and provided for in an annual Appropriation Act.

(B) Revenue.

1. **Total Collections.**—The consolidated revenue of the Commonwealth, which in 1901–2, the first complete financial year under the new régime, amounted to £11,296,985, had, in 1917–18, reached a total of £36,839,868, an increase in the period of £25,542,883.

Particulars concerning the total amount of revenue collected by the Commonwealth Government from 1st July, 1913, to 30th June, 1918, are contained in the following table:—

CONSOLIDATED REVENUE OF THE COMMONWEALTH, 1913–14 TO 1917–18.

—	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.
	£	£	£	£	£
Commonwealth ..	21,741,775	22,419,798	30,762,216	34,067,434	36,839,868

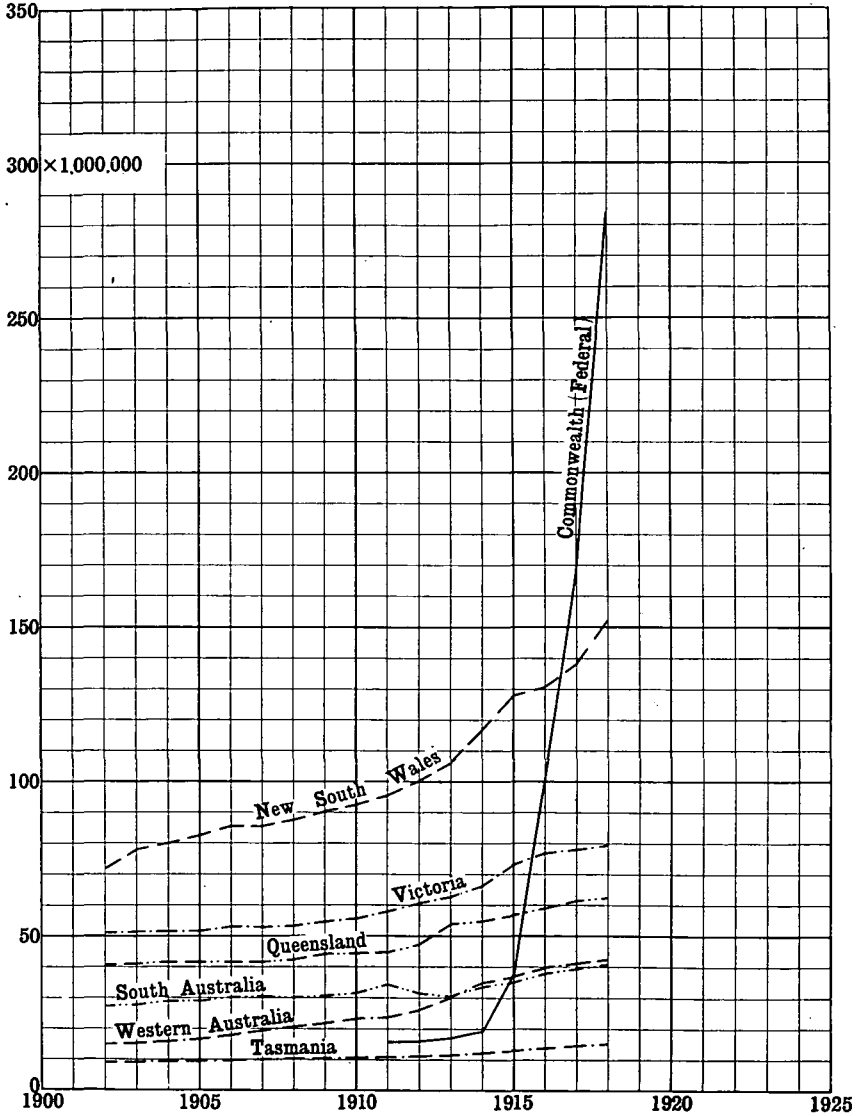
Since 1913–14 the revenue has increased steadily every year. In 1914–15 it was augmented by instalments, amounting to £14,100,000, of the War Loan from the British Government, and also by £371,118 Treasury Bills in aid of revenue. The great increase in the last three years is due to the large expansion in direct taxation, which will be dealt with in detail in a later section.

2. **Collections per Head.**—In the table given hereunder particulars are furnished of the amount of revenue per head of population collected in respect of the Commonwealth for the last five years:—

COMMONWEALTH REVENUE PER HEAD OF POPULATION, 1913–14 TO 1917–18.

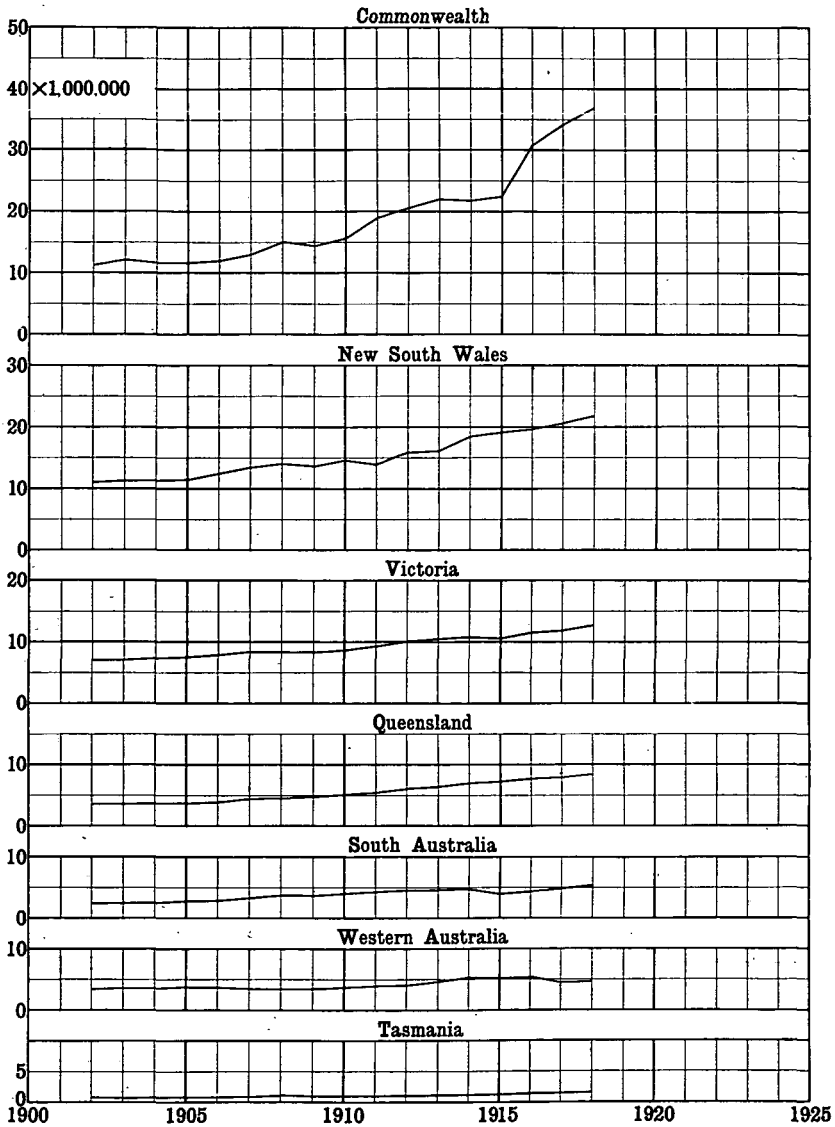
—	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Commonwealth ..	4 9 3	4 10 9	6 4 9	6 19 9	7 9 3

AUSTRALIAN PUBLIC DEBT—COMMONWEALTH AND STATES, 1901-2 TO 1917-18.



EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year, while the vertical height represents £10,000,000. The Commonwealth (Federal) debt commenced in the year 1911.

AUSTRALIAN CONSOLIDATED REVENUE—COMMONWEALTH AND STATES, 1901-2 TO 1917-18.



EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, while the vertical height represents £5,000,000. The zero lines in each case are marked thus "0."

3. Sources of Revenue.—The following table furnishes particulars concerning the Commonwealth revenue derived from each source during the years 1913-14 to 1917-18 :—

SOURCES OF COMMONWEALTH REVENUE, 1913-14 TO 1917-18.

Sources of Revenue.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Customs	12,652,737	12,105,698	13,610,684	12,373,664	9,486,555
Excise	2,325,333	2,771,556	3,323,419	3,236,623	3,737,757
Land Tax	1,609,836	1,953,696	2,040,436	2,121,952	2,123,779
Probate and Succession Duties .. .. .	..	39,646	626,215	1,062,168	947,232
Income Tax .. .. .	..	..	3,932,775	5,621,950	7,385,514
Entertainments Tax .. .. .	..	..	..	110,683	245,898
War-time Profits Tax .. .. .	..	..	..	..	680,008
Postal	4,511,307	4,594,542	5,053,596	5,498,517	5,762,190
Defence	22,936	219,152	881,115	478,326	384,114
Patents	22,393	17,165	15,487	15,167	15,671
Trade Marks, Copyrights and Designs	5,932	4,741	5,175	5,432	4,611
Quarantine	15,173	13,768	19,242	19,671	16,453
Coinage	208,348	208,515	359,720	354,276	229,378
Public Service Pension Funds, Repayments and Transfers	36,824	44,817	47,604	47,737	48,911
Northern Territory	54,777	53,026	64,780	40,650	39,621
Miscellaneous	270,179	393,476	781,968	3,080,618	5,732,176
Total	21,741,775	22,419,798	30,762,216	34,067,434	36,839,868

In addition to the new direct taxation, there was for some time a fairly steady return from customs and excise. In the last two years, however, there has been a striking fall in the customs returns, due probably to the diminution of imports caused by a scarcity of tonnage. The postal revenue has shewn a consistent upward tendency. The principal items included in the "Miscellaneous" are set out in detail on page 755.

4. Customs Revenue for Past Five Years.—Particulars for the Commonwealth as a whole, for the five years 1913-14 to 1917-18, are furnished in the following table :—

COMMONWEALTH CUSTOMS REVENUE, 1913-14 TO 1917-18.

Classes.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Stimulants	2,810,222	2,899,540	2,500,606	1,986,321	1,693,957
Narcotics	1,175,404	1,257,223	1,333,516	1,300,683	1,236,085
Sugar	209,375	60,403	587,028	453,380	51,119
Agricultural products	1,002,363	1,087,133	1,310,437	862,227	603,605
Apparel and textiles	2,514,170	2,302,764	2,902,012	3,197,778	2,393,518
Metals and machinery	1,672,125	1,638,416	1,572,536	1,404,705	1,000,943
Oils, paints, etc.	310,847	311,545	386,994	338,202	267,129
Earthenware, etc.	426,134	338,095	368,300	249,525	176,244
Drugs and chemicals	122,960	131,764	160,997	163,027	163,623
Wood, wicker and cane	553,843	455,860	365,969	277,396	203,430
Jewellery, etc.	272,214	253,290	335,147	325,718	279,785
Leather, etc.	470,382	428,106	505,652	498,874	346,073
Paper and stationery	234,504	269,443	346,158	419,323	299,330
Vehicles	343,633	303,868	499,140	429,077	322,344
Musical instruments	166,059	83,570	100,562	107,915	110,413
Miscellaneous articles	330,548	248,977	295,895	320,334	298,661
Other receipts	35,954	35,701	39,735	39,179	40,296
Total Customs	12,652,737	12,105,698	13,610,684	12,373,664	9,486,555

It will be seen that during the period here dealt with, the Customs revenue from stimulants and narcotics has represented, approximately, a proportion of the total

varying from one-fourth to one-third. The other principal articles from which Customs revenue was derived were "apparel and textiles," "metals and machinery," and "agricultural products."

5. Excise Collections, 1913-14 to 1917-18.—Particulars concerning the amount of Excise collected under each head during each of the years ending 30th June, 1914 to 1918, are given hereunder :—

COMMONWEALTH EXCISE REVENUE, 1913-14 TO 1917-18.

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Beer	792,243	1,205,001	1,485,543	1,387,115	1,703,888
Spirits	421,506	514,794	627,431	670,768	804,476
Sugar	179,149	1,508	(a)170	..	..
Tobacco	927,293	1,043,885	1,204,556	1,172,787	1,223,792
Licenses	5,142	6,368	6,059	5,953	5,601
Total Excise	2,325,333	2,771,556	3,323,419	3,236,623	3,737,757

(a) Debit.

Comparing the Excise collections for 1917-18 with those for 1913-14, it will be seen that the increase in the revenue from tobacco was about 30 per cent., the yield from beer was more than doubled, and that from spirits increased about 90 per cent., while the revenue from sugar has vanished, owing to the abolition of the Excise duties.

6. Commonwealth Direct Taxation.—(a) *General.* Under section 51, sub-section (ii) of the Constitution, power is given to the Commonwealth Parliament to make laws with respect to taxation, but so as not to discriminate between States or parts of States. Section 90 of the Constitution makes the power of the Commonwealth Parliament to impose Customs and Excise duties an exclusive one, but it would appear that as regards all other forms of taxation the States and Commonwealth possess concurrent powers. The question of the imposition by the Commonwealth Parliament of direct taxes such as land and income taxes is one which has been the subject of considerable discussion, and the opinion has been expressed that the intention of the framers of the Constitution was that of restricting the powers of taxation of the Commonwealth to the imposition of Customs and Excise duties except in case of great national peril. Whatever the intention of the framers may have been in this matter, the Constitution itself contains no such provision, and the Commonwealth Parliament is given an absolutely free hand in the imposition of taxation. Up to the end of the financial year 1909-10 the only taxes so levied were those of Customs and Excise, referred to in detail in the foregoing paragraphs. During the 1910 session of the Federal Parliament, however, an Act—assented to on 17th November, 1910—was passed, giving to the Commonwealth the power of levying a tax upon the unimproved value of all lands within the Commonwealth which were owned by taxpayers, and not specially exempted. Detailed reference to this Act will be found in Commonwealth Year Books Nos. 5 and 6. The Act No. 30 of 1918 increased the existing rates of land tax by 20 per cent.

(b) *Budget of 1914-15.* The fact stated in the previous paragraph, that there was nothing in the Constitution itself to restrain the Federal Government from entering the field of direct taxation, received further exemplification by the Budget of 1914-15. In the first place the Land Tax was raised by altering the graduation so that the increase in rate over the whole taxable value of the estate, for each succeeding pound of taxable value between £5,000 and £75,000, was one eighteen-thousand seven-hundred and fiftieth of a penny, instead of one thirty-thousandth of a penny, as hitherto. The maximum rate for resident owners became 9d. in the £ on estates whose taxable value was more

than £75,000. Corresponding increases in the rates payable by absentee owners were made, rising to a maximum of 10d. in the £ on estates whose taxable value is more than £80,000. These advances were estimated as likely to increase the annual yield of the Land Tax by £1,000,000. In addition to this substantial increase in an already existing tax, the Federal Government, for the first time, introduced Succession Duties on estates of deceased persons, in addition to those already imposed by the State Governments. The Commonwealth scale of succession duty, after starting by the exemption of all estates of less than £1,000, ranges from a minimum of 1 per cent. to a maximum of 15 per cent. on estates of a higher taxable value than £71,000. The rate of duty for any estate may be found by the following rule. Divide the number of thousands of pounds in the estate by five, and to the quotient thus obtained add $\frac{2}{3}$ per cent. in the case of an exact thousand, and $\frac{1}{2}$ per cent. in every other case. Thus for an estate of £43,000 the duty would be $9\frac{1}{2}$ per cent. (i.e. $\frac{43}{5} + \frac{2}{3}$), but for an estate of £43,001 the duty would be $9\frac{2}{3}$ per cent. (i.e. $\frac{43}{5} + \frac{1}{2}$). The succession duties thus outlined yielded £39,646 up to 30th June, 1915, an amount very much less than the estimate. It is probable, however, that sufficient account was not taken of the interval that frequently elapses between a person's death and the taking out of probate on the estate. This is borne out by the great increase in the yield in the more recent years. The respective contributions of the several States are as follows :—

COMMONWEALTH PROBATE AND SUCCESSION DUTIES, 1914-15 TO 1917-18.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£;
1914-15 ..	18,474	9,216	4,774	1,900	1,912	3,370	39,646
1915-16 ..	261,477	276,923	23,928	32,790 ^a	8,530	22,567	626,215
1916-17 ..	306,249	588,125	61,239	65,130	30,064	11,361	1,062,168
1917-18 ..	338,006	448,225	55,181	69,737	18,616	17,467	947,232

(a) Including Northern Territory, £164.

(c) *Commonwealth Income Tax.* (i) The first Commonwealth Income Tax was levied during the financial year 1915-16. The legislation on the subject comprised the Income Tax Assessment Act No. 34 of 1915, as amended by the Income Tax Assessment Acts Nos. 47 of 1915, 37 of 1916, 39 of 1916 and 18 of 1918. The rates are fixed for one year only, and in each financial year an Income Tax Act fixing the rate for that year is passed. Various estimates as to the probable yield in the first year were made, varying from £3,000,000 to £4,000,000, and the confidence of those who quoted the higher amount was justified by the result. The increased amounts collected in subsequent years are due to increases in the rates. The result of the first three years' collections was as follows :—

COMMONWEALTH INCOME TAX COLLECTIONS, 1915-16 TO 1917-18.

States.	1915-16.	1916-17.	1917-18:
	£	£	£
New South Wales	1,462,418	1,670,829	2,543,427
Victoria	1,476,690	2,547,222	2,847,448
Queensland	497,059	545,475	795,717
South Australia	245,063	433,446	612,225
Western Australia	185,003	314,374	433,703
Tasmania	66,183	108,837	149,947
Northern Territory	359	1,767	3,047
Total	3,932,775	5,621,950	7,385,514

- (ii) The principal exemptions are as follows :—
- (a) The salaries of the Governor-General and the various State Governors.
 - (b) Income derived from the different Commonwealth securities issued for the purposes of certain of the War Loan Acts 1915.
 - (c) The revenue of a municipal corporation or other local governing body.
 - (d) The income of religious, scientific or charitable institutions.
 - (e) The income of friendly societies, trade unions, or any associations registered under an Act for the settlement of industrial disputes.
- (iii) *Deductions.* The following deductions, amongst others, are allowed :—
- (a) All rates and taxes paid in Australia, exclusive of those paid under this Act.
 - (b) Life assurance premiums and fidelity guarantee payments not exceeding a total of £50.
 - (c) Payments not exceeding £50 to a friendly society, sustentation fund, superannuation, widows or orphans fund.
 - (d) Gifts exceeding £5 each to public charitable institutions, and contributions in cash or kind to a patriotic fund connected with the present war or to any public authority for repatriation purposes.
 - (e) The sum of £26 in respect of each child under sixteen years at the beginning of the financial year, wholly maintained by any taxpayer who is not an absentee.
- (iv) *Special deduction to a person (other than a company, an absentee, or a person who is not married and has no dependents) :*
- (a) The sum of £156 less £1 for every £3 by which the income exceeds £156.
- Special deduction to a person who is not married and has no dependents (not being a company or an absentee) :*
- (b) The sum of £100 less £1 for every £5 by which the income exceeds £100.
- When the total taxable income consists partly of income from personal exertion and partly of income from property, the deduction is to be made in the first place from the income from property and any excess is to be deducted from the income from personal exertion.
- (v) It is worthy of note that in the taxation of companies there is deducted from the income not only all the deductions already allowed for, but also so much of the income as is distributed to the members, or shareholders.
- (d) *Entertainments Tax.* This tax was to amount to 1d. for a ticket not exceeding 1s., and $\frac{1}{2}$ d. for each additional 6d., or part thereof. An exception was made in the case of payments not exceeding 3d. for the admission, on Saturdays between the hours of twelve o'clock noon and six o'clock in the afternoon, of children apparently under the age of twelve years.
- (e) *War Time Profits Tax.* This tax was recently passed by Parliament. It provides for a tax on the amount by which the profits made in the war-time financial year (1st July to 30th June following), exceeds the pre-war standard of profits, which may be either :—(a) the average profits of two of the three years before 4th August, 1917, or (b) 10 per cent. on the capital employed in a business. The tax in respect of profits derived in the financial year 1st July, 1915, to 30th June, 1916, was 50 per cent., and in all subsequent years 75 per cent. The collections up to 30th June, 1918, were £680,008, with £435,972 outstanding.

7. *Commonwealth Land Tax.*—Particulars as to the Land Tax assessment for each State for the year ending 30th June, 1917, the latest available return at the time of writing, will be found in the following table. Details in regard to rate of tax, etc., will be found in Year Books Nos. 5, 6.

PARTICULARS OF LAND TAX ASSESSMENT FOR EACH STATE OF THE COMMONWEALTH FOR THE YEAR ENDING 30th JUNE, 1917.

State.	Number of Taxable Returns.	Unimproved Value as ascertained by Department.	Tax Assessed.		
			Town.	Country.	Total.
		£	£	£	£
Central—					
Resident	1,446	36,378,682	291,337	376,493	667,830
Absentee	219	508,809	5,505	2,465	7,970
	1,665	36,887,491	296,842	378,958	675,800
New South Wales—					
Resident	4,740	72,613,655	252,092	434,926	687,018
Absentee	642	1,287,348	12,105	2,204	14,309
	5,382	73,901,003	264,197	437,130	701,327
Victoria—					
Resident	4,377	48,522,928	113,524	191,397	304,921
Absentee	704	1,119,776	11,989	3,976	15,965
	5,081	49,642,704	125,513	195,373	320,886
Queensland—					
Resident	1,123	13,616,557	28,446	73,026	101,472
Absentee	274	374,578	1,537	2,186	3,723
	1,397	13,991,135	29,983	75,212	105,195
South Australia—					
Resident	1,631	17,205,505	44,498	74,520	119,018
Absentee	320	371,250	2,666	675	3,341
	1,951	17,576,755	47,164	75,195	122,359
Western Australia—					
Resident	569	6,830,617	25,421	26,781	52,202
Absentee	1,052	445,150	2,350	962	3,312
	1,621	7,275,767	27,771	27,743	55,514
Tasmania—					
Resident	477	5,321,566	8,360	26,409	34,769
Absentee	300	238,217	528	941	1,469
	777	5,559,783	8,888	27,350	36,238
Grand Total—					
Resident	14,363	200,489,510	763,678	1,203,552	1,967,230
Absentee	3,511	4,345,128	36,680	13,409	50,089
	17,874	204,834,638	800,358	1,216,961	2,017,319

The foregoing table relates to the assessments for the latest year in regard to which figures are available. In addition to this, a further table is appended shewing the actual amounts received by the Treasury for five years, after the "central" returns have been allocated to each State.

COMMONWEALTH LAND TAX COLLECTIONS IN EACH STATE, 1913-14 TO 1917-18.

State.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
New South Wales ..	661,344	865,791	925,055	921,974	889,164
Victoria ..	669,724	751,870	760,205	822,946	844,872
Queensland ..	84,054	107,891	100,588	143,317	149,989
South Australia ..	113,373	133,522	154,689	150,670	145,852
Western Australia ..	51,233	55,983	61,485	47,365	58,743
Tasmania ..	30,108	38,639	38,414	35,680	35,159
Total	1,609,836	1,953,696	2,040,436	2,121,952	2,123,779

8. Details of Postal Revenue, 1913-14 to 1917-18.—Particulars concerning the postal revenue of the Commonwealth for each of the financial years from 1913-14 to 1917-18 are contained in the following table:—

COMMONWEALTH POSTAL REVENUE, 1913-14 TO 1917-18.

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Private boxes and bags ..	27,744	29,995	30,743	33,239	34,926
Commission—					
Money orders and postal notes	134,834	129,760	137,355	127,775	129,651
Telegraphs	834,316	878,238	893,904	950,842	1,032,318
Telephones	996,047	1,099,417	1,220,855	1,549,961	1,731,149
Postage	2,391,424	2,338,489	2,525,873	2,614,542	2,625,262
Miscellaneous	126,942	118,643	244,866	222,158	208,884
Total	4,511,307	4,594,542	5,053,596	5,498,517	5,762,190

9. Revenue from Patents.—Under the Commonwealth Patents Act 1903, which was assented to on 22nd October, 1903, and came into force on 1st June, 1904, the complete control of the Patents administration of Australia passed from the several State Governments to that of the Commonwealth, which, under section 19 (a) of the Act mentioned, was authorised to collect for each State the fees to which it was entitled under the State Act in respect of proceedings then pending.

The revenue collected since the financial year 1913-14 is shewn in the following table:—

COMMONWEALTH PATENTS REVENUE, 1913-14 TO 1917-18.

	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Revenue	22,393	17,165	15,487	15,167	15,671

10. Revenue from Trade Marks, etc.—Under the several Acts of the Commonwealth Legislature relating to trade marks, copyrights, and designs, the Commonwealth Government has assumed the exclusive administration of such matters, and now collects all revenue accruing therefrom. The following table gives particulars of the amounts received for the last five years:—

COMMONWEALTH TRADE MARKS, COPYRIGHTS AND DESIGNS REVENUE,
1913-14 TO 1917-18.

	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
Revenue	£ 5,932	£ 4,741	£ 5,175	£ 5,432	£ 4,611

11. Defence Revenue.—The revenue appearing under the head of “Defence” comprises the receipts derived from the sale of stores and clothing, from fines, etc., and for 1917-18 amounted to £384,114.

12. Coinage.—The revenue for the Commonwealth under this head is derived from the profit on coin issued, and is made up of £209,952 from silver coin and £19,426 from bronze coin.

13. Miscellaneous.—This includes a large number of items which cannot be conveniently allotted under any of the preceding heads. The outbreak of war has very largely increased the “miscellaneous” revenue by the profits of certain enterprises, controlled for the time being by the Federal Government. In the financial year 1917-18 no less an amount than £5,732,176 was available from this source, the principal contributing items being as follows:—Interest, discount, exchange, etc., £995,576; profit on sale of rabbit-skins, £301,000; profit on charter of vessels, £166,790; detained enemy vessels, £2,173,418; Commonwealth Government line of steamers—surplus earnings, £880,000; receipts from railways, £200,403; lighthouses and light dues, £108,556; unexpended balances of London orders, £186,149; and balance of Defence Trust Accounts, £250,310. As it is possible that many of these items will not re-appear in subsequent years, they have not been presented in tabular form.

(C) Expenditure.

1. Nature of Commonwealth Expenditure.—The disbursements by the Commonwealth Government of the revenue collected by it fell naturally, under the “book-keeping”* system, into three classes, viz. :—

- (a) Expenditure on transferred services.
- (b) Expenditure on new services.
- (c) Payment to States of surplus revenue.

Of these three, only the first two were actual expenditure, the last being merely a transfer, the actual expenditure being incurred by the States. In accordance with the provisions of the Constitution, the expenditure on transferred services was, under the “book-keeping” system, debited to the several States in respect of which such expenditure was incurred, while the expenditure on new services was distributed *per capita*. Surplus Commonwealth revenue was paid to the States monthly. During the earlier years of Federation, viz., until the end of the year 1903-4, new works, etc., for transferred departments were treated as transferred expenditure, and were charged to the States on whose behalf the expenditure had been incurred. In subsequent years all such expenditure

* For an exposition of the “book-keeping system” see Commonwealth Year Book No. 6, p. 780.

was regarded as expenditure on new services, and was distributed amongst the States *per capita*. Under the new system of keeping the accounts there is no further debiting of expenditure to the several States.

2. **Total Expenditure.**—The expenditure by the Commonwealth Government during the period 1913–14 to 1917–18 is shown in the following table :—

COMMONWEALTH EXPENDITURE, 1913–14 TO 1917–18.(a)

	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.
	£	£	£	£	£
Commonwealth	15,458,776	16,056,023	24,415,221	27,797,015	30,499,494

(a) Including balance paid into Trust Funds.

The largely increased expenditure of recent years is due partly to Old-age and Invalid Pensions, partly to fleet construction, and partly to such public works as the Trans-Australian Railway, Federal Capital, etc. In 1914–15 an additional amount of £14,471,118 was spent, made up of £14,100,000 war loan from the Imperial Government, and £371,118 Treasury Bills in aid of revenue. In 1915–16 the expenditure included £3,000,000 set aside for the purposes of Invalid and Old-age Pensions in subsequent years, and this item came to £2,077,427 in 1916–17 and £3,925,820 in 1917–18. These totals include amounts paid into Trust Funds, but exclude subsidy to States.

3. **Expenditure per Head.**—Particulars concerning the Commonwealth expenditure per head are furnished hereunder :—

COMMONWEALTH EXPENDITURE PER HEAD OF POPULATION, 1913–14 TO 1917–18.

	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Commonwealth	3 3 5	3 5 0	4 19 0	5 14 0	6 3 6

4. **New Works, etc.**—As previously mentioned, the Commonwealth expenditure on new works, etc., for transferred departments was, prior to 1904–5, included under the head of “transferred” expenditure, but in that and subsequent years up to 1909–10 was treated as “other” expenditure, and debited to the States *per capita*. Particulars of the expenditure on new works, etc., during the last six years are given in the following table :—

**COMMONWEALTH EXPENDITURE ON NEW WORKS FOR SIX YEARS,
1913 TO 1918.**

Year ended 30th June—	Defence.	Trade and Customs.	Postmaster- General.	Home Affairs.	External Affairs.	Treasury.	Prime Minister's Department.	Home and Territories.	Works and Railways.	Total.
	£	£	£	£	£	£	£	£	£	£
1913	1,258,277	51,272	1,088,022	186,345	65,290	4,076	..	..	..	2,653,282
1914	1,079,940	56,014	1,121,632	266,124	50,653	1,637	..	..	..	2,576,000
1915	1,520,684	66,338	831,828	217,784	30,647	6,396	..	..	..	2,673,939
1916	1,940,682	133,976	644,134	168,898	50,598	2,547	..	..	..	2,940,835
1917	1,765,253	201,419	590,770	(b)	(b)	2,085	120,591	293,836	1,314,793	4,288,747
1918	245,501	109,164	233,255	(b)	(b)	2,377	..	27,718	4,188	622,203

(a) Including £262 for Attorney-General's Department. (b) Merged into other Departments.

It will be seen that the Commonwealth expenditure under this head was very considerable up to 1916-17. The main cause of this heavy increase was the large expenditure on fleet construction, but in the year 1916-17 a very large expenditure was debited to the Works and Railways Department.

5. Cost of Departments, etc.—Arranged in such a manner as to shew under each Department the expenditure on behalf of that Department, the cost of the several branches of the Commonwealth service for the years 1913-14 to 1917-18 was as follows :—

COST OF COMMONWEALTH DEPARTMENTS, ETC., 1913-14 TO 1917-18.

Departments, etc.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Governor-General	17,815	24,750	23,535	25,279	26,893
Parliament	243,163	340,605	263,397	344,060	237,464
Prime Minister	82,847	56,642	60,790	155,797	234,568
External Affairs	678,974	595,178	840,199		
Attorney-General	82,442	78,466	86,164	94,195	96,930
Home Affairs	152,299	440,932	592,251		
Treasury	2,787,034	2,527,833	3,817,851	(b)1,545,923	(c)2,902,578
Trade and Customs	730,458	551,318	589,121	648,147	715,129
Defence	2,950,722	3,545,086	1,512,340	1,544,775	1,283,063
Navy			1,552,318	1,514,661	1,551,258
Postmaster-General	5,157,022	5,221,274	5,358,371	5,288,998	5,349,994
Home and Territories				484,274	468,701
Works and Railways				886,661	672,893
All other Expenditure	2,576,000	2,673,939	9,718,684	15,264,245	16,960,023
Total	15,458,776	16,056,023	24,415,221	27,797,015	30,499,494

(a) Exclusive of £14,471,118 spent from loans in aid of Revenue. (b) In addition £3,000,000 was spent on Invalid and Old-age Pensions from Trust Funds. (c) In addition £2,077,427 was spent on Invalid and Old-age Pensions from Trust Funds.

The expenditure in connection with the sugar bounties is mainly responsible for the variations which have taken place in the cost of the Department of Trade and Customs. The amount paid in Old-age and Invalid Pensions is included in Treasury expenditure for every year. The heading "all other expenditure" includes War Services since 1915-16. More detailed reference to the items included under the above general heads is furnished in the succeeding paragraphs.

6. Governor-General.—In section 3 of the Constitution it is enacted that, until the Commonwealth Parliament otherwise provides, there shall be payable out of the Consolidated Revenue Fund for the salary of the Governor-General an annual sum of ten thousand pounds, and a proviso is made that the salary of the Governor-General shall not be altered during his continuance in office. The total expenditure in connection with the Governor-General and establishment for the five years 1913-14 to 1917-18 is as follows :—

EXPENDITURE, GOVERNOR-GENERAL AND ESTABLISHMENT, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Salary	10,000	10,000	10,000	10,000	10,000
Governor-General's Establishment	5,118	5,573	4,365	5,079	6,351
(a) Contingencies	2,697	9,177	9,170	10,200	10,542
Total	17,815	24,750	23,535	25,279	26,893

(a) Represents official services outside the Governor-General's personal interests, and carried out in the main at the instance of the Government.

7. **Parliament.**—Under this head have been grouped all the items of expenditure connected with the Parliamentary government of the Commonwealth, including the salaries of the Ministers and the allowances to senators and members of the House of Representatives. Details for the five years 1913-14 to 1917-18 are furnished in the table given hereunder :—

EXPENDITURE, COMMONWEALTH PARLIAMENT, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Salaries of Ministers	12,000	12,000	13,597	13,650	14,901
Allowances to Senators	21,004	18,979	21,000	20,866	20,854
Allowances to Members of House of Representatives	43,745	39,556	43,132	39,072	42,796
Officers, staff, contingencies, etc. ..	36,703	36,347	37,746	36,771	39,583
Repairs, maintenance, etc.	2,808	4,411	6,085	1,988	1,518
Printing	20,078	21,429	17,817	18,997	16,864
Travelling expenses of Members and others	10,627	10,173	10,458	10,339	9,950
Insurance	342	342	342	342	342
Electoral Office	11,716	49,815	49,155	53,091	53,717
Election expenses	28,252	84,600	1,360	83,276	4,355
Referendum .. ..	..	..	21,334	77	..
Administration of Electoral Act ..	54,541	57,691	34,687	60,100	27,425
Miscellaneous	1,347	5,262	6,684	5,491	5,159
Total	243,163	340,605	263,397	344,060	237,464

In section 66 of the Constitution, provision is made that there shall be payable out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of Ministers of State, an annual sum which, until Parliament otherwise provides, shall not exceed £12,000. This was modified in 1915-16, when the Minister of the Navy was given separate Cabinet rank. Allowances to senators and members of the House of Representatives are also provided for in the Constitution, section 48 of which specifies that until Parliament otherwise provides, each such allowance shall consist of £400 a year, reckoned from the day on which the member takes his seat. During the second session of the Commonwealth Parliament in 1907 the question of allowances to members came under consideration, and an Act was passed raising the annual allowance from £400 to £600, such increase to date from 1st July, 1907. This provision is still in force.

8. **Prime Minister's Department.**—This was a new department created during the financial year 1911-12. In addition to the Prime Minister's Office it includes the Audit Office taken from the Treasury, the Executive Council taken from the External Affairs Department, and the Public Service Commissioner's Office taken from the Home Affairs Department. In 1916-17 it assumed control of the High Commissioner's Office in London, which was detached from the old External Affairs Department when the latter was merged in the Home and Territories Department. The expenditure for the last five years is shown in the following table :—

EXPENDITURE, PRIME MINISTER'S DEPARTMENT, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Salaries, contingencies, etc.	8,961	11,087	11,906	21,691	25,764
Executive Council	152	164	137	170	160
Audit Office	12,167	10,943	11,574	16,726	18,480
Rent, repairs, etc.	2,552	2,829	3,021	4,678	16,489
Public Service Commissioner's Office ..	22,303	23,255	21,252	22,142	22,329
High Commissioner's Office .. ..	..	..	..	31,518	52,166
Miscellaneous	36,712	8,364	12,900	58,872	99,180
Total	82,847	56,642	60,790	155,797	234,568

The principal items in the rather large "Miscellaneous" vote for 1917-18 are "Shipping and mail service to Pacific Islands," £35,021; "Interest on Commonwealth Inscribed Stock," £17,034; "Rent of buildings," £15,346; and "Working expenses, Port Pirie wharf," £13,831.

9. Home and Territories.—Under this new department, created in the financial year 1916-17, is placed the bulk of the old External Affairs Department (after the removal of the London office), and the Census and Statistics, and Meteorological Offices taken from the old Home Affairs Department. The expenditure for the two years of its existence was as follows:—

EXPENDITURE, HOME AND TERRITORIES DEPARTMENT, 1916-17 TO 1917-18.

Details.	1916-17.	1917-18.
	£	£
Chief Office	17,065	14,737
Census and Statistics	18,505	15,013
Meteorological Branch	27,499	25,971
Papua	61,746	51,918
Rents, repairs, etc.	1,951	10,493
Northern Territory	293,183	264,360
Federal Capital Territory .. .. .	..	23,382
Miscellaneous	64,325	62,827
Total	484,274	468,701

10. Northern Territory.—The Department of External Affairs assumed control of the administration of the Northern Territory from 1st January, 1911, and separate accounts were issued for the first time in the Treasurer's statement for the financial year ending 30th June, 1911. The chief sources of revenue for the year ending 30th June, 1918, were the Customs and Excise, amounting to £13,919, and railways £35,172. The Postal revenue amounted to £10,711, whilst the total revenue was £101,483. The chief items of expenditure were as follows:—Postal Department, £20,768; goldfields and mining, £17,678; and railways, £56,144. The total expenditure was £248,305. In addition to this expenditure the Commonwealth is liable for interest on loans and redemption, which for this financial year totalled £242,517. The deficiency for the year was £389,339.

REVENUE, NORTHERN TERRITORY, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Customs and Excise	12,628	13,466	21,282	19,156	13,919
Miscellaneous	61,029	69,599	75,898	83,824	87,564
Deficiency for year	458,878	391,862	649,518	702,385	389,339
Total	532,535	474,927	746,698	805,365	490,822

EXPENDITURE, NORTHERN TERRITORY, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Interest and Redemption	246,271	246,442	464,510	389,819	242,517
Miscellaneous	286,264	228,485	282,188	415,546	248,305
Total	532,535	474,927	746,698	805,365	490,822

11. Papua.—The sums shewn in the table on page 759 as expenditure in connection with Papua represent the Commonwealth grants towards the cost of administering that territory, as well as certain additional amounts. The ordinary revenue and expenditure of Papua are kept distinct from those of the Commonwealth. Apart from the Commonwealth contribution, the principal source of revenue is the Customs House. Details for the five years 1913-14 to 1917-18 are as follows :—

REVENUE, PAPUA, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Customs dues	37,341	32,244	33,931	45,353	48,067
Other collections	17,363	19,717	15,380	18,215	24,527
Commonwealth grant	30,000	30,000	30,000	30,000	30,000
Total	84,704	81,961	79,311	93,568	102,594

The expenditure for 1917-18 totalled £103,176, the main outlay being on the Government Secretary's Department and the Departments of Agriculture, Lands, and Public Works. The total expenditure for each of the five years 1913-14 to 1917-18 was as follows :—

EXPENDITURE, PAPUA, 1913-14 TO 1917-18.

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Total expenditure	81,095	82,535	77,913	83,740	103,176

12. *Attorney-General's Department.*—The extra expenditure connected with this Department of late years has been brought about in large measure by the extension of the Federal High Court, the total cost of which, including the Court of Conciliation and Arbitration, for the year 1914–15, amounted to £34,623, in 1915–16 to £40,084, in 1916–17 to £42,848, and in 1917–18 to £39,252. Details for the five years 1913–14 to 1917–18 are furnished hereunder :—

EXPENDITURE, ATTORNEY-GENERAL'S DEPARTMENT, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Attorney General's Office	6,302	5,852	10,457	13,880	10,189
Crown Solicitor's Office	7,565	8,371	10,078	10,766	11,255
Salaries of Justices of High Court	21,500	21,175	21,500	21,500	21,500
High Court expenses	11,209	9,862	9,947	10,280	9,852
Court of Conciliation and Arbitration	6,450	3,586	8,637	11,068	7,900
Rent, repairs, etc.	3,733	4,755	3,412	3,217	9,414
Patents, Trade Marks, etc.	24,439	23,485	20,579	21,856	19,253
Miscellaneous	1,244	1,380	1,554	1,628	7,567
Total	82,442	78,466	86,164	94,195	96,930

13. *Works and Railways Department.*—The great extension of Commonwealth Works and Railways led, in 1916–17, to the separation of these functions from the old Home Affairs Department and the constitution of a separate office. This new office also administers the Railways, formerly under the control of the old External Affairs Department. The expenditure for the two years of its existence is as follows :—

EXPENDITURE, WORKS AND RAILWAYS DEPARTMENT, 1916-17 AND 1917-18.

Details.	1916-17.	1917-18.
	£	£
Chief Office	40,558	31,162
Trans-Australian Railway	302,550	232,726
Port Augusta—Oodnadatta Railway, and Northern Territory Railways	312,907	172,676
Interest and Sinking Fund on Commonwealth Securities	210,363	220,768
Miscellaneous	20,283	15,561
Total	886,661	672,893

14. *Treasurer's Department.*—The sub-departments under the control of the Commonwealth Treasurer are the Treasury, the Pensions Department, and the Taxation Office. The Audit Office was transferred to the Prime Minister's Department in 1911–12. The rather large item for "Miscellaneous" in 1914–15 includes the

Belgian grant of £100,000. Details of the expenditure of this department for each of the five years 1913-14 to 1917-18 are furnished hereunder :—

EXPENDITURE, TREASURER'S DEPARTMENT, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Treasury	22,696	26,291	26,996	37,993	29,391
Old-age pensions—Salaries, etc. ..	44,942	46,421	42,796	52,214	53,391
Rents, repairs, etc.	6,294	6,654	17,103	15,487	14,243
Invalid and Old-age pensions ..	a1,881,794	b1,479,963	2,859,766	c453,344	d1,781,564
Taxation	79,525	78,737	131,089	193,923	230,242
Maternity allowance	674,990	694,275	659,745	662,030	634,428
Miscellaneous	76,793	195,492	80,356	126,832	109,319
Total	2,787,034	2,527,833	3,817,851	1,545,923	2,902,578

(a) In addition, £697,471 was spent from Trust Funds. (b) In addition, £1,224,347 was spent from Trust Funds. (c) In addition, £3,000,000 was spent from Trust Funds, and the War Services include £1,149,242 for War Pensions, £37,090 for Pensions Administration, and £156 Miscellaneous, all debited to this Department. (d) In addition, £2,077,427 was spent from Trust Funds.

15. Trade and Customs:—Under this head have been included the expenditure of all the sub-departments under the control of the Minister of Trade and Customs, as well as the amounts payable as sugar and other bounties and the expenses in connection therewith. The administration of Patents, Trade Marks, and Copyright is now entrusted to the Attorney-General's Department. The fluctuations in the total expenditure of this Department in recent years have been mainly due to variations in the amount payable in respect of sugar bounties. Particulars for the five years 1913-14 to 1917-18 are given in the following table :—

EXPENDITURE, TRADE AND CUSTOMS DEPARTMENT, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Chief Office	14,429	16,240	15,986	19,223	21,849
Customs (ordinary)	341,116	354,205	323,309	344,303	361,547
Fisheries	7,443	4,447	492	170	224
Analyst	3,441	3,441	3,576	4,440	3,498
Audit (proportion)	8,144	7,427	6,722	5,786	4,525
Quarantine	44,063	32,057	38,804	46,251	50,748
Pensions and retiring allowances	13,318	16,041	14,524	16,215	16,545
Rents, repairs, etc.	14,872	15,448	21,067	19,103	20,945
Sugar bounties and expenses ..	149,244	4	..	174	..
Bounties	14,304	28,286	6,767	2,995	15,418
Iron bonus	51,810	15,072	24,465	11,454	..
Lighthouses .. .. .	..	..	86,524	128,767	133,837
Interest on transferred properties	49,350	29,556	30,125	29,933	79,294
Miscellaneous	18,924	29,094	16,760	19,333	6,699
Total	730,458	551,318	589,121	a648,147	b715,129

(a) In addition, £10,030 was spent as War Services.

(b) In addition, £7,179 was spent as War Services.

16. Defence.—The Commonwealth expenditure in connection with Defence, which in 1901-2 amounted to £861,218, had by 1917-18 grown to £1,283,063. The bulk of the immense war expenditure is provided for out of loan. Particulars for the five years 1913-14 to 1917-18 are as follows :—

EXPENDITURE, DEFENCE, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Chief Office	86,191	88,233	46,441	49,267	50,163
Military	1,547,921	2,977,903	1,273,885	1,311,481	1,052,848
Naval	979,554				
Audit (proportion)	1,362	2,398	5,486	11,117	21,548
Pensions and retiring allow- ances	1,103	1,427	363	191	380
Rents, repairs, etc.	70,471	79,665	76,744	68,314	54,599
Interest on transferred properties	94,859	177,740	88,519	88,512	88,490
Miscellaneous	169,261	217,720	21,102	15,893	15,035
Total	2,950,722	3,545,086	1,512,540	1,544,775	1,283,063

(a) Now a separate Department. (b) In addition £3,005,994 was spent on War Services from Revenue. (c) Excluding appropriations for Interest and Sinking Fund.

17. Navy Office.—During the financial year 1915-16, the Navy Office, owing to its increasing importance, was separated from the Defence Department and constituted an independent Department. Appended is the expenditure for the last three years, under similar headings to the Defence Department :—

EXPENDITURE, NAVY DEPARTMENT, 1915-16 TO 1917-18.

Details.	1915-16.	1916-17.	1917-18.
	£	£	£
Chief Office	39,170	40,747	39,176
Naval	1,444,521	1,401,659	1,426,988
Audit (proportion)	1,166	1,272	1,017
Pensions and retiring allowances	899	899	899
Rents, repairs, etc.	17,402	15,969	19,079
Interest on transferred properties	39,920	41,058	41,058
Miscellaneous	9,240	13,057	23,041
Total	(a)1,552,318	1,514,661	1,551,258

(a) In addition £771,855 was spent on War Services from Revenue.

18. Postal.—From a total of £5,157,022 in 1913-14, the cost of the Department under the control of the Postmaster-General advanced to £5,349,994 in 1917-18, an increase of £192,972. Details for the five years 1913-14 to 1917-18 are furnished hereunder :—

EXPENDITURE, POSTAL DEPARTMENT, 1913-14 TO 1917-18.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Chief Office	22,506	23,606	21,400	22,821	21,960
Postal Department (ordinary)	4,752,652	4,809,672	4,904,839	4,853,886	4,920,251
Audit (proportion) ..	3,340	3,955	3,670	2,981	2,635
Pensions and retiring allowances	48,400	48,073	53,358	55,877	59,174
Rents, repairs, etc. ..	88,884	84,044	92,083	67,494	60,070
Interest on transferred properties	217,730	217,640	217,625	217,602	(a)212,227
Miscellaneous	23,510	34,284	65,396	68,337	73,677
Total	5,157,022	5,221,274	5,358,371	5,288,998	5,349,994

(a) An amount of £5,368 was paid as Betterment Tax in addition, on account of the G.P.O., Sydney.

19. Miscellaneous.—In addition to the foregoing there are certain items which do not come under any of the heads enumerated. They consist in the main of war services, expenditure on new works which has already been treated in detail on page 756, and sums carried forward in respect of pensions in subsequent years. The particulars for the preceding five years are given in detail.

ALL OTHER EXPENDITURE, 1913-14 TO 1917-18.

Detail.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
New Works	2,576,000	2,673,939	2,940,835	4,288,747	622,203
War Services—					
Special Appropriations ..	..	..	..	5,988,058	7,813,296
Prime Minister's Department .. ..	..	..	..	..	999,197
Treasury .. ..	..	..	..	1,186,488	3,043,046
Defence .. ..	..	..	3,005,994	550,377	532
Navy .. ..	..	..	771,855	686,701	..
Trade and Customs .. ..	..	..	..	10,030	7,179
Carried forward in respect of Pensions .. ..	..	..	3,000,000	2,077,427	3,925,820
Miscellaneous .. ..	..	..	..	476,417	548,750
Total	2,576,000	2,673,939	9,718,684	15,264,245	16,960,023

20. Cost of the War.—A substantial amount of the cost of the war has been paid out of consolidated revenue in the last two years under the heading "War Services." The expenditure on the war from revenue has already been dealt with in the previous table,

but a table is here presented shewing the total expenditure from the different funds during the four years for which the war lasted up to 1917-18. The armistice was signed in November, 1918, but, in view of the expenses of maintenance and repatriation, the expenditure in 1918-19 is quite likely to reach at least the standard of the two previous years.

COST OF WAR TO COMMONWEALTH.

Year.	From Consolidated Revenue.	From War Loan Fund.	Total.
	£	£	£
1914-15	640,217	14,471,118	15,111,335
1915-16	3,777,949	37,423,568	41,201,417
1916-17	8,421,654	53,114,237	61,535,891
1917-18	11,863,251	55,095,109	66,958,360
Total	24,702,971	160,104,032	184,807,003

The expenditure in 1918-19 has been returned approximately as £21,165,495 from Consolidated Revenue, and £62,467,776 from War Loan Fund, a total of £83,633,271.

(D) Subsidy Paid to States.

1. Payments to the Several States.—In the following table are furnished particulars relative to the amounts actually paid to the several States on account of each of the financial years 1913-14 to 1917-18 :—

COMMONWEALTH SUBSIDY PAID TO STATES, 1913-14 TO 1917-18.

State.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
New South Wales	2,248,241	2,287,295	2,297,872	2,286,913	2,317,783
Victoria	1,733,229	1,757,894	1,743,467	1,722,409	1,739,431
Queensland	810,274	831,486	836,743	823,771	845,913
South Australia	540,113	542,715	540,649	531,340	535,808
Western Australia	613,606	606,900	591,064	569,982	561,129
(a) Tasmania	247,536	247,485	247,200	246,004	250,260
(a) Total	6,192,999	6,273,775	6,256,995	6,180,419	6,250,374

(a) Not including special grant of £90,000 to Tasmania.

The normal rate of increase was checked in 1914-15 owing to the departure of the troops, and in 1915-16 four of the States, from this cause, shewed a decrease. This was still more marked in 1916-17, but, owing to the return of invalided soldiers, an increase was manifested in 1917-18. The amounts allotted to Tasmania are exclusive of the instalments of the special payment to which reference has already been made (see, page 744).

§ 3. Trust Fund.

1. Trust Accounts.—The Trust Fund credit balance on 30th June, 1918, amounted to £71,189,698, as compared with £60,154,961 for the corresponding date in the year ending 30th June, 1917. These enormous amounts are due mainly to the Australian

Notes Account referred to in detail in para. 3 hereunder. Other large items are "London Liabilities" and "Invalid and Old-age Pensions." Details concerning the most important trust accounts contributing to this amount are as follows:—

COMMONWEALTH TRUST FUND, 30th JUNE, 1918.

Trust Accounts.	Balance at 30th June, 1918.	Trust Accounts.	Balance at 30th June, 1918.
	£		£
Debts due to Enemy Subjects	99,848	Loans Sinking Fund	1,255,186
Public Trustee	67,823	War Savings Certificates, Interest Account	133,333
General Average Deposits	11,767	Commonwealth Government Steamers, Earnings and Expenses	53,614
Defence Clothing Material	157,732	Detained Enemy Vessels	49,129
Small Arms Ammunition	30,332	Williamstown Dockyard	23,978
Small Arms	17,584	Australian Metal Company	14,159
Unclaimed Pay	16,015	Norfolk Island Account	10,378
Naval Dockyard	28,858	Northern Territory	31,658
Deferred Naval Pay	324,051	Commonwealth Railways	128,635
War Contributions	42,769	Other Trust Moneys	364,992
Money Order	819,500	Miscellaneous	34,646
International Postal Order	20,080		
Invalid and Old-age Pensions	4,067,695	Total	71,189,698
London Liabilities	7,146,634		
Australian Notes Account	56,185,004		
Northern Territory Sinking Fund	67,195		
Port Augusta Railway Sinking Fund	42,063		

2. **Distribution.**—The amounts to credit of Trust Fund in the several States on 30th June, 1918, were as follows:—New South Wales, £2,085,070; Victoria, £67,338,621; Queensland, £685,645; South Australia, £533,959; Western Australia, £277,482; and Tasmania, £268,921.

3. **Australian Notes Account.**—After the passage of the Australian Notes Act, Australian notes began to appear in circulation in December, 1910. For the first half of the calendar year 1911, they circulated side by side with bank notes and Queensland Treasury notes. After 30th June, 1911, the penal clauses of the Notes Act came into operation, and the banks and the Queensland Government began to withdraw their notes from active circulation. By the end of the year the process was virtually complete. On 30th June, 1918, the notes issued and unredeemed amounted to £52,501,948. Against this there was a reserve in gold coin of £17,783,742 or 33.87 per cent., and other assets, of which the most important were investments in Government Stock and fixed deposits, totalling £36,671,750, and returning an annual income of £1,444,073.

The position, according to a Treasury return issued at the end of June, 1919, was as follows:—

COMMONWEALTH NOTES ISSUED AND UNREDEEMED AT 25th JUNE, 1919.

	£
10s.	1,995,779
£1	13,178,099
£5	7,601,495
£10	3,551,330
£20	595,220
£50	1,327,000
£100	1,206,500
£1,000	26,112,000
	<u>£55,567,423</u>

The amount of the gold reserve was £24,273,622, representing 43.68 per cent. of the liability.

The subject is also dealt with at some length in Section XXI, Sub-section 2, *Banking*.

4. Advances by Commonwealth Government to States.—Reference has been made in the previous paragraph to the investments of the gold reserve from the Australian Notes Account. A large proportion has been advanced to the respective State Governments for short periods, sometimes as low as one year. This is an interesting departure in Australian Public Finance, and in view of the financial relations thus brought about between the Commonwealth and State Governments, the following table is appended, giving full particulars of the investments of £36,671,750, to which reference has already been made:—

**AUSTRALIAN NOTES ACCOUNT.—PARTICULARS OF INVESTMENT AS AT
30th JUNE, 1918.**

Investment.	Amount.	Rate of Interest.	Date of Maturity.	Annual Amount of Interest.
	£	%		£
Commonwealth Inscribed Stock ..	3,830,000	3½	1962-1972	134,050
Commonwealth War Loan Stock ..	63,640	4½	1925	2,864
Commonwealth Treasury Bills ..	6,082,610	4	(a)	243,304
STATE GOVERNMENT SECURITIES—				
New South Wales Stock ..	800,000	3½	1919	30,000
New South Wales Treasury Bills ..	7,400,000	4½	(b)	305,250
Victorian Debentures (face value, £800,000) ..	784,000	3½	1921	28,000
Victorian Debentures ..	3,900,000	4½	(b)	160,875
South Australian Treasury Bills ..	2,600,000	4½	(b)	107,250
Western Australian Stock ..	590,000	3½	1926	22,125
Western Australian Treasury Bills ..	3,100,000	4½	(b)	127,875
Tasmanian Stock ..	460,000	3½	1921	17,250
Tasmanian Treasury Bills ..	1,000,000	4½	(b)	41,250
FIXED DEPOSITS—				
Sundry Banks ..	6,061,500	4	1916-17	223,980
Total ..	36,671,750	..	..	1,444,073

(a) Not fixed. (b) Treasury Bills with currency of two years from date of loan instalment.

In the financial year 1913-14 the Commonwealth Government called in as far as possible its outstanding advances to the State Governments. The money lent on fixed deposit was taken up as the term expired; and furthermore, the Commonwealth Government, requiring additional money for the expenditure on public works, etc., induced some of the State Governments to discount a portion of their securities held by the Commonwealth. The money thus obtained was spent in the purchase of further Commonwealth Inscribed Stock, thus increasing the Loan Fund, to which reference is made in the next section. On the outbreak of war the Commonwealth Government agreed to lend to the States (Queensland standing out of the arrangement) the sum of £18,000,000 for the purpose of maintaining the expenditure on public works. The bulk of the money, lent to the States from the Note Account, was advanced in pursuance of that undertaking.

5. London Flotations on behalf of States.—Act No. 17 of 1916 authorised the Treasurer to borrow £8,940,000 in the United Kingdom, and Act No. 16 of 1917 to raise £8,000,000, and to lend the amount to the several States, other than that of New South Wales, and, pending the borrowing of the money, to advance the amounts set forth in the Acts out of loans made by the Government of the United Kingdom to the Commonwealth. In pursuance of these Acts, £11,533,571 was distributed to the States up to 30th June, 1918, being the proceeds of two loans amounting to £12,000,000. In addition, a sum of £1,560,000 was advanced from loans received for war purposes. Flotation

expenses and discount together amounted to £466,429, and these were debited to the States. Consequently the total charged to the States by the Commonwealth under this head at 30th June, 1918, was £13,560,000, allocated as follows:—

**COMMONWEALTH LOANS RAISED IN LONDON ON BEHALF OF STATES
AS AT 30th JUNE, 1918.**

State.	£
Victoria	1,954,000
Queensland	4,297,000
South Australia	2,847,000
Western Australia	3,546,000
Tasmania	916,000
Total	13,560,000

6. **Surplus Revenue.**—It has been the practice to transfer to the Trust Accounts mentioned below the amount of the Surplus Revenue, and the amount was expended in subsequent years as required.

COMMONWEALTH SURPLUS REVENUE.

—	Invalid and Old-age Pensions Account.	Naval Defence Account. (Fleet construction.)	Total.
—	£	£	£
Surplus transferred—			
1910-11	918,587	918,588	1,837,175
1911-12	146,256	278,242	424,498
1912-13	856,974	..	856,974
1915-16	3,000,000	..	3,000,000
1916-17	2,077,427	..	2,077,427
1917-18	3,925,820	..	3,925,820
Total	10,925,064	1,196,830	12,121,894
Surplus expended—			
1912-13 .. .. .	..	475,342	475,342
1913-14	697,470	721,488	1,418,958
1914-15	1,224,347	..	1,224,347
1916-17	3,000,000	..	3,000,000
1917-18	2,077,427	..	2,077,427
Total	6,999,244	1,196,830	8,196,074

§ 4. Commonwealth Public Debt.

Although it was not until 1915 that the Federal Government appeared before the public as a direct borrower, there had been a Commonwealth Public Debt for many years. It now includes several items, such as the balance of the debt taken over from South Australia, the money owing to the States for transferred properties, the Commonwealth General Loan Fund, the loans for military purposes, etc. In view of the large expansion of the Public Debt, and its present importance in Commonwealth public finance, the different items are treated seriatim in the sub-sections that follow.

1. **Loans Taken Over from South Australia.**—The first portions of the debt were contracted at the beginning of 1911, when the Commonwealth assumed responsibility for the administration and the liabilities of the Northern Territory and the Port Augusta-Oodnadatta Railway. At 30th June, 1911, the debt on account of the former was £3,657,836, and on account of the latter, £2,274,486—a total of £5,932,322. As the securities fall in they are redeemed by the Commonwealth Government, the money

required being taken from the Loan Fund, which was created for this reason, amongst others. This item is thus a constantly diminishing one, and on 30th June, 1918, stood at £4,531,519, of which £2,772,516 was on account of the Northern Territory, and £1,759,003 on account of the railway.

2. *Loan Fund for Public Works, etc.*—Up to 1911 the Commonwealth Government had met its Public Works expenditure out of Revenue. In that year, however, the Commonwealth being faced with the heavy prospective cost of the Transcontinental Railway and the Federal Capital Territory, it was decided to initiate a Loan Fund similar to those of the States. The flotation of this Fund was greatly assisted by the fact that the Treasury at this time held a large quantity of gold, principally on behalf of the Australian Notes Account, at that time only just inaugurated. Up to 30th June, 1914, the money required for loan expenditure was taken mainly from this account at 3½ per cent., and inscribed stock of an equivalent value created. Since the outbreak of war the creation of inscribed stock has ceased, the money required for the Loan Fund being obtained by the issue of Treasury Bills. The relation between the magnitude of the Loan Fund and the expenditure therefrom is shewn for the last seven years in the following table :—

SECURITIES CONSTITUTING COMMONWEALTH LOAN FUND FOR WORKS, ETC., AND EXPENDITURE THEREFROM, 1912 TO 1918.

Year ended 30th June—	Commonwealth Loan Fund.			Expenditure in year ended 30th June.	Total Expenditure up to year ended 30th June.	Unexpended Balance.
	Inscribed Stock.	Treasury Bills.	Total Receipts.			
	£	£	£	£	£	£
1912 ..	700,000	..	700,000	660,475	660,475	39,525
1913 ..	2,000,000	..	2,000,000	1,188,027	1,848,502	151,498
1914 ..	4,100,000	..	4,100,000	2,155,261	4,003,763	96,237
1915 ..	4,580,000	1,578,202	6,158,202	6,158,439	6,158,202	..
1916 ..	4,580,000	4,437,543	9,017,543	2,859,341	9,017,543	..
1917 ..	4,580,000	4,437,543	9,017,543	..	9,017,543	..
1918 ..	4,580,000	6,240,990	10,820,990	1,803,447	10,820,990	..

In addition to the securities enumerated in the preceding table, £371,118 worth of Treasury Bills were issued in 1914–15 in aid of Revenue. They were repaid by the Consolidated Revenue Fund in 1916–17.

The preceding table gives the total expenditure. The details of the expenditure for five years are as follows :—

COMMONWEALTH LOAN EXPENDITURE, DETAILS, 1914 TO 1918.(b)

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Railways Construction—Trans-Australian Railway	1,346,040	1,070,459	1,046,953	..	410,506
Northern Territory ..	128,529	94,392	128,592	..	42,178
Loan Redemption—Oodnadatta Railway	135,627	15,077	923	..	..
Northern Territory ..	..	..	400,000	..	3½ ..
Papua—Railways and wharves ..	685	13,042	12,829	..	..
Posts and Telegraphs—Purchase of land ..	42,598	84,500	92,712	..	2,811
Construction of conduits ..	258,407	178,142	271,211	..	67,375
Acquisition of Land—London (a) ..	64,887	19,274	113,744	..	69,991
Perth, Western Australia ..	..	..	..	..	24,347
Federal Territory ..	180,488	36,770	127,537	..	90,703
Defence machinery, etc. : Dockyards, Cockatoo	..	..	..	..	..
Island ; Naval Bases, etc. ..	..	42,782	66,840	..	440,200
Fleet Construction ..	..	..	..	..	355,397
Miscellaneous ..	..	..	..	..	299,849
Total	2,155,261	2,154,438	2,859,341	..	1,803,447

(a) Including cost of erection of buildings. (b) There were no transactions in this Fund for 1916–17, except the cancelling of £371,118 Treasury Bills already referred to.

The main items in the "Miscellaneous" for 1917-18 were £200,000 capital required for the "Plant and Stores Suspense Account" established by the Commonwealth Railways Act 1917, and £52,410 for an Acetate of Lime Factory. The expenses of interest and sinking fund are allocated among the different departments which have benefited, as follows:—

**LIABILITIES OF DIFFERENT DEPARTMENTS WITH REGARD TO LOAN FUND,
1917-18.**

	Interest on Inscribed Stock.	Sinking Fund. Inscribed Stock.	Interest on Treasury Bills.	Total.
	£	£	£	£
Prime Minister	17,034	2,433	6,433	25,900
Home and Territories	13,972	1,996	7,694	23,662
Treasury .. .. .	..	..	12,273	12,273
Defence .. .. .	..	..	1,839	1,839
Navy	28	40	16,967	17,035
Trade and Customs .. .. .	..	..	726	726
Works and Railways	83,697	11,957	125,114	220,768
Postmaster-General	18,567	16,271	23,583	58,421
Northern Territory and Port Augusta- Oodnadatta Railway	27,002	3,957	25,880	56,739
Total	160,300	36,554	220,509	417,363

3. **Properties Transferred from States.**—At the time of Federation, when the Commonwealth undertook control of a great many departments which had previously been administered by the States, a large amount of property was handed over to the Commonwealth Government. This consisted mainly of Post Offices, Customs Houses, Defence works, and other buildings necessary to the effective working of the transferred departments. In the early days of the "Braddon Clause," when the Federal Government was spending less than its statutory proportion of the Customs revenue, the question of suitable compensation to the States did not become acute; but, when the "Braddon Clause" was replaced by another arrangement between Commonwealth and States, much less favourable to the latter, the time had evidently come to put matters on a more definite footing. In the Commonwealth accounts of the last five years, certain amounts (independent entirely of the subsidy) have been paid to the States as "Interest on Transferred Properties." These amounts have been substantially based upon a valuation made by the old Home Affairs Department, with the following result:—

ORIGINAL VALUATION OF TRANSFERRED PROPERTIES.

State.	Department.				Total.
	Postmaster- General.	Defence.	Trade and Customs.	Home Affairs.	
	£	£	£	£	£
New South Wales	2,337,316	1,182,003	154,009	1,320	3,674,648
Victoria	1,332,862	805,389	190,657	1,266	2,330,174
Queensland	925,628	386,802	202,082	7,356	1,521,868
South Australia	842,281	161,140	28,486	815	1,032,722
Western Australia	600,895	64,842	37,714	835	704,286
Tasmania	214,906	121,490	48,212	143	384,751
Total	6,253,888	2,721,666	661,160	11,735	9,648,449

Since the valuation some transfers and retransfers have been made. The estimated value of the transferred properties for the last five years is given in the table in sub-section 7 hereinafter.

4. War Loan from the Imperial Government.—On the outbreak of the European war in 1914, the Commonwealth Government contracted a loan from the Imperial Government for the purpose of financing the large military expenditure which was seen to be inevitable. At first, the arrangement was that the Imperial Government should advance the sum of £18,000,000 in twelve monthly instalments of £1,500,000 each. It was soon found, however, that this would be insufficient, and consequently the Imperial Government made a fresh advance of £6,500,000, also to be paid in monthly instalments. A third loan of £25,000,000 was subsequently contracted for, of which £12,000,000 was received by 30th June, 1916, and £11,000,000 in 1916–17. The total capital debt thus created up to 30th June, 1918, is set out in the following table :—

**CAPITAL DEBT TO IMPERIAL GOVERNMENT ON ACCOUNT OF WAR LOANS
AS AT 1917-18.**

Authority.	Imperial Loans—Capital Debt created up to 30th June, 1918.			
	Issues, 3½%.	Issues, 4½%.	Issues, 5%.	Total.
	£	£	£	£
War Loan Act 1914—£18,000,000 ..	1,263,158	11,500,000	5,757,540	18,520,698
War Loan Act No. 2 1915—£6,500,000 ..	..	..	6,885,656	6,885,656
War Loan Act (United Kingdom) No. 2 1916—£25,000,000 (a) .. ..	..	..	23,675,705	23,675,705
	1,263,158	11,500,000	36,318,901	49,082,059

(a) Only £23,000,000 has been advanced.

Interest is paid on these loans in London as at 31st March and 30th September in each year. The amounts paid in the four financial years comprising the currency of the loans are as follows :—1914–15, £36,489; 1915–16, £843,893; 1916–17, £2,082,258; and £2,477,288 in 1917–18.

5. Flotation of War Loans in Australia.—In addition to the advances from the Imperial Government, the Commonwealth Government has raised large amounts of money for the prosecution of the war, by direct application to the investing public of Australia. Acts No. 21 and No. 50 of 1915 authorised the Commonwealth to make application for £20,000,000 and £18,000,000 respectively, and in pursuance of these a loan of £5,000,000 was placed upon the market late in 1915, and a further amount of £10,000,000 early in 1916. These issues—unprecedented in Australian finance—were entirely successful, the latter being subscribed twice over, and the former more than two and a-half times. Both loans were issued at par, bore interest at 4½ per cent., and were redeemable on 15th December, 1925. The expenses included a commission of two shillings per cent. to the Commonwealth Bank, commission to brokers at ¼ per cent., and miscellaneous items such as printing. The total cost of flotation, however, was most moderate, amounting only to £86,103, or less than five shillings per cent. of the amount subscribed. The two Acts already mentioned were succeeded by a third, which authorised the Commonwealth Parliament to raise a further sum of £50,000,000. In pursuance of this a third issue was placed upon the market, closing on 1st August, 1916, and subsequently a fourth issue, closing on 8th February, 1917. It may be mentioned that whilst the expenses of flotation are small, the accrued interest is by no means negligible. Owing mainly to this, the net proceeds to the Federal Government only amount to about 98½ per cent., consequently, when allowance is made for redemption at par, the Government pays about £4 14s. per cent. interest, instead of the nominal 4½ per cent. In view, however, of the advancing rate of interest, this cannot be called excessive.

A fifth Commonwealth War Loan, floated in November, 1917, realised £21,213,780, and a sixth loan, floated in April, 1918, realised £42,851,960. The sixth issue differed from the preceding ones in that it gave the investor the option of $4\frac{1}{2}$ per cent. free of income tax, or 5 per cent. subject to tax, the bulk of the money being invested in the former security. The fifth and sixth loans, moreover, are redeemable on 15th December, 1927, thus to a large extent relieving the pressure on 1925 as year of maturity.

PARTICULARS OF LOCAL AUSTRALIAN WAR LOANS, 1915 TO 1918.

Heading.	1st Issue.	2nd Issue.	3rd Issue.	4th Issue.	5th Issue.	6th Issue.		Total.
						$4\frac{1}{2}$ per cent.	5 per cent.	
	No.	No.	No.	No.	No.	No.	No.	No.
Number of Subscribers—								
For Inscribed Stock ..	8,603	12,450	13,660	13,666	9,882	17,778	8,537	84,576
For Treasury Bonds ..	10,145	16,495	88,382	53,806	31,826	72,521	44,912	318,087
Total ..	18,748	28,945	102,042	67,472	41,708	90,299	53,449	402,663
Amount Subscribed—	£	£	£	£	£	£	£	£
For Inscribed Stock ..	9,581,120	16,271,710	15,417,880	14,695,240	14,276,790	14,169,600	4,342,470	88,754,810
For Treasury Bonds ..	3,808,320	5,383,970	8,169,770	6,888,780	6,936,990	22,155,530	2,184,360	55,527,720
Total ..	13,389,440	21,655,680	23,587,650	21,584,020	21,213,780	36,325,130	6,526,830	144,282,530
						42,851,960		
Accrued Interest	221,502	324,169	326,887	254,071	239,319	410,913	71,771	1,848,632
Expenses of Flotation ..	35,451	50,652	52,278	45,795	53,317	102,280	18,250	358,023
Total deductions	256,953	374,821	379,165	299,866	292,636	513,193	90,021	2,206,655
Net proceeds of Loan ..	13,132,487	21,280,859	23,208,485	21,284,154	20,921,144	35,811,937	6,436,809	142,075,875
						42,248,746		

6. Australian Notes.—In connection with the subject of the Public Debt a further reference to the issue of Australian notes will be of interest. The gold held in reserve in the Treasury has varied from rather more than 30 per cent. to rather less than 50 per cent. of the outstanding notes. Consequently a large proportion of the notes—all of which are payable on demand—is permanently uncovered by gold, and this proportion constitutes an undoubted part of the Public Debt. The item is constantly fluctuating in amount, and financially resembles a bank overdraft on which no interest is payable. Whilst, however, attention has been drawn to this on the ground of principle, no reference has been made to the uncovered notes in the tables summarising the Public Debt which appear in sub-section 7 hereafter. As already stated, on 30th June, 1918, the value of the notes issued and unredeemed was £52,501,948, against which there was a gold reserve of £17,783,742, leaving an uncovered amount of £34,718,206. In this connection reference may be made to the table on page 766.

7. Total Commonwealth Public Debt.—Separate consideration has already been given to the items composing the Public Debt. The table appended to this sub-section shews the entire debt of the Commonwealth (apart from the States) at yearly intervals since 1914. The liability on account of the note issue is excluded, for reasons already given,

but the liability on account of the transferred properties has been included for the entire period. The Commonwealth Public Accounts first took cognizance of this item in 1913, although the debt had been incurred much earlier.

PUBLIC DEBT OF THE COMMONWEALTH AS AT 30th JUNE, 1914 TO 1918.

Details.	1914.	1915.	1916.	1917.	1918.
Balance of loans taken over from South Australia—	£	£	£	£	£
(a) On account of Northern Territory ..	3,359,891	3,359,891	2,778,266	2,772,516	2,772,516
(b) On account of Oodnadatta railway ..	1,935,431	1,920,354	1,896,132	1,759,003	1,759,003
Value of properties transferred by States ..	9,787,011	10,777,161	10,781,797	10,789,739	11,202,515
Amount of Commonwealth Loan Fund—					
Inscribed Stock ..	4,100,000	4,580,000	4,580,000	4,580,000	4,580,000
Treasury Bills ..	..	1,949,319	4,808,661	4,437,543	6,240,990
War Loan from British Government ..	..	14,842,105	36,774,269	47,774,269	49,082,059
Commonwealth Internal Loans ..	..	..	34,965,430	80,242,510	143,190,680
Accrued Deferred Pay, A.I.F. ..	..	..	4,759,730	9,373,977	10,309,908
Miscellaneous ..	..	..	..	..	42,917,398
Total ..	19,182,333	37,428,830	101,344,285	169,229,557	284,055,069
				(a)	(b)
Commonwealth Debt <i>per capita</i> ..	£3 17 11	£7 11 6	£20 13 5	£34 11 3	£57 0 8

(a) Including £7,500,000 raised for the States.

(b) Including £12,000,000 raised for the States.

It will be noticed that the amount of the Commonwealth Internal Loans does not quite agree with the totals of the first six issues in the table on page 772. This is owing to the fact that stock to a considerable amount has been presented as payment of Estate Duty, and cancelled, the payments being accepted in accordance with the provisions of section 5 of the Commonwealth Inscribed Stock Act 1915. The amount of £143,190,680 is the balance of the first six issues. To this must be added £4,534,747 raised by the sale of War Savings Certificates, and £37,651 by the sale of War Savings Stamps. The item "Miscellaneous" is made up of the last two amounts and a sum of £38,345,000 due to the British Government for the maintenance of Australian troops.

8. *Place of Flotation.*—The loans taken over from South Australia, which constituted the first portion of the Federal Public Debt, included both London and Australian securities. The presence in the Treasury of a large holding of gold, and the moderate rate of interest ruling on gilt-edged securities, made the conditions in 1911, and for some little time afterwards, very favourable for the flotation of local loans. London securities were redeemed as they fell due, and replaced by the 3½ per cent. stock of the Loan Fund. Consequently, up to 1914 the amount of the securities repayable in London fell steadily, and the amount repayable in Australia rose rapidly. In 1915, however, the military loan from the Imperial Government caused a sharp rise in the amount of the securities repayable in London, which was maintained in the two following years. This was, however, more than offset by the flotation of the local war loans. Appended is a table shewing particulars of the loans of the Commonwealth for seven financial

years which have been floated in London and Australia respectively. A separate column is reserved for the cost of the transferred properties, which, for obvious reasons, it is impossible to allocate:—

COMMONWEALTH PUBLIC DEBT.—LONDON AND AUSTRALIAN FLOTATIONS, 1911 TO 1918.

Year ended 30th June—	Payable in—		Value of Transferred Properties.	Total.
	London.	Australia.		
	£	£	£	£
1911	3,815,502	2,116,820	9,648,449	15,580,771
1912	3,815,502	2,556,345	9,648,449	16,020,296
1913	3,645,548	3,784,401	9,648,449	17,079,398
1914	3,510,921	5,884,401	9,787,011	19,182,333
1915	18,337,949	8,313,720	10,777,161	37,428,830
1916	40,063,440	50,499,048	10,781,797	101,344,285
1917	58,426,312	100,013,506	10,789,739	169,229,557
1918	102,579,102	170,273,452	11,202,515	284,055,069

9. Rates of Interest.—When the first debt was taken over from South Australia it consisted in the main of a mass of securities varying from 3 per cent. to 4 per cent., the average rate of interest for the first year being £3 12s. 4d. For the first three years the increase in the debt was due almost entirely to the expansion of the 3½ per cent. stock of the Loan Fund, and as a consequence the average rate of interest fell steadily, until on 30th June, 1914, it stood at £3 11s. 10d. Then came the loans for military purposes, and the fall in the average rate was ultimately converted into a rise which is likely to be maintained, since there is not likely to be any further borrowing for some time at a rate of less than 4½ per cent. In fact, the influence of the heavy borrowing of the last three years at high rates is already reflected in the average rate of interest, which rose during that period by approximately 1 per cent. It is notoriously difficult to forecast the future of the rate of interest, but the influence of the large Imperial War Loans on gilt-edged securities has been so far-reaching, that in all probability during the next decade the average rate of interest on the Federal Public Debt will rise continuously.

The accompanying table gives full particulars concerning the interest for the five financial years ended 30th June, 1918.

RATES OF INTEREST ON COMMONWEALTH PUBLIC DEBT, 1914 TO 1918.

Rates of Interest.	Year ended 30th June—				
	1914.	1915.	1916.	1917.	1918.
%	£	£	£	£	£
Not bearing interest ..	..	..	4,759,730	9,373,977	..
3	35,612	35,612	35,063	35,063	35,063
3½	14,058,768	30,371,023	16,796,712	16,804,654	17,217,430
£3/12/3	748,404	748,404	720,411	720,411	720,411
3¾	1,798,383	1,798,383	1,399,758	1,394,008	1,394,008
4	2,541,166	4,475,408	7,156,070	6,647,823	8,451,270
4½ .. ..	..	..	56,076,541	101,353,621	200,261,846
5 .. ..	..	..	14,400,000	25,400,000	43,975,041
5¼ .. ..	..	..	..	4,000,000	4,000,000
5½ .. ..	..	..	..	3,500,000	8,000,000
Total	19,182,333	37,428,830	101,344,285	169,229,557	284,055,069
Average rate of interest	£3/11/10	£3/11/6	£4/2/10	£4/4/8	£4/10/9

A table is appended shewing the amounts payable as interest on the Commonwealth Public Debt as at 30th June in the respective years. The rapid increase is due not only to the great expansion of the War Loan Fund, but also to the high rate of interest on recent loans.

AMOUNT OF INTEREST PAYABLE ON COMMONWEALTH PUBLIC DEBT AS AT 30th JUNE—

Year.					£
1911	..	..	..	..	563,540
1912	..	..	..	..	579,000
1913	..	..	..	..	615,797
1914	..	..	..	..	689,247
1915	..	..	..	..	1,337,546
1916	..	..	..	..	4,196,404
1917	..	..	..	..	7,166,105
1918	..	..	..	..	12,879,793

10. **Dates of Maturity.**—A table is appended giving the dates of maturity of the several portions of the Commonwealth debt. The Commonwealth Government has refrained from issuing interminable stock, although as regards nearly one-fourth of the debt no definite date of maturity had been assigned on 30th June, 1918. It will be noticed that about £150,000,000 falls due in the space of two years, 1925–27, the bulk of this being represented by the balance of the first six internal loans.

DUE DATES OF THE COMMONWEALTH PUBLIC DEBT OUTSTANDING ON 30th JUNE, 1918.(a)

Due Dates.	Amounts.	Due Dates.	Amounts.	Due Dates.	Amounts.
	£		£		£
1920 ..	176,714	1927 ..	72,773,965	1945 ..	11,500,000
1921 ..	4,619,498	1928 ..	1,263,158	1947 ..	36,318,901
1922 ..	4,000,125	1930 ..	750,950	1972 ..	4,580,000
1924 ..	1,553,952	1935 ..	83,051	Indefinite ..	66,471,083
1925 ..	78,431,160	1936 ..	583,769		
1926 ..	66,801	1939 ..	881,942	Total ..	284,055,069

(a) Those loans in the case of which the Government has the option of redemption during a specified period have been in each case classified according to the latest date of maturity.

On pages 747 and 748 will be found a series of graphs illustrating the rise in the revenue and public debt of the Commonwealth and States since 1902, the year 1901–2 being the first complete financial year since Federation.

SECTION XX.

STATE FINANCE.

§ 1. General.

1. **Functions of State Governments.**—In any comparison of the finances of the several States due recognition must be made of the actual functions assumed by the respective Governments, and also of the local conditions and requirements in each case. Direct comparisons of public expenditure are thus rendered difficult, owing to the fact that functions which in one State are assumed by the Central Government are in another State relegated to local governing bodies, and further by the fact that costly developmental work may, under certain conditions, be not only economically justifiable, but may be an essential of progress, whilst parsimonious expenditure may be a serious economic blunder. A large expenditure may, therefore, be an indication either of gross extravagance and bad economy on the one hand, or healthy and vigorous progress and good economy on the other.

Similarly, as regards revenue, imposts which in some States are levied by the Central Government, are in others considered as matters to be dealt with locally. Under these circumstances care is needed in instituting comparisons between the several States, and the particulars contained in this section should be read in connection with those contained in the section dealing with Local Government. It should also be noted that in many ways the budgets of the Australian Governments differ materially from those of most European countries, owing to the inclusion therein of the revenue and expenditure of departments concerned in rendering public services, such for instance as railways, tramways, water supply, etc., which, in the other countries referred to, are often left to private enterprise.

2. **Accounts of State Governments.**—The various financial transactions of the States are in each case concerned with one or other of three Funds—the “Consolidated Revenue Fund,” the “Trust Funds,” and the “Loan Funds.” All revenue collected by the State is placed to the credit of its Consolidated Revenue Fund, from which payments are made under the authority of an Annual Appropriation Act passed by the Legislature, or by a permanent appropriation under a special Act. The hypothecation of the revenue from a specific tax to the payment for some special service is not practised in Australia, all statutory appropriations ranking on an equality as charges on the Consolidated Revenue Fund. The Trust Funds comprise all moneys held in trust by the Government, and include such items as savings banks funds, sinking funds, insurance companies’ deposits, etc. The Loan Funds are credited with all loan-moneys raised by the State, and debited with the expenditure therefrom for public works or other purposes.

3. **Inter-relation of Commonwealth and State Finance.**—The principal alteration in State finance, brought about by Federation, has been that the States have transferred to the Commonwealth the large revenue received by the Customs and Postal Departments and have been relieved of the expenditure connected with these and the Defence Departments, while, on the other hand, a new item of State revenue has been introduced, viz., the payment to the States of a Commonwealth subsidy. Provision for the taking over by the Commonwealth of certain of the public debts of the States is made in section 105 of the Constitution, and a proposed law extending this provision to the whole of the State indebtedness, which passed both Houses of the Federal Legislature by

the statutory majority, was submitted to a referendum at the election in April, 1910, and received the requisite endorsement by the electorate. No action has as yet been taken, although the subject has, on more than one occasion, been under discussion.

§ 2. State Consolidated Revenue Funds.

(A) Receipts.

1. Sources of Revenue.—The principal sources of State revenue are :—

- (a) Taxation.
- (b) The public works and services controlled by the State Governments.
- (c) Sale of and rental from Crown lands.
- (d) The Commonwealth subsidy.
- (e) Miscellaneous sources, comprising fines, fees, interest, etc.

Of these sources, that yielding the largest revenue for the States as a whole is the group of public works and services, the principal contributor being the Government railways and tramways. Next in magnitude comes Taxation, followed in order by the Commonwealth Subsidy and Land Revenue.

2. Amount Collected.—The following table furnishes particulars of the total amount of consolidated revenue received by the several States during the ten years 1908-9 to 1917-18 :—

STATE REVENUE, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1908-9	13,646,126	8,247,684	4,769,172	3,591,260	3,268,993	934,405	34,457,640
1909-10	14,540,073	8,597,992	5,119,254	4,032,891	3,657,670	1,008,932	36,956,812
1910-11	13,839,139	9,204,503	5,320,008	4,181,472	3,850,439	970,092	37,365,653
1911-12	15,776,816	10,009,796	5,989,347	4,450,739	3,966,673	1,084,663	41,278,034
1912-13	16,057,298	10,287,285	6,378,213	4,506,698	4,596,659	1,206,292	43,032,445
1913-14	18,298,625	10,730,961	6,973,259	4,822,766	5,205,343	1,238,085	47,269,039
1914-15	18,928,551	10,529,017	7,202,658	3,973,310	5,140,725	1,244,095	47,018,356
1915-16	19,629,442	11,470,875	7,706,365	4,356,967	5,356,978	1,376,493	49,897,120
1916-17	20,537,835	11,813,879	7,880,893	4,874,603	4,577,007	1,369,368	51,053,585
1917-18	21,577,229	12,672,787	8,491,482	5,526,226	4,622,536	1,503,047	54,393,307

The figures given in this table relate in each instance to the financial year ended 30th June.

During the nine years from 30th June, 1909, to 30th June, 1918, the aggregate revenues of the States increased by no less a sum than £19,935,667, or about 58 per cent. Increases were in evidence in all the States, the largest being that of £7,931,103 in New South Wales. This general advance is the more notable since, during recent years, a much smaller amount has been received from the Commonwealth, in the way of subsidy, than was the case up to 1910.

3. Revenue per Head.—Details concerning the revenue per head of population, collected in the several States of the Commonwealth during the ten years 1908-9 to 1917-18, are furnished in the table given hereunder. It will be seen that throughout the period Western Australia has collected by far the largest amount per head, and that Tasmania has collected the least.

STATE REVENUE PER HEAD OF POPULATION, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1908-9 ..	8 12 4	6 11 11	8 11 3	9 4 5	12 11 9	4 17 6	8 2 10
1909-10 ..	9 0 2	6 14 8	8 17 2	10 3 6	13 15 4	5 4 6	8 10 11
1910-11 ..	8 8 5	7 1 5	8 17 8	10 3 11	13 18 2	5 0 1	8 8 11
1911-12 ..	9 8 5	7 6 11	9 12 6	10 12 10	13 9 8	5 12 1	9 0 8
1912-13 ..	9 0 6	7 9 0	10 0 5	10 9 6	15 0 3	6 2 4	9 1 10
1913-14 ..	9 19 10	7 12 0	10 11 3	10 19 2	16 4 8	6 2 9	9 14 1
1914-15 ..	10 3 1	7 7 2	10 12 10	8 19 11	15 18 3	6 3 6	9 10 3
1915-16 ..	10 10 1	8 1 0	11 6 6	9 18 2	16 16 11	6 16 11	10 2 4
1916-17 ..	11 1 0	8 8 9	11 15 4	11 5 9	14 16 5	6 17 0	10 9 5
1917-18 ..	11 9 7	8 19 7	12 6 8	12 13 4	14 18 9	7 8 0	11 0 5

In all the States, during the period, there has been a marked increase in the State revenue collections per head, the most noticeable advance being £3 15s. 5d. in the case of Queensland. Western Australia throughout the period has led the other States, and in 1917-18 the revenue per head in that State exceeded the Commonwealth average by about 35½ per cent. South Australia shewed a marked decline in 1914-15, due largely to a diminished revenue from public works and services, but has since recovered.

4. Details for 1917-18.—Classifying the revenue of the several States in the manner indicated in § 2 (a) 1 above, particulars for the year 1917-18 are as follows:—

DETAILS OF STATE REVENUE, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Taxation ..	3,860,501	2,310,723	1,761,232	1,016,887	449,457	533,383	9,932,183
Public works and services ..	12,870,167	7,296,846	4,157,582	3,208,911	2,657,899	446,233	30,637,638
Land ..	1,861,460	292,473	1,116,648	258,959	315,907	91,191	3,936,638
Commonwealth sub-sidy ..	2,317,783	1,739,481	842,858	535,808	599,239	(a)340,260	6,375,429
Miscellaneous ..	667,318	1,033,264	613,162	505,661	600,034	91,980	3,511,419
Total ..	21,577,229	12,672,787	8,491,482	5,526,226	4,622,536	1,503,047	54,393,307

(a) Including special grant of £90,000.

It will be noted that the amounts returned under the heading "Commonwealth subsidy" do not always agree with those given in the chapter on Commonwealth Finance, page 765. This arises from the fact that the State figures shew the amount for which credit was taken by the State during the financial year 1917-18, whilst the Commonwealth figures shew the amounts paid to State Treasurers on account of that financial year.

5. Revenue per Head, 1917-18.—Particulars concerning the revenue per head of population in each State derived from the several sources enumerated in the preceding paragraph are given hereunder:—

STATE REVENUE FROM VARIOUS SOURCES PER HEAD OF POPULATION, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation ..	2 1 1	1 12 9	2 11 2	2 6 7	1 9 1	2 12 6	2 0 3
Public works and services ..	6 16 11	5 3 5	6 0 9	7 7 2	8 11 9	2 3 11	6 4 2
Land ..	0 19 10	0 4 1	1 12 5	0 11 10	1 0 5	0 9 0	0 15 11
Commonwealth sub-sidy ..	1 4 8	1 4 8	1 4 6	1 4 7	1 18 9	1 13 6	1 5 10
Miscellaneous ..	0 7 1	0 14 8	0 17 10	1 3 2	1 18 9	0 9 1	0 14 3
Total ..	11 9 7	8 19 7	12 6 8	12 13 4	14 18 9	7 8 0	11 0 5

The magnitude of the revenue per head from public works and services in the case of Western Australia is mainly due to the fact that the number of miles of railway in that State is large compared with the population, while the revenue-earning power of the railways is also high.

6. **Relative Importance of Sources of Revenue.**—The following table furnishes an indication of the relative importance of the different sources of revenue in the several States, the figures given being the percentage which each item of revenue bore to the total for the State for the year 1917-18 :—

PERCENTAGE OF ITEMS ON TOTAL STATE REVENUE, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
Taxation	17.89	18.23	20.74	18.40	9.72	35.49	18.26
Public works and services ..	59.65	57.58	48.96	58.07	57.50	29.69	56.33
Land	8.63	2.31	13.15	4.69	6.84	6.06	7.24
Commonwealth subsidy	10.74	13.73	9.93	9.69	12.96	22.64	11.72
Miscellaneous	3.09	8.15	7.22	9.15	12.98	6.12	6.45
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

7. **State Taxation.**—(a) *Details, 1917-18.* Prior to the inauguration of Federation the principal source of revenue from taxation was the imposition of duties of Customs and Excise. At the present time the most productive forms of State taxation are the income tax, which is now imposed in all the States (Western Australia, the last of the States to adopt this method of taxation, having passed the necessary legislation during the Parliamentary session of 1907), and stamp duties. For 1917-18 probate and succession duties occupied third place. In addition to these a State land tax is now collected in all the States, license fees of various kinds are also collected in all the States, while a dividend tax is levied in Western Australia. The total revenue from taxation collected by the States during the year 1917-18 was £9,932,183, details of which are set forth in the table given hereunder :—

STATE REVENUE FROM TAXATION, 1917-18.

Taxation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Probate and succession duties	677,433	506,662	121,986	170,185	38,710	50,688	1,565,664
Other stamp duties	618,180	507,573	205,674	179,521	80,720	96,215	1,685,883
Land tax	2,921	353,156	344,547	165,469	63,388	84,701	1,014,182
Income tax	2,182,117	773,468	967,420	452,303	(a)207,983	259,869	4,843,140
Licenses	160,520	158,842	84,529	27,519	39,983	14,722	486,095
Other taxation	221,330	11,022	37,076	21,890	18,713	27,188	337,219
Total	3,860,501	2,310,723	1,761,232	1,016,887	449,457	533,383	9,932,183

(a) Includes £109,462 dividend tax.

(b) *Summary, 1908-9 to 1917-18.* The total amount raised by means of taxation by the several State Governments during the ten years 1908-9 to 1917-18 is given in the following table :—

STATE REVENUE FROM TAXATION, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1908-9 ..	907,249	1,072,228	535,194	450,250	296,599	250,835	3,512,355
1909-10 ..	1,223,521	1,083,353	584,997	481,003	336,396	303,390	4,017,660
1910-11 ..	1,027,519	1,344,573	667,196	545,986	325,246	284,965	4,195,485
1911-12 ..	1,885,653	1,501,696	787,577	551,994	352,314	340,434	5,419,668
1912-13 ..	1,405,360	1,577,878	806,677	536,401	393,615	345,282	5,065,213
1913-14 ..	2,330,005	1,598,876	887,798	730,640	386,104	371,413	6,304,836
1914-15 ..	2,955,670	1,762,041	954,457	588,690	371,960	367,577	7,000,395
1915-16 ..	3,117,221	2,074,839	1,455,358	701,511	407,997	384,820	8,141,746
1916-17 ..	3,629,404	2,237,016	1,564,044	726,645	402,336	438,632	8,998,077
1917-18 ..	3,860,501	2,310,723	1,761,232	1,016,887	449,457	533,333	9,932,183

During the period between 30th June, 1909, and 30th June, 1918, the aggregate State revenue from taxation increased by about 180 per cent., the increase varying considerably in the several States. The remarkable increase of the last five years in New South Wales is due principally to the broadening of the basis of the State Income Tax, and increased receipts from Stamp Duties. Queensland collected a Land Tax for the first time in 1915-16. Tasmania imposed in 1917-18 a Super Tax on incomes, and a Motor Tax. The total increase in State taxation for the year 1917-18 amounted to £934,106, or nearly 10½ per cent.

The revenue from State taxation per head of population, collected in the several States during each of the years 1908-9 to 1917-18, was as follows :—

STATE TAXATION PER HEAD, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1908-9 ..	0 11 6	0 17 2	0 19 2	1 3 1	1 2 10	1 6 2	0 16 7
1909-10 ..	0 15 2	0 17 0	1 0 3	1 4 3	1 5 4	1 11 5	0 18 7
1910-11 ..	0 12 6	1 0 8	1 2 3	1 6 8	1 3 6	1 9 5	0 19 0
1911-12 ..	1 2 6	1 2 1	1 5 4	1 6 2	1 3 11	1 15 2	1 3 9
1912-13 ..	0 15 10	1 2 10	1 5 4	1 4 9	1 5 8	1 15 0	1 1 5
1913-14 ..	1 5 5	1 2 8	1 6 11	1 13 2	1 4 1	1 16 10	1 5 11
1914-15 ..	1 11 8	1 4 8	1 8 2	1 6 8	1 3 0	1 16 6	1 8 4
1915-16 ..	1 13 4	1 9 3	2 2 9	1 11 11	1 5 8	1 18 3	1 13 0
1916-17 ..	1 19 1	1 12 0	2 6 9	1 13 8	1 6 1	2 3 11	1 16 11
1917-18 ..	2 1 1	1 12 9	2 11 2	2 6 7	1 9 1	2 12 6	2 0 3

Taking the States as a whole, the State taxation increased by 23s. 8d. per head during the period from 1908-9 to 1917-18, the most marked increase occurring in the case of Queensland. Most of the advance took place in the last two years, and was chiefly due to the Land Tax.

8. *Commonwealth and State Taxation.*—For the purpose of obtaining an accurate view of the extent of taxation imposed on the people of the Commonwealth by the central governing authorities, it is necessary to add together the Commonwealth and

State collections. This has been done in the table given hereunder, which contains particulars concerning the total taxation for each of the years 1913-14 to 1917-18, as well as the amount per head of population:—

COMMONWEALTH AND STATE TAXATION, 1913-14 TO 1917-18.

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Commonwealth taxation	16,587,906	16,870,596	23,533,529	24,523,013	24,606,743
State taxation ..	6,304,836	7,000,395	8,141,746	8,998,077	9,932,183
Total ..	22,892,742	23,870,991	31,675,275	33,521,090	34,538,926
Taxation per head ..	£4/14/0	£4/16,7	£6/8/5	£6/17/6	£7/0/0

Whilst the Commonwealth taxation increased during the period by £8,018,837, the State taxation advanced by £3,627,347, the aggregate increase being £11,646,184. The amount *per capita* of total taxation remained fairly constant for some years previous to 1914-15, at an average of about £4 15s. In the last three years, however, it has reached an abnormally high amount, owing to the imposition of fresh direct taxation by the Commonwealth Government. The large increase in Commonwealth taxation in recent years is mainly due to the appearance of the Federal Land Tax, Federal Income Tax, Federal Succession Duties, and other taxes due to the war.

9. Public Works and Services.—A very large proportion of the revenue of all the States of the Commonwealth is made up of the receipts from the various public works and services under the control of the several Governments. The principal of these are railways and tramways, harbour works, and water supply and sewerage, while in addition, State batteries for the treatment of auriferous ores exist in Western Australia, and various minor revenue-producing services are rendered by the Governments of all the States. For the year 1917-18 the aggregate revenue from these sources totalled £30,637,638, or nearly 56 per cent. of the revenue from all sources. Details of revenue from public works and services for the year 1917-18 are as follows:—

STATE REVENUE FROM PUBLIC WORKS AND SERVICES, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ..	10,821,648	6,615,914	4,020,753	2,344,584	1,970,333	357,640	26,130,872
Harbour services ..	648,793	92,237	33,002	217,558	85,168	..	1,076,758
Public batteries ..	..	802	..	..	69,335	..	70,137
Water supply and sewerage ..	1,058,129	232,257	..	367,643	379,925	..	2,037,953
Other public services ..	341,598	355,636	103,827	279,126	153,138	88,593	1,321,918
Total ..	12,870,167	7,296,846	4,157,582	3,208,911	2,657,899	446,233	30,637,638

(a) Water supply only.

10. Land Revenue.—The revenue derived by the States from the sale and rental of Crown lands has, with few exceptions, been treated from the earliest times as forming part of their respective Consolidated Revenue Funds, and has been applied to meet ordinary current expenses. Where the rentals received are for lands held for pastoral or for residential purposes, such application of the revenue appears perfectly justifiable. On the other hand, where the rentals are those of mineral and timber lands, and in all cases of sales of lands, such a proceeding is essentially a disposal of capital in order to

defray current expenses and as a matter of financial procedure is open to criticism. In the following table particulars of revenue derived from sales and rental of Crown lands are given for the year 1917-18 :—

STATE LAND REVENUE, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Sales ..	1,074,486	153,788	276,182	116,704	257,368	56,823	1,935,351
Rentals ..	786,974	138,685	840,466	142,255	58,539	34,368	2,001,287
Total ..	1,861,460	292,473	1,116,648	258,959	315,907	91,191	3,926,638

11. **Commonwealth Subsidy.**—The payments to the States of Commonwealth subsidy represent in each instance a considerable proportion of the States' revenue, and for the year 1917-18 aggregated £6,375,429. This represents a great decline from the amounts received up to 1910, owing to the new system of allotting the subsidy. The percentage which the subsidy received by each State for 1917-18 was of the total revenue of that State is shewn in the following table :—

COMMONWEALTH SUBSIDY PAID TO STATES DURING 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Commonwealth subsidy	2,317,783	1,739,481	842,858	535,808	599,239	340,260	6,375,429
Total revenue ..	21,577,229	12,672,787	8,491,482	5,526,226	4,622,536	1,503,047	54,393,307
Percentage of subsidy on revenue ..	10.74	13.73	9.93	9.69	12.96	22.64	11.72

(a) Including special grant of £90,000.

The amount of subsidy here shewn is that for which the several States took credit during the year 1917-18. (See also page 778.)

12. **Miscellaneous Items of Revenue.**—In addition to the foregoing sources of revenue there are in each State several miscellaneous ones, including such items as interest, fines, fees, &c., which for the year 1917-18 aggregated £3,511,419.

(B) Disbursements.

1. **Heads of Expenditure.**—The principal heads of State expenditure from Consolidated Revenue Funds are :—

- (a) Interest and sinking funds in connection with public debt.
- (b) Working expenses of railways and tramways.
- (c) Justice.
- (d) Police.
- (e) Penal establishments.
- (f) Education.
- (g) Medical and charitable expenditure.
- (h) All other expenditure.

Of these items, that of working expenses of railways and tramways was the most important, and for the year 1917-18 represented about 35 per cent. of the aggregate expenditure from the Consolidated Revenue Fund. Next in order for that year was the item of interest and sinking fund in connection with the public debt, then education, medical and charitable expenditure, and police in the order named.

2. **Total Expenditure.**—The total expenditure from Consolidated Revenue Funds in the several States during each of the years 1908-9 to 1917-18 is furnished in the table given hereunder:—

STATE EXPENDITURE, CONSOLIDATED REVENUE FUNDS, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1908-9	12,893,662	8,240,177	4,759,231	3,760,005	3,370,530	960,237	33,983,842
1909-10	13,038,150	8,579,980	5,113,578	4,196,493	3,447,732	997,321	35,373,254
1910-11	13,807,538	9,194,157	5,314,737	4,181,472	3,734,448	1,016,963	37,249,315
1911-12	15,277,001	9,999,342	5,965,692	4,450,739	4,101,082	1,064,725	40,858,581
1912-13	16,798,500	10,258,081	6,372,097	4,506,698	4,787,063	1,095,883	43,818,322
1913-14	17,701,851	10,717,642	6,962,516	4,604,130	5,340,754	1,235,014	46,561,907
1914-15	17,935,748	11,706,968	7,199,399	4,662,395	5,706,542	1,384,150	48,595,202
1915-16	18,931,814	11,683,363	7,671,573	4,741,377	5,705,201	1,340,711	50,074,039
1916-17	20,806,633	11,795,295	8,134,387	5,190,453	5,276,764	1,412,893	52,616,425
1917-18	21,553,405	12,631,169	8,900,934	5,500,419	5,328,279	1,459,748	55,373,954

As in the case of the table previously given for revenue, the above figures relate to the year ended 30th June.

3. **Expenditure per Head.**—Owing to the varying conditions of the several States and the extent to which the different functions of Government are distributed therein between central and local governing authorities, the expenditure per head from Consolidated Revenue Funds differs materially in the several States, being highest in the case of Western Australia and lowest in that of Tasmania. The expenditure per head of population for each State for the years 1908-9 to 1917-18 is as follows:—

STATE EXPENDITURE PER HEAD, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1908-9	8 2 10	6 11 9	8 10 10	9 13 1	12 19 7	5 0 2	8 0 7
1909-10	8 1 7	6 14 4	8 17 0	10 11 9	12 19 6	5 3 3	8 3 7
1910-11	8 8 0	7 1 3	8 17 5	10 3 11	13 9 9	5 4 11	8 8 4
1911-12	9 2 5	7 6 9	9 11 9	10 12 10	13 18 10	5 10 1	8 18 10
1912-13	9 9 0	7 8 8	10 0 3	10 9 6	15 12 9	5 11 2	9 5 2
1913-14	9 13 3	7 11 10	10 10 11	10 9 3	16 13 1	6 2 6	9 11 2
1914-15	9 12 8	8 3 8	10 12 7	10 11 1	17 13 4	6 17 5	9 16 8
1915-16	10 2 7	8 4 10	11 5 6	10 15 8	17 18 10	6 13 4	10 3 1
1916-17	11 3 11	8 8 6	12 3 0	12 0 5	17 1 9	7 1 4	10 15 10
1917-18	11 9 3	8 19 0	12 18 6	12 12 2	17 4 5	7 3 8	11 4 5

The total expenditure per head has increased every year in the period under review, although there have been fluctuations in the individual States.

4. **Details of Expenditure for 1917-18.**—The following table furnishes for the year 1917-18 particulars as to the expenditure of the several States under each of the principal heads :—

DETAILS OF STATE EXPENDITURE, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Public debt (interest, sinking fund, etc.) ..	5,220,307	3,309,936	2,454,863	1,710,590	1,879,051	638,788	15,213,535
Railways and tramways (working expenses) ..	7,580,342	4,475,717	3,420,764	1,775,504	1,559,581	305,007	19,116,915
Justice ..	351,087	165,613	133,827	51,063	76,980	12,782	791,352
Police ..	646,522	376,201	332,707	135,165	130,568	49,448	1,670,611
Penal establishments ..	90,570	55,027	32,856	23,219	20,126	6,619	228,417
Education ..	1,955,267	1,215,880	737,861	376,069	377,735	140,222	4,803,034
Medical and charitable ..	949,154	614,974	567,502	245,802	278,865	100,729	2,757,026
All other expenditure ..	4,760,156	2,417,821	1,220,554	1,183,007	1,005,373	206,153	10,793,064
Total ..	21,553,405	12,631,169	8,900,934	5,500,419	5,328,279	1,459,748	55,373,954

5. **Expenditure per Head, 1917-18.**—The expenditure per head of population of the several States for the year 1917-18 under each of the principal items, is given hereunder :—

STATE EXPENDITURE PER HEAD, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Public debt (interest, sinking fund, etc.) ..	2 15 6	2 6 11	3 11 3	3 18 5	6 1 6	3 2 10	3 1 8
Railways and tramways (working expenses) ..	4 0 8	3 3 5	4 19 4	4 1 5	5 0 10	1 10 0	3 17 6
Justice ..	0 3 9	0 2 4	0 3 11	0 2 4	0 5 0	0 1 3	0 3 2
Police ..	0 6 10	0 5 4	0 9 8	0 6 2	0 8 5	0 4 10	0 6 9
Penal establishments ..	0 1 0	0 0 9	0 1 0	0 1 1	0 1 3	0 0 8	0 0 11
Education ..	1 0 9	0 17 3	1 1 5	0 17 3	1 4 5	0 13 10	0 19 6
Medical and charitable ..	0 10 1	0 8 8	0 16 6	0 11 3	0 18 0	0 9 11	0 11 2
All other expenditure ..	2 10 8	1 14 4	1 15 5	2 14 3	3 5 0	1 0 4	2 3 9
Total ..	11 9 3	8 19 0	12 18 6	12 12 2	17 4 5	7 3 8	11 4 5

6. **Relative Importance.**—The relative importance of the items of expenditure enumerated above varies considerably in the several States. This will readily be seen from the following table, giving for each State the percentage of the expenditure under the various items, on the total expenditure for the State :—

PERCENTAGE OF ITEMS ON TOTAL STATE EXPENDITURE, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
Public debt (interest, sinking fund, etc.) ..	24.22	26.20	27.58	31.10	35.27	43.76	27.47
Railways and tramways (working expenses) ..	35.17	35.43	38.43	32.28	29.27	20.89	34.52
Justice ..	1.63	1.31	1.50	0.93	1.44	0.88	1.43
Police ..	3.00	2.98	3.74	2.46	2.45	3.39	3.02
Penal establishments ..	0.42	0.44	0.37	0.42	0.38	0.45	0.42
Education ..	9.07	9.63	8.29	6.84	7.09	9.61	8.67
Medical and charitable ..	4.40	4.87	6.38	4.47	5.23	6.90	4.98
All other expenditure ..	22.09	19.14	13.71	21.50	18.87	14.12	19.49
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Taken together, the interest and sinking fund on the public debt, and the working expenses of the railways and tramways, represented for the year 1917-18 about 60 per cent. of the aggregate State expenditure, a proportion which has been maintained with great regularity for many years past.

(C) Balances.

1. **Position on 30th June, 1918.**—On various occasions in each of the States the revenue collected for a financial year has failed to provide the funds requisite for defraying the expenditure incurred during that year, the consequence being a deficit which is usually liquidated either by cash obtained from trust funds, or by the issue of Treasury bills. In some of the States a number of such deficits has occurred, interspersed with occasional surpluses, the result being an accumulating overdraft, which in certain instances assumed very large proportions. Thus, during the period of financial stress resultant upon the crisis of 1893 and the drought conditions of succeeding years, the accumulated overdrafts of several of the States grew very rapidly, and the situation has changed very much for the worse in the years preceding 1917–18, so that not one of the States now has a credit balance. The position of the balances of the several Consolidated Revenue Funds on 30th June, 1918, was as follows:—

STATE CONSOLIDATED REVENUE FUND BALANCES, 30th JUNE, 1918.

State.	Cash Credit Balances.	Debit Balance.		Net Result.
		Cash Overdraft.	Overdraft liquidated by Treasury Bills.	
	£	£	£	£
New South Wales	459,313	.. .. .	Dr. 459,313
Victoria	178,604	1,403,285	Dr. 1,581,889
Queensland	409,452	.. .. .	Dr. 409,452
South Australia	1,144,900	.. .. .	Dr. 1,144,900
Western Australia	1,298,890	1,467,575	Dr. 2,766,465
Tasmania	69,213	146,871	Dr. 216,084
Total	3,560,372	3,017,731	Dr. 6,578,103

(D) Principal State Taxes.**(a) Probate and Succession Duties.**

1. **General.**—Probate duties have been levied for a considerable time in all the States of the Commonwealth. From the provisions of the several State Acts governing the payment of duty, it will be seen that both the ordinary rates and those which apply to special beneficiaries differ widely in several cases. In the following table the amount under which the estates of deceased persons were sworn is shewn for the years 1913 to 1917. The values are net values.

VALUE OF ESTATES OF DECEASED PERSONS, 1913 TO 1917.

State.	1913.	1914.	1915.	1916.	1917.
	£	£	£	£	£
New South Wales	8,443,068	(a)9,997,615	(a) 10,813,889	(a) 11,687,910	(a) 11,859,375
Victoria	8,367,862	(a)8,481,720	(a) 8,759,728	(a) 8,917,481	(a) 9,486,584
Queensland	1,685,287	2,101,558	2,483,908	2,746,508	2,598,771
South Australia	2,214,241	2,907,561	2,734,597	1,893,017	3,018,598
Western Australia	607,972	739,956	850,367	1,462,820	994,346
Tasmania	680,477	620,108	721,850	807,513	696,142
Total	21,998,907	24,848,518	26,364,339	27,515,249	28,653,816

(a) Including letters of administration.

The duty collected in the several States for the financial years 1913-14 to 1917-18 is as follows :—

AMOUNT OF PROBATE AND SUCCESSION DUTIES COLLECTED, 1913-14 TO 1917-18.

State.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
New South Wales ..	512,529	551,629	645,554	826,769	677,433
Victoria ..	457,042	536,869	510,032	546,400	506,662
Queensland ..	89,835	112,740	136,277	146,077	121,983
South Australia ..	226,367	113,734	183,919	134,620	170,185
Western Australia ..	30,662	40,156	44,284	40,963	38,710
Tasmania ..	29,094	38,252	36,700	37,310	50,688
Total ..	1,345,529	1,393,380	1,556,766	1,732,139	1,565,664

For particulars relating to the legislation of the different States on probate and succession duties see Year Book No. 6, pp. 815-818.

(b) Stamp Duties.

1. **Revenue.**—The revenue derived by the several States of the Commonwealth from stamp duties for the years 1913-14 to 1917-18 is shown in the accompanying table :—

**STAMP REVENUE (EXCLUSIVE OF PROBATE AND SUCCESSION DUTIES),
1913-14 TO 1917-18.**

State.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
New South Wales ..	377,707	552,762	522,992	550,211	616,180
Victoria ..	278,240	280,384	400,056	376,196	507,573
Queensland ..	205,635	208,664	185,734	175,186	205,674
South Australia ..	101,094	81,007	114,169	145,079	179,521
Western Australia ..	77,051	64,398	64,858	67,035	80,720
Tasmania ..	83,202	73,754	69,888	77,636	96,215
Total ..	1,122,929	1,269,969	1,357,697	1,391,343	1,685,883

2. **Bank Notes.**—Promissory notes issued by any bank were not required to bear a duty stamp either impressed or adhesive, and might be re-issued as often as thought fit. An annual composition was, however, paid in lieu of stamp duty up to 1910. This composition was payable quarterly, and was the same in all States, being at the rate of £2 per annum on every £100 or part thereof of the average annual amount of bank notes in circulation. On 2nd June, 1893, the Treasury Notes Act of Queensland was assented to, by which the issue of Treasury notes payable on demand was authorised. These notes were used exclusively by the banks in that State, but their issue was prohibited by the Federal Bank Note Tax Act, and they have now passed out of circulation. (See Section XXI., Private Finance.)

The issue of bank notes by the banks has practically ceased owing to this Act, which passed the Federal Parliament in the session of 1910, and was assented to on 10th October, 1910. Further reference is made to the Act in the section dealing with Private Finance. It is sufficient to say here that it imposed a tax of 10 per cent. per annum on all bank notes issued or re-issued by any bank in the Commonwealth after the commencement of the Act and not redeemed.

For further details concerning Stamp Duty Legislation, see Year Book No. 7, p. 723.

(c) Land Tax.

1. **General.**—All the States now impose a Land Tax, although Queensland, the last State to fall into line, only collected its first levy in 1915–16. Western Australia imposed its first tax in 1907, but in the other States the impost is of very long standing.

The following table shews the amount collected by means of such taxes during the financial years 1913–14 to 1917–18 in the States in which a land tax was imposed :—

STATE LAND TAX COLLECTIONS, 1913–14 TO 1917–18.

State.	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.
	£	£	£	£	£
New South Wales ..	4,692	3,346	3,190	3,215	2,921
Victoria	302,224	303,550	352,353	369,486	353,156
Queensland .. ..	..	..	247,044	362,535	344,547
South Australia ..	136,602	131,896	154,483	139,372	165,469
Western Australia ..	46,201	36,433	47,716	42,431	63,388
Tasmania	79,085	80,863	82,436	83,595	84,701
Total ..	568,804	556,088	887,222	1,000,634	1,014,182

For details relating to State Land Tax legislation see Year Book No. 6, pp. 821–823.

(d) Income Tax.

1. **General.**—A duty on the income of persons, whether it be derived from personal exertion or from the produce of property, is now imposed in all the States of the Commonwealth. As might be expected in dealing with the different States, the rates, exemptions, etc., are widely divergent, but the general principle of the several Acts is strikingly consistent. The Dividend Duties Acts of Queensland and Western Australia—the former of which is now repealed—supplied to a certain extent the place of an income tax in those States in former years, but, with the increasing demands upon the State Treasury, the levying of a direct income tax has been found necessary.

In the following table particulars are furnished concerning the total amount collected in the several States during the years 1913–14 to 1917–18. In the case of Queensland and Western Australia the amount of dividend duty collected is included, this tax being closely allied to the income tax.

STATE INCOME AND DIVIDEND TAXES, 1913–14 TO 1917–18.

State.	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.
	£	£	£	£	£
New South Wales ..	1,290,370	1,653,923	1,707,403	1,973,477	2,182,117
Victoria	527,705	506,214	702,745	766,746	773,468
Queensland	472,918	517,273	766,560	756,292	967,420
South Australia ..	240,996	236,270	212,418	264,946	452,303
Western Australia ..	174,558	174,561	195,249	196,221	207,963
Tasmania	162,458	157,595	177,730	216,278	259,869
Total ..	2,869,005	3,245,836	3,762,105	4,173,960	4,843,140

For details relating to Income Tax legislation in the various States see Year Book No. 6, pp. 823–829.

§ 3. Trust Funds.

1. *Nature.*—In addition to the moneys received by the several State Governments as revenue, and paid to the credit of their respective Consolidated Revenue Funds, considerable sums are held by the Governments in trust for various purposes. One of the chief sources of these trust funds is the State Savings Bank, which exists in each State either as a Government department or under the control of a Board acting under Government supervision or Government guarantee. In most of the States also, sinking funds for the redemption of public debt are provided, and the moneys accruing thereto are paid to the credit of the appropriate trust funds. A similar course is followed in the case of municipal sinking funds placed in the hands of the Government. In all the States except New South Wales, life assurance companies carrying on business are required to deposit a substantial sum in cash or approved securities with the Government, and these deposits go to further swell the trust funds. Various other deposit accounts, superannuation funds, suspense accounts, etc., find a place in these funds. The trust funds have at various times enabled the several State Treasurers to tide over awkward financial positions, but the propriety of allowing deficits to be frequently liquidated in this manner is worthy of very serious consideration.

2. *Extent of Funds.*—The amount of such funds held by the several State Governments on 30th June, 1918, was as follows:—

STATE TRUST FUNDS ON 30th JUNE, 1918.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£ Dr.	£	£	£	£
Amount of trust funds	5,957,608	10,925,795	1,657,037	2,315,703	12,824,787	1,164,326	31,531,182

§ 4. Loan Funds.

1. *Nature.*—As early in the history of Australia as 1842 it was deemed expedient to supplement the revenue collections by means of borrowed moneys, the earliest of the loans so raised being obtained by New South Wales for the purpose of assisting immigration, at rates of interest varying from 2½d. to 5½d. per £100 per diem, or approximately from 4¼ per cent. to 8 per cent. per annum. The principal reason for Australian public borrowing, however, has been the fact that the Governments of the several States have, in addition to ordinary administrative duties, undertaken the performance of many functions which, in other countries, are usually entrusted to local authorities, or left to the initiative of private enterprise. Principal amongst these have been the construction of railways and the control of the railway systems of the several States, while the assumption by the State Governments of responsibilities in connection with improvements to harbours and rivers, and the erection of lighthouses, as well as the construction of works for the purposes of water supply and sewerage, have materially swelled the amounts which it has been considered expedient to obtain by means of loans. The Australian State loan expenditure and public debt thus differ very materially from those of most European countries, where such expenditure is very largely incurred for purposes of defence, or absorbed in the prosecution of war. The State debts of Australia, on the other hand, consist in the main of moneys raised and expended with the object of assisting the development of the resources of the Commonwealth, and are, to a very large extent, represented by tangible assets such as railways, tramways, waterworks, etc.

2. Loan Expenditure, 1917-18.—During the year ended 30th June, 1918, the actual expenditure of the Australian States from loan funds amounted to £11,407,382, New South Wales with a total of £4,487,511 being the principal contributor to this amount. The chief item of expenditure for the year was that of railways and tramways, which represented a total of £4,898,429, water supply and sewerage works contributing the amount of £2,023,727; the expenditure on harbours, rivers, etc., and roads and bridges totalling £1,116,659, and land purchases for settlement, loans to local bodies, advances to settlers, etc., were the most important of the remaining items. Details for the year for each State are given in the following table :—

STATE LOAN EXPENDITURE, 1917-18.

Heads of Expenditure.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ..	2,412,108	761,705	984,147	500,441	184,467	55,561	4,898,429
Water supply and sewerage ..	1,187,812	302,955	2,915	314,312	68,247	147,486	2,023,727
Harbours, rivers, etc. }	478,235	296,494	..	124,256	87,536	130,138	1,116,659
Roads and bridges }	195,843	14,016	105,259	37,390	17,537	24,646	394,691
Public buildings ..	..	(a) 183	..	..	10,661	..	10,478
Development of mines, etc. ..	..	9,479	..	784,605	503,170	95,334	1,388,097
Advances to settlers ..	(a) 4,491	273,494	..	..	..	2,640	276,134
Land purchases for settlement ..	(a) 7,364	..	301,778	..	..	64,537	358,951
Loans to local bodies ..	(a) 2,452	..	251	..	..	..	(a) 2,201
Rabbit-proof fences ..	..	..	..	..	..	..	..
Other public works and purposes ..	227,820	273,719	433,970	100,939	182,559	(a) 1,413	1,217,594
Total ..	4,487,511	1,931,679	1,828,320	(b) 1,586,766	1,054,177	518,929	(c) 11,407,382

(a) Repayment.

(b) After deduction of £275,177 credit account.

(c) See footnote (b).

3. Aggregate Loan Expenditure.—The total loan expenditure of the Australian States from the initiation of the borrowing system to the 30th June, 1918, has amounted to no less a sum than £384,136,750. The manner in which this sum has been spent in the several States is furnished in the following table :—

AGGREGATE STATE LOAN EXPENDITURE TO 30th JUNE, 1918.

Heads of Expenditure.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ..	88,480,659	54,672,527	39,217,225	20,584,860	17,812,863	5,466,600	226,234,734
Telegraphs and telephones ..	1,761,844	..	996,587	991,772	..	..	3,750,203
Water supply and sewerage ..	24,945,775	12,391,438	494,294	9,352,056	4,885,228	..	52,068,791
Harbours, rivers, etc. }	16,989,746	2,492,684	3,353,790	5,282,736	4,013,400	4,859,897	36,992,253
Roads and bridges }	1,457,536	149,323	363,084	291,615	..	128,224	2,389,782
Defence ..	8,073,012	2,409,713	2,005,677	1,510,667	797,063	1,215,146	16,011,278
Public buildings ..	569,930	..	2,763,070	..	393,445	235,000	3,961,445
Immigration ..	..	511,074	..	..	1,728,579	109,000	2,348,653
Development of mines, etc. ..	58,460	875,149	..	2,763,916	2,608,728	..	6,306,253
Advances to settlers ..	..	..	..	..	..	..	..
Land purchases for settlement ..	489,000	5,312,104	..	1,988,676	324,662	304,124	8,418,566
Loans to local bodies ..	(a) 1,833	..	5,317,882	..	64,491	1,263,241	6,643,781
Rabbit-proof fences ..	45,456	..	(b)	291,789	328,703	..	665,948
Other public works and purposes ..	992,567	5,970,751	2,575,719	3,683,930	3,758,332	1,363,764	18,345,063
Total ..	143,862,152	84,784,763	57,087,328	46,742,017	36,715,494	14,944,996	384,136,750

(a) Repayment.

(b) Included in loans to local bodies.

It must be noted that the figures furnished in this table represent the amounts actually spent, and consequently differ somewhat from those given later in the statements relating to the public debt, which represent amount of loans still unpaid at a given date. The loan expenditure statement includes all such expenditure, whether the loans by

means of which the necessary funds were raised have been repaid or are still in existence. On the other hand, in the public debt statement loans repaid are excluded, but in the case of loans still outstanding each is shown according to the amount repayable at maturity, not according to the amount originally available for expenditure.

4. **Relative Importance of Loan Items.**—The relative importance of the different items of loan expenditure given in the foregoing table varies considerably in the several States, but in each instance the expenditure on railways and tramways predominates, the percentage of this item on total expenditure ranging between the limits of 37 per cent. in the case of Tasmania and 69 per cent. in that of Queensland. The following table gives for each State the percentage of each item on the total loan expenditure of that State to 30th June, 1918 :—

PERCENTAGE OF EACH ITEM ON TOTAL LOAN EXPENDITURE OF THE STATES TO 30th JUNE, 1918.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Railways and tramways ..	61.51	64.48	68.69	44.04	48.52	36.58	58.89
Telegraphs and telephones ..	1.22	..	1.75	2.13	..	..	0.98
Water supply and sewerage ..	17.34	14.62	0.87	20.01	13.31	..	13.55
Harbours, rivers, etc.	11.81	2.94	5.87	11.30	10.93	32.52	9.63
Roads and bridges							
Defence ..	1.01	0.18	0.64	0.62	..	0.86	0.62
Public buildings ..	5.61	2.84	3.51	3.23	2.17	8.13	4.17
Immigration ..	0.40	..	4.84	..	1.07	1.57	1.03
Development of mines, etc.	..	0.60	..	..	4.70	0.73	0.61
Advances to settlers ..	0.04	1.03	..	5.91	7.10	..	1.64
Land purchases for settlement	0.34	6.27	..	4.26	0.88	2.03	2.19
Loans to local bodies ..	..	..	9.32	..	0.18	8.45	1.73
Rabbit-proof fences ..	0.03	..	(a)	0.62	0.90	..	0.18
Other public works and purposes ..	0.69	7.04	4.51	7.88	10.24	9.13	4.78
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(a) Included in loans to local bodies.

5. **Loan Expenditure in Successive Years.**—In the following table are given particulars relative to the loan expenditure of the several States during each of the years 1908-9 to 1917-18 :—

STATE LOAN EXPENDITURE, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1908-9 ..	2,906,507	1,098,360	1,247,821	832,114	1,012,452	334,200	7,431,454
1909-10 ..	3,246,640	1,209,505	1,486,216	978,082	1,028,995	435,104	8,384,542
1910-11 ..	3,921,758	2,657,271	1,995,301	1,567,210	1,484,367	300,216	11,926,123
1911-12 ..	5,491,103	2,974,149	3,324,243	1,756,050	2,344,070	435,557	16,325,177
1912-13 ..	7,703,594	2,202,697	2,448,066	2,247,337	3,423,020	404,560	18,429,274
1913-14 ..	9,126,844	3,276,994	2,190,150	2,762,686	2,883,169	498,141	20,737,984
1914-15 ..	6,996,107	5,351,830	2,638,266	2,532,759	2,521,608	785,269	20,825,839
1915-16 ..	8,173,104	4,473,569	3,061,839	2,097,197	1,584,643	880,394	20,270,746
1916-17 ..	6,862,179	2,440,966	2,267,962	1,811,531	855,184	476,472	14,714,294
1917-18 ..	4,487,511	1,931,679	1,828,320	1,586,766	1,054,177	518,929	11,407,382

Throughout the ten years under review the loan expenditure of New South Wales exceeded that of any other of the States, and for many years has represented about 40 per cent. of the aggregate of Australia. The large loan expenditure of New

South Wales in 1908-9, 1909-10, and 1910-11, was incurred chiefly in connection with railway construction and the resumption of the foreshores and adjoining properties of Darling Harbour. In Victoria the construction of railways and water supply and sewerage works was mainly responsible for the high amounts of 1908-9 and 1909-10. In 1910-11 the large amount was mainly accounted for by heavy expenditure on railways and land purchased for settlement. In the case of the large loan expenditure of Queensland in 1909-10 and 1910-11, railway construction was the principal contributing item. In Western Australia the heavy loan expenditure of 1908-9 was principally in connection with railway construction and water supply. The year 1917-18 shewed a great decline in the total loan expenditure, which is likely to be maintained in the future, in view of the scarcity of capital.

6. *Loan Expenditure per Head.*—The loan expenditure per head of population varies materially in the different States and in different years, reaching its highest point for the ten years under review in Western Australia in 1912-13 with £11 3s. 7d. per head, and its lowest in Victoria in 1908-9 with 17s. 7d. per head. Particulars concerning the loan expenditure per head for the ten years 1908-9 to 1917-18 are given hereunder :—

STATE LOAN EXPENDITURE PER HEAD, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1908-9 ..	1 16 8	0 17 7	2 4 10	2 2 9	3 18 0	1 14 10	1 15 1
1909-10 ..	2 0 3	0 18 11	2 11 5	2 9 4	3 17 6	2 5 1	1 18 9
1910-11 ..	2 7 9	2 0 10	3 6 7	3 16 5	5 7 3	1 11 0	2 13 11
1911-12 ..	3 5 7	2 3 8	5 6 10	4 4 0	7 19 4	2 5 0	3 11 6
1912-13 ..	4 6 8	1 11 10	3 16 11	5 4 6	11 3 7	2 1 0	3 17 10
1913-14 ..	4 19 8	2 6 5	3 6 4	6 5 6	8 19 10	2 9 5	4 5 1
1914-15 ..	3 15 1	3 14 10	3 17 3	5 14 8	7 16 2	3 18 0	4 4 4
1915-16 ..	4 7 6	3 3 1	4 10 0	4 15 5	4 19 8	4 7 7	4 2 2
1916-17 ..	3 13 10	1 14 10	3 7 9	4 3 11	2 15 4	2 7 8	3 0 4
1917-18 ..	2 7 9	1 7 5	2 13 1	3 12 9	3 8 2	2 11 1	2 6 3

§ 5. Public Debt.

1. *Initiation of Public Borrowing.*—The earliest of the loans raised in Australia for Government purposes was that obtained by New South Wales in 1842. This and nine other loans raised prior to 1855 were all procured locally. In the last-mentioned year Australia's first appearance on the London market occurred, the occasion being the placing of the first instalment of the New South Wales 5 per cent. loan for £683,300. Victoria first appeared as a borrower in 1854, and made its first appearance on the London market in 1859. In the remaining States the first public loans were raised in the following years :—Queensland 1861, South Australia 1854, Western Australia 1845, and Tasmania 1867.

2. *Nature of Securities.*—All the earlier loans raised by the Australian States were obtained by the issue of debentures, some of which were repayable at fixed dates, and others by annual or other periodical drawings. In more recent years, however, the issue of debentures has given place to a great extent to that of inscribed stock, the inscription in the case of local issues being carried out by the State Treasuries, and in the cases of loans floated in London being mainly performed by the Bank of England and the London and Westminster Bank. The issue of debentures has not, however, been entirely discontinued, for within recent years debentures to a large amount have been

placed on the market by the Government of New South Wales. In other States also, recent issues of debentures have taken place, the occasions usually being those in which the term of the loan is less than that ordinarily attaching to issues of inscribed stock. Another form of security is that variously known as the Treasury bill or Treasury bond. This is usually merely a short term debenture having a currency in most instances of from three to five years. The bonds are issued in certain cases to liquidate deficiencies in revenue, and in others to obtain moneys for the purpose of carrying on public works at a time when it is deemed inexpedient to place a permanent loan on the market. The amount of the public debt of the several States held in each of these forms of security is furnished in the table hereunder :—

PUBLIC DEBT OF THE AUSTRALIAN STATES, 30th JUNE, 1918.

State.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
New South Wales ..	13,425,250	127,519,548	11,639,895	..	152,584,693
Victoria ..	25,732,782	49,507,579	2,952,000	1,403,285	79,595,646
Queensland ..	19,043,299	42,128,337	..	1,125,350	62,296,986
South Australia ..	2,066,900	30,860,655	7,693,925	..	40,621,480
Western Australia ..	1,153,110	34,501,076	5,182,240	1,467,575	42,304,001
Tasmania ..	2,195,481	11,941,874	1,000,000	..	15,137,355
Total ..	63,616,822	296,459,069	28,468,060	3,996,210	392,540,161

The manner in which the amount of public debt of the Australian States held under these various forms of security has grown during the past nine years will be seen from the following table :—

PUBLIC DEBT OF THE AUSTRALIAN STATES, 1908-9 TO 1917-18.

Date.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
30th June, 1909 ..	31,218,229	203,640,152	13,620,561	3,294,591	251,773,533
„ 1910 ..	29,765,929	213,599,894	12,393,503	1,864,337	257,623,663
„ 1911 ..	31,148,162	222,343,184	8,939,771	3,946,166	a267,127,283
„ 1912 ..	31,576,656	230,170,271	13,962,002	1,265,166	b277,124,095
„ 1913 ..	39,044,995	241,819,896	12,345,935	1,161,660	c294,472,486
„ 1914 ..	37,160,145	265,734,131	13,572,562	1,131,950	317,598,788
„ 1915 ..	47,550,115	269,686,934	23,658,270	2,030,350	342,925,669
„ 1916 ..	51,069,616	277,268,688	27,074,647	2,400,820	357,813,771
„ 1917 ..	60,364,239	279,252,215	29,782,535	3,118,635	372,517,624
„ 1918 ..	63,616,822	296,459,069	28,468,060	3,996,210	392,540,161

(a) Includes an advance of £750,000 from South Australian Government to Victorian Government.
 (b) Includes £150,000, balance of £750,000 referred to in Note (a). (c) Includes £100,000 advance from Queensland to Victorian Government.

During the period between 30th June, 1909, and 30th June, 1918, the public debt of the States increased by £140,766,628, or at the rate of about £15,600,000 per annum.

3. Increase in Indebtedness of the Several States.—The table given hereunder furnishes particulars of the increase which has taken place during the past nine years in the public debts of the several States:—

PUBLIC DEBT OF THE AUSTRALIAN STATES, 30th JUNE, 1909 TO 1918.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
30th June, 1909 ..	90,307,419	54,667,197	44,276,067	30,436,183	21,951,753	10,134,914	251,773,533
" 1910 ..	92,525,095	55,576,725	44,276,067	31,387,870	23,287,453	10,570,453	257,623,663
" 1911 ..	95,523,926	57,983,764	44,613,197	34,224,653	23,703,953	11,077,790	267,127,283
" 1912 ..	100,052,635	60,737,216	47,068,188	31,680,124	26,283,523	11,302,411	277,124,095
" 1913 ..	106,170,747	62,776,724	53,604,733	30,147,883	30,276,436	11,495,963	294,472,486
" 1914 ..	116,695,031	66,130,726	54,523,506	33,564,332	34,420,181	12,265,012	317,598,788
" 1915 ..	127,735,405	73,083,927	56,869,046	35,081,623	37,022,622	13,133,046	342,925,669
" 1916 ..	130,514,018	76,775,032	58,732,843	37,993,289	39,889,676	13,908,913	357,813,771
" 1917 ..	138,138,347	78,125,395	61,303,136	39,364,280	40,914,826	14,671,640	372,517,624
" 1918 ..	152,584,693	79,595,646	62,296,986	40,621,480	42,304,001	15,137,355	392,540,161

The State in which the greatest increase in indebtedness was experienced during the period is New South Wales, which added £62,277,274 during the period under review. On the other hand, the public debt of Tasmania increased by about £5,000,000 only.

4. Indebtedness per Head.—The indebtedness per head of population varies considerably in the several States, being highest in the case of Western Australia, and lowest in that of Victoria. Details for the period from 30th June, 1909, to 30th June, 1918, are as follows:—

PUBLIC DEBT OF AUSTRALIAN STATES PER HEAD, 30th JUNE, 1909 TO 1918.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
30th June, 1909 ..	56 10 3	43 6 11	77 13 8	78 7 1	83 7 7	53 5 7	58 18 0
" 1910 ..	56 13 2	43 6 8	74 16 10	78 18 6	85 18 6	55 6 10	58 19 0
" 1911 ..	57 9 4	43 18 3	72 12 4	83 4 6	82 13 0	58 4 2	59 9 9
" 1912 ..	57 11 9	44 16 11	74 5 0	75 5 8	88 18 8	59 9 7	59 13 5
" 1913 ..	58 13 4	45 3 0	81 13 4	68 18 5	96 8 0	59 0 2	61 6 5
" 1914 ..	62 17 9	46 10 1	80 6 4	78 12 0	108 5 0	62 6 9	64 10 5
" 1915 ..	68 7 2	51 4 9	82 9 2	80 1 6	114 15 9	66 3 9	69 5 3
" 1916 ..	70 6 0	54 12 1	85 8 8	87 12 7	128 15 2	70 8 6	72 19 7
" 1917 ..	73 18 6	55 14 0	89 19 7	91 11 4	132 12 3	74 7 0	76 1 9
" 1918 ..	79 17 4	56 3 5	89 19 11	92 0 6	135 19 6	74 12 6	78 16 3

5. Flotation of Loans.—The early loans of the Australian States, usually for comparatively small amounts, were raised locally, but, with the increasing demand for loan funds and the more favourable terms offering in the London than in the local money market, the practice of placing Australian public loans in London came into vogue, and for many years local flotations, except for short terms or small amounts, were comparatively infrequent. In more recent years, however, the accumulating stocks of money in Australia seeking investment have led to the placing of various redemption

and other loans locally, with very satisfactory results. In the following table are given particulars of loans of the several States outstanding on 30th June, 1918, which had been floated in London and Australia respectively :—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1918.

State.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
New South Wales ..	105,648,569	69.23	46,936,124	30.77	152,584,693
Victoria ..	43,437,719	54.57	36,157,927	45.43	79,595,646
Queensland ..	50,164,147	80.52	12,132,839	19.48	62,296,986
South Australia ..	21,807,240	53.68	18,814,240	46.32	40,621,480
Western Australia ..	30,412,758	71.89	11,891,243	28.11	42,304,001
Tasmania ..	9,637,250	63.66	5,500,105	36.34	15,137,355
Total ..	261,107,683	66.52	131,432,478	33.48	392,540,161

The following table, giving corresponding particulars for the aggregate indebtedness of the Australian States at the end of each of the financial years 1908-9 to 1917-18, furnishes an indication of the rapidity with which the local holdings of Australian securities have grown in recent years :—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1909 TO 1918.

Date.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
30th June, 1909 ..	189,410,036	75.23	62,363,497	24.77	251,773,533
" 1910 ..	191,972,479	74.52	65,651,184	25.48	257,623,663
" 1911 ..	189,067,671	70.78	78,059,612	29.22	267,127,283
" 1912 ..	192,190,771	69.35	84,933,324	30.65	277,124,095
" 1913 ..	204,395,129	69.41	90,077,357	30.59	294,472,486
" 1914 ..	224,061,456	70.55	93,537,332	29.45	317,598,788
" 1915 ..	229,212,541	66.84	113,713,128	33.16	342,925,669
" 1916 ..	232,040,101	64.85	125,773,670	35.15	357,813,771
" 1917 ..	243,735,172	65.43	128,782,452	34.57	372,517,624
" 1918 ..	261,107,683	66.52	131,432,478	33.48	392,540,161

It will be seen that in the course of nine years the London indebtedness of the States has increased by £71,697,647, while the local indebtedness has increased by no less than £69,063,981. In other words, whilst on 30th June, 1909, the Australian portion of the debt represented only about one-fourth of the total, the proportion had on 30th June, 1918, grown to more than one-third, and has remained at about one-third for the last three years.

It will be noticed in the foregoing table that the Australian indebtedness of the States increased during the year 1917-18 to a figure absolutely higher than had ever before been attained. This was due, in the main, to an arrangement with the Commonwealth Government, which was concluded shortly after the outbreak of war. It seemed very probable, at that period, that London would be reluctant to make

advances for other than military purposes, and this would have seriously embarrassed several of the States which were committed to a vigorous public works and developmental policy. The Commonwealth Government met the situation by advancing £18,000,000 to five of the States in the following proportion:—New South Wales, £7,400,000; Victoria, £3,900,000; South Australia, £2,600,000; Western Australia, £3,100,000; and Tasmania, £1,000,000. Victoria contracted her portion of the debt in debentures, whereas the remaining States chose Treasury bills, but otherwise the conditions were the same. The Commonwealth Government paid the money in monthly instalments, to be repaid after two years, and the rate of interest was fixed at 4½ per cent. The money was taken entirely from the Australian Notes Account, and the whole transaction furnishes another illustration of the increasingly intimate financial relationship between the Commonwealth and State Governments, to which reference was made in the preceding chapter, page 767. Further advances were made to the States by the Commonwealth in 1916–18 out of the proceeds of loans contracted in London. The loans aggregated £12,000,000, and carried interest partly at 5½ per cent., and partly at 5¼ per cent. By agreement between the State Treasurers and the Commonwealth Treasurer, the £18,000,000 already referred to is to be repaid within five years of the termination of the war, but not later than 1925.

6. Rates of Interest.—As mentioned above, the highest rate of interest paid in connection with the earliest Australian public loans was fivepence farthing per £100 per diem, or, approximately, 8 per cent. per annum. At the present time the principal rates of interest payable on Australian public securities are 5 per cent., 4½ per cent., 4¼ per cent., 4 per cent., 3¾ per cent., 3½ per cent., and 3 per cent. It is most probable, however, that the amount of outstanding debt at the higher rates will increase materially in the future, since conversion can scarcely be effected at present at a lower rate of interest than 5 per cent. The average rate payable on the aggregate indebtedness of the Australian States is nearly 4 per cent. For the separate States the average rate payable varies considerably, being lowest in the case of Victoria and highest in that of South Australia; the difference between these two average rates is about ½ per cent. In the table given hereunder particulars are furnished of the rates of interest payable on the public debt of the several States of the Commonwealth on 30th June, 1918:—

RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE, 1918.

Rate of Interest.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
%	£	£	£	£	£	£	£
6 .. ..	.. ..	.. ..	.. ..	1,900	.. ..	.. ..	1,900
5½	13,076,000	.. ..	.. ..	.. ..	.. ..	.. ..	13,076,000
5¼	3,000,000	1,304,000	.. ..	3,472,000	1,811,000	593,000	10,180,000
5	2,695,400	650,000	1,275,000	775,000	1,100,000	200,000	6,695,400
5	5,365,450	(a) 4,087,335	2,496,000	3,377,000	1,130,450	1,125,799	17,582,034
4½	12,030,162	7,748,250	13,249,450	3,487,415	1,114,875	516,780	38,146,932
4¼ .. ..	.. ..	660,250	.. ..	.. ..	.. ..	140,750	801,000
4	7,400,000	3,900,000	.. ..	2,600,000	3,100,000	1,000,000	18,000,000
4	28,143,540	19,301,678	18,667,450	8,879,013	12,730,186	5,498,239	93,220,106
3¾	13,514,098	230,183	2,550,050	5,892,264	1,650,000	540,243	24,376,838
3½	50,306,321	31,604,311	18,569,053	6,209,648	12,317,490	5,068,476	124,075,299
3	17,047,072	10,108,639	5,489,383	5,927,240	7,350,000	(b) 454,068	46,376,402
Not bearing interest ..	6,650	1,000	600	.. ..	.. ..	.. ..	8,250
Total public debt	152,584,693	79,595,646	62,296,986	40,621,480	42,304,001	15,137,355	392,540,161
Average rate per cent. payable	£3/19/8	£3/16/10	£3/18/6	£4/0/6	£3/16/4	£3/19/5	£3/18/6

(a) Includes £20,000 at 4¾ per cent. (b) Includes £24,718 at 3¼ per cent.

The rapid increase which has taken place in recent years in the amount of Australian Government securities, bearing interest at the higher rates, is clearly shewn in the table hereunder, which gives particulars concerning the aggregate amount of the Australian indebtedness, at the several rates of interest, on 30th June in each of the years 1914 to 1918 :—

RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE, 1914 TO 1918.

Rate of Interest.	30th June, 1914.	30th June, 1915.	30th June, 1916.	30th June, 1917.	30th June, 1918.
%	£	£	£	£	£
6	74,900	49,900	39,900	19,900	1,900
5½	..	..	..	5,590,000	13,076,000
5¼	..	..	..	6,695,400	10,180,000
5	..	..	2,950,000	6,695,400	6,695,400
4½	142,700	2,146,800	7,010,675	14,753,617	17,582,034
4¼	39,300	25,279,647	28,155,096	32,845,044	38,146,932
4	..	300,000	600,000	..	..
4	..	290,750	771,250	901,000	801,000
4	..	10,625,000	18,000,000	18,000,000	18,000,000
4	111,771,588	100,551,888	97,965,741	95,382,445	93,220,106
3½	27,679,770	26,372,084	25,989,072	24,714,487	24,376,838
3¼	131,292,054	130,392,839	129,732,699	127,146,373	124,075,299
3	46,592,430	(a) 46,567,286	(a) 46,591,188	(a) 46,450,341	(a) 46,376,402
Not bearing interest	6,048	340,475	8,150	19,017	8,250
Total public debt	317,598,788	342,925,669	357,813,771	372,517,624	392,540,161
Average rate per cent. payable	£3/12/6	£3/13/11	£3/15/1	£3/16/6	£3/18/6

(a) Including £24,718 at 3¼ per cent.

The feature of this table is the rapid rise in the average rate of interest. The process started in 1912, but was accelerated by the war, which has virtually made 5 per cent. the present minimum rate of interest for gilt-edged securities. The average rate is likely to rise for some considerable time, since securities falling due in the immediate future will, in all likelihood, have to be renewed at a higher rate of interest.

7. **Interest Payable per Head.**—The relative burden of the debts of the several States in respect of interest payments will be seen from the following table, which gives for the 30th June, 1918, the amount of interest paid during the financial year ending at that date, and also the corresponding amount per head of population :—

STATE DEBTS.—INTEREST PAYABLE PER HEAD, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Total annual interest payable	5,188,754	2,977,277	(a) 2,454,863	1,700,590	1,573,666	549,690	14,444,840
Annual interest payable per head	£2/15/2	£2/2/2	£3/11/3	£3/18/0	£5/1/9	£2/14/1	£2/18/6

(a) Inclusive of flotation expenses.

8. **Dates of Maturity.**—An important point of difference between the securities of the Australian Governments, whether in the form of inscribed stock, debentures, or Treasury bills, and such a well-known form of security as British Consols, is that whereas the latter are interminable, the Australian Government securities have in almost all cases a fixed date for repayment, there being only a few exceptions, which are included in the following table under the headings "interminable" and "indefinite." The terms of the loans raised by the issue of debentures and inscribed stock have varied considerably in the different States, ranging between fifteen and fifty years, while loans obtained by

means of Treasury bills have usually been for such short terms as from six months to five years. In the case of the majority of the loans the arrival of the date of maturity means that arrangements for renewal are necessary in respect of the greater portion of the loan, as it is only in exceptional cases that due provision for redemption has been made. The condition of the money market at the date of maturity has an important bearing on the success or otherwise with which the renewal arrangements can be effected, and consequently, in order to obviate the necessity for making an application to the market at an unfavourable time, several of the States have now adopted the practice of specifying a period of from ten to twenty years prior to the date of maturity within which the Government, on giving twelve, or in some cases six, months' notice, has the option of redeeming the loan. By such means advantage may be taken by the Government during the period of opportunities that may offer for favourable renewals. Particulars concerning the due dates of the loans of the several States outstanding on 30th June, 1918, are given in the following table.

Those loans in the case of which the Government has the option of redemption during a specified period have been in each instance classified according to the latest date of maturity:—

DUE DATES OF THE PUBLIC DEBTS OF THE SEVERAL STATES OUTSTANDING ON 30th JUNE, 1918.

Due Dates.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Overdue ..	6,650	1,000	600	..	..	..	8,250
1918 ..	19,609,533	2,684,160	..	958,700	..	536,474	23,788,867
1919 ..	12,287,236	6,272,245	..	2,133,496	262,070	484,801	21,439,848
1920 ..	5,733,120	8,343,296	..	1,537,959	3,759,170	857,836	20,231,381
1921 ..	5,723,843	4,853,200	..	1,997,679	116,710	590,007	13,283,439
1922 ..	7,118,200	6,148,790	2,399,750	1,853,304	1,514,575	277,727	19,112,346
1923 ..	8,074,482	10,327,578	..	2,694,712	556,550	110,197	21,772,519
1924 ..	16,698,065	..	12,973,834	1,531,993	568,570	55,776	31,828,238
1925 ..	311,799	6,672,240	..	91,509	1,922,305	1,284,630	10,282,483
1926 ..	415,000	5,109,000	11,728,800	1,112,427	..	332,120	18,697,347
1927 ..	10,748,417	2,006,450	..	1,976,801	4,311,000	841,987	19,884,655
1928 ..	36,000	927,500	..	846,308	..	304,581	2,114,389
1929 ..	..	747,500	..	221,418	..	4,068	972,986
1930 ..	..	1,814,650	3,704,800	302,425	..	4,149	5,826,024
1931 ..	..	1,061,948	..	450	..	4,437	1,066,535
1932 ..	10,076,000	929,550	..	1,225	1,380,540	4,436	12,391,751
1933 ..	9,686,300	..	..	368,912	716,708	43,949	10,815,869
1934 ..	..	..	..	1,043,421	1,866,318	47,164	2,956,903
1935 ..	15,500,000	..	..	1,478,499	8,358,185	182,140	25,518,824
1936 ..	..	300,000	..	4,250,380	1,240,000	46,993	5,837,373
1937 ..	..	..	..	15,586	..	46,993	62,579
1938 ..	..	..	..	92,383	..	46,993	139,376
1939 ..	..	..	..	2,560,999	..	46,993	2,607,992
1940 ..	..	248,900	..	14,860	..	5,652,182	5,915,942
1941 ..	..	324,380	..	..	..	44,901	369,281
1942 ..	..	485,100	..	..	..	44,901	530,001
1943 ..	..	3,600	..	..	..	44,901	48,501
1944 ..	..	400	..	..	..	44,901	45,301
1945 ..	..	..	5,349,590	..	..	44,901	5,394,491
1946 ..	..	217,400	..	..	..	44,901	262,301
1947 ..	..	..	4,274,213	..	2,000,000	44,901	6,319,114
1948 ..	..	..	..	..	..	44,901	44,901
1949 ..	..	11,699,471	..	..	..	44,900	11,744,371
1950 ..	12,250,000	..	6,001,000	..	..	2,839,207	21,090,207
1951 ..	..	..	2,169,680	..	..	39,207	2,208,887
1952 ..	..	..	..	..	..	39,200	39,200
1953 ..	..	..	2,397,309	..	..	..	2,897,809
1954 ..	..	123,874	..	..	..	..	123,874
1955 ..	..	..	..	..	4,437,000	..	4,437,000
1960 ..	..	2,979,700	2,000,000	3,000,000	1,000,000	..	8,979,700
1962 ..	10,500,000	..	..	..	6,000,000	..	16,500,000
1964 ..	..	..	..	..	1,566,000	..	1,566,000
1965 ..	..	..	2,884,450	..	..	..	2,884,450
1970 ..	..	..	3,416,460	..	..	..	3,416,460
Interminable ..	532,890	..	..	..	93,300	..	626,190
Annual drawings ..	..	..	..	..	635,000	..	635,000
Indefinite ..	7,275,158	5,314,014	2,496,000	10,536,034	..	..	25,621,206
Total ..	152,584,693	79,595,646	62,296,986	40,621,480	42,304,001	15,137,355	392,540,161

9. **Sinking Funds.**—The practice of providing for the ultimate extinction of the public debt by means of the creation of sinking funds, receiving definite annual contributions from Consolidated Revenue, and accumulating at compound interest, has only been consistently adopted in the case of Western Australia. This State has established, in connection with each of its loans, sinking funds varying from 1 per cent. to 3 per cent. per annum of the nominal amount of the loan. These funds are placed in the hands of trustees in London, by whom they are invested in the securities of the British, Indian, and Colonial Governments, and applied from time to time in the redemption of loans falling due. In the remaining States the sinking fund provision made is varied, consisting in certain instances of the revenues from specified sources, in others of the Consolidated Revenue Fund surplus, and in others again of fixed annual amounts. In the following table are given particulars of the sinking funds of each State, and the net indebtedness of each after allowance for sinking fund has been made, the details given being those for 30th June, 1918:—

STATE SINKING FUNDS AND NET INDEBTEDNESS, 30th JUNE, 1918.

State.	Gross Indebtedness.	Sinking Fund.	Net Indebtedness.	Net Indebtedness per Head.
	£	£	£	£ s. d.
New South Wales ..	152,584,693	494,163	152,090,530	79 12 2
Victoria ..	79,595,646	2,186,078	77,409,568	54 12 7
Queensland ..	62,296,986	369,522	61,927,464	89 9 3
South Australia ..	40,621,480	1,533,973	39,087,507	88 19 8
Western Australia ..	42,304,001	5,570,851	36,733,150	118 1 4
Tasmania ..	15,137,355	878,737	14,258,618	70 5 11
Total ..	392,540,161	11,033,324	381,506,837	76 12 0

10. **Total Australian Debt.**—With the object of setting out the entire liability of the Australian public, the Commonwealth and State debts for the last five years have been brought together into one statement. It will be noticed that the total Commonwealth Public Debt does not agree with the amounts given in the chapter on Commonwealth Finance. This is owing to the fact that the value of the transferred properties has been deducted in every year, since this appears also in the State debts. The sums borrowed by the Commonwealth for the States in London, during 1916–17 and 1917–18, have also been deducted from the Commonwealth debt of those years for the same reason.

COMMONWEALTH AND STATES PUBLIC DEBT, 1913–14 TO 1917–18.

Particulars.	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.
	£	£	£	£	£
Commonwealth Public Debt ..	9,395,322	26,651,669	90,562,488	150,939,819	260,852,954
States Public Debt ..	317,598,788	342,925,669	357,813,771	372,517,624	392,540,161
Total ..	326,994,110	369,577,338	448,376,259	523,457,443	653,393,115
Total debt per head ..	£66/8/9	£74/12/11	£91/9/0	£106/18/4	£131/3/10

On pages 747 and 748 will be found a series of graphs illustrating the rise in the revenue and public debt of the Commonwealth and States since 1902, the year 1901–2 being the first complete financial year since Federation.

SECTION XXI.

PRIVATE FINANCE.

§ 1. Currency.

1. **The Three Australian Mints.**—Soon after the discovery of gold in Australia steps were taken for the establishment of a branch of the Royal Mint in Sydney. The formal opening took place on the 14th May, 1855, the mint being located in the southern part of the building once known as the "rum hospital." The Melbourne branch of the Royal Mint was opened on the 12th June, 1872, and the Perth branch on the 20th June, 1899. The States of New South Wales, Victoria, and Western Australia provide an annual endowment, in return for which the mint receipts are paid into the respective State Treasuries, and it may be said that, apart from expenditure on buildings, new machinery, etc., the amounts paid into the Treasuries fairly balance the mint subsidies.

2. **Receipts and Issues in 1916.**—(i) *Assay of Deposits Received.* The number of deposits received during 1916 at the Sydney Mint was 674, of a gross weight of 408,936 ozs.; at the Melbourne Mint, there were 2,376, of a gross weight of 364,849 ozs.; and at the Perth Mint, 3,423, of a gross weight of 1,304,778 ozs. The average composition of these deposits in Sydney was, gold 888.1, silver 74.0, base 37.9 in every 1,000 parts; Melbourne, gold 878.0, silver 79.2, base 42.8 in every 1,000 parts; and Perth, gold 808.6, silver 132.2, base 59.2 in every 1,000 parts. As many parcels have, however, undergone some sort of refining process before being received at the mint, the average assay for gold shews higher in these figures than for gold as it naturally occurs.

(ii) *Issues.* The Australian mints, besides issuing gold coin in the shape of sovereigns and half-sovereigns, also issue gold bullion, partly for the use of local manufacturers (jewellers and dentists), and partly for export, India taking annually a considerable quantity of gold cast into 10-oz. bars. Owing, however, to the prohibition by the Commonwealth Government of the export of gold, the issue of bars for India ceased in July, 1916. The issues during 1916 are shewn in the table below:—

ISSUES OF GOLD FROM AUSTRALIAN MINTS DURING 1916.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ..	1,242,000	224,000	1,466,000	69,584	1,535,584
Melbourne ..	1,273,643	..	1,273,643	92,061	1,365,704
Perth ..	4,096,771	..	4,096,771	369,342	4,466,113
Total ..	6,612,414	224,000	6,836,414	530,987	7,367,401

In addition to the issue of gold, the Sydney and Perth mints distribute silver and bronze Australian coins struck elsewhere.

(iii) *Withdrawals of Worn Coin.* The mints receive light and worn coin for recoinage, gold being coined locally, while silver is forwarded to London. The value of gold coin so received in 1916 amounted to £81,621, all from Melbourne. The value of worn silver coins received during 1916 was £11,901, viz. :—Sydney, £8,305 ; Melbourne, £3,596 ; and Perth, nil.

3. **Total Receipts and Issues.**—(i) *Receipts.* The total quantities of gold received at the three mints since their establishment are stated in the gross as follows :—Sydney, 37,785,617.84 ozs. ; Melbourne, 37,003,073.34 ozs. ; and Perth, 23,541,397.77 ozs. As the mints pay for standard gold (22 carats) at the rate of £3 17s. 10½d. per oz., which corresponds to a value of £4 4s. 11½d. per oz. fine (24 carats), it is possible to arrive at the number of fine ounces received from the amounts paid for the gold received. These amounts were :—Sydney, £139,422,678 ; Melbourne, £145,543,597 ; Perth, £82,552,411 ; corresponding to—Sydney, 32,460,162 ozs. fine ; Melbourne, 33,942,715 ozs. fine ; and Perth, 18,379,475 ozs. fine. Silver found in assaying is paid for if it exceeds 8 per cent. ; in Sydney it has been paid for at the rate of 1s. 6d. per oz. fine since 12th May, 1902 ; in Melbourne the price is fixed monthly by the Deputy-master of the Mint ; and in the Perth accounts it has been taken at 1s. per oz.

(ii) *Issues.* The total values of gold coin and bullion issued by the three mints are shewn in the table hereafter. It may be said that rather more than one-half of the total gold production of Australasia has passed through the three Australian mints, the production of the Commonwealth States to the end of 1916 being valued at £582,938,588, and that of New Zealand at £85,847,675, or a total of £668,786,263.

TOTAL ISSUES OF GOLD FROM AUSTRALIAN MINTS TO END OF 1916.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£		
Sydney ..	127,968,500	4,781,000	132,749,500	6,681,839	139,431,339
Melbourne ..	133,879,031	946,780	134,825,811	10,722,804	145,548,615
Perth ..	74,278,816	257,344	74,536,160	7,979,756	82,515,916
Total ..	336,126,347	5,985,124	342,111,471	25,384,399	367,495,870

The total issues of Imperial silver coins to the end of 1915 were £2,415,200, viz. :—Crowns, £3,500 ; double florins, £4,585 ; half-crowns, £722,600 ; florins, £523,215 ; shillings, £606,200 ; sixpences, £253,220 ; and threepences, £296,880.

Imperial bronze coins to the value of £180,150 have been issued, viz. :—Pence, £126,640 ; half-pence, £53,310 ; and farthings, £200.

(iii) *Withdrawals of Worn Coin.* Complete figures as to the withdrawal of gold coin are as follows :—Sydney, £1,084,327 ; Melbourne, £751,566 (since and including 1890) ; and Perth, £422.

Withdrawals of worn silver coin amounted to £575,173 in Sydney, to £549,082 in Melbourne, and to £52,491 in Perth.

4. *Standard Weight and Fineness of Coinage.*—The coinage of the Commonwealth is the same as that of the United Kingdom, and the same provisions as to legal tender hold good, viz., while gold coins are legal tender to any amount, silver coins are only so for an amount not exceeding forty shillings, and bronze coins up to one shilling. As will be seen from the table below, the standard weights of the sovereign and half-sovereign are respectively 123.27447 grains and 61.63723 grains, but these coins will pass current if they do not fall below 122.5 grains and 61.125 grains respectively.

STANDARD WEIGHT AND FINENESS OF COMMONWEALTH COINAGE.

Denomination.	Standard Weight.	Standard Fineness.
	Grains.	
GOLD—		} Eleven-twelfths fine gold, viz. :— Gold .. 0.91667 } 1.00000 Alloy .. 0.08333 }
Sovereign ..	123.27447	
Half-sovereign ..	61.63723	
SILVER—		} Thirty-seven-fortieths fine silver, viz. :— Silver .. 0.925 } 1.000 Alloy .. 0.075 }
Crown ..	436.36363	
Double florin ..	349.09090	
Half-crown ..	218.18181	
Florin ..	174.54545	
Shilling ..	87.27272	
Sixpence ..	43.63636	
Threepence ..	21.81818	
BRONZE—		} Mixed metal, viz. :— Copper .. 0.95 } 1.00 Tin .. 0.04 } Zinc .. 0.01 }
Penny ..	145.83333	
Halfpenny ..	87.50000	
Farthing ..	43.75000	

5. *Prices of Silver and Australian Coinage.*—(i) *Prices of Silver.* The value of silver has greatly decreased since its demonetisation and restricted coinage in almost the whole of Europe. A noticeable increase has, however, taken place since 1915, the price of silver following the general trend of world prices. Its average price in the London market in recent years is shewn in the subjoined table :—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1878 TO 1916.

Year.	Price per Standard Oz.	Year.	Price per Standard Oz.	Year.	Price per Standard Oz.
	d.		d.		d.
1878 ..	52.5625	1891 ..	45.0625	1904 ..	26.3750
1879 ..	51.1875	1892 ..	39.8125	1905 ..	27.8125
1880 ..	52.2500	1893 ..	35.6250	1906 ..	30.8750
1881 ..	51.7500	1894 ..	29.0000	1907 ..	30.1875
1882 ..	51.8125	1895 ..	29.8750	1908 ..	24.3750
1883 ..	50.5625	1896 ..	30.7500	1909 ..	23.6875
1884 ..	50.6875	1897 ..	27.5625	1910 ..	24.6875
1885 ..	48.6250	1898 ..	26.9375	1911 ..	24.5625
1886 ..	45.3750	1899 ..	27.5000	1912 ..	28.0625
1887 ..	44.6250	1900 ..	28.3125	1913 ..	27.5625
1888 ..	42.8750	1901 ..	27.2500	1914 ..	25.3125
1889 ..	42.6875	1902 ..	24.1250	1915 ..	23.6875
1890 ..	47.7500	1903 ..	24.7500	1916 ..	31.3125

(ii) *Profits on Coinage of Silver.* As sixty-six shillings are coined out of one pound troy of standard silver, the silver required to produce £3 6s. of coin was only worth £1 11s. 4d. during 1916; the difference of £1 14s. 8d. represents, therefore, the gross profit or seignorage made on the coinage of every £3 6s. Negotiations took place for a number of years between the Imperial authorities and the Governments of New South Wales and Victoria, which in 1898 resulted in permission being granted to the two Governments named to coin silver and bronze coin at the Sydney and Melbourne Mints for circulation in Australia. No immediate steps were, however, taken in the matter, and as section 51 of the Commonwealth Constitution makes legislation concerning "currency, coinage, and legal tender" a federal matter, the question remained in abeyance until the latter part of 1908, when the Commonwealth Treasurer announced his intention of initiating the coinage of silver in the future.

(iii) *Coinage Bill.* In 1909 a Coinage Bill was introduced in the Commonwealth Parliament, which provided that the future Australian coinage should consist of the following coins:—In gold, £5, £2, £1, and 10s.; in silver, 2s., 1s., 6d., and 3d.; and in bronze, 1d. and ½d. Gold was to be legal tender up to any amount, silver up to 40s., and bronze up to 1s. Ultimately the coinage was to be undertaken in Australia, but for the time an agreement was made with the authorities of the Royal Mint in London, under the terms of which the coinage was to be done in London on account of the Commonwealth Government. Orders were given for the immediate coinage of £200,000 worth of silver, viz., one million florins, one million shillings, one million sixpences, and two million threepences. The coins were to bear on the obverse H.M. the King's head, with the Latin inscription which appears on the British coins, and on the reverse the Australian coat-of-arms, with the denomination and the date. The Imperial authorities undertook to withdraw £100,000 worth of the existing silver-coinage per annum at its face value. The first consignment of the new coinage arrived in Australia early in 1910, and in a short time all the silver coins contracted for were supplied to the Royal Mints, Australia. Copper coins of the value of £10,000, viz., 1,560,000 pennies and 1,680,000 halfpennies, of a design similar to that of the silver coins, were ordered. It was not, however, intended to withdraw any of the existing copper coins, but merely to make good the "leakage," which was considerable.

The issue in 1916 was £676,700 silver, and £24,070 bronze, according to a statement issued by the Commonwealth Treasury. The total issue since 1910 amounted to £2,410,300 silver, and £92,540 bronze.

§ 2. Banking.

1. *Banking Facilities.—Head Offices of Banks.* Of the twenty-two banks trading in the Commonwealth on 30th June, 1918, four have their head offices in London, viz., the Bank of Australasia; the Union Bank of Australia Limited; the English, Scottish and Australian Bank Limited; and the London Bank of Australia Limited. The head offices of the following four banks are in Sydney—The Commonwealth Bank of Australia, The Bank of New South Wales, the Commercial Banking Company of Sydney Limited, and the Australian Joint Stock Bank Limited (now the Australian Bank of Commerce

Limited). Five banks have their head offices in Melbourne, viz., the National Bank of Australasia Limited, the Commercial Bank of Australia Limited, the Bank of Victoria Limited, the Colonial Bank of Australasia Limited, and the Royal Bank of Australia Limited. Brisbane is the headquarters of two banks, viz., the Queensland National Bank Limited, and the Bank of Queensland Limited. Only one bank has at present its head office in Adelaide, viz., the Bank of Adelaide; one in Perth, viz., the Western Australian Bank; and one in Hobart, the Commercial Bank of Tasmania Limited. The Bank of New Zealand has its headquarters in Wellington. Of the three remaining banks, the Comptoir National d'Escompte de Paris has its head office in Paris, the Ballarat Banking Company in Ballarat, and the Yokohama Specie Bank in Yokohama, Japan. It is proposed, in the few instances where the banks are referred to by name, to arrange them in the order just given, with the exception of the Commonwealth Bank, which is placed first.

It is worthy of note that the bank amalgamations, which have been such a feature in British banking of late years, have appeared in Australia, and materially reduced the number of competitive joint stock banks. During the calendar years 1917 and 1918 the following have been recorded:—(a) the Royal Bank of Queensland Limited with Bank of North Queensland Limited; (b) City Bank of Sydney with Australian Bank of Commerce Limited; (c) National Bank of Tasmania Limited with Commercial Bank of Australia Limited; and (d) National Bank of Australia Limited with Colonial Bank of Australasia Limited. This accounts for the reduction in number of independent joint stock banks operating in Australia.

2. Banking Legislation.—Under Section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to “Banking, other than State banking, also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money.” For a few years the only Commonwealth banking legislation passed was Act No. 27 of 1909, “An Act relating to Bills of Exchange, Cheques, and Promissory Notes,” which came into force on the 1st February, 1910. In the session of 1910, however, two Acts relating to banking were passed by the Federal Parliament. The first was the Australian Notes Act No. 11 of 1910, assented to on the 16th September, 1910, and proclaimed 1st November, 1910; and the second the Bank Notes Tax Act No. 14, 1910, assented to on 10th October, 1910, and proclaimed 1st July, 1911. Under the first of these Acts the Commonwealth Treasurer was empowered to issue notes which shall be legal tender throughout the Commonwealth, and redeemable at the seat of Federal Government. The notes were issued in denominations of 10s., £1, £5, £10, £20, £50, and £100. The Act directed the Treasurer to hold the following reserve of gold coin:—

- (a) An amount not less than one-fourth of the amount of Australian notes issued up to seven million pounds;
- (b) An amount equal to the amount of Australian notes issued in excess of seven million pounds.

For the purpose of estimating the reserve, notes which have been redeemed are not included amongst those issued.

The portion of the Act relating to the reserve was amended by Act No. 21 of 1911, which was assented to on 22nd December, 1911. According to this amending Act the clause relating to the reserve now reads as follows:—“The Treasurer shall hold in gold coin a reserve of not less than one-fourth of the amount of Australian notes issued.” It was intended that this amendment should come into force on 1st July, 1912, but the Federal Treasurer afterwards announced that its operation would be deferred until after the Commonwealth elections of 1913. These elections resulted in the return to power

of another administration, and the new Treasurer, Sir John Forrest, announced his intention of maintaining the reserve at the rate provided for in the original Act during his tenure of office. This only lasted until September, 1914, but there has not, since then, been a very great diminution in the proportionate gold reserve, which on 30th July, 1919, stood at about 43 per cent.

The Australian Notes Act prohibited the circulation of notes issued by a State six months after the commencement of the Act, and such notes then ceased to be legal tender. In addition, the Bank Notes Act imposed a tax of 10 per cent. per annum in respect of all bank notes issued or re-issued by any bank in the Commonwealth after the commencement of this Act and not redeemed.

The Notes Act and the Bank Notes Act were supplemented in the following year by the passing of No. 18 of 1911, "An Act to provide for a Commonwealth Bank," which passed both Houses and was assented to on 22nd December, 1911. The early steps in the foundation of the Bank have been described in previous issues from No. 6 to No. 10 inclusive, and will not be repeated here.

As the initial expenses of the bank were heavy, and as no capital was advanced, the early operations resulted in a small loss. This was debited to the profit and loss account of the bank, and the increasing prosperity of the institution can be seen by the way in which the original debit was reduced, until on 30th June, 1915, it was entirely extinguished. The following table shews the results of the transactions of the bank as published for the several periods mentioned:—

COMMONWEALTH BANK.—NET RESULT OF TRANSACTIONS, 1913 TO 1918.

Net Result at 30th June—	General Bank.	Savings Bank.	Entire Bank.
	£	£	£
1913	<i>Dr.</i> 24,329	<i>Dr.</i> 22,308	<i>Dr.</i> 46,637
1914	<i>Cr.</i> 11,761	<i>Dr.</i> 48,757	<i>Dr.</i> 36,996
1915	<i>Cr.</i> 56,905	<i>Dr.</i> 54,684	<i>Cr.</i> 2,221
1916	<i>Cr.</i> 181,445	<i>Dr.</i> 34,376	<i>Cr.</i> 147,069
1917	<i>Cr.</i> 522,467	<i>Cr.</i> 3,825	<i>Cr.</i> 526,292
1918	<i>Cr.</i> 991,934	<i>Cr.</i> 84,092	<i>Cr.</i> 1,076,026

It will be seen from the above that the general bank became profitable at a much earlier stage than the savings bank. According to the provisions of section 30 of the Bank Act, the net profit of £1,076,026 disclosed at 30th June, 1918, was divided equally between a bank reserve fund and a redemption fund. The reserve fund is available for the payment of any liabilities of the bank. The redemption fund is available for the repayment of any money advanced to the bank by the Treasurer, or for the redemption of debentures or stock which may be issued by the bank; and any excess may be used for the purpose of the redemption of any Commonwealth debts, or State debts taken over by the Commonwealth.

Under the existing laws, banks are required to furnish quarterly statements of their average assets and liabilities, but these statements are not equally complete in all the States. Until the close of 1907 these quarterly statements, together with the periodical balance-sheets of the banks (generally half-yearly, but in a few cases yearly), were the only information available in regard to banking business. During the year 1908 the Commonwealth Statistician, under the provisions of the Census and Statistics Act,

asked the banks for quarterly returns giving slightly more detailed information than had previously been obtained. As, however, this extra information has not been forthcoming in the case of all the banks, the returns for the years subsequent to 1907 have been practically left in the same condition as those for 1907 and previous years.

The Acts under which the various banks are incorporated are not all of the same nature, but it may be stated that while most of the older banks were incorporated by special Acts, *e.g.*, the Bank of New South Wales, by Act of Council 1817; the Bank of Australasia, by Royal Charter; the Bank of Adelaide, by Act of the South Australian Parliament; and the Bank of New Zealand, by Act of the General Assembly of New Zealand, the newer banks are generally registered under a "Companies Act," or some equivalent Act. This is also the case with those banks which, after the crisis of 1893, were reconstructed.

3. **Capital Resources of Banks.**—The paid-up capital of the cheque-paying banks, together with their reserve funds, the rate per cent., and the amount of their last dividends, is shewn in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1918. In regard to the reserve funds it must be stated that in the case of some of the banks these are invested in Government securities, while in other cases they are used in the ordinary business of the banks, and in a few instances they are partly invested and partly used in business.

CAPITAL RESOURCES OF CHEQUE-PAYING BANKS, 1917-18.

Bank.	Paid-up Capital.	Rate per cent. per annum of last Dividend and Bonus.	Amount of last Half-yearly Dividend and Bonus.	Amount of Reserved Profits.
	£	%	£	£
Commonwealth Bank of Australia	2,000,000	14 and Bonus 3	170,000	1,076,026
Bank of Australasia	2,000,000	14	140,000	3,028,300
Union Bank of Australia Ltd.	539,438	8	43,155 ⁵	2,073,504
English, Scottish and Australian Bank Ltd.	669,685 ¹	7	23,200	534,263
London Bank of Australia Ltd.	3,904,860	10	97,622 ⁵	409,526
Bank of New South Wales	2,000,000	10	100,000	3,077,729
Commercial Banking Coy. of Sydney Ltd.	1,198,679	3	17,980	2,050,254
Australian Bank of Commerce Ltd.	1,498,220 ²	7	52,437	131,835
National Bank of Australasia Ltd.	2,213,009 ³	4	42,347	718,302
Commercial Bank of Australia Ltd.	1,478,010 ⁴	6	44,340	6,435
Bank of Victoria Ltd.	439,280	7	15,375	460,808
Colonial Bank of Australasia Ltd.	300,000	8	12,000	309,462
Royal Bank of Australia Ltd.	480,000	..	..	301,716
Queensland National Bank Ltd.	450,000	6	13,500	36,934
Bank of Queensland Ltd.	500,000	10	25,000	6,019
Bank of Adelaide	250,000	10	25,000	567,528
Western Australian Bank	200,000	14	14,000	738,678
Commercial Bank of Tasmania Ltd.	..	12 and Bonus 3 Ordinary and B Preferential, 10 Preferential 4 Guaranteed	237,500	283,063
Bank of New Zealand	2,270,988	6	480,000 ⁵	2,345,702
Comptoir National d'Escompte de Paris	85,000	9 and Bonus 1	4,250	1,688,956
Ballarat Banking Coy. Ltd.	4,200,000	12	216,000	92,927
Yokohama Specie Bank	..	..	..	2,582,000
Total	34,686,169	..	..	22,510,969

1. Including calls in arrear. 2. £305,780 preferential, £1,192,440 ordinary. 3. Subject to estimated deficiency in connection with Special Assets Trusts Coy. Ltd. 4. £418,790 preferential, £1,061,250 ordinary. 5. For twelve months. 6. Dividend for quarter.

4. **Liabilities and Assets of Banks.**—(i) *Liabilities of Banks for Quarter ended 30th June, 1918.* As already stated, the banks transacting business in any State are obliged, under the existing State laws, to furnish a quarterly statement of their assets and liabilities, which contains the averages of the weekly statements prepared by the bank for that purpose, and they have, during the years 1908-18, furnished quarterly statements to the Commonwealth Statistician. As all other financial returns in this work embrace, so far as possible, a period ended 30th June, 1918, it seems advisable to give the banking figures for the quarter ended on that date, and, where they are shown for a series of years, similarly to use the figures for the June quarter of each year. The liabilities are those to the general public, and are exclusive of the banks' liabilities to their shareholders, which are shewn in the preceding table:—

AVERAGE LIABILITIES OF BANKS IN EACH STATE OF THE COMMONWEALTH AND THE NORTHERN TERRITORY FOR THE QUARTER ENDED 30th JUNE, 1918.

State.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances Due to Other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
New South Wales	73,616	694,468	1,722,958	46,125,773	40,363,817	86,489,590	88,980,632
Victoria ..	95,774	171,661	1,124,191	31,742,857	36,921,032	68,663,889	70,055,515
Queensland ..	(a)	737,828	551,546	17,276,302	16,856,781	34,133,083	35,422,457
South Australia ..	26,029	46,261	631,232	8,969,460	9,624,931	18,594,391	19,297,913
Western Australia	26,920	63,388	280,435	4,841,294	4,929,215	9,770,507	10,141,250
Tasmania ..	7,300	12,220	146,026	3,153,074	3,597,905	6,750,979	6,917,125
Northern Territory	..	219	29,509	153,561	210,753	364,314	394,042
Total ..	229,639	1,726,045	4,486,497	112,262,321	112,504,432	224,766,753	231,208,934

(a) In Queensland, Treasury Notes were used instead of bank notes.

(ii) *Assets of Banks for Quarter ended 30th June, 1918.* The average assets of the banks are shewn in the following table:—

AVERAGE ASSETS OF BANKS IN EACH STATE OF THE COMMONWEALTH AND THE NORTHERN TERRITORY FOR THE QUARTER ENDED 30th JUNE, 1918.

State.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Government and Municipal Securities.	Landed and House Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	Discounts, Over-drafts, and all other Assets.	Australian Notes.	Total Assets.
	£	£	£	£	£	£	£	£	£
N.S.W. ...	10,758,839	397,547	16,833,370	2,389,946	597,881	2,472,052	58,176,269	11,048,271	100,674,175
Victoria...	5,036,888	91,838	5,400,868	1,462,878	732,822	1,276,673	42,185,873	10,455,180	66,643,020
Q'land ...	2,305,501	66,227	1,079,898	776,302	428,583	791,607	18,685,598	6,534,978	30,668,694
S. Aust. ...	1,748,543	18,049	297,436	298,645	184,698	629,391	10,877,107	3,163,548	17,217,417
W. Aust.	1,014,327	314,586	638,922	224,828	123,371	572,860	9,183,968	1,448,698	13,521,560
Tasmania	650,206	40	1,773,037	147,035	37,416	272,231	3,265,637	1,287,160	7,432,762
Nor. Ter.	3,960	745	..	1,200	45,028	73,176	36,006	14,737	174,852
Total	21,518,264	889,032	26,023,531	5,300,834	2,149,799	6,087,990	140,410,458	33,952,572	236,332,480

(iii) *Liabilities of Banks for June Quarters, 1909 to 1918.* In the subjoined table, which shows the average liabilities of the banks for the quarters ended 30th June, 1909 to 1918, for the Commonwealth as a whole, it will be seen that the growth in total liabilities is almost entirely due to an increase in the deposits, and that deposits not bearing interest and deposits bearing interest have both shared in that increase :—

AVERAGE LIABILITIES OF BANKS IN THE COMMONWEALTH FOR THE QUARTER ENDED 30th JUNE, IN THE YEARS 1909 TO 1918.

Year.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances Due to Other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
1909	3,510,629	720,853	555,806	46,812,632	70,945,623	117,758,255	122,545,543
1910	3,748,482	821,758	570,115	55,233,862	74,657,274	129,891,136	135,031,491
1911	3,718,458	928,663	741,188	62,226,897	81,220,013	143,446,910	148,835,219
1912	536,984	1,002,062	872,946	65,408,841	84,397,756	149,806,597	152,218,589
1913	368,975	894,095	2,492,229	62,012,773	87,814,795	149,827,568	153,582,867
1914	306,809	1,089,548	2,750,788	70,195,462	93,659,093	163,854,555	168,001,700
1915	275,589	1,140,592	3,347,646	75,380,916	99,598,420	174,979,336	179,743,163
1916	207,621	1,263,622	4,389,228	92,821,872	100,118,758	192,940,630	198,851,101
1917	244,806	1,439,019	3,660,853	105,390,961	103,739,427	209,130,388	214,475,066
1918	229,639	1,726,045	4,486,497	112,262,321	112,504,432	224,766,753	231,208,934

(iv) *Assets of Banks for June Quarters, 1909 to 1918.* A similar table shewing the average assets of the banks for the June quarters of each of the years 1909 to 1918 is shewn below.

AVERAGE ASSETS OF BANKS IN THE COMMONWEALTH FOR THE QUARTER ENDED 30th JUNE, IN THE YEARS 1909 TO 1918.

Year.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Landed and other Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	All other Debts Due to the Banks.(a)	Total Assets.
1909	24,943,910	1,353,933	4,852,471	932,354	1,153,611	98,451,421	131,717,700
1910	28,826,729	1,322,899	4,919,991	973,161	1,343,669	101,371,817	138,758,266
1911	32,330,705	1,140,065	4,937,437	1,279,714	1,698,097	118,179,425	159,565,443
1912	27,581,368	1,104,644	4,956,593	1,168,958	1,761,701	129,197,992	165,771,256
1913	30,133,187	1,118,879	4,983,882	1,334,182	3,211,812	123,772,972	164,554,914
1914	35,385,924	1,024,100	4,592,951	1,785,498	4,737,862	127,922,971	175,449,306
1915	33,888,106	1,015,017	5,064,575	1,671,105	4,070,229	148,603,014	194,312,046
1916	26,957,576	843,214	5,237,167	1,756,796	5,526,231	179,232,575	219,553,559
1917	21,685,410	1,156,033	5,288,199	2,035,297	5,429,884	176,739,172	212,333,995
1918	21,518,264	889,032	5,300,834	2,149,799	6,087,990	209,336,561	236,332,480

(a) Including Government and Municipal securities, and Australian notes.

As the table shews, the increase in the total amount of assets is mainly due to advances. The marked advance in the item "all other debts" in the year 1915 was due to the large expansion of the Australian note issue, owing to the war. The decline in 1917 was due to a fall in the advances, which was not quite balanced by the rise in Government securities. The great increase of 1918 is almost exactly accounted for by the increase in the advances, due largely to the action of the banks in financing wheat and other commodities awaiting shipment; also in assisting individuals to invest in war loan. The banks have materially assisted the Federal Government in its war finance by advancing £10,000,000 in gold, receiving in return an equivalent amount in Australian notes, which they undertook not to present for payment until the termination of the war.

5. Percentage of Coin, Bullion, and Australian Notes to Liabilities at Call.—

(i) *Commonwealth.* Although it is not strictly correct to assume that the division of deposits into those bearing interest and not bearing interest would in every case coincide

with a division into fixed deposits and current accounts, the division, in default of a better one, must be adopted, and in the following table "liabilities at call" are therefore understood to include the note circulation of the banks and the deposits not bearing interest. From 1912 onwards, however, the former item has steadily decreased.

PERCENTAGE OF COIN, BULLION, AND AUSTRALIAN NOTES TO LIABILITIES AT CALL, COMMONWEALTH BANKS, 1909 TO 1918.

Year.	Liabilities at Call.		Coin, Bullion, and Australian Notes.	Percentage to Liabilities at Call.
	£		£	%
1909	50,323,261	26,297,843	52.26	
1910	58,982,344	30,149,628	51.12	
1911	65,945,355	33,470,770	50.76	
1912	65,945,825	34,120,831	51.74	
1913	62,381,748	36,105,775	57.88	
1914	70,502,271	41,446,540	58.79	
1915	75,656,505	55,376,352	73.19	
1916	93,079,493	58,312,009	62.65	
1917	105,635,767	53,777,126	50.91	
1918	112,491,960	56,359,868	50.10	

It would appear from the figures just given that the banks generally consider it advisable to hold rather more than half the amount of liabilities at call in coin and bullion. In the two years 1913 and 1914 the ratio rose to more than four-sevenths, and in 1915 to nearly three-fourths. The large rise in 1913 was due to a decrease in the deposits, coupled with a simultaneous advance in coin, bullion, and Australian notes. The result of over 73 per cent. for 1915 was abnormal, and was due to the rise in the holdings of Australian notes, which are being held in excess of requirements. The subsequent fall is due partly to an increase in the deposits, and partly to a diminution in the holding of gold coin.

(ii) *Queensland Treasury Notes.* No bank notes are issued by any of the banks in Queensland, where a Treasury note took the place of bank notes from 1893. These Treasury notes are disregarded in the quarterly statements of the banks; according to Treasury returns the amount outstanding on 30th June, 1918, was £26,570. Under the Australian Notes Act, previously referred to, the issue of notes by a State is now prohibited.

(iii) *States.* The proportion of coin, bullion, and Australian notes to liabilities at call varies considerably in the different States, and even sometimes in the same State from year to year. A table is appended shewing the percentage for each State for the quarter ended 30th June in each of the years 1909 to 1918:—

PERCENTAGE OF COIN, BULLION, AND AUSTRALIAN NOTES TO LIABILITIES AT CALL, COMMONWEALTH BANKS, 1909 TO 1918.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
	%	%	%	%	%	%	%	%
1909 ..	50.38	56.57	39.68	46.90	83.29	41.48	..	52.26
1910 ..	51.33	51.66	39.78	48.27	81.09	37.77	..	51.12
1911 ..	52.28	45.05	43.60	51.64	86.55	35.13	16.27	50.76
1912 ..	50.79	50.42	47.53	56.98	72.82	44.63	32.95	51.74
1913 ..	51.93	59.87	54.18	70.75	94.23	47.23	20.98	57.88
1914 ..	57.66	55.16	47.85	74.93	102.60	50.04	19.53	58.79
1915 ..	66.50	69.13	63.82	115.07	139.21	68.90	20.80	73.19
1916 ..	56.02	62.94	56.78	72.93	127.61	72.55	13.40	62.65
1917 ..	49.34	49.51	46.71	54.11	80.41	62.89	11.50	50.91
1918 ..	48.06	48.95	51.55	54.81	57.06	61.30	12.66	50.10

6. *Deposits and Advances.*—(i) *Total Deposits.* The total amount of deposits held by the banks shews a steady advance during the period under review, although there was a slight check in the increase during 1913.

TOTAL DEPOSITS IN COMMONWEALTH BANKS, 1909 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£	£	£	£	£	£	£	£
1909 ..	44,626,194	38,611,731	16,138,931	9,727,879	4,987,894	3,665,626	..	117,753,255
1910 ..	50,018,885	41,809,708	17,420,034	10,782,890	6,129,668	3,729,951	..	129,891,136
1911 ..	55,222,458	46,363,615	19,633,309	11,123,300	7,280,392	3,759,486	59,350	143,446,910
1912 ..	58,229,571	48,453,808	20,311,907	11,600,180	6,900,755	4,236,207	74,166	149,806,597
1913 ..	57,282,179	47,690,128	21,504,588	11,714,785	6,350,055	5,188,274	97,559	149,827,568
1914 ..	62,927,433	52,027,824	24,244,483	12,248,015	6,858,956	5,415,462	132,382	163,854,555
1915 ..	68,170,388	54,159,707	27,369,725	11,857,003	7,539,468	5,710,106	172,939	174,979,336
1916 ..	80,046,047	59,280,709	25,648,722	13,631,827	8,070,380	6,042,451	220,494	192,940,630
1917 ..	84,049,266	65,241,651	29,215,467	15,812,959	8,519,488	5,966,908	324,639	209,130,388
1918 ..	86,489,590	68,663,889	34,133,083	18,594,391	9,770,507	6,750,979	364,314	224,766,753

(ii) *Deposits per Head of Population.* To shew the extent to which the population makes use of the banking facilities afforded to it, a table is given hereunder shewing the amount of total deposits per head of mean population for each of the years 1909 to 1918. The figures must not be taken as representative of the savings of the people, as a large proportion of the deposits is non-interest-bearing and therefore presumably used in the business of the banks' customers, together with a small part of the interest-bearing deposits.

DEPOSITS PER HEAD OF POPULATION IN COMMONWEALTH BANKS, 1909 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1909 ..	28 0 4	30 14 0	28 8 6	24 17 5	19 0 4	19 6 1	..	27 12 8
1910 ..	30 13 5	32 14 9	29 11 6	27 1 2	22 14 10	19 11 0	..	29 16 5
1911 ..	33 9 1	35 1 10	32 2 2	27 3 7	25 1 0	19 7 7	17 17 0	32 1 8
1912 ..	34 15 5	35 11 1	32 13 0	27 14 10	23 9 2	21 17 11	22 16 8	32 8 1
1913 ..	31 14 9	34 6 10	33 1 3	27 1 8	20 6 11	26 15 0	26 17 0	31 6 0
1914 ..	34 18 10	37 5 4	36 14 11	28 17 2	22 12 6	28 0 0	36 7 8	34 4 7
1915 ..	36 8 10	37 18 6	39 16 2	26 19 0	23 7 2	28 12 5	41 9 1	35 6 8
1916 ..	42 19 0	42 0 6	37 9 1	31 6 3	25 11 8	30 9 7	45 10 9	39 5 5
1917 ..	44 19 9	46 9 9	43 2 2	36 14 7	27 12 9	30 2 5	64 12 10	42 15 1
1918 ..	45 7 2	48 10 5	49 13 3	42 6 11	31 9 8	33 4 0	71 4 6	45 5 1

(iii) *Total Advances.* In the quarterly statements furnished by the banks the column headed "all other debts due to the banks," is made up of such miscellaneous items as bills discounted, promissory notes discounted, overdrafts on personal security, overdrafts secured by deposit of deeds or by mortgage, etc. The quarterly returns furnished to the Commonwealth Statistician in 1908 and 1909 provided for a division of the amounts contained under this heading into a number of sub-headings, but all the banks were not in a position to make the necessary division, so that under present circumstances it is impossible to separate these items, and the total amounts contained in the column must, therefore, be treated as advances. The following table shews the totals for each State during the years 1909 to 1918. It will be noted that in 1913 there was a marked decrease in the advances. This was roughly concurrent with a slackening in the increase of deposits, and was due partly to this slackening, and partly to international causes. The fall in 1917 was due to the fact that the banks were not called upon to finance the harvest, this being undertaken by the Imperial Government. Part of the very large rise in 1917-18 is due to the advances made by the banks to their clients, to enable them to subscribe to the sixth Commonwealth War Loan.

ADVANCES BY COMMONWEALTH BANKS, 1909 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£	£	£	£	£	£	£	£
1909 ..	34,853,220	31,455,141	14,499,669	5,699,546	5,384,518	2,715,648	..	94,607,742
1910 ..	34,809,345	33,064,881	14,167,480	6,426,809	5,889,061	2,722,645	..	97,080,221
1911 ..	39,001,933	35,792,928	15,639,657	8,018,597	7,327,529	2,796,045	2,085	108,578,774
1912 ..	43,575,784	37,843,360	17,765,880	8,565,340	8,360,993	2,857,565	3,755	118,972,674
1913 ..	41,740,849	35,914,898	16,748,341	7,893,585	8,124,242	3,056,852	2,279	113,481,046
1914 ..	43,423,580	35,667,449	17,114,230	8,142,197	8,024,452	3,132,988	4,314	115,509,210
1915 ..	45,305,098	35,233,268	17,304,016	8,078,242	8,503,033	2,880,489	8,332	117,312,478
1916 ..	50,443,748	41,990,188	18,456,103	10,156,148	9,414,042	2,871,661	4,141	133,336,031
1917 ..	48,592,208	38,922,442	17,753,656	6,459,562	9,057,389	2,988,916	5,935	123,787,852
1918 ..	56,176,269	42,185,873	18,685,598	10,877,107	9,183,968	3,265,637	36,006	140,410,458

(iv) *Proportion of Advances to Deposits.* The percentage borne by advances to total deposits shews to what extent the needs of one State have to be supplied by the resources of another State, and where the percentage for the Commonwealth as a whole exceeds 100 (as it did in the early years of the century), the banks must have supplied the deficiency from their own resources, or from deposits obtained outside the Commonwealth. The following figures shew, however, that the banking business of the Commonwealth has been self-contained during the period under review:—

**PERCENTAGE OF ADVANCES TO TOTAL DEPOSITS, COMMONWEALTH BANKS.
1909 TO 1918.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	All States.
	%	%	%	%	%	%	%	%
1909 ..	78.10	81.47	89.84	58.59	107.95	74.08	..	80.34
1910 ..	69.59	79.08	81.33	59.60	96.07	72.99	..	74.74
1911 ..	70.63	77.20	79.66	72.06	100.65	74.37	3.51	75.69
1912 ..	74.83	78.10	87.47	73.84	121.16	67.46	5.06	79.42
1913 ..	72.87	75.31	77.88	67.38	127.94	58.92	2.34	75.74
1914 ..	69.01	68.55	70.59	66.48	116.99	57.85	3.26	70.49
1915 ..	66.46	65.05	63.22	68.13	112.78	50.45	7.82	67.04
1916 ..	63.02	70.83	71.96	74.50	116.65	47.52	1.88	69.11
1917 ..	57.81	56.60	60.77	53.50	106.31	50.09	1.83	59.19
1918 ..	64.95	61.44	54.74	58.50	94.00	48.37	9.88	62.47

7. Clearing Houses.—The Sydney Banks' Exchange Settlement and the Melbourne Clearing House, at which two institutions settlements are effected daily between the banks doing business in New South Wales and Victoria respectively, publish figures of the weekly clearances effected. From these figures it appears that in 1918 the total clearances in Sydney amounted to £552,216,000, and in Melbourne to £493,768,000. These figures represent an increase for Sydney of £107,684,000 on those for 1917, and for Melbourne of £116,468,000. Owing to the different distribution of the banking business in the two cities these figures do not, however, afford a fair comparison of the volume of banking business transacted in Sydney and Melbourne. For Adelaide the clearances in 1918 totalled £105,705,000, an increase for the year of £21,839,000. Returns for all Australian Clearing Houses for the last seven years are shewn in the following table:—

**YEARLY TOTAL OF BILLS, CHEQUES, ETC., PASSED THROUGH AUSTRALIAN
CLEARING HOUSES, 1912 TO 1918.**

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.
	£	£	£	£	£
1912 ..	330,621,000	303,462,000	73,233,000	74,924,000	..
1913 ..	348,741,000	297,256,000	80,273,000	75,475,000	..
1914 ..	353,068,000	299,668,000	84,925,000	70,031,000	..
1915 ..	357,803,000	299,295,000	96,291,000	60,950,000	..
1916 ..	422,371,000	357,788,000	100,064,000	71,433,000	40,366,000
1917 ..	444,532,000	377,300,000	119,501,000	83,866,000	41,370,000
1918 ..	552,216,000	493,768,000	134,050,000	105,705,000	50,518,000

§ 3. Companies.

1. General.—Returns in regard to registered companies are defective, and, with few exceptions, are not available for Tasmania. They embrace (a) Returns relating to Trustees, Executors and Agency Companies; (b) Returns relating to Registered Building and Investment Societies; and (c) Returns relating to Registered Co-operative Societies.

2. **Trustees, Executors and Agency Companies.**—Returns are available of eight Victorian, two New South Wales, one Queensland, three South Australian, one Western Australian, two Tasmanian companies, and two with head offices in New Zealand. The paid-up capital of these nineteen companies amounted to £616,030; reserve funds and undivided profits to £522,874; other liabilities, £218,276; total liabilities, £1,357,180. Among the assets are included :—Deposits with Governments, £264,132; other investments in public securities, fixed deposits, etc., £265,248; loans on mortgage, £128,031; property owned, £451,581; other assets, £248,188. The net profits for the year were £104,537, and the amount of dividends and bonuses £60,304. Returns as to the amount at credit of estates represented by assets are available for only eleven companies, the total shewn being £51,632,748.

Probably about £20,000,000 would have to be added to this amount for the remaining seven companies, so that the total amount would probably be about £70,000,000. None of these companies receives deposits, and advances are only made under exceptional circumstances, and to a very limited extent, the total so shewn in the last balance-sheets being but £107,017.

3. **Registered Building and Investment Societies.**—Returns have been received of a total of 197 societies, viz., 114 in New South Wales, 31 in Victoria, 11 in Queensland, 24 in South Australia, 13 in Western Australia, and 4 in Tasmania. The balance-sheets cover various periods ended during the second half of 1917 and the first half of 1918, so that the returns may be assumed to correspond roughly to the financial year 1917–18. The liabilities of the societies are stated as follows :—

LIABILITIES OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1917–18.

State.	Paid-up Capital or Subscriptions.	Reserve Funds.	Deposits.	Bank Overdrafts and other Liabilities.	Total Liabilities.
	£	£	£	£	£
New South Wales ..	1,688,018	(a)	485,139	216,542	2,389,699
Victoria ..	1,307,860	354,073	746,750	104,179	2,512,862
Queensland ..	485,151	42,343	93,511	26,967	647,972
South Australia ..	529,018	16,757	1,659	22,465	569,899
Western Australia ..	151,907	387	25,635	7,032	184,961
Tasmania ..	100,437	57,026	145,782	13,377	316,622
Total ..	4,262,391	470,586	1,498,476	390,562	6,622,015

(a) Included in paid-up capital or subscriptions.

The assets of the companies for the same period were as follows :—

ASSETS OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1917–18.

State.	Advances on Mortgage.	Landed and House Property, Furniture, etc.	Cash in Hand and on Deposit and other Assets.	Total Assets.
	£	£	£	£
New South Wales ..	2,023,923	(a)	365,776	2,389,699
Victoria ..	2,035,768	460,627	78,617	2,575,012
Queensland ..	612,148	13,801	34,946	660,895
South Australia ..	549,814	3,225	27,513	580,552
Western Australia ..	175,978	195	8,788	184,961
Tasmania ..	274,097	9,940	32,585	316,622
Total ..	5,671,728	(b)487,788	548,225	6,707,741

(a) Included with other assets.

(b) Exclusive of New South Wales.

Statistical information, so far as is available, is furnished in the following table :-

REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1917-18.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Number of societies ..	114	31	11	24	13	4	197
Number of shareholders ..	(a)	7,524	4,514	9,615	3,234	1,580	(b) 28,467
Number of shares ..	(a)	(a)	834,390	24,875	10,521	13,528	(c) 883,314
Number of borrowers ..	(a)	9,680	4,747	2,960	1,300	1,337	(b) 20,024
Income for year from interest	127,354	163,766	44,478	30,679	(d)	20,329	386,606
Working expenses for year	102,773	66,818	7,012	7,037	3,726	5,976	193,342
Amount of deposits during year	220,575	552,447	44,898	3,320	44,678	25,838	891,756
Repayment of loans during year ..	238,799	518,835	145,843	91,347	38,283	62,510	1,095,617
Loans granted during year ..	324,146	338,979	110,271	89,437	39,142	46,436	948,411

(a) Not available. (b) Exclusive of New South Wales. (c) Exclusive of New South Wales and Victoria. (d) Included in repayment of loans.

4. Registered Co-operative Societies.—Returns are available of 116 societies, of which 46 are in New South Wales, 49 in Victoria, 5 in Queensland, 7 in South Australia, and 9 in Western Australia. As in the case of Building and Investment Societies, so in the case of Co-operative Societies the balance-sheets cover various periods ended during the financial year 1917-18. The liabilities of the 116 societies are shown in the following table :—

LIABILITIES OF REGISTERED CO-OPERATIVE SOCIETIES, 1917-18.

State.	Paid-up Capital.	Reserve Funds.	Bank Overdrafts and Sundry Creditors.	Other Liabilities, Profit and Loss Account, etc.	Total Liabilities.
	£	£	£	£	£
New South Wales ..	310,776	171,542	(a)	166,256	648,574
Victoria ..	124,208	46,455	157,167	75,918	403,748
Queensland ..	10,875	972	4,907	14,172	30,926
South Australia ..	189,026	15,563	17,302	73,410	295,301
Western Australia ..	17,551	2,360	26,591	57,128	103,630
Total ..	652,436	236,892	205,967	386,884	1,482,179

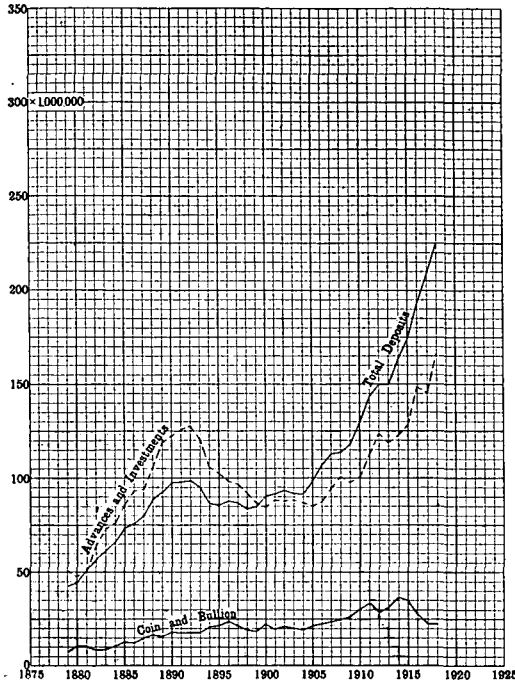
(a) Included in other liabilities.

The assets of the societies are shown hereunder :—

ASSETS OF REGISTERED CO-OPERATIVE SOCIETIES, 1917-18.

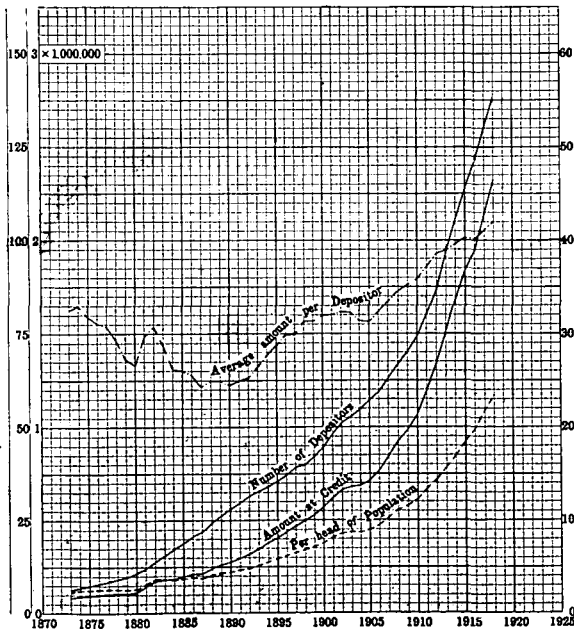
State.	Stock and Fittings.	Cash in Hand and Sundry Debtors.	Freehold and other Property and other Assets.	Total Assets.
	£	£	£	£
New South Wales ..	516,706	113,398	18,470	648,574
Victoria ..	165,473	154,682	107,222	427,377
Queensland ..	7,921	8,407	14,528	30,856
South Australia ..	205,415	60,223	37,432	303,070
Western Australia ..	78,961	23,774	895	103,630
Total ..	974,476	360,484	178,547	1,513,507

AUSTRALIAN BANKING STATISTICS.—CHEQUE-PAYING BANKS IN AUSTRALIA, 1879-1918.



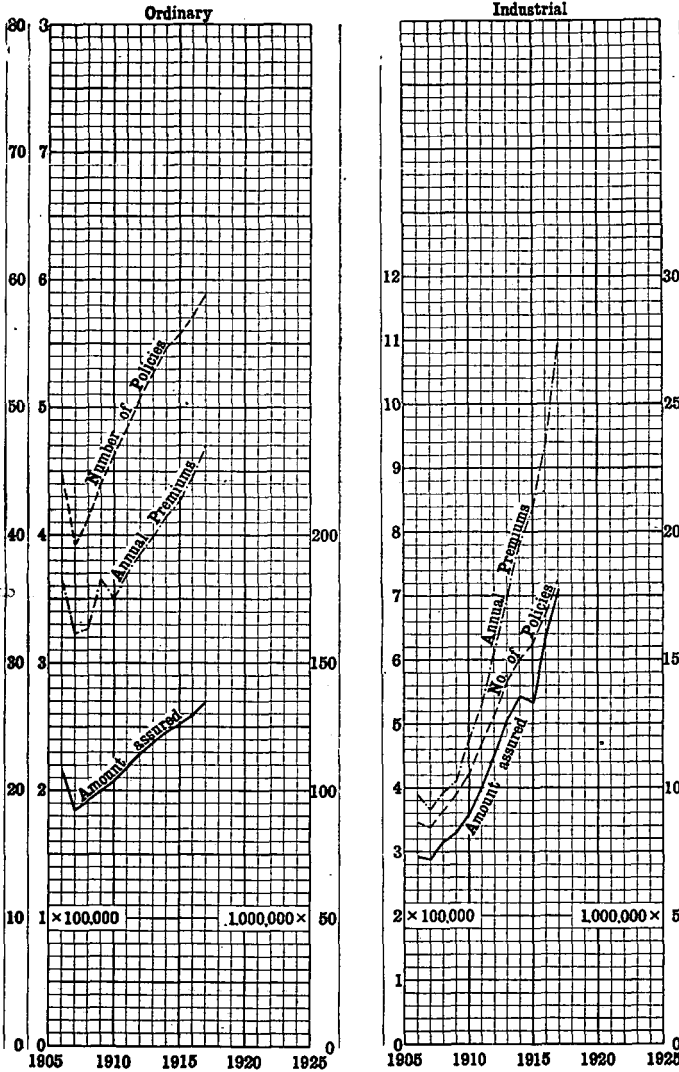
EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year, and its vertical height a sum of £5,000,000.

SAVINGS BANKS IN AUSTRALIA, 1873-1918.



EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. Of the two scales on the left, the outer one represents the amount at credit, and the inner one the number of depositors, while the vertical height of each small square represents £2,500,000 and 50,000 in number respectively. The scale on the right represents the average amount per depositor, and per head of population respectively, while the vertical height of each small square represents £1.

GRAPHS SHEWING LIFE ASSURANCE IN ORDINARY AND INDUSTRIAL DEPARTMENTS
IN THE COMMONWEALTH OF AUSTRALIA, 1906-1917.



EXPLANATION OF GRAPHS—The base of each small square represents in each graph an interval of one year.

In the case of the "Ordinary" Assurance graph, there are three scales—two on the left—the outer one representing the Annual Premiums, and the inner one the number of Policies in force,—and one on the right representing the Amount Assured, exclusive of bonus additions. The vertical height of each small square represents £100,000, 10,000 in number and £5,000,000 respectively.

In the case of the "Industrial" Assurance graph, the scale on the left represents the Annual Premiums and the number of Policies in force, and the scale on the right the Amount Assured, exclusive of bonus additions. The vertical height of each small square represents £20,000, 20,000 in number and £500,000 respectively.

The following table gives statistical information, so far as available :—

REGISTERED CO-OPERATIVE SOCIETIES, 1917.

Details.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	C'wealth. (a)
Number of Societies on 31st December, 1916	44	53	5	6	10	118
Total No. of members on 31st December, 1916	40,791	13,589	17,719	13,078	1,890	87,067
Total income for year 1916	£ 1,913,676	869,862	20,306	505,114	176,275	3,485,233
Working expenses for year ended 31st December, 1916	£ 1,777,998	119,333	24,030	81,999	162,954	2,166,314

(a) Exclusive of Tasmania.

§ 4. Savings Banks.

1. **General.**—The total number of savings banks, with their branches and agencies, in the Commonwealth, nearly approximates to that of ordinary banks, and at the middle of 1918, numbered 2,247, distributed as follows :—New South Wales, 629; Victoria, 475; Queensland, 488; South Australia, 307; Western Australia, 199; and Tasmania, 149.* These figures are exclusive of the Commonwealth Savings Bank, except in the State of Tasmania, in which the Commonwealth Savings Bank absorbed the State Savings Bank. In the Northern Territory the Commonwealth Savings Bank alone is in operation.

In the following tables the figures for all the States except Tasmania refer to financial years ended 30th June. In the case of Tasmania, figures for the two joint-stock savings banks are made up to the last day of February in each year. In the case of the Commonwealth Bank, figures are made up to the 30th June, 1918.

2. **Depositors.**—The total number of depositors, *i.e.*, of persons having accounts open, not of those making deposits, in each of the last ten years is shewn in the following table :—

NUMBER OF DEPOSITORS IN SAVINGS BANKS, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria. (a)	Q'land.	S. Aust. (a)	W. Aust. (a)	Tasmania.	N. Ter.	All States.
1908-9	436,029	532,425	106,627	187,482	77,748	58,145	..	1,398,456
1909-10	460,251	560,515	114,720	201,275	86,166	60,646	..	1,483,573
1910-11	498,658	595,424	127,219	216,480	99,017	63,314	..	1,600,112
1911-12	544,023	641,736	139,091	232,971	111,078	67,105	..	1,736,004
1912-13 (b)	619,224	703,084	168,438	251,963	121,201	70,402	228	1,934,540
1913-14 (b)	693,618	735,400	201,163	267,805	134,510	76,000	292	2,108,788
1914-15 (b)	755,835	781,490	229,023	232,169	144,777	80,446	716	2,274,456
1915-16 (b)	806,882	821,208	249,235	299,308	157,355	86,489	1,139	2,421,616
1916-17 (b)	872,351	869,058	281,585	319,960	172,084	91,680	1,366	2,608,084
1917-18 (b)	920,337	913,875	313,248	337,709	182,140	95,154	1,274	2,763,737

(a) Inclusive of depositors in penny savings banks.

(b) Inclusive of Commonwealth Savings Bank.

* Year 1913.

The subjoined table shows the above figures in relation to the population of the States; it must, of course, be borne in mind that savings bank accounts are not restricted to the adult population, but that it is, on the contrary, a very usual practice to open accounts in the names of children. Even so, the proportion is a large one, amounting in the case of the Commonwealth to about five-ninths, and rising in Victoria to seven-elevenths, and in South Australia to more than three-quarters. In the case of this table and the one that follows, it may be pointed out that as it is possible for the same person to have accounts in both Commonwealth and State Savings Banks, the figures given are perhaps slightly in excess of the number of individual depositors.

**DEPOSITORS IN SAVINGS BANKS PER 1,000 OF POPULATION,
1908-9 TO 1917-18.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
1908-9 ..	275	426	191	481	299	303	..	330
1909-10 ..	285	439	199	508	324	314	..	343
1910-11 ..	303	458	212	528	358	327	..	362
1911-12 ..	325	471	224	553	378	347	..	380
1912-13 (a)	342	508	257	581	386	362	74	403
1913-14 (a)	373	517	296	607	415	386	80	428
1914-15 (a)	404	548	332	637	449	405	161	459
1915-16 (a)	434	584	362	690	500	438	235	494
1916-17 (a)	467	620	413	744	557	473	271	532
1917-18 (a)	482	645	453	768	585	469	242	555

(a) Inclusive of Commonwealth Savings Bank.

3. Deposits.—The total amount of deposits in the savings banks of the six States reaches the large sum of one hundred and sixteen million pounds, and would no doubt be even larger if the banks did not restrict interest-bearing deposits to certain limits. It must be remembered that though not granting facilities to draw cheques, the Australian savings banks practically afford the small tradesman all the advantages of a current account, in addition to which they also allow him interest on his minimum monthly balance, instead of charging him a small fee for keeping his account, as the ordinary banks do. The rates of interest allowed, and the limits of interest-bearing deposits, are as follows:—New South Wales, Government Savings Bank, $3\frac{1}{4}$ per cent. up to £500; Victoria, $3\frac{1}{2}$ per cent. on first £350, and on deposit stock up to £1,000; Queensland, $3\frac{1}{2}$ per cent. up to £1,000; South Australia, $2\frac{1}{2}$ per cent. on accounts closed during the year, and 4 per cent. up to £350 on accounts remaining open; Western Australia, $3\frac{1}{2}$ per cent. from £1 to £500, and 3 per cent. from £500 to £1,000; also 4 per cent. on deposit stock up to £1,000; Hobart Trustees' Savings Bank, 4 per cent. up to £300; Launceston Trustees' Savings Bank, 4 per cent. up to £150, and Commonwealth Savings Bank, 3 per cent. up to £300. The savings banks of five of the States—New South Wales, Victoria, Queensland, South Australia, and Western Australia—have, for the further benefit of depositors, entered into a reciprocity arrangement, under which money deposited in one State may be drawn out in another State, even by telegraph. The two Savings Banks in New South Wales amalgamated on 1st May, 1914. The Act of amalgamation provided for interest at the rate of $3\frac{1}{2}$ per cent. on the accounts carried to the combined institution. If the rate of interest to Government Savings Bank depositors should fall subsequently below 3 per cent., the transferred accounts of the old Barrack Street Bank were to receive a preferential rate of interest of $\frac{1}{2}$ per cent. Otherwise their accounts will not receive less than $3\frac{1}{2}$ per cent. These preferential rights of interest conserved to the old Barrack Street depositors were for a period of ten years.

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The table below shows the total amounts at credit of depositors in each of the last ten years:—

DEPOSITS IN SAVINGS BANKS, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£	£	£	£	£	£	£	£
1908-9 ..	18,805,082	14,101,710	5,158,219	6,347,271	3,059,738	1,605,919	..	49,077,939
1909-10 ..	20,150,574	15,417,888	5,622,986	6,791,320	3,481,764	1,652,966	..	53,117,498
1910-11 ..	22,453,924	17,274,423	6,376,969	7,435,772	4,092,504	1,760,090	..	59,393,682
1911-12 ..	25,361,338	19,662,465	7,342,811	8,248,396	4,408,320	1,933,448	..	66,956,778
1912-13 (a)	28,862,592	22,232,196	8,668,284	8,766,182	4,682,738	2,036,211	13,151	75,261,354
1913-14 (a)	32,363,069	24,533,519	10,166,946	9,366,490	4,932,895	2,178,305	18,709	83,559,933
1914-15 (a)	35,562,649	26,996,025	11,972,965	9,595,156	5,149,536	2,301,336	42,643	91,620,310
1915-16 (a)	37,363,272	28,789,426	12,938,636	10,035,036	5,338,009	2,534,266	77,956	97,076,601
1916-17 (a)	40,836,747	31,581,266	14,725,959	11,331,343	5,846,109	2,695,274	102,348	107,139,046
1917-18 (a)	43,039,012	34,598,186	16,501,325	12,899,036	6,290,027	2,917,235	95,071	116,339,892

(a) Inclusive of Commonwealth Savings Bank.

A comparison between the tables shewing the number of depositors and the amount of deposits reveals the fact that the average amounts to the credit of each depositor are considerably larger in some States than in others; in other words, that in one State a comparatively larger proportion of the population makes use of the savings banks, and that the natural result is a smaller amount to the credit of the individual depositor. Within the same State there is little variation in the figures from year to year, except that Victoria has shewn a steady advance in the period under review.

AVERAGE AMOUNT PER DEPOSITOR IN SAVINGS BANKS, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1908-9 ..	43 11 2	26 9 9	48 7 6	33 17 1	39 7 1	27 12 5	..	35 4 1
1909-10..	43 15 8	27 10 1	49 0 4	33 14 10	40 8 2	27 5 1	..	35 16 1
1910-11..	45 0 7	29 0 3	50 2 6	34 7 0	41 6 7	27 16 0	..	37 2 4
1911-12..	46 12 4	30 12 9	52 15 10	35 8 1	39 13 9	28 18 3	..	38 11 4
1912-13(a)	46 12 2	31 12 5	51 9 3	34 15 10	38 12 9	28 18 4	57 13 7	38 18 0
1913-14(a)	46 13 2	33 7 2	50 10 10	34 18 10	36 13 6	28 13 3	64 1 5	39 12 4
1914-15(a)	47 1 0	34 10 11	52 5 7	34 0 1	35 11 5	28 12 2	59 11 2	40 5 7
1915-16(a)	46 6 1	35 1 9	51 18 3	33 10 6	33 18 0	29 6 0	68 8 10	40 1 6
1916-17(a)	46 16 10	36 6 9	52 5 10	35 9 5	33 19 0	29 7 10	74 18 6	41 1 8
1917-18(a)	46 15 3	37 17 2	52 13 7	38 3 11	34 10 8	30 13 2	74 12 6	42 1 11

(a) Inclusive of Commonwealth Savings Bank.

The average amount deposited per head of population shews a satisfactory increase during the period under review. Since 1908-9 it has practically doubled itself, the figures for South Australia being particularly noticeable.

SAVINGS BANKS DEPOSITS PER HEAD OF POPULATION, 1908-9 TO 1917-18.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1908-9 ..	11 17 5	11 5 6	9 5 2	16 6 0	11 15 8	8 7 6	..	11 11 11
1909-10..	12 9 8	12 1 6	9 14 7	17 2 8	13 2 1	8 11 2	..	12 5 8
1910-11..	13 13 2	13 5 6	10 12 11	18 2 7	14 15 8	9 1 9	..	13 8 5
1911-12..	14 11 7	14 10 5	11 11 8	19 8 11	14 11 7	10 3 6	..	14 8 4
1912-13..	15 19 0	15 19 10	13 4 2	20 4 3	14 17 8	10 9 4	4 5 1	15 18 4
1913-14..	17 8 7	17 5 1	14 19 6	21 4 0	15 4 6	11 1 5	5 2 1	16 19 6
1914-15..	19 0 1	18 18 6	17 7 2	21 13 6	15 19 4	11 12 0	9 11 9	18 10 0
1915-16..	20 1 0	20 9 6	18 16 5	23 2 11	16 19 3	12 16 8	16 1 9	19 16 1
1916-17..	21 19 5	22 11 2	21 19 0	26 5 9	18 18 7	13 9 10	20 5 11	21 17 7
1917-18..	22 10 7	24 8 5	23 16 9	29 7 0	20 4 4	14 7 7	18 0 9	23 7 2

4. Annual Business.—The annual volume of business transacted by the Australian savings banks is very large when compared with the total amount of deposits. This is mainly due to the fact already pointed out that many accounts are used as convenient current accounts. Thus, during the last year of the period under review, the total

amount deposited and withdrawn (exclusive of interest added) amounted to about 160 per cent. of the total amount of deposits at the end of the previous year, while the amount at credit of depositors (inclusive of interest added) increased by only about 9 per cent. during the same year. The following table shews the business transacted during the year 1917-18 :—

SAVINGS BANKS TRANSACTIONS DURING THE YEAR 1917-18.

State.	Total Deposits at end of Year 1916-17.	Amounts Deposited during Year 1917-18.	Interest Added during Year 1917-18.	Total.	Amounts Withdrawn during Year 1917-18.	Total Deposits at end of Year 1917-18.
	£	£	£	£	£	£
N. S. Wales ..	40,836,747	33,440,635	1,418,238	75,695,620	32,656,608	43,039,012
Victoria ..	31,581,266	27,878,539	1,093,024	60,552,829	25,954,643	34,598,186
Queensland ..	14,725,959	13,487,276	508,204	28,721,439	12,220,114	16,501,325
South Australia ..	11,351,343	8,186,820	435,124	19,973,287	7,074,251	12,899,036
West. Australia ..	5,846,109	4,378,740	192,295	10,417,144	4,127,117	6,290,027
Tasmania ..	2,695,274	1,893,637	90,332	4,679,243	1,762,008	2,917,235
Nor. Territory ..	102,348	94,168	2,570	199,086	104,015	95,071
Total ..	107,139,046	89,359,815	3,739,787	200,238,648	83,898,756	116,339,892

5. **Commonwealth Savings Bank.**—The Savings Bank department of the Commonwealth Bank started operations in Victoria on 15th July, 1912, in Queensland on 16th September, 1912, in the Northern Territory on 21st October, 1912, and in the States of New South Wales, South Australia, and Western Australia on 13th January, 1913. Business is being transacted on the usual Savings Bank lines, interest at the rate of 3 per cent. per annum being allowed on deposits up to £300. Extensive use is being made of the country post-offices as local agencies, the several States having received notice that their Savings Banks would have to be removed from the post-offices by the end of 1912.

For further particulars concerning the Commonwealth Bank, see Official Year Books Nos. 6-10.

The following table shews for each State the number of depositors, and the amount at credit on 30th June, 1918, in the Commonwealth Savings Bank :—

COMMONWEALTH SAVINGS BANK AS AT 30th JUNE, 1918.

Locality.	Number of Depositors.	Amount at Credit.
		£
New South Wales	136,422	4,472,018
Victoria	87,759	3,494,849
Queensland	70,765	3,002,888
South Australia	30,365	1,313,180
Western Australia	35,301	1,254,694
Tasmania	46,361	1,265,610
Northern Territory	1,274	95,071
Papua	964	34,694
London	10,509	294,530
Total	419,720	15,227,534

§ 5. Life Assurance.

1. **General.**—Under section 51 of the Commonwealth Constitution Act, the Commonwealth Parliament is empowered to legislate in regard to "insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned." With the exception of Act No. 12 of 1905, "an Act relating to assurance

on the lives of children by life assurance companies or societies," no legislation relating to life assurance has been passed by the Commonwealth Parliament, and life assurance companies carry on their business under State laws where such laws are in existence, or otherwise under the provisions of various companies' or special Acts. A Royal Commission consisting of the Honourable J. H. Hood, one of the judges of the Supreme Court of Victoria, and G. H. Knibbs, Esq., C.M.G., Commonwealth Statistician, was, however, appointed in 1908, "to inquire into and report upon the law relating to, and the methods of operating, Fire, Life, Industrial, and other Insurance in Australia." The Commission was originally required to report the result of its inquiry before the 30th June, 1909. A progress report was issued before that date, and the time for the final report extended to the 30th June, 1910. The report relating to Life Assurance was published on 15th March, 1910, and that relating to Fire Insurance on 15th October, 1910. On the conclusions contained in these reports future Commonwealth legislation will probably be based. In fact, a bill embodying some of the conclusions was introduced into the Federal Parliament on 20th December, 1912, but, owing to lack of time, did not reach its second reading. An additional report on Social Insurance was prepared by the Commonwealth Statistician and issued on 9th September, 1910.

Returns for the year 1917 have been directly collected from life assurance societies by the Commonwealth Statistician, with results which are in the main satisfactory. Figures for 1917 refer to business in the Commonwealth only, and do not include New Zealand business.

2. Companies Transacting Business in the Commonwealth.—The total number of companies at present established in the Commonwealth is nineteen, of which the following nine have their head offices in New South Wales :—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the City Mutual Life Assurance Society Limited, the Australian Metropolitan Life Assurance Company Limited, the People's Prudential Assurance Company Limited, the Life Insurance Company, the Assurance and Thrift Association Limited, the Co-operative Assurance Company Limited, and the Australian Provincial Assurance Association Limited. The Standard Life Association Limited is now omitted, since a controlling interest in it has been purchased by the Colonial Mutual Life Assurance Society, and almost all its policy-holders have transferred themselves to the latter corporation. The Mutual Life and Citizens' Assurance Company Limited was formed in 1908 by the amalgamation of the Mutual Life Association of Australasia and the Citizens' Life Assurance Company Limited. During 1910 it increased in size by amalgamating with the Australian Widows' Fund Life Assurance Society Limited, which is therefore no longer included in the list of independent corporations. Five companies have their head offices in Victoria, viz. :—The Australian Alliance Assurance Company, the National Mutual Life Association of Australasia Limited, the Victoria Life and General Insurance Company, the Colonial Mutual Life Assurance Society Limited, and the Australasian Temperance and General Mutual Life Assurance Society Limited. The head office of the Provident Life Assurance Company is in New Zealand, and that of the Liverpool and London and Globe Insurance Company in England. The remaining three societies belong to the United States, viz. :—The Equitable Life Assurance Society of the United States, the Mutual Life Insurance Society of New York, and the New York Life Insurance Society.

Most of the Australian companies are purely mutual; the following, however, are partly proprietary, the figures in brackets representing the shareholders' capital paid up :—The Victoria Life and General (£40,000), Mutual Life and Citizens' (£200,000), Metropolitan (£11,839), Prudential (£10,000), Life Insurance Company (£44,000), Assurance and Thrift (£17,684), Co-operative Assurance (£56,895), and Australian Provincial Association (£76,001). Of foreign companies transacting business in the Commonwealth, the Liverpool and London and Globe, the Provident, and the Equitable are partly proprietary, the shareholders' capital amounting to £265,525, £21,000, and £20,550 respectively.

3. Ordinary and Industrial Business.—Of the societies enumerated in the preceding paragraph, the following seven in 1917 transacted both ordinary and industrial business :—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the Australasian Temperance and General Mutual Life Assurance

Society Limited, the Australian Metropolitan Life Assurance Company Limited, the Colonial Mutual Life Assurance Society, the Life Insurance Company, and the Co-operative Assurance Company.

The People's Prudential Assurance Company Limited and the Provident Life Assurance Company formerly restricted their operations to industrial business, but have now established an ordinary department.

The remaining nine societies transacted ordinary life assurance business only, with the exception of those companies which have fire and accident branches, etc.

It has been attempted in this section to keep returns relating to ordinary and to industrial business apart, so far as it is possible to do so, and figures relating to companies whose head offices are in New Zealand or in Europe or America refer to the Australian business only of those companies.

4. **Ordinary Business : Australian Business in Force, 1917.**—The subjoined table shews the ordinary life business in force at the latest dates available in the nineteen societies conducting operations in the Commonwealth :—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1917.

Society.	Policies in force, exclusive of Annuities.	Amount Assured, exclusive of Bonus Addition, etc.	Annual Premium Income, exclusive of Annuities.
	No.	£	£
Australian Mutual Provident Society	265,546	73,555,466	2,413,114
Mutual Life and Citizens' Assurance Company Limited	95,358	17,466,117	609,890
City Mutual Life Assurance Society	27,206	4,687,056	184,571
Australian Metropolitan Life Assurance Company	4,047	427,777	18,545
Australian Alliance Assurance Company	256	88,372	2,046
National Mutual Life Association of Austratasia	82,835	19,271,626	723,379
Victoria Life and General Insurance Company	53	36,542	633
Colonial Mutual Life Assurance Society	32,332	5,934,586	209,036
People's Prudential Assurance Company	4,401	308,867	(a)26,275
Australasian Temperance and General Mutual Life Assurance Society	47,358	5,472,080	222,003
Liverpool and London and Globe Insurance Company (Life Branch)	251	99,041	2,858
Provident Life Assurance Company	690	70,388	2,702
Life Insurance Company	3,652	678,613	29,210
Assurance and Thrift Association Limited	1,106	211,889	8,610
Co-operative Assurance Company	714	168,723	6,903
Australian Provincial Assurance Association Limited	10,639	1,923,940	76,280
Equitable Life Assurance Society of United States	4,196	1,342,628	49,600
Mutual Life Insurance Society of New York	3,107	1,170,355	33,263
New York Life Insurance Society	4,767	2,045,512	72,673

(a) Including industrial.

5. **Industrial Business : Australian Business in Force, 1917.**—Similar information in regard to the industrial business of the nine societies transacting this kind of business is given in the following table :—

INDUSTRIAL ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1917.

Society.	Policies in Force.	Amount Assured.	Annual Premium Income.
	No.	£	£
Australian Mutual Provident Society	142,557	5,277,606	300,250
Mutual Life and Citizens' Assurance Company	252,400	4,735,713	264,677
Australian Metropolitan Life Assurance Company	32,246	884,049	48,855
Colonial Mutual Life Assurance Society	69,307	1,689,614	110,023
People's Prudential Assurance Company	5,556	120,150	(a)
Aust. Temperance and General Mutual Life Ass. Society	203,483	4,516,992	342,844
Provident Life Assurance Company	12,730	338,891	15,841
Life Insurance Company	3,494	86,740	5,464
Co-operative Assurance Company	3,864	101,128	6,379

(a) Included in ordinary.

6. Receipts and Expenditure of Assurance Societies, 1917.—(i) *Ordinary Business.* The following returns refer to the Australian business of all societies doing business in the Commonwealth. The People's Prudential Assurance Company, whose accounts do not distinguish between revenue and expenditure on account of ordinary and industrial business, has been included among the companies doing industrial business.

ORDINARY LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1917.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society	3,906,946	3,071,277	835,669
Mutual Life and Citizens' Assurance Company ..	948,984	679,937	269,047
City Mutual Life Assurance Society	287,959	187,227	100,732
Australian Metropolitan Life Assurance Company ..	21,939	10,709	11,230
Australian Alliance Assurance Company	5,760	9,686	(a)3,926
National Mutual Life Association of Australasia ..	1,148,853	656,875	491,978
Victoria Life and General Insurance Company ..	4,686	20,345	(a)15,659
Colonial Mutual Life Assurance Society	348,434	211,003	137,431
Aust. Temperance and General Mutual Life Ass. Soc.	285,545	179,948	105,597
Liverpool and London and Globe (Life Branch) ..	2,858	14,029	(a)11,171
Provident Life Assurance Company	2,705	723	1,982
Life Insurance Company	31,707	21,573	10,134
Assurance and Thrift Association Limited	11,546	6,063	5,483
Co-operative Assurance Company	8,021	6,188	1,833
Australian Provincial Assurance	77,968	61,987	15,981
Equitable Life Assurance Society	76,215	147,021	(a)70,806
Mutual Life Insurance Society of New York ..	42,749	86,086	(a)43,337
New York Life Insurance Society	80,706	107,492	(a)26,786

(a) Decrease.

(ii) *Industrial Business.* A similar return for those societies which transact industrial business is given below. The figures for the Prudential, as stated above, are included therein.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1917.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society	361,230	129,089	232,141
Mutual Life and Citizens' Assurance Company ..	342,943	219,985	122,958
Australian Metropolitan Life Assurance Company ..	50,907	41,291	9,616
Colonial Mutual Life Assurance Society	114,996	74,956	40,040
People's Prudential Assurance Company	29,291	22,644	6,647
Aust. Temperance and General Mutual Life Ass. Soc.	383,033	235,024	148,009
Provident Life Assurance Company	16,694	12,391	4,303
Life Insurance Company	5,754	5,861	(a)107
Co-operative Assurance Company	6,934	6,829	105

(a) Decrease.

7. *Liabilities and Assets of Assurance Societies, 1917.*—The liabilities of the Australian societies consist mainly of their assurance funds; as already mentioned, however, nine of the societies are partly proprietary, viz., the Mutual Life and Citizens', with a paid-up capital of £200,000; the Metropolitan, with a paid-up capital of £11,839; the Prudential, with a paid-up capital of £10,000; the Victoria Life and General, with a paid-up capital of £40,000; the Provident, with a paid-up capital of £21,000; the Life Insurance Company, with £44,000; the Assurance and Thrift, with £17,684; Co-operative Assurance Company, with £56,895; and the Australian Provincial with £76,001. With the exception of the Victoria, the Life Insurance, Assurance and Thrift, and Australian Provincial, this paid-up capital belongs in every case to the industrial branch of the respective societies. The capital of the Provident (£21,000) is held in New Zealand, that of the Liverpool and London and Globe (£265,525) in England, and that of the Equitable Life (£20,550) in the United States. None of these three amounts appears, therefore, in the two subjoined tables, where the capital of the Australian societies is included with the assurance funds. The assets consist mainly of loans on mortgage and policies, Government, municipal, and similar securities, shares, freehold property, etc. As in some cases the Australian liabilities exceed the Australian assets, it may be pointed out that this table should be read in connection with the table on page 821, which sets out the total assets. Loans on personal security are granted by very few of the Australian societies.

(i) *Ordinary Business.* The following table shews the liabilities and assets of the societies transacting ordinary life business:—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1917.

Society.	Liabilities.			Assets.(c)		
	Total Funds including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£	£	£	£	£	£
Australian Mutual Provident Society(a)	31,574,469	927,082	32,501,551	14,003,063	15,481,967	29,485,030
Mutual Life and Citizens' Assurance Co.	(b)	(b)	(b)	3,133,805	4,047,380	7,181,185
City Mutual Life Assurance Society	1,026,774	73,792	1,100,566	580,756	519,810	1,100,566
Australian Metropolitan Life Assurance Company	87,922	2,867	90,789	11,129	79,660	90,789
Australian Alliance Assurance Company	91,214	5,819	97,033	39,371	57,662	97,033
National Mut. Life Assoc. of Australasia	8,545,896	156,449	8,702,345	5,668,420	3,033,925	8,702,345
Victoria Life and General Insurance Co.	90,246	8,012	98,258	7,877	90,380	98,257
Colonial Mutual Life Assurance Society	3,151,575	162,180	3,313,755	1,012,282	2,301,473	3,313,755
Australasian Temperance and General Mutual Life Assurance Society(a)	2,245,986	101,350	2,347,336	791,352	1,555,984	2,347,336
Liverpool and London and Globe (Life Branch)	(b)	2,000	2,000	(b)	(b)	(b)
Provident Life Assurance Company	7,579	286	7,865	132	7,733	7,865
Commonwealth Life Insurance Co.	92,023	4,351	96,374	9,116	87,258	96,374
Assurance and Thrift Association Ltd.	44,799	3,578	48,377	37,405	9,217	46,622
Co-operative Assurance Company(a)	75,430	315	75,745	11,761	63,984	75,745
Australian Provincial Assur. Assocn. Ltd.	100,970	5,403	106,373	1,432	104,941	106,373
Equitable Life Assurance Society	106,086	622	106,708	153,219	388,460	541,679
Mutual Life Insurance Society of New York	(b)	(b)	(b)	164,322	63,596	227,918
New York Life Insurance Society	753,000	17,498	770,498	124,481	30,470	154,951

(a) Including industrial business. As the business of these three societies is mainly ordinary life business they have been included in this table. (b) Not available. (c) Several life offices have a considerable portion of their assets invested outside the Commonwealth (see table on the next page).

(ii) *Industrial Business.* As stated in the footnote to the preceding table, the Australian Mutual Provident Society, the Australasian Temperance and General Mutual Life Assurance Society, and the Co-operative Assurance Company, which transact a certain amount of industrial business, but whose business is mainly ordinary life business, have been included with those societies doing only ordinary life business. On the other hand, the People's Prudential Assurance Company, in whose case industrial business greatly predominates over ordinary life business, has been included in the following table. Incomplete as the table is, it shews that the funds appropriated to industrial business

are very insignificant in comparison with those pertaining to ordinary life business. Taking the table in conjunction with the statements of revenue and expenditure, the question may well be asked whether in the case of some of the societies, industrial business is worth catering for at all.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1917.

Society.	Liabilities.			Assets.		
	Total Funds, including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£ (b)	£ (b)	£ (b)	£	£	£
Mutual Life and Citizens' Assurance Co.				16,775	2,812,878	2,829,453
Australian Metropolitan Life Assurance Company	73,586	15,419	89,005	2,118	86,887	89,005
Colonial Mutual Life Assurance Society	201,336	1,961	203,297	2,370	196,811	199,181
(a) People's Prudential Assurance Co.	68,094	2,027	70,121	56,088	14,033	70,121
Provident Life Assurance Company	13,148	616	13,764	20	13,744	13,764

(a) Including ordinary business. (b) Particulars not available.

(iii) *Total Assets.* It has been thought advisable to confine the figures relating to life assurance to business in the Commonwealth. Several of the companies whose head offices are in Australia transact, however, a large amount of business elsewhere, viz., in New Zealand, in South Africa, and in the United Kingdom, while in the case of the foreign companies, the Australian business is insignificant compared with that done elsewhere. Particulars as to this foreign business of both Australian and foreign companies will be found in "Finance Bulletin, No. 10," and a short table only is inserted here, shewing the total assets of the various companies, so that the deficiencies in the Australian assets shown in the previous tables for those companies doing business elsewhere may not be misunderstood:—

TOTAL ASSETS OF ASSURANCE COMPANIES, 1917.

Society.	Assets.	Society.	Assets.
ORDINARY BUSINESS.		ORDINARY BUSINESS—continued.	
(a) Australian Mutual Provident Soc.	£ 38,924,020	(a) Co-operative Assurance Co. . .	75,745
Mutual Life and Citizens' Assur. Co.	9,425,218	Aust. Provincial Assurance Asscn.	106,373
City Mutual Life Assurance Society . .	1,100,566	Equitable Life Assurance Society . .	118,813,365
Aust. Metropolitan Life Assur. Co. . .	90,789	Mutual Life Ins. Society of New York	130,184,717
Australian Alliance Assurance Co. . .	97,033	New York Life Insurance Society . .	192,130,351
National Mutual Life Association . .	11,179,994		
Victoria Life and General Insur. Co.	98,257	INDUSTRIAL BUSINESS.	
Colonial Mutual Life Assurance Soc.	4,633,160	Mutual Life and Citizens' Assur. Co.	3,334,062
(a) Australasian Temperance and General Mutual Life Assurance Soc.	2,640,618	Australian Metropolitan Life Assurance Company . . .	89,005
Liverpool & London & Globe (Life)	16,000,793	Colonial Mutual Life Assurance Soc.	251,835
Provident Life Assurance Company . .	66,616	(b) People's Prudential Assur. Co.	70,121
Commonwealth Life Insurance Co. . .	96,374	Provident Life Assurance Company	125,983
Assurance and Thrift Asscn. Ltd. . .	48,504		

(a) Including industrial business. (b) Including ordinary business.

§ 6. Fire Insurance.*

1. **General.**—Returns as to fire insurance are very defective, and only for Sydney and Melbourne and the country districts of Victoria have some figures been given which are worth reproducing. The Royal Commission mentioned above under "Life Assurance" has reported upon fire insurance matters, and Commonwealth legislation may, therefore, be expected in the future. Legislation concerning fire insurance was, in fact, contained in the bill to which reference has already been made. [§ 5, sub-section 1.]

* See also Section XXVI., § 5, Fire Brigades.

2. **Sydney.**—Under the Fire Brigades Act 1902 the cost of the Metropolitan Fire Brigade is defrayed by equal payments on the part of the Colonial Treasurer, the municipal councils within the area under the jurisdiction of the Fire Brigades Board, and the insurance companies represented in Sydney. The companies divide their share proportionately to the amount held at risk. Under this arrangement the amount payable by the companies for the year 1909 was £19,100, divided amongst sixty-five companies, of which not more than six had their head office in Sydney. The amounts thus held at risk at the close of the last four years for which returns are available were, in 1905, £78,108,749; in 1906, £81,364,129; in 1907, £86,563,304; and in 1908, £89,071,992. A new Act, which came into force on the 1st January, 1910, was passed in 1909. This Act substituted a Board of Fire Commissioners for New South Wales for the original Metropolitan Fire Brigades Board, and divided the whole State into eight fire districts for the greater facilitation of working.

3. **Melbourne.**—In Melbourne the Metropolitan Fire Brigades Board assesses the amount payable by the insurance companies on the amount of premiums returned. These premiums for the last four years averaged about £530,000 per annum, while the contributions paid by the companies averaged about £27,000, or about £5 for every £100 of premiums. It may be said, therefore, that the companies have to devote about 5 per cent. of their premium income from metropolitan insurances to the maintenance of the fire brigade.

The value of ratable property is about £7,835,000, and the amounts contributed by the municipalities—as in the case of the insurance companies, one-third of the amount required by the Fire Brigades Board, the remaining one-third being contributed by the State Treasurer—are equal to about $\frac{7}{8}$ d. per £1 of ratable value. In addition to this contribution, insurance companies doing business in Victoria have to take out an annual license at a cost of $1\frac{1}{2}$ per cent. of the gross premium income, which is probably equal to about $1\frac{2}{3}$ per cent. on net income.

4. **Country Districts of Victoria.**—The country districts are divided into nine areas for fire insurance purposes, and the contributions to be paid vary in these areas according to the actual requirements of the Country Fire Brigades Board. The value of ratable property for the last year was slightly over £1,825,000. The premium income of the insurance companies from country business in protected areas during the year 1917 was about £215,000, and the contributions of the companies £4,717, equal to rather more than 2 per cent. of the premium income.

5. **Brisbane.**—A similar arrangement holds good in Brisbane, under which the cost of the Fire Brigade Board, amounting to about £20,000 per annum, is paid in equal shares by the Government, the Brisbane City Council, and the insurance companies.

6. **Adelaide.**—The Fire Brigades Board of South Australia is incorporated under “The Fire Brigades Act 1904”; “The Fire Brigades Act Amendment Act 1905”; and “The Fire Brigades Act Further Amendment Act 1910.” The cost is distributed as follows:—Three-ninths to the Government; four-ninths to the insurance companies; and two-ninths to the municipalities and districts which come under the operations of the board. The insurance companies are assessed in proportion to that portion of their premium incomes derived from the insurance of property (re-insurance within the State excepted) situated within the limits of the municipalities and districts coming under the operations of the board. The respective contributions for 1917 were as follows:—The Government, £8,761; the companies, £11,682; the municipalities, £5,841.

7. **Perth.**—A District Fire Brigades Bill was reported on by a committee of the Legislative Assembly during 1909, and it was recommended that all brigades should in future be controlled by one board, and that the expense should be met by contributions at the following rate:—By Government, two-eighths; by the municipalities, three-eighths; and by the insurance companies, three-eighths. These provisions were incorporated in an Act, “The District Fire Brigades Act 1909,” which was assented to on 21st December, 1909, and came into force on the 1st day of January, 1910. This

Act is now superseded by the Fire Brigades Act 1916 which came into operation on 2nd April 1917: It provides that every municipal or road board district shall be a fire district for the purposes of the Act, under the control of the Western Australian Fire Brigades Board. The income of the Board is derived in the same proportions as provided for in the Act of 1909. The latest valuation of ratable property is £1,583,000, and expenditure £31,550, of which the Government paid £7,888, the municipalities £11,831 and the insurance companies, £11,831.

8. Australian Fire Insurance Business.—Returns are available shewing the revenue and expenditure, assets and liabilities, and investments of twenty-eight insurance companies having their head offices either in the Commonwealth or in New Zealand. These companies are:—(a) with head office in Sydney—the Australian Mutual Fire Insurance Company, the City Mutual Fire Insurance Company, the Mercantile Mutual Fire Insurance Company, the Queensland Insurance Company Limited, the United Insurance Company, the Insurance Office of Australia Limited, the Federal Mutual Insurance Company of Australia, The Manufacturers' Mutual and the Farmers and Settlers; (b) with head office in Melbourne—the Australian Alliance Assurance Company, the Colonial Mutual Fire Insurance Company, the Victoria Insurance Company, the Victoria General Insurance and Guarantee Company Limited, the Australasian Mutual Insurance Society, the Commonwealth Insurance Company, the Chamber of Manufacturers, and the Victoria State Accident Office; (c) with head office in Hobart—the Derwent and Tamar Fire and Marine Assurance Company Limited; (d) with head office in Launceston—the Mutual Fire Insurance Company of Tasmania; (e) with head office in Auckland—the New Zealand Insurance Company, and the South British Fire and Marine Insurance Company of New Zealand; (f) with head office in Dunedin—the National Fire and Marine Insurance Company of New Zealand, and the Standard Fire and Marine Insurance Company of New Zealand; (g) with head office in Wellington—the New Zealand State Fire Insurance Office, and the New Zealand Government Accident; (h) with head office in Christchurch—the Farmers' Co-operative Insurance Association of New Zealand; (i) with head office in Perth—the Western Australian Insurance Company; and (j) with head office in Brisbane—the Queensland State Government. As their names imply, many of these companies transact marine insurance, and in some cases guarantee and other business, in addition to the fire insurance business, and the returns relating to the latter cannot be separated from the former.

The accounts given hereunder cover two consecutive years, the second year ending at various dates from 31st December, 1916, to 30th April, 1918. The figures for the first year are in brackets.

The premiums, less reinsurances and returns, amounted to £5,294,100 (£4,015,460); losses were £3,009,036 (£2,060,135). Expenses and commission came to £1,301,667 (£1,187,988), and there was, therefore, a profit on trade operations of £983,397 (£767,337). As, however, interest, rent, fees, etc., amounted to £288,854 (£265,026), the total profit was £1,272,251 (£1,032,363). Dividends and bonuses came to £316,516 (£300,628). The ratio to premium income of losses was, therefore, 56.84 per cent. (51.30 per cent.), and of expenses and commissions, 24.59 per cent. (29.59 per cent.). The resulting ratio of trade surplus to premium income was 18.57 per cent. (19.11 per cent.).

The paid-up capital of the twenty-seven companies was £2,756,585 (£2,500,443); reserve and reinsurance funds, £3,622,937 (£3,338,577); undivided profits, £733,189 (£540,469). The total paid-up capital and reserves were, therefore, £7,112,711 (£6,379,489). In addition to these liabilities there were others, viz.:—Unsettled losses, £525,904 (£480,077); sundry creditors, £791,911 (£525,402); dividend to pay, £238,898 (£230,818); and, in the case of one company, a life assurance fund, £91,214 (£95,139); thus bringing the total liabilities to shareholders and to the general public up to £8,760,638 (£7,710,925).

The corresponding amount of assets is made up of investments, £6,923,502 (£6,291,468), viz.:—Loans on mortgage, £1,317,909 (£1,506,161); Government securities, debentures, shares, etc., £3,129,389 (£2,326,587); landed and other property, including furniture, £1,247,836 (£1,193,970); fixed deposits, £1,107,445 (£1,175,676); in the case of one company doing a mixed business—loans on its own life policies, etc., £5,269 (£6,502); other investments, £115,654 (£82,572). The balance of assets consisted of cash in bank, on hand, and bills receivable, £553,858 (£478,882); and sundry debtors, etc., £1,283,278 (£940,575).

The financial position of the companies is undoubtedly a strong one, owing to the steady accumulation of reserves, and the high ratio borne by capital and reserves to premium income must be a cause of satisfaction to policy holders.

§ 7. Marine Insurance.

No returns are available in regard to Marine Insurance. It may, however, be stated that the Commonwealth Parliament in 1909 passed an Act (No. 11 of 1909, "An Act relating to Marine Insurance") which was assented to on the 11th November, 1909. This Act materially alters some of the conditions under which marine policies have heretofore been issued.

§ 8. Friendly Societies.

1. **General.**—Friendly societies are an important factor in the social life of the community, as probably nearly one-third of the total population of the Commonwealth comes either directly or indirectly under their influence. Their total membership is about 480,000, but as certain benefits, such as medical attendance and free medicines, and in many cases funeral expenses, are granted to members' families as well as to members themselves, this figure must, even when due allowance is made for young and unmarried members, be multiplied by at least four to arrive at the total number of persons more or less connected with these societies. Legislation has conferred certain privileges on friendly societies, but, on the other hand, it insists on their registration, and it is the duty of the Registrars in the various States, prior to registering a new society, to see that its rules are conformable to the law, and that the scale of contribution is sufficiently high to enable the promised benefits to be conferred on members. Societies are obliged to forward annual returns as to their membership and their finances to the Registrar, and elaborate reports are published in most of the States dealing with the returns thus received.

In the following tables the figures refer to the year 1917.

2. **Number of Societies, Lodges, and Members.**—The total number of societies registered in New South Wales is 64; in Victoria, 46; in Queensland, 20; in South Australia, 17; in Western Australia, 15; and in Tasmania, 19. No total is given of these figures for the Commonwealth, as the societies shewn in one State are in most cases represented in all the other States. The number of different lodges, the total number of benefit members at the end of the year, and their average number during the year are shewn in the following table:—

FRIENDLY SOCIETIES.—LODGES AND MEMBERS, 31st DECEMBER, 1917.

State.	Number of Lodges.	Benefit Members at End of Year.	Average No. of Benefit Members during Year.
New South Wales	1,885	162,370	163,271
Victoria	1,516	158,181	158,035
Queensland	548	51,383	51,065
South Australia	596	66,241	65,890
Western Australia	275	17,969	18,302
Tasmania	198	22,391	(a)22,565
Commonwealth	5,018	478,535	479,128

(a) Estimated.

3. **Sickness and Death.**—Sick pay is generally granted for a number of months at full rates, then for a period at half rates, and in some societies is finally reduced to quarter rates. The following table shows the total number of members who received sick pay during the year, the number of weeks for which they received pay in the aggregate, and the average per member sick, and further the number of benefit members who died during the year, together with the proportion of deaths per thousand average members :—

FRIENDLY SOCIETIES.—SICKNESS AND DEATH, 1917.

State.	Number of Members who received Sick Pay.	Total Number of Weeks of Sick Pay Granted.	Average Number of Weeks per Member Sick.	Deaths of Benefit Members and Wives.	Proportion of Deaths to 1,000 average Benefit Members.
New South Wales	(a)	(a)	(a)	(a)	(a)
Victoria	26,468	275,388	10.40	2,957	18.71
Queensland	7,460	55,273	7.41	762	14.92
South Australia	10,179	109,606	10.78	1,495	22.69
Western Australia	2,564	19,487	7.60	367	20.05
Tasmania	3,276	26,281	8.02	445	19.72
Commonwealth	(b)49,947	(b)486,035	(b)9.73	(b)6,026	(b)19.08

(a) Not available.

(b) Exclusive of New South Wales.

4. **Revenue and Expenditure.**—The financial returns are not prepared in the same way in each State, but an attempt has been made in the subjoined table to group the revenue under the main headings :—

FRIENDLY SOCIETIES.—REVENUE, 1917.

State.	Entrance Fees, Members' Contributions, and Levies.	Interest, Dividends, and Rents.	All other Income.	Total Revenue.
	£	£	£	£
New South Wales	524,341	100,947	53,438	678,726
Victoria	464,583	129,787	58,685	653,055
Queensland	166,002	41,453	..	207,455
South Australia	156,104	61,356	46,364	263,824
Western Australia	54,453	16,811	27,632	98,896
Tasmania	65,907	10,484	14,343	90,734
Commonwealth	1,431,390	360,838	200,462	1,992,690

The returns relating to expenditure are more complete than those relating to revenue, and can be shewn in full for every State. The figures show that the excess of revenue, amounting in the aggregate to £367,638, was divided amongst the six States as follows :—New South Wales, £124,401; Victoria, £105,325; Queensland, £84,457; South Australia, £44,958; Western Australia, £5,860; and Tasmania, £2,637. The revenue exceeded the expenditure by about fifteen shillings per average benefit member, a margin which cannot be called very large.

FRIENDLY SOCIETIES.—EXPENDITURE, 1917.

State.	Sick Pay.	Medical Attendance and Medicine.	Sums Paid at Death of Members and Members' Wives.	Adminis-tration.	All other Expendi-ture.	Total Expendi-ture.
	£	£	£	£	£	£
New South Wales ..	168,986	178,789	69,371	96,830	40,349	554,325
Victoria ..	184,246	171,159	49,960	79,379	62,986	547,730
Queensland ..	38,714	56,961	27,323	..	..	122,998
South Australia ..	63,933	36,427	39,754	31,909	46,843	218,866
Western Australia ..	15,738	18,500	7,708	13,856	37,234	93,036
Tasmania ..	19,126	18,008	23,100	11,739	16,124	88,097
Commonwealth ..	490,743	479,844	217,216	233,713	203,536	1,625,052

It appears from the above figures that sick pay averaged about thirteen shillings and sixpence per week, but, as the returns include pay at half and quarter rates, and as the proportion of these to full rates is not stated, the average given must be taken for what it is worth. Medical attendance and medicine came to about one pound per average benefit member.

5. Funds.—The two foregoing tables shew that the surplus of revenue over expenditure in five States amounted to £367,638 for the year, and a small surplus must, of course, result annually in every society which levies adequate contributions to enable it to meet all possible claims. These accumulations of profits are generally invested, and the subjoined table shews for all of the six States the division into invested and uninvested funds :—

FRIENDLY SOCIETIES.—FUNDS, 31st DECEMBER, 1917.

State.	Invested Funds.	Uninvested Funds.	Total Funds.
	£	£	£
New South Wales ..	2,094,672	(a)	2,094,672
Victoria ..	2,923,471	94,032	3,017,503
Queensland ..	899,361	2,851	902,212
South Australia ..	1,283,375	39,692	(b)1,323,067
Western Australia ..	268,078	6,468	274,546
Tasmania ..	231,524	14,142	245,666
Commonwealth ..	7,700,481	157,185	7,857,666

(a) Included in Invested Funds. (b) Exclusive of Other Funds, £14,298.

The total funds amounted, therefore, to about £16 7s. 0d. per member at the close of the year under review.

§ 9. Probates.

1. Number of Probates and Letters of Administration and Value of Estates.—The value of the estates left by deceased persons gives a fair view of the distribution of property among the general population. There occurred in 1917 the deaths of 37,152 adult persons, while the total number of probates and letters of administration granted during the same period was 16,787. It would therefore appear that about four in every

nine adults who died during the year were possessed of sufficient property to necessitate the taking out of probate. The details for each State are shewn in the table hereunder :—

PROBATES AND LETTERS OF ADMINISTRATION, 1917.

State.	Number of Estates.			Net Value of Estates.		
	Probates.	Letters of Administration.	Total.	Probates.	Letters of Administration.	Total.
New South Wales ..	6,476	(a)	6,476	£ 11,859,375	£ (a)	£ 11,859,375
Victoria ..	3,863	1,972	5,835	9,486,584	(a)	9,486,584
Queensland ..	696	145	841	2,598,771	197,921	2,796,692
South Australia ..	1,515	431	1,946	3,018,598	170,273	3,188,871
Western Australia ..	825	351	1,176	994,346	124,678	1,119,024
Tasmania ..	445	68	513	696,142	148,134	844,276
Commonwealth ..	13,820	2,967	16,787	28,653,816	641,006	29,294,822

(a) Included with Probates.

Intestate estates were placed under the control of the Curator during the year, and unclaimed money paid into Consolidated Revenue. The details for each State are shewn hereunder :—

INTESTATE ESTATES, 1917.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
Intestate estates placed under control of Curator during 1917—				°			
Number ..	(a)	841	2,337	224	837	229	(c)
Value .. £	(a)	57,814	371,114	653,977	52,182	21,764	(c)
Unclaimed money paid into Consolidated Revenue by Curator during 1917 £	43,497	3,245	8,949	839	1,462	..	57,992

(a) Included above. (b) Included in letters of administration. (c) Not available.

On pages 813 and 814 will be found a series of graphs illustrating the progress of Banking and Life Assurance. The graphs on Banking cover a period of about forty years, and include cheque paying Banks and Savings Banks. The graphs dealing with Life Assurance go back to 1906 only, and include ordinary and industrial business.

SECTION XXII.

PUBLIC INSTRUCTION.

§ 1. Evolution of Educational Systems in Australia.

1. Educational Systems of the States.—(i) *Place of New South Wales in Australian Education.* The first settlement in Australia being in New South Wales, it is but natural that Australian education should have had its beginning in that State. In the evolution of educational method and system in Australia, New South Wales also has played a leading part, and has had practically a dominating influence. For that reason an account of the evolution of education in this State contains, as it were, the key to the understanding of the Australian attitude to this question. The subject is dealt with in some detail in No. I. and No. II. issues of the Commonwealth Official Year Book, but it is not proposed to repeat it in the present volume. (See also 2 hereunder.)

(ii) *Educational Systems of Commonwealth States.* A more or less detailed account of the origin and development of the primary educational systems of the other States also appears in No. I. and No. II. issues of the Year Book. Later details are given hereunder.

2. Recent Development in State Educational Systems.—(i) *New South Wales.* The year 1913 was an important one in New South Wales educational history, in that it was the first complete year of active operation of the principles laid down in the University Amendment Act and the Bursary Endowment Act of 1912. More extended reference to these Acts will be found later on. It was also remarkable for the reorganisation of technical education on a Trades School basis and of the Superior Schools on a vocational basis. Reference may also be made to the development of the Evening Continuation Schools established in 1911, and to the wide extension of the scheme of school medical inspection. As pointed out in a preceding Official Year Book (see No. VII., page 765), the Education Department instituted a scheme of examinations in 1911 for what were termed respectively the "qualifying," "intermediate," and "leaving" certificate. The first "qualifying" examination was held in March, 1911, the first "intermediate" in November, 1912, and the first "leaving" in November, 1913. The successful students who were awarded exhibitions at the leaving certificate examination took up University studies in the first term of 1914, thus marking the definite linking up of the State School system with the University. Amongst noteworthy features in the year 1914 were the remarkable increase in school population, the establishment of Trade Schools, the expansion of secondary education, and the extension of the scheme of school medical inspection. The travelling hospital and the travelling ophthalmic and dental clinics are rendering splendid service in the remote and sparsely settled districts. During the last few years increasing attention has been devoted to the development of infant schools on the lines of awakening a larger sense of responsibility amongst the young children by giving them a greater measure of freedom. It is recognised by modern educationists that freedom coupled with responsibility lies at the root of all true education.

During 1917 the provisions of the Public Instruction (Amendment) Act of 1916 were found to have exercised a marked influence on school attendance, and in many schools the average now exceeds 90 per cent. of the effective enrolment.

Arrangements were made during the year for the teaching of Japanese in selected High Schools.

It has been found that a large proportion of children leave school at the age of fourteen years or thereabouts. As in other countries, it is realised in New South Wales that this removal from educational guidance at the very time when such formative influences are so necessary is against the best interests of the children and the State, and it is intended to submit proposals to Parliament for continuous training to an extent which will give more adequate preparation for the responsibilities of adult life.

(ii) *Victoria.* Under the Amending Education Act of 1910 it is provided that every child must attend school for the full period of eight years between 6 and 14, unless he be given a certificate of education at 13. The schools are open on an average 225 days in each year, and require attendance on all these days, unless reasonable excuse is forthcoming. Provision is made for the mentally deficient. The primary curriculum divides the school life into eight grades, so that a child entering at six years of age will have completed the full course by the time he reaches his fourteenth year. After completion of the elementary school course, the pupil may go on to the Evening Continuation Schools, Higher Elementary Schools, District High Schools, or the Trade Schools. Special schools for feeble-minded children have been established in the metropolis, and an "open air" school for delicate children is in operation at Blackburn. There is also a special school for epileptics at Clayton. Highly encouraging results have been obtained at all these institutions. A Council of Public Education has been appointed to advise on educational matters generally, and particularly in regard to co-ordination. Examinations are held throughout the State for the certificate of merit and the qualifying certificate. The former is granted to pupils who, under prescribed conditions, reach a satisfactory standard in subjects prescribed for Grade VIII., while the latter is awarded to pupils who reach a satisfactory standard in Grade VI. Possession of this certificate enables the holder to enter upon the work of the Higher Elementary or the District High School. Acting on the advice of the Council of Education, the Melbourne University has established a Schools Board. The function of this body is to consider all questions relating to school studies and the inspection and examination of schools. In addition to University representation, there are also on the Board representatives of the Department of Education, the registered Secondary Schools, and the business interests of the community. Being clothed with such wide powers, this Board must of necessity be the chief guiding factor in the development of education in Victoria. During the year 1915 a considerable amount of attention was devoted to the organisation of the elementary schools, especially in connection with the question of retardation, and in regard to the teaching of infants. It is hoped that the greater flexibility in organisation and system of promotions, coupled with special methods of dealing with backward pupils, will tend to considerably lower the retardation percentage. The institution of the uniform school year, the greater powers conferred on the head teachers in regard to the promotion of scholars, the making of the inspector an advisory rather than an examining officer, and the better provision for the practical training of the junior teachers have all been fraught with excellent results. During recent years methods of training teachers have been considerably improved. Formerly there was only one course leading to the trained teacher's certificate. At present four courses are provided—primary, secondary, infant, and short course for teachers of rural schools.

(iii) *Queensland.* The Amending Act of 1910 introduced several new features into the educational system of Queensland, chief amongst them being—(a) employment of proceeds of sales of land and other school property for school purposes, instead of paying them into Consolidated Revenue; (b) abolition of local contributions; (c) provision of scheme of school certificates to assist in co-ordination of various branches of the system; (d) establishment of compulsory continuation classes; (e) compulsory medical and dental examination; (f) raising the compulsory age to 14 years instead of 12 years; (g) provision for compulsory attendance on every day on which the school is open. The last-mentioned provision has already produced good results in regard to improved attendance. The organisation of the general scheme of education is being systematically developed. State High Schools were inaugurated in February, 1912, and a more liberal scheme of

scholarships to secondary schools came into force in 1913, while further amendments were made in 1914 and 1915. A Teachers' Training College has been established, and greater attention is being given to the development of technical education. Methods of instruction have been brought into consonance with the latest developments under the new syllabus adopted in 1914. During this year also the medical and dental inspection of State School children were considerably extended.

(iv) *South Australia.* One of the chief events in educational development in South Australia in 1911 was the provision of Evening Continuation Schools, intended to help those who cannot afford to attend the Higher Day Schools. The State has also come into line with the other States in the matter of medical supervision of school children, and a medical officer and two trained nurses have been appointed. The changes introduced at the Teachers' Training College have proved very satisfactory, and the academic teaching at the University is now supplemented by a systematic pedagogic instruction for all classes of teachers. A course of six months' instruction and training for teachers of small schools was introduced in 1913, and has proved of great value. In 1913 the principle was adopted of simultaneous examination of the schools, and granting to teachers the authority to make the promotions of their scholars. An Act to consolidate and amend the law relating to Public Instruction was assented to on the 23rd December, 1915. Under the Amending Act of 1916 all Lutheran Schools are to be taken over by the State. A Superintendent of Technical Education was appointed in 1916.

(v) *Western Australia.* During 1912 the curriculum of the Primary Schools was remodelled in order to bring it into line with the most up-to-date principles. The work was lightened in directions where experience shewed there was overloading, and efforts were particularly directed toward the removal of the abstract and to the development of the imaginative and constructive throughout all grades. Greater freedom was given for experiment by the teacher, and it is recognised that considerable improvement has resulted. Montessori principles are being increasingly adopted in the teaching of the youngest children. Constructive work is receiving greater attention in all departments, and encouragement is given to original or research work of an elementary character. Four special courses—commercial, industrial, domestic, and professional—have been established at the central schools. These schools are practically day continuation schools designed to carry on the education of boys and girls beyond the primary stage. Continued efforts are being made in the direction of bringing about a closer correlation between primary and secondary education. The Modern School at Perth was opened in 1911. In June, 1914, a Goldfields High School was opened at Kalgoorlie, and it is proposed to establish additional schools at the larger country centres, and in the meantime to grant scholarships at the existing High Schools to country children. Continuation classes were held at various centres in 1916, with an enrolment of 2,600. Certificates granted to successful students entitle the holder to advanced tuition at the Technical College. During 1917 a medical officer for schools was appointed under the Public Health Department.

(vi) *Tasmania.* During the last seven years educational effort in Tasmania has been directed to the development on modern lines of the primary system, the foundation of secondary schools, and the provision of a satisfactory system of training for teachers. Kindergarten, Montessori Schools, and Model Country Schools have been established as adjuncts to the training system, and the courses have been remodelled with a view to providing trained teachers for secondary as well as for primary work. At the High Schools, secondary, commercial, and industrial courses have been established. School hygiene has received especial attention, doctors and nurses have been appointed, and two dental clinics have been established.

(vii) *Northern Territory.* Although the number of children of school age in the Territory is small, nevertheless ample provision has been made by the Commonwealth Government for their education. Five State schools are in operation, viz., at Darwin, Pine Creek, Brock's Creek, and Daly River in the northern portion, and at Alice Springs

in the south. There is a special school for aboriginal and half-caste children at Darwin, also one at Alice Springs. A satisfactory standard is maintained at the schools, but progress is somewhat retarded by irregular attendance. Continuation classes are available at Darwin for cadets in Government employment and for others.

(viii) *Present Position of State Education in Australia.* Throughout Australia primary education is compulsory and free of charge, while there exists in most of the States a liberal provision of scholarships and bursaries to the Higher State Schools, to the Secondary Schools, and to the Universities. Provided that the requisite standard is reached, it is, of course, permissible for children to receive home tuition, or to attend so-called private schools. Considerable interest is taken in educational matters by the people of the Commonwealth, and within recent years several of the States have sent qualified representatives to inspect and report on the methods adopted in the chief countries of Europe and America. The reports of these Commissioners, especially those of New South Wales, have been widely studied, and various improvements have been made in accordance with their recommendations. The orientation, lighting, and ventilation of school buildings are being modernised. In all of the States periodical medical inspection of the children is in force. (A detailed statement of the work being done in this direction will be found in the chapter dealing with Public Hygiene.) Methods of training teachers are now better developed, and although the "pupil teacher" system with its effects have not been wholly eliminated, it appears to be gradually vanishing. (The methods adopted in the various States for the selection and training of teachers are described in some detail in § 2, 10, hereinafter.) There has been a wider employment of kindergarten principles in the early stages, and the more or less purely abstract teaching of the older days has been largely replaced by concrete methods. Such subjects as nature study, manual training, music, and drawing have received a general impetus. Greater attention has been given to the scientific classification of children. Moreover, as will be seen from the above, and from § 2, 7, the State Education Departments are increasing their activities in the direction of secondary education. Lastly, the system of inspection has been considerably remodelled. Under the old system, the inspector was little more than an examining officer, but, under the present régime, the primary duty of this officer consists in guiding and directing the teaching in accordance with approved methods. [See also § 6, Technical Education.]

(ix) *Co-ordination of Educational Activities.* As pointed out already, the educational system of New South Wales may now be considered as a more or less homogeneous entity, the various stages succeeding one another by logical gradation from kindergarten to university. In the other States development is proceeding on somewhat similar lines, although in varying degree. [See also § 1, para. 2 *supra*.]

(x) *Educational Conference.* In May, 1916, the first Conference of Directors of Education in the States of the Commonwealth was held at Adelaide. Amongst important matters discussed thereat may be mentioned:—(a) *Education Reports (Departmental).* In regard to these a decision was arrived at respecting the general principles which should govern the preparation of future reports in order to ensure uniformity so far as the compilation and presentation of statistics relating to enrolment, attendance, and finance are concerned. (b) *Raising School-age Limit.* In view of the circumstance that educational expenditure has, up till now, been largely wasted owing to school attendance ceasing at the age of 14 in the case of so many children, it was resolved that legislation is desirable providing for continuous education up to the age of 16, and that attendance be made compulsory except where special exemption could be granted on the ground of educational fitness. (c) *Schools for Defectives.* At present New South Wales and Victoria have a school each of this type, but it was agreed that such schools ought to be provided where required. (d) *Other Special Schools.* Each State is making experiments in regard to the provision of new types of schools giving industrial and secondary instruction, and arrangements were made for the exchange of detailed information in regard to their working. (e) *Sex Physiology.* The Conference was opposed to the introduction of special teaching on this subject, and it was affirmed that efforts should

be directed towards excluding all thought and talk about sex matters from the schools. It was agreed, however, that the Departments should prepare a special leaflet setting forth the duties of parents in this direction.

§ 2. State Schools.

1. **Introductory.**—The State Schools, or, as they are sometimes termed, the “public” schools, of the Commonwealth comprise all schools directly under State control, in contradistinction to the so-called “private” schools, the bulk of which, through privately managed, nevertheless cater for all classes of the community. Information regarding Technical Education is given in § 6.

2. **Enrolment and Attendance.**—The following table shows the number of State Schools, together with the teachers employed and the enrolment and “average attendance” in each State during the year 1917:—

STATE SCHOOLS, TEACHERS, AND SCHOLARS, 1917.

(COMMONWEALTH.)

State or Territory.	Schools.	Teachers.*	Scholars Enrolled.	Average Attendance.
New South Wales†	3,221	8,633	282,757	221,940
Victoria	2,286	6,602	225,370	167,588
Queensland	1,507	4,075	108,201	88,259
South Australia	870	2,098	70,959	56,782
Western Australia	639	1,714	47,717	41,034
Tasmania	465	1,048	29,699	24,300
Northern Territory	4	7	277	186
Commonwealth	8,992	24,177	764,980	600,089

* Exclusive of sewing mistresses. † Including Federal Territory.

Unfortunately, the schemes of enrolment and of the computation of “average attendance” are not identical in each State, so that the comparisons are imperfect.

The enrolment and average attendance at the State Schools in the Commonwealth are given below for the years 1891, 1901, 1911, and for each year of the period 1913 to 1917:—

ENROLMENT AND ATTENDANCE AT STATE SCHOOLS, 1891 TO 1917.

(COMMONWEALTH.)

Year.	Total Population*	Enrolment.	Average Attendance.	Year.	Total Population*	Enrolment.	Average Attendance.
1891	3,241	561,153	350,773	1914	4,941	713,232	544,230
1901	3,825	638,478	450,246	1915	4,932	732,464	557,962
1911	4,569	638,850	463,799	1916	4,875	751,126	569,306
1913	4,872	685,406	515,948	1917	4,935	764,980	600,089

* In thousands.

3. **Schools in the Federal Capital Area.**—During the year 1917 thirteen State Schools were in operation in the Federal Territory (Yass-Canberra). The pupils enrolled numbered 407 and the average attendance 279. Cost of upkeep in 1917 amounted to £2,831. By arrangement with the Federal Government these schools are conducted by the New South Wales Education Department on the same lines as the ordinary State Schools, the Department being recouped for expenditure.

4. **Centralisation of Schools.**—The question of centralisation of schools adopted so successfully in America has received some attention in the Commonwealth, and particularly in New South Wales. It is recognised that a single adequately-staffed and well-equipped central institution can give more efficient teaching than a congeries of small scattered schools in the hands of less highly trained teachers, and the small schools in some districts were therefore closed and the children conveyed to the central institution. The principle was first adopted in New South Wales in 1904, when the conveyance of pupils was authorised in the case of 12 schools. During 1917 over £13,000 was expended on boarding allowances and in the conveyance of pupils to Central Schools.

5. **Education in Sparsely-settled Districts.**—It has always been the aim of the State to carry the benefits of education into the remotest and most sparsely-settled districts. This is effected in various ways. (i) By the establishment of Provisional Schools, *i.e.*, small schools in which the attendance does not amount to more than about a dozen pupils, these institutions merging into the ordinary public school list when the attendance exceeds the minimum. (ii) When there are not enough children to form a provisional school, what are known as Half-time Schools are formed, the teacher visiting them on alternate days. (iii) In still more sparsely-peopled districts, an itinerant teacher goes from house to house within a certain radius. Thus, in Queensland during 1917 the 14 itinerant teachers covered 439,200 square miles of country and travelled 54,646 miles to visit 1,479 children. In this State also the Education Department has established what are known as Saturday Schools, in which small groups of children in outlying districts are visited by the nearest teacher on Saturdays and receive the benefit of several hours' instruction. These schools, of which there are now ten, have been warmly welcomed in the districts in which they are established, inasmuch as under this system the children "outback" receive a greater amount of instruction than is possible under the system of itinerant teachers. During 1917, the Education Department in Western Australia disbursed £9,121 in "driving grants," *i.e.*, sums of money granted to parents whose homes are over three miles from the nearest schools, and who arrange to have their children driven in. In New South Wales, Victoria, Western Australia and Tasmania parents in the thinly-peopled areas are also allowed to club together and build a school, which receives aid from the Government in the form of a yearly subsidy and grant of school material. During 1917 subsidy was paid to 646 schools in New South Wales. (iv) An experiment on the part of New South Wales, the result of which was awaited with some interest, was the establishment in 1908 of a "Travelling" School. A van was provided in which the teacher travelled, carrying with him a tent for himself and one to be used as a school, together with such books and apparatus as are required in a Primary School. So far very satisfactory results have been attained. Two additional schools of this nature were established in 1914. (v) There are also railway camp schools in operation on the sites of extensive railway works. Regulations were framed in Tasmania during 1912, providing for the subsidising of private teachers at a rate not exceeding £5 per pupil in districts too remote or sparsely settled to warrant the establishment of an ordinary Provisional School. The schools of this nature established in 1917 numbered 61, with an enrolment of 752 scholars. During the year the department also paid for the conveyance of 251 children to schools by boat, vehicle, or train. New South Wales and Victoria provide for education, by correspondence, of children in isolated districts.

6. **Evening Schools.**—Evening Public Schools have been in existence for many years in some of the States, but their progress has been uncertain. In New South Wales the 42 Evening Continuation Schools had an average attendance in 1917 of 2,000. In Victoria there was only one night school in operation for elementary work during the year. It is stated that future developments in evening instruction will be in the direction

of continuation classes. Western Australia has evening continuation classes in the chief centres; the attendance in 1917 numbered 3,196. Evening Continuation Schools have been established under regulation in South Australia, and are intended principally to help the working boy to improve his general education and to add to the store of knowledge most useful in his present work.

7. **Higher State Schools.**—(i) In *New South Wales*, public schools which provided advanced courses of instruction for two years for pupils who have completed the primary course were classed as *Superior Schools*. These were reorganised in 1913 as Day Continuation Schools, and divided into Superior Commercial Schools, Superior Junior Technical Schools, and Superior Domestic Schools for Girls. During 1917 there were 93 schools of this type in operation, of which 26 were in the Commercial group, 24 in the Junior Technical, and 43 in the Domestic group, with an average attendance of 3,989 in the sixth and seventh classes. It is believed, however, that greater efficiency could be produced by reducing the number of these schools and establishing Central "Superior Public Schools" instead. Provision has also been made for the more advanced education of children in country centres by the establishment of 18 District Schools. These schools are specially staffed, and undertake the work of preparing students for admission to the training colleges. There are also 21 *High Schools* in the State. These had an enrolment in 1917 of 6,088, with an average attendance of 5,011. To meet the wishes of representatives of the registered Secondary Schools, the syllabus of the High Schools was amended in 1913, and now offers such a wide range of choice in the selection of subjects that there is no possibility of producing a merely stereotyped uniformity of study. Three "Intermediate" High Schools have been established to meet the growing demand for High School education in the metropolis, and others will be provided during the next few years in the city and in country centres. The average attendance at these schools in 1917 was 545. In accordance with Departmental regulations liberal provision is made for scholarships and bursaries to the higher State Schools. Under the provisions of the University Amendment Act of 1912, 200 exhibitions were awarded in 1917 to successful students at the leaving certificate examinations, and 114 of these were given to pupils attending the State Schools.

The Sydney Grammar School (not a "State" School in the ordinary acceptance of the term), which receives a State endowment of £1,500 a year, had, in 1917, a quarterly enrolment of 624 pupils, and an average attendance of 587.

During 1917 the State School of Aviation at Richmond was transferred to the control of the Education Department. The school served a military purpose during the war, but it is hoped that it will henceforward prove of great commercial value to the State.

(ii) In *Victoria*, action was taken in January, 1912, to give effect to the provisions of the Education Act of 1910, with regard to the decentralisation of the system of secondary education. Twenty Higher Elementary and 28 District High Schools have been established, and, to obviate congestion at the High Schools, Higher Elementary Classes are carried on at ten "Central" Schools. The enrolment at the end of the first term at the Higher Elementary Schools in 1917 was 1,896, of whom 955 were girls, at the District High Schools 5,318, of whom 2,559 were girls, while 582 boys and 588 girls were receiving secondary teaching in the Central Schools. The qualifications for admission to the High Schools and Higher Elementary Schools are that pupils shall be not less than 12 years of age, shall possess the qualifying certificate or its equivalent, and that their parents shall undertake that the children will remain at school for four years. For the first two years there is a common course for all pupils, thereafter replaced by four special courses:—(1) A preparatory professional course for pupils preparing to proceed to the University, to enter the teaching profession, or to gain a sound general education; (2) an agricultural course to be taken in Agricultural High Schools; (3) a commercial course; and (4) a domestic arts course for girls. Parallel with these courses an industrial course has been developed for pupils who intend to enter upon some form of industrial occupation.

Junior Technical Schools have been established apart from the High Schools in Melbourne, Ballarat, Bendigo, and Geelong, and there are schools also at Glenferrie, Collingwood, Sunshine, and Warrnambool.

Scholarships granted by the Department are as follows:—(a) One hundred junior, tenable for four years at a District High School or approved Secondary School, with allowance of £26 per annum for board where required; (b) Forty senior, tenable four to six years, with allowance of £40 towards expense of course at University; (c) Fifty junior technical, giving free tuition for two years at a Junior Technical or other approved school, and, in certain cases, board allowance of £26 per annum; (d) Fifty-five senior technical, giving free tuition for approved courses at Technical schools, with £30 allowance for day students, and £10 for night students; (e) Sixty teaching, similar in other respects to junior; (f) Twenty nominated courses, giving four to six years' free tuition in agriculture, mining, or veterinary science at the University, with allowance in certain cases of £26 per annum.

(iii) Prior to the year 1912, *Queensland* did not possess any distinctly Secondary Schools under State control, but in February of that year High Schools were opened at Warwick, Gympie, Bundaberg, Mount Morgan, Mackay, and Charters Towers. Tuition at these schools is free, but students must pass a qualifying entrance examination. Three courses of study, General, Commercial, and Domestic, are provided. The General Course will lead up to the University, and students will be able to matriculate from the High Schools. In 1917 new High Schools were opened at Gatton and Cairns. In smaller centres where an average of not less than 25 qualified pupils can be obtained, secondary tuition is provided at existing State Schools, and this has been arranged for at Brisbane Central (boys), Brisbane Central (girls and infants), Herberton, Childers, Dalby, Pittsworth, Roma, and Southport. The enrolment at High Schools in 1917 was 1,064, and the daily attendance 847. There are, moreover, ten Grammar Schools—six for boys and four for girls—each of which is subsidised by the State to the extent of £750 per annum, and in addition receives a payment of £250 per annum for providing five scholarships for State scholars. The enrolment at the Grammar Schools in 1917 was 1,600, and the average attendance 1,466. Since the year 1909 these schools have been regularly examined by the Inspector-General of the Education Department.

Under the amended scheme of scholarships to Secondary Schools which came into force in 1914, all candidates who gained 50 per cent. of marks at the previous December examination were eligible for free scholarships tenable for three years at an approved Secondary School. Provision was made for board allowance of £30 per annum where necessary and of £12 where the holder lived at home. In 1915 the tenure was altered to two years, with the proviso that, should the holder at the end of that period obtain an approved pass at the University Junior Examination, an extension scholarship of two years was granted, and, in addition, an extension at the end of the fourth year where an approved pass at the Senior University Examination was obtained. The extension scheme came into force in 1917, when 93 boys and 45 girls gained extension for a third and fourth year.

As a result of the 1917 examinations, scholarships were awarded to 526 boys and 312 girls.

Prior to the establishment of the Queensland University, three exhibitions per annum to approved Universities were granted. These have been replaced by twenty scholarships to the local University. Each scholarship is tenable for three years, and carries an allowance of £26 per annum if the holder lives at home and attends the University, or £52 per annum board allowance where necessary.

(iv) *South Australia*. Including the Adelaide High School, there were altogether twenty-one High Schools open in South Australia in 1917, with an enrolment of 3,016 students, and a staff of 97 teachers. In addition to giving secondary education, these institutions form a valuable source from which the Department can draw a supply of young teachers. Under existing regulations provision is made for the following scholarships:—(i) Eight public exhibitions open to boys and girls who have been bona

vide residents of South Australia for two years prior to the competitive examination. The exhibitions are tenable for three years at an approved school or college, carry free tuition and books, and an allowance of £22 per annum when the holder lives away from home. (ii) Forty exhibitions, tenable for three years at an approved school or college are open to competition by children under 13 years of age in attendance at State Primary Schools. (iii) Eight senior exhibitions, worth £40 per annum, and four of the value of £20, are tenable at the Adelaide High School or other approved Secondary School, and are open to pupils of any Secondary School. (iv) Twelve junior exhibitions, eight of £40 and four of £20, tenable for two years at any approved Secondary School, are reserved for pupils of Secondary Schools within a radius of 10 miles of the General Post Office, Adelaide. (v) Twelve Government bursaries, of which six are reserved for pupils of the High Schools. These are tenable at the University, and the holder receives £20 per annum and free tuition. (vi) The Government provides £180 per annum to assist students who are unable to attend the University during the day. Each studentship is limited to £10 for science students, and £7 for arts students.

(v) *Western Australia.* In 1917, there were two schools providing a course up to the leaving certificate standard—the Perth Modern School and the Eastern Goldfields High School—and two District High Schools, at Northam and Geraldton, providing a three years' course up to the Junior Certificate standard. In addition, the Central Schools at Perth, Claremont, and Fremantle have professional courses with a curriculum equal to that of the District High Schools. At the beginning of 1918 District High Schools came into operation at Albany and Bunbury. The Perth Modern School and the Eastern Goldfields High School had an enrolment in 1917 of 412 and 201 students respectively. Extension of the opportunity to obtain secondary education in country districts has been greatly appreciated, and the enrolments at the beginning of 1918 in the High School sections ranged from 100 at Geraldton to 143 at Bunbury. The Science Courses in these schools are designed to aid in the practical study of agriculture. Entrants to State secondary schools must have passed an examination identical with that for Secondary School scholarships, and boarding allowance up to £30 per annum is provided where necessary. Continuation classes were inaugurated in 1911, and were attended at 20 centres in 1917 by about 3,200 pupils. The classes are intended to provide some measure of higher education to those who leave school as soon as they reach the compulsory age of 14 years. Admission to these classes is free, but pupils must attend regularly three evenings a week. Evening Schools are held in various parts of the State, but the work carried on is mainly primary. Junior and senior exhibitions were abolished in 1914 and provision made for 10 University exhibitions, each tenable for three years at the University of Western Australia, and valued at £40 per annum for students living at home and £60 in the case of those living away from home. Fifty scholarships tenable for three years at approved Secondary Schools are annually offered for boys and girls attending Government or other efficient schools. Ten carry an allowance of £20 per annum, and the remainder entitle the holders to receive a grant for books and travelling expenses. Boarding allowance up to £30 per annum may also be granted where necessary. Thirty-three bursaries of the value of £5 each tenable for two years were also granted in 1917. Scholarships to enable children from country districts to attend at District High Schools or the Narrogin School of Agriculture were inaugurated in 1917. Only those children who must live away from home are eligible, and the tenure may in some cases be extended to five years.

(vi) *Tasmania.* Up to the year 1912 the Department confined its efforts to the provision of primary education for the school children in Tasmania. In 1911, however, super-primary classes were formed in the larger schools, with an enrolment in 1911 of 200, and in 1912 of 400 pupils. It was recognised, however, that the previously existing scheme of scholarships and exhibitions was inadequate to meet the demands for higher education. High Schools were therefore opened in January, 1913, at Hobart and Launceston, and intermediate High Schools were opened in 1915 at West Devonport and Burnie. These provide for five classes of pupils—(i) Those who desire to become teachers; (ii) University students; (iii) Commercial; (iv) Mechanics; (v) Home duties (girls). The enrolment in 1917 was 923. It is proposed to grant a leaving certificate at the end of a four years' course. The Bursaries Act of 1915 provides for 30 junior and 20 senior bursaries tenable for two years at an approved State School or registered Secondary

School. They are valued at £2 per annum for a State School and £12 at a Secondary School, in addition to satisfactory boarding and travelling allowance where required. Four-fifths of the bursaries are awarded to country children. The Tasmanian Education Department scholarship is open for competition to High School pupils under the age of 19 years. The scholarship is valued at £20 per annum, with an allowance of £40 if the student lives away from home while attending the approved University course.

8. **Agricultural Training in State Schools.**—The question of agricultural training in ordinary schools has received considerable attention in *New South Wales*. In 1905 a teacher of school agriculture was appointed to visit schools and districts for the purpose of giving instruction to teachers and scholars in the subject, the officer selected possessing the qualifications of a thorough acquaintance with agricultural work as well as school methods. The Education Department makes grants of seeds of various kinds to schools having gardens, and in some instances has installed windmill plants to provide an adequate water supply. Under the direction of a capable head master, a college has also been opened at Hurlstone, near Sydney, at which practical lessons are given in elementary agriculture, and the institution also serves as a stepping-stone to the Hawkesbury Agricultural College. Scholarships are available to students of the Hurlstone Agricultural High School as it is now called, and these scholarships entitle the holder to a two years' free course at the Hawkesbury institution, with a grant of £1 10s. per annum for text books. The Department has also organised Rural Camp Schools for the purpose of giving teachers and scholars first hand knowledge of country industries.

The subject of Agricultural Colleges and Experimental Farms is dealt with in the section relating to Agriculture. (See page 383.)

In *Victoria*, what are termed Agricultural High Schools have been established at Ballarat, Colac, Leongatha, Mansfield, Mildura, Sale, Shepparton, Wangaratta, Warragul, and Warrnambool. Pupils must be at least fourteen years of age, and have passed beyond the curriculum of the elementary school, or else be able to afford satisfactory proof that they are qualified to profit by the instruction offered. The schools are practically secondary schools with an agricultural bias, and form a link between the rural school and the agricultural college. They are also used as a preliminary stage in the education of boys and girls who wish to become teachers and eventually graduate in the State Training College and the University. At some of the schools short courses in agriculture have been instituted for farmers' sons who have left school. A local council is appointed for each school, and exercises a general oversight over its operations. The experimental plots at these schools have aroused much interest among the farmers from the surrounding districts. A Supervisor of Agriculture reports and gives advice on the teaching of agriculture in the State Schools. A fair number of teachers have gained diplomas in agriculture, and will be in a position to give practical instruction at the High Schools. The elementary principles of agriculture are taught in 755 State Schools. A Horticultural Society has been established in connection with State Schools, and there are 1,200 schools in affiliation. The Society has a nursery and distributing centre for plants and seeds at Oakleigh.

In *Queensland* the Government provides a small grant to encourage the study of agriculture, horticulture, and kindred subjects in the State Schools, while a departmental teacher of agriculture visits the schools and gives assistance in agricultural, horticultural, and nature study work. Some excellent experimental work has been carried out at a few of the schools, while gardens have been established wherever circumstances permitted. Short courses of instruction for teachers have been instituted at the Gatton College. A large number of teachers have gained a practical knowledge of milk and cream testing, and the subject is now added to the programme of instruction in several of the dairying districts. At Nambour, a Rural School, the first of its type, was opened early in 1917. In addition to the ordinary subjects of the curriculum this school provides for instruction in farming, fruit growing, dairying, etc. In view of the success of this institution the question of the provision of similar schools in other centres is under consideration.

In *South Australia*, the Public Schools' Floral and Industrial Society, founded in 1880, holds annual exhibitions of school work from all parts of the State. In addition, it has for some years undertaken the distribution of flower seeds among school children at a very cheap rate, and has thus fostered the love of horticulture with remarkable success. A special instructor has been appointed to give assistance to teachers desirous of making their school gardens aid in nature study work. Aid is given by personal visits as well as by correspondence. A seed wheat competition amongst school children inaugurated in 1911 proved very successful, and a second, which was commenced in 1916, will conclude in 1920. Over 600 experiments were arranged and conducted by students at the Nature Study Laboratory in 1917.

In *Western Australia* an advisory teacher of nature study visits the schools and gives advice in regard to proper methods in horticulture and experimental agricultural work. The number and usefulness of the gardens and experimental plots attached to State Schools shew marked improvement each year. Early in 1914 a school was opened on the Narrogin State Farm. The students are taken directly from the primary schools, and the course of instruction lasts for two years. On its completion students are qualified to enter on the diploma course at the University.

In *Tasmania* the organising teacher of nature study visits and advises the teachers at the State Schools, and also gives addresses and model lessons at the schools of instruction.

9. Teachers in State Schools.—The distribution of the teaching staff in the State Schools during the year 1917, including teachers of needlework, was as follows:—

TEACHING STAFF IN STATE SCHOOLS, 1917.

(COMMONWEALTH.)

State.	Principal Teachers.		Assistants.		Pupil or Junior Teachers.		Sewing Mis-tresses.	Total.		
	Males.	Fem.	Males.	Fem.	Males.	Fem.		Males.	Fem.	Total.
New South Wales	2,400	1,319	1,284	3,554	14	62	126	3,698	5,061	8,759
Victoria ..	1,739	1,071	408	1,549	319	1,516	430	2,466	4,566	7,032
Queensland ..	848	746	406	1,088	402	585	..	1,656	2,419	4,075
South Australia ..	408	483	106	670	113	318	116	627	1,587	2,214
Western Australia	345	348	112	648	56	205	58	513	1,259	1,772
Tasmania	150	326	82	192	44	254	2	276	774	1,050
Northern Territory	2	2	..	2	..	1	..	2	5	7
Commonwealth ..	5,892	4,295	2,398	7,703	948	2,941	732	9,238	15,671	24,909

It will be observed that there is a fairly large number of junior teachers, or pupil teachers, as they are called in some of the States. The pupil teachers will, however, in time disappear, and their places will be filled by young people who have undergone a course of training in schools specially provided for the purpose. Allusion to the methods of training will be found in the next paragraph.

10. Training Colleges.—The development of the training systems of the various States has been alluded to at some length in earlier issues of the Year-Book. The present position is as follows:—

(i) *New South Wales*. During 1917, the total number of students in the Blackfriars Training College was 812, women students numbering about 80 per cent. A branch institution was opened early in 1911 at Hereford House for the training of candidates for the position of teacher or assistant at small country schools, and this was attended in 1917 by 355 students. Several of the larger metropolitan schools are used as practice schools for giving training college students opportunity to acquire practical skill in teaching. At the college, a complete set of Montessori apparatus has been prepared for demonstration work on the Montessori principles, and one of the College staff was a

few years ago sent to Italy in order to gain first-hand knowledge of the possibilities of the scheme. Opportunities are also afforded to other members of the teaching staff to visit foreign countries on study leave. The Principal of the Training College is also Professor of Education at the Sydney University. A new Teachers' College within the University grounds is now in course of erection. Up to the year 1913 the limits of accommodation at the Teachers' College were responsible for the employment of a number of untrained junior assistants, but it is now provided that no teacher enters the Service without at least six months' professional training. Schools of instruction for teachers are held each year, the subjects chosen being military drill, swimming, physical training, first-aid work, manual training work, etc., and lectures are given to teachers in rural districts by members of the Teachers' College staff.

(ii) *Victoria.* During recent years the educational and professional attainments of the general body of teachers in Victoria have steadily improved. Prior to the establishment of the High Schools, the pupil or junior teachers were recruited from the ranks of those who had obtained the Merit Certificate in the eighth grade of the elementary schools, and the acquirement of the necessary literary qualifications for promotion was greatly hindered by the circumstance that they were engaged in teaching for the greater portion of the day. Under present conditions, candidates spend three or four years in a High School exclusively in study, and consequently enter on their professional duties with a better mental and physical equipment. On receiving promotion in rural schools as sixth grade teachers, they may join the correspondence classes of the Melbourne High School and receive tuition for the higher examinations. At present about 600 rural teachers are on the correspondence class rolls, while evening and Saturday classes for junior teachers are also held at the school. A number of High School pupils after serving as junior teachers for a year are awarded studentships at the Training College, and competition has been so keen that it has been found possible to exact the standard of the Senior Public Examination for these studentships. The present Training College dates back to 1874, but during the retrenchment period, viz., from 1893 to 1900, it was closed. The institution was reopened in February, 1900, with an enrolment of fifty-seven students. During the year 1917, 379 teachers, some of whom were extra-departmental, were brought into contact with the college work. A Training College Hostel has been established, and a Correspondence class formed for country teachers desirous of qualifying for the Infant Teacher's Certificate. The students at the Hostel receive training in domestic economy. Three city and six country practising schools are attached to the Training College, and four infant rooms with attached kindergartens have been specially equipped for the training of infant teachers. The University High School gives secondary teaching practice to both departmental and private students. A remodelled system of training came into force in 1914, providing, amongst other things, for the alteration of the name "Training College" to "Teachers' College," and for the classification of students into three groups, *i.e.*, those training for secondary teachers' certificate, for sub-primary teachers, and for primary teachers.

The Teachers College conducts a Correspondence class for women teachers in the country studying for the Infant Teacher's Certificate. In 1917 the students numbered 160.

(iii) *Queensland.* In connection with the Teachers' Training College opened in Brisbane in 1914, the following scheme has been evolved :—Twenty-five special Teacher scholarships to the University, each with a currency of two years, are to be awarded annually. Living allowances at the rate of £52 per annum and £26 per annum respectively are provided, the former being paid to students living away from home. The University is to provide an Education group of subjects, including Logic, Psychology, and Education. Ten of the scholarships may be carried on for a third year, and five for a fourth year. Practical training is entrusted to a Training Master appointed by the Department. Those who attend the two years' course will be appointed to the Primary Schools, and the graduates from the three and four years' course will be available for High Schools and Secondary Schools. Short courses of training have been instituted for teachers to take charge of small schools, and arrangements have been made to allow an approved number of teachers already in charge of such small schools to obtain the benefit of the training. About 60 short course students are trained each year. In the meantime, young people of both sexes are admitted to the service as pupil teachers at

the age of fourteen years, and receive training from the principals of the schools to which they are appointed. The schools for infants at Kangaroo Point and Rockhampton have been specially staffed and equipped for training Kindergarten teachers, and Kindergarten methods have been introduced into most of the larger schools. Teachers of small schools are also greatly helped by the inspectors' practical and theoretical instruction in the various districts, while the Central Technical College gives correspondence lessons to small-school teachers desirous of passing the Class III. examination. Schools of instruction for the untrained teachers of small schools are conducted by the inspectors in their respective districts.

(iv) *South Australia.* During the year 1910 the system of training in force in South Australia was remodelled and improved. Prior to that year students had devoted themselves chiefly to academic studies, but in 1910 provision was made for increased attention to the theory and practice of teaching. District courses of training were established to prepare teachers for work in primary and infant schools, and an advanced course was outlined for those who will become High School teachers. Each of these courses extends over a year. Students in the primary course who shew special ability may be granted a second year's training. The special course for Secondary Schools will give students an opportunity of obtaining the Diploma of Education. Provision has also been made for a six months' course of training for teachers of provisional schools. There were 72 students in the Training College in 1917. Most of the students have, in the first instance, had a period of one year's practical mentorship in a State school under the guidance of a head master. This is followed by three years' general education in a High School, and a further year of junior teachership in a primary school under the supervision of a head master, prior to entrance to the Training College. At the Adelaide High School there were 238 students training for teachers at the beginning of 1917, and 161 new candidates were admitted, 8 for one year, and 39 for two years. In December, 1917, 135 students left the school to commence teaching. There were also 260 candidates for the junior teachers' entrance examination, of whom 184 passed. Altogether over 1,000 students received instruction in 1917 at this institution, which claims to be the largest secondary school in Australia. Practice in teaching is gained by the student teachers at the Observation School, which also provides training for teachers qualifying for appointment to provisional schools. A director was appointed in 1917 to give instruction in Montessori methods at the school. A considerable amount of help is given to the teachers of small schools at the periodical "Summer" Schools and "refresher" courses.

(v) *Western Australia.* A Training College for teachers was opened at Claremont in 1902. The original building provided accommodation for sixty students, but extensions were opened in 1908, and the number in training in 1917 was 142. Two classes of training are provided for—the full course, lasting two years, and a special course of six months. The latter is intended for teachers of small schools in country districts, and the trainees are drawn partly from those already acting as teachers in these schools and partly from outside applicants who pass the necessary qualifying examination. Special practising schools have been established for the proper training in teaching and managing the smaller country schools. Three classes of students are admitted to the full course—(i) from State or private secondary schools; (ii) monitors from departmental schools; (iii) ordinary teachers from the departmental schools. The standard of education required on entering is the school-leaving or matriculation certificate, but a special examination is held for candidates possessing neither. The course is both academic and practical, the former being co-ordinated with the University. As a help in the practical work, there is an adjunct school attached to the college, and several practising schools, two of which are for infants only. An advisory teacher visits the small country schools to give practical help and advice. At the Claremont Infants' School a room has been set apart for work on Montessori lines. During 1917, in addition to short courses at the Training College, schools of instruction for teachers of small schools were held at Toodyay, Woodanilling, and Narrogin, and monitors' classes were held at Perth, Fremantle, and Kalgoorlie.

(vi) *Tasmania.* During 1917 the schemes for the training of teachers were recast and grouped in four divisions:—(1) A short course to supply the professional training required for the less important positions in the primary schools and for teachers of

the smaller provisional and Sixth Class schools. The course lasts six months. (2) Training of infant teachers. (3) Training for positions in the larger primary schools. (4) Training of high school teachers. Practical training for the various classes is given in well-equipped practising schools and in model small schools. The inspectors also hold schools of instruction for teachers of small schools. The enrolment at the Training College in 1917 numbered 29.

11. **School Savings Banks.**—Returns shew that these institutions are in existence in three States. In New South Wales, there were 808 banks at the end of 1917, the deposits amounting to £49,047, and withdrawals to £46,186. Since the establishment of the banks in 1887, deposits totalled £611,599, and withdrawals £595,563. Of the latter sum £133,224 was placed to the children's accounts in Government Savings Banks. In South Australia, 514 schools had 26,085 depositors, with £24,028 to their credit; and in Western Australia, there were 441 school banks, with 25,953 depositors and £37,672 to their credit.

12. **Expenditure on State Schools.**—The net expenditure on State education during 1901 and for the five years ended 1917 is shewn below. The figures do not include expenditure on buildings, which is shewn separately in a subsequent table.

EXPENDITURE ON MAINTENANCE, STATE SCHOOLS, 1901 AND 1913 TO 1917.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1901 ..	623,734	656,907	256,245	152,006	89,694	37,710	..	1,816,296
1913 ..	1,318,326	975,977	432,751	243,094	258,171	91,513	1,942	3,321,774
1914 ..	1,366,955	995,120	458,466	254,485	290,929	105,147	1,830	3,472,932
1915 ..	1,428,873	1,033,292	462,842	260,279	299,505	110,981	1,246	3,597,018
1916 ..	1,534,186	1,032,708	484,500	268,399	305,130	111,140	1,956	3,738,019
1917 ..	1,662,658	1,033,876	562,418	295,261	319,954	115,547	1,594	3,991,308

The expenditure per head of average attendance for each of the years given above will be found in the succeeding table.

COST PER HEAD OF AVERAGE ATTENDANCE, STATE SCHOOLS, 1901 AND 1913 TO 1917.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901	4 0 10	4 7 0	3 12 9	3 9 5	5 9 3	2 12 11	..	4 0 8
1913	7 8 1	6 4 2	5 8 3	5 12 3	7 2 5	4 6 5	28 1 1	6 8 9
1914	7 3 9	6 1 11	5 10 1	5 9 11	7 11 1	4 13 2	18 9 8	6 7 7
1915	7 7 1	6 4 0	5 8 9	5 7 4	7 10 0	4 15 4	9 13 2	6 8 11
1916	7 13 0	6 3 1	5 14 0	5 2 4	7 12 8	4 15 5	11 18 6	6 11 4
1917	7 9 10	6 3 5	6 7 5	5 4 0	7 15 11	4 15 1	8 11 5	6 13 0

Expenditure on school buildings in each of the years quoted was as follows:—

EXPENDITURE ON STATE SCHOOL BUILDINGS, 1901 AND 1913 TO 1917.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1901 ..	57,663	36,040	33,421	13,656	49,073	7,762	..	197,615
1913 ..	347,183	158,028	77,715	59,385	61,464	16,456	791	721,022
1914 ..	302,566	198,377	107,113	56,840	36,513	20,233	..	721,642
1915 ..	234,281	315,869	83,159	32,163	51,252	20,640	214	737,578
1916 ..	303,001	220,042	96,397	33,472	24,863	28,793	..	706,568
1917 ..	208,733	116,010	78,080	46,948	21,034	21,667	253	492,725

The net total cost and the net cost per scholar in average attendance during the year 1917 were as follows:—

NET TOTAL COST, STATE SCHOOL EDUCATION, 1917.

(COMMONWEALTH.)

Item.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
Net cost of education, including buildings ..	1,871,391	1,149,886	640,498	342,209	340,988	137,214	1,847	4,484,033
Per scholar in average attendance ..	£8/8/7	£6/17/3	£7/5/2	£6/0/6	£8/6/2	£5/12/11	£9/18/7	£7/9/5

The average for the Commonwealth in 1901 was £4 9s. 3d. per scholar in average attendance.

§ 3. Private Schools.*

1. **School Teachers, etc., in 1917.**—The following table shows the number of Private Schools, together with the teachers engaged therein, and the enrolment and average attendance in 1917:—

PRIVATE SCHOOLS, 1917.

(COMMONWEALTH.)

State.	Schools.	Teachers.	Enrolment.	Average Attendance.
New South Wales	659	3,707	68,516	55,425
Victoria	495	1,970	56,193	47,000
Queensland	156	841	20,331	16,880
South Australia	169	703	14,015	10,081
Western Australia	123	497	11,484	10,097
Tasmania	82	308	6,509	4,880
Northern Territory	1	2	78	46
Commonwealth	1,685	8,028	177,126	144,409

* Private schools include all schools not wholly under State control. The term "private," though popularly applied, is of course a misnomer.

Compared with the previous year, the number of private schools in New South Wales in 1917 shews a falling-off amounting to about 6 per cent., the decrease being due to the circumstance that a number of undenominational schools failed to satisfy the requirements of the Public Instruction Amendment Act of 1916, and were not granted registration.

The totals for New South Wales are exclusive of returns from the Sydney Grammar School, which receives a yearly State subsidy of £1,500, and which, in 1917, had an enrolment of 624, and an average attendance of 587.

The figures for Queensland include the returns from Grammar Schools, of which there are ten—six for boys and four for girls, with an enrolment of about 1,000 boys and 600 girls. These schools are governed by boards of trustees, partly nominated by Government, and partly by the subscribers to the funds. The trustees make regulations regarding the fees of scholars, the salaries of teachers, and generally for the management of the schools. Each school is endowed by the Government at the rate of £750 per annum, together with, in some instances, an additional £250 to provide district scholarships. The total Government aid received in 1917 was £9,563. The Grammar Schools are inspected annually by the departmental Inspector-General.

2. **Growth of Private Schools.**—The enrolment and average attendance at Private Schools during 1891, 1901, and in each year of the period 1910 to 1917 are as follows :—

ENROLMENT AND ATTENDANCE AT PRIVATE SCHOOLS, 1891 TO 1917.

(COMMONWEALTH.)

Year.	Enrolment.	Average Attendance.	Year.	Enrolment.	Average Attendance.
1891	124,485	99,588	1913	161,204	132,679
1901	148,659	120,742	1914	162,813	135,141
1910	158,694	129,872	1915	172,957	144,804
1911	160,794	132,588	1916	177,650	146,380
1912	164,085	133,940	1917	177,126	144,409

The small rate of increase in private school enrolment and attendance is due in a large measure to the development of the State educational systems, especially as regards the provision of secondary education.

3. **Registration of Private Schools.**—Until recent years the various State Governments had comparatively little control over privately conducted schools. With the advance of modern educational thought the position is improving, but still leaves much to be desired. It is evident that without a thorough system of registration there will always be a difficulty in regard to enforcing the compulsory clauses of the various Education Acts. Moreover, advanced educational thought demands complete supervision, not only of curricula, but of all matters pertaining to school hygiene.

In New South Wales, under the provisions of the Bursary Endowment Act of 1912, 51 non-State Schools were inspected by the Departmental Inspector of Secondary Education for registration or renewal thereof. Under the compulsory clauses of the amending Public Instruction Act of 1916 children between the ages of 7 and 14 years must attend schools certified as efficient by the Minister. Provisional registration is granted to applicants pending inspection by Government officers. School proprietors must conform to prescribed conditions in regard to the hygiene, etc., of their buildings.

In Victoria, up to the year 1905, no attempt had been made to bring Private Schools under general administrative control, but the Registration of Teachers and Schools Act of 1906, and the Education Act of 1910, established a registration scheme under a special committee. At present, the committee consists of nine members of the Council of Education. Section 60 of the Act of 1910 also empowers the Minister of Education to authorise the inspection of any school (other than a State School) in order to ascertain whether the instruction given is satisfactory. The inspector of registered schools has on several occasions pointed out that there is a fair number of institutions which are very unsatisfactory, both as regards buildings and quality of instruction given therein.

In Queensland, with the exception of the Grammar Schools, which are now examined annually, there is practically no control over the private schools, beyond the fact that they may submit themselves to inspection if so desired, and there is apparently no provision in South Australia for any Government supervision over private school affairs.

In Western Australia, non-Government schools must be declared efficient by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law, and the school registers must be open to the inspection of the compulsory officers of the Department.

In Tasmania the Education Act requires the teachers of other than State Schools "to furnish during January of each year returns shewing attendances at such schools." Despite the fact that penalties are prescribed for non-compliance with the law, many teachers neglect to return the forms sent out. Provision has been made for registration of private teachers and schools very much on the lines adopted in Victoria. The Act declares that all persons who were employed in a bona fide manner for at least three months before 25th October, 1906, were entitled to be registered as teachers without submitting proof of professional qualifications. No person can be registered as a private teacher since July, 1907, unless the Board is satisfied as to his fitness for the work.

4. German Schools in Australia.—The accompanying particulars in regard to German Schools in Australia have been extracted from information supplied by the State Education Departments.

New South Wales. In this State there are three private schools conducted by German teachers, and attended entirely by children of German descent. The schools are situated at Jindera, near Albury (26 pupils); Trungley Hall, near Temora (31 pupils); and Gidginburg, near Temora (17 pupils). The schools are inspected by the Departmental officers, and school work is conducted in English. The use of German as the language of instruction is not permitted in any school. Jindera, Trungley Hall, and Gidginburg have been gazetted "certified" schools under the provisions of the Public Instruction Amendment Act of 1916.

The scholars attending the following State schools consisted largely of children whose parents were known to be of German descent:—Alma Park, Burrumbuttock East, Gerogery Railway Station and Gerogery West, Glenellen, Hovell, Major's Plains, Jindera, Lavington, Walkyrie, Walla Walla. Many of the scholars at these schools could speak German before they attended school.

Victoria. There are ten registered private Lutheran schools in Victoria, with an attendance of 326 pupils. In connection with these schools it has been laid down by the Government that the German language is not to be employed in teaching, and books, charts, etc., in German are prohibited. Religious instruction in German is not permitted, and the syllabus of instruction must be on lines prescribed by the Education Department, and be such as will promote good citizenship and loyalty to the British Empire. There are no State German schools.

Queensland. There are now no German day schools in operation. In districts where German families form a considerable proportion of the population the children attend the State schools, and, in common with other children, are subject to the conditions imposed by the compulsory clauses of the State Education Act now in force.

South Australia. In the year 1916 there were 52 Lutheran schools in this State, practically all under the control of the Lutheran Church. In many of these schools the teaching was carried on in the German language, and English was hardly spoken at all. Religion as taught by the Lutheran Church formed an important part of the instruction.

The Education Act of 1915 provided that teaching should be through the medium of the English language for at least four hours a day. The Education Amendment Act of 1916, however, provided that the Government should take over and carry on all Lutheran schools not earlier than 30th June, 1917, and not later than 31st December, 1917, and that no language but English should be spoken in the schools. The Act was put into force on the 1st July, 1917. With the exception of the Point Pass and Concordia Secondary Schools there are now no Lutheran schools in South Australia. Forty-nine Lutheran schools were closed on the 30th June, and 45 of these re-opened, 25 being absorbed into neighbouring public schools, while 20 were carried on in their own buildings with an English teacher. Four schools were not opened, owing to the determination of the parents to defeat the Department by refusing to assist in finding accommodation for the teacher.

Western Australia and Tasmania. There are no German schools in either of these States.

§ 4. Free Kindergartens.

The following information regarding Free Kindergartens in the Commonwealth has been compiled from particulars supplied by the principals of the chief institutions in each State, except in the cases of Victoria and Western Australia, the details for which were furnished by the Education Departments.

FREE KINDERGARTENS IN THE COMMONWEALTH, 1917.

State.	No. of Schools.	Average Attendance.	Permanent Instructors.	Student Teachers.	Voluntary Assistants.
New South Wales (Sydney)	10	551	17	50*	12
Victoria (Melbourne) ..	26	1,470	54	14	283
(Ballarat) ..	1	40	2	..	14
Queensland (Brisbane) ..	6	168	8	23	1
South Australia (Adelaide)	4	200	8	17	..
Western Australia (Perth)	2	85	3	18	..
Tasmania (Hobart) ..	2	90	3	5	4
(Launceston) ...	1	44	1	5	..
Total ..	52	2,648	96	132	314

* Exclusive of 34 teachers attending courses and 18 students attending single classes.

It must, of course, be distinctly understood that the information given above refers to institutions under private kindergarten unions or associations, and is exclusive of institutions controlled by the Education Departments of the various States.

§ 5. Universities.

1. **Origin and Development.**—The history of the foundation and progress of the four then existing Australian Universities was traced at some length in Year Books I. and II. In the present volume space will permit of only a very brief reference to the subject.

(i) *University of Sydney.* The Act of Incorporation of the University of Sydney received Royal Assent on the 1st October, 1850, and the first Senate was appointed on the 24th December of that year. The first matriculation examination was held in October, 1852, when 24 candidates passed the required test, and the formal inauguration ceremony took place on the 11th October of the same year. A Royal Charter was granted to the University on the 27th February, 1858. Women students were admitted in 1881. The passing of the University (Amendment) Act of 1912 marks an important epoch in the development of the educational system of New South Wales. The Act aims at placing the University in a more effective position as the culminating point in a thoroughly co-ordinated system of State education, and it is claimed that the passing of this measure makes the educational system—from the Primary Schools through the Secondary Schools to the Technical Colleges or to the University—form a progressive and continuous whole. Under the new Act the Constitution of the Senate was radically changed, and this body now consists of—four Fellows appointed by the Governor, one elected by members of the Legislative Council, one elected by members of the Legislative Assembly, five representatives of the University teaching staff, ten elected by graduates of the University, and three elected by the aforesaid Fellows. The professorial representatives hold office for two years, and the other Fellows for five years. In addition it was provided that in view of their distinguished services, the late Chancellor, Sir Normand MacLaurin, and the Vice-Chancellor, Judge Backhouse, should each during his life be a Fellow in addition to the ten Fellows elected by the graduates. The second part of the Act contains a feature of outstanding importance, in that it provides for the allotment of exhibitions in the proportion of 1 for every 500 of the population of New South Wales between the ages of 17 and 20, or in such other ratio as may be determined by Parliament. These exhibitions, which carry exemption from all fees, are not restricted to any particular faculty in the University, and are principally allotted in order of merit as shewn by examinations for leaving certificates at the State Schools. Pupils of registered Secondary Private Schools are also eligible for leaving certificates on the same conditions as those of the State Schools. To gain a leaving certificate a candidate must have satisfactorily completed an approved four years' course of study. Five per cent. of the total number of exhibitions allotted in any year are available for successful candidates at the written examination, even though they be ineligible for a leaving certificate. At the inception of the University there were only three professorships. The present staff consists of 23 professors, including the Director of Military Science, seven assistant professors, and 135 lecturers and demonstrators. There are, in addition, various honorary lecturers and demonstrators, as well as miscellaneous assistants in laboratories, and three curators of museums.

(ii) *University of Melbourne.* This institution was established by Act of Parliament assented to on the 22nd January, 1853, and its first Council was appointed on the 11th April of that year. The foundation stone of the main building was laid on the 3rd July, 1854, and the University was formally inaugurated on the 13th April, 1855. By Royal Letters Patent, issued in 1859, its degrees are, like those of the Sydney institution, declared of equal status with those of any other University in the British Empire. Women students attended lectures for the first time in 1881. The University, which began in 1855 with Schools of Arts and Laws, has now a staff of 17 professors, 73 lecturers and demonstrators, as well as various assistants. The Conservatorium of Music has a staff numbering 38.

(iii) *University of Adelaide.* This University was established by Act of Parliament in 1874. Its origin and progress were largely due to the munificence of the late Sir Walter Watson Hughes and Sir Thomas Elder, G.C.M.G., the total gifts of the latter amounting

to over £100,000. The academical work of the institution was commenced in March, 1876, when eight matriculated and fifty-two non-graduating students attended lectures. The foundation stone of the University buildings was laid on the 30th July, 1879, and the buildings were opened in April, 1882. In 1881, by Royal Letters Patent, the degrees granted by the institution were recognised as of equal distinction with those of any University in the British Empire. The Elder Conservatorium of Music was opened in 1898. Power was given by Act of Parliament in 1880 to grant degrees to women. At first there were only four professorships in the University, whereas the present staff consists of eleven professors, forty-five lecturers with the necessary complement of demonstrators, etc., while the staff at the Conservatorium, not included in the foregoing figures, numbers sixteen.

(iv) *University of Tasmania.* The Act to establish the University of Tasmania (Hobart) was assented to on the 5th of December, 1889. At the present time the institution, which is small but efficient, possesses a staff of six professors, eight independent lecturers, and four student assistants. Under Statute dated 13th April, 1905, the Zeehan School of Mines and Metallurgy was affiliated to the University, while the School of Mines and Industries at Mount Lyell was affiliated on the 4th November, 1915. Tutorial classes have been arranged at Hobart and Launceston, and Extension Committees have been formed in various country centres.

(v) *University of Queensland.* The Act to establish the University of Queensland was passed in 1909, and the first Senate was appointed on the 14th April, 1910. The University was opened on the 14th March, 1911, when 60 students were matriculated. Provision has been made for a Correspondence Study department in connection with the institution, and at the request of the Brisbane branch of the Workers' Educational Association weekly lectures are given in History and Economics. At the present time there are four professors, *i.e.*, one each of classics, chemistry, engineering, and mathematics and physics, with twelve independent lecturers, seven assistant lecturers, seven demonstrators and five honorary lecturers. The Correspondence department is under the control of a director and assistant. University extension lectures are delivered at important country centres.

(vi) *University of Western Australia.* The University of Western Australia was established under an Act which received Royal assent on the 16th February, 1911, and the first Senate was appointed on the 13th February, 1912. There are now professorships in agriculture, biology, chemistry, English, geology, history and economics, mathematics and physics, and mining and engineering, in addition to ten lecturers and demonstrators, and seven associate lecturers. The Chair of Agriculture was endowed by Sir Winthrop Hackett. Students of the Perth Technical School and the Kalgoorlie School of Mines are admitted to the first year examinations in certain subjects provided they have matriculated. The institution was opened in March, 1913.

2. *Teachers and Students of Universities.*—The following table shews the number of professors and lecturers and the students in attendance at each of the Commonwealth Universities during the year 1917 :—

UNIVERSITIES.—TEACHERS AND STUDENTS, 1917.

University.	Professors.	Lecturers.	Students attending Lectures.		
			Matriculated.	Non-matriculated.	Total.
Sydney	30	135	1,355	381	1,736
Melbourne	17	73	..	..	1,199*
Adelaide	11	45	319	217	536†
Tasmania (Hobart)	6	8	75	18	93
Queensland (Brisbane)	4	21	202	25	227
Western Australia (Perth)	8	10	148	88	236

* Exclusive of 128 music students. † Exclusive of 202 music students.

3. **University Revenues.**—The income of the Universities from all sources during the year 1917 was as follows:—

UNIVERSITIES.—REVENUE, 1917.

University.	Government Grants.	Fees.	Other.	Total.
	£	£	£	£
Sydney	61,654	13,489	28,499	103,642
Melbourne	26,858	38,835	9,800	75,493
Adelaide	12,747	9,871	5,512	28,130
Tasmania (Hobart) .. .	7,175	1,403	866	9,444
Queensland (Brisbane) .. .	15,300	3,908	2,835	22,043
Western Australia (Perth) .. .	16,320	1,314	961	18,595

The column "Other" includes the receipts from private foundations. The extent to which the Universities have benefited by private munificence will be apparent from the following table:—

PRINCIPAL PRIVATE BENEFACTIONS TO AUSTRALIAN UNIVERSITIES.

University of Sydney.		University of Melbourne.		University of Adelaide.	
Donor.	Amount.	Donor.	Amount.	Donor.	Amount.
	£		£		£
J. H. Challis ..	250,750	Sir Samuel Wilson ..	30,000	Sir Thos. Elder ..	98,760
Sir P. N. Russell ..	100,000	James Stewart ..	25,624	Sir W. Hughes ..	20,000
Thos. Fisher ..	30,000	Hon. Francis Ormond	20,000	Hon. J. H. Angas ..	10,000
Edwin Dalton ..	8,000	John Hastie ..	19,140	R. Barr Smith ..	10,150
Hugh Dixon ..	7,050	Robert Dixon ..	10,837	Other donations	20,361
Hon. Sir W. Macleay	6,221	John Dixson Wyse-			
Mrs. Hovell ..	6,000	laskie ..	8,400		
Thos. Walker ..	6,200	David Kay ..	5,764		
Other donations ..	56,356	Henry Dwight ..	5,000		
		Wm. Thos. Mollison	5,000		
		Other donations ..	52,545		
Total	£ 470,577	Total	£ 182,310	Total	£ 159,271

In addition to the sum of £6,000 shewn above, the Hon. Sir W. Macleay also presented the Museum of Natural History to the University of Sydney.

The credit balances of some of the above endowments now amount to very considerable sums. For example, on the 31st December, 1917, the Challis Fund amounted to nearly £316,000, and the Fisher bequest to over £43,000. The cash balance at the end of 1917 on account of all private foundations to Sydney University stood at £571,760. In the case of Melbourne University the Stewart fund on the 31st December, 1917, stood at £30,450, the Hastie at £19,266, and the Dixon fund at £14,172.

In addition to the above there were various other bequests to Sydney University—*e.g.*, collection of Egyptian antiquities, etc., by Sir Charles Nicholson, and Natural History collection by Mr. Geo. Masters, while the building for the Natural History Museum was given by Sir W. Macleay. Numerous prizes and scholarships have also been given to the various colleges. In Melbourne, the Hon. Francis Ormond's benefactions to Ormond College amounted to about £108,000. With a view to advancing the course of education in agriculture, forestry and allied subjects, Mr. Peter Waite transferred to the Adelaide University in 1914 the whole of the valuable Urrbrae estate at Glen Osmond. The estate comprises 134 acres of land with a fine mansion. Private benefactions to the University of Tasmania and the newly-established University of Queensland amount to £3,280 and £16,000 respectively. In connection with the latter, the trustees of the Walter and Eliza Hall Trust have endowed fellowships in engineering, economic biology, and pure and applied chemistry. In Western Australia the chair of Agriculture was founded by an endowment of Sir Winthrop Hackett, first Chancellor of the University, who made available also an annual sum of £900 for the establishment of a Department of Agriculture.

4. University Extension.—Extension lectures were instituted at Sydney University in 1886, but under a Statute of the Senate, approved of in 1892, a Board was appointed, which was empowered from time to time to recommend to the Senate the names of suitable persons for giving courses of lectures, and to hold examinations in the subjects of the lectures. The Board receives and considers applications from country centres, and makes provision for engaging lecturers and managing the entire business connected with the various courses. The project has only met with fair success, no lectures having been given in some years, but lately there appears to be an awakening of interest in the matter. The Board also arranges for courses of lectures in other States. In 1917 the average attendance at extension lectures in New South Wales was 195.

University extension lectures in Victoria date from the year 1891, when a Board was appointed by the Melbourne University for the purpose of appointing lecturers and holding classes and examinations at such places and in such subjects as it might think fit. Interest in University extension has varied in Victoria, the attendance at the various centres being estimated at 475 in 1916.

The Adelaide University has also instituted short courses of extension lectures in Arts and Science, to which students are admitted on payment of a nominal fee. Public intimation of these lectures is made from time to time during the session.

The University of Tasmania provides for courses of extension lectures at various centres. Tutorial classes in Economics, History, Philosophy, and Literature are conducted in Hobart, and a class in Economics has been formed at Launceston. Attendance at extension lectures in 1917 numbered 131.

As pointed out previously, a correspondence study department has been inaugurated in connection with the University of Queensland in order to overcome, as far as possible, the difficulties of students who desire to benefit by University teaching, but who for various reasons are unable to attend the lectures. At present the work of this department is confined to the Arts course.

In Western Australia provision has been made for the giving of courses of extension lectures in Perth and suburbs, and also—by arrangement with local committees—in country centres. The professor of agriculture visits the chief farming districts for the purpose of giving lectures to, and holding conferences with the primary producers. Special short courses for farmers are given at the University. Short courses of popular lectures are also given in the evening by various professors at the University.

5. Soldiers' Scholarships at British Universities.—A scheme has been evolved under which men on active service with the military and naval forces of the Dominions may benefit by the facilities for special education afforded by British Universities and technological institutions. Funds have been made available to allow selected disabled soldiers and sailors to commence work as soon as they are fit to take up their studies. The Earl of Selborne has generously provided a number of scholarships, a large subscription

has been allotted from the Kitchener Memorial Fund, and the Rhodes' Trust has set apart several scholarships, some of which have been given to Australians. At present a small number of Australian soldiers are studying at Oxford, Cambridge, and Leeds. The scholarships are of the annual value of £150 to £250, and cover all expenses, including tuition fees and cost of living. They are granted with the proviso that those who hold them will follow up in their future professions and occupations the line of study embraced in the scholarships. The South African Government has offered twenty-five additional scholarships for South Africans, and in view of the possibilities of the scheme it is hoped that endowments will be provided by all the Dominion Governments.

6. Workers' Educational Association.—Chiefly as the result of a visit to Australia in 1913 by Mr. Mansbridge, Secretary of the Workers' Educational Association of Britain, a movement has been inaugurated having for its object the bringing of the University into closer relationship with the masses of the people, and thereby providing for the higher education of the workers in civic subjects. In New South Wales the Workers' Educational Association was at once formed, and similar branches of the movement have since been established in all the States of the Commonwealth and in New Zealand. The Government of New South Wales granted the University of Sydney the sum of £1,000 to initiate the scheme for tutorial classes. In that State the number of classes and study circles had grown by 1919 to between 40 and 50, and the number of students exceeded 1,000, while the Government grant has increased to £5,150. There are now direct grants from all State Governments except Western Australia, and a University grant in New Zealand. The particulars of grants for classes are as follow :—New South Wales, £5,150, 42 classes; Victoria, £1,500, 15 classes; Tasmania, £675, 5 classes; South Australia, £1,600, 5 classes; Queensland, £300, 5 classes; New Zealand, £1,500, 40 classes. The total number of students throughout Australasia is approximately 3,000, the greater number of whom are taking three-year courses while working at their daily occupations as artisans and clerical workers. The principal subjects chosen in all States are Industrial History, Economics, Political Science, and Sociology, while Psychology, Philosophy, Literature, and Biology are increasingly selected. Each University co-operates with the W.E.A. in the formation of a joint committee for tutorial classes, which elects tutors and generally supervises the work with the assistance of a University officer with the title of Director of Tutorial Classes. In addition to the longer and more serious courses, a great many preparatory classes and study circles are organised by the association, numerous courses of public lectures are delivered, and educational conferences promoted. In New South Wales the association organised an important representative conference on "Trade Unionism in Australia" in 1915, the report of which has been issued in book form. Another conference on the "Teaching of Sex Hygiene" was held in 1916, the report of which has passed through two large editions. A Commonwealth Conference held at Adelaide in 1918 resulted in the formation of a federal organisation, whose first president is Professor Meredith Atkinson, M.A., Director of Tutorial Classes, Melbourne University. The Federal Council co-ordinates the activities of the W.E.A. in all States, and has inaugurated a series of publications on sociological and economic subjects.

§ 6. Technical Education.

1. General.—Although provision has been made in some of the States in respect to many necessary branches of technical education, the total provision made would imply that this branch of education has not been regarded as of great importance. As will be seen later on, the expenditure on technical education for the whole of Australia is comparatively insignificant. The question of apprenticeship is referred to in the sections dealing with "Manufacturing Industries" and "Labour and Industrial Statistics."

2. New South Wales.—The present organisation of technical education in this State dates from the year 1883, when a Technical Education Board was appointed as a result of suggestions made at the Technological Conference held in 1879. This Board continued its functions till November, 1889, when it was dissolved, and the work has thenceforward been carried on as a branch of the Public Instruction Department. The chief centre of activity is, of course, in Sydney, where the Technical College and Technological Museum

are situated, the college having been opened for the reception of students early in 1892. Colleges were also erected in some of the chief country towns—at Maitland in 1890; Newcastle 1896; Bathurst 1898; Broken Hill 1898; Albury 1899; and Goulburn 1902. In other centres classes were established in various subjects whenever the prospects were sufficiently encouraging. Up to the year 1912 the provision for technical education is stated to have partaken more or less of the nature of successive accretions on the original humble beginnings, rather than to have aimed at development in accordance with a definite plan. With the systematisation of the other branches of education, the necessity for more effective organisation of the technical side became imperative, and in 1913 a rearrangement was effected. Under the new conditions Trade Schools will supersede the branch Technical Colleges, with the exception of that at Newcastle. Entrance to the Trades Schools will be conditional on a student being actively engaged in the trade concerned during the day and possessing a certain degree of preparatory knowledge. The latter qualification is assured by the possession of a certificate from a Commercial Superior Junior Technical School or an Evening Continuation Junior Technical School. It is proposed to build new Trades Schools in several of the suburbs of Sydney, and to establish institutions in the country wherever circumstances demand. The co-operation of both employers and employees has been sought and obtained, and while at first there will be some diminution in the number attending the classes, this will be counterbalanced by increased efficiency. At the beginning of 1913 a conference was held between the education authorities and leading employers and employees with a view to deciding on a scheme of organisation of the system of technical education. Sub-conferences were held for each trade or group of trades. In view of the information received, the Director of Education submitted a scheme to the Minister, and the scheme was approved at the end of November. Under the new plan the instruction will be given in two divisions—(1) Trade Courses; (2) Higher Technical Courses. Instruction in the trade courses will be really continuation trade instruction, *i.e.*, supplementary to actual workshop practice under an employer. Attempts to train youths to be tradesmen in the College will be abandoned, and only those actually engaged as apprentices or journeymen will be admitted to the college classes. Entrance tests are prescribed so as to ensure that students admitted to the courses will possess sufficient preparatory knowledge to benefit by them, but journeymen desirous of improvement may join at any time. Advisory committees have been appointed for each trade or group of trades. The first two or three years' course of instruction will be given in the Trade Schools, of which there are ten, and the last two or three years' at the Technical Colleges, of which there are three, one at Sydney, one at Newcastle, and one at Broken Hill. The higher courses will embrace instruction in advanced trades work qualifying for the position of manager or foreman, but no attempt will be made to train for the professional standing. It is hoped, however, that the scheme will develop so that part of the graduates may proceed to the University. Admission to the higher courses will eventually be restricted to those who have either graduated in the Trade Schools of the Department, or who evidence possession of a similar standard of knowledge. A liberal scheme of scholarships has been provided for students passing from the day or evening Junior Technical Schools or Domestic Science schools, to the Trades and Science Schools, as well as scholarships to the University at the close of the diploma course.

The table below gives some idea of the development of technical education in New South Wales during the five years 1913-17 :—

TECHNICAL EDUCATION, NEW SOUTH WALES, 1913 TO 1917.

Year.	Number of Classes.	Number of Enrolments.	Average Weekly Attendance.	Number of Lecturers and Teachers.	Fees Received.
					£
1913	582	16,193	12,214	286	13,760
1914	513	13,687	11,523	289	10,779
1915	519	13,000	9,257	298	9,830
1916	529	14,188	10,077	321	9,939
1917	544	15,065	11,072	354	9,354

At the beginning of 1913 the Sydney Technical High School and the Hurlstone Agricultural High School were removed from the control of the technical branch and placed under the Inspector of Secondary Schools. Reference to the Agricultural Colleges will be found in the section dealing with Agriculture.

3. **Victoria.**—Technical instruction in mining has for many years received considerable attention in Victoria, the Ballarat School of Mines, which was established as far back as 1870, having achieved an Australasian reputation. Fine work was also done at the School of Mines in Bendigo, and later on excellent courses of training were evolved at the Working Men's College in Melbourne. The general scheme of instruction, however, lacked cohesion, and it was not until after the publication of the Report of the Royal Commission on Technical Education, which was appointed in 1899, that many defects were remedied. It is hoped that the Agricultural and District High Schools will serve as an effective connecting link between the ordinary State Schools and the Technical Schools, as also the Junior Technical Schools established in and around Melbourne, and at Ballarat, Bendigo, Geelong, Sunshine, and Warrnambool. At present there are 23 Technical Schools receiving State aid, and of these 7 afford instruction in Science, Art, Commercial and Trade subjects; 8 in Art, Trade, and Science; 2 in Art, Commerce, and Trade; 1 in Science, Commerce, and Art; 1 in Art and Commerce; while 3 confine their teaching to Art. The largest technical institution in Melbourne is the Working Men's College, founded in 1887. The College, in addition to giving instruction in a large number of technical subjects, is also a School of Mines. Six of the Schools, viz., the Working Men's College, and the Schools of Mines at Ballarat, Bendigo, Bairnsdale, Maryborough, and Stawell are classed as Certified Science Schools, and provide full courses in metallurgy and mining engineering, extending over three or four years. There are at the present time eleven Junior Technical Schools in existence, giving a two years' course of instruction to boys between the ages of 12½ and 15 years.

During the year 1916 a new Art School, costing £17,000, was opened at the Working Men's College, also an Art School at Ballarat at a cost of £8,600, and a Technical School at Brunswick, costing £8,400, while the Footscray Technical School cost £6,650.

The Committee of the Mechanics' Institute at Prahran has erected a building at a cost of £17,000, to a design approved by the Department, and has made it available without rent as a Technical School, the Department undertaking the expenses of equipment and maintenance.

In his report for 1913-14, the Chief Inspector of Technical Schools alludes to the necessity for an Employment Officer, in order to ensure that boys who have had vocational training will be able to find suitable situations when their term has expired.

TECHNICAL EDUCATION, VICTORIA, 1913 TO 1917.

Year.	Number of Classes.	Number of Enrolments.	Fees Received.
1913	92	9,036	£ 13,054
1914	103	10,249	12,968
1915	110	10,782	14,992
1916	104	12,049	16,439
1917	106	12,139	18,836

The average attendance in 1914 was 6,487, in 1915, 6,852, in 1916, 7,724, and in 1917, 8,736.

4. **Queensland.**—The control of technical education in Queensland was removed from the hands of the local Committee in 1905, and vested in the Education Department. At present the Director is assisted in his administration by a Superintendent, and an Inspector of Technical Colleges. During 1917 there were fifteen colleges in operation—Bowen, Bundaberg, Cairns, Brisbane Central, Charters Towers, Gympie, Ipswich, Mackay, Maryborough, Mount Morgan, Rockhampton, Sandgate, Toowoomba, Townsville, Warwick, and branch classes of these colleges were held in various country centres. The progress of technical education since 1913 is shewn in the following table:—

TECHNICAL EDUCATION, QUEENSLAND, 1913 TO 1917.

Year.	Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
					£
1913	353	7,958	6,009	247	11,069
1914	355	7,820	6,481	255	11,326
1915	358	7,522	6,258	271	10,761
1916	365	8,644	8,500	283	12,024
1917	388	9,632	7,800	310	15,274

Greater attention is being devoted to the development of trade classes, and the Technical College authorities have been assisted by the University professors in the preparation of a properly organised system of Trade instruction. Full time Commercial Day Schools are in operation at Warwick, Ipswich, Brisbane, and Townsville. Preparatory Day Trade Schools have been established in connection with the Central and Ipswich Technical Colleges. Trade Advisory Committees have been inaugurated in connection with several of the subjects of instruction at the Central Technical College. Compulsory attendance at technical classes in various districts has been provided for by industrial awards, the decisions so far—with the exception of Printing—being confined to trades connected with Engineering and Metal Working. The Department now pays about £2,000 per annum to the Technical Colleges for the instruction of selected State School pupils in approved subjects. Tuition by correspondence is given by the Central Technical School. It is believed that the raising of the school age to fourteen years, coupled with the establishment of High Schools, will result in a more effective co-ordination between ordinary and technical education in the State. At present the Colleges are assisting in the training of returned soldiers, and at the end of 1917, 143 soldier students were receiving instruction in book-keeping, wool-classing, motor mechanics, sugar chemistry, and various other subjects, while 82 had entered employment in occupations for which they had been prepared at the College.

5. **South Australia.**—Prior to the year 1917 the condition of affairs in regard to technical education in Australia was regarded by the Education Department as unsatisfactory. There was a School of Mines and Industries in Adelaide, and in addition Schools of Mines at Moonta, Port Pirie, Kapunda, Mount Gambier, and Gawler. While the Government bore the bulk of the cost of maintenance of these institutions, they were controlled by independent councils, and there was no regular co-ordination in regard to staffs, curriculum, etc. The Education Department has now taken over the administration of Technical Education. A Director of Technical Education was appointed in 1916, and the work of reorganisation of the system was continued in 1917. A suitable area has been acquired for the erection of a Government Technical School in Adelaide to accommodate between 300 and 400 junior students, with provision for evening students. At Port Pirie a Junior and Senior Technical School is to be established, the latter side to specialise in metallurgy. The work of the existing country schools was continued in 1917, but new Councils were appointed, and regulations for the conduct of the schools have been prepared.

TECHNICAL EDUCATION, SOUTH AUSTRALIA, 1913 TO 1917.

Year.	Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
1913	218	4,885	3,473	115	£ 3,459
1914	229	4,947	3,508	127	3,365
1915	228	5,402	3,645	126	3,272
1916	203	5,335	4,520	119	3,221
1917	195	6,273	5,307	105	3,974

6. **Western Australia.**—A Technical School was established at Perth in 1900, and since its opening has progressed rapidly. Extensive additions to the buildings were made in 1909, and the remodelled institution was opened in 1910. The school is affiliated to the University. There are branch institutions at Midland Junction, Fremantle, Claremont, Kalgoorlie, Boulder, Geraldton, Bunbury, Coolgardie, and Albany. In addition, Continuation Classes are held at various centres. The schools are all under the control of the Education Department, the officer entrusted with their supervision being styled Director of Technical Education. The Director also supervises the School of Mines at Kalgoorlie, which is controlled by the Mines Department. Advanced work at present is taken only in Perth, Fremantle, Boulder, and in Kalgoorlie by the School of Mines, the other branches dealing almost entirely with preparatory work, chiefly in Continuation Classes. Until the establishment of the local University, the Perth Technical School was affiliated with Adelaide University. Over 100 railway apprentices regularly attend the special classes held at Midland Junction.

At present pupils leaving the State Schools at the age of 14 to take up employment may by attendance at evening classes qualify for free admission to the Technical Schools. Those with leaving certificates from the eighth standard, and others able to devote their full time to study, may obtain day instruction at the Technical Schools in subjects bearing on their intended occupations, or may qualify for a more extended course, including graduation at the University. Returns for the last five years are embodied in the table hereunder :—

TECHNICAL EDUCATION, WESTERN AUSTRALIA, 1913 TO 1917.

Year.	Number of Classes.	Enrolments.	Number of Teachers.	Fees Received.
1913	230	2,346	77	£ 1,941
1914	306	3,353	89	969
1915	313	3,184	96	928
1916	369	3,757	103	1,058
1917	439	5,100	120	1,083

The average attendance at classes in 1915 was 1,920, in 1916, 2,366, and in 1917, 2,767.

7. **Tasmania.**—In this State provision for technical education dates from the year 1888. At the present time the most important technical institution is the School of Mines and Metallurgy at Zeehan. Courses of instruction are given in metal mining and in metallurgical chemistry and assaying, the diploma in metal mining entitling the holder to the Government certificate of competency as a mine manager. The institution is affiliated to the University of Tasmania. There are also Schools of Mines at Beaconsfield and Queenstown, and Technical Schools at Hobart and Launceston. In the report of the Commission appointed in 1916 to enquire into the condition of technical education in Tasmania, allusion was made to the want of co-ordination between these institutions and the Education Department, and it was recommended that the schools should be taken over by the Government, and a trained technologist appointed as organising inspector.

The inspector was appointed in 1917, but some time must elapse before the recommendations of the Commission can be fully dealt with. Statistics for the last five years are as follows :—

TECHNICAL EDUCATION, TASMANIA, 1913 TO 1917.

Year.	Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
1913	76	1,013	787	41	£ 918
1914	78	900	700	40	936
1915	85	955	545	40	874
1916	69	882	433	37	992
1917	68	829	470	38	871

8. Attendance at Commonwealth Technical Schools.—The table hereunder shows the enrolment and attendance at Technical Schools and classes in the Commonwealth during 1917 :—

ENROLMENT AND ATTENDANCE AT TECHNICAL SCHOOLS, ETC., 1917.

(COMMONWEALTH.)

State.	Enrolment.	Average Attendance.
New South Wales	15,065	11,072
Victoria	12,139	8,736
Queensland	9,632	7,800
South Australia	6,273	5,307
Western Australia	5,100	2,767
Tasmania	829	470
Commonwealth	49,038	36,152

9. Expenditure on Technical Education.—The expenditure on technical education in each State during the period 1913 to 1917 is shewn below :—

EXPENDITURE ON TECHNICAL EDUCATION, 1913 TO 1917.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1913 ..	132,305	49,139	63,589	14,769	26,886	3,529	290,217
1914 ..	72,718	73,654	83,722	15,720	13,552	3,493	262,859
1915 ..	78,129	77,852	69,740	16,173	10,375	3,906	256,175
1916 ..	102,139	94,098	41,083	17,614	10,849	4,438	270,221
1917 ..	110,796	93,661	42,505	20,265	11,544	3,915	287,686

The figures in the preceding table represent an expenditure of about 1s. 2d. per head of the population of the Commonwealth, as compared with 16s. 3d. per head spent on maintenance for primary education, and clearly shew that technical education has not attained its proper place in the educational organisation of Australia. Expenditure on buildings, included in the foregoing totals, comprises £20,163 in New South Wales, £10,603 in Victoria, £4,599 in Queensland, and £672 in Western Australia.

§ 7. Business Colleges and Shorthand Schools.

There has been considerable development in recent years both in the number and scope of privately conducted institutions, which aim at giving instruction in business methods, shorthand, typewriting, the use of calculating machines, etc. Particulars for all States excepting Queensland are given in the following table :—

BUSINESS COLLEGES, SHORTHAND SCHOOLS, ETC., 1917.

State.	Schools.	Teachers.	Students Enrolled.		Average Attendances.		Fees Received.
			Males.	Females.	Males.	Females.	
New South Wales ..	17	123	2,567	5,190	1,021	1,853	£ 34,899
Victoria ..	16	187	4,100	3,041	3,029	2,275	†
Queensland*	..	..	..	..	..	..	..
South Australia ..	5	49	798	1,442	441	785	12,777
Western Australia	10	56	520	723	†	†	8,540
Tasmania ..	3	9	66	284	31	137	2,931

* Included in private schools. † Not available.

The figures for New South Wales are exclusive of students instructed at home through the medium of correspondence classes.

In Victoria it is explained that the preponderance of male students is due to the larger enrolment of males in the correspondence classes.

§ 8. Diffusion of Education.

1. General Education.—A rough indication of the state of education of the people is obtained at each Census under the three headings, "read and write," "read only," and "cannot read." The grouping of the whole population, exclusive of aborigines, in these three divisions is given for each Census since 1861 :—

EDUCATION AT CENSUS PERIODS, 1861 TO 1911.

(COMMONWEALTH.)

State or Territory.	1861.	1871.	1881.	1891.	1901.	1911.	
N.S.W.*	Read & write	188,543	296,741	507,067	835,562	1,071,935	1,379,631
	Read only ..	46,024	56,391	49,372	43,539	29,728	6,442
	Cannot read	116,293	149,866	193,386	244,853	253,183	260,661
Victoria	Read & write	328,362	478,464	653,346	908,490	998,010	1,136,289
	Read only ..	57,351	70,953	47,950	32,794	21,852	4,630
	Cannot read	152,915	180,781	160,270	198,556	181,208	174,632
Q'land	Read & write	17,152	74,940	136,436	276,381	376,294	508,703
	Read only ..	3,680	12,080	13,657	14,618	11,737	3,416
	Cannot read	9,227	33,084	63,432	102,719	110,098	93,694
S. Aust.†	Read & write	72,190	117,349	200,057	236,514	290,748	344,095
	Read only ..	18,535	21,509	15,267	9,571	8,283	1,785
	Cannot read	36,105	46,768	64,541	74,346	64,126	62,678
W. Aust.	Read & write	7,683	14,166	19,684	34,254	150,099	237,629
	Read only ..	1,301	2,717	2,430	2,061	3,107	917
	Cannot read	5,853	7,902	7,594	13,467	30,918	43,568
Tasm'nia	Read & write	48,282	55,941	74,966	103,138	133,579	155,295
	Read only ..	13,136	13,946	9,606	6,287	3,907	918
	Cannot read	28,559	29,441	31,133	37,242	34,989	34,998
Northern Ter.‡	Read & write	..	..	..	..	..	2,397
	Read only ..	..	..	..	..	..	34
	Cannot read	..	..	..	..	..	879
Federal Ter.§	Read & write	..	..	..	..	..	1,424
	Read only ..	..	..	..	..	..	14
	Cannot read	..	..	..	..	..	276
C'wealth	Read & write	662,212	1,037,601	1,591,556	2,394,339	3,020,665	3,765,463
	Read only ..	140,027	177,596	138,282	108,870	78,614	18,156
	Cannot read	348,952	447,842	520,356	671,183	674,522	671,386

* Including Federal Territory prior to 1911. † Including Northern Territory prior to 1911.
 ‡ Included in South Australia prior to 1911. § Included in New South Wales prior to 1911.

The proportion in the Commonwealth of the various classes per 10,000 of the population is shewn below for each Census period :—

PROPORTION OF EDUCATED AND ILLITERATE PER 10,000 PERSONS, 1861 TO 1911.

(COMMONWEALTH.)

Division.	1861.	1871.	1881.	1891.	1901.	1911.
Read and write	5,752	6,239	7,073	7,543	8,004	8,452
Read only ..	1,217	1,068	615	343	208	41
Cannot read ..	3,031	2,693	2,312	2,114	1,788	1,507

2. Education of Children.—The figures in the preceding tables refer to the entire population of the Commonwealth, and as the age constitution of those dwelling in the various portions of Australia underwent considerable modifications during the period dealt with, a far more reliable test of the diffusion of education will be obtained by a comparison of the Census returns in regard to children of school age. For comparative purposes this has been taken to include all children in the group over five and under fifteen years of age, and the degree of education of these at each Census will be found below :—

EDUCATION OF CHILDREN AT CENSUS PERIODS, 1861 TO 1911.

(COMMONWEALTH.)

State or Territory.	1861.	1871.	1881.	1891.	1901.	1911.	
N.S.W.*	Read & write	34,040	68,776	121,735	196,240	251,187	291,450
	Read only ..	20,345	26,886	25,100	21,375	15,934	993
	Cannot read	25,472	32,924	41,663	48,580	60,734	34,793
Victoria	Read & write	42,268	122,739	170,713	201,199	236,515	237,028
	Read only ..	25,518	39,636	25,249	15,656	13,128	410
	Cannot read	19,341	29,490	21,421	27,441	27,765	19,621
Q'land	Read & write	2,156	12,698	33,317	62,402	95,635	117,347
	Read only ..	1,534	6,104	7,019	7,580	5,955	616
	Cannot read	1,629	6,015	9,615	16,257	18,827	8,633
S. Aust.†	Read & write	15,485	30,608	46,630	58,291	69,451	69,878
	Read only ..	8,748	12,432	7,926	4,618	4,229	248
	Cannot read	6,907	10,074	12,483	17,988	15,480	9,638
W. Aust.	Read & write	1,333	3,218	4,418	6,910	25,326	47,568
	Read only ..	226	617	1,260	933	1,815	159
	Cannot read	1,015	1,795	1,593	2,348	5,431	5,234
Tasm'nia	Read & write	11,919	17,335	17,188	24,007	32,890	36,351
	Read only ..	2,848	4,143	4,108	2,974	1,795	186
	Cannot read	4,581	6,663	6,606	8,829	8,475	5,575
Northern Ter.‡	Read & write	..	..	..	..	..	195
	Read only ..	..	..	..	..	..	..
	Cannot read	..	..	..	..	..	118
Federal Ter.§	Read & write	..	..	..	..	..	322
	Read only ..	..	..	..	..	..	2
	Cannot read	..	..	..	..	..	47
C'wealth	Read & write	107,201	255,374	394,001	549,049	711,004	800,139
	Read only ..	59,219	89,818	70,662	53,136	42,856	2,614
	Cannot read	58,945	86,961	93,381	121,443	136,712	83,659

* Including Federal Territory prior to 1911.
 † Included in South Australia prior to 1911.

‡ Including Northern Territory prior to 1911.
 § Included in New South Wales prior to 1911.

In the case of Tasmania full details for the years 1861 and 1871 are not available, and the figures for those years are approximate. The variation in degree of education may be more readily seen by reducing the foregoing figures to the basis of proportion per 10,000, and the results so obtained are embodied in the following table, a glance at which is sufficient to demonstrate the remarkable strides that at least the lower branches of education have made since 1861. In that year, only 47 per cent. of the children of school age could read and write, while 26 per cent. were illiterate. The returns for 1911 shew that the proportion of those who could read and write had increased to over 90 per cent., while the totally ignorant had declined by nearly two-thirds.

EDUCATION OF CHILDREN (AGES 5 TO 14) PER 10,000 AT CENSUS PERIODS,
1861 TO 1911.

(COMMONWEALTH.)

State or Territory.	1861.	1871.	1881.	1891.	1901.	1911.	
N.S.W.*	Read & write	4,263	5,349	6,458	7,372	7,662	8,907
	Read only..	2,547	2,091	1,332	803	486	30
	Cannot read	3,190	2,560	2,210	1,825	1,852	1,063
Victoria	Read & write	4,851	6,397	7,853	8,236	8,526	9,221
	Read only..	2,929	2,066	1,162	641	473	16
	Cannot read	2,220	1,537	985	1,123	1,001	763
Q'land	Read & write	4,053	5,116	6,670	7,236	7,942	9,269
	Read only..	2,884	2,460	1,405	879	495	49
	Cannot read	3,063	2,424	1,925	1,885	1,563	682
S. Aust.†	Read & write	4,973	5,763	6,956	7,206	7,790	8,761
	Read only..	2,809	2,341	1,182	571	474	31
	Cannot read	2,218	1,896	1,862	2,223	1,736	1,208
W. Aust.	Read & write	5,179	5,716	6,076	6,780	7,775	8,982
	Read only..	878	1,096	1,733	916	557	30
	Cannot read	3,943	3,188	2,191	2,304	1,668	988
Tasm'nia	Read & write	6,160	6,160	6,160	6,704	7,820	8,632
	Read only..	1,472	1,472	1,472	830	416	44
	Cannot read	2,368	2,368	2,368	2,466	1,964	1,324
Northern Ter.‡	Read & write	..	..	..	..	..	6,230
	Read only..	..	..	..	..	..	..
	Cannot read	..	..	..	..	..	3,770
Federal Ter.§	Read & write	..	..	..	..	..	9,868
	Read only..	..	..	..	..	..	5
	Cannot read	..	..	..	..	..	127
C'wealth	Read & write	4,757	5,910	7,061	7,588	7,984	9,027
	Read only..	2,628	2,078	1,266	734	481	29
	Cannot read	2,615	2,012	1,673	1,678	1,535	944

* Including Federal Territory prior to 1911.

† Including Northern Territory prior to 1911.

‡ Included in South Australia prior to 1911.

§ Included in New South Wales prior to 1911.

3. Education as shewn by Marriage Registers.—Another common method of testing the spread of education is to compare the number of mark signatures with the total number of persons married during each year of a series. The percentage of males and females signing with a mark to the total persons married in the Census years 1861 to 1901, and during each of the last nine years, was as follows. The figures refer to marriages in the Commonwealth in respect of which information was obtainable.

ILLITERACY SHOWN BY MARRIAGE SIGNATURES, 1861 TO 1917.

(COMMONWEALTH.)

Year.	Proportion Signing with Marks of Total Persons Married.			Year.	Proportion Signing with Marks of Total Persons Married.		
	Males.	Females.	Total.		Males.	Females.	Total.
	Per cent.	Per cent.	Per cent.		Per cent.	Per cent.	Per cent.
1861	18.50	30.69	24.60	1911	0.56	0.54	0.55
1871	10.58	16.40	13.49	1912	0.43	0.45	0.44
1881	4.34	6.78	5.56	1913	0.36	0.38	0.37
1891	2.27	2.40	2.34	1914	0.41	0.38	0.39
1901	1.35	1.29	1.32	1915	0.27	0.27	0.27
1909	0.65	0.62	0.64	1916	0.37	0.32	0.35
1910	0.56	0.59	0.58	1917	0.37	0.31	0.34

The table shews that there has been a large diminution in illiteracy, and judging from the figures for the last few years the proportion bids fair to practically disappear. Up to 1891 there was a higher proportion of illiteracy amongst females, but during the later years the rates have been very even.

§ 9. Miscellaneous.

1. *Scientific Societies.*—(a). *Royal Societies.* Despite the trials and struggles incidental to the earlier years of the history of Australia, higher education and scientific advancement were not lost sight of. Thus a Society was founded in Sydney as far back as 1821, under the name of the Philosophical Society of Australasia, Sir Thomas Brisbane being its first president. Scientific work was fitfully carried on by means of various Societies until the year 1850, when the Australian Philosophical Society was founded. This Society is the progenitor of the present Royal Society of New South Wales, the latter title dating from the 12th December, 1866. Some of the papers of the old Philosophical Society were published in 1825 under the title of "Geographical Memoirs of New South Wales" (Barron Field), and contain much that is interesting in regard to the early history of Australia. One volume containing the Transactions of the Philosophical Society of New South Wales (1862-65) was published in 1866. The journal of the Society did not begin to bear a serial number, however (vol. 1), until the year 1867. "Transactions of the Royal Society of New South Wales" were issued in 1867, the title of the series being altered to "Journal" in 1876. Up to 31st March, 1918, 52 volumes had been published. The exchange list comprises the names of 360 kindred societies. At the present time the library contains about 25,000 volumes and pamphlets, valued at about £7,000. Income and expenditure for the year ended 31st March, 1918, were £1,337 and £1,124 respectively, and the Society had on the same date 307 members.

The Royal Society of Victoria dates from 1854, in which year the Victorian Institute for the Advancement of Science and the Philosophical Society of Victoria were founded. These were amalgamated in the following year under the title of the Philosophical Institute of Victoria, whilst the Society received its present title in 1860. The first volume of its publications dates from 1855. The earlier publications dealt largely with Physics, later on Biology became prominent, while at present a large number of papers deal with Geology. Up to 1918, 64 volumes of proceedings had been issued. The Society exchanges with 320 kindred bodies. The constitution of the Society states that it was founded "for the promotion of art, literature, and science," but for many years past science has monopolised its energies. The library contains over 12,000 volumes, valued at £3,200. Income for the year 1918 amounted to £440, and expenditure to £420. There are 170 members on the roll.

The inaugural meeting of the Royal Society of Queensland was held on the 8th January, 1884, under the presidency of the late Sir A. C. Gregory. The Society was formed "for the furtherance of the natural and applied sciences, especially by means of

original research." Shortly after its formation it received an addition to its ranks by the amalgamation with it of the Queensland Philosophical Society, which was started at the time when Queensland became a separate colony. At the end of 1918 the members numbered 88; publications issued, 30 volumes; library, 6,000 volumes; societies on exchange list, 161. Income and expenditure in 1918 amounted to £170 and £166 respectively.

The present Royal Society of South Australia grew out of the Adelaide Philosophical Society, which was founded in 1853, its object being the discussion of all subjects connected with science, literature and art. Despite this programme, the tendency of the papers was distinctly scientific, or of a practical or industrial nature. With the advent of the late Professor Tate the society became purely scientific. Permission to assume the title of "Royal" was obtained in 1879, the Society thenceforward being known as "The Royal Society of South Australia." In 1903 the society was incorporated. In 1918 the number of members was 92. The income for the year 1918 was £526, and expenditure £445. Up to 1918 the Society had issued four volumes of proceedings and six parts of memoirs, exclusive of several individual papers published in earlier years. The exchange list numbers about 194, while the library contains 3,400 volumes and over 1,600 pamphlets.

Permission to assume the title of Royal Society was granted to the Natural History and Science Society of Western Australia in March, 1914. This Society has grown out of the Mueller Botanic Society, founded in July, 1897. The objects of the society are the study of natural history and pure science, promoted by periodical meetings and field excursions, the maintenance of a library, and issue of reports of proceedings. It numbers at present 97 members, whose subscriptions form its main source of revenue, the income and expenditure in 1918 being respectively £75 and £88. Five volumes of proceedings were issued as *Journal of the Natural History and Science Society of Western Australia*, and four as of the Royal Society. Its publications are exchanged with 120 institutions at home and abroad. The library contains 200 volumes, besides 350 unbound journals, pamphlets, etc.

The Royal Society of Tasmania (the first Royal Society outside the United Kingdom) was inaugurated by Sir Eardley Wilmot, Lieutenant-Governor of Van Diemen's Land, on the 14th October, 1843. It may be mentioned, however, that a scientific society had been formed as far back as 1838 under the presidency of Sir John Franklin, then Governor of the colony, and in 1841 the number of resident members was 31, and corresponding members, 38. The meetings of this parent society were held at Government House, and three volumes of proceedings were issued. A large portion of the Colonial Gardens, together with a grant of £400, was given to the Society. A library and museum were established in 1848. In 1885 the museum and gardens were given back to the State, the Society being granted room in the museum for its library and meetings. The names of Captains Ross and Crozier, of H.M.S. *Erebus* and *Terror*, appear in the list of the first corresponding members. The society, which, since 1844, has published 57 annual volumes of proceedings, possesses 124 members, 13 corresponding members, exchanges with 216 kindred bodies, and has a library containing 13,000 volumes, in addition to manuscripts, etc., valued at over £4,000. Income for the year 1918 was £258, and expenditure £287.

(b) *Other Scientific Societies.* The Australasian Association for the Advancement of Science, founded in 1888, has its headquarters in Sydney. It meets usually in each State biennially in turn. Its receipts to date were about £14,000, including Government aid to the amount of £4,000. The library contains 4,000 volumes, valued at £400. Up to date, 14 volumes of proceedings have been issued. The exchange list numbers 176. The Linnean Society of New South Wales, with headquarters in Sydney, was founded in 1875, and possesses a library of 10,000 volumes, valued at £6,000. Up to date 42 volumes of proceedings have been issued. Exchanges number 188. This Society maintains five investigators engaged in research work, and owes its development almost entirely to the benefactions of Sir William Macleay. The number of ordinary members at the end of 1917 was 154. Income for the year came to £1,245, and expenditure to £929. The special revenue for research purposes only was £2,849, and the expenditure £2,314. The British Astronomical Society has a branch in Sydney, and in some of the States the British Medical Association has branches.

The Chemical Society of Western Australia was founded in 1915, for the promotion of the study of Chemistry and the furtherance of the interests of professional chemists. Meetings are held monthly. There is a council consisting (in 1917) of seven members.

In addition to the societies enumerated above, there are various others in each State devoted to branches of scientific investigation, particulars respecting which are not at present available.

2. Libraries.—As far as can be ascertained the total number of libraries in the Commonwealth at the latest available date was about 1,700, and the number of books contained therein is estimated at about four millions. In each of the capital cities there is a well-equipped Public Library, the institutions in Melbourne and Sydney especially comparing very favourably with similar institutions elsewhere. The new reading room at the Melbourne Library ranks amongst the finest in the world. It was opened in November, 1913, and has a diameter of 114 feet, with a similar height, and is capable of seating 320 readers at a time, all of whom are under efficient supervision from the centre of the room. The following statement gives the number of volumes in the Public Library of each capital city :—

METROPOLITAN PUBLIC LIBRARIES.

City.	Number of Volumes in—			Total.
	Reference Branch.	Ordinary Lending Branch.	Country Lending Branch.	
Sydney	295,493	*	13,487	308,980
Melbourne	251,294	34,967	..	286,261
Brisbane	40,078	..	..	40,078
Adelaide	102,530	32,807	..	135,337
Perth	107,189	13,410	..	120,599
Hobart	21,000	..	..	21,000

* The maintenance and control of the lending branch of the Public Library at Sydney were transferred in 1908 to the Municipal Council. At the end of December, 1917, the books numbered 26,000.

The Mitchell Library in Sydney consisted of over 60,000 volumes and pamphlets, and 300 paintings, principally relating to Australasia, valued at £100,000, and bequeathed in 1907 by Mr. D. S. Mitchell, together with an endowment of £70,000. The testator stipulated that the regulations of the British Museum were to be adopted as far as practicable, hence the library is the resort of specialists. There are now 96,000 volumes in the library. During 1917 the Mitchell Library was further enriched by a donation of 3,676 printed volumes, 117 volumes of manuscript, and 235 pamphlets from the working library of the late John Tebbutt, of Windsor, the well-known astronomer. A very fine collection of postage and fiscal stamps, estimated by philatelists to be worth at least £15,000, was presented to the trustees by Mr. H. L. White, of Belltrees, near Scone, in June of the same year. The Fisher Library at the Sydney University contains 100,000 volumes.

For some years past efforts have been made in South Australia to collect original documents likely to be of service in compiling a history of the State, and recently the question of founding a Public Records or Archives Office to house them has been under consideration. So far back as 1914 Professor Henderson, of Adelaide University, under commission from the South Australian Government, visited and reported on the system of keeping archives in England, France, Belgium, Holland, and Ceylon, and obtained valuable information also from the United States and Canada. Although owing to financial considerations it has not yet been possible to erect the necessary buildings for the department of historical documents, valuable preliminary work has been done in connection with the examination, classification, and permanent preservation of the available papers.

The library at Launceston, in Tasmania, contains 29,000 volumes.

The number of libraries in receipt of State or municipal aid, together with the estimated number of books contained therein, is given below for each State :—

SUBSIDISED LIBRARIES AND BOOKS THEREIN.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.
Number of libraries	*	472	231	210	251	31	3
Estimated number of books ..	1,250,000	1,165,000	376,000	573,000	253,000	108,000	5,000

* Not available.

The figures in the above table can be taken only as approximations, as in many instances returns were not received from various institutions. The return for New South Wales includes the Public Library, the Mitchell Library, and the Sydney Municipal Library. Amongst other important libraries not included, may be enumerated those at the Sydney University and the Australian Museum, which contain 117,000 and 22,000 volumes respectively, and the Parliamentary Library with over 52,000 volumes. There are also over 2,700 libraries, with an estimated total of 362,000 volumes, attached to State Schools.

3. **Museums.**—The Australian Museum in Sydney, founded in 1836, is the oldest institution of its kind in Australia. In addition to possessing a fine collection of the usual objects to be met with in kindred institutions, the Museum contains a very valuable and complete set of specimens of Australian fauna. The cost of construction of the building was £79,000. The number of visitors to the institution in 1917 was 179,000, and the average attendance on week-days 485, and on Sundays 971. The expenditure for 1917 amounted to £9,121. A valuable library containing over 22,000 volumes is attached to the Museum. Representative collections, illustrative of the natural wealth of the country, are to be found in the Agricultural and Forestry Museum, and the Mining and Geological Museum. The latter institution prepares collections of specimens to be used as teaching-aids in country schools. The "Nicholson" Museum of Antiquities, the "Macleay" Museum of Natural History, and the Museum of Normal and Morbid Anatomy, connected with the University, and the National Herbarium and Botanical Museum at the Sydney Botanic Gardens, are all accessible to the public. There is a fine Technological Museum in Sydney, with branches in six country centres, the combined institutions containing over 120,000 specimens. Valuable research work has been undertaken by the scientific staff in connection with oil and other products of the eucalyptus. The number of visitors at the Technological Museums during 1917 was about 240,000.

The National Museum at Melbourne, devoted to Natural History, Geology, and Ethnology, is located in the Public Library Building. The National Art Gallery is also situated in the same building. The Industrial and Technological Museum, opened in 1870, contains about 9,000 exhibits. There is a fine Museum of Botany and Plant Products in the Melbourne Botanic Gardens. In addition to the large collection in the geological museum attached to the Mines Department in Melbourne, well-equipped museums of mining and geological specimens are established in connection with the Schools of Mines in the chief mining districts.

The Queensland Museum dates from the year 1871, but the present building was opened in January, 1901. Since its inauguration the Government has expended on the institution a sum of £91,815, of which buildings absorbed £19,589, purchases £27,999, and salaries £44,426. The number of visitors during the year was 70,154, of whom 23,038 visited the institution on Sundays. The Queensland Geological Survey Museum has branches in Townsville, opened in 1886, and in Brisbane, opened in 1892.

Under the Public Library Act of 1884 the South Australian Institute ceased to exist, and the books contained therein were divided amongst the Museum, Public Library, and Art Gallery of South Australia, and the Adelaide Circulating Library. The Museum was attended by 84,000 visitors in 1917.

The latest available returns show that the Western Australian Museum contains altogether 89,000 specimens, of an estimated value of £78,500. The Museum is housed in the same building as the Art Gallery, and the visitors to the combined institutions during the year reached 85,000. The expenditure for the year 1917-18 was £1,773, and the Government grants for the year amounted to £2,050.

There are two museums in Tasmania—the Tasmanian Museum at Hobart, and the Victoria Museum and Art Gallery at Launceston—both of which contain valuable collections of botanical and mineral products. The Tasmanian Museum received aid from the Government during last year to the extent of £600. The Hobart institution cost £9,500 to construct, and that at Launceston £6,000.

4. Art Galleries.—Information regarding the State collections of objects of art in the various capitals is in some cases very meagre, while the method of presentation does not admit of any detailed comparisons being made. The National Art Gallery of New South Wales originated in the Academy of Art founded in 1871. Cost of construction is returned at £94,000. The contents, which are valued at £152,000, comprise 443 oil paintings, 413 water colours, 653 black and white, 168 statuary and bronzes, and 440 ceramics, works in metal and miscellaneous. During 1917 the average attendance on week days was 444, and on Sundays 1,735.

The National Gallery at Melbourne at the end of 1917 contained 584 oil paintings, 4,686 objects of statuary, bronzes and ceramics, and 14,125 water-colour drawings, engravings, and photographs. The Gallery is situated in the same building as the Museum and Public Library, the total cost of construction being £325,000. Several munificent bequests have been made to the institution. That of Mr. Alfred Felton, given in 1904, amounts to about £8,000 per annum. In 1913, Mr. John Connell presented his collection of art furniture, silver, pictures, etc., the whole being valued at £10,000. At the end of 1917 the Ballarat Art Gallery contained 222 oil paintings and 169 water colours, etc., while there are some valuable works of art in the smaller galleries at Bendigo, Castlemaine, Geelong, and Warrnambool.

The Queensland National Art Gallery, situated in the Executive Buildings, Brisbane, was founded in 1895, and contains a small, but well chosen, collection of pictures. At latest available date there were on view 93 oil paintings, 23 water colours, 99 black and white, and 29 pieces of statuary, together with various prints, mosaics, and miniatures. Exclusive of exhibits on loan, the contents are valued at about £10,000.

The Art Gallery at Adelaide dates from 1880, when the Government expended £2,000 in the purchase of pictures, which were exhibited in the Public Library building in 1882. The liberality of private citizens caused the Gallery to rapidly outgrow the accommodation provided for it in 1889 at the Exhibition Building, and on the receipt of a bequest of £25,000 from the late Sir T. Elder, the Government erected the present building, which was opened in April, 1900. The Gallery also received bequests of £16,500 in 1903 from the estate of Dr. Morgan Thomas, and of £3,000 in 1907 from Mr. David Murray. At the latest available date there were in the Gallery 229 oil paintings, 69 water colours, and 24 statuary. Building and site are valued at upwards of £31,000. Visitors during the year 1917 numbered 86,000.

The foundation stone of the present Art Gallery at Perth in Western Australia was laid in 1901, the building and site being valued at £60,000. The collection comprises 96 oil paintings, 51 water colours, 192 black and white, 265 statuary, and miscellaneous metal works, etc.

In Tasmania the Art Gallery at Hobart was opened in 1887. Its present contents consist of 96 paintings and 81 etchings and black and white drawings. The building is valued at £9,500.

The Art Gallery at Launceston was erected in 1888 at a cost of £5,000, and opened on the 2nd April, 1891. Only a small proportion of the contents belong to the Gallery, the bulk of the pictures being obtained on loan. At latest date there were on view 80 oil paintings and 44 water colours valued at £5,000. The building is valued at £6,000. Average attendance of visitors on week days is returned as 96 and on Sundays 200.

5. State Expenditure on all Forms of Educational Effort.—The expenditure from the Consolidated Revenue in each State and Territory on all forms of educational and scientific activity during each of the last five financial years was as follows :—

EXPENDITURE ON EDUCATION, SCIENCE, AND ART, 1913-14 TO 1917-18.

State or Territory.		1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
New South Wales	Total £	1,735,404	1,651,571	1,717,040	1,870,043	1,968,366
	Per head	18/11	17/9	18/4	20/0	21/0
Victoria	Total £	1,147,319	1,218,459	1,161,335	1,171,757	1,227,629
	Per head	16/3	17/0	16/5	16/9	17/6
Queensland	Total £	702,491	807,915	703,664	763,591	827,332
	Per head	21/6	23/10	20/8	22/10	24/4
South Australia	Total £	342,209	342,464	337,307	376,730	397,210
	Per head	15/6	15/6	15/4	17/5	18/5
Western Australia	Total £	349,371	351,516	348,344	368,603	397,661
	Per head	21/9	21/9	21/11	23/10	25/9
Tasmania	Total £	112,364	124,791	127,016	132,590	140,766
	Per head	11/2	12/5	12/7	13/3	14/2
Northern Territory	Total £	3,916	2,073	2,180	2,257	2,479
	Per head	21/4	10/5	9/7	9/6	..
Commonwealth	Total £	4,393,074	4,498,789	4,396,886	4,685,571	4,961,443
	Per head	18/0	18/3	17/10	19/1	20/3

The comparatively heavy increases in Queensland and Western Australia since 1912 are due to the inclusion of expenditure in connection with the newly-established Universities in those States, and in the case of the latter, also, to large increases in teachers' salaries and allowances.

SECTION XXIII.

PUBLIC JUSTICE.

§ 1. Police.

1. **Introductory.**—In previous issues of the Year Book a résumé was given of the evolution of the police force in Australia up to the passing of the Police Act of 1862 (25 Vic. No. 16) in New South Wales, but considerations of space preclude its inclusion in the present volume.

In general terms the police forces of Australia may be said to be satisfactory both in regard to physique and intelligence, while as regards methods of prevention and detection of crime it is believed that the system in vogue here compares very favourably with those of the older-settled countries of the world.

2. **Strength of Police Force.**—The strength of the police force in each State during the five years ended 1917 was as follows. It may be mentioned that the police forces are entirely under State control, but, by arrangement, the Commonwealth Government utilises their services in various directions, such as the collection of Commonwealth electoral rolls, etc. :—

POLICE FORCES IN THE COMMONWEALTH, 1913 TO 1917.

State.	Area of State in Sq. Miles.	1913.	1914.	1915.	1916.	1917.
New South Wales	310,372	2,582	2,627	2,613	2,587	2,557
Victoria ..	87,884	1,753	1,739	1,737	1,638	1,650
Queensland ..	670,500	1,108	1,112	1,194	1,176	1,152
South Australia..	380,070	500	556	541	567	540
Western Australia	975,920	477	482	495	473	472
Tasmania ..	26,215	237	231	233	232	235
Northern Territory	523,620	26	25	26	27	27
Commonwealth	2,974,581	6,683	6,772	6,839	6,700	6,633

The figures for New South Wales for 1917 are exclusive of 39 "black trackers," i.e., natives employed in detection of offenders chiefly in outlying districts, and five female searchers. In Queensland there were 96 native trackers. The South Australian returns for 1917 are exclusive of nine "black trackers" and one female searcher. The Northern Territory had twenty-four "black trackers" in 1917. There are also 43 "black trackers" in Western Australia and four searchers not included in the table.

Average Number of Inhabitants to each Police Officer. The average number of inhabitants to each officer in each State during the same period is as follows. In considering these figures, allowance must, of course, be made for the unequal area and unequal distribution of the population of the various States.

INHABITANTS TO EACH POLICE OFFICER, 1913 TO 1917.

(COMMONWEALTH.)

State.	Number of Persons per Sq. Mile, 1911 Census.	Inhabitants to each Police Officer.				
		1913.	1914.	1915.	1916.	1917.
New South Wales	5.31	710	709	716	719	732
Victoria ..	14.97	805	823	816	855	855
Queensland ..	0.90	595	608	570	569	598
South Australia..	0.46	880	794	810	762	800
Western Australia	0.29	672	670	642	653	656
Tasmania ..	7.29	851	872	863	862	868
Northern Territory	..	141	159	175	179	184
Commonwealth	1.50	729	730	721	728	739

The figures in the preceding tables shew a great disparity in the relative numbers of the population protected by each police officer in the various States, and also in the relative area of territory to each officer. Western Australia and South Australia exhibit the largest figures in the latter respect, this, of course, being due to the fact that extensive areas in each State are as yet unpeopled by white settlers.

3. Duties of the Police.—In addition to the ordinary employment attaching to their office, the police are called upon to perform many duties which in other countries are carried out by various functionaries. Thus, in Queensland, according to the Commissioner's report for 1917, no less than sixty-five subsidiary offices are held by the police. As far as the statistician is concerned, it is found that the expert local knowledge possessed by the police renders their services in the collection of such returns as those relating to the agricultural, pastoral, and manufacturing industries, private schools, etc., more than ordinarily valuable. Then, again, the fact that their services are enlisted by such widely different departments as those dealing with mines, stock, agriculture, elections, registrations of births, deaths, and marriages, forestry, fisheries, explosives, old-age pensions, lunacy, public works, labour, etc., greatly enhances their general alertness by widening the range of their experience. Occasionally the objection is heard in some quarters that these special tasks involve some degree of sacrifice of ordinary routine duties, but that the general intelligence of the Australian police is adequate to the obligation to perform these tasks, besides being most creditable, results in a great saving of the public money.

4. Cost of Police Forces.—The expenditure from Consolidated Revenue on the police forces in each State during the five years 1913 to 1917 is shewn in the following table. Cost of buildings has been excluded from the return :—

COST OF POLICE FORCES IN THE COMMONWEALTH, 1913 TO 1917.

State.	1913.	1914.	1915.	1916.	1917.
	£	£	£	£	£
New South Wales ..	593,406	592,694	603,347	649,093	709,649
Victoria	354,264	380,724	365,821	356,885	371,413
Queensland	304,817	302,633	302,209	322,422	337,259
South Australia ..	129,834	132,445	131,580	127,632	136,158
Western Australia ..	126,532	133,452	131,806	125,446	136,752
Tasmania	45,237	45,972	45,952	47,320	49,448
Northern Territory ..	10,614	10,307	10,216	10,260	10,210
Commonwealth ..	1,564,704	1,598,227	1,590,931	1,639,058	1,750,889

The total for New South Wales includes £63,000 payment to Police Superannuation Fund. Similar payments in Victoria and Queensland amount to £27,500 and £35,500 respectively, while smaller sums are included in the returns for other States. The cost per head of the population in each State for the period 1913 to 1917 was as follows :—

COST OF POLICE PER INHABITANT, 1913 TO 1917.

(COMMONWEALTH.)

State.	1913.	1914.	1915.	1916.	1917.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
New South Wales ..	6 7	6 4	6 6	7 0	7 6
Victoria ..	5 1	5 4	5 2	5 1	5 3
Queensland ..	9 4	9 0	8 11	9 8	9 10
South Australia ..	6 0	6 0	6 0	5 11	6 3
Western Australia ..	8 1	8 3	8 3	8 1	8 10
Tasmania ..	4 7	4 7	4 7	4 9	4 10
Northern Territory ..	58 0	52 0	44 9	43 0	41 2
Commonwealth ..	6 6	6 6	6 6	6 9	7 2

The relatively high cost per head in Queensland and Western Australia is due to the fact that there are in those States extensive areas of sparsely settled country, in which mounted patrols have to be maintained.

In view of the small number of its white population and the vast extent of country to be patrolled, the figures for the Northern Territory necessarily shew a very high average. The duties of the police, moreover, chiefly pertain to matters connected with the control of aborigines.

Expenditure in connection with police patrol in Papua during 1917-18 amounted to about £13,000.

§ 2. Lower (Magistrates') Courts.

1. **Introductory.**—In considering the criminal returns of the various States, due allowance must be made on account of several factors, such as the relative powers of the courts, both lower and higher, etc. In the case of lower courts, the actual number of laws in each State, the breach of which renders a person liable to fine or imprisonment, must be taken into account. Again, the attitude of the magistracy and police towards certain classes of offences is a factor, for in the case of liquor laws, or laws connected with vagrancy or gaming, the views of magistrates, and instructions issued to the police, may be responsible for considerable variations in the returns. The strength and distribution of the police forces, and the age constitution and distribution of the State's population, also influence the results. In any consideration of criminal returns, due weight should also be given to the prevalence of undetected crime, but information on this point can only be obtained for the State of Victoria. It may be mentioned that each State has its own separate judicial system, the Commonwealth jurisdiction being confined to the High Court of Australia, which is largely a Court of Appeal intermediate to the Privy Council, although it has also original jurisdiction, and the Commonwealth Court of Arbitration and Conciliation. Full particulars regarding the judicial power of the Commonwealth will be found in Chapter III. of the Commonwealth Constitution (see page 25).

2. **Powers of the Magistrates.**—In New South Wales there is no general limit to the powers of the magistrates in regard to offences punished summarily, their authority depending in such case on the statute which creates the offence and gives them jurisdiction. Except in the case of a very few statutes, and excluding cumulative sentences, the power

of sentence is limited to six months. Imprisonment in default of payment of fine is regulated by a scale limiting the maximum period according to the sum ordered to be paid, but in no case exceeding twelve months. Actions for debt and damage within certain limits also come within magisterial jurisdiction. In cases of debts, liquidated or unliquidated, the amount recoverable is not exceeding £50 before a court constituted of a stipendiary or police magistrate at certain authorised places, and not exceeding £30 at any other place before a court constituted of a stipendiary or police magistrate or two or more justices of the peace. The amount in actions of damage is limited to £10, but may extend to £30 by consent of parties.

In Victoria, the civil jurisdiction of magistrates is restricted to what may be designated ordinary debts, damages for assault, restitution of goods, etc., where the amount in dispute does not exceed £50. No definite limit is fixed to the powers of the magistrates on the criminal side, and for some offences sentences up to two years may be imposed. The proportion of long sentences is, however, comparatively small.

In Queensland, generally speaking, the maximum term of imprisonment which justices can inflict is six months, but in certain exceptional cases, such as offences against sections 233 and 445 of the criminal code (betting-houses and illegally using animals), sentences of twelve months may be imposed. No limit exists as to the extent to which cumulative sentences may be applied, but in practice the term is never very lengthy.

In South Australia, under the Minor Offences Act, magistrates can impose sentences up to six months, and under the Summary Convictions Act, up to three months. The Police Act of 1869 gives power to sentence up to one year, with hard labour, in the case of incorrigible rogues; while under the Quarantine Act of 1877, and the Lottery and Gaming Act of 1875, sentences of two years may be imposed.

Under the Petty Sessions Act of 1867, in Tasmania, any person charged with having committed, or with having aided or abetted in the commission of an offence, in regard to property of a value not exceeding £10, may, on conviction, for a first offence, before two or more justices in Petty Sessions, be imprisoned for any term not exceeding one year, and for a term not exceeding two years for a second or subsequent offence.

3. Persons Charged at Magistrates' Courts.—The total number of persons who were charged before magistrates in each State is given below for the five years 1913 to 1917 :—

**PERSONS CHARGED BEFORE MAGISTRATES IN THE COMMONWEALTH,
1913 TO 1917.**

State.	1913.	1914.	1915.	1916.	1917.
New South Wales ..	92,107	94,766	86,576	82,036	71,658
Victoria	56,058	57,977	63,140	59,315	52,175
Queensland	29,166	29,635	30,047	25,206	24,243
South Australia ..	11,818	10,693	9,587	8,322	8,627
Western Australia ..	16,442	17,879	14,864	15,454	11,885
Tasmania	7,101	6,481	6,306	5,259	5,278
Northern Territory ..	139	203	287	313	239
Commonwealth ..	212,831	217,634	210,807	195,905	174,105

As the table shews, there was a large decrease in 1917 in charges in New South Wales, Victoria, Queensland, and Western Australia, small increases being recorded in South Australia and Tasmania.

Investigation of the returns shews, moreover, that considerable variations in the total for single States are occasioned by breaches of new Acts, or the more stringent enforcement of the provisions of existing Acts. For example, the increase in the Victorian figures for 1915 was due to the inclusion in the summons returns of over 10,000 cases in

connection with the Commonwealth Electoral Act. Any deductions drawn from the total returns as to the increase or otherwise of criminality must, therefore, be largely influenced by a careful analysis of the detailed list of offences. (See also § 2, 1, *ante*.)

The figures given in the tabulation above include, of course, a number of people who were wrongly charged, and statistically are not of general importance. The actual number of convictions in connection with the persons who appeared before the lower courts in each year of the period 1913 to 1917 is, therefore, given hereunder. A separate line is added shewing the committals to higher courts.

CONVICTIONS AND COMMITTALS AT MAGISTRATES' COURTS, 1913 TO 1917.

(COMMONWEALTH.)

State.		1913.	1914.	1915.	1916.	1917.
New South Wales ..	Convictions	79,079	81,217	73,248	68,615	59,999
	Committals	1,529	1,648	1,570	1,656	1,383
Victoria ..	Convictions	39,786	41,033	44,947	40,246	38,757
	Committals	611	571	634	552	495
Queensland ..	Convictions	26,782	27,244	27,625	23,161	21,985
	Committals	417	458	411	304	312
South Australia ..	Convictions	10,447	9,280	8,222	7,145	7,417
	Committals	141	135	105	71	82
Western Australia ..	Convictions	14,590	15,849	13,308	13,595	10,535
	Committals	150	147	*116	141	126
Tasmania ..	Convictions	6,471	5,852	5,492	4,614	4,722
	Committals	58	67	35	42	40
Northern Territory	Convictions	134	187	271	288	230
	Committals	2	2	1	3	3
Commonwealth	Convictions	177,289	180,662	173,113	157,664	143,645
	Committals	2,908	3,028	2,872	2,769	2,441

* Exclusive of four extradited.

4. **Convictions for Serious Crime.**—While the figures given in the preceding table refer to the entire body of convictions, the fact must not be lost sight of that they include a large proportion of offences of a technical nature, many of them unwittingly committed, against various Acts of Parliament. Cases of drunkenness and minor breaches of good order, which, if they can be said to come within the category of crime at all, at least do so in a very different sense to some other offences, also help to swell the list. The following table has, therefore, been prepared for the purpose of shewing the convictions at magistrates' courts for what may be regarded as the more serious offences, *i.e.*, against the person and property, either separately or conjointly, and forgery and offences against the currency:—

CONVICTIONS FOR SERIOUS CRIME AT MAGISTRATES' COURTS, 1913 TO 1917.

(COMMONWEALTH.)

State.	1913.	1914.	1915.	1916.	1917.
New South Wales ..	6,161	6,100	5,217	6,271	5,499
Victoria ..	2,405	2,705	2,994	2,736	2,830
Queensland ..	1,651	1,497	1,639	1,487	1,403
South Australia ..	571	665	607	522	490
Western Australia ..	1,111	1,237	1,005	1,014	845
Tasmania ..	657	611	558	441	390
Northern Territory ..	12	28	18	37	50
Commonwealth ..	12,568	12,843	12,038	12,508	11,507

Compared with the population the above figures give the following results per 10,000 inhabitants :—

CONVICTIONS FOR SERIOUS CRIME PER 10,000 INHABITANTS, 1913 TO 1917.

(COMMONWEALTH.)

State.	1913.	1914.	1915.	1916.	1917.
New South Wales	34.1	32.9	27.9	33.5	29.4
Victoria	17.3	19.0	21.0	19.4	20.0
Queensland	25.3	22.2	23.9	21.9	20.6
South Australia	13.2	15.1	13.8	12.1	11.3
Western Australia	35.4	38.2	31.2	32.2	27.4
Tasmania	33.5	30.8	28.0	22.3	19.6
Northern Territory	32.8	74.6	40.9	76.3	100.8
Commonwealth	26.2	26.1	24.3	25.5	23.5

5. **Decrease in Crime.**—The figures quoted in the preceding table shew that during the last five years the rate of serious crime has decreased considerably, while if the comparison be carried back to 1881 the position is seen to be still more satisfactory. The rate of convictions at magistrates' courts per 10,000 of the population is given below for each of the years 1881, 1891, 1901, 1912, and 1917. Only the more serious offences, particularised in the preceding sub-section, have been taken into consideration.

RATE OF CONVICTIONS FOR SERIOUS CRIME IN THE COMMONWEALTH, 1881 TO 1917.

Year.						Convictions per 10,000 Persons.
1881 .. ..	..	..	..	..	..	69.3
1891 .. ..	..	..	..	..	..	44.8
1901 .. ..	..	..	..	..	..	29.1
1912 .. ..	..	..	..	..	..	26.3
1917 .. ..	..	..	..	..	..	23.5

The figures already quoted refer to total convictions, and in respect of individuals necessarily involve a considerable amount of duplication, especially in minor offences, such as petty larcenies, etc., in which the same offender appears before the court many times in the course of the year.

6. **Causes of Decrease in Crime.**—The statistics given shew that there has been a considerable decrease in crime throughout Australia. The results so far quoted are restricted entirely to the lower or magistrates' courts. There has also been a gratifying decrease in regard to offences tried at the higher courts, as will be seen later.

Attempts have been made to account for this decline: *e.g.*, advance in education, enlightened penological methods, etc. Much depends upon what is meant by education. Many classed in census statistics as "educated" can barely read and write. In this connection, moreover, it ought not to be forgotten that collaterally with the introduction

of ordinary intellectual education certain people have departed from their pristine virtues. In regard to the deterrent effect of punishment, it may be said that in respect of many offences, notably drunkenness, vagrancy, petty larcenies, etc., it appears to be almost negligible. In general, punishment has declined in brutality and severity, and has improved in respect of being based to a greater extent upon a scientific penological system, though in this latter respect there is yet much to be desired. Recent advances in penological methods will be referred to in a subsequent section. Here it will be sufficient to remark that under the old *régime*, a prisoner on completion of a sentence in gaol was simply turned adrift on society, and in many cases sought his criminal friends, and speedily qualified for readmission to the penitentiary. Frequently he was goaded to this by mistaken zeal on the part of the police, who took pains to inform employers of the fact of a man having served a sentence in gaol. For a long time any assistance to discharged prisoners was in the hands of private organisations, such as the Salvation Army Prison Gate Brigade, but in some of the States, and notably in New South Wales, the authorities themselves look after the welfare of discharged prisoners in the way of finding work, providing tools, etc. Improvements in the means of communication and identification have been responsible for some of the falling-off noticeable in the criminal returns, the introduction of the Bertillon system having contributed to certainty of identification. In his report for the year 1910 the Inspector-General of Police in New South Wales states that "criminals have a wholesome dread of the finger print system, and I have not the slightest doubt that it is one of the principal causes of the diminution of serious crimes." Part of the improvement may no doubt be referred also to the general amelioration in social conditions that has taken place during the last fifty years.

As will be seen from the following table the restrictions on the consumption of intoxicants during the course of the war has been responsible for a great falling off in convictions for drunkenness.

7. *Drunkenness*.—The number of cases of drunkenness and the convictions recorded in connexion therewith during the period 1913 to 1917 will be found in the following table:—

CASES AND CONVICTIONS.—DRUNKENNESS, 1913 TO 1917.

(COMMONWEALTH.)

State.	1913.		1914.		1915.		1916.		1917.	
	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.
New South Wales	32,676	32,467	33,393	33,208	26,010	25,863	23,192	23,017	21,063	20,902
Victoria ..	14,782	7,676	14,437	7,425	13,453	7,080	11,316	6,049	7,575	4,101
Queensland ..	14,852	14,840	16,510	16,443	16,260	16,196	13,374	13,059	13,562	13,065
South Australia ..	5,994	5,962	5,282	5,243	4,060	4,027	3,451	3,433	3,097	3,072
Western Australia	5,353	5,302	5,795	5,770	4,836	4,806	4,081	4,045	3,855	3,830
Tasmania ..	729	721	685	661	628	612	488	480	415	407
Northern Territory	61	61	64	64	158	158	208	202	210	207
Commonwealth	74,447	67,029	76,166	68,814	65,405	58,748	56,110	50,285	49,777	45,584

The number of convictions is, as might naturally be expected, almost identical with the number of cases. Victoria, however, is an exception, but in this State it is explained that offenders are generally discharged on a first appearance, and no conviction is recorded, a similar procedure being also adopted in the case of those arrested on Saturday and detained in custody till Monday. The logic of excluding these cases from the list of convictions is certainly open to doubt.

The convictions for drunkenness per 10,000 of the population during each of the years from 1913 to 1917 are given hereunder:—

CONVICTIONS FOR DRUNKENNESS PER 10,000 INHABITANTS, 1913 TO 1917.

(COMMONWEALTH.)

State.	1913.	1914.	1915.	1916.	1917.
New South Wales	179.3	179.3	138.2	123.1	111.8
Victoria	55.1	52.2	49.7	42.9	29.2
Queensland	227.4	243.6	235.7	192.7	192.0
South Australia	137.5	119.1	91.5	79.3	71.1
Western Australia	168.9	178.4	149.1	128.5	124.1
Tasmania	36.8	33.3	30.7	24.2	20.5
Northern Territory	166.6	170.6	358.8	416.6	417.5
Commonwealth	139.5	139.9	118.7	102.5	93.0

The convictions for drunkenness taken by themselves are not an altogether satisfactory test of the relative sobriety of the inhabitants of each State, inasmuch as several important factors must be taken into consideration. The age and sex constitution of the people, for example, is by no means identical in each State, Western Australia having by far the largest proportion of adult males. Owing to the smallness of the population the figures for the Northern Territory are, of course, abnormal. The avocations of the people affect the result, since persons engaged in strenuous callings are, on the whole, more likely to indulge in alcoholic stimulants than those employed in less arduous ones. The distribution of the population is also a factor, the likelihood of arrest or summons for drunkenness obviously being greater in the more densely populated regions, and lastly, allowance must be made for the attitude of the magistracy, the police, and the public generally in regard to the offence. Due account also must be taken of the recent legislation dealing with the limitation of hours during which liquor may be sold in hotels.

It is not unusual to supplement statistics of drunkenness by furnishing also the relative consumption of alcoholic beverages. Deductions drawn therefrom will be very misleading if they fail to take into account also the consumption of non-intoxicating beverages such as tea and coffee, and the general habits of the people. Throughout the greater part of Europe, tea and coffee are consumed but sparingly, while Australia, as is well known, is one of the greatest tea-drinking countries of the world.

The following table shewing the consumption of spirits, wine, and beer per head of the population has, with the exception of the figures relating to the Commonwealth, been compiled from returns prepared by the British Board of Trade. The figures quoted for the Commonwealth refer to the year 1917-18, and for the other countries mentioned cover the quinquennium 1907-11.

CONSUMPTION OF ALCOHOLIC BEVERAGES IN VARIOUS COUNTRIES.

Country.	Consumption per Head of Population.			Country.	Consumption per Head of Population.		
	Spirits.	Wine.	Beer.		Spirits.	Wine.	Beer.
	Imp. Galls.	Imp. Galls.	Imp. Galls.		Imp. Galls.	Imp. Galls.	Imp. Galls.
United Kingdom	0.76	0.27	26.94	Canada ..	0.96	0.11	6.22
Commonwealth	0.50	0.50	11.92	German Empire	1.37	1.12	22.86
New Zealand ..	0.78	0.15	9.88	France ..	1.38	34.32	8.48
Union of South Africa ..	0.33	0.70	1.28	United States ..	1.04	0.54	16.72

8. Treatment of Drunkenness as Crime.—Though the problem of the correct method of dealing with dipsomania is by no means an easy one, it seems fairly clear that the present plan of bringing offenders before magistrates, and subjecting them to the penalty of imprisonment or fine, has little deterrent effect, as the same offenders are constantly reappearing before the courts. Further, the casting of an inebriate into prison, and placing him in his weakened mental state in the company of professional malefactors, doubtless tends to swell the ranks of criminals and certainly tends to lower his self-respect. Examination of the prison records in New South Wales some years ago disclosed the fact that over 40 per cent. of the gaol population had commenced their criminal career with a charge of drunkenness. During the last few years the dangers of moral contamination in this way have been more accurately appreciated, and a system of classification of prisoners has been adopted whereby the petty offender is as far as possible kept from association with the more evilly-disposed. The Comptroller-General of Prisons in Queensland stated in his report for the year 1907 that "the drunken habit in many cases is merely one of many symptoms which jointly indicate the existence of a graver condition than simple habitual drunkenness."

9. Remedial Treatment of Inebriates.—Legislation has been passed in each State providing for the commitment of inebriates to special Government institutions. The laws in the various States are as follows:—New South Wales, Inebriates Act 1912; Victoria, Inebriates Act 1915; Queensland, Inebriate Institutions Act 1896; South Australia, Inebriates Act 1908 and 1913; Western Australia, Inebriates Act 1912; Tasmania, Inebriates Act 1885, Inebriate Hospitals Act 1892. Curative work was first undertaken by the Government of New South Wales in 1907. In most cases the institutes are connected with the gaols, and, naturally, custodial measures are still a strong feature in their management; nevertheless, the results of remedial measures have been encouraging. In Victoria an institute purporting to be wholly remedial was founded in 1907. It may be mentioned that there are private retreats in various places in the Commonwealth, but these are not officially subsidised or inspected.

10. Treatment of Habitual Offenders.—In New South Wales the Habitual Criminal Act of 1905 gives judges the power of declaring a prisoner, after a certain number of sentences, to be an habitual criminal, and as such to be detained until, in the opinion of the authorities, he is fit to be at large. At the end of 1917 there were 27 persons in prison under this Act. Since the passing of the Act 70 males and 1 female have been declared to be habitual criminals. The Indeterminate Sentences Act came into force in Victoria in July, 1908, and up to the end of June, 1918, 330 prisoners had been released on probation or parole. Of this number, 132 completed their probation of two years without further lapse, but 9 became delinquent after their probation expired. The number re-convicted was 91, while 6 were returned on an order of the Board without conviction, and in 5 cases warrants were issued for non-observance of conditions of parole, making the total unsatisfactory cases 102 or 31 per cent. In several of the cases returned as unsatisfactory the delinquency, however, was of a minor character, and the offender was not re-committed to the reformatory prison. Since the passing of the Act 457 males and 20 females have been dealt with under its provisions. The provisions of the Habitual Criminals Amendment Act of 1907 were put into force in South Australia in 1909, and 22 criminals had been declared to be habitual offenders up to the end of 1917. Of these, 13 had been released after serving the indeterminate portion of their sentence. The Criminal Code Amendment Act of 1914, which makes provision for the detention and control of habitual criminals, was assented to in Queensland on the 3rd December, 1914, but up to the end of 1917 no prisoners had been brought under its provisions. Naturally it will be some time before the full effect of these measures on the prevalence of crime can be estimated. The Comptroller-General of Prisons in New South Wales states, however, that the system has exercised a wholesome deterrent effect on the criminal who is not a prisoner, while the Indeterminate Sentence Board in Victoria states that it has become impressed with the advantages which this form of sentence offers, both from a reformatory and deterrent standpoint, over the ordinary sentence. During the period in which the Habitual Criminals and Offenders Act of 1907 has been

in force in Tasmania, 74 men and 2 women have been released under its provisions, and the results, according to the Sheriff, have been satisfactory, only two prisoners having been reconvicted and sentenced to further imprisonment.

11. **Treatment of First Offenders.**—In all the States and in New Zealand statutes dealing with first offenders have been in force for some years, the dates of passing the Acts being as follows:—New South Wales, 1894; Victoria, 1890; Queensland, 1887; South Australia, 1887 and 1913; Western Australia, 1892; Tasmania and New Zealand, 1886. The method of procedure is practically the same in all cases, *i.e.*, with regard to most first offenders the magistrate or judge is empowered to allow the offender to go free on recognisances being entered into for his good behaviour for a certain period. In practice, this humane law has been found to work excellently, very few of those to whom its provisions have been extended having been found to relapse into crime.

12. **Children's Courts.**—Special courts for the trial of juvenile offenders have been established in New South Wales, Victoria, Western Australia, and New Zealand within the last few years, while Children's Courts, although not under that name, are practically provided for by the State Children's Acts of 1895 and 1900 in South Australia. The object of these courts is to avoid, as far as possible, the unpleasant surroundings of the ordinary police court.

13. **Committals to Superior Courts.**—In a previous section it has been pointed out that comparisons of criminality based on a consideration of the total returns from magistrates' courts are somewhat inadequate, seeing that the figures include numbers of cases which are merely technical breaches of laws having in some instances a purely local significance. The committals to higher courts give a better basis of comparison, although even in this connection allowance must be made for the want of uniformity in jurisdiction. The table below gives the number of committals in each year from 1913 to 1917, with the proportion of such committals per 10,000 of the population. The rates are shewn on a separate line.

COMMITTALS TO SUPERIOR COURTS, 1913 TO 1917.

(COMMONWEALTH.)

State.		1913.	1914.	1915.	1916.	1917.
New South Wales	{No.	1,573	1,699	1,633	1,707	1,383
	{Rate	8.7	9.2	8.7	9.1	7.4
Victoria	{No.	611	571	634	552	495
	{Rate	4.4	4.0	4.4	3.9	3.5
Queensland	{No.	417	458	411	304	312
	{Rate	6.4	6.8	6.0	4.5	4.6
South Australia	{No.	141	135	105	71	82
	{Rate	3.3	3.1	2.4	1.6	1.9
Western Australia	{No.	150	147	116*	141	126
	{Rate	4.8	4.5	3.6	4.1	3.6
Tasmania	{No.	58	67	35	42	40
	{Rate	3.0	3.4	1.8	2.1	2.0
Northern Territory	{No.	2	2	1	3	3
	{Rate	5.5	5.3	2.3	6.2	6.1
Commonwealth	{No.	2,952	3,079	2,935	2,820	2,441
	{Rate	6.1	6.3	5.9	5.7	5.0

* Exclusive of four extradited.

The above figures shew that the rate of committals for serious crime has decreased by 20 per cent. during the last five years, but if the comparison be carried farther back, it will be found that, as compared with the earlier years, there has been a considerable improvement. This will be evident from an examination of the following figures, which shew the rate of committals per 10,000 persons in Australia at various periods since 1861 :—

RATE OF COMMITTALS IN AUSTRALIA, 1861 TO 1917.

Year	1861.	1871.	1881.	1891.	1901.	1917.
Committals per 10,000 inhabitants ..	22	14	12	11	8	5

The decline in proportion to population since 1861 has therefore been about 77 per cent.

§ 3. Superior Courts.

1. **Convictions at Superior Courts.**—The total number of convictions at superior courts, together with the rate per 10,000 of the population, is shewn below for each of the years 1913 to 1917 :—

CONVICTIONS AT SUPERIOR COURTS, 1913 TO 1917.

(COMMONWEALTH.)

State.		1913.	1914.	1915.	1916.	1917.
New South Wales	{ No.	772	810	843	815	661
	{ Rate	4.3	4.4	4.5	4.4	7.4
Victoria	{ No.	506	494	533	386	303
	{ Rate	3.6	3.5	3.7	2.2	2.2
Queensland	{ No.	343	382	351	266	226
	{ Rate	5.3	5.7	5.1	3.9	3.3
South Australia	{ No.	86	93	74	52	59
	{ Rate	2.0	2.1	1.7	1.2	1.4
Western Australia	{ No.	92	84	66	91	55
	{ Rate	2.9	2.6	2.0	2.9	1.8
Tasmania	{ No.	28	41	19	30	28
	{ Rate	1.4	2.1	1.0	1.5	1.4
Northern Territory	{ No.	1	1	1	1	1
	{ Rate	2.7	2.7	2.3	2.1	2.0
Commonwealth	{ No.	1,828	1,905	1,887	1,641	1,333
	{ Rate	3.8	3.9	3.8	3.3	2.7

The rate in 1901 was 4.6 per 10,000, and the decrease to the end of 1917 was, therefore, about 40 per cent.

In considering the above figures allowance must be made for the various factors enumerated in a preceding paragraph. Tasmania, it will be noted, shews the smallest proportion of serious crime, while the figures available shew that the island State is relatively the smallest consumer of alcoholic beverages. That a definite causal relation exists between the figures shewn by the respective tables is not, however, obvious.

2. **Offences for which Convictions were Recorded at Superior Courts.**—In the following table will be found a classification of the principal offences for which persons were convicted at the higher courts during each year of the period 1913 to 1917. Owing to lack of uniformity in the presentation of the returns for the several States the information is confined to the chief offences against the person only. In the case of Victoria the information is incomplete regarding the convictions on summons committals. The figures quoted refer to convictions in the Commonwealth during the period dealt with.

CONVICTIONS FOR SERIOUS CRIME, SUPERIOR COURTS, 1913 TO 1917.

(COMMONWEALTH.)

Offences.	1913.	1914.	1915.	1916.	1917.
Murder, and attempts at	38	42	25	22	20
Manslaughter	14	15	15	13	9
Rape, and crimes of lust	71	67	90	77	75
Other offences against the person ..	298	300	226	209	259

While the individual totals shew considerable fluctuations, the returns generally manifest considerable improvement. The general total of convictions for all offences against the person shews a decline since 1901 of about 16 per cent., and since 1913 of about 14 per cent.

3. **Capital Punishment.**—The table below gives the number of executions in each State during the period 1913 to 1917 :—

EXECUTIONS, 1913 TO 1917.

(COMMONWEALTH.)

State.	1913.	1914.	1915.	1916.	1917.
New South Wales .. ..	..	..	..	2	2
Victoria .. ..	..	..	..	2	..
Queensland	2	..	..	..	..
South Australia .. ..	..	..	..	..	..
Western Australia	1	1	1	..	..
Tasmania	1	1	..	..	..
Commonwealth	4	2	1	4	2

In the early days of the history of Australia the penalty of death was attached to a large number of offences, many of which at the present time would be dealt with in the lower or magistrates' courts. With the growth of settlement, and the general amelioration in social and moral conditions, the list was, however, considerably curtailed, and the existing tendency is practically to restrict death sentences to cases of murder. It may be remarked that in cases of rape, which is a capital offence in some of the Australian States, the penalty has been but sparingly inflicted during the last few years. Juries are reputed to be loth to convict on this charge, owing to the uncertainty whether sentence of death will be pronounced.

During the period 1861 to 1880 the annual average number of executions in the Commonwealth was nine, from 1881 to 1900 the average was six, for the period 1901 to 1910 the figure stood at four, while the average for the last quinquennium was three.

§ 4. Prisons.

1. Prison Accommodation and Prisoners in Gaol.—The table below shows the number of prisons in each State and the accommodation therein at the end of 1917 :—

PRISONS AND PRISON ACCOMMODATION, 1917.

(COMMONWEALTH.)

State.	Number of Prisons.	Accommodation in—		Prisoners at End of Year.
		Separate Cells.	Wards.	
New South Wales	26	2,296	..	1,293
Victoria	15	1,464	610	720
Queensland	12	586	380	303
South Australia	13	760	463	268
Western Australia	24	455	909	195
Tasmania	2	188	276	42
Northern Territory	1	3	48	12
Commonwealth	93	5,752	2,686	2,833

The figures for Western Australia and the Northern Territory are exclusive of aborigines.

The number of prisoners in gaol, exclusive of debtors, at the 31st December in each of the years 1913 to 1917, is given below. A separate line is added in each instance, shewing the proportion per 10,000 of the population.

PRISONERS IN GAOL, 1913 TO 1917.

(COMMONWEALTH.)

State.	1913.	1914.	1915.	1916.	1917.	
New South Wales	{ Number ..	1,456	1,643	1,579	1,451	1,293
	{ Proportion	8.0	8.9	8.5	7.8	6.9
Victoria	{ Number ..	863	898	861	773	720
	{ Proportion	6.2	6.3	6.1	5.5	5.1
Queensland	{ Number ..	450	518	450	349	303
	{ Proportion	6.9	7.7	6.6	5.2	4.5
South Australia	{ Number ..	288	341	282	237	268
	{ Proportion	6.6	7.7	6.4	5.5	6.2
Western Australia	{ Number ..	284	277	238	207	195
	{ Proportion	9.0	8.6	7.5	6.6	6.3
Tasmania	{ Number ..	50	50	55	45	42
	{ Proportion	2.6	2.6	2.7	2.3	2.1
Northern Territory	{ Number ..	7	8	12	14	12
	{ Proportion	19.1	21.3	26.3	28.9	24.2
Commonwealth	{ Number ..	3,398	3,735	3,477	3,076	2,833
	{ Proportion	7.1	7.6	7.0	6.3	5.8

From the preceding table it will be seen that the proportion to population of prisoners in gaol has fallen by 18 per cent. during the last five years, but, if the comparison be carried farther back, the position is seen to be more favourable, the prisoners in gaol in the Commonwealth numbering as much as 16 per 10,000 of the population in 1891.

2. **Improvement of Penological Methods.**—During recent years Australia, in common with most other civilised countries, has introduced considerable modifications and improvements in methods of prison management. Under the old *régime*, punishment partook more or less of the character of reprisal for wrongdoing, and the idea of constituting the prison as a reformatory agency was in the background. But of recent years there has been an earnest attempt at effecting a moral reformation in the unfortunates who lapse into crime. This aspect of prison management has been specially prominent in New South Wales. A short account of the re-organisation of the prison system in this State appears in preceding Year Books (see No. V., p. 922), but considerations of space preclude its repetition here. At the present time it is found that good results have followed the principles of scientific classification and restricted association of prisoners, together with the provision of separate institutions for the treatment of inebriates. Special efforts are put forward to provide reproductive work for prisoners, and no capable able-bodied man is engaged in labour that demeans him, but on the other hand is encouraged to take pride and pleasure in good work. There are five principal gaols in which prisoners are classified according to history, &c. The large establishments at Goulburn, Bathurst, and Parramatta deal respectively with first offenders, previously convicted but hopeful cases, and incorrigibles. At Long Bay there is a well-designed reformatory institution for females, providing for effective classification, and a penitentiary used as a distributing centre and a place of detention for short-term prisoners from the metropolis. The first-class minor gaols at Albury, Armidale, Broken Hill, Grafton, and Maitland are convenient centres for the reception of country prisoners, and also for the treatment of special cases. There are also several second-class minor gaols and police gaols where short-sentenced prisoners from the surrounding districts are dealt with. In New South Wales the system of carrying on afforestation by prison labour, somewhat after the manner of that in vogue for several years in New Zealand, has been introduced, and in 1911 a site near Tuncurry, on the Manning River, was selected for the purpose of initiating the scheme. Pine trees of various kinds have been planted, the seedlings set out in 1917 numbering over 120,000, while the total planted to the end of 1917 reached 563,000. So far the scheme appears to be a great success, the prisoners being healthy, cheerful, well-behaved, and industrious. Each prisoner has his own comfortable hut, where he takes his meals and sleeps, and may, if he so desires, write his letters. There are no armed or night guards at the camp. During the year 1914 a property of 107 acres was purchased, near the Emu Plains railway station, for the purpose of establishing a prison farm, and this was opened in April, 1915, with ten prisoners. This institution was disestablished in 1916, when it was taken over by the Department of Agriculture, and beyond selecting the prisoners for work on the farm, the Prisons Department had no further responsibility. The farm was again transferred to the control of the Prisons Department in November, 1917. Accommodation is provided for 42 prisoners, each of whom occupies a roomy, comfortable hut. The inmates consist principally of first offenders under the age of 25 years, and they receive a practical training in general farm work. That there is some connection between mental and physical health and crime is proved by the condition in which many persons are received into gaol. In a large number of instances prisoners are found to be suffering from contagious diseases. Under the Prisoners Detention Act such persons may be kept in gaol until cured, but, unfortunately, the provisions of the Act do not apply to short-sentenced prisoners detained in lieu of paying fines, many of whom are known to be afflicted with disease. A further reform, introduced in 1915, was the provision of the Shaftesbury Inebriate Institution for the treatment of non-criminal inebriates. In 1916 accommodation was provided for voluntary paying guests who wish to undergo treatment.

In 1902 the system of finger-print identification of criminals was introduced, and by the year 1903 bureaux had been established in the various States for the exchange of records. Very successful results have attended the introduction of the system.

Space will not permit of more than a passing reference to the improvements brought about in prison management in the other States. In Victoria there is an excellent system of classification and allocation of prisoners in various grades to different gaols, while at the important penal settlement at Pentridge a careful segregation into several classes is carried out. In common with the other States the latest humane methods of accommodation and prison treatment have for some time been employed. An afforestation camp known as McLeod Settlement, French Island, was opened in 1916, and at the end of 1917 there were 28 inmates. Since the establishment of the Camp 1,890,000 trees have been planted by the prisoners for the Forests Department, the area being 1,689 acres. It is stated that the experiment has resulted in improvement, both in demeanour and physique of prisoners, and it is hoped that in many cases it will be conducive to a return to honest citizenship. A prison farm has also been established about three miles from the prison at Castlemaine, and the inmates are taken to and fro daily. It is proposed to provide accommodation later on for housing a certain number of prisoners on the farm site. The orchard planted in connection with the farm contains about 1,000 fruit trees.

Queensland prisons have been considerably modernised during the last few years. The prison for females at Brisbane has been built on the radiating plan, and embodies the latest ideas in penological methods. Classification of prisoners has been fully carried out in the male and female divisions of Brisbane prison, at Rockhampton prison, and at the Stewart's Creek penal establishment. It is proposed to erect a new prison establishment at St. Helena, embodying the most modern features in design. Amongst recent reforms are the reduction of the period of separate treatment undergone by prisoners sentenced to hard labour or penal servitude, a remodelling of the remission clauses, and allowance of more liberal privileges in the way of correspondence and visits from friends. Electric light has been installed in the Brisbane prison, and prisoners are allowed to read up to 8 o'clock each evening.

Unusual circumstances have combined to keep crime at a low point in South Australia. In the first place there was never any transportation of criminals to the State, while in the earlier years of its history South Australian law breakers were transported elsewhere. The discovery of gold in the neighbouring colonies was also responsible for the drawing away of turbulent spirits who might later on have caused trouble. The present system of gaol administration was drafted mainly on English and European lines by the late W. R. Boothby, C.M.G., and has since been as far as possible adapted to modern penological procedure. It is proposed to establish an afforestation camp prison at the Bangham Forest Reserve on similar lines to that at Toncurry in New South Wales. Excellent work for the benefit and assistance of discharged prisoners is performed by the Prisoners' Aid Association.

A Royal Commission in 1911 recommended the adoption of various reforms in connection with the prison system of Western Australia. The bulk of these were carried out, and included, amongst other things, an extension of the principle of separate treatment, improvement in prisoners' dietary scale, more satisfactory arrangements in regard to remission of sentences, and improvements in regard to hours of labour, leave of absence, etc., for the staff. The separate system has, however, been abolished. Amongst other improvements recently introduced may be mentioned the grant of an eight hours' day to officers, enlargement and improved hygiene of cells, additional library facilities, assistance to discharged prisoners by provision of railway passes and monetary aid, appointment of committees to look after the welfare of discharged prisoners, and the remodelling of the "mark" system. The military method of control at Rottnest Island, coupled with considerable privileges to well-conducted prisoners, has proved very successful.

The daily average number of prisoners in confinement in Tasmanian gaols during the year 1917 was about 49. There are penal establishments at Hobart and Launceston, and at the former the prisoners were concentrated in the northern wing during 1915-16. A new workshop also was erected, and the sanitary and lighting conditions were remodelled.

§ 5. Civil Courts.

1. **Lower Courts.**—The transactions of the lower courts on the civil side during each of the last five years are given in the table hereunder. As pointed out previously, the jurisdiction of the courts is by no means uniform in the various States.

LOWER COURTS.—CIVIL CASES, 1913 TO 1917.

(COMMONWEALTH.)

State.		1913.	1914.	1915.	1916.	1917.
New South Wales	{ Cases No.	40,265	37,472	39,828	35,724	31,172
	{ Amount £	106,809	107,810	110,229	101,530	88,576
Victoria	{ Cases No.	39,911	41,497	41,055	38,573	32,187
	{ Amount £	204,175	207,863	188,542	170,086	143,469
Queensland	{ Cases No.	15,716	16,015	15,729	14,094	11,867
	{ Amount £	64,518	66,226	68,337	64,502	51,302
South Australia	{ Cases No.	21,288	21,681	17,765	16,505	14,579
	{ Amount £	74,623	74,627	80,918	50,515	42,774
Western Australia	{ Cases No.	14,549	16,974	17,259	15,776	13,798
	{ Amount £	67,470	66,864	61,169	51,050	44,937
Tasmania	{ Cases No.	5,194	5,813	6,081	4,879	4,611
	{ Amount £	34,425	81,610	67,152	30,739	29,080
Commonwealth	{ Cases No.	136,923	139,452	137,717	125,551	108,214
	{ Amount £	552,020	605,000	576,347	468,422	400,138

The figures just given represent the returns from Petty Sessions Courts in New South Wales and Victoria, the Petty Debts cases in Queensland, the Local Courts of South Australia and Western Australia, and the Court of Requests in Tasmania.

2. **Superior Courts.**—In the next table will be found the transactions on the civil side in the Superior Courts during each of the years 1913 to 1917.

The New South Wales returns are to some extent defective, as the figures quoted for amount of judgments include, up to 1913, in the case of the Common Law jurisdiction of the Supreme Court, the total judgments signed, while in the case of the other States the figures refer to sums actually adjudged after trial. For New South Wales, also, the transactions of district courts refer to the total amounts sued for, and not the sums actually awarded after trial. Statistically the chief importance of the table consist in the fact that it shews a decline in litigiousness in Australia.

SUPERIOR COURTS.—CIVIL CASES, 1913 TO 1917.

(COMMONWEALTH.)

State.		1913.	1914.	1915.	1916.	1917.
New South Wales ..	Causes No.	926	864	845	902	862
	Amount £	568,761	*328,429	*293,697	*290,642	*274,646
Victoria ..	Causes No.	617	710	713	536	573
	Amount £	91,428	91,903	93,695	104,965	88,177
Queensland ..	Causes No.	133	129	129	124	128
	Amount £	22,932	19,156	22,165	20,335	32,606
South Australia ..	Causes No.	44	27	21	14	13
	Amount £	9,688	17,358	2,882	2,482	..
Western Australia ..	Causes No.	546	578	367	348	108
	Amount £	79,534	37,610	37,581	36,042	14,639
Tasmania ..	Causes No.	118	385	282	308	326
	Amount £	7,486	28,159	17,112	17,539	20,481
Commonwealth	Causes No.	2,384	2,693	2,357	2,232	2,010
	Amount £	779,829	522,615	467,132	472,005	430,549

* Exclusive of judgments signed, Supreme Court, the amount not being recorded.

During the year 1916-17 the civil causes in the higher courts of the Northern Territory numbered 13, and the amount of judgments was returned as £2,288.

3. Divorces and Judicial Separations.—The number of divorces and judicial separations in each State during the period 1913 to 1917 is shown below :—

DIVORCES AND JUDICIAL SEPARATIONS, 1913 TO 1917.

(COMMONWEALTH.)

State.	1913.		1914.		1915.		1916.		1917.	
	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.
New South Wales ..	317	9	297	6	349	6	348	11	375	13
Victoria ..	237	12	244	1	218	1	206	1	202	..
Queensland ..	31	1	29	1	27	..	25	..	16	3
South Australia ..	8	..	20	..	12	..	15	..	20	1
Western Australia ..	37	..	21	1	31	2	13	..	24	..
Tasmania ..	8	..	7	..	7	..	2	..	7	..
Northern Territory ..	..	..	1	..	1	..	..	..	..	..
Commonwealth ..	638	12	619	9	645	9	609	12	644	17

The average annual number of divorces and judicial separations in the Commonwealth at decennial periods from 1871 to 1910 and for the seven years 1911-17 is as follows :—

DIVORCES AND JUDICIAL SEPARATIONS, 1871 TO 1917.

	1871-1880.	1881-90.	1891-1900.	1901-10.	1911-17.
Commonwealth ..	29	70	358	401	632

The bulk of the divorces and judicial separations refer, as the table shews, to New South Wales and Victoria, the Acts of 1899 and 1889 in the respective States making the separation of the marriage tie comparatively easy. In some statistical works it is customary to compare the divorces in any year with the marriages in the same year. The comparison is, however, quite valueless, as there is no necessary connection between the figures.

4. Probates.—The number of probates and letters of administration granted, together with the value of the estates concerned, is shewn below for each State for the period 1913 to 1917 :—

PROBATES AND LETTERS OF ADMINISTRATION, 1913 TO 1917.

(COMMONWEALTH.)

State.		1913.	1914.	1915.	1916.	1917.
New South Wales	{ Number	3,679	4,438	5,088	5,336	6,408
	{ Value £	8,443,068	9,997,615	10,813,889	11,687,910	11,923,328
Victoria	{ Number	4,483	4,451	4,449	5,448	5,835
	{ Value £	8,367,862	8,481,720	9,759,728	8,917,481	9,486,584
Queensland	{ Number	765	765	896	967	841
	{ Value £	2,640,017	2,331,224	2,720,896	2,746,508	2,796,692
South Australia	{ Number	1,373	1,418	1,515	1,661	1,946
	{ Value £	2,214,241	3,050,075	2,894,517	1,893,017	3,188,871
Western Australia	{ Number	580	577	682	957	1,176
	{ Value £	607,972	1,009,677	935,107	1,452,820	1,119,024
Tasmania	{ Number	415	386	418	423	513
	{ Value £	680,477	727,126	793,106	807,513	844,276
Commonwealth	{ Number	11,295	12,035	13,048	14,792	16,809
	{ Value £	22,953,637	25,597,437	26,918,243	27,515,249	29,358,775

As may naturally be expected, the figures in the above table, giving the value of property left each year, shew considerable variations.

5. Bankruptcies.—The returns in bankruptcy during each of the last five years are given in the following table.

For several reasons comparisons drawn from the figures in the following table are of little value. In the first place, the statements of assets and liabilities are notably unsatisfactory, particularly in regard to the former. Then, again, there is wide dissimilarity in regard to the laws in force in the various States and the method of procedure thereunder in connection with bankruptcy. Further, there are no means of knowing how many persons in each State who were in a bankrupt condition made private arrangements with their creditors either personally or by intervention of a solicitor. The figures quoted in the table exclude the private arrangements in Victoria and South Australia, and the liquidations and compositions in Queensland and Tasmania.

BANKRUPTCIES, 1913 TO 1917.

(COMMONWEALTH.)

State.		1913.	1914.	1915.	1916.	1917.
New South Wales	{ Number	351	405	405	360	301
	{ Liabilities £	208,755	323,111	423,700	383,448	227,663
	{ Assets £	144,038	141,068	166,748	303,893	208,093
Victoria	{ Number	455	450	436	337	222
	{ Liabilities £	440,318	272,582	414,439	213,989	152,338
	{ Assets £	237,868	171,295	273,805	127,730	94,390
Queensland	{ Number	232	210	238	181	137
	{ Liabilities £	60,385	53,947	65,716	42,272	81,148
	{ Assets £	21,720	36,293	35,533	30,785	29,084
South Australia	{ Number	185	187	135	139	108
	{ Liabilities £	169,516	184,220	204,089	160,601	122,036
	{ Assets £	104,622	115,621	136,420	151,332	79,810
Western Australia	{ Number	75	77	53	34	56
	{ Liabilities £	65,284	46,234	38,008	52,345	16,588
	{ Assets £	51,925	23,456	34,576	52,024	44,829
Tasmania	{ Number	46	30	40	16	21
	{ Liabilities £	16,673	13,476	15,548	13,530	27,487
	{ Assets £	9,831	4,251	9,461	7,585	20,438
Northern Territory	{ Number	4	1	1	1	..
	{ Liabilities £	724	119	106	96	..
	{ Assets £	18	..	39	306	..
Commonwealth	{ Number	1,348	1,360	1,308	1,068	845
	{ Liabilities £	961,655	893,689	1,166,606	866,281	657,260
	{ Assets £	570,025	491,984	656,582	673,655	476,644

6. **High Court of Australia.**—Under the provisions of section 71 of the Commonwealth Constitution Act, the judicial power of the Commonwealth is vested in a Federal Supreme Court, called the High Court of Australia, and in such other courts as the Parliament creates or invests with federal jurisdiction. The Federal High Court possesses both original and appellate jurisdiction. The powers of the court are defined in Chapter III. of the Constitution Act and in the Judiciary Acts of 1903–15. At present the court consists of a Chief Justice and six other judges. Sittings of the Court are held in the capitals of the various States as occasion may require. The following statement shews the transactions of the High Court for the quinquennium 1913–17 :—

COMMONWEALTH HIGH COURT TRANSACTIONS, 1913 TO 1917.

Items.	1913.	1914.	1915.	1916.	1917.
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I. ORIGINAL JURISDICTION.

Number of writs issued	83	75	126	141	106
Number of causes entered for trial	9	6	12	14	18
Verdicts for plaintiffs	5	5	6	7	6
Verdicts for defendants	2	1	6	3	5
Otherwise disposed of	16	31	40	60	47
Amount of judgments	£6,556	£5,304	£4,966	£4,479	£6,025

II. APPELLATE JURISDICTION.

Number of appeals set down for hearing	66	71	85	67	72
Number allowed	33	25	23	23	31
Number dismissed	26	38	39	24	33
Otherwise disposed of	7	8	23	10	8

III. AMOUNT OF FEES COLLECTED.

Amount in each year	£692	£656	£808	£756	£619
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During the year 1917 the Court dealt also with other matters as follows :—

Appeals from Assessments under the Taxation Assessment Acts ..	9
Special cases stated for the opinion of the Full Court	8
Applications for Prohibition	Nil
Applications under the Trading with the Enemy Act	Nil

7. **Commonwealth Court of Conciliation and Arbitration.**—A more or less detailed statement regarding the operation of this Court, which was established under the provisions of the Commonwealth Conciliation and Arbitration Act of 1904–15 will be found in Section XXVII.

§ 6. Cost of Administration of Justice.

The table below shews the expenditure from Consolidated Revenue during each of the last five years in connection with the administration of justice in each of the States. Expenditure on police and prisons has been separately shewn. With regard to the figures quoted for "other" expenditure, a slight allowance has to be made for the fact that some extraneous expenditure has been included which it was found impossible to disentangle from the total, but the amount is in no instance large.

EXPENDITURE ON JUSTICE, 1913 TO 1917.

(STATES.)

State.		1913.	1914.	1915.	1916.	1917.
		£	£	£	£	£
New South Wales	Police	593,406	592,694	603,347	649,093	709,649
	Gaols	91,279	92,285	92,529	91,913	90,633
	Other	273,043	282,716	286,924	287,419	276,722
Victoria	Police	354,264	380,724	365,821	356,885	371,413
	Gaols	54,776	57,272	57,791	59,614	55,027
	Other	165,091	192,222	169,309	165,789	163,381
Queensland	Police	304,817	302,633	302,209	322,422	337,259
	Gaols	28,950	30,989	32,981	30,803	33,626
	Other	101,011	101,687	136,619	140,643	128,328
South Australia	Police	129,834	132,445	131,580	127,632	136,158
	Gaols	19,159	23,436	22,177	22,052	22,040
	Other	48,203	33,277	33,006	36,854	39,569
Western Australia	Police	126,532	133,452	131,806	125,446	136,752
	Gaols	21,403	22,339	23,265	22,321	22,104
	Other	77,182	79,142	86,790	79,510	75,184
Tasmania	Police	45,237	45,972	45,952	47,320	49,448
	Gaols	6,103	7,071	7,261	7,013	6,619
	Other	20,877	21,763	21,338	22,190	21,223
Northern Territory	Police	10,614	10,307	10,216	10,260	10,210
	Gaols	2,289	2,501	2,128	2,875	2,972
	Other	2,136	1,941	1,453	2,744	1,991
Commonwealth	Police	1,564,704	1,598,227	1,590,931	1,639,058	1,750,889
	Gaols	223,959	235,893	238,132	236,591	233,021
	Other	690,543	712,748	735,439	735,149	706,398

With the exception of that of the Northern Territory, the expenditure shewn in the foregoing table is that incurred by the State Governments only, and does not include expenditure in connection with the Federal High Court, which is shewn hereunder for the period 1913-14 to 1917-18:—

EXPENDITURE ON FEDERAL HIGH COURT, 1913-14 TO 1917-18.

Year.	Amount.	Year.	Amount.
	£		£
1913-14	32,709	1916-17	31,780
1914-15	31,037	1917-18	31,352
1915-16	31,447		

Other items of federal legal expenditure also not included in the table are:—Court of Conciliation and Arbitration £8,750, Crown Solicitor £11,255, and general £19,606. Excluding Patents and Copyrights, the total expenditure by the federal law authorities for the year 1917-18 was £70,963.

For the purposes of comparison the figures in the first table above have been reduced to a population basis, and the results are given in the table following :—

EXPENDITURE ON JUSTICE PER INHABITANT, 1913 TO 1917.

(STATES.)

State.		1913.	1914.	1915.	1916.	1917.
		<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
New South Wales	Police	6 7	6 4	6 6	7 0	7 6
	Gaols	1 0	1 0	1 0	1 0	1 0
	Other	3 0	3 0	3 2	3 1	2 11
Victoria	Police	5 1	5 4	5 2	5 1	5 3
	Gaols	0 9	0 10	0 10	0 11	0 9
	Other	2 4	2 8	2 5	2 4	2 4
Queensland	Police	9 4	9 0	8 11	9 8	9 10
	Gaols	0 11	0 11	1 0	0 11	1 0
	Other	3 1	3 0	4 0	4 2	3 9
South Australia	Police	6 0	6 0	6 0	5 11	6 3
	Gaols	0 11	1 1	1 0	1 0	1 0
	Other	2 3	1 6	1 6	1 7	1 10
Western Australia	Police	8 1	8 3	8 3	8 1	8 10
	Gaols	1 4	1 5	1 6	1 5	1 5
	Other	4 11	4 11	5 6	5 2	4 10
Tasmania	Police	4 7	4 7	4 7	4 9	4 10
	Gaols	0 7	0 8	0 9	0 8	0 8
	Other	2 2	2 2	2 1	2 3	2 1
Northern Territory	Police	58 0	52 0	44 9	43 1	41 2
	Gaols	12 6	12 7	9 4	12 1	12 0
	Other	11 8	9 9	6 4	11 6	8 0
Commonwealth	Police	6 6	6 6	6 6	6 9	7 2
	Gaols	0 11	0 11	1 0	1 0	0 11
	Other	3 0	3 0	3 0	3 0	2 11

Owing to the smallness of the white population, large area to be policed, and cost of supplies, transport, etc., the figures for the Northern Territory must necessarily appear somewhat abnormal.

The total expenditure in the Commonwealth in connection with the administration of justice in the various States has risen from ten shillings per inhabitant in 1901 to eleven shillings in 1917. Police expenditure has increased by about one shilling and fivepence per head, the average for gaols is about threepence per head less, while the expenditure on courts and the remaining machinery of justice has decreased by twopence per head during the same period.

SECTION XXIV.

PUBLIC BENEVOLENCE.

§ 1. Introductory.

1. **General.**—Charity and charitable effort in Australia may be classified under three headings, viz. :—(a) State ; (b) public ; (c) private. To the first belong all institutions wholly provided for by the State, such as the principal lunatic asylums in the various States, the Government hospitals in Western Australia, and the Government asylums for infirm in New South Wales. The second class comprises public institutions of two kinds, viz. :—(i) Institutions partially subsidised by the State or State endowed, but receiving also private aid, and (ii) those wholly dependent upon private aid. To the former division belong such institutions as the principal metropolitan hospitals. In the latter are included institutions established and endowed by individuals for the benefit of the needy generally. All charitable movements of a private character are included in the third group.

A more or less accurate statistical account is possible in classes (a) and (b), but in regard to (c) complete tabulation is, for obvious reasons, impossible. Moreover, public response to special appeals, and summary relief in kind, cannot be statistically recorded. Hospitals, orphanages, homes, benevolent asylums, etc., naturally attract the largest share of charitable aid, but there are numerous minor charities dependent upon private beneficence. In institutions which receive Government aid, management and finance are usually relegated to executive bodies.

The scope which economic and industrial conditions in Australia afford for the exercise of natural ability, and the comparatively wide distribution of wealth throughout the Commonwealth, operate to prevent the development of a permanent pauper class, and at the same time lessen in a dual way the burden of charity. This result is brought about by the increase, on the one hand, of the number of people whose prosperity enables them to relieve the indigent and unfortunate, and by the reduction, on the other, of the number who need assistance. Enactments of State Legislatures have decreed short hours and a liberal holiday allowance for large numbers of persons engaged in industrial and other pursuits, and, even in occupations not covered by Act of Parliament, the general conditions of employment often provide a considerable amount of leisure. This, coupled with an equable climate, enables the community to spend much of its time in the open air, with resultant advantages to its physique and general health. No poor-rate is levied in Australia, and Government aid without return is required only for the aged and disabled. Moreover, although Old-age Pensions, Invalid Pensions, and Maternity Allowances are paid by the Commonwealth, the payments are looked upon rather in the light of a citizen's right than as a charity. Reference to these matters will be found in Section xxxiv., *Miscellaneous*, § 4.

To meet special and temporary conditions, various relief works have been started from time to time, in which the able-bodied who may be forced to seek official relief are required to make some return for the assistance afforded.

In each of the States there are Government asylums for the care of the insane, and the condition of these unfortunates has been steadily ameliorated by the general advance in psychiatry.

Young children deprived of parental training and control are cared for and educated in orphanages and industrial schools, and those who have been guilty of some specific offence, or who are beyond effective parental control, are committed to "reformatories."

From time to time relief funds have been organised for famine-stricken territories (*e.g.*, China, India, etc.), or for places where plague, flood, fire, or earthquake has shewn the need of urgent relief. Special funds are also raised for such as are disabled or bereaved through war. Complete statistical information in regard to these forms of charity is not, however, available. It may be mentioned that the daily Press frequently accepts the duty of collectorship in charity appeals. In regard to subscriptions to the various patriotic funds which have been instituted in consequence of the war, the total for Australia, up to 31st December, 1918, has been estimated to exceed £12,000,000 sterling.

2. Charity Reforms.—The evident overlapping of charitable effort has on various occasions led to discussion regarding methods of collection and distribution. The great desideratum in charity organisation is that the available aid should be relegated solely to the relief of distress and suffering. The true interests of the sick poor would thus be conserved, and the real intention of the donors fulfilled. With greater public attention, improved administration has been brought about. Societies to prevent overlapping have been formed, resulting in improved economical collection and distribution of charitable aid, and a better system of using the available accommodation.

Other proposed reforms aim at ascertaining the cause of poverty and crime, and finding the necessary palliative. Increased provision of better houses and workrooms and improved sanitation are advocated, together with more stringent legislative measures to enforce cleanliness and healthy modes of life. Further, factory legislation, Health Acts, etc., have enacted provisions for safeguarding dangerous machinery, and permitting only competent persons to be employed thereon.

3. Tabulation of Charities Statistics.—Differences in the organisation of charities prevent uniform tabulation of statistics for all the States, but certain of the larger features of the statistics of benevolence have been combined for the whole Commonwealth, and are shewn for a period extending over five years. Where the combination has been for dissimilar periods the nearest years have been taken. Satisfactory tabulation for other charities is not yet possible.

§ 2. The Larger Charities of Australia.

1. Hospitals.—All of the State capitals have several large and well-equipped hospitals, and there is at least one in every important town. In large centres there are hospitals for consumptives, women, children, infectious diseases, incurables, etc. The

number of hospitals in Australia, with the admissions, patients treated, deaths, and expenditure, is shewn in the following table. Only general hospitals are tabulated, since the working of "special" institutions is not properly comparable with those which treat every class of case.

HOSPITALS IN THE COMMONWEALTH, 1913 TO 1917.

Particulars.	1913.	1914.	1915.	1916.	1917.
Number of institutions ..	381	389	398	391	399
Number of beds ..	15,235	15,345	16,374	15,811	16,763
Admissions during year ..	145,908	155,531	169,892	166,588	164,889
Indoor patients treated ..	152,077	164,349	179,829	176,279	174,387
Deaths ..	11,362	11,468	12,809	13,128	11,885
Expenditure ..	£ 1,264,605	1,255,658	1,280,461	1,351,160	1,396,361

In addition to those admitted to the institutions there are large numbers of out-patients. The exact number of these cannot be given, but a rough estimate of distinct cases for 1917 places the total at about 300,000.

Fuller details of hospital statistics are given for 1917 in the tables below, the States and Northern Territory of the Commonwealth being shewn separately:—

GENERAL HOSPITALS.—NUMBER, STAFFS, AND ACCOMMODATION OF HOSPITALS IN THE COMMONWEALTH, 1917.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
Number of Hospitals—								
Government ..	4	..	2	10	22	2	4	44
Other ..	153	51	91	19	29	12	..	355
Total ..	157	51	93	29	51	14	4	399
Medical Staff—								
Males ..	752	83	163	97	44	19	1	1,180
Females ..	..	..	14	6	1	..	..
Total ..	752	83	177	103	45	19	1	1,180
Nursing Staff and Attendants—								
Males ..	86	14	273	66	104	2	2	547
Females ..	2,064	820	955	498	510	173	4	5,054
Total ..	2,150	834	1,258	564	614	175	6	5,601
Accommodation—								
Number of dormitories, etc. ..	1,030	438	546	211	212	119	11	2,567
Capacity in cubic feet ..	7,563,135	4,695,890	3,916,862	1,598,499	2,330,748	820,069	57,312	20,982,515
Number of beds ..	6,425	3,470	3,434	1,210	1,627	537	60	16,763
Cubic feet to each bed ..	1,177	1,353	1,141	1,321	1,433	1,527	1,302	1,252

In addition to the accommodation provided in the ordinary wards, a considerable amount of accommodation for certain classes of cases is furnished in out-door or verandah sleeping places. Full particulars are not available.

GENERAL HOSPITALS.—PATIENTS TREATED IN HOSPITALS IN THE COMMONWEALTH, 1917.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
Indoor Relief: Distinct Persons Treated—								
Males	38,750	15,792	23,250	6,544	7,075	3,935	252	95,598
Females	37,910	12,847	13,608	5,688	4,768	3,868	100	78,789
Total	76,660	28,639	36,858	12,232	11,843	7,803	352	174,387
Inmates at beginning of Year—								
Males	2,157	1,355	1,235	376	525	192	17	5,857
Females	1,913	934	694	304	298	174	..	4,317
Total	4,070	2,289	1,929	680	823	366	17	10,174
Admissions and Re-admissions during Year—								
Males	36,593	14,437	22,015	6,600	6,550	3,743	252	90,190
Females	35,997	11,913	12,914	5,611	4,470	3,694	100	74,699
Total	72,590	26,350	34,929	12,211	11,020	7,437	352	164,889
Discharges—Recovered:								
Males	25,758	11,875	20,027	4,314	3,262	3,403	210	68,849
Females	28,299	10,113	11,889	3,877	2,661	3,438	82	60,359
Total	54,057	a21,988	a31,916	8,191	5,923	a6,841	292	129,208
Relieved:								
Males	7,145	..	..	1,133	2,395	..	21	10,694
Females	4,898	..	..	1,012	1,366	..	3	7,279
Total	12,043	b	b	2,145	3,761	b	24	17,973
Unrelieved:								
Males	923	143	390	499	297	89	..	2,341
Females	867	121	274	342	168	69	..	1,841
Total	1,790	264	664	841	465	158	..	4,182
Not stated:								
Males .. .. .	..	902	153	25	4	9	..	1,093
Females .. .. .	..	699	55	16	1	4	..	775
Total .. .. .	..	1,601	208	41	5	13	..	1,868
Deaths—								
Males	2,815	1,755	1,509	600	627	230	18	7,554
Females	1,812	984	708	364	302	153	8	4,331
Total	4,627	2,739	2,217	964	929	383	26	11,885
Inmates at end of Year—								
Males	2,109	1,117	1,171	405	490	204	20	5,516
Females	2,034	930	682	304	270	204	7	4,431
Total	4,143	2,047	1,853	709	760	408	27	9,947
Average Daily Number Resident—								
Males	2,344	2,106	2,230	434 327	572 332	233 223	18 7	11,137
Females	2,311							
Total	4,655	2,106	2,230	761	904	456	25	11,137

a Including relieved. b Included in recovered.

The revenue and expenditure of the institutions were as follows :—

GENERAL HOSPITALS.—REVENUE AND EXPENDITURE, 1917.

Particulars.	N.S.W.	Victoria. <i>a</i>	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
Revenue—								
Fees of patients, etc. ..	91,336	41,056	32,314	16,811	23,547	11,274	491	216,829
Government grants ..	296,561	68,617	153,628	82,180	68,870	31,579	4,488	705,923
Other ..	202,738	151,287	105,096	15,247	23,656	6,873	..	504,897
Total ..	590,635	260,960	291,038	114,238	116,073	49,726	4,979	1,427,649
Expenditure—								
Buildings ..	85,997	22,597	30,890	15,775	117,647	3,826 17,341 15,809 13,580	463 2,050 2,466 ..	1,396,361
Salaries ..	215,946	196,072	100,006	38,007				
Maintenance ..	246,891		144,148	57,225				
Other ..	53,807	3,616	9,534	2,668				
Total ..	602,641	222,285	284,578	113,675	117,647	50,556	4,979	1,396,361

a Year ended 30th June, 1917. *b* Including rents.

2. **Principal Hospitals in each State.**—The tables here given refer to general hospitals. In addition there are hospitals for “specials” (such as women’s, children’s, and infectious diseases hospitals), and institutions nearly allied to hospitals (such as consumptive sanatoria). Where the institutions carry on general hospital relief, they are included with those establishments.

(i) *New South Wales.* A Government hospital, with a staff of 17 medical officers and accommodation for 591 patients, is established at Little Bay, near Sydney. Altogether, there are four women’s hospitals, one for women and children, and three children’s hospitals in the metropolis. The Royal Prince Alfred Hospital, with a medical staff of 69, and with 397 beds, is the largest metropolitan endowed institution. Amongst other large metropolitan hospitals may be mentioned the Sydney Hospital, with a medical staff of 80 and with 334 beds, St. Vincent’s with 49 doctors and 190 beds, and Lewisham with 23 medical attendants and 169 beds. In extra-metropolitan areas the Waterfall Hospital for Consumptives, which is a Government institution, provides accommodation for 300 patients. The Newcastle Hospital has 146 beds and a medical staff of 14. At the Carrington Convalescent Home at Camden, 110 patients may be admitted. The hospital in the Broken Hill district can accommodate 142.

(ii) *Victoria.* There are several large metropolitan hospitals in Victoria. The largest of these, the Melbourne Hospital, has 325 beds; the Austin Hospital for Incurables has 290, the Alfred Hospital 168, St. Vincent’s 138, and the Homœopathic 98. Amongst the country institutions, Bendigo has 222 beds, Geelong 205, and Ballarat 150.

(iii) *Queensland.* Of the metropolitan hospitals, the largest is the Brisbane General, which can accommodate 316 patients. The Children’s Hospital has 217 beds, the Diamantina 162, and the Mater Misericordiæ 112. Ipswich Hospital, with 146 beds, is the largest of the country institutions, followed by Toowoomba with 128, Rockhampton with 110, Townsville with 105, Maryborough 96, Charters Towers 92, Mackay 84, Mt. Morgan 71, and Bundaberg 70.

(iv) *South Australia.* Including the Consumptive Home and Infectious Diseases Block, the Adelaide Hospital can accommodate a total of nearly 440 patients. The most important of the country hospitals are Port Augusta, Port Pirie, and Wallaroo, with 65, 56, and 48 beds respectively.

(v) *Western Australia.* Information regarding the capacity of the Western Australian hospitals is not available, but some idea of their comparative importance may be gained from the figures relating to cases treated. In the metropolis, 3,583 cases were treated at the Perth Hospital in 1917, and 1,227 at the Perth Children’s. Of the country hospitals, Kalgoorlie returned 1,418 cases, Fremantle 750, and Woorlooloo 605.

(vi) *Tasmania.* There are well-equipped general hospitals in Hobart and Launceston. The former has a medical staff of 2 and can accommodate 185 patients, and the latter has 190 beds and a medical staff of 2. Hospitals for women have been established in both centres, and there is a sanatorium for consumptives at Newtown. Outside the metropolitan area, the Devon Cottage Hospital has a medical staff of 2, and beds for 66 patients; the Lyell District Hospital can accommodate 35 patients, and there are 9 other institutions in important country centres.

(vii) *Northern Territory.* In addition to the hospitals at Darwin and Pine Creek, arrangements have been made for the supply of medicines and first aid to outlying stations. Great improvements have recently been made by the Public Health Department in the sanitation of Darwin. Close supervision is also exercised over the sanitary conditions at railway camps.

3. *Benevolent and Destitute Asylums.*—A marked increase has taken place in the amount of aid bestowed upon the aged. Two elements, each of them independent of the growth of population, have influenced this increase. One is, that the general age of the community has advanced—the large flow of immigration of fifty and sixty years ago having been mostly of persons in the prime of life; the other is the increased regard paid in all British communities to the well-being of the helpless. The result in Australia has been that numerous establishments have been founded for the housing and protection of such as are no longer able to care for themselves. The institutions are supported by Government and municipal aid, public subscriptions, charity performances, bequests, etc., and in many cases relatives of indigent and afflicted persons contribute to their maintenance.

The impossibility of an entirely satisfactory statistical tabulation in regard to all forms of charitable aid is especially marked in the case of benevolent institutions, since the conditions under which they have been established in the different centres in the Commonwealth have caused divergence in their development and in the classes of cases treated by them. For example, in Western Australia the Home for Destitute Women includes a maternity ward, for which the statistics are not separately kept. Since the predominating function of the institution is aid to the destitute, it has been included among benevolent asylums. In Victoria, nine of the hospitals are also benevolent asylums, and they are included wholly under the former. In South Australia, the Destitute Asylum includes lying-in and children's departments.

BENEVOLENT INSTITUTIONS.—REVENUE AND EXPENDITURE, 1917.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Revenue—							
Government aid	72,235	17,996	32,338	34,079	21,188	7,325	185,161
Municipal aid		935					935
Public subs., legacies, etc. ..	2,895	10,357	1,265	24			14,541
Fees	216	12,298		5,351		2,274	20,139
Other	19,450	7,617	2,045	224		269	29,605
Total	94,706	49,203	35,648	39,678	21,188	9,868	250,381
Expenditure—							
Buildings	851	954	1,988	114		249	4,156
Maintenance	93,541	44,611	33,202	39,397	21,188	7,017	238,956
Other	668	2,354	224			2,602	5,848
Total	95,060	47,919	35,414	39,511	21,188	9,868	248,960

(i) *Government Asylums for the Infirm, New South Wales.* There were three asylum hospitals in New South Wales at the end of 1917. Rookwood, the largest of these, had an average number resident of 1,352, Newington had 732, and Liverpool 532. At the

Cottage Homes, situated at two separate localities in Parramatta, the average number resident was about 330. The State Labour Depot and Refuge at Randwick had 193 inmates at the end of 1917.

(ii) *Benevolent Asylums, Victoria.* Besides the asylums attached to hospitals, there are eight institutions in Victoria. The Melbourne Benevolent Asylum had 670 inmates on 30th June, 1918, the Victorian Home for Aged and Infirm, 380. Of the country benevolent asylums, Ballarat had 185 inmates, Bendigo 150, Castlemaine 124, and Ovens 67.

(iii) *Benevolent Asylums, Queensland.* There are four institutions in Queensland, with 851 beds. The most important of these is at Dunwich (Stradbroke Island) with 734 beds, while there are small institutions at Nundah, Rockhampton, and Toowoomba. At the end of 1917 the inmates of the four institutions numbered 1,006.

(iv) *Destitute Asylum, Adelaide.* Outside of hospitals and lunatic asylums the destitute of South Australia are dealt with and relieved at the Destitute Asylum, Adelaide, and at the Aged Men's Home, Beaumont. The former institution includes lying-in and children's departments. In the asylum the number of inmates at the end of 1917 was 292; in the Beaumont Home it was 71.

(v) *Homes for the Destitute, Western Australia.* There are two of these homes in Western Australia supported by public funds. The Old Men's Home at Claremont had 547 inmates at the end of 1917, and the Women's Home, Fremantle, which receives children also, had 70 adult inmates. The children admitted during the year numbered 19.

(vi) *Charitable Establishments, Tasmania.* There are two principal Government charitable establishments in Tasmania. The New Town Infirmary and Consumptive Home, which has 220 beds, had 180 inmates at the end of June, 1918, and the Home for Invalids, Launceston, which has 21 beds, had 21 inmates on the same date.

4. *Orphanages, Industrial Schools, etc.*—The organisation of charitable effort varies greatly in regard to orphans and waifs. In many institutions shelter and some form of industrial training are offered to destitute children of all classes, whether orphans or not, while some of those styled orphanages do not confine their relief to orphans strictly so called. The figures in the next table are those for institutions where, it is believed, the principal effort is on behalf of those who are really orphans:—

ORPHANAGES IN COMMONWEALTH, 1913 TO 1917.

Particulars.	1913.	1914.	1915.	1916.	1917.
Number of Institutions	42	50	50	48	47
Admissions	1,514	2,340	2,376	2,118	1,400
Total number of inmates during year ..	4,720	4,344	4,503	5,061	5,754
Deaths	18	46	48	35	20
Expenditure (a)	£ 72,091	86,390	93,758	79,526	81,141

(a) Incomplete. Expenditure is not available for some orphanages.

(i) *New South Wales.* The care of destitute and neglected children is entrusted to the State Children's Relief Board, whose officers are charged with a strict supervision regarding the welfare of the children and the treatment of them by those to whom they are boarded out. Provision is made for instruction in various trades and callings, and many of the children become useful members of society. The number of children under the Board's supervision in 1917-18 was 12,420. The board's expenditure in that year was £183,356, or £14 15s. per child.

There are also orphanages, farm homes, country homes for children, etc., with upwards of 1,300 children under care.

There are several reformatories and industrial schools maintained by the State. At the Parramatta Industrial School for Girls, to which a Training Home was attached in 1912, there were on 31st December, 1917, 170 inmates. At the Farm Home for boys, Gosford, there were 88 boys at the end of 1917.

(ii) *Victoria*.—There are ten orphanages in Victoria, with 1,714 beds. The total number under care in 1916–17 was 2,105, of whom 1,648 were inmates on 30th June, 1917. The expenditure in 1916–17 was £25,310.

At the end of 1917 there were three industrial and six reformatory schools in the State. Of these, one in each class is wholly controlled by the Government, being used merely as a receiving and distributing depot. The children are sent thence to situations, foster homes, or other institutions dealing with State wards. The other schools are under private management, receiving an allowance for State wards. Many of the reformatory children are placed with friends, or licensed out. On 31st December, 1917, the wards of the State numbered 11,143—classed mostly as neglected children. There were also 38 children free from legal control, who, being incapacitated, were maintained by the State. The total expenditure for 1917 was £175,754, of which £167,214 was borne by the Government.

(iii) *Queensland*.—There are eleven orphanages in Queensland. The number under care on 31st December, 1917, was 1,058, and the expenditure for the year £23,768.

There are also seven industrial and reformatory schools, with 109 boys and 66 girls under detention at the end of 1917. The total number of children under State control at the end of 1917 was 6,194. The gross cost was £127,227, of which £119,085 was borne by the Government.

(iv) *South Australia*.—The State Children's Department exercises a supervision over the probationary and industrial schools and the reformatories. The total number of admissions into these institutions in 1917–18 was 257. The number of inmates on the 30th June, 1918, was 211, in addition to which 1,627 were placed out, or had been adopted or apprenticed. There were two deaths amongst children in industrial schools and reformatories, and of those placed out and in other institutions six died. The number of children under State control on 30th June, 1918, was 1,838. The expenditure for 1917–18 was £39,092.

There are three orphan asylums. The number under care during 1917 was 305, of whom 252 were inmates on 31st December, 1917. There were no deaths during the year, and the expenditure amounted to £6,236.

(v) *Western Australia*.—In Western Australia there were, at the end of 1917, four orphanages, three orphanages and industrial schools, and two industrial schools, containing 404 boys and 380 girls. There were also 9 boys and 11 girls at the Government Receiving Depot. The total number of children in charge of the State Children's Department at the end of 1917 was 1,474, and the net cost £22,610.

(vi) *Tasmania*.—There are three industrial schools and one orphanage under benevolent institutions in the State. Admissions in 1917–18 numbered 95, and total inmates during the year 248. No deaths occurred. The expenditure was £4,481.

The New Town Training School for boys had 42 inmates at the end of June, 1918.

Under the boarding-out system upwards of 400 children are placed out. The total number of children under State control at the end of June, 1918, was 492, the net cost to the State of children's relief being £5,044.

(vii) *Neglected Children.* The following table summarises the number of neglected children under State Departments. Included in the figures are children boarded out with their own mothers, the numbers being, New South Wales 7,764, Victoria 5,151, Queensland 3,499, South Australia 300, Western Australia 185, Tasmania 6; the total for the Commonwealth being 16,905.

STATE RELIEF OF NEGLECTED CHILDREN.—TRANSACTIONS OF STATE DEPARTMENTS, 1917.

Particulars.	N.S.W.*	Vic.	Q'land.	S. Aust.†	W. Aust.	Tas.	C'wealth.
Number of Children under State control at end of year—							
Males	‡	5,805	3,250	1,002	776	275	‡
Females	‡	5,338	2,944	836	698	217	‡
Total	12,420	11,143	6,194	1,838	1,474	492	33,561
	£	£	£	£	£	£	£
Gross cost to State of children's relief	183,356	175,754	127,227	39,092	23,938	5,994	555,361
Receipts, from parents' contributions, etc.	6,580	8,540	8,142	4,529	1,328	950	30,069
Net cost	176,776	167,214	119,085	34,563	22,610	5,044	525,292

* For year ended 5th April following. † For the year ended 30th June, 1918.
‡ Details not available.

5. *Lepers.*—Lazarets for the treatment of lepers have been established in New South Wales (Little Bay); Queensland (Peel Island, near Brisbane, and Dayman Island, Torres Strait); and the Northern Territory (Mud Island). Quarantine and isolation stations have also been used for the segregation of patients. A great deal of information concerning the beginning and progress of leprosy in Australia was collected and published by the late Dr. J. Ashburton Thompson, while Chief Government Medical Officer and President of the Board of Health, New South Wales, from whose reports the following table has been compiled, up to and including the year 1915, later figures not being available in similar form:—

CASES OF LEPROSY RECORDED IN THE COMMONWEALTH, 1855 TO 1915.

State.	1855 to 1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
New South Wales ..	140	4	2	2	5	3	4	2	4	3
Victoria	(a) 27	..	..	..	..	..	1	..	1	1
Queensland	(b) 186	21	23	8	6	7	4	12	8	10
South Australia ..	37	1	..	..	..	..	..	..	..	..
Western Australia ..	4	..	3	4	3	2	..	..	..	5
Tasmania	1	..	..	..	..	..	..	..	..	..
Northern Territory (c)	..	..	..	..	..	..	..	1	..	..
Total	(a) (b) 395	26	28	14	14	12	9	15	13	19

(a) In addition, some Chinese. (b) In addition, many Kanakas. (c) As from the year 1911.

6. Hospitals for the Insane.—The method of compiling insanity statistics has been fairly uniform throughout the States, but the various methods of observing the early stages of the development of insanity introduce an element of uncertainty which considerably reduces the value of comparison. In the summary given below, licensed houses (except as regards expenditure) are included in the total for New South Wales and Victoria, but in the latter State the figures are exclusive of reception houses and observation wards in gaols:—

HOSPITALS FOR INSANE,(a) COMMONWEALTH, 1913 TO 1917.

Particulars.	1913.	1914.	1915.	1916.	1917.
Number of institutions	35	35	34	35	34
Number of beds	16,115	16,432	16,417	16,673	16,808
Admissions	3,153	3,339	3,118	3,268	3,054
Discharged as recovered, relieved, etc...	1,415	1,574	1,491	1,451	1,456
Deaths	1,292	1,270	1,341	1,459	1,306
Expenditure	£ 772,984	755,697	815,200	861,258	875,963

(a) Exclusive of receiving wards at two general hospitals and including six licensed houses for insane in Victoria.

The proportion of insane, as well as the total number returned as under treatment, has changed very little during recent years. In the next table the number of insane under official care in Australia is given, and in the table following, the proportion of insane to population.

The number of insane persons in institutions in Australia at the end of each of the years 1913-1917 was as follows:—

INSANE PERSONS IN THE COMMONWEALTH, 1913 TO 1917.

State.	1913.	1914.	1915.	1916.	1917.
New South Wales	6,639	6,906	7,063	7,240	7,340
Victoria.. .. .	5,631	5,729	5,767	5,793	5,833
Queensland	2,370	2,448	2,441	2,517	2,590
South Australia	1,082	1,080	1,137	1,158	1,176
Western Australia	933	981	1,009	1,045	1,066
Tasmania	526	537	522	545	570
Commonwealth	17,181	17,681	17,939	18,298	18,575

For the period embraced in the tables Victoria shows the highest rate of insanity, roughly 1 in 250 persons. It is stated that this is chiefly owing to the proportionately greater number of old persons in that State. On the other hand, in South Australia a considerably lower insanity rate has prevailed, averaging about 1 in 370, Tasmania following closely with an average of about 1 in 360.

PROPORTION OF INSANE PER 1,000 OF THE POPULATION, 1913 TO 1917.

(COMMONWEALTH.)

State.	1913.	1914.	1915.	1916.	1917.
New South Wales ..	3.62	3.71	3.78	3.92	3.88
Victoria	3.98	4.00	4.04	4.15	4.13
Queensland	3.60	3.62	3.55	3.70	3.83
South Australia	2.46	2.42	2.58	2.67	2.70
Western Australia	2.91	3.04	3.13	3.38	3.44
Tasmania	2.61	2.67	2.62	2.72	2.80
Commonwealth	3.53	3.58	3.62	3.75	3.76

Consequent upon the development of a more rational attitude towards the treatment of mental cases, a greater willingness is being shewn to submit afflicted persons to treatment at an earlier stage than formerly. Hence an increase in the number of recorded cases does not necessarily imply an actual increase in insanity. It is important to bear this in mind, because the small progressive increase in the numbers in the first of the immediately preceding tables is probably to be attributed largely, if not solely, to this circumstance.

The leading features in regard to institutions for the care of the insane are given below for 1917 :—

HOSPITALS FOR THE INSANE.—NUMBER, STAFFS, ACCOMMODATION, 1917.

(COMMONWEALTH.)

Particulars.	N.S.W.	Vic.(a)	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Number of Institutions—							
Government	9	9	3	1	2	1	25
Private	3	(b) 5	..	..	1	..	(b) 9
Total	12	14	3	1	3	1	34
Medical Staff—							
Males	20	21	6	2	2	2	53
Females	1	..	1	..	1	..	3
Total	21	21	7	2	3	2	56
Nursing Staff and Attendants—							
Males	608	547	225	91	120	88	1,679
Females	490	517	165	61	52	59	1,344
Total	1,098	1,064	390	152	172	147	3,023
Accommodation—							
Number of dormitories	(c) 353	1,424	572	(f)	41	334	(f)
Capacity in cubic feet	63,582,976	3,760,637	1,778,319	(f)	699,664	706,704	(f)
Number of beds	(c) 6,298	5,138	2,551	1,157	1,104	560	16,808
Cubic feet to each bed	{ (d) 600 }	{ 732 }	697	(f)	634	1,262	(f)
	{ (e) 1,000 }						

(a) Exclusive of Receiving House, Royal Park, and of the Receiving Wards at Bendigo and Geelong Hospitals. (b) There are five private licensed houses in Victoria, in which there were 90 cases at end of 1917. Other figures for these private asylums are not available. (c) Government hospitals only. (d) Ordinary dormitory. (e) Hospital dormitory. (f) Information not available.

HOSPITALS FOR THE INSANE.—PATIENTS TREATED, 1917.

Particulars.	N.S.W.	Vic. (a)	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth
Admissions and re-admissions during year—							
Males	819	402	264	176	107	42	1,810
Females	491	360	178	107	61	47	1,244
Total	1,310	762	442	283	168	89	3,054
Discharges—Recovered—							
Males	326	80	128	55	24	17	630
Females	258	103	82	43	15	9	510
Total	584	183	210	98	39	26	1,140
Relieved and unrelieved—							
Males	54	65	15	39	7	5	185
Females	35	57	6	17	11	5	131
Total	89	122	21	56	18	10	316
Absconders not retaken—							
Males	3	8	..	..	4	..	15
Females .. .. .	..	..	..	..	..	..	..
Total	3	8	..	..	4	..	15
Deaths—							
Males	363	230	92	73	64	18	840
Females	171	179	46	38	22	10	466
Total	534	409	138	111	86	28	1,306
Number of patients on books at end of year—							
Males	4,317	2,901	1,645	647	752	282	10,544
Females	3,023	2,932	945	529	314	288	8,031
Total	7,340	5,833	2,590	1,176	1,066	570	18,575
Average daily number resident—							
Males	4,117	2,606	1,625	642	742	282	10,014
Females	2,779	2,539	911	518	307	275	7,329
Total	6,896	5,145	2,536	1,160	1,049	557	17,343
Number of patients on books at end of year per 1,000 of population—							
Males	4.65	4.34	4.76	3.23	4.74	2.84	4.38
Females	3.19	3.99	2.88	2.28	2.09	2.89	3.22
Persons	3.91	4.15	3.84	2.72	3.45	2.87	3.79
Average number of patients resident in hospitals for insane per 1,000 of mean population—							
Males	4.44	3.90	4.70	3.20	4.68	2.84	4.16
Females	2.93	3.45	2.77	2.24	2.05	2.76	2.94
Persons	3.68	3.68	3.76	2.68	3.40	2.80	3.54

(a) Exclusive of inmates of the Receiving House, Royal Park, and of Receiving Wards attached to the hospitals at Bendigo and Geelong, and of five private licensed houses.

In some of the States it is the practice to allow persons well advanced towards recovery to leave the institutions and reside with their relatives or friends, but they are nevertheless under supervision of the asylum authorities and are kept on the books. The figures for admission, etc., include absconders captured and readmitted. Very few escapees succeed in avoiding capture.

The revenue of Government asylums is small in comparison with their cost, and consists chiefly of patients' fees. The proportion of expenditure borne by the State amounts to about 88 per cent.

HOSPITALS FOR THE INSANE (GOVERNMENT ONLY), REVENUE AND EXPENDITURE, 1917.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Revenue (exclusive of Government Grants)—							
Fees of patients.. ..	48,399	27,450	8,135	12,260	4,801	4,950	105,995
Other	2,567	5,036	1,647	735	1,401	1,191	12,577
Total	50,966	32,486	9,782	12,995	6,202	6,141	118,572
Expenditure—							
Salaries	175,546	119,512	56,835	21,054	28,470	14,800	416,217
Maintenance	153,802	120,831	56,165	27,109	29,621	11,014	398,542
Buildings .. ..	..	11,725	13,167	2,244	679	1,759	29,574
Other	16,664	3,303	601	..	..	11,062	31,630
Total	346,012	255,371	126,768	50,407	58,770	38,635	875,963

(i) *New South Wales.* The latest return available shews that the average length of residence in the hospitals of persons who died was 4 years 8 months for males and 5 years 9 months for females; and that of persons who were discharged was 1 year 2 months for males and 1 year 7 months for females.

There are also two State reception houses, where suspected persons are confined for observation, being subsequently either discharged or transferred to lunatic asylums. In two of the gaols observation wards have been instituted, with similar functions.

(ii) *Victoria.* The average residence in the hospitals of those who died was 8 years 3 months for males and 12 years 11 months for females; that of those discharged, 1 year 3 months for males and 1 year 9 months for females.

There are lunacy wards in two of the general hospitals; also a State receiving house where persons are placed for observation, and subsequently discharged or transferred to asylums.

(iii) *Queensland.* The average residence in the institutions of those who died was 6 years for males and 8 years 6 months for females; and of those who were discharged, 13 months for males and 2 years for females.

There are also three reception houses for insane, which act as depots to which patients are sent with a view to determining whether their mental illness is of a merely temporary character, easily relieved, or is of such a nature as to need further treatment at the State asylums.

(iv) *South Australia.* The average residence of those who died was 7 years and 2 months for males and 8 years for females; of those discharged, 5 months for males and 2 years and 2 months for females.

(v) *Western Australia.* The period of residence of those who died during the year averaged 3 years 8 months for males and 7 years 4 months for females; of those who were discharged, 1 year and 4 months for males and 1 year 7 months for females.

(vi) *Tasmania.* The period of residence of those who died was 7 years 4 months for males and 9 years 4 months for females; that of those discharged, 1 year 9 months for males and 1 year 7 months for females.

(vii) *Causes of Insanity.* The proportion of causes of insanity to the total of ascertained causes in Australia in the five years 1913-17 shews that hereditary influences have been the chief factor, more than one-fifth of the total ascertained causes

coming under this head. Domestic troubles, adverse circumstances, &c., have also been a fruitful source. Cases due to intemperance in drink range from one in seven to one in ten.

PROPORTION OF ASCERTAINED CAUSES, ETC., OF INSANITY, COMMONWEALTH, 1913 TO 1917.

Causes, Previous History, etc.	1913.	1914.	1915.	1916.	1917.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Domestic trouble, adverse circumstances, mental anxiety ..	7.6	10.1	10.6	9.6	9.7
Intemperance in drink ..	16.3	12.9	11.6	10.3	10.5
Hereditary influence, ascertained : congenital defect, ascertained ..	22.6	16.6	22.9	22.4	21.8
Pregnancy, lactation, parturition and puerperal state, uterine and ovarian disorders, puberty, change of life ..	6.0	4.9	7.1	5.1	6.0
Previous attacks ..	8.7	10.8	13.0	14.9	14.1
Accident, including sunstroke ..	2.6	2.2	1.7	1.8	1.9
Old age ..	10.2	8.4	8.2	10.0	9.8
Other causes ascertained ..	26.0	34.1	24.9	25.9	26.2
All ascertained causes ..	100.0	100.0	100.0	100.0	100.0

7. **Treatment of Inebriates.**—The treatment of inebriates is referred to in the section dealing with Public Justice hereinbefore. (See page 875.)

8. **Protection of Aborigines.**—For the protection of the aboriginal Australian race there are institutions, under the supervision of Aborigines Boards, where the blacks are housed and encouraged to work, the children receiving elementary education. The work is usually carried on at mission stations, but many of the natives are nomadic in habit of life, and receive food and clothing when they call, whilst others but rarely come under the notice of the Boards. The native race is extinct in Tasmania. The estimated average annual expenditure on maintenance, &c., for the last five years was—New South Wales, £25,000; Victoria, £4,000; Queensland, £21,000; South Australia, £20,000; Western Australia, £25,000; Northern Territory, £3,000; total for Commonwealth, £98,000. In New South Wales the average number receiving monthly aid in 1917 was 2,142, of whom 920 were adults; in Victoria there were 320 under the care of the Aborigines Protection Board on the 30th June, 1917; in Queensland, at the end of 1917, there were 2,546 aborigines at the mission stations; in South Australia, there were 749 inmates at mission stations, while in Western Australia the aborigines and half-castes in the native institutions numbered 447. At the mission stations in the Northern Territory about 300 were in residence, but casual assistance and medical attendance are given to large numbers of natives every year.

9. **Royal Life Saving Society.**—In each of the State capitals, "centres" of the Royal Life Saving Society have been established. Life preservation is the object of the Society, and its immediate objects are (a) educative and (b) remedial. By stimulating the acquirement of the art of swimming in schools, colleges, clubs, &c., it is desired to bring about a widespread and thorough knowledge of natation and life-saving; while life-belts, reels, lines, and other first-aid appliances are provided on ocean beaches and at places where they are likely to be in demand. Certificates of proficiency in various grades are issued after examination. In the year 1917-18 the number of certificates issued in New South Wales was 658; in Victoria 1,039; in Queensland 532; in South Australia 16; in Western Australia 531; in Tasmania 114; making a total for the Commonwealth of 2,890.

10. **Royal Humane Society.**—The Royal Humane Society of Australasia has for its objects (a) to grant awards for skill, promptness, and perseverance in life saving; (b) to provide assistance in cases of danger and apparent death; (c) to restore the apparently drowned; (d) to collect and circulate the latest information regarding approved methods and apparatus for life saving. In 1917, 89 awards of medals and certificates were made. Upwards of 350 lifebuoys have been provided at various places on the coasts, rivers, lakes, and reservoirs in the various States. Swimming is encouraged amongst school children, and awards made for proficiency.

11. **Other Charitable Institutions.**—Owing to variety of name and function of other charitable institutions it has been found impracticable to give detailed results. The aid given in kind—food, clothing, tools of trade, etc.—is considerable, whilst the shelter and treatment afforded range from a bed for a night for casual callers in establishments ministering minor charity, to indoor treatment over long periods in those that exist for the relief of the aged and infirm. The institutions not so particularised include asylums for the deaf, dumb, and blind, maternity institutions and infant homes, homes for the destitute and aged poor, industrial colonies, night shelters, crèches, homes of hope, rescue homes, free kindergarten and ragged schools, auxiliary medical charities, free dispensaries, benevolent societies and nursing systems, ambulance and health societies, boys' brigades, humane and animals' protection societies, prisoners' aid associations, shipwreck relief societies, bush fires and mining accident relief funds, etc.

12. **State Expenditure on Charities.**—The table below gives the amount expended by Government on charities in each of the last five years, the figures for the various States being compiled, as far as possible, on the same basis:—

STATE EXPENDITURE ON CHARITIES, 1913 TO 1917.

State or Territory.	1913.	1914.	1915.	1916.	1917.
	£	£	£	£	£
New South Wales	683,102	711,453	779,303	876,767	863,713
Victoria	468,588	485,018	541,668	525,682	543,225
Queensland	261,237	321,597	307,899	324,143	372,342
South Australia	117,204	129,281	167,272	162,849	191,748
Western Australia	201,215	222,417	223,064	247,589	178,477
Tasmania	62,205	70,387	78,092	79,494	88,445
Northern Territory	5,602	5,301	4,864	5,649	4,488
Commonwealth	1,799,153	1,945,454	2,107,162	2,222,173	2,242,438

13. **Total Charitable Expenditure.**—The expenditure in the Commonwealth in money on hospitals, charities, and all forms of relief publicly given, comprising the amounts furnished by Government and those raised by public subscription, etc., but excluding old-age pensions, exceeds £3,750,000 annually.

SECTION XXV.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

1. **General.**—The legislative power of the Commonwealth is vested in the Federal Parliament, which consists of the Sovereign, the Senate, and the House of Representatives. The Sovereign is represented throughout the Commonwealth by the Governor-General, who, subject to the Constitution of the Commonwealth, has such powers and functions as the Sovereign is pleased to assign to him. In each State there is a State Governor, who is the representative of the Sovereign for the State, and who exercises such powers within the State as are conferred upon him by the Letters Patent which constitute his office, and by the instructions, which inform him in detail of the manner in which his duties are to be fulfilled. The Legislature in each State is also bi-cameral, and consists of (a) a Legislative Council and (b) a Legislative Assembly, or House of Assembly, the legislative powers of these chambers being delimited by the Commonwealth and the State Constitutions. The latter chamber, which is the larger, is always elective; the qualification for the franchise varies in character. The former chamber is, in the case of New South Wales and Queensland, nominated by the Governor-in-Council, but in the other States it is elective, the constituencies being differently arranged and some property qualification for the electorate being required. In the Federal Parliament, however, the qualifications for the franchise are identical for both Houses. A brief account of the constitutional history of each of the States was given in previous issues of this book (see especially Year Book No. 4, pp. 27 to 32).

2. **Number of Members of the Legislatures.**—The following table shows the number of members in each of the legislative chambers in the Commonwealth and in each State at 1st August, 1919:—

MEMBERS OF PARLIAMENT OF AUSTRALIA, 1919.

Members in—	C'wealth.	N.S.W.	Victoria.	Q'land.	S. Aust. *	W. Aust.	Tas.	Total.
Upper House ..	36	68	34	48	20	30	18	254
Lower House ..	75	90	65	72	46	50	30	428
Total	111	158	99	120	66	80	48	682

* By "Constitution Further Amendment Act 1913," the number of members in the Upper House was increased to 20, and in the Lower to 46, the previous numbers being 18 and 40 respectively.

The use of the expressions "Upper House" and "Lower House" in the above statement, though not justified constitutionally, is convenient, inasmuch as the legislative chambers are known by different names in the Commonwealth and in some of the States.

In the Commonwealth Parliament the Upper House is known as the Senate, and in the State Parliaments as the Legislative Council. The Lower House is known as follows:—In the Commonwealth Parliament as the House of Representatives, in the State Parliaments of New South Wales, Victoria, Queensland, and Western Australia as the Legislative Assembly, and in the State Parliaments of South Australia and Tasmania as the House of Assembly.

3. The Cabinet and Executive Government.—The Sections of the Commonwealth Constitution Act dealing with the Executive Government will be found on page 24 hereinbefore. In both the Commonwealth and the State Legislatures the forms of government have been founded on their prototype, the Imperial Government, and the relations established between the Ministry and the representatives of the people are in accordance with those prevailing in Great Britain. The executive powers in the Commonwealth and in the State Governments are vested in the Governor-in-Council. The Executive Council in the Commonwealth and in the majority of the States is practically co-extensive with a group of departmental chiefs, who are usually spoken of as the Cabinet, and who change with the rise and fall of party majorities. In the Commonwealth Government, however, as well as in the States of Victoria and Tasmania, the Cabinet on leaving office remain members of the Executive Council, though they no longer attend its meetings, and it is in fact an essential feature of the Cabinet system of Government that they should not do so, except to assist the Governor in transacting purely formal business, or to advise on non-political questions.

(i) *The Executive Council.* This body is composed of the Governor and the Ministers of State holding office for the time being. The latter are sworn both as Executive Councillors and as Ministers controlling the different administrative departments. It should be observed that all persons living who have held Ministerial office under former Governments are also technically members of the Executive Council, and are thus liable to be specially summoned for attendance at meetings of that body. The meetings are official in character; they are presided over by the Governor-General (or Governor) and are attended by the clerk, who keeps a formal record of its proceedings. At these meetings the decisions of the Cabinet are put into official form and made effective, appointments are confirmed, resignations accepted, proceedings ordered, and notices and regulations published.

The official members of the Executive Council in August, 1919, have been previously specified (see page 37). In addition, all living members of past Ministries (see following pages) are technically liable to be officially summoned to attend meetings of the Executive Council.

Particulars of previous Commonwealth Ministries are given on pages 33 to 36 hereinbefore.

(ii) *The Cabinet.* The meetings of this body are private and deliberative. No one is admitted but the actual Ministry of the day, no records of the meetings transpire, and no official notice is taken of the proceedings. The members of the Cabinet, being the leaders of the party in power in Parliament, control the bent of legislation, and must retain the confidence of the people and also of the Governor-General (or Governor), to whom they act as an advising body. They also in effect wield, by virtue of their seats on the Executive Council, the whole executive force of the community. In summoning, proroguing, or dissolving Parliament, the Governor-General (or Governor) is usually guided by the advice tendered him by the Cabinet, though legally in no way bound to accept such advice. The following statement gives the names of the Ministers of State for the Commonwealth who have held office since the inauguration of the Commonwealth Government:—

**MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM
1st JANUARY, 1901, to AUGUST, 1919.**

HOME AND TERRITORIES. (Previous to 14/11/16 known as External Affairs).			TRADE AND CUSTOMS.		
Name.	From—	To—	Name.	From—	To—
(b) Rt. Hon. E. BARTON, P.C., K.C. (a) ..	1/1/01	23/9/03	Rt. Hon. C. C. KINGSTON, P.C., K.C. ..	1/1/01	24/7/03
Hon. A. DEAKIN (a) ..	23/9/03	26/4/04	Hon. Sir W. J. LYNE, K.C.M.G. ..	7/8/03	26/4/04
Hon. W. M. HUGHES (k) ..	26/4/04	17/8/04	Hon. A. FISHER (h) ..	26/4/04	17/8/04
Rt. Hon. G. H. REID, P.C., K.C. (g) ..	17/8/04	4/7/05	Hon. A. MCLEAN ..	17/8/04	4/7/05
Hon. A. DEAKIN (a) ..	4/7/05	12/11/08	Hon. Sir W. J. LYNE, K.C.M.G. ..	4/7/05	29/7/07
Hon. E. L. BATCHELOR ..	12/11/08	2/6/09	Hon. A. CHAPMAN ..	29/7/07	12/11/08
Hon. L. E. GROOM ..	2/6/09	29/4/10	Hon. F. G. TUDOR ..	12/11/08	2/6/09
Hon. E. L. BATCHELOR ..	29/4/10	f 8/10/11	Hon. Sir R. W. BEST, K.C.M.G. ..	2/6/09	29/4/10
Hon. J. THOMAS ..	14/10/11	24/6/13	Hon. F. G. TUDOR ..	29/4/10	24/6/13
Hon. P. McM. GLYNN, K.C. ..	24/6/13	17/9/14	Hon. L. E. GROOM ..	24/6/13	17/9/14
Hon. J. A. ARTHUR ..	17/9/14	f 9/12/14	Hon. F. G. TUDOR ..	17/9/14	14/9/16
Hon. HUGH MAHON ..	14/12/14	14/11/16	Rt. Hon. W. M. HUGHES, P.C. ..	29/9/16	14/11/16
Hon. F. W. BAMFORD ..	14/11/16	17/2/17	Hon. W. O. ARCHIBALD ..	14/11/16	17/2/17
Hon. P. McM. GLYNN, K.C. ..	17/2/17	(e)	Hon. J. A. JENSEN ..	17/2/17	13/12/18
			Hon. W. A. WATT ..	13/12/18	17/1/19
			Hon. W. M. GREENE ..	17/1/19	e
ATTORNEY-GENERAL.			TREASURER.		
Name.	From—	To—	Name.	From—	To—
Hon. A. DEAKIN ..	1/1/01	23/9/03	Rt. Hon. Sir G. TURNER, P.C., K.C.M.G. ..	1/1/01	26/4/04
Hon. J. G. DRAKE ..	23/9/03	26/4/04	Hon. J. C. WATSON (a) ..	26/4/04	17/8/04
Hon. H. B. HIGGINS, K.C. ..	26/4/04	17/8/04	Rt. Hon. Sir G. TURNER, P.C., K.C.M.G. ..	17/8/04	4/7/05
Hon. Sir J. H. SYMON, K.C.M.G., K.C. ..	17/8/04	4/7/05	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	4/7/05	29/7/07
Hon. I. A. ISAACS ..	4/7/05	11/10/06	Hon. Sir W. J. LYNE, K.C.M.G. ..	29/7/07	12/11/08
Hon. L. E. GROOM ..	11/10/06	12/11/08	Hon. A. FISHER (a) (h) ..	12/11/08	2/6/09
Hon. W. M. HUGHES (k) ..	12/11/08	2/6/09	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	2/6/09	29/4/10
Hon. P. M. GLYNN ..	2/6/09	29/4/10	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	29/4/10	24/6/13
Hon. W. M. HUGHES (k) ..	29/4/10	24/6/13	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	24/6/13	17/9/14
Hon. W. H. IRVINE, K.C. (j) ..	24/6/13	17/9/14	Rt. Hon. A. FISHER, P.C. (a) ..	17/9/14	27/10/15
Hon. W. M. HUGHES (a) (k) ..	17/9/14	(e)	Hon. W. G. HIGGS ..	27/10/15	27/10/16
			Hon. A. POYNTON ..	24/11/16	17/2/17
			Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	17/2/17	27/3/18
			Hon. W. A. WATT ..	27/3/18	(e)
WORKS AND RAILWAYS. (Previous to 14/11/16 known as Home Affairs).			DEFENCE.		
Name.	From—	To—	Name.	From—	To—
Hon. Sir W. J. LYNE, K.C.M.G. ..	1/1/01	7/8/03	Hon. Sir J. R. DICKSON, K.C.M.G. ..	1/1/01	f 10/1/01
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	7/8/03	26/4/04	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	17/1/01	7/8/03
Hon. E. L. BATCHELOR ..	26/4/04	17/8/04	Hon. J. G. DRAKE ..	7/8/03	23/9/03
Hon. D. THOMSON ..	17/8/04	4/7/05	Hon. A. CHAPMAN ..	23/9/03	26/4/04
Hon. L. E. GROOM ..	4/7/05	11/10/06	Hon. A. DAWSON ..	26/4/04	17/8/04
Hon. T. T. EWING (c) ..	11/10/06	23/1/07	Hon. J. W. McCAY (m) ..	17/8/04	4/7/05
Hon. J. H. KEATING ..	23/1/07	12/11/08	Hon. T. PLAYFORD ..	4/7/05	23/1/07
Hon. H. MAHON ..	12/11/08	2/6/09	Hon. Sir T. T. EWING, K.C.M.G. ..	23/1/07	12/11/08
Hon. G. W. FULLER ..	2/6/09	29/4/10	Hon. G. F. PEARCE ..	12/11/08	2/6/09
Hon. K. O'MALLEY ..	29/4/10	24/6/13	Hon. J. COOK (s) ..	2/6/09	29/4/10
Hon. JOSEPH COOK (a) (i) ..	24/6/13	17/9/14	Hon. G. F. PEARCE ..	29/4/10	24/6/13
Hon. W. O. ARCHIBALD ..	17/9/14	27/10/15	Hon. E. D. MILEN ..	24/6/13	17/9/14
Hon. K. O'MALLEY ..	27/10/15	14/11/16	Hon. G. F. PEARCE ..	17/9/14	(e)
Hon. P. J. LYNCH ..	14/11/16	17/2/17			
Hon. W. A. WATT ..	17/2/17	27/3/18			
Hon. L. E. GROOM ..	27/3/18	(e)			

(a) Prime Minister. (b) Afterwards the Rt. Hon. Sir E. Barton, P.C., G.C.M.G., etc. (c) Afterwards the Hon. Sir T. T. Ewing, K.C.M.G. (d) Afterwards the Hon. Sir N. E. Lewis, K.C.M.G. (e) Still in office. (f) Died while holding office. (g) Prime Minister, afterwards the Rt. Hon. Sir G. H. Reid, P.C., G.C.M.G. (h) Afterwards the Rt. Hon. A. Fisher, P.C. (i) Afterwards the Rt. Hon. Sir J. Cook, P.C., G.C.M.G. (j) Afterwards the Hon. Sir W. H. Irvine, K.C.M.G., K.C. (k) Afterwards the Rt. Hon. W. M. Hughes, P.C. (l) Afterwards Lord Forrest of Bunbury. (m) Afterwards the Hon. Sir J. W. McCay, K.C.M.G.

MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM
1st JANUARY, 1901, TO AUGUST, 1919—*continued.*

POSTMASTER-GENERAL.			VICE-PRESIDENT OF THE EXECUTIVE COUNCIL.		
Name.	From—	To—	Name.	From—	To—
Rt. Hon. Sir JOHN FORREST, P.C., G.C.M.G. (d) ..	1/1/01	17/1/01	Hon. R. E. O'CONNOR, K.C. ..	1/1/01	23/9/03
Hon. J. G. DRAKE ..	5/2/01	7/8/03	Hon. T. PLAYFORD ..	23/9/03	26/4/04
Hon. Sir P. O. FYSH, K.C.M.G. ..	7/8/03	26/4/04	Hon. G. MCGREGOR ..	26/4/04	17/8/04
Hon. H. MAHON ..	26/4/04	17/8/04	Hon. J. G. DRAKE ..	17/8/04	4/7/05
Hon. S. SMITH ..	17/8/04	4/7/05	Hon. T. T. EWING (c) ..	4/7/05	11/10/06
Hon. A. CHAPMAN ..	4/7/05	29/7/07	Hon. J. H. KEATING ..	11/10/06	19/2/07
Hon. S. MAUGER ..	29/7/07	12/11/08	Hon. Sir R. W. BEST, K.C.M.G. ..	19/2/07	12/11/08
Hon. J. THOMAS ..	12/11/08	2/6/09	Hon. G. MCGREGOR ..	12/11/08	2/6/09
Hon. S. SMITH ..	2/6/09	29/4/10	Hon. E. D. MILLEN ..	2/6/09	29/4/10
Hon. Sir J. QUICK ..	29/4/10	14/10/11	Hon. G. MCGREGOR ..	29/4/10	24/6/13
Hon. J. THOMAS ..	29/4/10	14/10/11	Hon. J. H. MCCOLL ..	24/6/13	17/9/14
Hon. C. E. FRAZER ..	14/10/11	24/6/13	Hon. A. GARDINER ..	17/9/14	27/11/16
Hon. AGAR WYNNE ..	24/6/13	17/9/14	Hon. W. G. SPENCE ..	27/11/16	17/2/17
Hon. W. G. SPENCE ..	17/9/14	27/10/15	Hon. E. D. MILLEN ..	17/2/17	16/11/17
Hon. W. WEBSTER ..	27/10/15	(e)	Hon. L. E. GROOM ..	16/11/17	27/3/18
			Hon. E. J. RUSSELL ..	27/3/18	(e)
THE NAVY.			REPATRIATION.		
Name.	From—	To—	Name.	From—	To—
Hon. J. A. JENSEN ..	12/7/15	17/2/17	Hon. E. D. MILLEN ..	28/9/17	(e)
Rt. Hon. J. COOK, P.C. (t)	17/2/17	(e)			
WITHOUT PORTFOLIO.					
Name.	From—	To—	Name.	From—	To—
Hon. N. E. LEWIS (d) ..	1/1/01	23/4/01	Hon. J. S. CLEMONS ..	24/6/13	17/9/14
Hon. Sir P. O. FYSH, K.C.M.G. ..	23/4/01	7/8/03	Hon. W. H. KELLY ..	24/6/13	17/9/14
Hon. J. H. KEATING ..	5/7/05	11/10/06	Hon. H. MAHON ..	17/9/14	14/12/14
Hon. S. MAUGER ..	11/10/06	29/7/07	Hon. J. A. JENSEN ..	17/9/14	12/7/15
Hon. J. H. COOK ..	28/1/08	12/11/08	Hon. E. J. RUSSELL ..	17/9/14	27/3/18
Hon. J. HUTCHISON ..	12/11/08	2/6/09	Hon. W. H. LAIRD SMITH ..	14/11/16	17/2/17
Hon. A. DEAKIN (a) ..	2/6/09	29/4/10	Hon. L. E. GROOM ..	17/2/17	16/11/17
Col. Hon. J. F. G. FOXTON, C.M.G. ..	2/6/09	29/4/10	Hon. A. POYNTON ..	26/3/18	(e)
Hon. E. FINDLEY ..	29/4/10	24/6/13	Hon. G. H. WISE ..	26/3/18	(e)
Hon. C. E. FRAZER ..	29/4/10	14/10/11	Hon. W. M. GREENE ..	26/3/18	17/1/19
Hon. E. A. ROBERTS ..	23/10/11	24/6/13	Hon. R. B. ORCHARD ..	26/3/18	(e)

See notes on previous page.

(iii) *Constitution of Ministries.* The subjoined table shows the constitution of the Ministries in the Commonwealth and the State Governments at 1st August, 1919 :—

CONSTITUTION OF MINISTRIES, 1919.

Ministers with Seats in—	C'wealth.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
The Upper House ..	3	2	4	1	2	2	3	17
The Lower House ..	9	10	7	9	4	6	4	49
Total ..	12	12	11	10	6	8	7	66

The names of the members of the Ministries in each State in August, 1919, are shewn in the following statement :—

MEMBERS OF STATE GOVERNMENT MINISTRIES, 1919.

NEW SOUTH WALES.—MINISTRY.

<i>Premier—</i>	<i>Minister for Lands and Minister for Forests—</i>
HON. W. A. HOLMAN.	HON. W. G. ASHFORD.
<i>Colonial Secretary—</i>	<i>Treasurer and Minister for Mines—</i>
HON. G. W. FULLER.	HON. J. C. L. FITZPATRICK.
<i>Solicitor-General, and Minister for Justice and Local Government—</i>	<i>Minister for Agriculture—</i>
HON. J. D. FITZGERALD, M.L.C.	HON. W. C. GRAHAME.
<i>Secretary for Public Works and Minister for Railways—</i>	<i>Minister for Public Health—</i>
HON. R. T. BALL.	HON. D. STOREY.
<i>Attorney-General—</i>	<i>Minister for Housing—</i>
HON. J. GARLAND, K.C., M.L.C.	HON. D. R. HALL.
<i>Minister for Public Instruction and Labour and Industry—</i>	<i>Minister without Portfolio, assisting Premier and Minister for Lands—</i>
HON. A. G. F. JAMES.	HON. C. W. OAKES.

VICTORIA.—MINISTRY.

<i>Premier and Attorney-General—</i>	<i>President of the Board of Land and Works, Commissioner of Crown Lands and Survey and Minister of Water Supply—</i>
HON. H. S. W. LAWSON.	HON. F. G. CLARKE, M.L.C.
<i>Chief Secretary, Minister of Labour, and Minister of Public Health—</i>	<i>Minister of Railways and Mines and a Vice-President of the Board of Land and Works—</i>
MAJOR THE HON. M. BAIRD.	HON. S. BARNES.
<i>Treasurer—</i>	<i>Minister of Agriculture—</i>
HON. W. M. MCPHERSON.	HON. D. S. OMAN.
<i>Solicitor-General, Commissioner of Public Works, and a Vice-President of the Board of Land and Works—</i>	<i>Ministers without Portfolio—</i>
HON. A. ROBINSON, M.L.C.	HON. W. KENDELL, M.L.C.
<i>Minister of Public Instruction and Forests, and a Vice-President of the Board of Land and Works—</i>	HON. J. MCWHAE, M.L.C.
HON. W. HUTCHINSON.	HON. H. J. M. CAMPBELL.

QUEENSLAND.—MINISTRY.

<i>Premier, Chief Secretary, and Attorney-General—</i>	<i>Secretary for Public Instruction—</i>
HON. T. J. RYAN.	HON. H. F. HARDACRE.
<i>Home Secretary—</i>	<i>Vice-President of the Executive Council—</i>
HON. J. HUXHAM.	HON. J. M. HUNTER.
<i>Secretary for Public Lands—</i>	<i>Secretary for Mines—</i>
HON. J. H. COYNE.	HON. A. J. JONES, M.L.C.
<i>Treasurer and Secretary for Public Works—</i>	<i>Secretary for Agriculture and Stock—</i>
HON. E. G. THEODORE.	HON. W. LENNON.
<i>Secretary for Railways—</i>	<i>Minister without Portfolio—</i>
HON. J. A. FHELLY.	HON. W. N. GILLIES.

SOUTH AUSTRALIA.—MINISTRY.

Premier and Treasurer—

HON. A. H. PEAKL.

*Chief Secretary and Minister of Marine and
of Irrigation—*

HON. J. G. BICE, M.L.C.

*Commissioner of Public Works and Minister
of Railways and of Agriculture—*

HON. G. RITCHIE.

*Commissioner of Crown Lands and Immi-
gration and Minister of Repatriation—*

HON. E. A. ANSTEY.

*Attorney-General and Minister of In-
dustry—*

HON. H. N. BARWELL.

Minister of Education and of Mines—

HON. W. H. HARVEY, M.L.C.

WESTERN AUSTRALIA.—MINISTRY.

*Premier, Colonial Treasurer, and Minister
for Lands and Repatriation—*

HON. JAMES MITCHELL, C.M.G.

Colonial Secretary—

HON. F. T. BROUN.

Minister for Health and Education—

HON. H. P. COLEBATCH, M.L.C.

*Minister for Mines, Railways, Industries,
and Woods and Forests—*

HON. J. SCADDAN.

Attorney-General—

HON. T. P. DRAPER, K.C.

*Minister for Works, Trading Concerns, and
for Water Supply—*

HON. W. J. GEORGE.

Ministers without Portfolio—

HON. F. E. S. WILLMOTT.

HON. C. F. BAXTER, M.L.C.

TASMANIA.—MINISTRY.

*Premier and Chief Secretary and Minister
for Education—*

HON. W. H. LEE.

*Attorney-General and Minister for Rail-
ways—*

HON. W. B. PROFSTING, M.L.C.

Treasurer and Minister for Mines—

HON. SIR N. E. LEWIS, K.C.M.G.

*Minister of Lands and Works and Agri-
culture—*

HON. J. B. HAYES.

Ministers without Portfolio—

HON. T. SHIELDS, M.L.C.

HON. H. HAYS, M.L.C.

HON. A. HEAN, C.M.G.

4. **The Appointment of Ministers and of Executive Councillors.**(a)—Although it is technically possible for the Governor to make and unmake cabinets at his pleasure, under all ordinary circumstances his apparent liberty in choosing his Executive Council is virtually restricted by the operation of constitutional machinery. When a Ministry is defeated in Parliament or at the polls, the procedure both in the Commonwealth and the State Parliaments generally, though not invariably, follows that prevailing in the Imperial Parliament. The customary procedure in connection with the resignation or acceptance of office by a Ministry is described fully in previous issues of the Year Book. (No. 6, page 942.)

5. **Enactments of the Parliament.**—In the Commonwealth, all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Constitution Act (see pp. 21–24 hereinbefore). In the States, laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council and Legislative Assembly or House of Assembly. The Governor-General or the State Governor acts as Viceroy as regards giving the Royal Assent to or vetoing Bills passed by the Legislatures, or reserving them for the special consideration of the Sovereign. In the States, the Councils and Assemblies are empowered generally, subject to the Commonwealth Constitution, to make laws in and for their respective States, in all cases whatsoever. Subject to certain limitations, they may alter, repeal, or vary their Constitution. Where a law of a State is inconsistent with a law of the Commonwealth the latter prevails, and the former is, to the extent of the inconsistency, invalid.

(a) See Jenks' "Government of Victoria," pp. 269 *et seq.*

6. Powers and Functions of the Governor-General and of the Governors.—The Governor-General and the State Governors act under the authority of the Commissions by which they are appointed and the Letters Patent under the Great Seal of the United Kingdom, and according to instructions issued by the Colonial Office and passed under the Royal Sign Manual and Signet.

The office of Governor-General and Commander-in-Chief of the Commonwealth was constituted by Letters Patent issued on the 29th October, 1900, in pursuance of the provisions of the Commonwealth Constitution Act (see page 15 hereinbefore). The powers and duties of the Governor-General were further defined by Royal instructions passed on the same date. The principal and most important of his functions, legislative as well as executive, are expressly conferred upon him by the terms of the Constitution itself. He is the custodian of the Great Seal of the Commonwealth, and has the appointment of political officers to administer Departments of State of the Commonwealth.

His legislative functions are exercised with respect to proposed laws as finally passed by the Federal Houses of Parliament. Such Bills are presented to the Governor-General for his assent in the King's name, on receiving which they become law throughout the Commonwealth. The Governor-General may, however, withhold his assent, or may reserve any Bill for the King's pleasure. He may return to the House in which it originated any proposed law with suggested amendments. The King may disallow any law within one year from the date on which it was assented to by the Governor-General.

The Governor-General's executive functions are, under ordinary circumstances, exercised on the advice of his responsible Ministers. Various specific powers are vested in him by the Constitution; he may summon or prorogue Parliament and may dissolve the House of Representatives. He is the Commander-in-Chief of the military and naval forces of the Commonwealth, and is invested by the Crown with the prerogative of mercy in cases of offences committed against the laws of the Commonwealth.

The Governor-General is also invested with authority in certain matters of Imperial interest, such as the control of the naval and military forces of the Commonwealth; the observance of the relations of foreign States to Great Britain, so far as they may be affected by the indirect relations of such States to the Commonwealth; and the treatment of neutral and belligerent ships in Commonwealth waters in time of war.

The Governor-General may not leave the Commonwealth without having first obtained leave from the Imperial Government, to whom alone he is responsible for his official acts. The powers and functions of the State Governors are, within their respective States, very similar to those exercised by the Governor-General for the Commonwealth, and are defined by the terms of their Commissions and by the Royal instructions accompanying the same. A State Governor is the official head of the State Legislature, and assents in the name of the Crown to all Bills passed by the Parliament, except those reserved for the Royal Assent. The latter include certain classes of Bills, which are regulated by the Constitution Acts and by the instructions issued by the Imperial Government. The Governors are, under ordinary circumstances, guided by their Executive Councils, the chief matters in which the exercise of discretion is required being the granting or withholding of a dissolution of Parliament when requested by a Premier; the appointment of a new Ministry; or the assenting to, vetoing, or receiving of Bills passed by the legislative chambers. The Governors are authorised, under certain restrictions, to administer the prerogative of mercy by the reprieve or pardon of criminal offenders within their jurisdiction, and to remit fines and penalties due to the Crown. All moneys to be expended for the public service are issued from the Treasury under the Governor's warrant.

In a recent work in which the above matters are exhaustively discussed, (a) it is indicated that there are important functions in the hands of a Governor, and that his influence may extend beyond what is anticipated by those who are unfamiliar with the activities of actual government. This is, however, essentially a matter of individual character. A Governor is entitled to the fullest confidence of his Ministers, to be informed at once of any important decisions taken by his Cabinet, and to discuss them with the utmost freedom. He can point out objections, give advice, deprecate measures, and

(a) "Responsible Government in the Dominions," A. B. Keith, Oxford, Clarendon Press, 1912, Vol. I.

urge alterations, subject, however, to his remaining always behind the scenes. It should be remembered, moreover, that the State Executive Councils owe their existence to the Royal Letters Patent constituting the office of Governor and that, in law, the Governor is never bound to accept the advice of his Ministers. He cannot indeed do many things without their advice, for it is provided by law (either in the Constitution or Interpretation Acts, or by authoritative usage) that a Governor-in-Council must act on the advice of the Council. He cannot therefore perform any act in Council without a majority, though he can always refuse to act, and thus force his Ministers either to give way on the point at issue or to resign their posts. Even in the case of a ministerial act he can forbid a Minister to take any action on pain of dismissal. Nominally a Governor will, of course, be justified in accepting the advice of his Ministers as being a correct statement of the facts and law, but he is not bound to be so satisfied, and in matters of law he must exercise his own judgment if he be in doubt. A Governor is not, however, entitled to refuse to act on the advice of his Ministers because he personally does not approve of their action or policy; his duty is not to his own conscience, but to the people of the State which he governs, and he should execute that duty independently of every other consideration.

Although the above furnishes a brief résumé of the powers of a Governor from a legal point of view, in practice the exercise of his powers is generally limited by his ability to persuade his Ministers as to the desirability of any particular course of action. Disagreement with Ministers is only justifiable in extreme cases, and even then it involves the responsibility of finding other Ministers, who must either shew that they have as much support as any other party, or be prepared to administer during a dissolution, pending an appeal to the people. It may be remarked that a Governor who cannot work with Ministers possessing the support of the people must be recalled, unless he has acted on Imperial grounds, and the dispute is not one between him and Ministers, but between the Imperial and State Governments.

It may also be pointed out that a Governor, besides acting according to law, has, within the range of what is lawful, to act according to the instructions of the Secretary of State. He is called upon to do so by the instruments which create his office and appoint him Governor, and he obeys the Secretary of State as the mouthpiece of the Crown. Historically, there have been many cases in which these instructions have placed Governors in opposition to their Ministers.

The present Governor-General is the Right Honourable Sir Ronald Craufurd Munro Ferguson, P.C., G.C.M.G. He assumed office 18th May, 1914. Particulars of previous Governors-General are given on p. 33 hereinbefore.

The following is a list of the Governors of the various States of the Commonwealth :—

New South Wales ..	SIR WALTER DAVIDSON, K.C.M.G.
Victoria ..	The Hon. SIR ARTHUR LYULPH STANLEY, K.C.M.G. (on leave). Lieutenant-Governor, SIR WILLIAM HILL IRVINE, K.C.M.G., K.C.
Queensland ..	Major SIR HAMILTON JOHN GOOLD-ADAMS, G.C.M.G., C.B.
South Australia ..	Lieutenant-Colonel SIR HENRY LIONEL GALWAY, K.C.M.G., D.S.O.
Western Australia ..	The Rt. Hon. SIR WILLIAM GREY ELLISON-MACARTNEY, P.C., K.C.M.G.
Tasmania ..	SIR FRANCIS ALEXANDER NEWDIGATE NEWDEGATE, K.C.M.G.

7. Cost of Parliamentary Government.—The following statement shews the cost of parliamentary government in the Commonwealth and in each State, as well as the cost per head of population, for the year ended the 30th June, 1918. In order to avoid any incorrect conclusions as to the cost of the Governor-General's or Governor's establishment, it may be pointed out that a very large part of the expenditure (with the exception of item "Governor's salary") under the head of Governor-General or Governor represents official services entirely outside the Governor's personal interests, and carried out at the request of the Government.

COST OF PARLIAMENTARY GOVERNMENT, 1917-18.

Particulars.	C'with.	N.S.W.	Vic.	Q'land.	S.A.†	W.A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. Governor-General or Governor—								
Governor's salary ..	10,000	5,000	5,000	3,000	4,000	4,000	2,750	33,750
Official secretary's salary ..	650	400		300	..	350	..	
Governor's establishments ..	9,771	210	4,305	2,003	..	1,115	410	
Repairs and maintenance of Governor's residences ..	6,472	886	(e)317	..	1,188	2,383	399	
Miscellaneous ..	..	2,780	..	1,552	123	204	271	
Total ..	26,893	9,276	9,622	6,855	5,311	8,052	3,830	69,839
2. Executive Council—								
Salaries of Officers ..	156	115	612	20	..	350	..	1,253
Other expenses ..	4	..	25	96	..	44	..	169
Total ..	160	115	637	116	..	394	..	1,422
3. Ministry—								
Salaries of Ministers ..	14,901	11,040	8,400	8,300	5,000	6,200	3,200	57,041
Other expenses ..	87	2,291	(d)	..	..	2,431	617	5,426
Visits of Commonwealth Ministers to London ..	4,450	..	..	..	..	..	..	4,450
Total ..	19,438	13,331	8,400	8,300	5,000	8,631	3,817	66,917
4. Parliament—								
A. The Upper House :								
Allowances to members ..	20,854	..	..	1,500	3,600	9,576	3,000	38,530
Railway passes ..	(a)9,950	8,432	(e)5,000	(f)	800	(f)	750	24,932
Other expenses of members ..	(a)378	..	..	..	181	..	..	559
B. The Lower House :								
Allowances to members ..	42,796	40,607	16,240	20,848	7,885	15,600	5,087	149,063
Railway passes ..	(b)	10,841	(e)	(f)	1,240	(f)	1,250	13,931
Other expenses of members ..	(b)	5,455	..	1,531	540	..	43	7,569
C. Miscellaneous :								
Salaries of officers and staff ..	14,892	22,656	13,710	3,755	5,285	3,667	2,846	66,811
Printing ..	6,776	13,110	1,247	3,985	5,508	545	2,195	33,366
Hansard ..	18,918	6,925	6,674	8,312	4,918	4,049	..	49,796
Library ..	6,692	565	983	1,065	757	400	..	
Refreshment rooms ..	1,990	(c)	2,145	1,500	1,402	1,052	..	
Water, power, light, and heat ..	787	552	515	461	677	144	744	40,855
Postage, stores, and stationery ..	1,859	2,606	1,030	345	368	280	..	
Miscellaneous ..	8,073	1,333	211	446	457	1,416	..	
Total ..	133,965	113,082	47,755	43,748	34,218	36,729	15,915	425,412
5. Electoral Office—								
Salaries of officers and staff ..	41,356	1,307	700	2,283	3,804	2,181	2,899	127,929
Other expenses ..	39,786	3,431	15,091	8,964	3,818	2,309	..	
Total ..	81,142	4,738	15,791	11,247	7,622	4,490	2,899	127,929
6. Cost of Elections ..	4,355	17,564	11,219	22,026	935	6,199	(g)	62,208
7. Royal Commissions and Select Committees ..	4,615	3,872	1,434	5,619	2,077	4,047	1,428	23,092
GRAND TOTAL ..	270,568	161,978	94,858	97,911	55,163	68,542	27,889	776,909
Cost per head of population ..	1s. 1.2d.	1s. 8.6d.	1s. 4.1d.	2s. 10.7d.	2s. 6.8d.	4s. 5.2d.	2s. 8.9d.	3s. 1.1d.

* See preceding paragraph. † Figures for 1916-17. Later figures not supplied. (a) Including Lower House. (b) Included in Upper House. (c) Included in Miscellaneous. (d) See note (e). Ministers are allowed £1 per day when travelling. (e) £5,000 is paid to the Railway Department to cover issue of passes to State Governor and Staff, members of Parliament of Victoria and other States, and Executive Councillors. (f) Not available. Each member of both Houses has a pass for the whole of the State Railways. (g) Included in Electoral Office. (h) Exclusive of travelling expenses of members, free passes, special trains, etc.

§ 2. Parliaments and Elections.

1. **Qualifications for Membership and for Franchise.**—The summary on pages 920 and 921 gives particulars as to the legislative chambers in the Commonwealth and State Parliaments, and shews concisely the qualifications necessary for membership and for the franchise in each House. Persons who are otherwise eligible, either as members or voters, are generally disqualified on the usual grounds of being of unsound mind or attainted of treason, being convicted of certain offences, and, as regards membership, on the grounds of holding a place of profit under the Crown, being pecuniarily interested in Government contracts, or being an undischarged bankrupt.

2. **The Federal Parliament.**—The Senate consists of 36 members, six being returned by each of the original federating States. Members of this chamber are elected for a term of six years, but by a provision in the Constitution a certain number retire at the end of every third year, although they are eligible for re-election. In accordance with the Constitution the total number of members of the House of Representatives must be as nearly as possible double that of the Senate. In the House of Representatives the States are represented on a population basis, and the numbers stand at present as follows:—New South Wales, 27; Victoria, 21; Queensland, 10; South Australia, 7; Western Australia, 5; Tasmania, 5—total, 75. The Constitution provides for a minimum of five members in each original State. Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. In elections for Senators, each State is counted as a single electorate, but an elaborate scheme of subdivision had to be undertaken in order to provide workable electorates in each State for members of the House of Representatives. Members of both Houses are paid at the rate of £600 per annum. Further information regarding the Senate and the House of Representatives is given on pages 16 to 20 hereinbefore.

Particulars of Elections. There have been six complete Parliaments since the inauguration of Federation. The dates of the opening and dissolution of these Parliaments are given on page 32. The fifth Parliament, which was opened on the 9th July, 1913, was dissolved on the 27th June, 1914, in somewhat unusual circumstances. Under Section 27 of the Constitution, it is provided that, should the Senate fail to pass, or pass with amendments, any proposed law previously passed by the House of Representatives, and should the latter House, after a specified interval, again pass the proposed law, with or without the amendments of the Senate, and the Senate for a second time reject it or pass it with amendments to which the lower House will not agree, then the Governor-General may dissolve the two Houses simultaneously. For the first time in the history of the Commonwealth this deadlock between the Senate and the House of Representatives occurred in the second session of the Fifth Parliament, and, in accordance with the section of the Constitution referred to above, both Houses were dissolved by the Governor-General. The first session of the seventh Parliament opened on the 14th June, 1917. Particulars regarding Commonwealth elections may be found in the tables given hereunder:—

FEDERAL ELECTION, MARCH, 1901.

State.	Number of Electors.		Electors who Voted.		Percentage of Electors who Voted.	
	Total.	In contested Districts for the House of Representatives.	Senate.	House of Representatives.	Senate.	House of Representatives.
New South Wales ..	331,765	317,902	218,456	211,035	65.81	66.38
Victoria ..	280,661	233,051	149,012	130,610	53.09	56.04
Queensland ..	103,806	103,806	51,336	62,656	49.45	60.35
South Australia ..	154,281	154,281	62,952	62,892	40.80	40.76
Western Australia ..	87,920	70,230	28,733	25,945	32.68	36.95
Tasmania ..	39,528	39,528	18,822	18,572	47.62	46.99
Commonwealth ..	997,961	918,798	529,311	511,710	53.04	55.69

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906, 13th APRIL, 1910, 31st MAY, 1913, 5th SEPTEMBER, 1914, AND 5th MAY, 1917.

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.		
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.
THE SENATE.									
New South Wales	1903 360,285	326,764	687,049	189,877	134,487	324,364	52.70	41.16	47.21
	1906 392,077	345,522	737,599	229,654	151,682	381,336	58.57	43.90	51.70
	1910 444,269	390,933	834,662	301,167	211,835	512,802	67.79	54.21	61.44
	1913 554,028	482,159	1,036,187	405,152	312,703	717,855	73.13	64.85	69.28
	1914 576,309	506,820	1,083,129	407,464	294,939	702,403	70.70	58.19	64.85
	1917 566,345	528,489	1,094,834	430,514	343,143	773,657	76.92	64.93	70.66
Victoria	1903 302,069	310,403	612,472	171,830	141,648	313,478	56.89	45.63	51.18
	1906 335,886	336,168	672,054	209,252	171,933	381,185	62.30	51.14	56.72
	1910 346,050	357,649	703,699	245,666	222,866	468,532	70.99	62.32	66.58
	1913 407,852	422,539	830,391	326,856	300,005	626,861	80.14	71.00	75.49
	1914 401,055	413,685	814,740	335,507	309,841	644,898	83.54	74.90	79.15
	1917 398,794	425,913	814,707	345,804	342,131	687,935	87.81	80.33	83.92
Queensland	1903 127,914	99,166	227,080	79,398	44,569	124,507	62.49	44.94	54.83
	1906 150,037	121,072	271,109	79,567	44,972	124,539	53.03	37.14	45.94
	1910 158,436	120,505	278,941	104,570	66,064	170,634	66.00	54.78	61.15
	1913 209,727	156,355	366,082	163,380	117,145	280,525	79.03	74.92	77.26
	1914 207,587	160,820	368,207	163,709	112,695	276,404	78.86	70.16	75.07
	1917 204,280	174,016	378,296	183,486	153,265	336,751	89.82	83.08	89.02
South Australia	1903 85,947	81,828	167,775	85,736	19,049	54,785	41.58	23.28	32.65
	1906 97,454	95,664	193,118	103,318	27,199	70,517	44.45	28.43	36.51
	1910 105,301	102,354	207,655	63,384	47,110	110,503	60.19	46.03	53.22
	1913 124,222	119,804	244,026	103,739	91,724	195,463	83.51	76.56	80.10
	1914 131,758	125,595	257,353	110,049	96,195	206,244	83.52	76.59	80.14
	1917 132,260	133,519	265,779	103,707	87,471	191,178	78.41	65.51	71.93
Western Australia	1903 74,754	42,188	116,942	26,878	6,270	33,148	35.96	14.86	28.35
	1906 91,427	54,046	145,473	37,180	15,522	52,712	40.67	28.74	36.23
	1910 80,996	53,983	134,979	53,704	30,189	83,893	66.30	55.92	62.50
	1913 106,264	73,520	179,784	80,011	52,138	132,149	75.29	70.92	73.15
	1914 107,005	75,102	182,107	79,150	50,984	130,134	73.97	67.89	71.46
	1917 93,049	74,981	168,030	76,518	54,154	130,672	82.23	72.22	77.77
Tasmania	1903 43,515	38,753	82,268	23,729	13,292	37,021	54.53	34.30	45.00
	1906 47,306	42,903	90,209	29,184	19,715	48,879	61.65	45.95	54.18
	1910 51,731	46,725	98,456	33,539	24,070	57,609	64.83	51.51	58.51
	1913 54,856	51,890	106,746	43,539	36,859	80,398	79.37	71.03	75.32
	1914 54,754	51,225	105,979	44,504	37,749	82,253	81.28	73.69	77.61
	1917 54,405	54,278	108,681	44,634	37,974	82,608	82.04	69.96	76.01
Commonwealth	1903 994,484	899,102	1,893,586	527,997	359,315	887,312	53.09	39.06	46.86
	1906 1,114,187	995,375	2,109,562	628,135	431,033	1,059,168	66.38	43.30	50.21
	1910 1,186,733	1,071,699	2,258,432	602,030	601,940	1,203,976	67.58	58.17	62.16
	1913 1,453,949	1,306,267	2,760,216	1,122,677	910,574	2,033,251	77.22	69.71	73.66
	1914 1,478,463	1,333,047	2,811,510	1,139,933	902,403	2,042,336	77.10	67.69	72.64
	1917 1,444,133	1,391,194	2,835,327	1,184,663	1,018,138	2,202,801	82.03	73.18	77.69

THE HOUSE OF REPRESENTATIVES. (a)

New South Wales	1903 303,254	274,763	578,017	164,133	118,381	282,514	54.12	43.08	48.88
	1906 363,723	314,777	678,500	216,150	141,227	357,377	59.43	44.87	52.67
	1910 431,702	379,927	811,629	294,049	207,868	501,917	68.11	54.71	61.84
	1913 554,028	482,159	1,036,187	405,152	312,703	717,855	73.13	64.85	69.28
	1914 576,309	506,820	1,083,129	407,464	294,939	702,403	70.70	58.19	64.85
	1917 566,345	528,489	1,094,834	430,514	343,143	773,657	76.92	64.93	70.66
Victoria	1903 302,069	310,403	612,472	171,830	141,648	313,478	56.89	45.63	51.18
	1906 335,886	336,168	672,054	209,252	171,933	381,185	62.30	51.14	56.72
	1910 346,050	357,649	703,699	245,666	222,866	468,532	70.99	62.32	66.58
	1913 407,852	422,539	830,391	326,856	300,005	626,861	80.14	71.00	75.49
	1914 401,055	413,685	814,740	335,507	309,841	644,898	83.54	74.90	79.15
	1917 398,794	425,913	814,707	345,804	342,131	687,935	87.81	80.33	83.92
Queensland	1903 127,914	99,166	227,080	79,398	44,569	124,507	62.49	44.94	54.83
	1906 150,037	121,072	271,109	79,567	44,972	124,539	53.03	37.14	45.94
	1910 158,436	120,505	278,941	104,570	66,064	170,634	66.00	54.78	61.15
	1913 209,727	156,355	366,082	163,380	117,145	280,525	79.03	74.92	77.26
	1914 207,587	160,820	368,207	163,709	112,695	276,404	78.86	70.16	75.07
	1917 204,280	174,016	378,296	183,486	153,265	336,751	89.82	83.08	89.02
South Australia	1903 85,947	81,828	167,775	85,736	19,049	54,785	41.58	23.28	32.65
	1906 97,454	95,664	193,118	103,318	27,199	70,517	44.45	28.43	36.51
	1910 105,301	102,354	207,655	63,384	47,110	110,503	60.19	46.03	53.22
	1913 124,222	119,804	244,026	103,739	91,724	195,463	83.51	76.56	80.10
	1914 131,758	125,595	257,353	110,049	96,195	206,244	83.52	76.59	80.14
	1917 132,260	133,519	265,779	103,707	87,471	191,178	78.41	65.51	71.93
Western Australia	1903 74,754	42,188	116,942	26,878	6,270	33,148	35.96	14.86	28.35
	1906 91,427	54,046	145,473	37,180	15,522	52,712	40.67	28.74	36.23
	1910 80,996	53,983	134,979	53,704	30,189	83,893	66.30	55.92	62.50
	1913 106,264	73,520	179,784	80,011	52,138	132,149	75.29	70.92	73.15
	1914 107,005	75,102	182,107	79,150	50,984	130,134	73.97	67.89	71.46
	1917 93,049	74,981	168,030	76,518	54,154	130,672	82.23	72.22	77.77
Tasmania	1903 43,515	38,753	82,268	23,729	13,292	37,021	54.53	34.30	45.00
	1906 47,306	42,903	90,209	29,184	19,715	48,879	61.65	45.95	54.18
	1910 51,731	46,725	98,456	33,539	24,070	57,609	64.83	51.51	58.51
	1913 54,856	51,890	106,746	43,539	36,859	80,398	79.37	71.03	75.32
	1914 54,754	51,225	105,979	44,504	37,749	82,253	81.28	73.69	77.61
	1917 54,405	54,278	108,681	44,634	37,974	82,608	82.04	69.96	76.01
Commonwealth	1903 994,484	899,102	1,893,586	527,997	359,315	887,312	53.09	39.06	46.86
	1906 1,114,187	995,375	2,109,562	628,135	431,033	1,059,168	66.38	43.30	50.21
	1910 1,186,733	1,071,699	2,258,432	602,030	601,940	1,203,976	67.58	58.17	62.16
	1913 1,453,949	1,306,267	2,760,216	1,122,677	910,574	2,033,251	77.22	69.71	73.66
	1914 1,478,463	1,333,047	2,811,510	1,139,933	902,403	2,042,336	77.10	67.69	72.64
	1917 1,444,133	1,391,194	2,835,327	1,184,663	1,018,138	2,202,801	82.03	73.18	77.69
New South Wales	1903 303,254	274,763	578,017	164,133	118,381	282,514	54.12	43.08	48.88
	1906 363,723	314,777	678,500	216,150	141,227	357,377	59.43	44.87	52.67
	1910 431,702	379,927	811,629	294,049	207,868	501,917	68.11	54.71	61.84
	1913 554,028	482,159	1,036,187	405,152	312,703	717,855	73.13	64.85	69.28
	1914 576,309	506,820	1,083,129	407,464	294,939	702,403	70.70	58.19	64.85
	1917 566,345	528,489	1,094,834	430,514	343,143	773,657	76.92	64.93	70.66
Victoria	1903 302,069	310,403	612,472	171,830	141,648	313,478	56.89	45.63	51.18
	1906 335,886	336,168	672,054	209,252	171,933	381,185	62.30	51.14	56.72
	1910 346,050	357,649	703,699	245,666	222,866	468,532	7		

In the Senate the figures for the year 1906 shew that ballot-papers were issued to 50.21 per cent. of the electors, and are a slight improvement on those for the year 1903, when only about 47 per cent. of the electors visited the polls. There was, however, a substantial increase in the number of electors who voted at the 1910 elections, 62.16 per cent. of the persons on the rolls exercising the franchise. The elections of 1913 shewed a gratifying increase over those of 1910, no less than 73.66 per cent. of the persons on the rolls exercising their right to vote, while in 1914, the percentage was almost as high, viz., 72.64 per cent. It will be seen from the foregoing table that the electors of the Commonwealth are setting a higher value on the privilege of the franchise. The percentage of female voters in 1914, while still considerably below that of the males, shews a marked increase on that of female voters in the earlier years of Federation. At the elections in 1917, the proportion of voters of both sexes was the highest yet recorded.

3. Commonwealth Referenda, 26th April, 1911.—Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (a) The Constitution Alteration (Legislative Powers) 1910, and (b) the Constitution Alteration (Monopolies) 1910. If, in a majority of the States, a majority of the electors voting approve the proposed laws, and if a majority of all the electors voting also approve them, they are presented to the Governor-General for the King's assent. Particulars of the alterations proposed have already been given (see page 21).

Results of the Referenda of 1911 are given in the following table, which shews the number of electors enrolled, electors to whom ballot papers were issued, and the number of votes in favour of, and against, each of the proposed laws. As will be seen, neither of the proposed laws was approved by the people.

**COMMONWEALTH REFERENDA (LEGISLATIVE POWERS AND MONOPOLIES),
TAKEN ON 26th APRIL, 1911.**

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Legislative Powers.		Monopolies.	
	Males.	Females.	Total.	Males.	Females.	Total.	Total Number of Votes given in favour of the Prop'd Law.	Total Number of Votes given not in favour of the Prop'd Law.	Total Number of Votes given in favour of the Prop'd Law.	Total Number of Votes given not in favour of the Prop'd Law.
N.S.W. ..	461,196	406,998	868,194	233,668	150,520	384,188	135,368	240,605	138,237	238,177
Victoria..	355,381	367,996	723,377	236,194	212,372	448,566	170,288	270,390	171,453	268,742
Q'land ..	167,725	125,278	293,003	101,245	60,890	162,135	69,552	89,420	70,259	88,472
S. Aust...	110,217	105,810	216,027	72,761	61,041	133,802	50,358	81,904	50,835	81,479
W. Aust.	83,850	54,847	138,697	42,598	18,884	61,482	33,043	27,185	33,592	26,561
Tasmania	54,008	48,318	102,326	33,103	24,950	58,053	24,147	33,200	24,292	32,960
Totals for C'wealth	1,232,377	1,109,247	2,341,624	719,569	528,657	1,248,226	483,356	742,704	488,668	736,392

4. Commonwealth Referenda, 31st May, 1913.—At the general elections that took place on 31st May, 1913, the question of altering the Constitution so as to extend the powers of the Commonwealth was again submitted to the people. The particulars of the

proposed laws have been given on page 21 hereinbefore. The results of the Referenda of 1913 are given below, and, as will be seen, none of the proposed laws was approved by the electors.

COMMONWEALTH REFERENDA (LEGISLATIVE POWERS) TAKEN ON 31st MAY, 1913.

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
N.S.W. . .	554,028	482,159	1,036,187	405,152	312,703	717,855	73.13	64.85	69.28
Victoria . .	407,852	422,539	830,391	326,856	300,005	626,861	80.14	71.00	75.49
Queensland . .	206,727	156,355	363,082	163,380	117,145	280,525	79.03	74.02	77.26
South Aust. . .	124,222	119,804	244,026	103,739	91,724	195,463	83.51	76.56	80.10
Western Aust.	106,264	73,520	179,784	80,011	52,138	132,149	75.29	70.92	73.50
Tasmania . .	54,856	51,890	106,746	43,539	36,859	80,398	79.37	71.03	75.32
Totals for Commonwealth	1,453,949	1,306,267	2,760,216	1,122,677	910,574	2,033,251	77.22	69.71	73.66

The following table shews the number of votes cast for and against each of the proposed laws in each of the States :—

COMMONWEALTH REFERENDA, 31st MAY, 1913.—RESULTS OF THE VOTING ON EACH PROPOSED LAW.

State.	Trade and Commerce.		Corporations.		Industrial Matters.		Railway Disputes.		Trusts.		Nationalisation of Monopolies.	
	Votes in Favour of Proposed Law.	Votes Not in Favour of Proposed Law.	Votes in Favour of Proposed Law.	Votes Not in Favour of Proposed Law.	Votes in Favour of Proposed Law.	Votes Not in Favour of Proposed Law.	Votes in Favour of Proposed Law.	Votes Not in Favour of Proposed Law.	Votes in Favour of Proposed Law.	Votes Not in Favour of Proposed Law.	Votes in Favour of Proposed Law.	Votes Not in Favour of Proposed Law.
N.S.W. . .	317,848	359,418	317,668	361,255	318,622	361,044	316,928	361,743	319,150	358,155	301,192	341,724
Victoria . .	297,290	307,975	298,479	308,915	297,892	309,804	296,255	310,921	301,729	305,268	287,379	298,326
Q'land . . .	146,187	122,813	146,936	123,632	147,171	123,554	146,521	123,859	147,871	122,088	139,019	117,609
S. Aust. . .	96,085	91,144	96,309	91,273	96,626	91,361	96,072	91,262	96,400	90,185	91,411	86,915
W. Aust.	66,349	59,181	66,595	59,445	66,451	59,612	65,957	59,965	67,342	58,312	64,988	57,184
Tasmania	34,660	42,084	34,724	42,304	34,830	42,236	34,625	42,296	34,839	41,935	33,176	40,189
Totals	958,419	982,615	960,711	986,324	961,601	987,611	956,358	990,046	967,331	975,943	917,165	941,947

5. Commonwealth Referendum, 28th October, 1916.—A special referendum was held on the 28th October, 1916, when the following question with regard to military service was submitted to the people :—“ Are you in favour of the Government having, in this grave emergency, the same compulsory powers over citizens in regard to requiring their military service, for the term of this War, outside the Commonwealth, as it now has in regard to military service within the Commonwealth ? ” In New South Wales,

Queensland and South Australia the majority of voters were not in favour of the prescribed question; and in Victoria, Western Australia and Tasmania the majority of votes were cast in its favour, the net result being a majority of 72,476 votes not in favour.

**COMMONWEALTH REFERENDUM (MILITARY SERVICE), TAKEN ON
28th OCTOBER, 1916.**

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
N.S.W. ..	550,187	499,709	1,055,986	475,669	332,730	858,399	85.52	76.58	81.29
Victoria ..	398,075	425,007	824,072	354,067	342,617	696,684	88.74	80.43	84.45
Queensland ..	199,602	166,440	366,042	173,448	136,473	309,921	86.90	81.00	84.67
South Australia ..	131,636	131,145	262,781	113,461	97,791	211,252	86.19	74.57	80.39
Western Aust. ..	94,456	73,146	167,602	82,067	58,581	140,648	86.88	80.09	83.92
Tasmania ..	54,758	53,117	107,875	47,020	41,211	88,231	85.87	77.59	81.79
Federal Territories ..	3,296	1,276	4,572	2,576	892	3,468	78.16	69.91	75.85
Total ..	1,438,910	1,350,920	2,789,830	1,248,308	1,060,295	2,308,603	86.75	78.49	82.75

The following table shews the number of votes cast in each State in favour and not in favour of the prescribed question :—

**COMMONWEALTH REFERENDUM, 28th OCTOBER, 1916.—RESULTS OF VOTING
ON THE PRESCRIBED QUESTION.**

State.	Votes given in Favour of the Prescribed Question.	Votes given Not in Favour of the Prescribed Question.	Percentage of Votes recorded in Favour of the Prescribed Question.	
			To Formal Votes.	To Electors Enrolled.
New South Wales ..	356,805	474,544	42.92	33.79
Victoria ..	353,930	328,216	51.88	42.90
Queensland ..	144,200	158,051	47.71	39.39
South Australia ..	87,924	119,236	42.44	33.46
Western Australia ..	94,069	40,884	69.71	56.13
Tasmania ..	48,493	37,833	56.17	44.95
Federal Territories ..	2,136	1,269	62.73	46.72
Total ..	1,087,557	1,160,033	48.39	38.98

6. Commonwealth Referendum, 20th December, 1917.—A further referendum was held on 20th December, 1917, the question being, "Are you in favour of the proposal of the Commonwealth Government for reinforcing the Australian Imperial Force oversea?" The proposal was that, while voluntary enlistment was to continue, compulsory reinforcements should be called up by ballot to make the total reinforcements up to 7,000 per month. In New South Wales, Victoria, Queensland and South Australia

the majority of voters were not in favour of the prescribed question; and in Western Australia, Tasmania and the Federal Territories, the majority of votes were cast in its favour, the net result being a majority of 166,588 votes not in favour.

**COMMONWEALTH REFERENDUM (MILITARY SERVICE), TAKEN ON
20th DECEMBER, 1917.**

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
N.S.W. ..	540,713	515,170	1,055,883	473,693	380,201	853,894	87.61	73.80	80.87
Victoria ..	383,511	423,820	807,331	348,211	330,595	678,806	90.80	78.00	84.08
Queensland ..	202,656	175,722	378,378	175,950	134,205	310,155	86.83	76.37	81.97
South Aust. ..	129,249	132,412	261,661	107,116	90,854	197,970	82.88	68.61	75.66
Western Aust. ..	83,126	74,221	157,347	81,365	54,228	135,593	92.33	73.06	83.52
Tasmania ..	53,030	53,773	106,803	43,981	34,811	78,792	82.94	64.74	73.77
Federal Territories ..	2,855	1,182	4,037	2,254	748	3,002	78.95	63.28	74.36
Total ..	1,400,140	1,376,300	2,776,440	1,232,579	1,025,642	2,258,221	88.03	74.52	81.34

The votes cast in each State were as follows :—

**COMMONWEALTH REFERENDUM, 20th DECEMBER, 1917.—RESULTS OF
VOTING ON THE PRESCRIBED QUESTION.**

State.	Votes given in Favour of the Prescribed Question.	Votes given Not in Favour of the Prescribed Question.	Percentage of Votes recorded in Favour of the Prescribed Question.	
			To Formal Votes.	To Electors Enrolled.
New South Wales ..	341,256	487,774	41.16	32.32
Victoria ..	329,772	332,490	49.79	40.85
Queensland ..	132,771	168,875	44.02	35.09
South Australia ..	86,663	106,364	44.90	33.12
Western Australia ..	84,116	46,522	64.39	51.81
Tasmania ..	38,881	38,502	50.24	36.40
Federal Territories ..	1,700	1,220	58.22	42.11
Total ..	1,015,159	1,181,747	46.21	36.56

7. **The Parliament of New South Wales.**—The Legislative Council in this State is a nominee chamber, the Legislative Assembly being an elective body. Theoretically the Legislative Council may contain an unlimited number of members, but in practice the number is restricted to about sixty, the members at the latest available date being sixty-eight. The tenure of the seat is for life; four-fifths of the members must be persons not holding any paid office under the Crown, but this is held not to include officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. The Legislative Assembly consists of ninety members, who hold their seats during the existence of the Parliament to which they are elected. The duration of any single Parliament is limited to three years.

Particulars of Elections. Since the introduction of responsible government in New South Wales there have been twenty-three complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twenty-third opened on the 23rd December, 1913, and closed on the 21st February, 1917. The average duration of the Parliaments was two years and five months. The first session of the twenty-fourth Parliament was opened on the 17th April, 1917. Particulars of voting at the last nine elections are given below :—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES, 1894 TO 1917.

Date of Opening of Parliament.	Electors upon the Roll.	Members Returned.	Members Unopposed.	Contested Electorates.			
				Electors upon the Roll.	Votes Recorded.	Per-centage of Votes Recorded.	Per-centage of Informal Votes.
7th August, 1894.. ..	298,817	125	1	254,105	204,246	80.38	1.62
13th August, 1895	267,458	125	8	238,233	153,034	64.24	0.88
16th August, 1898	324,339	125	3	294,481	178,717	60.69	0.92
23rd July, 1901	346,184	125	13	270,861	195,359	72.13	0.79
23rd August, 1904 {	Males	90	2	304,396	226,057	74.26	0.59
	Females			326,428	174,538	66.51	
2nd October, 1907 {	Males	90	5	370,715	267,301	72.10	2.87
	Females			353,055	204,650	60.78	
15th Nov., 1910.. {	Males	90	3	444,242	322,199	72.53	1.78
	Females			409,069	262,154	65.52	
23rd Dec., 1913 .. {	Males	90	3	534,379	385,838	72.20	2.10
	Females			484,366	302,389	64.55	
17th April, 1917 {	Males	90	8	525,681	328,030	62.40	0.94
	Females			535,522	295,354	60.57	

The franchise was extended to women (*Women's Franchise Act*) in 1902, and was exercised for the first time at a State election in 1904.

8. **The Parliament of Victoria.**—Both of the Victorian legislative chambers are elective bodies, but there is a considerable difference in the number of members of each House, as well as in the qualifications necessary for members and electors. The number of members in the Upper House in March, 1919, was 34, and in the Lower House, 65. In the Legislative Council the tenure of the seat is for six years, but one member for each province retires every third year, except in the case of a dissolution, when one half of the newly elected members hold their seats for three years only. Members of the Legislative Assembly are elected for the duration of Parliament, which is limited to three years. The franchise was extended to women by the *Adult Suffrage Act 1908*. An elector for the Legislative Assembly may only vote once, plurality of voting having been abolished in 1899; an elector, however, qualified in more than one district, may select that for which he desires to record his vote. A preferential system of voting (see Year Book No. 6, page 1182) was for the first time adopted in Victoria at the election held in November, 1911.

Particulars of Elections. Since the introduction of responsible government in Victoria there have been twenty-four complete Parliaments, the first of which was opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twenty-fourth closed on the 23rd October, 1917. The first session of the twenty-fifth Parliament opened on the 27th November, 1917, and closed on the 9th April, 1918; the second session was opened on the 9th July, 1918, and closed on the 7th January, 1919.

Statistics regarding the elections that have been held since 1901 will be found below :—

PARTICULARS OF VICTORIAN ELECTIONS, 1902 TO 1918.

Year.	Legislative Council.				Legislative Assembly.			
	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts.	Per-centage.	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts.	Per-centage.
1902..	134,087	(a)	(a)	(a)	290,241	216,063	141,471	65.47
1904..	172,526	104,865	66,182	63.11	264,709	223,600	149,192	66.72
1907..	180,738	78,512	27,152	34.58	261,088	191,131	117,098	61.26
1908..	185,234	(a)	(a)	(a)	263,876	164,919	88,461	53.64
1910..	240,520	136,479	40,053	35.21	487,661	(a)	(a)	(a)
1911..	249,481	(a)	(a)	(a)	701,451	619,644	394,189	63.61
1913..	270,175	99,646	47,719	47.89	670,775	(a)	(a)	(a)
1914..	284,089	(a)	(a)	(a)	810,026	593,334	319,950	53.92
1916..	300,321	92,421	34,853	37.71	767,378	(a)	(a)	(a)
1917..	308,339	(a)	(a)	(a)	828,230	658,488	356,999	54.21
1918..	310,987	(a)	(a)	(a)	816,172	(a)	(a)	(a)

(a) Not contested.

As the table shews, the proportion of voters for the Legislative Council is considerably less than that for the Legislative Assembly.

9. **The Parliament of Queensland.**—No limit is set by the Constitution Act to the number of members of the Legislative Council of Queensland, the total at the latest available date being forty-eight. Members are appointed by the State Governor, and it is provided that not less than four-fifths of the members must consist of persons not holding any office under the Crown, except officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. The members are nominated for life. By The Electoral Districts Act of 1910 the Legislative Assembly is composed of seventy-two members, and the State is now divided into that number of electoral districts, and the General Election which took place in 1912 was in conformity with this new Act. A modified system of optional preferential voting is in operation in Queensland. (See Year Book No. 6, page 1183.)

Particulars of Elections. Since the establishment of responsible government in Queensland there have been nineteen complete Parliaments, the first of which opened on the 29th May, 1860, and dissolved on the 20th May, 1863, while the first session of the twentieth Parliament opened on the 12th July, 1915. At the elections held in May, 1915, the principle of compulsory voting was introduced for the first time in Australia. It will be seen that of the total number of electors enrolled, 88.14 per cent went to the polls. Statistics regarding the last eight elections are given below :—

ELECTIONS FOR QUEENSLAND LEGISLATIVE ASSEMBLY, 1902 TO 1918.

Year.	Number of Seats.	Number of Candidates Nominated.	Candidates sent to the Poll.	Electors Enrolled.			Electors who Voted.			Percentage of Electors Voting in Contested Electorates.		
				Males.	Fe-males.	Total.	Males.	Fe-males.	Total.	Males.	Fe-males.	Total.
1902	72	159	154	108,548	..	108,548	80,076	..	80,076	78.88	..	78.88
1904	72	140	117	103,943	..	103,943	60,265	..	60,265	74.16	..	74.16
1907	72	185	179	125,140	95,049	220,189	(a)	(a)	152,049	73.42	68.64	71.61
1908	72	137	125	117,385	88,507	205,892	77,632	61,115	138,747	66.13	69.05	67.39
1909	72	145	133	135,841	106,913	242,754	87,609	66,809	156,418	75.34	69.36	72.67
1912	72	144	139	173,801	135,789	309,590	122,844	95,795	218,639	75.92	75.02	75.52
1915	72	148	138	184,627	150,588	335,195	140,396	125,844	266,240	86.46	90.09	88.14
1918	72	(b)	149	233,342	191,074	424,416	176,768	163,901	340,669	75.75	85.78	80.27

(a) Incomplete; percentages based on available returns. (b) Not available.

PARLIAMENTS AND ELECTIONS—

Particulars.	Commonwealth.	New South Wales.	Victoria.
1. Senate and Legislative Councils			
<i>Number of Members</i> ..	36	68. May not be less than 21	34
<i>Qualification for Membership</i>	Adult British subjects natural-born or naturalised for 5 years, if (a) eligible to vote at the elections for the Senate, and (b) resident for at least 3 years within the Commonwealth	Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects of the age of 30 years or upwards, (a) if possessed of a freehold property of the annual value of at least £50 for one year previous to the election, and (b) in the case of naturalised subjects if a resident of the State for 10 years
<i>Period for which elected or nominated</i>	6 years	For life	6 years
<i>Allowance to Members</i>	£600 each per annum	None	None
<i>Qualification for Franchise</i>	Adult British subjects of either sex who have lived in Australia for 6 months continuously. Aboriginal natives of Australia, Asia, Africa, or the islands of the Pacific, except New Zealand, cannot vote at federal elections unless they have acquired a right to vote at elections for the Lower House of a State Parliament. In addition, for a period of three years after the war, British subjects (including nurses) who have served outside Australia or on a ship of war, in the Commonwealth Naval or Military Forces; and war workers who have served outside Australia under agreement with the Government	(Nominated)	Adult British subjects of either sex, if either (a) the owner of a freehold of the annual value of £10 or of a leasehold of property rated at £15, or (b) a graduate of a British university, matriculated students of Melbourne University, qualified legal and medical practitioners, ministers of religion, certificated schoolmasters, and naval and military officers. Naturalised subjects must be of 3 years' standing, and must have resided in the State for 12 months
2. House of Representatives, Legislative Assemblies, etc.			
<i>Number of Members</i> ..	75	90	65
<i>Qualification for Membership</i>	The same as for the Senate	Male adult British subjects if qualified to vote at an election of members of the Legislative Assembly, unless disqualified under the Constitution Acts or the Federal Elections Act 1900	Male adult natural-born British subjects or aliens naturalised for the period of 5 years, if resident in the State for not less than 2 years
<i>Period for which elected</i>	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years
<i>Allowance to Members</i>	£600 each per annum	£500 each per annum	£300 each per annum
<i>Qualification for Franchise</i>	The same as for the Senate	Adult naturalised subjects of either sex, who have resided in the Commonwealth for 6 months, in the State continuously for 3 months and in the district for which he claims to vote, for one month after naturalisation; and adult natural-born subjects who have resided in the Commonwealth for 6 months, in the State for a continuous period of 3 months, and in the district for which he claims to vote, for one month	Adult natural-born or naturalised subjects of either sex who have resided in the State for a continuous period of 6 months and in the district one month. An elector may be enrolled in (a) the electorate in which he resides, and (b) in an electorate in which he is a freeholder or holder of an unexpired lease, provided that no elector can be on more than 2 rolls. He may vote in which district he chooses, but not in both

SUMMARY, MARCH, 1919.

Queensland.	South Australia.	Western Australia.	Tasmania.
<p style="text-align: center;">48</p> <p>Male adult natural-born or naturalised British subjects</p> <p style="text-align: center;">For life</p> <p style="text-align: center;">(*) None (Nominated)</p>	<p style="text-align: center;">20</p> <p>Male natural-born or naturalised British subjects if (a) of the age of 30 years or upwards, and (b) if resident in the State for 3 years</p> <p style="text-align: center;">6 years</p> <p>£200 each per annum</p> <p>Adult British subjects of either sex who are either (a) owners of a freehold of the clear value of £50, (b) owners of a leasehold of the clear annual value of £20, with at least 3 years to run or containing a right of purchase, (c) inhabitant, occupiers of a dwelling house, (d) registered proprietors of a Crown lease on which there are improvements to the value of at least £50. Claimants must have resided in State for 6 months prior to application for enrolment</p>	<p style="text-align: center;">30</p> <p>Male natural-born or naturalised British subjects of the age of 30 years or upwards, if (a) in the case of natural-born subjects, resident in the State for 2 years, and (b) in the case of naturalised subjects, if naturalised for 5 years previous to the election and resident in the State during that period</p> <p style="text-align: center;">6 years</p> <p>£300 each per annum</p> <p>Adult British subjects of either sex who have resided in the State for 6 months, and who either (a) own a freehold estate to the value of £50, (b) occupy a house or own leasehold property rated at £17, (c) hold Crown leases or licenses to the value of not less than £10 per annum, or (d) are on the electoral list of a municipality or road-board district in respect of property of the annual value of £17. Aboriginal natives may only acquire the franchise in respect of a freehold qualification</p>	<p style="text-align: center;">18</p> <p>Male British subjects, either natural-born or for at least 5 years naturalised, of not less than 30 years of age, qualified to vote at the election for the Legislative Council, and who have resided in Tasmania for any continuous period of 5 years, or for a period of 2 years immediately preceding the election</p> <p style="text-align: center;">6 years</p> <p>£200 each per annum</p> <p>Adult British subjects of either sex who have resided in the State for 12 months, if either (a) possessing freehold to the annual value of £10 or leasehold of the value of £30, or (b) graduates of a British university, qualified legal or medical practitioners, officiating ministers of religion, or retired naval or military officers</p>
<p style="text-align: center;">72</p> <p>All persons qualified and registered to vote at the election of members of the Legislative Assembly are eligible as members</p> <p>Duration of Parliament, which is limited to 3 years</p> <p>£300 each per annum and £2 per month for postage and telegrams. Also an allowance of £200 per member this year for expenses incurred in a campaign re abolition of the Upper House</p> <p>Adult British subjects of either sex who either (a) have resided in Queensland for 12 months continuously and whose names are on the electoral roll, (b) own freehold estate of the value of £100, (c) have occupied a house of the annual value of £10 for at least 6 months, or (d) have a leasehold estate in possession of the annual value of £20 with not less than 18 months to run</p>	<p style="text-align: center;">46</p> <p>Any person qualified for the franchise of the House of Assembly is eligible for membership</p> <p>Duration of Parliament, which is limited to 3 years</p> <p>£200 each per annum</p> <p>Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months</p>	<p style="text-align: center;">50</p> <p>Male adult British subjects, if resident in the State for 12 months. Naturalised subjects must have been naturalised for 5 years and have resided in the State for 2 years previous to the election</p> <p>Duration of Parliament, which is limited to 3 years</p> <p>£300 each per annum</p> <p>Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months continuously and for a continuous period of 1 month in district</p>	<p style="text-align: center;">30</p> <p>Male adult British subjects, either natural-born or for at least 5 years naturalised, qualified to vote at the election for the House of Assembly, and who have resided in Tasmania for any continuous period of 5 years, or for a period of 2 years immediately preceding the election</p> <p>Duration of Parliament, which is limited to 3 years</p> <p>£200 each per annum</p> <p>Adult natural-born or naturalised subjects of either sex who have resided in Tasmania for 6 months continuously</p>

(*) The President is allowed £1,000 per annum, and the Chairman of Committees £500 per annum.

The election of 1907 was the first State election in Queensland at which women voted, the privilege being conferred under the *Elections Acts Amendment Act 1905*. Some of the returns did not separate the sexes in the figures respecting the number of electors who voted, and the percentage of males and females was therefore calculated on the total returns where the subdivision was made.

10. **The Parliament of South Australia.**—In this State there is a Legislative Council composed of twenty members and a House of Assembly with forty-six members, both chambers being elective. Under the Constitution Amendment Act 1908, the State of South Australia was divided into four Council Districts, of which one returned six members, and the others returned four members each, to the Legislative Council, but under the Constitution Further Amendment Act of 1913, the State is now divided into five districts, which return four members each, making a total of twenty members instead of eighteen as formerly. For the purpose of electing members of the House of Assembly the State was divided into twelve electoral districts, but under the Act of 1913 mentioned above, the State has been divided into nineteen districts, which return forty-six members instead of forty as formerly. The former districts returned five members from one district, four members from two, and three each from the balance. Under the new Act, eight districts return three members each, and eleven districts two members each.

Particulars of Elections. Since the inauguration of responsible government in South Australia there have been twenty-two complete Parliaments, the first of which was opened on the 22nd April, 1857, and dissolved on the 1st September, 1859, while the twenty-second was opened on the 8th July, 1915, and terminated on the 28th February, 1918. The first session of the new Parliament was opened on the 25th July, 1918. Particulars of voting at the different elections from the year 1900 are given below :—

PARLIAMETARY ELECTIONS IN SOUTH AUSTRALIA, 1900 TO 1918.

Year.	Electors on Rolls.			(a) Electors who Voted.			(a) Percentage of Electors Voting.	
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
LEGISLATIVE COUNCIL.								
1900 ..	38,688	9,854	48,542	21,403	3,907	25,310	55.32	39.65
1902 ..	38,413	13,496	51,909	29,978	7,940	37,918	78.04	58.83
1905 ..	39,011	13,873	52,884	28,820	8,328	37,148	73.88	60.03
1910 ..	48,145	16,157	64,302	32,540	9,356	41,896	81.84	65.89
1912 ..	59,228	19,985	79,213	40,709	13,016	53,725	80.91	72.56
1915 ..	66,614	21,635	88,249	11,436	4,808	16,244	75.69	71.25
1918 ..	71,510	23,461	94,971	42,987	11,800	54,787	60.11	50.30
HOUSE OF ASSEMBLY.								
1902 ..	77,147	72,030	149,177	53,471	36,545	90,016	39.31	50.73
1905 ..	95,396	92,249	187,645	64,330	50,246	114,576	67.43	54.47
1906 ..	96,724	93,438	190,162	60,109	45,997	106,106	62.14	49.22
1910 ..	94,656	88,762	183,418	73,464	56,830	130,294	77.61	64.03
1912 ..	117,440	106,971	224,411	87,530	73,732	161,262	74.53	68.93
1915 ..	128,594	124,797	253,391	70,898	65,157	136,055	77.22	72.64
1918 ..	126,669	132,043	258,712	71,501	62,742	134,243	56.45	47.52

(a) In contested districts.

It is interesting to note that South Australia was the first of the States to grant women's suffrage (under the *Constitution Amendment Act 1894*), the franchise being exercised for the first time at the Legislative Assembly election on the 25th April, 1896.

11. The Parliament of Western Australia.—In this State both chambers are elective. For the Legislative Council there are thirty members, each of the ten provinces returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral districts. At the expiration of two years from the date of election to a seat in the Legislative Council, and every two years thereafter, the senior member for the time being for each province retires. Seniority is determined (a) by date of election, (b) if two or more members are elected on the same day, then the senior is the one who polled the least number of votes, (c) if the election be uncontested, or in case of an equality of votes, then the seniority is determined by the alphabetical precedence of surnames and, if necessary, Christian names. Members of the Legislative Assembly are elected for three years.

Particulars of Elections. Since the establishment of responsible government in Western Australia there have been nine complete Parliaments, the first of which was opened on the 30th December, 1890, while the first session of the tenth Parliament commenced on the 20th November, 1917. Women's suffrage was granted by the *Electoral Act* of 1899. The preferential system of voting in use in Western Australia is described in Year Book No. 6, page 1184. Particulars relating to the last seven Assembly and six Council elections are given in the tables below :—

PARLIAMMENTARY ELECTIONS, WESTERN AUSTRALIA, 1901 TO 1918.

Year.	Electors on the Roll.			In Contested Districts.			Votes Recorded.			Percentage of Electors Voting.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.

LEGISLATIVE ASSEMBLY.

1901 ..	74,874	16,648	91,522	67,967	14,775	82,742	29,832	8,255	38,087	44	56	46
1904 ..	108,861	54,965	163,826	88,524	49,791	138,315	43,285	23,500	66,785	49	47	48
1905 ..	79,025	42,697	121,722	65,296	36,706	102,002	33,482	19,435	52,917	51	53	52
1908 ..	83,060	52,919	135,979	69,277	44,804	114,081	46,411	29,412	75,823	67	66	66
1911 ..	91,814	60,831	152,645	71,675	50,700	122,375	53,355	38,281	91,636	74	75	75
1914 ..	126,598	88,143	214,741	96,503	72,043	168,546	54,812	41,993	96,605	57	58	57
1917 ..	93,106	73,845	166,951	76,445	61,310	137,755	45,453	40,167	85,620	59	65	62

LEGISLATIVE COUNCIL.

1908 ..	29,255	6,543	35,798	19,233	4,508	23,741	10,210	2,283	12,493	53	51	52
1910 ..	31,983	7,553	39,536	31,290	7,495	38,785	12,020	2,461	14,481	38	33	35
1912 ..	36,716	10,437	47,153	33,490	9,818	43,308	20,733	5,552	26,285	62	57	59
1914 ..	43,299	12,423	55,722	36,793	9,822	46,615	22,963	5,556	28,519	62	57	61
1916 ..	45,325	13,683	59,008	19,950	4,877	24,827	10,672	2,464	13,136	53	51	53
1918 ..	46,272	14,700	60,972	35,962	12,348	48,310	14,043	3,930	17,973	39	31	37

12. The Parliament of Tasmania.—In Tasmania there are two legislative chambers—the Legislative Council and the House of Assembly, both bodies being elective. The Council consists of eighteen members, returned from fifteen districts, Hobart returning three, Launceston two, and the remaining thirteen districts sending one member each. For the Parliament which expired in March, 1909, there were thirty-five House of Assembly districts, each district returning one member, but, in accordance with the Constitution Amendment Act of 1906, upon the expiration of the last Assembly, either by dissolution or by effluxion of time, there are now five House of Assembly districts, viz., the Commonwealth electoral districts, each district returning six members, who are elected under a system of proportional representation which first came into force at the 1909 elections. (See Year Book No. 6, page 1185.) Women's suffrage was first granted in this State under the *Constitution Amendment Act 1903*.

Particulars of Elections. The first Tasmanian Parliament opened on 2nd December, 1856, and closed on 8th May, 1861. There have been nineteen complete Parliaments since the inauguration of responsible government. The first session of the twentieth Parliament opened on 16th May, 1916. Particulars of the voting at the last seven elections are given hereunder:—

ELECTIONS, HOUSE OF ASSEMBLY, TASMANIA, 1900 TO 1916.

Year.	Electors on Roll.		Electors in Contested Districts.		Votes Recorded.		Percentage of Electors Voting.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1900 ..	39,002	..	29,022	..	18,872	..	65.02	..
(a)1903 ..	43,999	..	40,267	..	23,766	..	59.87	..
1906 ..	47,400	41,629	37,120	33,415	23,128	17,194	62.30	51.46
1909 ..	50,221	45,563	50,221	45,563	30,509	19,893	60.74	43.67
1912 ..	52,853	50,660	52,853	50,660	40,713	35,337	77.03	69.73
1913 ..	53,372	51,920	53,372	51,920	38,700	32,102	72.51	61.83
1916 ..	54,466	52,855	54,466	52,855	41,427	37,557	76.06	71.05

(a) Manhood suffrage, Act 64 Vic., No. 5. Universal adult suffrage, Act 3 Edward VII., No. 17, has been prescribed in all subsequent elections.

§ 3. Administrative Government.

In each State, as well as in the Commonwealth, the Government is administered by a number of chief departments, on lines similar to those on which administrative government is carried on in the United Kingdom. Reference has already been made to the creation of the Commonwealth Departments (see page 743). In the States the number and functions of the administrative departments vary considerably. In many cases more than one department is under the control of a single Minister. The tabular statement given on this page and on the following pages shews the sub-departments, branches, etc., of each Ministerial Department in the Commonwealth and in each State, together with the principal Acts administered and other more important matters dealt with.

COMMONWEALTH ADMINISTRATIVE GOVERNMENT, 1919.

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
1. Prime Minister's— (a) Auditor-General. (b) Public Service Commissioner. (c) High Commissioner.	Arbitration (Public Service), Committee of Public Accounts, Commonwealth Public Works Committee, Commonwealth Public Service, Commonwealth Salaries, Meat Export Trade Commission, Ministers of State Act, Parliamentary Allowances, Petherick Collection, Royal Commissions, High Commissioner, Papua, Pacific Islands.	Auditor - General and Staff, Officers of the Parliament, Public Service Commissioner and Staff, Royal Commissions, the Federal Executive Council, Historic Memorials, Passports, Papua, External Affairs, Pacific Islands, Consular Appointments.
2. Attorney-General's— (a) Crown-Solicitor. (b) High Court. (c) Patents, Copyright, Designs, and Trade Marks.	Acts Interpretation, Amendments Incorporation, Bills of Exchange, Commonwealth Conciliation and Arbitration, Copyright, Crimes, Designs, Enemy Contracts Annulment, Evidence, Extradition, High Court Procedure, Judiciary, Parliamentary Papers, Patents, Trade Marks and Designs, State Law and Records Recognition, Statutory Declarations.	Bankruptcy and Insolvency, Bills of Exchange and Promissory Notes, Conciliation and Arbitration, Copyright, Crown Law Offices, Designs, Divorce and Matrimonial Causes, Foreign Corporations, Judiciary and Courts, Patents, Parliamentary Drafting, Trade Marks, Trading and Financial Corporations formed within the limits of the Commonwealth.

COMMONWEALTH—*continued.*

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
3. Defence—	Defence, War Precautions.	Administration of Territory in Military Occupation, Control of Railways with respect to transport for Naval and Military purposes, Land Defence of the Commonwealth, Naval and Military Defence, Naval and Military Factories and Workshops, Provision of Troops for Active Service Abroad, Royal Military College.
4. Navy—	Naval Defence, Naval Discipline, Wireless Telegraphy.	Construction and Repairs of Vessels for Commonwealth Departments, Naval Bases, Naval Defence, Dockyards, Naval Marine Works, Wireless Telegraphy.
5. Postmaster-General's—	Pacific Cable, Post and Telegraph, Telephone.	Postal, Telegraph and other like services.
6. Treasury— (a) Taxation Department. (b) Old Age Pensions. (c) Maternity Bonus. (d) Government Printer. (e) War Pensions.	Appropriation, Audit, Australian Notes, Bank Notes Tax, Coinage, Commonwealth Bank, Commonwealth Inscribed Stock, Constitution Alteration (State Debts), Estate Duty, Income Tax, Invalid and Old-Age Pensions, Land Tax, Life A-surance (Companies), Loan Acts, Marine Insurance, Maternity Bonus, Supply, Treasury Bills, War Loan, War Pensions.	Appropriation and Supply, Banking, Currency, Government Printer, Insurance, Invalid and Old-Age Pensions, Maternity Bonus, Pensions and Retiring Allowances, Public Loans, Public Moneys, State Debts, Taxation (other than duties of Customs and of Excise), War Pensions, Workmen's Compensation.
7. Trade and Customs— (a) Customs and Excise. (b) Fisheries. (c) Navigation. (d) Quarantine.	Australian Industries Preservation, Beer Excise, Bounties, Commerce (trade descriptions), Customs, Distillation, Excise, Interstate Commission, Iron Bounty, Lighthouse, Manufactures Encouragement, Quarantine, Seacarrriage of Goods, Seamen's Compensation, Secret Commissions, Shale Oils Bounties, Spirits, Sugar Purchase, Trading with the Enemy.	Bounties, Customs and Excise, Fisheries (other than Pearl Shell or Trepang) in Australian waters beyond territorial limits, Interstate Commission, Lighthouses, Beacons and Buoys, Quarantine, Trade and Commerce, Navigation and Shipping.
8. *Home and Territories— (a) Bureau of Census and Statistics. (b) Electoral Office. (c) Lands and Surveys. (d) Meteorological Office.	Census and Statistics, Commonwealth Electoral, Commonwealth Franchise, Compulsory Voting, Constitution Alteration (Senate Elections), Contract Immigrants, Emigration, Governor-General's Residences, Jervis Bay Territory Acceptance, Lands Acquisition, Meteorology, Naturalisation, Norfolk Island, Referendum (Constitution Alteration), Referendum (Military Service), Representation, River Murray Waters, Seat of Government, War Census.	Astronomy, Census and Statistics, Elections, Franchise, Lands and Surveys, Meteorology, Representation of the People, Rivers, Seat of Government, Immigration and Emigration, Naturalisation and Aliens, Territories forming part of the Commonwealth.
9. *Works and Railways—	Kalgoorlie to Port Augusta Railway, Pine Creek to Katherine River Railway.	Public Works, Railways, Rivers.
10. Repatriation—	Australian Soldiers' Repatriation Act, War Service Homes Act.	Repatriation, Erection of Soldiers' Homes, Settlement (through States Lands Departments) of Returned Soldiers on the Land.

(* From 14th November, 1916, the Departments of Home Affairs and External Affairs were abolished, their functions being divided between the Prime Minister's Department and two new Departments, Home and Territories, and Works and Railways.

NEW SOUTH WALES.—ADMINISTRATIVE GOVERNMENT, 1919.

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
<p>1. Premier's Office— (a) Governor's Establishment. (b) Agent-General's Office, London. (c) Executive Council.</p>	<p>.. .. .</p>	<p>Is charged with—Correspondence with the Houses of Parliament, other Governments, foreign Consuls, the Agent-General, the Commercial Commissioner in the East (Japan), Immigration matters, matters of Government policy.</p>
<p>2. Chief Secretary— (a) Audit Dept. (b) Police Dept. (c) State Fisheries. (d) Aborigines Protection Board. (e) Board of Fire Commissioners. (f) Electoral Office. (g) Registry of Friendly Societies and Trade Unions. (h) Bureau of Statistics. (i) State Trawling Industry. (j) Weights and Measures Office. (k) Lord Howe Island. (l) Board of Control. (m) Tourist Bureau.</p>	<p>Electorates and Elections, Audit, Banks and Bank Holidays, Birds and Animals Protection, Bread, Building and Co-operative Societies, Sunday Trading, Constitution, Fire Brigades, Fisheries, Friendly Societies, Gaming and Betting, Totalliator, Metropolitan Traffic Police Offences, Police Regulation, Printing, Sydney Corporation, Theatres and Public Halls, Vagrancy, Weights and Measures, Motor Traffic, Aborigines Protection.</p>	<p>Is charged with—the public seal, appointment of magistrates, the police, theatrical, public entertainments and racecourse licenses, general elections, franchise, statistics, Lord Howe Island, and all matters of business not expressly assigned to any other department.</p>
<p>3. Public Health— (a) Inspector-General of Mental Hospitals. (b) Director-General of Public Health. (c) Master in Lunacy. (d) Dental Board. (e) Medical Board. (f) Board of Official Visitors Mental Hospital. (g) Meat Industry and Abattoirs Board. (h) Pharmacy Board.</p>	<p>Lunacy, Inebriates, Public Health, Dentists, Diseased Animals and Meat, Medical Practitioners, Public and Private Hospitals, Dairies Supervision, Pure Food, Cattle Slaughtering, Smoke Nuisance, Meat Industry, Poisons, Noxious Trades, Venereal Diseases.</p>	<p>State, public and private hospitals, treatment of insane and inebriates, public vaccinators, charitable institutions, public health, etc.</p>
<p>4. Treasury— (a) Stamp Duties Office. (b) Taxation Dept. (c) Government Printing Office. (d) Explosives Dept. (e) Shipping Offices, Sydney and Newcastle. (f) Navigation Dept. (g) Resumed Properties Office. (h) Stores Supply Department. The following departments are connected with the Treasury though administered by Commissioners:— (a) Housing Board. (b) Sydney Harbour Trust. (c) Government Savings Bank.</p>	<p>Stamp Duties, Land and Income Tax, Merchant Shipping, Wharfage and Tonnage Rates, Sydney Harbour Trust, Government Savings Bank, Explosives, Inflammable Liquids, Navigation, Housing.</p>	<p>The financial business of the Government generally, including the collection of the public revenue and the payment of all claims against the Government: the inscription and management of Government stocks, the control and management of the Government insurance business, both fire, marine, accident, and fidelity.</p>
<p>5. Dept. of Attorney-General and of Justice— (a) Prothonotary and Registrar in Divorce. (b) Master in Equity. (c) Sheriff. (d) Registrar in Bankruptcy. (e) Registrar of Probates, etc. (f) Crown Solicitor. (g) Parliamentary Draftsman. (h) Clerk of the Peace. (i) Registrar of Sydney District Court. (j) Registrar-General. (k) City Coroner. (l) Children's Court. (m) Petty Sessions. (n) Police Magistrates, Clerks of Petty Sessions and Registrars of District Courts. (o) Prisons Department. (p) Public Service Board. (q) Public Trustee. (r) Fair Rents Court. (s) Court Reporting Staff.</p>	<p>Auctioneers, Bankruptcy, Companies, Contractors' Debts, Coroners, Crimes, Justices, Fines and Penalties, Hawkers, Inebriates, Interstate Debts, Liens on Crops, Liquor, Lotteries, Marriage, Moneylenders, Newspapers, Pawnbrokers, Prisons, Public Service, Public Trustee, Real Property, Registration of Births, Deaths, and Marriages, Registration of Deeds, Registration of Firms, Sheriff, Small Debts, Wills, Probate and Administration, Poor Prisoners' Defence, Influx of Criminals, Fair Rents, Criminal Appeal, Superannuation, Prisoners' Detention, Poor Persons' Legal Remedies.</p>	<p>Is charged with—business relating to the offices of the Chief Justice and Justice Judges, Supreme Courts District Courts, Gaols and Penal establishments, Circuit Courts and Quarter Sessions, deals with all matters relating to remission of sentences, or of fines or estates or control of Court houses, etc., and advises the Government on all legal questions.</p>

NEW SOUTH WALES—continued.

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
<p>6. Department of Lands— (a) Survey of Lands. (b) Local Land Boards. (c) Trigonometrical Survey. (d) Land Appeal Court. (e) Western Land Board. (f) Closer Settlement Advisory Boards. (g) Returned Soldiers' Settlement. (h) Animal Industry.</p>	<p>Crown Lands, Newcastle Pasturage Reserve, Public Roads, Public Parks, Public Gates, Public Trusts, Prickly Pear Destruction, Western Lands, Closer Settlement, Returned Soldiers' Settlement, Rural Tenants Improvements, Voluntary Workers (Soldiers' Homes) Act.</p>	<p>All business arising from tenures created by Crown Lands Acts and other Acts mentioned, dedications and reservations, exchanges of land, proclamation of towns and villages, business connected with Land Appeal Court, local boards, district surveyors and Crown land agents, survey of Crown lands, and triangulation survey of State, and making lands available for settlement, establishment of calf-rearing depots and investigation of diseases among calves.</p>
<p>7. Dept. of Public Works— (a) Architects Branch. (b) National and Local Government Works. (c) Harbours and Drainage. (d) Survey Drafting. (e) Water Supply and Sewerage Construction. (f) Electrical Engineering. (g) Accounts. (h) Legal and Industrial. (i) Testing and Inspection. (j) Government Dockyard, Newcastle. (k) The following Industrial Undertakings, viz.:—Building Construction I.U., Maroubra Quarry I.U., State Brickworks Homebush Bay, State Metal Quarries, State Monier Pipe and Reinforced Concrete Works, State Motor Garage, State Power Station, Uhr's Point, State Timber Yards and Building Workshops, Uhr's Point. (l) Metropolitan Board of Water Supply and Sewerage. (m) Hunter District Water Supply and Sewerage Board, and (n) Country Towns Water Supply and Sewerage.</p>	<p>Public Works Act 1912, and all Acts authorising the carrying out of Public Works, Metropolitan Water and Sewerage Acts 1880-1910, Hunter District Water Supply and Sewerage Acts 1892-1906, Country Towns Water and Sewerage Acts 1880-1905, and such provisions of the Water Act 1912 as relate to drainage and flood prevention, Public Watering Places Act 1900 (except such sections as are administered by Municipal and Shire Councils), and certain Acts dealing with Main and Parish Roads, Bridges, Tolls, etc.</p>	<p>Construction of water supply works in Sydney and Newcastle and suburbs and in country towns. Construction of sewerage and drainage works in Sydney and Newcastle and suburbs and in country towns. The erection, maintenance and repair of public buildings. The dredging and improvements of harbours and rivers, excepting such works as are vested in the Sydney Harbour Trust Commissioners. Construction and repair of wharves, basins and breakwaters, except such works as are vested in the Sydney Harbour Trust Commissioners. The construction and maintenance of docks and engineering establishments. The construction of land drainage works. The formation and maintenance of roads other than those vested in Shires and Municipal Councils. The construction and maintenance of national bridges and bridges outside municipalities in the western division. The management of national ferries and ferries outside municipalities in the western division. The maintenance of public watering places other than those under the control of Municipal and Shire Councils. The resumption of land for public purposes.</p>
<p>8. Department of Mines— (a) Ministerial Branch. (b) Registrar and Inquiry. (c) Account and Examining. (d) Lease. (e) Charting and Mining Survey. (f) Geological Survey. (g) Geological Survey Laboratory. (h) Inspectors of Mines and Drills. (i) Miners' Accident Relief Branch. (j) Prospecting Board. (k) Mining Museum. (l) Sludge Abatement Board. (m) Coalfields. (n) Correspondence. (o) Records. (p) State Coal Mine.</p>	<p>Mining, Miners' Accident Relief, Mines Inspection, Coal Mines Regulation, State Coal Mine.</p>	<p>All matters relating to mining generally, geological and mining surveys, assays, inspection of mines, miners' accident relief, advances to prospectors.</p>

NEW SOUTH WALES—*continued.*

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Other Matters dealt with or under Control.
<p>9. Dept. of Agriculture— (a) Administrative. (b) Accounts. (c) Stock. (d) State Wheat Office. (e) Field Branch. (f) Fruit Expert. (g) Exports and Imports. (h) Library and "Agricultural Gazette." (i) Sheep and Wool Expert. (j) Dairy Expert. (k) Chemist. (l) Entomologist. (m) Viticultural Expert. (n) Poultry Expert. (o) Herd Master. (p) Biologist. (q) Tobacco Expert. (r) Botanic Gardens, Centennial Park, etc. (s) Hawkesbury Agricultural College. (t) Experiment Demonstration Farms. (u) Agricultural Museum.</p>	<p>Vine and Vegetation Diseases, Fruit Pests, Wine Adulteration, Fertilisers, Pastures Protection, Commons, Stock Diseases, Trustees of Show Grounds Enabling, Fruit Cases, Dairy Industry, Apiaries, Bulk Handling of Wheat.</p>	<p>Matters relating to agriculture, stock, including experiment and demonstration farms, viticultural stations and nurseries, experiment plots, Agricultural College, Farm Schools, Veterinary Experiment Farm, Bee Farm, Botanic Gardens, Centennial Park and Sydney Domain, irrigation farms, diseases of stock, plant pests, publication of Agricultural Gazette and Bulletins, Agricultural Bureau, advances to necessitous farmers.</p>
<p>10. Dept. of Public Instruction— (a) Ministerial Branch. (b) Chief Inspector's Branch. (c) School Architect's Branch. (d) Teachers' Training College. (e) Technical Education, including Technological Museum and Aviation School. (f) State Children's Relief. (g) Industrial Schools and Reformatories. (h) National Art Gallery. (i) Conservatorium of Music. (j) Public Library. (k) Australian Museum. (l) Observatory. (m) Schools of Arts, Literary Institutions, etc.</p>	<p>Public Instruction, Public Instruction (Amendment), Free Education, State Children's Relief, Children's Protection, Infant Protection, Neglected Children and Juvenile Offenders, Anatomy, Public Library and Art Gallery, Australian Museum, Schools of Arts, University and University Colleges, Sydney Grammar School, Bursaries Endowment, Trades Hall, School of Arts Trustees Enabling.</p>	<p>Education; high schools, district schools, continuation (junior technical, commercial and domestic, schools, day and evening, kindergarten and subsidised teaching, correspondence school, boys' employment bureau, technical education, scholarships, medical inspection of school children, anthropometrical survey of school children, rural camp schools for city children, travelling schools, school agriculture, physical training, swimming, etc.</p>
<p>11. Department of Labour and Industry—</p>	<p>Early Closing, Factories and Shops, Shearers' Accommodation, Saturday Half Holiday, Industrial Arbitration, Gas, Workmen's Compensation Act, Agreements Validating, Apprentices, Eight Hours, Scaffolding and Lifts.</p>	<p>Working conditions in factories and shops, early closing, matters proceeding from the Court and Boards under the Industrial Arbitration Acts, investigation of industrial complaints, industrial intelligence, and industrial matters generally, unemployment, control of private employment agencies, organization of the labour market, administrative and executive work of the New South Wales Board of Trade, State-aided immigration</p>

VICTORIA.—ADMINISTRATIVE GOVERNMENT, 1919.

<p>1. Chief Secretary— (a) Board for the Protection of Aborigines. (b) Public Service Commissioner. (c) Registry of Friendly Societies. (d) Observatory. (e) Government Statist. (f) Marine Board. (g) Audit. (h) Lunacy. (i) Explosives. (j) Mercantile Marine. (k) Marine Board. (l) Neglected Children and Reformatory Schools. (m) Penal and Gaols. (n) Police. (o) Premier's Office. (p) Inspection of Stores. (q) Public Library. (r) Government Shorthand Writer. (s) Fisheries and Game. (t) Herbarium. (u) Inebriates' Institutions. (v) State Accident Insurance. (w) Licences Reduction Board.</p>	<p>Aborigines, Animals Protection, Constitution, Crimes, Explosives, Fire Brigades, Friendly Societies, Gaols, Inebriates, Libraries, Licensing (part), Lunacy, Marine, Medical, Neglected Children, Poisons, Police Offences, Public Service, Registration of Births, Deaths, and Marriages, Theatres, Weights and Measures, Dentists, Infant Life Protection, Statistics, Opium (part), Motor-car, Electoral, Preferential Voting, Workers' Compensation, Fisheries, Game.</p>	<p>Departmental business connected with the Houses of Parliament, execution of capital sentences, local option, prisons, the Govt. Gazette, Lotteries, Gaming and Betting, Public Library, Museum and Art Gallery, "Hansard," Police, Public and Bank Holidays, Fisheries, Game and other matters as indicated in columns 1 and 2.</p>
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VICTORIA—*continued.*

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
<p>2. Attorney-General and Solicitor-General— (a) Supreme Court. (b) County Court, Courts of General Sessions and Court of Insolvency, Courts of Petty Sessions. (c) Crown Law Offices. (d) Crown Solicitor. (e) Master in Equity and Lunacy. (f) Prothonotary. (g) Registrar of Titles. (h) Sheriffs. (i) Comptroller of Stamps. (j) Official Accountant (Insolvency)</p>	<p>Justices, Administration and Probates, Coroners, Licensing (part), Crimes, Children's Courts, Companies, Crown Remedies, Partnership, Hawkers, Insolvency, Mines (part), Money-lenders, Pawnbrokers, Real Property, Transfer of Land, Stamps, Trusts, Book Debts, Supreme Court, County Court.</p>	<p>Bankruptcy and insolvency, administration and probate, control of courthouses, etc., preparation of legal instruments, administration of justice generally, and advice to Government on all legal questions.</p>
<p>3. Treasury— (a) Land and Income Tax Office. (b) Printing Office. (c) Curator of Intestate Estates. (d) Charities. (e) Tender Board.</p>	<p>Auction Sales, Hospitals and Charities, Public Money, Savings Bank, Income Tax, Licensing (part), State Land Tax.</p>	<p>Conduct of finances, financial aid to charities, endowment to municipal institutions.</p>
<p>4. Public Instruction—</p>	<p>Education, Public Service (part).</p>	<p>Public education generally, establishment, management and maintenance of State elementary, secondary and technical schools, registration of teachers and schools.</p>
<p>5. Railways—</p>	<p>Railways and other Acts relating to specific railways and railway loans.</p>	<p>Management and maintenance of Government railways and electric trams, management and working of the State Coal Mine.</p>
<p>6. Mines—</p>	<p>Mines, Gold Buyers, Boilers Inspection, Mines Development, Coal Mines Regulation.</p>	<p>Mining leases and licenses, licenses to buyers of virgin and wrought gold, inspection of mines, inspection of boilers, factory and mining engine drivers.</p>
<p>7. Water Supply—</p>	<p>Water, Waterworks Construction, Water Supply, Loans Application, Mildura Irrigation Trusts, Sewerage Districts, Closer Settlement (part), Discharged Soldiers' Settlement (part).</p>	<p>Construction and administration of waterworks, irrigation and flood protection schemes, boring for water, supervision of administration of waterworks trusts, local bodies, and country sewerage authorities, acquisition and disposal of land in irrigation districts for closer settlement and settlement of discharged soldiers, and supervision and control of such settlements.</p>
<p>8. Agriculture—</p>	<p>Agricultural Colleges, Stock Diseases, Dairy Supervision, Thistle, Vegetation and Vine Diseases, Sheep Dipping, Bees, Fertilisers, Fruit, Seeds, Shearers' Hut Accommodation, Fungicides, Export Products, Stock Food.</p>	<p>Agricultural colleges and experimental farms, lectures and demonstrations in practical and theoretical agriculture, etc.</p>
<p>9. Lands— (a) Survey. (b) Botanic Gardens and Domain. (c) Land Purchase and Management Board. (d) Immigration and Labour Bureau.</p>	<p>Lands, Closer Settlement, Vermin Destruction, Local Government (part), Seed Wheat Advances, Bush Fires Loan, State Aid Abolition, Mines (part), Discharged Soldiers' Settlement Act.</p>	<p>Survey, sale, and administration of Crown lands, including occupation for industrial, agricultural, and pastoral purposes, immigration, assisted and nominated passages and employment.</p>
<p>10. Public Works— (a) Roads and Bridges and Local Government Branch. (b) State Schools. (c) Dredges and Snagging. (d) Ports and Harbours. (e) Manufacture and Supply of Wire Netting.</p>	<p>Local Government, Electric Lighting and Power, Pounds, Tramways, Drainage Areas, Country Roads, Developmental Works, Electricity Commissioners, Melbourne and Metropolitan Tramways, 1918, etc.</p>	<p>Construction of public works, bay lighthouses, and signal stations.</p>
<p>11. Labour—</p>	<p>Factories and Shops, Servants, Registry Office, Lifts Regulation, Footwear Regulation.</p>	<p>Inspection of factories, workshops and shops, wages boards, engagement of servants, lifts, stamping of footwear.</p>
<p>12. Forests—</p>	<p>Forests.</p>	
<p>13. Public Health—</p>	<p>Health, Midwives, Venereal Diseases, Cemeteries, Pure Food, Goods (Merchandise Marks).</p>	<p>Public health generally, including inspection of food, supervision of meat, false trade descriptions, midwifery, venereal diseases, sanatoria for tuberculosis.</p>

QUEENSLAND.—ADMINISTRATIVE GOVERNMENT, 1919.

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
<p>1. Chief Secretary— (a) Auditor - General. (b) Agent-General. (c) Bureau of Exchange of International Publications. (d) Immigration Department. (e) Intelligence and Tourist Bureau. (f) S.S. Lucinda. (g) Public Library, Art Gallery, and Museum. (h) State Trade Office.</p>	<p>Constitution, Extradition, Immigration, Officials in Parliament, Public Service, Standard Time, State Enterprises.</p>	<p>Commissions, etc., under Public Seal of State, foreign correspondence, immigration, justices of the peace, legislation, public service, Commissioner for Trade, communications with Governor and with States, Commonwealth, British, colonial, and foreign Governments.</p>
<p>2. Public Instruction—</p>	<p>University, Grammar Schools, State Education, Technical Instruction.</p>	<p>Primary education, secondary education in State high schools, inspection of denominational schools, medical and dental inspection of schools, schools of art, technical colleges, rural schools, domestic schools, trade classes grammar schools, physical training, school committees, Teachers' Training College, University of Queensland.</p>
<p>3. Railways—</p>	<p>Railways and Railway Construction.</p>	<p>Railways and tramways management and construction.</p>
<p>4. Home Secretary— (a) Local Government. (b) Public Health. (c) Infant Life Protection. (d) Dental Board. (e) Local Auditors Board. (f) Medical Board. (g) Aborigines. (h) Hospitals and Charitable Institutions. (i) Nurses Registration Board. (j) Police. (k) Prisons. (l) State Children. (m) Cemeteries. (n) Conciliation Courts. (o) Traffic. (p) Fire Brigades. (q) Holidays. (r) Hospitals for Insane. (s) Government Relief Departments.</p>	<p>Aboriginals, Holidays, Careless Use of Fire, Cemetery, Charitable Institutions, Children's Protection, Dental, Fencing, Fire Brigades, Hawkers, Health, Hospital, Industrial Schools, Inebriates, Influx of Criminals Prevention, Insanity, Legitimations, Liquor, Local Government, Medical, Native Labourers, Opticians, Pharmacy, Police, Prisons, Religious, etc., Institutions, Registration Births, etc., State Children, Statistics, Traffic, Courts of Conciliation, Leprosy, Party Processions, Prevention of Undue Subdivision of Land.</p>	<p>Is charged with business connected with—aboriginals, cemeteries, fire brigades, holidays, hospitals and charitable institutions, industrial and reformatory schools, infant life protection, insanity, lazarets, local Government, outdoor relief, police, prisons, public health, quarantine, remission and execution of sentences and penalties, State children, miscellaneous services, and all other matters of internal arrangement not confided to any other Minister.</p>
<p>5. Treasury— (a) Government Analyst. (b) Government Printing Office. (c) Government Stores. (d) Harbours and Rivers Department. (e) Land and Income Tax Office. (f) Marine Department. (g) Marine Board. (h) Water Supply Department. (i) Comptroller of Central Sugar Mills. (j) State Fisheries.</p>	<p>Coast Survey, Explosive, Fisheries and Fish Supply, Annuities, Auctioneers, Harbours, Income Tax, Land Tax, Irrigation, Loans, Shipping and Navigation, Port Dues Revision, Firms Registration, Water Conservation, Stock Inscription, Sugar Works, Treasury Notes and Bills, Tobacco, Water Authorities, Weights and Measures.</p>	<p>Central sugar mills, dredges, fisheries, fish market, finance generally, harbour boards and improvements, navigation, ports and harbours, explosives magazines, printing, public debt, registration of firms, taxation generally, trade and commerce, water supply, water conservation, weights and measures, wharves and jetties.</p>
<p>6. Attorney-General— (a) Department of Justice. (b) Crown Solicitor. (c) Supreme and District Courts. (d) Public Curator. (e) Registry of Friendly Societies. (f) Registry of Titles. (g) Comptroller of Stamps. (h) Police Magistrates. (i) Petty Sessions. (j) Public Service Superannuation. (k) Sheriff. (l) State Insurance. (m) Electoral. (n) Registration of Money Lenders. (o) Advertising Board.</p>	<p>Justiciary, Building Societies, Companies, Friendly Societies, Inquests, Insurance, Leases to Aliens, Printing, Real Property, Public Curator, Public Service Superannuation, Stamp, Succession and Probate, Totalisator, Trade Unions, Workers' Compensation, Gaming, Money Lenders.</p>	<p>Administration of justice generally, advising Government on all legal questions, judicial establishments, courts of petty sessions, preparation of all legal instruments and contracts, electoral matters, by-laws and regulations under statutes.</p>
<p>7. Mines— (a) Geological Survey. (b) Wardens and Mining Registrars. (c) Mines Inspection. (d) School of Mines. (e) Queensland Government Mining Journal.</p>	<p>Mining Acts, Mines Regulation Act, Miners' Homestead Act.</p>	<p>Geological survey, mining fields, administration, regulation of mines, Charters Towers School of Mines, Government Assay Laboratories, Government Mining Journal.</p>

QUEENSLAND—*continued.*

Departments Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
<p>8. Public Lands— (a) District Land Offices. (b) District Survey Offices. (c) Survey Office. (d) Forestry.</p>	<p>Closer Settlement, Crown Lands, Pastoral Leases, State Forests and National Parks, Public Works, Land Resumption, Rabbit, Marsupial-proof Fencing, Discharged Soldiers' Settlement.</p>	<p>Destruction, etc., of rabbits and prickly pear, opening and closing roads, reserves, settlement of Crown lands, lands survey, forestry, public estate improvement, State cannery, soldier settlement.</p>
<p>9. Agriculture— (a) Agricultural College. (b) Inspectors of Stock and Brands and Registry of same. (c) Inspector of Dairies. (d) Botanic Gardens. (e) State Farms and Nurseries. (f) Sugar Experiment Stations. (g) Stock Diseases Experiment Stations. (h) Chemical Laboratory. (i) Central Sugar Cane. (j) Prices Board.</p>	<p>Brands, Dairy, Diseases in Plants, Stock, Game and Fish Acclimatisation, Farm Produce Agents, Fertilisers, Fruit Cases, Live Stock and Meat Export, Margarine, Dingo and Marsupial Boards, Native Animals and Birds Protection, Slaughtering, Sugar Cultivation, Sugar Cane Prices, Pure Seeds.</p>	<p>Agricultural College, Botanic Gardens, brands and earmarks of stock, diseases in animals and plants, travelling of stock, loans in aid of co-operative agricultural production, dingo and marsupial destruction, protection of native birds and animals, slaughter of cattle for consumption, inspection of dairy produce, fruit, and plants, State farms and nurseries, stock and sugar experiment stations.</p>
<p>10. Public Works— (a) Under-Secretary for Works, Government Architect, and Engineer for Bridges, (b) Labour and Factories. (c) Inspection of Machinery and Scaffolding. (d) Court of Industrial Arbitration. (e) Gas Testing.</p>	<p>Metropolitan Water and Sewerage, Electric Light and Power, Factories and Shops, State Industrial Arbitration, Inspection of Machinery and Scaffolding, Workers' Accommodation, Labour Exchanges, Gas, Trade Unions.</p>	<p>Construction of public buildings, State-school buildings, technical colleges, bridges, hospitals, prisons, court houses, police stations, Government Savings Banks, State hotels, State fish markets and cold storage, State retail butcheries.</p>

SOUTH AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1919.

<p>1. Premier and Chief Secretary— (a) Government Reporting Department. (b) Railways Standing Committee. (c) Royal Commissions. (d) Government Motor Garage. (e) Statistical Department. (f) Audit. (g) Public Actuary. (h) Sheriff. (i) Registrar-General. (j) Government Printer. (k) Police. (l) Central Board of Health. (m) Hospitals. (n) Mental Hospital. (o) Destitute Persons. (p) State Children. (q) Gaols and Prisons. (r) Public Service Commissioners. (s) Places of Public Entertainment.</p>	<p>Railways Standing Committee Act, War Funds Regulation Act, Civil Service, Audit, Friendly Societies, Registration of Births, Deaths and Marriages, Prisons, Police, Legitimation, Public Hospitals, Mental Defectives, State Children, Health, Vaccination, Places of Public Entertainment, Fire Brigades, Public Charities' Funds, Public Service.</p>	<p>Correspondence with Commonwealth, State, and other Governments. Business relating to sub-departments, Chamber of Manufactures, Civil Service examinations, fire brigades, Government Gazette, public charities, Royal commissions, State printing, public houses, hospitals, public health, law and order, prisons, places of public entertainment.</p>
<p>2. Treasury— (a) Land and Income Tax Department. (b) Stamp Duty Department. (c) Motor Vehicles Branch. (d) Agent-General in London. (e) Produce Department.</p>	<p>Seed Wheat, Un claimed Moneys, Pawnbrokers, Appraisers, Auctioneers, Hawkers, Taxation, Stamp Duty, Motor Vehicles.</p>	<p>Banking, finance and taxation generally, Imperial and other Government pensions, Public Service Superannuation Fund, licenses, produce export, correspondence with the Agent-General and with the Chamber of Commerce.</p>
<p>3. Attorney-General— (a) Law Officers. (b) Public Trustees. (c) Curator of Convicts' Estates. (d) Supreme Court. (e) Registrars of Industrial Soc., etc., in Admiralty, of Probates, of Companies, and of Building Soc. (f) Insolvency Courts. (g) Police and Local Courts. (h) Licensing Courts. (i) Registrar-General of Deeds. (j) Coroners. (k) Electoral Department. (l) Local Option. (m) Town Planning.</p>	<p>Courts of Justice, Administration and Probate, Public Trustee, Legal Practitioners, Succession Duties, Companies, Insolvency, Police, Real Property, Bills of Sale, Deposit of Deeds, Coroners, Electoral, Licensing, Ancient Lights, Declarations and Attestation.</p>	<p>Responsible for Government Parliamentary bills and administration of Local Option and Electoral Acts. Deals with issue of summonses and warrants and with preparing informations and plaints, licenses, franchise, appeals from courts, town planning.</p>

SOUTH AUSTRALIA—*continued.*

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
<p>4. Commissioner of Crown Lands and Immigration— (a) Lands and Survey Department. (b) Local Government Department. (c) Photolithographic Department.</p>	<p>Crown Lands, Corporations, District Councils, Manufacturing Districts, Blocker's Loans, Animal Protection, Game, National Park, Noxious Weeds, Roads, Pastoral, Vermine, Licensed Surveyors, Weights and Measures, Botanic Garden, Advances to Settlers, Immigration, Impounding Travelling Stock, Waybills.</p>	<p>Matters affecting municipal corporations and district councils respecting the Acts under which they are constituted, payment of main road grants, subsidies, and license fees, all matters affecting Crown lands, roads and bridges, immigration, surveys, botanic gardens, animals and birds.</p>
<p>5. Public Works— (a) Engineer-in-Chief's Department. (b) Hydraulic Engineer's Department. (c) Works and Buildings. (d) Labour Exchange. (e) Supply and Tender Board Department. (f) Aborigines Department.</p>	<p>South-eastern Drainage, Water Conservation, Waterworks, Sewers, Murray River Works, Adelaide Cemetery and Cremation, Renmark Irrigation Trust, Municipal Tramways Trust, Aborigines.</p>	<p>Water conservation works and artesian boring, construction of roads outside district councils, town and country waterworks, weirs, locks, and other improvements, River Murray, State Government buildings, Adelaide cemetery, aborigines, labour exchange.</p>
<p>6. Mines— (a) Department of Mines. (b) Geological Survey.</p>	<p>Mining, Gold Dredging, Mining on Private Property, Gold Buyers.</p>	<p>Administration of Mining Acts, records and statistics, geological reports, State batteries and cyanide works, metallurgical laboratories, inspection of mines and quarries, diamond drilling.</p>
<p>7. Minister of Railways—</p>	<p>Railway Administration and Construction.</p>	<p>Railways.</p>
<p>8. Education— (a) Education Department. (b) Observatory. (c) Adelaide University. (d) Adelaide School of Mines. (e) Country Schools of Mines. (f) Public Library, Museum and Art Gallery. (g) Institutes Association.</p>	<p>Education, Adelaide University, Degrees in Surgery, University Site, Public Library, Museum and Art Gallery, School of Mines, Country Institutes.</p>	<p>Education generally, including primary, secondary, technical, and university, institutes, astronomical (but not meteorological) work.</p>
<p>9. Department of Industry— (a) Chemistry Dept. (b) Factories' Dept. (c) Fisheries' Dept. (d) Chief Inspector of Steam Boilers. (e) Industrial Court. (f) Government Workers Tribunal.</p>	<p>Industrial Arbitration, Factories, Early Closing, Scaffolding, Lifts, Shearers' Accommodation, Fisheries, Bird Protection, Registry Offices, Steam Boilers and Engine Drivers, Workmen's Compensation, Apprentices (War Relief), inflammable Oils.</p>	<p>Factories, shops, early closing, industrial disputes, explosives, fish industry, industrial research, steam boilers and engine drivers, Wages Boards.</p>
<p>10. Agriculture and Irrigation— (a) Department of Agriculture. (b) Advisory Board of Agriculture. (c) Agricultural College. (d) Dairy Department. (e) Poultry Department. (f) Horticultural Department. (g) Stock and Brands. (h) Irrigation. (i) Experimental Farms. (j) Government Produce Department.</p>	<p>Bush Fires, Fertilisers, Fisheries, Vine, Fruit and Vegetable Protection, Commerce, Hay and Chaff, Insecticides, Phylloxera, Irrigation, Stock Diseases, Brands, Sale of Fruit, Hide, Skin and Wool Dealers, Chaff, Hay and Fruit. Sale of Fruit, Loans to Producers.</p>	<p>Scientific farming, agricultural colleges and experimental farms, agricultural instruction, handling, shipping and cold storage of produce, inspection of stock, registration of stock brands, reclamation and irrigation of land, advances to agricultural co-operative societies.</p>
<p>11. Marine— (a) Harbours Board. (b) Marine Board. (c) Life Saving Department.</p>	<p>Harbour, Marine, and Navigation Acts.</p>	<p>Wharves, harbours, jetties, light-houses, dredging, life saving.</p>

WESTERN AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1919.

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
<p>1. Premier— (a) Premier's Office. (b) Executive Council. (c) London Agency. (d) Public Service Commissioner. (e) Government Motor Cars.</p>	<p>Public Service, Postponement of Debts.</p>	<p>State Governor's establishment, Executive Council, London agency, justices of the peace, Government motor cars, State functions and celebrations, royal commissions.</p>
<p>2. Colonial Secretary— (a) Aborigines. (b) Fisheries. (c) Friendly Societies and Industrial Arbitration. (d) Gaols. (e) Government Gardens. (f) Harbour and Light. (g) Immigration and General Information. (h) Lunacy. (i) Medical, Public Health, Factories, and Early Closing. (j) Observatory. (k) Police. (l) State Children, Interstate Destitute Persons and Outdoor Relief. (m) State Labour Bureau. (n) Registry and Statistical. (o) State Hotels and Tourists. (p) State Steamship Service.</p>	<p>Aborigines, Bread, Bank Holidays, Benefit Building Societies, Protection of Property, Co-operative and Provident Societies, Dentists, Fire Brigades, Early Closing, Friendly Societies, Fisheries, Factories, Footwear Regulation, Game, Harbours and Rivers, Hospitals, Health, Industrial Arbitration, Interstate Destitute Persons' Relief, Lunacy, Inebriates, Marine Stores, Medical, Navigation, Newspaper Libel, Pearlery, Poorhouses, Discipline, Prisons, Police, Pharmacy and Poisons, Registration of Births, Deaths and Marriages, Legitimation, Racing Clubs, Royal Commissioners' Powers, Statistical, State Children, Shearers' Accommodation, Seamen, Shipping, Trespass, Trades Unions, Truck, University Endowment, Vaccination, Whaling, Workers' Compensation, Workmen's Wages.</p>	<p>Consuls, fisheries, aborigines, actuarial, industrial arbitration, friendly and other societies, trades unions, prisons, Government gardens, lighthouses, harbours and rivers, immigration and general information, hospitals, hospitals for insane, early closing, sanitation, factories, astronomical, police, poor relief, State children, infant life protection, labour bureau, births, marriages and deaths, statistics, children's courts, old men's home, old women's home, inebriates' homes, Sunday entertainments, ferries, State steamships, State dairy farm, State hotels and inspection of liquors, pearling, oyster fisheries, game, Rottnest Island, tourists, public health, midwives' registration, meat and dairies inspection, school medical inspection, jetties, navigation, port lighthouses, workers' compensation.</p>
<p>3. Treasury— (a) Treasury. (b) Savings Bank. (c) Government Stores. (d) Workers' Home Board. (e) Lithography. (f) Printing. (g) Audit. (h) Taxation.</p>	<p>Auctioneers, Wines, Beer and Spirits Sale, Gun Licensing, Government Savings Bank, Workers' Homes, Pensions, Audit, Sale of Government Properties, General Loan and Inscribed Stock, Treasury Bills, Treasury Bonds Deficiency, Land and Income Tax, Stamp Dividend Duties, Totalisator Duty, Totalisator Regulation.</p>	<p>Finance generally, general stores, savings bank, pensions, public accounts, licences, stamps, taxation, audit, printing and lithography, workers' homes.</p>
<p>4. Attorney-General— (a) Crown Law Offices. (b) Supreme Court. (c) Stipendiary Magistrates. (d) Land Titles Office. (e) Electoral Office. (f) Official Receiver. (g) Curator of Intestate Estates. (h) Sheriff.</p>	<p>Administration of Justice, Bankruptcy, Bills of Sale, Building Societies, Corporations, Companies, Conveyancing, Divorce, Death Duties, Extradition, Electoral, Firms' Registration, Intestate Estates, Life Assurance, Lunacy Estates, Libel, Licensing, Real Property, Truck Act, Transfer of Land, Workers' Compensation, Workmen's Wages, Usury.</p>	<p>Criminal and civil law, conveying, parliamentary drafting, sheriffs, bankruptcy, intestacy, licensing, petty debts, petty sessions and police courts, land titles and registration of deeds and leases, elections, supreme court, registration of companies, newspapers, corporations, extradition, sheriff.</p>
<p>5. Public Works— (a) Administrative and State Industries. (b) Engineering Division. (c) Architectural Division.</p>	<p>Public Works, Tramways, Railways (Special), Electric Light, Municipal Corporations, Roads, Dog, and Cart and Carriage.</p>	<p>Public buildings and works, abattoirs, freezing and cold storage works, railway and tramway construction, municipalities, roads and bridges, State saw mills and brickworks, implement and engineering works, quarries, erection of wheat and flour storage sheds and silos.</p>
<p>6. Water Supply, Sewerage and Drainage in— (a) Goldfields. (b) Agricultural North-West Divisions. (c) Metropolitan Water Supply, Sewerage and Drainage.</p>	<p>Goldfields Water Supply, Water Boards, Land Drainage, Rights in Water and Irrigation, Metropolitan Water Supply, Sewerage and Drainage.</p>	<p>All State hydraulic, sewerage, land drainage and irrigation undertakings.</p>

WESTERN AUSTRALIA—*continued.*

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
<p>7. Agricultural— (a) Department of Agriculture. (b) Commissioner Wheat Belt. (c) Chief Inspector, Fruit Industries. (d) Stock Brands, Poultry, and Veterinary Inspection. (e) Rabbit and Vermin Branch. (f) Markets, Refrigerating Works, Saleyards and Abattoirs. (g) Botanist, Pathologist, and Entomologist. (h) Wyndham Freezing Works.</p>	<p>Rabbit, Stock Diseases, Scab, Brands, Plant Diseases, Noxious Weeds, Fertilisers and Feeding Stuffs Contagious Diseases in Bees, Droving, Abattoirs, Vermin, Veterinary Surgeons, Destructive Birds and Animals, Cattle Trespass, Fencing and Impounding, Live Stock and Frozen Meat, Quarantine, and Commerce.</p>	<p>Agricultural, horticultural, dairying and pastoral pursuits generally, abattoirs and refrigerating works, encouragement of secondary industries, State farms, orchard and insect pests, Federal quarantine (fruit), veterinary inspection, meat canning.</p>
<p>8. Industries— (a) Agricultural Bank. (b) Industries Assistance Board. (c) Council of Industrial Development.</p>	<p>Agricultural Bank, Industries Assistance.</p>	<p>Assistance to settlers, industrial development, assistance to returned soldiers.</p>
<p>9. Education— (a) Primary Education. (b) Secondary Education. (c) Training College for Teachers. (d) Technical Education.</p>	<p>Education.</p>	<p>Education generally, including primary, secondary, continuation and technical schools, inspection of schools, training of teachers.</p>
<p>10. Railways—</p>	<p>Government Railways, Tramways, Electric Light and Power Agreement, and Government Electric Works.</p>	<p>Management, maintenance and control of Government railways and tramways, control of electricity supply.</p>
<p>11. Mines— (a) Explosives and Analytical. (b) Inspection of Machinery. (c) Mining Engineers. (d) Geological Survey. (e) State Batteries. (f) School of Mines. (g) State Smelter.</p>	<p>Mining, Sluicing and Dredging for Gold, Explosives, Inspection of Machinery, Mines Regulation, Coal Mines, Mining Development.</p>	<p>Mining generally, State batteries and reduction plants.</p>
<p>12. Lands— Lands and Surveys.</p>	<p>Land, Cemeteries, Bush Fires, Parks and Reserves, Agricultural Lands Purchase, Native Flora and Fauna, Opening and Closing of Roads under Roads Act, Permanent Reserves, Licensed Surveyors, Discharged Soldiers' Settlement.</p>	<p>All business in connection with holdings under the Land Acts, reserves, roads, land selection, district survey offices, land agencies.</p>

TASMANIA.—ADMINISTRATIVE GOVERNMENT, 1919.

<p>1. Chief Secretary and Premier— (a) Governor's Establishment. (b) Premier's Dept. (c) Executive Council. (d) Agent-General. (e) Houses of Parliament. (f) Electoral. (g) Audit. (h) Statistical and Registration. (i) Inspection of Machinery. (j) Fisheries. (k) Public Buildings. (l) Charitable Institutions. (m) Boys' Training School. (n) Home for Invalids. (o) Neglected Children's Department. (p) Medical Institutions. (q) Hospitals. (r) Public Health. (s) Public Service Board. (t) Industrial Education.</p>	<p>Audit, Bank Holidays, Cemeteries, Registration of Births and Deaths, Botanical Gardens, Charitable Institutions, Electoral, Fire Brigades, Factories, Fisheries, Hospitals, Inebriates, Museum and Art Gallery, Pensions, Pharmacy, Public Health, Public Service, Wages Boards, Midwifery, Shops Closing, Workers' Compensation, Industrial, Education, Children's Charter.</p>	<p>Correspondence with State, Federal, Colonial, British, and Foreign Governments, with Agent-General and Governor, etc., charitable institutions, cemeteries, public health, electoral, franchise, fisheries, machinery, statistics, training and industrial schools, neglected children, public service, explosives, wages boards.</p>
<p>2. Treasury— (a) Taxes. (b) Printing. (c) State Savings Bank. (d) Agricultural Bank. (e) Merchant Ships' Officers' Exam. Board.</p>	<p>Suppression of Public Betting, Licensing, Stamp Duties, Auction, Pawnbrokers, Public Debts, Taxation Assessment, Savings Bank, State Advances, Merchant Ships' Officers' Examination.</p>	<p>Finance generally, collection of internal revenue and of stamp duties, Government printing.</p>

TASMANIA—*continued.*

Department, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
3. Mines—	Mining, Mining Companies, Mining Companies (<i>Foreign</i>), Magazine and Explosives.	All matters arising under Acts dealing with mining, registration of mining companies, magazines and explosives.
4. Lands— (a) Lands Branch Office, Launceston. (b) Agricultural and Stock Department.	Crown Lands, Closer Settlement, Game Protection, Stock, Diseased Animals, Rabbits Destruction, Vegetation Diseases.	Crown lands and surveys, agriculture and stock.
5. Public Works—	Public Works, Local Government.	Construction and control of public works, including railways.
6. Attorney-General— (a) Supreme Court. (b) Lands Titles. (c) Sheriff. (d) Magistracy. (e) Police. (f) Railways.	Probate, Stamp Duties, Foreign Companies, Real Property, Prisons, Bankruptcy, Local Courts, Infant Life Protection, Motor Traffic, Police, Railway Management, Newspapers.	Courts of law, gaols, justices of the peace and coroners, lands titles, police, registration of deeds, Supreme Court and Judges, Railways.
7. Education.	Education.	Primary and technical education, University of Tasmania.

SECTION XXVI.

LOCAL GOVERNMENT.

§ 1. Introduction.

1. **Early History of Local Government.**—In previous issues of this book, a description was given of the systems of Local Government and their development in the several States of the Commonwealth, and at the same time a comparison was made between the Australian and Continental systems. The early history of Local Government in Australia was also dealt with. Owing, however, to considerations of space, these matters have been omitted from the present volume, and the reader is referred to Year Book No. 5, pages 972 to 975.

§ 2. Local Government Systems.*

1. **New South Wales.**—(i) *Development of Local Government.* The history of Local Government in New South Wales has been given in previous issues of this book (see No. 6, page 966). It is not intended to repeat the information in this issue.

(ii) *Present System of Local Government.* The law relating to local government in New South Wales is now contained in the Acts of 1906, 1907, 1908, and 1914. Practically the whole of the State, with the exception of the Western Division, has been brought under the operation of these Acts.

(a) *Areas Incorporated.* Prior to the year 1907 the total area incorporated formed a very small part of the whole area of the State, as may be seen in the following statement :—

AREAS INCORPORATED IN NEW SOUTH WALES, 1860 TO 1906.

Year	..	..	..	1860.	1870.	1880.	1890.	1900.	1906.
Area incorporated—sq. miles	..	..	..	409	649	1,482	2,387	2,763	2,830
<i>Total area of State exclusive of Lord Howe Island and inclusive of Federal Territory, 310,367 square miles.</i>									

The areas incorporated in 1906 in each of the three territorial divisions of the State were as follows :—

NEW SOUTH WALES.—DISTRIBUTION OF INCORPORATED AREAS, 1906.

Division.	Incorporated Area.	Unincorporated Area.	Total Area.
Eastern Sq. miles	1,977	93,742	95,719
Central "	571	88,579	89,150
Western "	282	125,216	125,498
Total "	2,830	307,537	(a) 310,367

(a) Total area of State, exclusive of Lord Howe Island, the area of which is 5 square miles, and inclusive of Federal Territory, the area of which is 940 square miles.

The total area incorporated under the Local Government Act 1906 to the end of the year 1917 was 183,530 square miles, of which 180,658 square miles were comprised within shires and 2,872 within municipalities. The areas incorporated comprise the whole of the eastern and central divisions of the State, with the exception of Lord Howe Island, the islands in Port Jackson, and the quarantine station at Port Jackson.

* For a detailed account of the various Local Government Systems in Australia see also *Local Government in Australia*, compiled in the Commonwealth Bureau of Census and Statistics, and published by the Government Printer, Melbourne, 1919.

(b) *General.* The above Act came into operation on the 1st January, 1907; it provided for the continuation of existing shires and municipalities, for the creation of new ones, and for their reconstitution by uniting, dividing, altering, or converting areas. Each shire is divided into three ridings, and each municipality may be divided into wards by petition of the council or a majority of the ratepayers to the Governor. The councils consist, in the case of shires, of either six or nine councillors, and in the case of municipalities, of from six to eighteen aldermen. A summary of the functions of councils, their powers and duties, together with a detailed statement of rates, ratable property, and endowment, will be found in previous issues of the Year Book. (See Year Book No. 5, pages 977 to 979.)

(iii) *Shires.* The total area of the 136 shires constituted under the new system is 180,658 square miles, and the population on the 31st December, 1917, was 658,880.

The shires vary in area from 36 square miles in the case of Ku-ring-gai, immediately north of the metropolis, to 5,730 square miles in the case of Lachlan in the Condobolin district.

(a) *Valuation and Rates Levied.* The unimproved capital value of the shires in 1917 was £107,695,315, as against £105,697,791 in the preceding year. It is not possible to give the improved capital value or the assessed annual value, as the shires are not compelled to make these valuations, and in many cases do not make them. The total amount of all rates levied was £691,593.

(b) *Revenue.* The principal heads of revenue for the last five years are shewn in the following table:—

NEW SOUTH WALES.—INCOME OF SHIRES, 1913 TO 1917.

Particulars.(a)	1913.	1914.	1915.	1916.	1917.
	£	£	£	£	£
<i>General Fund—</i>					
General rates	561,378	608,009	612,612	633,973	672,473
Government endowment ..	134,635	146,077	163,211	143,259	151,446
Public works	62,453	197,754	192,319	205,277	167,696
Health administration ..	4,864	4,889	4,620	4,087	3,987
Public services	10,305	10,069	9,711	11,162	10,682
Shire property	10,159	13,738	12,512	12,449	14,343
Miscellaneous	6,814	6,742	5,843	7,507	7,303
<i>Special, Local, and Loan Funds</i>	45,903	57,714	65,293	75,309	84,374
Total revenue	836,511	1,044,992	1,066,121	1,093,023	1,112,304

(a) The receipts for Public Works, Health Administration, Public Service, etc., include Government grants during 1917 amounting to £146,972.

(c) *Expenditure.* The following statement shews the expenditure of shires during the years 1913 to 1917 inclusive:—

NEW SOUTH WALES.—EXPENDITURE OF SHIRES, 1913 TO 1917.

Particulars.	1913.	1914.	1915.	1916.	1917.
	£	£	£	£	£
<i>General Fund—</i>					
Administrative expenses ..	91,450	95,760	87,527	100,224	100,649
Public works	707,923	801,542	813,400	843,803	901,730
Health administration ..	7,699	8,064	8,049	8,513	9,149
Public services	14,751	14,757	17,935	15,229	18,256
Shire property	11,251	15,277	14,644	14,969	16,211
Miscellaneous	9,975	9,275	10,590	17,510	15,912
<i>Special, Local, and Loan Funds</i>	43,041	51,796	67,025	78,649	78,819
Total expenditure	886,090	996,471	1,018,870	1,078,897	1,140,726

(d) *Assets and Liabilities.* The financial position of the shires at the end of the year 1917 was strong, as there was an excess of assets of £405,790. The following table gives particulars of assets and liabilities as at the 31st December, 1917 :—

NEW SOUTH WALES.—ASSETS AND LIABILITIES OF SHIRES, 1917.

Assets.		Liabilities.	
<i>General Fund—</i>	£	<i>General Fund—</i>	£
Outstanding rates ..	50,526	Temporary loans ..	62,341
Stores and materials ..	17,776	Sundry creditors ..	54,008
Bank balance ..	116,467	Due on contracts ..	38
Sundry debtors ..	16,226	Due to trust fund ..	288
Land ..	22,160	Other ..	386
Buildings ..	103,111	<i>Special, Local, and Loan Funds</i>	46,193
Plant and property (a) ..	156,981	Total ..	(b)163,254
Furniture ..	15,830		
Other ..	9,043	Excess of assets ..	405,800
<i>Special, Local, and Loan Funds</i> ..	60,934		
Total ..	569,054	Total ..	569,054

(a) Including saleyards, pounds, baths, public watering-places, ferries, wharves, etc.

(b) Includes £90,134 for outstanding loans.

(iv) *Municipalities.* Including the City of Sydney there were 185 municipalities in New South Wales at the end of 1917; of these, forty were in the suburbs of Sydney and eleven in the district of Newcastle and suburbs. Since the 1st January, 1908, under the Local Government Act 1906, suburban and country municipalities must levy a general rate on the unimproved capital value of all ratable land, and may levy additional general, special, local, or loan rates on either the unimproved or improved capital value. Municipal rates, until the year 1915, were charged on the annual value in the City of Sydney, and an additional rate was also levied on the unimproved capital value, but from 1916 the rates are levied on the unimproved capital value only. The only rates based solely on the assessed annual value are those charged by the Metropolitan and Hunter Water Supply and Sewerage Boards.

(a) *Capital Value, Area, Population, and Rates Levied.* The following table shows the improved capital value, the area, population, number of buildings, and amount of rates levied in municipalities for the years 1901 and 1913 to 1917 :—

NEW SOUTH WALES.—MUNICIPALITIES, IMPROVED CAPITAL VALUE, AREA, POPULATION, NUMBER OF BUILDINGS, AND TOTAL RATES LEVIED, 1901 AND 1913 TO 1917.

Year ended 31st Dec. (a)	Sydney and Suburbs.					Country.				
	Improved Capital Value.	Area.	Popu- lation.	Number of Dwel- lings.	Total Rates Levied.	Improved Capital Value.	Area.	Popu- lation.	Number of Dwel- lings.	Total Rates. Levied.
	£	Acres.	No.	No.	£	£	Acres.	No.	No.	£
1901	88,116,600	91,220	(b)487,900	94,907	277,457	36,429,800	1,732,302	371,330	73,862	127,564
1913	137,795,263	95,259	713,260	(c)	880,908	50,451,471	1,769,155	456,050	(c)	401,594
1914	158,764,693	95,259	739,210	(c)	1,038,224	55,682,063	1,769,155	457,150	(c)	450,140
1915	169,778,544	95,259	748,940	(c)	1,076,885	57,949,558	1,769,155	456,000	(c)	464,511
1916	176,059,505	95,259	750,260	(c)	1,153,987	59,422,910	1,742,275	446,800	(c)	485,104
1917	183,469,822	95,259	762,480	(c)	1,124,590	62,055,080	1,742,275	453,800	(c)	516,816

(a) Prior to 1908 the municipal year ended on the first Monday in February, since when the municipal year closes on 31st December. (b) Census, March, 1901. (c) Not available.

The following table gives a comparison of the unimproved and improved values for the years 1913 to 1917 inclusive :—

NEW SOUTH WALES.—MUNICIPALITIES, UNIMPROVED AND IMPROVED CAPITAL VALUES, 1913 TO 1917.

Year.	Sydney.	Suburbs.	Metropolis.	Country.	Total.
UNIMPROVED VALUE.					
	£	£	£	£	£
1913	23,837,157	28,240,971	52,078,128	20,807,126	72,885,254
1914	27,395,826	31,979,353	59,375,179	22,573,671	81,948,850
1915	27,226,283	33,403,223	60,629,506	22,843,195	83,472,701
1916	31,168,904	34,719,417	65,888,321	23,378,626	89,266,947
1917	31,130,368	36,808,755	67,939,123	24,350,474	92,289,597
IMPROVED VALUE.					
1913	64,080,440	73,714,823	137,795,263	50,451,471	188,246,734
1914	75,786,580	82,978,113	158,764,693	55,682,063	214,446,756
1915	78,580,300	91,198,244	169,778,544	57,949,558	227,728,102
1916	80,264,720	96,394,785	176,659,505	59,422,910	236,082,415
1917	81,976,260	101,493,562	183,469,822	62,055,080	245,524,902

(b) *Revenue.* The Local Government Act 1906 prescribed that there should be a general fund in each local government area (municipality and shire), also special funds for specified purposes. The regulations under the Act prescribed the system of accounts to be kept. This system differs materially from the old "cash" system of receipts (cash actually received) and disbursements (cash actually expended).

Prior to 1908 the municipal year ended on the first Monday in February; now it ends on the 31st December. In all statements of municipal accounts for the year 1908, therefore, the period referred to is from the 4th February to the 31st December, except in the City of Sydney, which does not come under the provisions of the Act of 1906 and where the accounts are kept for the calendar year. The first complete year for which financial particulars are available for the municipalities is the year 1909. Particulars of revenue for the year 1917 are given in the following table :—

NEW SOUTH WALES.—MUNICIPALITIES, REVENUE, 1917.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund	1,161,406 (b)	759,878	493,098	1,252,976 (c)
Trading accounts .. ..		..	162,628	162,628 (c)
Special and local funds		59,959	310,050	370,009 (c)
Loan funds		74,571	71,487	146,058 (c)
Reserve and Renewals Account		4,967	27,220	32,187 (c)
Gross revenue	1,161,406 (b)	899,375	1,064,483	3,125,264
Deduct transfers (a) .. ..	..	44,537	50,328	94,865
Net revenue	1,161,406 (b)	854,838	1,014,155	3,030,399

(a) Transfers from various funds to loan funds for principal, interest, and capital expenditure. (b) The City of Sydney accounts were formerly kept on a cash basis, i.e., the actual receipts and disbursements were shown; but the figures since 1914 shew total revenue and expenditure for the year. Items of revenue and expenditure for the City of Sydney cannot be allocated to the different headings shewn for municipalities. (c) Exclusive of Sydney.

(c) *Expenditure.* Reference has already been made to the system of accounts prescribed by the Local Government Act 1906 (see paragraph (b) hereof). The following table gives particulars of expenditure of municipalities for the year 1917 :—

NEW SOUTH WALES.—MUNICIPALITIES, EXPENDITURE, 1917.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund	1,228,187 (b)	760,812	496,202	1,257,014 (c)
Trading accounts .. ..		..	129,278	129,278 (c)
Special and local funds		56,157	295,256	351,413 (c)
Loan funds		54,834	43,677	98,561 (c)
Reserve and renewals account		1,089	3,686	4,775 (c)
Gross expenditure	1,228,187 (b)	872,942	968,099	3,069,228
Deduct transfers (a) .. ..	..	44,537	50,328	94,865
Net expenditure	1,228,187 (b)	828,405	917,771	2,974,363

(a) Transfers from various funds for principal and interest on loans. (b) See note (b) to preceding table.
(c) See note (c) to preceding table.

(d) *Assets and Liabilities.* The financial position of the municipalities as at the 31st December, 1917, is shewn by the following statement of assets and liabilities of the various funds :—

NEW SOUTH WALES.—MUNICIPALITIES, ASSETS AND LIABILITIES, 1917.

Particulars.	Sydney.	Suburbs.	Country.	Total.
<i>Assets—</i>		£	£	£
General fund	10,734,793 (a)	422,599	562,044	984,643 (b)
Trading accounts .. ..		..	173,514	173,514 (b)
Special and local funds		40,798	1,723,563	1,764,361 (b)
Loan funds		160,170	621,671	781,841 (b)
Reserves and renewals account		3,878	24,913	28,791 (b)
Total	10,734,793 (a)	627,445	3,105,705	14,467,943
<i>Liabilities—</i>				
General fund	10,469,229 (a)	191,744	128,130	319,874 (b)
Trading accounts .. ..		..	90,338	90,338 (b)
Special and local funds		10,087	1,547,092	1,557,179 (b)
Loan funds		840,706	629,397	1,470,103 (b)
Reserves and renewals account		3,878	24,913	28,791 (b)
Total	10,469,229 (a)	1,046,415	2,419,870	13,935,514

(a) See note (b) to last table on preceding page. (b) See note (c) to last table on preceding page.

2. *Victoria.*—(i) *Development of Local Government.* In Victoria there are now two types of municipal institutions, (a) boroughs, including cities and towns, and (b) shires, and, although they are now dealt with by the same Act, their origin was distinct, and in the early days of their development they were provided for by independent enactments. Melbourne and Geelong (the latter of which was for many years the second largest town in the State) having been incorporated under special statutes prior to the establishment of a general system of local government, are not subject to the provisions of the *Local Government Acts* except in a few comparatively unimportant details. Melbourne was incorporated as a town in 1842, and as a city in 1847; Geelong was incorporated as a town in 1849, and proclaimed a city on 14th December, 1910.

The earlier history of legislation in Victoria relative to Local Government, more especially with reference to the institution of Road Districts, their displacement by Shires, and the constitution of Urban Municipal Districts and Boroughs, has been fully dealt with in previous issues. (See Year Book No. 5, p. 992.)

(ii) *Present System of Local Government.* Local government is now administered under the Act of 1915 throughout the whole of the State, with the exception of French Island.

(a) *Constitution of Municipalities.* Provision is made for the continuation of municipalities established under previous Acts and for the constitution of new ones.

Definitions of shires, boroughs, and townships have been given in previous issues of this book (see Year Book No. 6, page 978), together with the conditions necessary for their constitution.

(b) *Municipal Councils, etc.* Considerations of space prevent more than a passing reference to the following subjects, which were dealt with in the previous issues of this book:—The constitution of municipal councils, their functions and powers, including the power of raising loans, the qualifications necessary for the exercise of the municipal franchise, and the definition of ratable and unratable property. (See Year Book No. 5, pp. 994 to 996.)

(c) *Endowment.* The legislation dealing with municipal endowment prior to 1907 is referred to in previous issues. (See Year Book No. 5, p. 996.) In 1907, under the *Municipal Endowment and Reclassification of Shires Act* of that year, a new classification was adopted under which the amount of the endowment is to be allocated. In addition to the endowment of £50,000, the municipalities received from the Government during the financial year 1917–18 a sum of £71,512 out of the *Licensing Act Fund* as the equivalent for (a) fees for licenses, (b) fees for the registration of brewers and spirit merchants, and (c) fines, penalties, and forfeitures incurred under the *Licensing Act 1915*. Under the Act of 1907 the endowment is payable in equal portions in March and September of each year. No city or town is entitled to receive any part of the endowment. The distribution amongst the boroughs and shires is based on the amount of general and extra rates received in the twelve months ending on the preceding 30th September, according to the following scale:—To every borough or 1st class shire, 3s. in the £; to every 2nd class shire, 5s. in the £; to every 3rd class shire, 6s. in the £; to every 4th class shire, 8s. in the £; to every 5th class shire, 10s. in the £; to every 6th class shire, 12s. in the £.

For the three financial years commencing the 1st July, 1907, however, the amounts were definitely fixed by Act No. 2129, and for the eight succeeding financial years by Acts No. 2267, 2334, 2407, 2475, 2562, 2805, 2872 and 2935 respectively.

(iii) *Boroughs and Shires.—Number, Population, and Value of Ratable Property.* The following table shews the number of cities, towns, boroughs, and shires, their estimated population, the number of ratepayers and dwellings, and the value of ratable property for the years 1901 and 1914 to 1918 inclusive:—

VICTORIA.—PARTICULARS OF MUNICIPALITIES, 1901 AND 1914 TO 1918.

Year ending 30th September.	Number of Municipalities.	Estimated Population.	Number of Ratepayers (both sexes).	Estimated Number of Dwellings.	Estimated Value of Ratable Property.	
					Total.	Annual.
CITIES, TOWNS, AND BOROUGHES.						
1901	58	627,237	153,783	130,358	£ 67,302,423	£ 4,765,632
1914	61	802,479	203,773	178,195	137,649,219	7,790,654
1915	61	825,078	209,276	185,330	147,205,224	8,218,040
1916	52	824,170	208,759	186,740	149,235,137	8,335,553
1917	51	829,368	213,520	188,528	154,105,571	8,587,302
1918	52	844,970	219,076	193,398	158,777,843	8,912,303

SHIRES.

					£	
					Total.	Annual.
1901	150	571,683	159,128	122,645	106,839,331	5,771,865
1914	147	600,431	175,637	137,187	164,268,467	8,255,505
1915	147	608,828	181,480	138,462	167,405,523	8,517,938
1916	141	617,587	184,374	141,893	169,724,979	8,606,509
1917	139	618,896	187,894	142,511	172,309,539	8,732,116
1918	139	613,380	186,551	141,313	172,558,872	8,735,794

(iv) *Municipal Assets and Liabilities.* The assets of municipalities may be classified under three heads—(a) the municipal fund, (b) the loan fund, and (c) property; the liabilities under two heads—(a) the municipal fund, and (b) the loan fund. The following table shows the amount of municipal assets and liabilities for the years 1901 and 1913 to 1917:—

VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1901 AND 1913 TO 1917.

Items.	1901.	1913.	1914.	1915.	1916.	1917.
ASSETS.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Uncollected rates	187,205	108,686	120,200	147,886	146,491	138,617
Other assets	122,581	582,451	652,530	760,685	392,876	442,388
LOAN FUND—						
(a) Sinking funds—						
Amount at credit	675,310	924,952	878,322	839,951	792,445	745,784
Arrears due	1,391	438	1,327	1,326	834	1,732
(b) Unexpended balances	394,136	167,952	351,923	378,278	209,363	286,206
PROPERTY—						
Buildings, markets, etc.	2,507,441	3,534,691	3,799,038	3,863,556	3,750,947	3,848,320
Waterworks	197,675	184,842	180,485	175,267	177,050	252,069
Gasworks	63,732	96,963	103,435	99,107	105,124	109,215
Total	4,149,471	5,600,975	6,087,260	6,266,056	5,575,130	5,824,331

LIABILITIES.

	£	£	£	£	£	£
MUNICIPAL FUND—						
Arrears due sinking funds	1,021	438	1,327	1,326	834	1,732
Overdue interest	9,413	18,005	19,771	13,776	14,456	24,425
Bank overdrafts	157,046	201,142	206,694	213,330	252,130	233,160
Temporary Government advances	20,901	..	..	..	..	..
Other liabilities	91,396	364,287	356,884	410,576	221,183	233,189
LOAN FUNDS—						
Loans outstanding	4,253,304	5,259,138	5,617,056	5,739,084	5,869,260	6,030,343
Due on loan contracts	52,826	128,051	69,181	237,765	15,888	42,428
Due on current contracts	51,134	74,770	74,451	71,729	73,005	98,538
Total	4,637,041	6,045,831	6,345,364	6,687,586	6,446,756	6,663,815

(v) *Revenue and Expenditure of Municipalities.* The following table shows the revenue from various sources, and the expenditure under various heads, exclusive of loan revenue and expenditure, of municipalities during the years 1901 and 1913 to 1917 :

**VICTORIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES,
1901 AND 1913 TO 1917.**

Items.	1901.	1913.	1914.	1915.	1916.	1917.
REVENUE.						
	£	£	£	£	£	£
Taxation { Rates	722,346	1,199,874	1,251,649	1,277,063	1,346,439	1,395,723
{ Licenses	104,499	103,528	108,106	104,634	105,772	108,651
{ Dog fees	14,965	21,483	21,807	20,158	20,528	20,883
{ Market and weigh- bridge dues	49,623	71,937	70,620	63,646	63,812	67,726
Government grants	175,972	160,949	144,374	140,545	74,372	68,364
Contributions for streets, etc.	24,999	59,172	63,260	52,472	52,045	54,620
Sanitary charges	48,253	80,194	83,982	85,971	91,125	96,484
Rents	54,117	78,016	76,803	72,133	59,006	62,953
Other sources	89,210	324,496	354,427	388,850	441,128	487,962
Total	1,283,984	2,099,649	2,175,028	2,205,472	2,254,227	2,363,366

EXPENDITURE.

Salaries, etc.	139,270	187,180	192,066	199,872	206,353	210,034
Sanitary work, street cleaning, etc.	132,542	203,757	206,271	225,919	236,766	243,774
Lighting	86,059	87,395	89,926	93,381	95,420	97,685
Fire brigades' contributions	16,769	27,101	28,361	30,277	32,086	33,939
Public works { Construction	244,315	339,158	315,480	274,593	238,773	200,151
{ Maintenance	345,334	753,083	814,459	811,608	847,505	897,136
Formation of private streets, etc.	23,350	56,600	70,465	62,012	68,024	63,499
Redemption of loans	27,745	70,506	80,576	92,738	101,461	112,020
Interest on loans	197,810	224,479	239,737	252,912	262,760	274,113
Charities	13,407	16,429	18,026	19,406	18,801	20,350
Other expenditure	103,403	126,376	151,613	174,945	180,018	186,310
Total	1,330,004	2,092,064	2,206,980	2,237,663	2,287,967	2,339,011

3. *Queensland.—(i) Development of Local Government.* The existing scheme of local government in the State of Queensland is regulated by the provisions of the Local Authorities Act 1902, with its amendments in 1903, 1905 and 1910. A summary of these Acts and of the earlier legislation under which the system of local government in Queensland was inaugurated and developed, will be found in previous issues of this book. (See Year Book No. 5, p. 1013).

(ii) *Present System of Local Government.* The principal features of previous enactments as to the division of the State into local areas are retained in the Acts of 1902 and 1910, but such areas are in future to be of two classes—(a) towns and (b) shires. All municipalities formerly constituted as boroughs become towns, except Brisbane, Rockhampton, and Townsville, which are declared to be cities, and all shires and divisions become shires. The Governor-in-Council may, after giving notice in the *Gazette*, constitute, unite, divide, or abolish areas for the purpose of forming new areas, and may by proclamation constitute a town or city.

(iii) *Municipal Councils.* All local areas are governed by councils, the members of which are called aldermen in the case of cities and towns, and councillors in the case of shires. City and town councils are composed of either seven, nine, or eleven members, as declared by Order-in-Council, but if the local authority has wards, three members are assigned to each ward. Shire councils are composed of five, seven, or nine members, as declared by Order-in-Council, but if the shire is divided the number cannot be more than three for each division, and need not be the same for every division.

In previous Year Books allusion has been made at some length to the powers and duties of municipal councils, as well as to loans, valuation, rates and franchise. It is not proposed to repeat this information in the present issue.

(iv) *Area, Population, Number of Dwellings, Rates, Assets and Liabilities of Cities, Towns and Shires.* The following table gives particulars of the area, population, number of inhabited tenements, assets and liabilities of cities and towns, and of shires, for each year from 1913 to 1917 :—

QUEENSLAND.—PARTICULARS OF CITIES AND TOWNS AND SHIRES
1913 TO 1917.

Year.	Municipality.	Area.	Population.		Number of Inhabited Dwellings.	Capital Value.	Assets.	Liabilities.		
			Square Miles.	No.				No.	Government Loans.	Other.	Total.
1913	Cities and Towns Shires ..	404 669,490	273,874 399,305	56,632 84,805	15,708,680 41,272,641	£ 1,515,104 467,182	£ 231,458 203,109	£ 919,978 93,410	£ 1,151,431 296,519	
	Total ..	669,894	673,179	141,437	56,981,321	1,982,286	434,567	1,013,383	1,447,950	
1914	Cities and Towns Shires ..	418 669,476	279,794 411,093	59,398 87,144	16,075,729 44,596,193	£ 1,635,685 455,476	£ 240,319 159,350	£ 1,047,739 97,454	£ 1,288,058 256,813	
	Total ..	669,894	690,887	146,542	60,671,922	2,091,161	399,678	1,145,193	1,544,871	
1915	Cities and Towns Shires ..	400 669,494	289,441 423,007	61,140 89,919	16,401,175 45,622,388	£ 1,691,800 499,390	£ 249,675 178,634	£ 1,132,546 127,618	£ 1,382,221 306,252	
	Total ..	669,894	717,448	151,059	62,023,563	2,191,190	428,309	1,260,164	1,688,473	
1916	Cities and Towns Shires ..	395 669,499	295,495 420,377	58,223 91,297	16,361,028 45,919,033	£ 1,741,355 552,750	£ 258,225 190,752	£ 1,170,038 133,352	£ 1,428,263 324,104	
	Total ..	669,894	715,872	149,520	62,280,061	2,294,105	448,977	1,303,390	1,752,367	
1917	Cities and Towns Shires ..	406 669,488	320,450 409,845	62,839 88,437	16,771,990 45,276,512	£ 1,829,543 567,438	£ 261,385 181,862	£ 1,217,593 124,432	£ 1,478,978 306,294	
	Total ..	669,894	730,295	151,276	62,048,502	2,396,981	443,247	1,342,025	1,785,272	

(v) *Receipts and Expenditure of Cities, Towns, and Shires.* The following table shows the receipts and expenditure (including loan moneys) of cities and towns and of shires, as well as the total receipts and expenditure of all municipalities, for each year from 1913 to 1917 :—

QUEENSLAND.—REVENUE AND EXPENDITURE OF CITIES AND TOWNS AND SHIRES, 1913 TO 1917.

Year.	Municipality.	Receipts.				Expenditure.				
		From Govern-ment.	From Rates.	From other Sources.	Total.	On Public Works.	Loan Redemp-tion.	Office Ex-penses and Salaries.	Other Expenses. (a)	Total.
		£	£	£	£	£	£	£	£	£
1913	Cities and Towns Shires ..	20,274	379,865	83,211	483,350	381,100	24,599	36,916	66,377	508,992
	Total ..	29,717	362,108	66,170	457,995	333,178	14,457	62,676	56,185	471,496
		49,991	741,973	149,381	941,345	719,278	39,056	99,592	122,562	980,488
1914	Cities and Towns Shires ..	31,725	421,329	92,203	545,257	495,067	21,210	38,766	89,707	644,750
	Total ..	41,413	394,373	64,760	500,546	387,021	16,496	64,789	48,876	518,183
		73,138	815,702	156,963	1,045,803	882,088	37,706	103,555	138,583	1,162,933
1915	Cities and Towns Shires ..	27,439	433,139	97,245	557,823	493,900	18,635	39,553	87,623	639,711
	Total ..	36,736	415,371	62,665	514,772	390,701	15,088	67,485	60,706	533,980
		64,175	848,510	159,910	1,072,595	884,601	33,723	107,038	148,329	1,173,691
1916	Cities and Towns Shires ..	29,541	460,252	86,139	575,932	478,962	20,221	50,388	87,970	637,541
	Total ..	23,680	443,843	63,361	530,884	366,007	13,587	82,240	71,902	533,736
		53,221	904,095	149,500	1,106,816	844,969	33,808	132,628	159,872	1,171,277
1917	Cities and Towns Shires ..	30,012	495,510	96,959	622,481	475,689	24,062	56,179	92,298	648,228
	Total ..	16,138	485,375	71,175	572,688	395,687	12,250	86,112	61,215	555,264
		46,150	980,885	168,134	1,195,169	871,376	36,312	142,291	153,513	1,203,492

(a) Including interest on loans.

4. *South Australia.*—(i) *Development of Local Government.* In the latter part of 1839 the first municipal law was passed in South Australia, which was thus the birthplace of municipal government in the Commonwealth. On the 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council consisting of nineteen members, and the system has since been extended throughout the settled parts of the State by the formation of district councils and municipal corporations, which are the two types of local authorities now in existence.

(ii) *District Councils.* The first District Councils Act was passed in 1852, was amended in 1858, and further amended and consolidated by the District Councils Act of 1876, which provided for the continuation of existing districts and for the establishment of new ones by proclamation on the petition of the ratepayers. The revenue of the councils consisted of rents, profits, and income from lands vested in the councils or over which the councils had the control and management; fines and penalties enforced under the Act; fees for licenses; and general and special rates and loans. Provision was made for the election of councillors, their number, qualification, and retirement; for the election of auditors; the meetings, powers and functions of councils; the appointment of constables; revenue and expenditure; assessment of rates; and for making by-laws for various purposes. The Act of 1876 was amended from time to time, and was finally amended and consolidated by the District Councils Act 1887, which has in turn been amended in the years 1889, 1890, 1897, 1904, and 1905. These Acts were again amended by the Local Government Act 1910. The District Councils Act 1914

embraces in one Act all the provisions of the above-mentioned Acts with emendations and additions. Subsidies of 25 per cent. on current rates collected are paid to corporations under Act 481 of 1899, and to district councils under Act 1182 of 1914. Votes are annually provided by Act of Parliament of about £180,000, for payment to corporations and district councils as a contribution towards the cost of main roads throughout the State and other roads in newly-settled areas.

The powers and duties of district councils, together with the qualification necessary for councillors and electors, have been given in extenso in previous issues.

(iii) *Municipalities.* Municipalities were first established under the Municipal Corporations Act of 1861, which, after providing for the extension of the powers and duties of the Corporation of the City of Adelaide, authorised the Governor, on petition of a majority of not less than two-thirds of the property-owners, to constitute any town, district, or place within the province, as a municipality. This Act and its amendments were consolidated in the Municipal Corporations Act 1880, which was amended from time to time until the year 1890, when it was repealed and its provisions consolidated by the existing Act, the Municipal Corporations Acts of 1890, which was in turn amended in 1893, 1896, and 1903. These Acts were again amended by the Local Government Act 1910.

A brief description of the Municipal Corporations Act of 1890, as well as the functions of municipal councils, will be found in previous issues of this book.

(iv) *Finances of District Councils and Corporations.* The subjoined tables shew the amounts of assessments and the revenue and expenditure of district councils and of corporations for the financial years 1901 and 1914 to 1918; the figures given are exclusive of the Main Roads Funds, particulars as to which may be found in the section of this book on "Roads and Bridges."

SOUTH AUSTRALIA.—ASSESSMENT, REVENUE AND EXPENDITURE OF LOCAL AUTHORITIES, 1901 AND 1914 TO 1918 (EXCLUSIVE OF MAIN ROADS FUNDS).

Year. (a)	Amount of Assessment (Annual Value).	Revenue.				Expenditure.	
		From Rates.	From Subsidies.	Other Sources.	Total.	On Public Works.	Total.

DISTRICT COUNCILS.

	£	£	£	£	£	£	£
1901 ..	1,412,507	63,321	15,225	51,919	130,465	65,406	128,499
1914 ..	2,435,655	132,277	38,397	32,878	203,552	145,282	196,408
1915 ..	2,601,298	128,859	34,999	27,574	191,432	152,951	204,358
1916 ..	2,662,066	148,895	34,487	27,135	210,517	136,380	189,582
1917 ..	2,704,374	155,677	36,674	30,143	222,494	161,886	205,079
1918 ..	2,767,309	162,718	38,298	32,091	233,107	194,734	250,610

CORPORATIONS.

1901 ..	1,177,850	87,289	9,733	49,342	146,364	55,533	146,091
1914 ..	1,896,273	168,041	23,821	63,026	254,888	176,952	266,202
1915 ..	1,918,256	173,941	22,669	66,887	263,497	169,926	288,629
1916 ..	2,006,802	176,870	23,448	67,136	267,454	160,516	270,929
1917 ..	2,354,649	189,594	24,084	77,517	291,195	199,532	289,235
1918 ..	3,747,675	194,497	26,821	76,589	297,907	206,122	296,590

(a) Up to and including the year 1903, the financial year for Corporations ended on the 31st December, but after that date ends on the 30th November. The financial year for district councils ends on the 30th June.

5. Western Australia.—(i) *Types of Local Authorities.* In this State there are three forms of local authorities, namely—(i) Municipalities, (ii) Road Districts, and (iii) Local Boards of Health. The first Municipalities Act was passed in 1871, but only a few districts were incorporated under it. In 1895 a more comprehensive measure, the Municipal Institutions Act, was passed, and after being amended from time to time was consolidated by the Municipal Institutions Act 1900. In 1906 the most recent enactment, the Municipal Corporations Act, was passed, repealing and consolidating previous enactments. The whole area of the State outside incorporated municipalities is divided into Road Districts, which are administered under the Roads Act 1911. In municipalities the councils act as Health Boards for the purpose of administering the Public Health Act, while outside municipalities local Boards of Health may be formed. In 1904, another local government measure, the Water Boards Act, was passed, under which Boards may be appointed for the control of waterworks, and rates may be levied for the purpose, the maximum being fixed at two shillings in the pound of ratable value.

(ii) *Municipalities.* These are now regulated by the Municipal Corporations Act, which came into force on the 1st January, 1907. Provision is made for the continuation of existing municipalities, and the Governor is authorised to constitute new municipalities on petition signed by at least fifty property-holders in the district proposed to be incorporated; to unite adjoining municipalities on petition under their common seals; to sever any portion from a municipality on petition signed by a majority of the ratepayers, and to annex such portion to a contiguous municipality or road district.

(a) *Municipal Councils* consist of a mayor and councillors, the number of which depends upon the population of the municipality; if the population is less than 1,000 there are six councillors, if from 1,000 to 5,000 there are nine councillors, and if the population is over 5,000 there are twelve councillors, or three for each ward. Any male ratepayer of the age of twenty-one years, if a natural-born or naturalised subject, is eligible for election as mayor or councillor, except ministers of religion, uncertificated bankrupts, prisoners, and certain other persons who may be disqualified on the ground of interest.

The duties and powers of municipal councils, the levying of rates, the qualification of voters and the classification of municipalities in Western Australia are fully referred to in previous issues. (Year Book No. 5, p. 1025.) Consideration of space prevents their inclusion in this edition.

(b) *Government Subsidies.* Amounts are granted annually to municipalities by way of subsidies on the amounts of rates collected. To entitle any council to participate in the allocation of the annual Parliamentary vote the council must have levied a minimum general rate of one shilling in the pound. The maximum subsidy payable to any one municipality is £3,000, and the minimum is £75. Apart from the above, amounts voted by Parliament for special works in municipal districts are often entrusted to the councils for expenditure under approved conditions.

(iii) *Area, Population, etc., of Municipalities.* Returns regarding the area, population, and valuation of municipalities are defective. They are shewn in the table hereunder:—

WESTERN AUSTRALIA.—NUMBER, AREA, POPULATION, NUMBER OF DWELLINGS, AND VALUATION OF MUNICIPALITIES, 1901 AND 1913 TO 1917.

Year ended the 31st October.	Number of Municipalities.	Area.	Population.	Dwellings.			Amount Payable in respect of Rates.
				Occupied.	Unoccupied.	Total.	
	No.	Acres.	No.	No.	No.	No.	£
1901 ..	42	71,721	(a) 96,807 (b)	(b) 20,989	(b) 967	(b) 21,956	(c)
1913 ..	33	67,290	153,673	32,082	1,609	33,691	156,537
1914 ..	33	67,290	158,664	32,864	1,033	33,897	163,597
1915 ..	31	67,290	155,334	(c)	(c)	33,542	172,720
1916 ..	30	60,160	152,671	(c)	(c)	33,763	168,148
1917 ..	28	59,560	150,562	(c)	(c)	33,733	171,239

(a) Census figures, 1901.

(b) Returns for thirty-nine municipalities only.

(c) Not available.

Complete particulars of improved or unimproved capital values are not available. In the year 1914 the capital value of ratable property in municipalities was £24,382,930; in 1915, £24,921,422; in 1916, £26,817,864; and in 1917, £24,933,426.

(iv) *Revenue and Expenditure of Municipalities.* The following table gives particulars as to the revenue and expenditure of municipalities during the years 1901 and 1913 to 1917 :—

**WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES,
1901 AND 1913 TO 1917.**

Year ended the 31st October—	Revenue.				Expenditure.			
	From Rates.	From Govt. Grants.	From other Sources.	Total.	Works and Improvements.	Disbursements in respect of Loans.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£
1901 (a)	78,021	66,860	82,228	227,109	111,241	23,809	79,365	214,415
1913 ..	153,966	19,382	347,323	520,671	159,445	104,091	286,619	550,165
1914 ..	153,686	13,142	479,797	646,625	223,098	115,924	304,823	643,845
1915 ..	170,675	10,309	465,810	646,794	190,739	129,103	382,784	702,626
1916 ..	166,617	9,462	437,258	613,337	120,411	127,559	370,390	618,360
1917 ..	167,997	7,813	375,541	551,351	73,991	133,954	334,002	541,947

(a) Incomplete.

(v) *Assets and Liabilities of Municipalities.* The following table gives particulars respecting the assets and liabilities of municipalities at the end of each financial year 1901 and 1913 to 1917 :—

**WESTERN AUSTRALIA.—ASSETS AND LIABILITIES OF MUNICIPALITIES,
1901 AND 1913 TO 1917.**

Year ended the 31st October—	Assets.					Liabilities.		
	Balance in Hand. (a)	Value of Property owned by Municipalities.	Accrued Sinking Funds for Redemption of Loans.	Other Assets.	Total.	Outstanding Debts and Bonds.	Other Liabilities.	Total.
	£	£	£	£	£	£	£	£
1901 (b)	37,259	214,984	42,311	13,432	307,986	321,000	19,762	340,762
1913 ..	78,066	1,188,068	249,376	66,271	1,581,781	1,468,780	55,887	1,524,667
1914 ..	78,790	1,221,891	283,855	90,768	1,675,304	1,606,966	76,647	1,683,613
1915 ..	16,732	1,280,912	268,911	103,409	1,669,964	1,690,074	74,392	1,764,466
1916 ..	17,233	1,438,246	286,485	86,158	1,828,122	1,813,426	68,897	1,882,323
1917 ..	27,259	1,445,877	298,421	85,039	1,856,596	1,789,168	67,754	1,856,922

(a) Including bank balance, cash in hand, and fixed deposit. (b) Incomplete.

(vi) *Road Districts.* The whole area of the State, outside incorporated municipalities, is divided into districts, the executive powers being vested in elective Boards. These districts were originally formed solely for the purpose of controlling roads and bridges, but their powers and duties have been extended, so that at the present time they correspond closely to the shires of the other States of the Commonwealth. The enactments at present governing the administration of the Road Boards are the Roads Act 1911, the Parks and Reserves Act, the Cattle Trespassing Act, the Width of Tires

Act, the Cart and Carriage Licenses Act, and the Dog Act. The general powers and duties of the Boards are described in previous issues of this Book. Returns regarding Road Districts are as under:—

WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE, ASSETS AND LIABILITIES, OF ROAD DISTRICTS, 1901 AND 1913 TO 1917.

Year ended 30th June.	No. of Boards.	Area.	Estimated Annual Value.	Revenue.			Expenditure.				Assets.	Liabilities.	
				Rates.	From Government.	Other.	Total.	Admin-istration.	Works.	Other.			Total.
1901 (a)	93	975,808	(b)	8,293	36,011	6,580	50,884	6,833	45,303	3,935	56,071	18,339	2,441
1913 ..	113	975,815	1,611,530	80,551	60,687	29,770	171,008	22,905	135,721	25,961	184,587	182,617	56,822
1914 ..	112	974,476	1,758,279	93,700	63,668	46,031	203,399	24,120	139,859	23,821	187,800	207,415	86,693
1915 ..	112	974,476	1,756,314	88,569	27,753	47,571	163,893	26,025	139,542	27,466	193,033	206,806	98,285
1916 ..	113	975,827	1,802,847	104,345	24,397	38,820	167,562	24,903	114,343	27,094	166,340	226,335	114,841
1917 ..	117	975,828	1,793,463	113,686	30,226	55,383	199,295	26,335	126,316	36,526	189,177	256,245	137,994

(a) Year ended 31st December.

(b) Not available.

(vii) *Boards of Health.* These may be established under the Public Health Act 1911, which came into force on the 1st June, 1911, either within or outside of municipal boundaries. In the former case the Act is administered by the municipal councils, while in the latter case districts whose borders are conterminous with road districts are administered by the local authorities. Those not conterminous with road districts are administered by special Boards. The revenue of these Boards consists chiefly of moneys received from health rates and sanitary fees, and the largest item of expenditure is directly connected with the sanitary service. The following table shews particulars of the receipts and expenditure of the various Boards—both municipal and extra-municipal—during the years 1901 and 1913 to 1917:—

WESTERN AUSTRALIA.—RECEIPTS AND EXPENDITURE OF LOCAL HEALTH BOARDS, 1901 AND 1913 TO 1917.

Year ended the 31st October—	Revenue.			Expenditure.		
	From Public Health Rate.	From other Sources.	Total.	On Sanitary Services.	Other Expenses.	Total.
1901 ..	£ 15,230	£ 17,477	£ 32,707	£ 18,787	£ 12,992	£ 31,779
1913 (a)	(f) 55,637	(g) 62,931	118,568	72,286	41,874	114,160
1914 (b)	(f) 53,470	(g) 61,801	115,271	62,831	47,484	110,315
1915 (c)	(f) 42,904	(g) 61,393	104,297	70,963	36,890	107,853
1916 (d)	(f) 43,942	(g) 59,441	103,383	68,749	29,971	98,720
1917 (e)	(f) 42,967	(g) 56,488	99,455	67,830	31,056	98,886

(a) Exclusive of 2 boards which did not furnish returns and 14 boards which were inactive. (b) Exclusive of 12 inactive boards. (c) Exclusive of 13 inactive boards. (d) Exclusive of 8 inactive boards. (e) Exclusive of 10 inactive boards. (f) Including sanitary rates. (g) Including sanitary fees and charges.

On the 31st October, 1917, there were twenty-nine Local Boards of Health within municipalities, and on the 30th June, 1917, sixty-one under control of Road Boards, and thirty-two extra-municipal Boards. In and after 1911, the financial year of Municipal Local Health Boards ended 31st October, and that of extra-municipal Boards, 30th June.

6. *Tasmania.*—(i) *Development of Local Areas.* In this State the city of Hobart was incorporated by special Act in the year 1852, but it was not until 1858, when the Rural Municipalities Act was passed, that a general scheme for the establishment of municipalities was extended throughout the State. This Act was amended from time to time without, however, altering its chief characteristics. In 1847 a Roads Act was passed, and after being amended at various times was consolidated in 1884, and in the same year the Town Boards Act was passed. Under the provisions of these Acts parts of the State

were placed under the control of Town Boards and Road Trusts. The general rate under the Municipalities Act was limited to one shilling and sixpence in the pound of annual value, while special rates could be levied in rural districts, provided that the general and special rates together did not exceed one shilling and sixpence in the pound.

(ii) *Acts now in Force.* In 1906 the whole of the Acts dealing with local authorities were amended and consolidated by the Local Government Act of that year. The whole State, with the exception of the urban municipalities of Hobart and Launceston, is divided into municipal districts, and every Rural Municipality, Town Board, Main Road District, Road District, Local Health District, Fruit District, Rabbit District, School District, and Public Recreation Ground District included in any municipality established by the Act is abolished. Each district is incorporated and is under the control of a warden and councillors, who, in addition to the specific duties and powers imposed and conferred by the Act of 1906, are vested with powers and authorities under the following Acts:—The Codlin Moth Act 1888, the Rabbits Destruction Act 1889, the Public Health Act 1903, the Education Act 1885, the Roads Act 1884, the Rural Municipalities Act 1865, the Police Act 1905, the Town Boards Act 1896, the Public Recreation Grounds Act 1888, the Cemeteries Act 1865, and the Californian Thistle Act 1883. The Governor is authorised to unite, subdivide, or abolish municipalities or wards on petition, and may do so without petition if in any municipality there is at any time no council or an insufficient number of councillors to form a quorum. The Act of 1906 was amended in 1908, and again in 1911.

(a) *Formation of Councils.* In the case of municipalities not divided into wards, the council is to consist of the number of members, being a multiple of three, assigned to it by the Governor, while the councils of municipalities which are subdivided consist of three councillors for each ward. Any resident elector is eligible to act as a councillor unless he is disqualified as being an interested person, a bankrupt or convict, or as undergoing a sentence of imprisonment, or as insane. The warden is elected by the councillors from their own body.

The functions of councils, their borrowing powers, the levying of rates, and the constitution of local and water districts have been referred to in detail in previous issues.

(b) *Qualification of Electors.* Both owners and occupiers of property within a municipality are allowed plurality of votes according to the following scale:—

Annual Value of Property	Under £30.	£30 to £80.	£80 to £160.	£160 to £240.	£240 to £360.	£360 and upwards.
Number of Votes	1	2	3	4	5	6

In the case of joint owners or occupiers the number of votes according to the above scale is equally divided as far as possible, and the vote or votes which cannot be so divided may be given by such one of the joint owners or occupiers as may be appointed by the others. The provisions of the Acts relating to voting by post at parliamentary elections may be made applicable to any municipal election on the petition of the council to the Governor.

(iii) *Annual Value, Revenue, and Expenditure of Municipalities.* The following table shews the annual value, total receipts, and expenditure of municipalities for the years 1913 to 1917 inclusive:—

TASMANIA.—ANNUAL VALUE, REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1913 TO 1917.

Year.	Number of Municipalities.	Annual Value of Ratable Property.	Revenue.				Expenditure. (b)
			From Rates.	From Govt.	From other Sources. (a)	Total.	
		£	£	£	£	£	£
1913 ..	51	1,583,739	178,749	17,510	114,046	310,305	336,509
1914 ..	51	1,776,099	185,954	14,416	169,825	370,195	349,186
1915 ..	50	1,654,654	190,491	14,651	172,006	377,148	394,374
1916 ..	50	1,717,878	188,939	12,753	216,880	418,572	510,977
1917 ..	50	1,769,443	202,119	18,527	249,756	470,402	487,615

(a) Including sums derived from loans.

(b) Including repayments of loans.

According to the latest estimate made by the Commissioner of Taxes the capital value of ratable property in 1917 was £35,447,336.

(iv) *Total Revenue and Expenditure of Local Bodies.* Particulars as to Road Boards and Road Trusts are given in the chapter of this book on "Roads and Bridges." In addition to the local authorities already mentioned, Marine Boards have been established at seven ports in Tasmania for the purposes of constructing and maintaining wharves and jetties and of controlling all matters relating to shipping in the respective ports. Twenty water trusts and forty cemetery trusts have also been established in connection with municipal bodies. The subjoined statement shews the total revenue and expenditure for all local bodies, exclusive of all amounts contributed by the general Government, during each financial year from 1913-14 to 1917-18 inclusive:—

TASMANIA.—REVENUE AND EXPENDITURE OF ALL LOCAL BODIES, EXCLUSIVE OF AMOUNTS CONTRIBUTED BY THE GENERAL GOVERNMENT, 1913-14 TO 1917-18.

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
(a) REVENUE.					
	£	£	£	£	£
Marine Boards and Lighthouses	73,805	77,732	93,488	82,285	106,093
Municipalities (c)	292,795	355,779	362,497	405,819	451,875
Cemetery Trusts	1,140	1,391	1,320	1,275	1,143
Water Trusts	9,934	2,508	2,364	2,365	2,865
Total	370,683	437,410	459,669	491,744	561,976
(b) EXPENDITURE.					
	£	£	£	£	£
Marine Boards and Lighthouses].	63,304	103,202	144,805	102,666	105,037
Municipalities (c)	318,999	334,770	379,723	498,224	469,088
Cemetery Trusts	963	1,032	1,499	1,425	1,379
Water Trusts	2,228	2,228	1,966	1,813	1,753
Total	355,494	441,232	527,993	604,128	577,257

(a) Exclusive of amounts contributed by the general Government. (b) Exclusive of expenditure from Government contributions. (c) Including Road and Bridge Trusts, and Town Boards.

§ 3. Water Supply, Sewerage and Drainage.

1. *New South Wales.*—(i) *Sydney Metropolitan Board of Water Supply and Sewerage.* Prior to the year 1888 the main water supply and sewerage systems of Sydney and suburbs were under the control of the City Corporation, while several of the suburban councils had constructed local systems, but in that year the Government, with the object of placing the administration of both water supply and sewerage systems throughout the County of Cumberland under the control of an independent body, passed an Act authorising the establishment of the Metropolitan Board of Water Supply and Sewerage. This Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and country municipalities in the County of Cumberland. The Board is subject to the control of the Governor and Executive Council, and is a public department in correspondence for all administrative purposes with the Minister of Public Works—a provision considered necessary since the loan expenditure of the Board forms part of the public debt of the State.

(a) *Present System.* In the year 1850 authority was given by the Legislative Council to the City Corporation to construct water and sewerage works. Under this authority a water supply scheme was adopted and carried out, at a cost of nearly

£1,750,000, by which the waters of the streams draining into Botany Bay were intercepted and pumped into three reservoirs. This system has now been superseded, the metropolitan water supply being at present obtained from the watersheds of the Nepean, Cataract, and Cordeaux Rivers. The principal reservoirs in connection with the scheme are the "Cataract" and "Prospect" dams. A fuller description of these dams will be found in previous issues of this book (see Year Book No. 5, p. 984), but their dimensions are here given :—

SYDNEY WATER SUPPLY.—CATARACT AND PROSPECT DAMS.

Dam.	Height above Foundation.	Width at Top.	Thickness at Bottom.	Length.	Area of Reservoir.	Capacity of Reservoir.
	Feet.	Feet.	Feet.	Feet.	Acres.	Gallons.
Cataract ..	192	16½	150	811	2,104	20,743,200,000
Prospect ..	85½	30	523	7,300	1,266½	11,029,200,000(a)

(a) Of which 5,527,000,000 gallons are available by gravitation.

(b) Water impounded in Cataract Reservoir, or diverted for water supply purposes from the Nepean and Cataract Rivers at Pheasant's Nest, Broughton's Pass, is conveyed through 40 miles of open canal, tunnel and pipe syphon to the Storage Reservoir at Prospect.

Water drawn from Prospect Reservoir is conveyed by the Lower Canal, 5 miles in length, to the Pipe Head Screening Works, situated 16½ miles from Sydney; here the whole of the metropolitan supply is screened through double copper gauze screens. The North Sydney District is fed from this point through two trunk mains extending some 9 miles to Ryde Pumping Station. From Pipe Head the supply is continued through two 72" mains to Potts' Hill Reservoir, a further distance of 5 miles; this storage of 100,000,000 gallons covers 24½ acres, and is designed to tide the city over any interruption of supply from Prospect and to prevent fluctuation of pressure. From Potts' Hill the water is conveyed a further distance of 12 miles through two 48" mains to the low-level reservoir and pumping station at Crown-street, City, supplying the intervening western and southern suburbs *en route*; also to the Illawarra suburbs, distant some 8½ miles, through a 42"/36"/30" main; also to other more adjacent districts through smaller trunk mains.

(c) *Service Reservoirs.* In connection with the water supply there are in all 38 service reservoirs, with a total maximum capacity of 67,395,000 gallons.

(d) *Revenue, Expenditure, and Capital Cost of Sydney Waterworks.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan waterworks for 1901 and 1914 to 1918 :—

**SYDNEY WATERWORKS.—REVENUE, EXPENDITURE, AND CAPITAL COST,
1901 AND 1914 TO 1918.**

Year ended 30th June.	Revenue. (a)	Working Expenses.	Capital Cost, exclusive of Items on which Interest is not charged.	Percentage of Working Expenses to Revenue.	Percentage of Revenue to Capital Cost.	Interest Payable on Capital Cost.	Net Profit after Paying Working Expenses and Interest.
	£	£	£	%	%	£	£
1901 ..	203,348	49,270	4,300,552	24.22	4.72	152,333	1,745
1914 ..	410,823	145,948	6,257,976	35.52	6.56	223,144	41,731
1915 ..	441,966	159,687	6,644,289	36.13	6.65	235,949	46,330
1916 ..	470,744	165,210	7,192,472	35.09	6.54	261,335	44,199
1917 ..	468,537	177,977	7,769,200	37.98	6.03	306,198	—15,638b
1918 ..	523,979	195,448	8,472,700	37.30	6.18	343,716	15,185

(a) Rate increased from 6½d. to 7½d. in the £ of the assessed annual value from 1st July, 1918.

(b) —Signifies loss.

(e) *Quantity of Water, Number of Houses, and Population Supplied.* The following table gives various particulars for the years 1901 and 1914 to 1918, shewing the increase in the supply of water in Sydney and suburbs :—

SYDNEY WATERWORKS.—NUMBER OF GALLONS, HOUSES, AND POPULATION SUPPLIED, 1901 AND 1914 TO 1918.

Year ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Average Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Population.	
	No.	No.	1,000 Gallons.	1,000 Gallons.	Gallons.	Gallons.	Miles.
1901 ..	98,298	491,000	21,583	7,877,677	219	43.95	40
1914 ..	166,112	830,560	36,540	13,337,000	220	44.00	102
1915 ..	175,758	878,790	37,548	13,705,061	210	42.72	183
1916 ..	183,598	917,990	39,380	14,374,000	214	42.89	183
1917 ..	193,643	968,215	39,637	14,467,000	204	40.94	104
1918 ..	196,685	993,425	41,358	15,096,030	206	41.63	98

(f) *Other Water Supply Systems under the Metropolitan Board.* In addition to the main metropolitan water supply system there are certain other systems within the County of Cumberland managed by the Metropolitan Board. (a) The Richmond waterworks are entirely unconnected with the Sydney supply. Water is supplied to the town by a small pumping station on the left bank of the Hawkesbury River, just below the confluence of the Grose and Nepean. (b) Wollongong and the South Coast towns north of Wollongong are supplied from the Upper Cordeaux River, the catchment area being 7½ square miles. The total capacity of the storage reservoirs is 433,000,000 gallons, and the total length of the mains in use is 93 miles, including extensions to Unanderra and Port Kembla. (c) The Manly waterworks are supplied by a special catchment area of about 1,300 acres, and are also connected with the metropolitan system by a 10-inch main from Mosman. (d) The water-supply for the districts of Campbelltown, Camden and Narellan, Ingleburn and Liverpool, is not drawn from the main Sydney supply through Potts' Hill, but is received by gravitation from the upper canal above Prospect. For further details of these water-supply systems see previous issues.

(ii) *Metropolitan Sewerage System.* The system which is now under the control of the Metropolitan Board of Water Supply and Sewerage will be found fully described in previous issues. (See Year Book No. 5, p. 986.)

(a) *Revenue, Expenditure, and Capital Cost of Sydney Sewerage Systems.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan sewerage systems for 1901 and 1914 to 1918 :—

SYDNEY SEWERAGE SYSTEMS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 AND 1914 TO 1918.

Year ended the 30th June.	Revenue.	Working Expenses.	Capital Cost, exclusive of Items on which Interest is not charged.	Percentage of Expenditure to Revenue.	Percentage of Revenue on Capital Cost.	Interest Payable on Capital Cost.	Profit or Loss after Payment of Working Expenses and Interest.
	£	£	£	%	%	£	£
1901 ..	125,290	45,395	3,066,147	36.23	4.05	106,475	- 26,580
1914 ..	297,840	104,543	5,448,968	35.10	5.46	193,389	- 92
1915 ..	344,489	111,809	5,775,094	32.45	5.96	205,928	26,752
1916 ..	363,799	120,244	6,114,072	33.05	5.95	224,551	19,004
1917 ..	387,333	138,416	6,722,313	35.73	5.76	269,723	- 20,806
1918 ..	429,669	147,444	6,870,927	34.31	6.25	263,661	- 1,436

NOTE.—The minus sign (—) represents a loss.

(b) *Number of Houses Drained, Population Served, and Length of Sewers in Sydney Metropolitan Sewerage Systems.* The following table gives particulars as to the number of houses drained, the population, and the length of sewers within the Sydney metropolitan area for 1901 and 1914 to 1918 :—

SYDNEY SEWERAGE SYSTEMS.—NUMBER OF HOUSES DRAINED, POPULATION SERVED, AND LENGTH OF SEWERS, 1901 AND 1914 TO 1918.

Year ended the 30th June.	Number of Houses Drained.	Estimated Population Served.	Total Length of Sewers.	Total Length of Storm-water Drains.	Ventilating Shafts Erected.	Sewers Ventilated.
	No.	No.	Miles.	Miles.	Feet.	Miles.
1901	75,416	370,000	515.62	25.91	194,667	450
1914	118,643	593,200	930.06	53.15	408,778	871
1915	124,759	623,795	972.14	53.65	427,552	915
1916	129,650	648,250	1,022.15	54.08	443,134	953
1917	136,409	682,045	1,085.45	59.55	475,474	1,030
1918	139,777	698,885	1,113.34	60.07	479,464	1,039

(iii) *The Hunter District Water Supply and Sewerage Board.* The waterworks of the Lower Hunter were constructed by the Government under the provisions of the Country Towns Water Supply and Sewerage Act of 1880. In 1892 a special Act was passed establishing an independent Board to control the water-supply works. Fuller reference is made to the constitution of this Board and to the municipalities and incorporated areas under its jurisdiction in previous issues of the Year Book. (See Year Book No. 5, p. 988.)

(a) *Description of Waterworks.* The water supply is pumped from the Hunter River about a mile and a half up stream from West Maitland into a settling-tank of 1,390,500 gallons capacity, and thence flows through filter beds into a clear water tank holding 589,500 gallons. It is then pumped from the clear water tank into two summit reservoirs, one of which at Rutherford (500,000 gallons), supplies East and West Maitland, and Morpeth, while the other at Buttai (1,051,010 gallons), supplies Newcastle and suburbs, and the townships of South Maitland and Cessnock. There is also a storage reservoir of 172,408,100 gallons capacity, which is resorted to when the river water is too turbid. In the Board's district there are fourteen service reservoirs, having a total capacity of 6,364,368 gallons. Eleven of these reservoirs are supplied by gravitation from the summit reservoir and three by re-pumping. The total length of water mains is 425 miles.

(b) *Water Supply, Capital Cost, Revenue, and Expenditure.* By the Act of 1892 referred to above and an amending Act of 1894 the capital debt of the Board was to be liquidated by annual instalments distributed over 100 years with interest at 3½ per cent. By a further amending Act of 1897 the repayment of expenditure on permanent works was abrogated, and the annual instalments to be paid in liquidation of the cost of renewable works were to be fixed by the Government from year to year. The capital debt of the Board to the Government at 30th June, 1918, was in respect of water supply £787,250,

and £463,858 in respect of sewerage. In the subjoined table particulars are given as to the revenue and expenditure, and also as to the number of houses and population supplied in 1901 and 1914 to 1918 :—

PARTICULARS OF HUNTER DISTRICT WATER SUPPLY, 1901 AND 1914 TO 1918.

Year ended 30th June.	Revenue.	Working Expenses (including Interest).	Houses Supplied.	Estimated Population Served.	Supply.	
					Daily Average.	Total.
	£	£	No.	No.	1,000 gallons.	1,000 gallons.
1901	27,405	30,948	9,086	45,400	1,005	366,889
1914	66,323	52,994	19,575	97,875	2,791	1,018,810
1915	68,611	55,382	20,709	103,545	2,859	1,043,546
1916	79,507	58,436	22,056	110,280	3,507	1,283,754
1917	78,040	65,338	22,604	113,377	3,435	1,253,897
1918	80,607	73,949 ^a	23,257	116,285	3,442	1,256,628

^a Including £30,204, interest on capital debt ; £11,394, instalment to sinking fund for reconstruction of renewable works ; £4,015, interest incurred during construction of scheme for amplifying the water supply.

The average daily consumption of water for all purposes per inhabitant was 29.60 gallons during the year 1918, as against 30.39 gallons during the previous year.

(c) *Sewerage Works.* Considerable progress has been made by the Department of Public Works with the construction of the sewerage works for Newcastle and suburbs. The scheme is designed on the separate system, and will deal with the sewage partly by gravitation and partly by pumping. Up to the 30th June, 1918, about 117 miles of sewers, connecting with 9,333 separate properties, were under the control of the Board. For the financial year 1917-18 the revenue was £24,215 and the expenditure £32,797, the latter amount including a £4,338 instalment to the sinking fund for the reconstruction of renewable works.

(iv) *Water Supply and Sewerage in Country Towns.* With the object of assisting municipalities to construct systems of water supply and sewerage, the Country Towns Water Supply and Sewerage Act of 1880 was passed, but has since been amended by the Acts of 1887, 1894 and 1905. The principal provisions of these Acts are more fully dealt with in previous issues of this book. (See Year Book No. 5, p. 989.) By an Act passed in 1916 these Acts were applied to shires.

(a) *Waterworks.* Up to the 30th June, 1918, 58 country municipalities had availed themselves of the privileges of the Acts as regards waterworks, all of which at that date had been completed and handed over by the Government. The capital debt of these works was £1,288,036, and the total of the sums payable annually for various periods ranging up to 100 years was £50,172, including interest ranging from 3½ per cent. to 4 per cent., the first repayments having become due at various dates, starting from the end of the year 1893. In the calculation of these repayments the interest on the sums actually expended has been added, and any payments by the councils, as well as sums remitted under the authority of the Act, have been deducted. Other schemes of water supply and extensions of existing works are in course of construction. A few other municipalities have constructed works out of their own resources, and the water supply of Broken Hill with a capital debt of £473,869 was constructed under a special Act and administered by the Minister for Public Works.

(b) *Sewerage Works.* Only seventeen municipal councils have taken advantage of the Act providing for the construction of sewerage and storm water drainage works in country towns. On the 30th June, 1918, the capital debt of these systems was £389,694, the amount payable annually to the Government being £14,323. Other sewerage systems, as well as extensions to existing systems, are in course of construction.

2. *Victoria.*—(i) *The Melbourne and Metropolitan Board of Works.* This Board was established by an Act of 1890, and entered upon its duties in March, 1891. The Board consists of forty members, one of whom is chairman, elected every four years by the other members, the retiring chairman being eligible for re-election. Nine members are elected by the Melbourne City Council, four by the South Melbourne Council, three by the Prahran, two each by the Collingwood, Fitzroy, Richmond, and St. Kilda, and one each by the other fifteen suburban municipal councils returning a representative. The sewerage area over which the Board exercises control consists of fifteen cities, five towns, one shire, and parts of five other municipalities, or twenty-six municipalities in all, comprising a total area of 90,821 acres. Control for water supply purposes is also exercised by consent of the Governor-in-Council over 2,949 acres in four municipalities. The Board further supplies water to the metropolitan farm at Werribee, and the outfall sewer area. Various other shires also arrange for bulk supplies of water. The total estimated population on the 31st December, 1918, was 749,709. The waterworks for the supply of Melbourne and suburbs were originally carried out by the Government, which had for that purpose contracted loans amounting to £2,389,934; these works were vested in the Board in 1891. The primary object of the creation of the Board was not, however, to take over these works, but to supply the long called for and pressing want of a sewerage system for the metropolis. To carry out this work the Board is authorised to borrow £10,750,000, exclusive of the loans contracted by the Government for the purpose of waterworks and taken over by the Board. The liability on Government loans on the 30th June, 1918, was £1,559,786, and for loans raised by the Board was £10,830,035. The Board is still empowered to borrow £750,113 before reaching the limit of its borrowing powers.

(a) *Total Cost of Water Supply and Sewerage.* The subjoined table shows the total cost of construction and maintenance of water supply and sewerage from 1853 to 1918:—

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—TOTAL COST OF CONSTRUCTION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE, 1853 TO 1918.

Period ending 30th June.	Water Supply.			Sewerage.			Grand Total.
	Capital Cost.	Working Expenses.	Interest.	Capital Cost.	Working Expenses.	Interest.	
	£	£	£	£	£	£	£
1853 to 1891	3,378,246	420,833	1,021,676	..	..	..	4,820,755
1891 to 1901	336,957	367,506	1,021,181	3,307,764	114,268	919,017	6,066,693
1901 to 1911	299,303	384,871	1,026,362	2,981,666	461,706	2,333,348	7,487,256
1911 to 1914	600,222	159,903	354,665	614,401	199,214	902,310	2,830,715
1914 to 1915	129,007	60,547	130,268	245,548	72,030	316,788	954,188
1915 to 1916	91,893	54,580	134,915	166,201	70,783	321,640	840,012
1916 to 1917	31,979	54,566	137,544	108,583	72,658	329,176	734,506
1917 to 1918	21,214	60,714	139,458	155,911	85,327	345,521	808,145
Total ..	4,888,821	1,563,520	3,966,069	7,580,074	1,075,986	5,467,800	24,542,270

(b) Revenue and Expenditure of Melbourne and Metropolitan Board of Works. The following table shows the actual receipts and expenditure, and also the loan receipts and expenditure of the Board during 1901-2 and 1913-14 to 1917-18 :-

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—REVENUE AND EXPENDITURE DURING EACH YEAR, 1901-2 AND 1913-14 TO 1917-18.

Particulars.	1901-2.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
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ORDINARY RECEIPTS.

	£	£	£	£	£	£
Water supply	171,956	322,762	356,155	344,053	333,647	335,674
Sewerage, etc.	124,696	320,931	344,768	311,408	293,250	308,904
Live stock—Metropolitan farm	19,929	62,064	87,135	103,669	86,225	58,124
Interest { Water supply .. .. .	..	1,890	1,576	1,718	1,593	1,053
{ Sewerage	17,448	9,125	8,296	8,694	11,131	8,514
Sinking Fund proceeds .. .. .	..	..	..	..	..	30,275
Total	334,029	716,772	797,930	769,542	725,846	742,544

ORDINARY EXPENDITURE.

General management	33,621	44,668	45,032	45,776	49,409	50,094
Live stock, etc.—Metropolitan farm	16,702	55,570	49,704	87,325	67,206	85,195
Maintenance { Water supply	22,205	34,125	41,521	41,457	38,452	39,024
{ Sewerage	24,396	49,198	53,465	54,748	45,208	61,332
Interest { Water supply	102,670	130,182	131,845	136,633	139,138	140,906
{ Sewerage	192,952	323,149	325,167	330,568	340,589	354,211
War expenditure: Safeguarding works, etc. .. .. .	..	..	..	1,000	7,431	6,458
Patriotic and Belgian Relief Funds .. .. .	..	..	2,000	10,721	..	..
Victorian Red Cross .. .. .	..	..	..	30,000	100	..
Total	392,546	636,892	648,734	738,228	687,533	737,220

LOAN RECEIPTS.

Water supply	1,636	10,803	10,138	18,500	8,062	3,482
Sewerage	88,425	46,620	49,950	53,326	44,928	42,673
Proceeds of loans	396,238	796,841	223,500	190,512	567,878	77,025
Miscellaneous .. .. .	..	17,375	10,735	7,947	2,648	4,431
Total	486,299	871,639	287,323	270,285	623,514	127,611

LOAN EXPENDITURE.

Water supply construction	17,058	160,107	140,102	109,440	39,764	23,569
Sewerage construction	410,760	242,849	288,582	235,458	154,743	182,431
Expenses in floating and redemption of loans	5,200	253,426	114	51,559	379,362	26,429
Miscellaneous	(a) 4,293	30,004	25,882	30,311	7,156	1,273
Total	428,725	686,386	454,680	426,768	581,025	233,702

(a) Excess of stock distribution (£7,020) over purchases (£2,727).

(ii) *Melbourne Metropolitan Water Supply.* In December, 1857, the construction of the Yan Yean Reservoir system was completed. A description of the conditions that prevailed in Melbourne prior to that date is given in previous issues of the Year Book.

(a) *Development of System.* The following statement shows the development which has taken place in the water supply system of Melbourne during the 61 years since its inception:—

MELBOURNE WATER SUPPLY SYSTEM, 1857 TO 1918.

Year.	Estimated Population Supplied. (a)	Capital cost. (b)	Charge per 1,000 Gallons.	Rate in £.	Reticulation, Mains, etc., Mileage. (b)	Daily average of annual consumption of water.(a)
		£				
1857 (Dec. 31)	95,442	748,974	10/- and 6/-	1/-	104	3,250,000
1918 (June 30)	749,709	4,888,821	1/-	6d.	1,694½	40,838,819

(a) 31st December. (b) 30th June.

(b) *Description of Water Supply Systems.* The water supply of Melbourne consists of three main systems—the Yan Yean (including the high level main), the Maroondah, and the O'Shanassy systems.

A full description of the two former systems has been given in previous issues of this book (see No. 6, p. 983).

The three reservoirs at Preston, which are the main distributors of the central city supply, contain 13,500,000, 24,500,000, and 26,300,000 gallons respectively.

The work has been completed of diverting the waters of the O'Shanassy River, a tributary of the Yarra, by an open aqueduct and pipe line of an aggregate length of 48½ miles, delivering water to the eastern portion of the metropolis by way of Mitcham and Surrey Hills. The total capacity of the scheme is 20,000,000 gallons per day, but it has been completed in the tunnels and some other parts to a capacity of 60,000,000 gallons to provide for further diversions from the Upper Yarra and its tributaries. The scheme was estimated to cost £450,000, and up to 30th June, 1918, £455,489 had been expended. The watershed of the O'Shanassy River, containing 33,000 acres, situated near Warburton, has been excised from the permanent forests area, and a Crown grant was issued to the Board on the 28th January, 1910.

(c) *Catchment Areas, Reservoirs, and Aqueducts.* (i) *Drainage Areas.* The whole of the catchment areas are absolutely free from population, cultivation, or stock grazing, and are under the complete control of the Metropolitan Board of Works. The present drainage areas from which the water is delivered are as follows:—

MELBOURNE WATER SUPPLY.—CATCHMENT AREA IN ACRES, 1918.

Silver and Wallaby Creeks.	Plenty River and Jack's Creek.	Yan Yean Reservoir Catchment.	Maroondah Catchment.	O'Shanassy Catchment.	Total.
12,000	12,000	5,000	40,000	33,000	102,000

All the water is delivered by gravitation, no pumping being required in any portion of the area supplied.

(d) *Storage and Service Reservoirs.* There are two storage reservoirs, having a total capacity of 6,460,000,000 gallons, and thirteen service reservoirs having a total capacity of 131,300,000 gallons. The total daily quantity of water which can be sent into Melbourne is as follows:—

System.	Yan Yean.	High Level Main.	Maroondah.	O'Shanassy.	Total Supply.
Gallons per day	33,000,000	9,000,000	28,000,000	20,000,000	90,000,000

(e) *Quantity of Water, Number of Houses, and Population Supplied.* The following table gives various particulars for the years 1901 and 1914 to 1918, shewing the increase in the supply of water in Melbourne and suburbs :—

MELBOURNE WATERWORKS.—NUMBER OF HOUSES, POPULATION, AND WATER SUPPLIED, 1901 AND 1914 TO 1918.

Year. Ended 30th June.	Number of Houses Served.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year ended 30th June.	Average Daily Supply.		Rate Levied.	Assessments of Houses Served by Metropolitan Water Supply.
					Per House.	Per Head of Estimated Population		
					Gallons.	Gallons.		
	No.	No.	,000 Gallons.	,000 Gallons.				£
1901 ..	104,548	491,780	28,732	10,487,007	274.8	58.4	6d. in the £	3,479,721
1914 ..	147,442	639,700	43,644	15,930,104	296.0	68.2	7d. in the	6,217,841
1915 ..	150,825	662,500	36,989	13,501,051	245.2	55.8	£	6,577,338
1916 ..	155,208	693,978	37,069	13,567,184	238.8	53.4	6d. in the £	6,905,842
1917 ..	158,086	720,577	37,653	13,743,439	238.2	52.3		7,113,740
1918 ..	161,743	733,496	39,133	14,283,490	241.9	53.3		£	7,270,091

(f) *Total Cost of Construction, Revenue, Expenditure and Net Profits, 1853 to 1918.* The following table shows the total cost of construction, the revenue, expenditure, and net profits for various periods up to 30th June, 1918 :—

MELBOURNE WATERWORKS.—CONSTRUCTION COST, REVENUE, EXPENDITURE, AND NET PROFITS, 1853 TO 1918.

Period.	Capital Cost. (a)	Revenue. (b)	Working Expenses. (c)	Percentage of Working Expenses to Revenue.	Interest. (d)	Surplus.
	£	£	£	%	£	£
Total to 1890-1 ..	3,378,246	3,150,055	420,833	..	1,021,676	1,707,546
1891-2 to 1900-1 ..	336,957	1,686,025	367,506	21.80	1,021,181	297,338
1901-2 to 1910-11 ..	299,303	(e) 2,054,355	384,871	18.73	1,026,362	643,122
1911-12 to 1913-14 ..	600,222	897,577	159,903	17.81	354,665	383,009
1914-15 ..	129,007	350,549	60,547	17.27	130,268	159,734
1915-16 ..	91,893	(e) 334,181	(f) 54,580	16.33	134,915	144,686
1916-17 ..	31,979	319,614	(g) 54,566	17.07	137,544	127,504
1917-18 ..	21,214	331,955	(h) 60,714	18.29	139,458	131,783
Total ..	4,888,821	9,124,311	1,563,520	..	3,966,069	3,594,722

(a) Works commenced in 1853. (b) Revenue commenced in 1854. (c) Returns for expenditure commenced in 1859. (d) First interest paid in 1856. (e) Rate increased from 6d. to 7d. in the £ from 1st July, 1906; and reduced from 7d. to 6d. in the £ from 1st July, 1915. (f) Not including renewals (£7,349) and special War expenditure (£7,728). (g) Not including renewals (£4,545) and special War expenditure (£4,689). (h) Not including renewals (£3,893) and special War expenditure (£3,632).

(iii) *Melbourne Sewerage.* As stated above, the chief object of the creation of the Melbourne and Metropolitan Board was to carry out an efficient system of sewerage. The cost of removal of the sewage in 1894 was about £90,000, equal to a capital expenditure of £1,750,000. This movable pan system has been displaced by the water carriage system throughout the greater portion of the metropolis, and in other parts the work of reticulation is now proceeding.

(a) *Description of Sewerage Systems.* The whole of the sewage of the metropolis is being gradually collected by means of two principal sewers and a subsidiary main leading to the pumping station at Spotswood. A description of the scheme may be found in previous issues. (See Year Book No. 5, p. 1007.)

(b) *Metropolitan Sewage Farm.* The farm originally contained 8,847 acres, situated on the western side of the Werribee River. The price paid for the land was £17 10s. per acre (including compensation for severance), which in its virgin unimproved state cost the Board in 1892, £159,873. This sum included the purchase of a strip of land $11\frac{1}{2}$ miles long (168 $\frac{1}{4}$ acres) on which the greater portion of the outfall sewer is constructed. Since 1911, 2,555 acres have been purchased, making the total area of the farm 11,402 acres at 30th June, 1918, its total cost to that date being £563,373. About 36,186,687 gallons of sewage had to be disposed of every 24 hours during the year 1917-18 in irrigating the fields. It is spread over properly prepared and sown blocks of land by a series of mains and lateral carriers. The blocks are laid down with grass and lucerne, on which sheep and cattle are depastured. During the financial year 1917-18, 7,351 sheep were sold, the profit for the year being £2,352. Cattle to the number of 2,830 were sold, the profit for the year on cattle being £19,822.

(c) *Number of Houses Connected, Capital Cost, Revenue and Expenditure.* The following table gives particulars as to the number of houses connected to the sewerage system, the total capital cost, and the receipts and disbursements during 1901-2 and 1913-14 to 1917-18 :—

MELBOURNE SEWERAGE WORKS.—TENEMENTS CONNECTED, CAPITAL COST, REVENUE, MAINTENANCE, AND WORKING EXPENSES, 1901-2 AND 1913-14 TO 1917-18.

Year.	Number of Houses Connected.	Capital Cost.	Revenue.			Maintenance, Repairs and Renewals.
			From Rates.	From other Sources.	Total.	
	No.	£	£	£	£	£
1901-2 ..	47,172	3,610,225	126,725	10,968	137,693	24,336
1913-14 ..	131,168	6,903,831	319,817	18,642	338,459	49,615
1914-15 ..	138,108	7,149,379	342,312	40,146	382,458	54,558
1915-16 ..	143,737	7,315,580	307,625 (a)	50,487	358,112	52,402 (b)
1916-17 ..	148,395	7,424,163	289,512 (c)	25,586	315,098	53,099 (d)
1917-18 ..	151,622	7,580,074	298,053	29,346	327,399	65,534 (e)

(a) Rate reduced from 1s. 1d. to 11d. in the £. (b) Not including renewals (£3,424) and special War expenditure (£2,925). (c) Rate reduced from 11d. to 10d. in the £. (d) Not including renewals (£3,790) and special War expenditure (£2,635). (e) Not including renewals (£3,402) and special War expenditure (£2,609).

(iv) *Water Supply in Country Towns and Districts.* By the Water Act 1905 (now the Water Act 1915), which came into operation on the 1st May, 1906, the control and management of all Irrigation Trusts, with one exception, and of a number of waterworks and water supply districts were centralised, and their works and property vested in the State Rivers and Water Supply Commission. The powers and duties of this Commission were extended by the Water Act 1909 (now embodied in the Water Act 1915), the whole of the Water Supply Department being now merged in the Commission. Further information with regard to this Commission and to the works and districts under its control are given in the section in this book dealing with Water Conservation and Irrigation. There are, however, in different parts of Victoria a number of other waterworks which are concerned chiefly with domestic supply, and which are controlled by local authorities, i.e., by Waterworks Trusts or by municipal corporations. These works are

constructed out of moneys either granted or lent by the State Government. The following table gives particulars as to the waterworks under the control of Trusts and municipal corporations for the years 1901 and 1913 to 1917 :—

VICTORIA.—COUNTRY WATERWORKS UNDER TRUSTS AND MUNICIPAL CORPORATIONS, 1901 AND 1913 TO 1917.

Year.	Waterworks Trusts.				Municipal Corporations.			
	Number of Trusts.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.	Number of Corporations.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.
	No.	£	£	£	No.	£	£	£
1901 ..	76	823,418	748,089	(a)	24	(a)	470,041	(a)
1913 ..	89	1,120,806	866,594	12,461	28	695,139	415,678	8,234
1914 ..	91	1,151,518	889,905	10,858	28	693,973	417,937	1,213
1915 ..	94	1,173,365	911,786	14,071	28	693,258	447,347	2,005
1916 ..	97	1,206,938	929,561	13,128	28	700,832	450,518	2,050
1917 ..	98	1,224,211	937,810	13,358	28	718,089	464,114	1,871

(a) Returns not available.

Under the provisions of the Local Government Act 1903 (now embodied in the Local Government Act 1915), municipal councils are authorised to construct and maintain tanks, dams, and reservoirs, and must maintain existing works for the gratuitous supply of water. They are also empowered to accept the management and control of new waterworks within their respective localities, and may, with the consent of the Governor, construct or purchase new works within or without their locality. Councils are also authorised to enter into contracts for the supply of water for any period not exceeding ten years with the owner of any waterworks. Every municipality may levy a special water rate for water supplied, or for the purpose of constructing waterworks or paying the interest on any loan contracted by the council for such purpose, but the amount of the rate must not exceed in any year the sum of two shillings in the pound, provided that a minimum of ten shillings may be fixed by the council to be paid in respect of any property to which water is supplied.

(v) *Geelong Waterworks and Sewerage Trust.* This Trust was constituted under the Geelong Municipal Waterworks Act 1907, with borrowing power up to £300,000, afterwards increased by Act No. 2322, 1911, to £350,000, and subsequently to £525,000. It was reconstituted under the Geelong Waterworks and Sewerage Act 1910, with power to borrow an additional £250,000 for the purpose of installing a sewerage system for Geelong and suburbs. These Acts have since been consolidated under the Geelong Waterworks and Sewerage Act No. 2661, and the borrowing power for sewerage purposes increased to £375,000. The available storage capacity of the reservoirs is 2,679 million gallons, and the Trust is authorised to supply water to (a) City of Geelong ; (b) the suburbs thereof, and all places within a radius of five miles of the Geelong post office ; and (c) any place within ten miles on either side of the main pipe from Stoney Creek to Geelong. The cost of the works (water and sewerage) to 30th June, 1918, was £750,273, the estimated population served is 35,000, and the number of assessments 11,500. The revenue for the year amounted to £46,712. The sewerage scheme provides for a main outfall sewer 4 ft. 3 in. × 3 ft. 3 in. to the ocean at Black Rock—a distance of about nine miles. The drainage district embraces an area of 8,081 acres, including the city of Geelong, boroughs of Geelong West, Newtown and Chilwell, and the suburban areas in the shires of Corio, South Barwon, and Bellarine.

3. *Queensland.*—(i) *The Metropolitan Water and Sewerage Board.* This Board was constituted by the Metropolitan Water and Sewerage Act 1909 and the Amended Act of 1915, which divested the then existing Water Board of its powers and duties and

vested them in an extended form in the new Board. The Acts further empower the Board to carry out a sewerage and drainage system, and relieve the local authorities of their responsibilities in that matter. The district of the new Board comprises the cities of Brisbane and South Brisbane, the towns of Hamilton, Ithaca, Toowong, and Windsor, and the shires of Balmoral, Cooparoo, Enoggera (except division 3), Sherwood (except division 1), Stephens, Taringa, Toombul, and a portion of Kedron.

The Board consists of nine members, viz., the president and eight elected colleagues.

(a) *Brisbane Water Supply.* The supply is derived from the upper reaches of the Brisbane River, and from two storage reservoirs, known respectively as the Enoggera and the Gold Creek reservoirs.

- (1) *The Brisbane River Supply.* About 75 per cent. of the total supply of water to the metropolitan area is derived from the pumping station situated at Mount Crosby. The catchment area above the pumping station is 4,000 square miles. The water is pumped from the river into a reservoir 267 feet long, 100 feet wide, and 15 feet deep, and 463 feet above low water mark at Brisbane. The capacity of this reservoir is 2,500,000 gallons. A larger reservoir and sedimentation basins have been completed at a slightly lower level than the first-named reservoir, the capacity of which is 5¼ million gallons. The Board has also completed the installation of three powerful pumping engines, each capable of pumping 6,000,000 gallons in 24 hours, the whole plant being one of the finest in Australia. Purification works have been established on Holt's Hill, about 1½ miles from the pumping station, and it is anticipated these works will be in operation early in 1919 and finally completed during that year. There are eight filters each of half-an-acre area, with a pure water reservoir of 2½ million gallons capacity. The storage at these works is about 6½ million gallons.
- (2) *The Enoggera Reservoir.* The Enoggera works are distant from Brisbane about eight miles by road. The catchment area is nearly thirteen square miles in extent, and the reservoir, which is formed by an earthen dam, holds 1,000,000,000 gallons, of which 600,000,000 are available by gravitation. The greatest length of the reservoir is 2,600 yards, and its greatest breadth 700 yards. The supply from Enoggera is filtered through an intermittent sand filtration plant, comprising half an acre of sand beds, and a pure water reservoir with a capacity of 750,000 gallons.
- (3) *The Gold Creek Reservoir.* This reservoir is situated in the upper waters of Gold Creek, a branch of Moggill Creek, distant from Brisbane by road about thirteen miles. The supply is drawn from a catchment area adjoining that of Enoggera, and comprises an area of nearly four square miles. The total capacity is about 406,000,000 gallons, of which 400,000,000 gallons are available.
- (4) *The Cabbage Tree Creek Reservoir.* This reservoir is some five miles from the pumping station in a straight line, but by windings in the river about 15 miles. It holds about 5,800 million gallons, and is a very valuable asset to the water supply in time of drought. It is intended to convey this water to the pumping station by a conduit.
- (5) *Service Reservoirs.* Certain portions of the metropolitan area are supplied with water from service reservoirs, and these reservoirs are supplied from the sources alluded to above. These service reservoirs are constructed at Highgate Hill, Wickham Terrace, and Bartley's Hill, and have a total capacity of over 4,000,000 gallons. A second reservoir is in course of construction at Bartley's Hill, which will, on completion, bring the capacity of the service reservoirs up to 6½ million gallons. A fuller description of the Brisbane water supply scheme may be found in previous issues.

(b) *Brisbane Waterworks : Cost, Revenue, Expenditure, and Interest.* The subjoined table gives particulars as to the total capital cost, the revenue and expenditure, and amount of interest and loan redemption during 1901 and each of the years 1913 to 1917 :—

BRISBANE WATERWORKS.—COST, REVENUE, EXPENDITURE, INTEREST, AND REDEMPTION OF LOANS, 1901 AND 1913 TO 1917.

Year.	Capital Cost.	Revenue from Rates and Sales of Water.	Working Expenses.	New Work Construction.	Interest and Redemption of Loans.
	£	£	£	£	£
1901	694,973	60,120	17,462	7,535	42,426
1913	1,255,898	76,922	43,135	121,083	31,498
1914	1,489,720	97,366	44,549	233,822	39,194
1915	1,852,622	103,530	50,078	361,765	52,704
1916	2,136,699	111,066	53,879	284,078	53,995
1917	2,422,857	121,514	59,199	286,158	60,388

(c) *Brisbane Waterworks : Length of Mains, Tenements and Population Served, and Water Consumption.* The following table shews the length of mains, the number of tenements connected, the population supplied, the total quantity of water supplied, the average daily supply, and the average daily supply per head of population supplied during 1901 and each year from 1914 to 1918 :—

BRISBANE WATERWORKS.—PARTICULARS, 1901 AND 1914 TO 1918.

Year.	Length of Reticulation Mains.	Number of Tenements Connected.	Estimated Population Supplied.	Quantity Supplied.	Average Daily Supply.	Average Daily Supply per Head of Estimated Population.
	Miles.	No.	No.	,000 Gallons.	Gallons.	Gallons.
1901	198	15,652	78,260	1,536,260	4,208,931	53.78
1914	389	29,612	148,060	2,293,920	6,284,712	42.44
1915	405	31,442	157,210	2,655,440	7,275,178	46.28
1916	414	31,770	158,030	2,629,108	7,183,354	45.46
1917	429½	33,082	165,410	2,827,836	7,747,498	46.83
1918	451½	34,450	172,250	3,159,105	8,655,082	50.24

The total length of the trunk mains is 98½ miles.

A scheme of sewerage has been devised for Brisbane and its suburbs. It is intended to construct works for the provision of a population of 275,000, and work is now being carried on in connection with the main sewers. Altogether 48,668 lineal feet of main sewers have been constructed, and 10,966 lineal feet are under construction. The latter includes a tunnel under the River Brisbane. Plans for the sewerage treatment works have been approved of by the Department of Public Works, and further plans embodying the actuated sludge method of treatment are now under review. The survey work has been carried on, 19,252 houses having now been surveyed.

(ii) *Country Towns Water Supply.* In addition to the city of Brisbane there were at the end of the year 1917 twenty-eight towns in Queensland provided with water supply systems, constructed by municipalities chiefly from Government loans. The subjoined statement gives particulars of all the water supply systems—exclusive of Brisbane—for the year 1917 :—

QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1917.

Cost of construction to 31/12/17 ..		£	939,264				
Receipts	Rates and sales of water .. 99,140 Other 35,217			Expenditure	Office and salaries .. 14,061 Construction .. 41,646 Maintenance .. 38,092 Interest & redemption .. 33,302 Other expenses .. 5,653		
		Total receipts ..				134,357	Total ..		132,754
	Assets		763,991		Liabilities		531,204

(a) Including £31,970 from Government loans.

4. *South Australia.*—(i) *Adelaide Water Supply System.* The water supply system of Adelaide is under the control of the Public Works Department. The supply is obtained partly from the catchment areas of the rivers Onkaparinga and Torrens, and Sixth Creek, and partly from springs and pumping stations. There are three storage reservoirs, situated at Happy Valley, Hope Valley, and Thorndon Park, having an aggregate capacity of 4,106,314,000 gallons, while the tanks used in connection with the springs and pumping stations have a further capacity of 4,824,000 gallons. A new reservoir having a capacity of 3,650,000 gallons is nearly completed at Millbrook, to be supplied from the River Torrens. The total capital cost up to the 30th June, 1918, was £2,039,007, the total revenue being £3,279,871, and the area served approximately 106,465 acres.

The following table gives various particulars relating to the water supply of Adelaide for the years 1914 to 1918 inclusive :—

ADELAIDE WATER SUPPLY.—LENGTH OF MAINS, REVENUE, EXPENDITURE, AND CONSUMPTION OF WATER, 1914 TO 1918.

Year ended 30th June.	Length of Mains.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Net Revenue on Capital Cost.	Total Consumption of Water. (a)
	Miles	£	£	£	%	Million of Gallons.
1914	836	113,156	30,106	83,050	4.32	5,150
1915	859	112,082	36,029	76,053	3.85	3,467
1916	873	103,947	35,412	68,535	3.42	3,223
1917	882	118,951	32,974	85,977	4.26	4,113
1918	901	118,985	34,298	84,687	4.15	4,266

(a) In the Adelaide Water District there are no governing meters. The quantities shown above are as recorded by gaugings taken at the reservoirs, and include evaporation and absorption.

(ii) *Adelaide Sewerage System.* In connection with the sewerage system of Adelaide, which is also under the control of the Public Works Department, about 354 miles of sewers had been laid in the city and suburbs up to the 30th June, 1918. The

sewage is disposed of on a farm and filter-beds, the latter being used only during the winter months. A scheme of sewerage extension which includes a pumping station to deliver the sewage to the existing sewage farm is now nearing completion.

The following table gives particulars relating to the Adelaide sewerage system for the years 1914 to 1918 inclusive :—

ADELAIDE SEWERAGE SYSTEM.—REVENUE AND EXPENDITURE, 1914 TO 1918.

Year ended the 30th June.	Revenue.			Expenditure.			Net Revenue.	
	Rates and Interest.	Sewage Farm. Sales of Produce, etc.	Total.	Mainten-ance.	Sewage Farm. Working Expenses.	Total.	Total.	Per-centage on Capital Cost.
	£	£	£	£	£	£	£	%
1914 ..	49,507	9,588	59,095	10,242	5,629	15,871	43,224	5.55
1915 ..	52,348	10,040	62,388	9,688	6,948	16,636	45,752	5.74
1916 ..	56,606	21,207	77,813	11,410	14,432	25,842	51,971	6.39
1917 ..	57,488	13,664	71,152	11,350	10,794	22,144	49,008	5.96
1918 ..	59,345	19,060	78,405	12,054	11,945	23,999	54,406	6.55

The seaside town of Glenelg is served by a separate sewage disposal works, including a pumping station, septic tank, lucerne plots, and filter beds. The net revenue for the year ended 30th June, 1918, was £1,337, being 2.95 per cent. on the capital cost. Up to the same date 15½ miles of sewers had been laid.

(iii) *Water Supply in Country Towns.* In South Australia there is a number of country waterworks under the control of the Public Works Department. There are large reservoirs at Barossa, Beetaloo, Bundaleer, Yeldulknie, and Warren, which supply sixty-six townships with water for domestic and stock purposes. The principal towns thus supplied are Gawler, Wallaroo, Moonta, Kadina, Port Pirie, Port Wakefield, Balaklava, Tanunda, and Cowell. The following table shews the capacity of these reservoirs, together with particulars as to the townships supplied and the country lands reticulated :—

PRINCIPAL COUNTRY WATERWORKS, SOUTH AUSTRALIA, 1918.

Reservoirs.	Townships Supplied.			Country Lands Reticulated.		Capacity in Million Gallons.	
	Number.	Square Miles.	Miles of Main.	Square Miles.	Miles of Main.	Head-works.	Service Reservoirs.
Barossa	23	40	72	1,008	563	993	10
Beetaloo	22	158	179	1,661	881	850	25
Bundaleer	14	8	33	1,088	514	1,390	..
Yeldulknie and Ullabadinie	2	3	6	784	108	279	..
Loxton	1	2	3	533	113	(a)	(a)
Warren	5	8	24	470	67	1,049	38

(a) Pumped from River Murray.

Sixteen township districts are supplied from smaller local reservoirs, the most important town served being Port Augusta. A new water supply scheme is in course of construction at the Baroota Creek to augment the supply of Port Augusta, Port Pirie, and farming lands, while a large reservoir on the Tod River is being constructed to supply Port Lincoln and farming lands in Eyre Peninsula. The reservoir with leading and reticulation mains for supplying the towns of Port Victor, Port Elliot, Middleton, and Goolwa has been completed and is in operation.

5. **Western Australia.**—(i) *Water Supply, Sewerage and Drainage Department.* Prior to 1912, water supply, sewerage and drainage in Western Australia, although under Governmental control, were nevertheless under the management of several distinct departments. In that year, however, the Government decided that these functions should be concentrated in one department with the Minister of Works as administrator, and on the 1st August, 1912, a new department with the above title assumed the management of the undermentioned water supplies:—(a) The Metropolitan Water Supply, Sewerage and Drainage Undertaking. (b) The Goldfields Water Supply Undertaking. (c) Mines Water Supplies, boring and well-sinking in mining districts, formerly a branch of the Mines Department. (d) Water supplies, sewerage and drainage, well-sinking, boring, etc., in agricultural districts, etc., formerly a branch of the Public Works Department. The total capital expenditure on works controlled by the Department was, at 30th June, 1917, £7,375,104.

Early in 1918 arrangements were made whereby the Metropolitan Water Supply, Sewerage and Drainage undertaking was entirely dissociated from the other Water Supply, Drainage and Irrigation undertakings, and placed under the administrative control of the Under Secretary for Public Works, who was also appointed Under Secretary for Water Supply, an Assistant Under Secretary being placed in charge of the offices of the metropolitan undertaking.

(ii) *The Metropolitan Water Supply, Sewerage and Drainage Undertaking.* The Metropolitan Water Supply Works were first opened by a private company in October, 1890. Under the provisions of the Metropolitan Waterworks Act 1896, however, the works were purchased by the Government at a cost of £220,000, and were placed under the control of a Board, the functions of which were exercised from 1904 to 1909 by the Minister for Works. By the Metropolitan Water Supply, Sewerage and Drainage Act 1909, all water and sewerage works formerly vested in the Metropolitan Board were transferred to a Minister of Water Supply, Sewerage and Drainage. In August, 1912, the administration was transferred to the new Water Supply Department.

(a) *Water Supply.* The supply of water is derived from five sources—(i) the Victoria reservoir, (ii) Bickley Brook pipe-head dam, (iii) the Mundaring reservoir, (iv) Narrogin Brook, and (v) artesian bores. A description of the principal schemes is given in previous Year Books (see Year Book No. 7, page 887). For the year ending 30th June, 1918, the total consumption of water was 1,845 million gallons, exclusive of water supplied to railways from Walters Brook, Victoria Reservoir, and Narrogin Brook—an increase of 4 millions over the previous year. The number of services at that date was 32,498, and the length of mains was 614 miles.

(b) *Financial Operations of Water Supply Branch.* The following table gives particulars of the financial operations of the Metropolitan Water Supply Branch for each year ending the 30th June from 1914 to 1918 inclusive:—

METROPOLITAN WATER SUPPLY BRANCH.(a)—PARTICULARS OF FINANCIAL OPERATIONS, 1914 TO 1918.

Year ended the 30th June.	Capital Cost of Works.	Depreciation.	Net Capital Cost.	Gross Revenue.	Cost of Maintenance and Management.	Ratio of Working Expenses to Revenue.
	£	£	£	£	£	Per cent.
1914	892,434	167,326	725,108	87,802	31,483	35.86
1915	964,670	183,910	780,760	99,953	33,580	33.52
1916	997,650	201,834	795,816	103,668	37,987	36.60
1917	1,019,388	220,750	798,638	95,451	36,075	37.79
1918	1,057,444	240,650	816,794	91,380	34,670	37.94

(a) Perth, Fremantle, and Claremont combined.

(c) *Consumption of Water.* The following table shews the total annual supply, the average daily supply, and the average daily supply per house and per head of population during each financial year from 1914 to 1918 inclusive:—

**METROPOLITAN WATER SUPPLY BRANCH.—CONSUMPTION OF WATER,
1914 TO 1918.**

Year.	Average Daily Supply in ,000 Gallons.			Water Supply for Years in ,000 Gallons.			Number of Houses Supplied.	Esti- mated Popu- lation Supplied.	Average Daily Supply during Years.	
	From Reser- voirs.	From Bores.	Total.	From Reser- voirs.	From Bores, etc.	Total.			Per House.	Per Head of Popu- lation.
CENTRAL DISTRICT (INCLUDES PERTH, FREMANTLE, CLAREMONT, GUILDFORD, AND MIDLAND JUNCTION).										
1914	1,954	2,805	4,759	713,368	1,023,727	1,737,095	No. 28,391	No. 120,000	Gals. 167	Gals. 39.6
1915	1,060	3,721	4,781	887,074	1,358,200	1,745,274	29,721	127,000	161	37.6
1916	2,443	2,609	5,052	894,057	955,075	1,849,132	30,782	129,300	164	39.1
1917	1,929	3,179	5,108	704,251	1,160,464	1,864,715	31,698	133,130	161	38.4
1918	2,659	2,444	5,103	970,671	892,054	1,862,725	32,396	136,000	157	37.5

ARMADALE DISTRICT.

1915	28	..	28	(a) 10,220	..	(a) 10,220	82	300	(a) 341	(a) 93.3
1916	23	..	23	8,300	..	8,300	83	300	277	76.6
1917	29	..	29	(a) 10,663	..	(a) 10,663	98	410	296	(a) 70.7
1918	30	..	30	10,954	..	10,954	102	428	294	70.1

(a) Includes water supplies to Railways.

(d) *Sewerage and Drainage in Perth and Fremantle.* The work of providing a sewerage system for Perth and Fremantle was commenced in 1906, and has proceeded without interruption up to the present time. Up to 30th June, 1918, 13,507 houses had been connected with the sewers. The revenue of the Sewerage and Drainage undertaking for 1917-18 was £53,258, as against £52,538 for the preceding year. The maintenance expenditure for the year amounted to £14,156, and interest and sinking fund charges to £47,422. A description of the method of sewage disposal adopted may be found in previous issues. (See Year Book No. 5, p. 1031.)

(iii) *Goldfields Water Supply Undertaking.* The Act under which the works were constructed was introduced in Parliament by Sir John Forrest, G.C.M.G., then Premier of Western Australia, in September, 1896, and provided for an expenditure of £2,500,000, and a daily supply of 5,000,000 gallons. The works designed by the late Mr. C. Y. O'Connor, Engineer-in-Chief of the State, were originally known as the "Coolgardie Water Scheme," but are now officially called the "Goldfields Water Supply." Construction work in connection with the scheme was commenced early in 1898, and the water was delivered in Kalgoorlie in January, 1903. The source of supply is the Helena River, in the Darling ranges, where, at about 18 miles from Perth, an impounding reservoir, 760 acres in extent, with a catchment area of 569 square miles, has been constructed. A detailed description of the scheme will be found in previous issues of the Year Book (see Year Book No. 9, p. 924). The area of operations embraces 16,000 square miles, the total length of the water area being approximately 380 miles. The cost of the original works, including expenses of raising loans, was £2,866,454, and of supplementary works £527,068, making a total of £3,393,522. The Mundaring Reservoir cost £249,000. Its capacity is 4,650,000,000 gallons, and its surface area at full supply level 672 acres. The height of the wall above the river bed is 100 feet; length of wall, 755 feet; width of wall at bottom, 85 feet; at top, 11 feet; and when reservoir is full, the water extends back for the distance of 7 miles.

During the financial year 1917-18, the total consumption amounted to 1,040,000,000 gallons, a decrease on the previous year of 21,000,000 gallons. The gross revenue was £199,302, and the working expenses £81,298, leaving a surplus available towards interest and sinking fund of £118,004. The outlay for interest and sinking fund charges in respect of supplementary capital absorbed £33,437, leaving £84,567, payable to the State Treasury. During the financial year the State Treasury paid £168,813 interest and sinking fund on State loans in respect to these works, and the operations of the undertaking shewed a net deficiency of £84,246. Reticulation figures are as follows:—Towns reticulation, 246 miles; supply mains to towns, 80 miles; supply mains to mining centres, 72 miles; agricultural extensions, 481 miles; total mains, including main conduit, 1,230.

(iv) *Water Supplies for Towns.* Under the Water Boards Act 1904, the following water undertakings are administered by the Department:—Collie, Cue-Day Dawn, Derby, Geraldton, Leonora, Meekatharra, Menzies, Ora Banda, Pingelly, and Bridgetown. Water supplies for Albany, Broome, Bunbury, Busselton, Carnarvon, Port Hedland, Roeburne, Sandstone, Wagin, and Wyndham are administered by local boards under the supervision of the Department.

(v) *Mines Water Supplies.* At the present time the water stations under the control of the Engineer for Goldfields Areas number about 1,400, and are spread over an area of nearly 500,000 square miles. The principal works carried out by the Branch are as follows:—(a) Domestic supplies for mining towns and the supply of water for battery and general mining purposes. (b) Opening up the very remote portions of the State by means of tracks, of which there are about 4,000 miles. (c) The sinking of wells and bore-wells, also testing the country by means of boring to locate water, and thus enabling the mineral resources of the State to be systematically prospected. (d) Diamond drilling has also been carried out for the purpose of testing the country for minerals at depths unattainable with the ordinary boring plants. (e) Over 3,000 miles of stock routes have been opened up, and wells have been sunk at easy stages, capable of watering mobs of 400 head of cattle. Tanks, dams, and reservoirs have been made on the goldfields for the conservation of surface water, their total storage capacity being over 200,000,000 gallons, and their cost over £400,000.

A very important adjunct of the branch is the camel farm established at Coolgardie, where the breeding of camels is undertaken, the number at present being about 240. These camels are used by parties from the Water Supply Branch in the arid regions of the interior, where water is scarce, and the stages are long.

(vi) *Water Supplies in Agricultural Areas.* Owing to the rapid development in agricultural districts in what a few years ago was practically unexplored country, and the consequent necessity for providing water for settlers, a large number of tanks were excavated, and wells sunk where suitable water had been proved by boring. Of 2,512 shallow bores put down, fresh water was obtained in 427, stock water in 219, the others being salt or dry. The number of tanks excavated to 30th June, 1918, was 340, with an approximate capacity of 122,090,000 gallons, and the number of wells 286, the estimated capacity of which is 53,060,000 gallons. The capital expenditure for the financial year ending June, 1918, was £6,585.

(vii) *Land Drainage.* Under the Land Drainage Act 1900 the drainage undertaking for the Torbay-Grassmere District, Wonnerup, and portion of Harvey and Waroona are administered by the Department. Undertakings controlled by Boards under the same Act are East Jandakot, Lennox, Korijekup, Njookenbooroo, Sterling, Saidie, Wungong, Benger, and Harvey.

6. *Tasmania.*—(i) *Hobart Water Supply.* The original water supply of Hobart was obtained from a stream known as the Hobart Rivulet, flowing from Mount Wellington, the works being carried out in 1831 by the Imperial Government. These works consisted of an aqueduct and a line of cast-iron pipes, the water being distributed to several points known as "wells." By an Act of the State Parliament passed in 1860 the works were

transferred to the municipality. Under this Act certain additional streams flowing from Mount Wellington were acquired as sources of supply, and a storage reservoir containing 40,000,000 gallons was constructed. The catchment area on Mount Wellington at present comprises an area of 4,200 acres, the sources of supply having been extended at various times as far as the North West Bay River, fifteen miles from Hobart.

(a) *Storage Reservoirs.* There are three storage reservoirs about 3 miles from the city. One standing 502 feet above sea-level has a capacity of 60,000,000 gallons; the second is 447 feet above sea-level, with a capacity of 40,000,000 gallons; while the third, which has been only recently completed, will hold 207,000,000 gallons. The whole of the supply is by gravitation. The water is brought from the various mountain streams by means of pipes to the storage reservoirs, and thence by four 10-inch cast-iron mains, of which three lead to the distributing reservoirs, and one direct to the shipping and southern portion of the city.

The provision of the new reservoir and the laying down of a new concrete intake pipe line from the N.W. Bay River has placed the city in a very good position in respect of water, and the supply is sufficient for a much larger population than is served at present.

(b) *Capital Cost, Tenements Connected, Length of Mains, Revenue and Expenditure.* The total capital cost to 30th June, 1917, was £348,000, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at 30th June, 1917, amounted to £286,405. At the same date the number of tenements supplied in the city and suburbs was 8,820, the population 35,000, and the length of reticulation mains 95 miles. The revenue and expenditure for the years 1913 to 1917 were as follows:—

HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1913 TO 1917.

Particulars.	1913.	1914.	1915.	1916.	1917.
	£	£	£	£	£
Revenue	21,982	22,191	23,382	24,801	21,677
Expenditure	21,336	24,550	26,471	27,676	28,794

(ii) *Hobart Sewerage System.* A scheme for the construction of a sewerage system in Hobart was adopted in 1903. The sewage is discharged into the estuary of the River Derwent. Up to 30th June, 1918 about 73 miles of sewers had been laid at a cost of about £192,000, and 7,110 tenements had been connected. The revenue for the year was £14,878. The scheme, which is intended to sewer over 2,000 acres so as to serve an estimated population of about 80,000 people, is practically completed. The suburb of Queenborough has recently become incorporated with the city, and arrangements are now being made to extend the system to this district, the work of construction having recently been commenced.

§ 4. Harbour Trusts.

1. *Introduction.*—In the chief ports and harbours of the Commonwealth, administrative bodies have been created, in whom is vested the control and management of the port with respect to dredging, wharf and harbour accommodation, pilotage, harbour dues, etc.

Of these Trusts or Boards some are purely departmental, some are nominated by Government, while others are comprised of members appointed by the municipal and other associations connected with the port. In the latter case, the Government is usually represented on the Board by one or more nominated members. The Boards and Trusts mentioned hereunder are the only ones for which information is at present available.

2. **Sydney Harbour Trust.**—This Trust was established by an Act which came into force on the 11th February, 1901. Its powers and duties have been dealt with in previous issues of this book, together with some of the more important improvements carried out by the Commissioners. (See Year Book No. 5, p. 990.)

(i) *Revenue, Expenditure, and Capital Cost.* The subjoined table gives particulars of the revenue and expenditure of the Trust, and also shows the total capital debt for properties, etc., vested in the Commissioners, the amount of interest payable on the debt, and the balance of revenue after deducting expenditure, interest, and the amount of the Commissioners' salaries :—

SYDNEY HARBOUR TRUST.—REVENUE, EXPENDITURE, CAPITAL DEBT, INTEREST, AND BALANCE, 1901 AND 1914 TO 1918.

Year ended the 30th June	Revenue.				Expenditure.	Total Capital Debt.	Interest.(b)	Balance.
	Wharfrage and Harbour Rates.	Tonnage Rates and Berthing Charges.	From Other Sources.	Total.				
	£	£	£	£	£	£	£	£
1901(a)	42,784	3,208	12,324	58,316	11,275	4,692,782	55,554	— 8,513
1914..	260,761	19,867	188,901	469,529	161,479(c)	6,992,932	248,088	50,962
1915..	255,217	15,046	194,418	464,681	161,358(c)	7,367,922	263,478	39,845
1916..	274,551	17,630	197,540	489,721	171,951(c)	7,948,756	289,256	28,484
1917..	252,044	29,095	230,841	511,980	165,586(c)	8,598,939	330,954	15,441
1918..	280,476	26,862	269,121	576,459	170,854(c)	8,796,521	348,023	57,582

(a) For the period from 11th February to the 30th June, 1901. (b) The rate of interest charged each year is the average rate on the total capital debt of the State, which varies. (c) Including expenditure for the renewal, replacement, or reconstruction of wharves or buildings.

NOTE.—The minus sign (—) represents a loss.

(ii) *Dredging and Towing.* The subjoined statement gives particulars of the dredging and towing done by the dredges and tug-boats owned by the Trust :—

SYDNEY HARBOUR TRUST.—PARTICULARS OF DREDGING AND TOWING, 1901 AND 1914 TO 1918.

Year.	Dredging.			Towing Dredged Material.		
	Tons Dredged.	Total Expenditure.	Expenditure per Ton.	Miles run Towing.	Total Expenditure in Towing.	Expenditure per Mile Towing.
	Tons.	£	Pence.	Miles.	£	Pence.
1901 ..	317,500	3,696	2.79	29,277	2,849	23.35
1914 ..	1,852,500	29,079	3.77	45,724	8,271	43.41
1915 ..	1,561,500	27,937	4.29	48,982	9,949	48.06
1916 ..	2,092,918	28,253	3.24	46,581	11,268	58.05
1917 ..	1,938,130	31,697	3.93	43,847	11,950	65.41
1918 ..	1,319,455	26,780	4.87	36,577	16,367	107.39

3. **The Melbourne Harbour Trust.**—This Trust was constituted under an Act passed in 1876, as a result of public agitation and demands extending over a period of 34 years to the effect that the cost of landing goods should be reduced and the delays in receiving goods should be abolished. Both demands arose from the fact that vessels of a draught greater than 12 feet had to discharge in the bay into lighters.

(i) *Constitution of the Trust.* The Harbour Trust Act was originally drafted on the lines of similar institutions in Great Britain, such as the Thames Conservancy, the Mersey Harbour Board, and the Clyde Trust. Under the Act of 1876, as amended in 1883, the

number of Commissioners was fixed at seventeen. By an Act No. 2449 (1912), the constitution of the Trust was altered to a Commission of five members elected by the Governor-in-Council, consisting of a chairman, who devotes his whole attention to the business of the Trust, and four others representing the interests of shipowners, exporters, importers, and primary producers.

(ii) *Works undertaken by Trust in the River and in the Port.* In 1890 a consolidating Act was passed, and the borrowing powers of the Trust were increased to £2,000,000, and subsequently by Act No. 2449 to £3,000,000. The river was widened from Queen's Bridge to the Bay to about 300 feet, while the depth has been gradually increased until at the present time it is 26 feet at low water. A total of 10.44 miles of wharves and piers are in use in the River, Victoria Dock, Williamstown, and Port Melbourne. Most of these wharves in the river and dock carry sheds with a total length of 17,394 feet, covering an area of 878,928 square feet. The new pier in Victoria Dock, now complete, is included in these figures.

(a) *The Coode Canal.* In 1889 the canal across the flats below Fishermen's Bend was completed at a cost of £96,000. The length of the canal is 2,002 yards, the distance from Queen's Bridge to the river entrance being thereby reduced from 7 miles to 5½ miles, and the navigation being greatly facilitated. This channel, which is called the Coode Canal, has been widened 164 feet, thus making its total width 487 feet, and its width at low water 430 feet. At the present time there is a depth of 26 feet at low water for a width of 250 feet.

(b) *The Victoria Dock.* This dock, 4 miles up the river, and opened in 1892, has an area of 82 acres and a depth of 30 feet at low water. The entrance to the dock is 160 feet wide. There are 11,760 feet of wharfage including that of the new central pier, and the total cost, including wharves, sheds, approaches thereto, and new pier was, to 31st December, 1918, £713,932. The sheds have a total length of 6,818 feet, and cover an area of 381,096 square feet. The new central pier is 1,631 feet long and 250 feet wide, with a 57-foot roadway in the centre. There are four cargo sheds on this pier, two being 430 feet by 60 feet, and two 486 feet by 60 feet. Two others each 486 feet long are in course of erection. The expenditure on this pier to 31st December, 1918, amounted to £186,425.

(iii) *Works in the Bay.* Prior to 1879 all the mail steamers and vessels of heavy draught had to lie at anchor in the bay, and there discharge into lighters. One of the first works undertaken by the Commissioners was to make the railway piers at Williamstown available to these vessels. This work was completed at a cost of £256,160. In 1893 a channel over 8,000 feet long and 600 feet wide was dredged, running in a southerly direction from Port Melbourne Railway Pier and having a navigable depth of 30 feet o.l.w. The cost of this work was £218,379. A new railway pier was completed at Port Melbourne in 1915. Its length is 1,902 feet, with a width of 186 feet, and the average depth of water is 37 feet. Two shelter sheds provide accommodation, and there are ten travelling gangways to facilitate the landing of passengers so as to avoid crossing the railway lines on the pier level.

(iv) *Dredging.* The total quantity of material raised by the dredging and excavation done in the improvement of the river and bay amounts to nearly 64 million cubic yards.

During the ten years ending 31st December, 1918, the average cost of dredging per cubic yard was 2.91 pence and the cost of towing and depositing 4.01 pence, not allowing for depreciation of plant. The Trust has expended £334,774 in reclaiming land within its jurisdiction. The amount of material raised annually is now about 3,158,000 cubic yards.

(v) *Financial Operations.* The revenue of the Trust is obtained from wharfages and tonnage rates, rents and license fees from land and ferries, and other license fees. One-fifth(a) of the revenue of the Trust is paid to the consolidated revenue of Victoria.

(a) Limited by Act 2449 to £60,000 per annum for five years from 1st January, 1913.

The following table gives particulars of the revenue and expenditure of the Trust from 1914 to 1918 inclusive :—

MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE, 1914 TO 1918.

Particulars.	1914.	1915.	1916.	1917.	1918.
REVENUE.					
	£	£	£	£	£
Rates, rents, etc.	349,461	306,034	311,395	312,654	314,777
Interest	2,284	1,293	170	31	123
Other receipts	8,172	7,957	11,109	7,610	10,691
Total	359,917	315,284	322,674	320,295	325,591
EXPENDITURE.					
	£	£	£	£	£
Management and general expenses ..	42,460	46,257	56,265	49,205	45,373
Interest	83,620	86,567	88,372	93,996	95,980
Total	126,080	132,824	144,637	143,201	141,353
Less standing charges added to works ..	21,936	23,823	21,135	19,632	23,595
Total	104,144	109,001	123,502	123,569	117,758
Wharfage and other refunds	1,531	1,620	1,140	1,378	2,382
Charges remitted on troopships	4,532	3,166	..	..	..
Consolidated revenue of Victoria	60,000	60,000	60,000	60,000	62,305
Flotation of loan expenses	5,289	5,011	..	1,005	3,012
Redemption of loans expenses .. .. .	..	925	..	..	2,392
Maintenance	50,661	55,520	53,375	70,112	35,706
Total expenditure	226,157	235,243	238,017	256,064	223,555
Surplus on revenue account	133,760	80,041	84,657	64,231	102,036
Less depreciation and renewals account and sinking fund	30,058	30,415	51,364	51,747	52,000
Net surplus on revenue account	103,702	49,626	33,293	12,484	50,036
CAPITAL EXPENDITURE.					
	£	£	£	£	£
Land and property	5,534	2,060	1,316	588	1,153
Deepening waterways	96,198	93,615	82,429	50,871	108,037
Wharves construction	87,885	120,627	105,803	62,246	37,321
Approaches construction	7,029	10,921	8,960	6,201	11,417
Other harbour improvements	1,376	4,275	35,946	26,923	7,352
Floating plant	33,452	3,112	25,190	3,814	811
General plant	3,364	4,107	2,853	1,728	130
Stock account	32,070	25,451	21,784	4,686	..
Total	266,908	264,168	284,281	157,057	166,221

4. **Fremantle Harbour Trust.**—Under the provisions of an Act passed in 1902, a Harbour Trust was constituted for the general administration of Fremantle harbour, and since January, 1903, the Trust has had full control of all the affairs of the harbour, and undertakes the duties of wharfingers, and the receiving, sorting, storing, delivering, and handling of all cargo between vessels and the owners of the goods. The works, which were commenced in 1892, were designed with the object of forming a safe and commodious harbour within the mouth of the Swan River, so as to admit vessels at all states of the tide, and thus enable cargo to be loaded and discharged at the quays and goods-sheds. Two ocean moles have been thrown out from the north and south heads, the former being 3,450 feet and the latter 2,040 feet long. A channel, 450 feet wide and 30 feet deep at low water has been blasted and dredged through the rock which formerly crossed the estuary to the river to give access to the harbour basin, which has a width of 1,400 feet and a depth of 30 feet at low water and is upwards of a mile in length, and wharves and goods-sheds have been constructed along the reclaimed foreshore on both sides of the harbour. The depth of water in the entrance channel and inner harbour is now being increased to 36 feet, and will eventually be made 40 feet below lowest low water datum. At the present time all the European mail boats and equally large vessels which make Fremantle the first and last port of call in Australia, are able to enter and leave the harbour in all weather and at all tides day or night. The quays on both sides of the inner harbour basin are equipped with electric and steam cranes, and there is also a complete installation of electric elevators and conveyors for stacking and shipping bagged grain and flour. All berths are laid with railway rails. For the year ended 30th June, 1918, the total revenue of the Trust was £162,659, and the expenditure £83,354. The gross amount paid to the Treasury for the year was £82,864, being interest £64,450 and sinking fund £18,414.

5. **Hobart Marine Board.**—The Hobart Marine Board was established in 1858, and consists of nine wardens, elected by the shipowners, importers, and exporters of the port. To meet the requirements of the large steamers visiting the Commonwealth, extensive harbour improvements have been completed. The Ocean wharf and pier has a length of 1,142 feet, with a depth of water from 36 feet at the inner to 60 feet at the outer end, while other piers afford accommodation for the largest vessels visiting Australia.

The total capital debt on properties in connection with the Harbour Trust vested in the Board is £106,350. The interest paid in 1918 amounted to £4,350, and the contributions to sinking fund, £1,050. The Board also transferred £3,775 from revenue to the Harbour Improvements Account. The receipts and expenditure of the Board for the last five years were as follows :—

HOBART MARINE BOARD.—RECEIPTS AND EXPENDITURE, 1914 TO 1918.

Year.	Receipts.				Expenditure.			
	General.	Harbour Improvements, Debentures, etc.	Light-house Fund.	Total.	General.	Harbour Improvements.	Light-house Fund.	Total.
	£	£	£	£	£	£	£	£
1914 ..	24,772	26,000	11,481	62,253	(a)24,956	29,241	13,047	67,244
1915 ..	23,448	5,264	(c)	28,712	(b)23,096	6,983	(c)	30,079
1916 ..	22,800	6,062	..	28,862	(d)21,803	7,801	..	29,604
1917 ..	17,294	6,627	..	23,921	(e)17,247	5,212	..	22,459
1918 ..	20,046	3,775	..	23,821	(f)20,887	3,131	..	24,018

(a) Including £8,000 transferred from the General Account to the Harbour Improvements Account. (b) Including £1,500 transferred from General Account to Harbour Improvements. (c) The Commonwealth Government took over control of Ocean lights from 1st July, 1915. (d) Including £4,000 debentures purchased. (e) Including £938 transferred from General Account to Harbour Improvements. (f) Including £3,775 transferred from General Account to Harbour Improvements.

6. **Launceston Marine Board.**—The Board was formed in 1858 and consists of thirteen members, elected on the municipal franchise, with special residential conditions. The principal work of the Board is in connection with the straightening, deepening, and widening of the River Tamar, the distance from the wharves to the open sea being 40 miles.

Wharves to the length of 6,702 feet have been constructed, the depth at some of them being 40 feet s.l.w. The total capital debt on 31st December, 1918, was £223,039, of which £166,801 was incurred on the Tamar Improvement Scheme. The revenue for 1918 was £35,094 and the expenditure £32,639.

7. **Geelong Harbour Trust.**—This Trust was incorporated in 1905, and consists of three Commissioners appointed by the Government of Victoria. To the 31st December, 1918, the Trust had borrowed £591,000. The sinking fund at the same date stood at £24,175. The revenue receipts for the year 1918 were £42,617, and the disbursements £48,783.

8. **Rockhampton Harbour Board.**—The Board consists of eleven members elected by the municipalities and shires of the Central Division of Queensland. The principal items of export by water in 1918 were—wool, 49,098 bales; preserved and frozen meats, 9,538 tons; blister copper and concentrates, 6,895 tons; and gold, £329,679 in value. For the year 1918 the receipts were £31,478, including loan advances, £4,950, and the expenditure was £31,478, including £16,000 payments for interest and redemption on loans. The total of the net registered tonnage entering the port in 1918 was 408,750.

9. **Bundaberg Harbour Board.**—The principal port in Queensland for the shipment of sugar is Bundaberg. The Harbour Board consists of nine members, representing the district shire councils and the shipowners and exporters, with one Government nominee.

The total exports for the year ending 31st December, 1918, amounted to 41,192 tons, as against 31,182 tons for the previous year, showing an increase of over 10,000 tons. The principal items of export were:—Raw sugars, 19,683 tons; refined sugars, 15,062 tons; syrups and molasses, 1,595 tons; rum and spirits, 3,170 tons; copper ores, 304 tons. The revenue for 1918 amounted to £7,567, as against £5,888 for 1917; the expenditure for 1918 was £9,390 as compared with £7,138 for 1917. Dredging resulted in 184,350 tons of silt, etc., being lifted and deposited at sea, operations being subject to considerable limitations owing to the necessity for repairs, etc.

10. **Cairns Harbour Board.**—The Cairns Harbour Board consists of twelve members, three representing the town of Cairns and the other nine the surrounding shire councils. For the year ended 31st December, 1918, the receipts from harbour and berthage dues and miscellaneous items amounted to £26,839, while the revenue from taxes and fixed rates was £25,059. The total income amounted to £26,874. The principal items of export were:—Raw sugar, timber, maize, copper, fruit, meats, and tallow.

11. **Bunbury (Western Australia) Harbour Board.**—The Bunbury Harbour Board was constituted in 1909, and consists of five members appointed by the Government. The jetty has berthage accommodation for eight steamers, and the depth of water for loading thereat ranges from 18 to 27 feet. Electric and steam gantry cranes are available at the deep berths. The jetty is lighted by electricity, and is being extended to provide two additional berths at which vessels can load to 28 feet.

The capital expenditure for the year ending 30th June, 1918, was £19,756, making the total capital expenditure to that date £328,851. The revenue for the year was £9,598 and the expenditure £4,851, the balance being paid into Consolidated Revenue to meet interest and sinking fund. The export tonnage for the year was made up as follows:—Jarrah timber, 64,428 loads of 50 cubic feet; coal (bunkers), 7,055 tons; wool, 681 bales; and miscellaneous goods, 503 tons; the total export value being £282,713. The total import tonnage was 5,695 tons.

12. **Burnie and Table Cape (Tasmania) Marine Board.**—While the existing works accommodate steamers of 4,000 to 5,000 tons, which visit the port regularly, they are insufficient for the rapidly increasing traffic in produce, ores and timber from the north-west and west coast districts of Tasmania. A scheme is therefore being carried out, by which the port will eventually be capable of taking any ships trading in the Commonwealth. A breakwater has been constructed 1,250 feet in length with a depth alongside up to

42 feet at low water. It is intended later on to increase the length to 4,000 feet and to enclose 300 acres of deep water space, of which 100 acres will have a depth of 45 feet. The expenditure on that portion of the scheme at present under construction will be £200,000, including a wharf 500 feet long, with a depth of 36 feet at low water. The revenue for the year 1918 was £9,738, and the expenditure £15,249, including £11,446 interest on construction loan.

§ 5. Fire Brigades.(a)

1. New South Wales.—Reference has been made in the section of this book dealing with the subject of *Private Finance* (see page 824) to the constitution of the Board of Fire Commissioners of New South Wales, which has now superseded the Metropolitan and all other Fire Brigade Boards in that State.

(i) *Receipts and Disbursements of Board of Fire Commissioners of New South Wales.* The subjoined table shews the actual receipts and disbursements of the Board for the past five years in respect of the Sydney Fire District:—

NEW SOUTH WALES BOARD OF FIRE COMMISSIONERS.—RECEIPTS AND DISBURSEMENTS FOR SYDNEY FIRE DISTRICT, 1914 TO 1918.

Year.	Receipts.						Disbursements.
	From Government.	From Municipalities.	From Fire Insurance Companies.	From Firms.	From other Sources.	Total.	
	£	£	£	£	£	£	£
1914	29,200	29,200	28,966	234	1,773	89,373	88,208
1915	29,071	29,071	28,161	410	1,749	88,462	96,146
1916	29,071	29,071	28,883	188	2,205	89,418	98,934
1917	34,283	34,283	33,562	721	4,103	106,952	103,539
1918	34,231	34,231	33,857	373	3,950	106,642	107,104

With reference to the preceding table, under the "Fire Brigades Act 1909," by which the New South Wales Board of Fire Commissioners was constituted, and which came into operation on 1st January, 1910, insurance companies do not now, as formerly, return the amount of their risks, but give in lieu thereof the amount of premiums received, which forms the basis of their contribution towards the revenue of the Board. By this Act also firms which effect insurances with companies not registered in New South Wales are likewise required to make contributions on account of the premiums paid to such companies, which is the first instance of this class of insurer being compelled to share the expense of local advantages, which had hitherto been available free of cost. A fuller description of the principal provisions of this Act will be found in previous issues of this book (see Year Book No. 5, page 990). The Sydney fire district includes the City of Sydney and suburbs, comprising a total area of 232 square miles. On the 31st December, 1918, the Board had under its control in this district 61 stations, 310 permanent men, 150 partially paid firemen, 12 steam and 36 motor fire engines, 50 horses, 135,759 feet of hose, and 498 telephone fire-alarms. The length of wire used for telephone lines was 1,206 miles.

2. Victoria.—Under the Fire Brigades Act of 1890 a metropolitan fire district and nine country fire districts were established, the former being placed under the control of a Metropolitan Fire Brigades Board, and the latter under the control of a Country Fire Brigades Board.

(i) *Metropolitan Fire Brigades Board.* The metropolitan fire district originally comprised the area included in the several municipalities within a radius of 10 miles from the Melbourne General Post Office, but this area has since been extended in certain directions so as to include the greater part of the Shire of Moorabbin and also the township of Mordialloc. The Board is composed of nine members, of whom three are appointed by the Governor-in-Council, three by the municipal councils, and three by the insurance companies. On the 30th June, 1919, the Board had under its control 41 stations, 250

(a) See Section XXI., § 6, Fire Insurance, p. 823.

permanent men, 102 partially-paid firemen, 49 special service firemen, 6 motor drawn steam fire engines, 8 petrol motor fire pumps, 47 other petrol motor appliances, 100,872 feet of hose, and 321 fire-alarm circuits having 1,032 street fire alarms, containing telephones. The Government, the insurance companies, and the municipalities in which the Board operates contribute equally to the cost and maintenance of the brigade. The following table gives particulars as to the financial operations of the Board during each year from 1914 to 1918-19 inclusive :—

**VICTORIA.—REVENUE AND EXPENDITURE OF METROPOLITAN FIRE
BRIGADES BOARD, 1914 TO 1918-19.**

Particulars.	1914.	1915.	1916.	1917-18.	1918-19.
ORDINARY RECEIPTS.					
	£	£	£	£	£
Contributions	68,433	77,794	86,771	84,418	85,569
Receipts for services	8,241	6,634	7,595	6,645	7,197
Interest and sundries	1,380	9,957	4,110	1,960	2,766
Total	78,054	94,385	98,476	93,023	95,532
ORDINARY EXPENDITURE.					
	£	£	£	£	£
Salaries	50,966	52,633	55,612	58,900	60,915
Interest and sinking fund	9,432	11,442	13,397	13,610	14,971
Other expenditure	18,971	25,744	24,566	25,057	20,968
Total	79,369	89,819	93,575	97,567	96,854

(ii) *The Country Fire Brigades Board.* This Board consists of nine members, of whom three are appointed by the Governor-in-Council, two are elected by the municipal councils of the districts where there are brigades registered under the Board, two by the fire insurance companies, and two by the registered fire brigades. At the end of the year 1918 there were 109 municipal councils and 71 insurance companies included in the operations of the Act. All the brigades are volunteer brigades, but in the large centres a few permanent station-keepers and watchmen are employed. There were 131 registered brigades and 2,995 registered firemen at the end of the year 1918.

For the year 1918 the receipts of the Country Fire Brigades Board amounted to £13,923, and the expenditure to £14,552.

3. *Queensland.*—In the year 1917 there were thirty-two fire brigades organised in various towns in Queensland. The revenue of these brigades is derived chiefly from grants from the Government, from municipalities, and from the insurance companies, generally in equal proportions, and the following table gives these particulars for the year 1917 :—

QUEENSLAND.—FIRE BRIGADES, 1917.

Receipts.	Amount.	Expenditure.	Amount.
	£		£
From Government	9,919	Salaries and wages	16,846
„ Local authorities	9,971	Building, repairs, etc.	1,588
„ Insurance companies	9,764	Plant, stores, clothing, etc.	4,573
„ Other sources	1,239	Other	4,914
Total	30,893	Total	27,921

At the end of the year 1917 the fire brigades staffs comprised 90 permanent men, 260 partially paid, and 111 volunteers. The Metropolitan Brigade at Brisbane and the South Brisbane brigade protect an area of $9\frac{1}{2}$ square miles; their joint staffs comprise 66 men. They have three steam engines, three motor turbines, one chemical motor, nine reels, consisting of four horse, two motor, and three hand reels, and 24,814 feet of hose. There are 11 telephone fire alarms and 194 call points.

4. **South Australia.**—The Fire Brigades of South Australia are managed by a Board consisting of five members, one being nominated by the Government, one by the Adelaide City Council, one by the other metropolitan and country municipalities, and the other two by the contributing insurance companies. The Board is incorporated under the Fire Brigades Act 1913. The revenue of the Board is derived by contributions of three-ninths by the Government, four-ninths by the insurance companies, and two-ninths by the City of Adelaide and the other municipalities subject to the Act, the contribution for 1918 amounting to £27,952. Brigades are established in the following municipalities, viz., Adelaide, Kensington and Norwood, Unley, Port Adelaide, Glenelg, Gawler, Kapunda, Moonta, Kadina, Port Pirie, Port Augusta, Wallaroo, and Thebarton. The strength of the brigades consists of 93 permanent firemen and 35 auxiliary firemen. The plant consists of 5 steam fire engines, 1 motor engine, 10 motor hose carriages, 1 floating fire engine, 5 hose reels, and 15 horses. The number of calls received during the year 1918 was 407, of which 12 were to fires of a serious nature. Of the total calls, 257 were in the metropolitan district.

5. **Western Australia.**—Under the Fire Brigades Act 1898, fire brigades were established in a number of the more important centres of population in the State. These brigades were under the control of local boards, and were in some cases municipal and in others volunteer.

An Act to make further provision for the protection of life and property from fire came into operation on the 2nd April, 1917, and is called the Fire Brigades Act 1916. It provides that every municipal or road board district shall be a fire district for the purposes of such Act, under the control of the Western Australian Fire Brigades Board. Formerly, under the District Fire Brigades Act 1909, which was repealed by the 1916 Act, the whole State was divided into two fire districts only. Provision is also made in the later Act for the amalgamation of two or more municipal or road board districts into one fire district. The Board is elected biennially and is constituted as follows:—Two members nominated by the Government, one of whom shall be the President; one member elected by the council of the municipality of the City of Perth; one member elected by the municipal and road board districts between Fremantle and Midland Junction, excluding the City of Perth; one member elected by the municipal and road board districts between Southern Cross and Leonora (Eastern Goldfields District); one member elected by the remainder of the municipal and road board districts in the State under the operation of the Act; two members elected by the insurance companies; and one member elected by the Volunteer Fire Brigades. The income of the Board is derived as follows:—Two-eighths from the Government, three-eighths from the local authorities, and three-eighths from the insurance companies. In regard to the revenue derived from the local authorities it is provided that the local authority in each district shall only contribute three-eighths of the expenditure in such district. Under the 1909 Act the amount levied upon each local authority was a pro-rata proportion of the three-eighths of the total estimated expenditure in the State, based on the valuation of the property within each local authority's district. The receipts for the year 1918 amounted to £30,394, and the expenditure to £31,072.

The whole of the brigades throughout the State are now controlled by this Board, and number one purely permanent, nine permanent and partially paid, seven permanent and volunteer, one partially paid, and twenty-two purely volunteer brigades; making a total of forty. The staff includes a chief officer, deputy chief officer, third officer, motor engineer, electrical engineer, 12 other officers, 60 permanent firemen, 29 partially-paid firemen, and 490 volunteer firemen.

6. **Tasmania.**—Under the present system, the Government, the City Council, and the Fire Insurance Companies contribute equally to the annual expenditure of the Hobart Fire Brigade. There are volunteer brigades under the control of local boards in most of the larger centres of population. The expenditure for the year for Hobart amounted to £3,215.

§ 6. Local Government Finance.

1. **Introduction.**—In the preceding parts of this section certain particulars have been given regarding local authorities in each individual State. It is proposed to give here in a comparative form for each State particulars regarding the financial operations of local governing bodies. The areas controlled by these bodies are variously known in the several States as cities, towns, boroughs, shires, municipalities, municipal districts, and road districts. The particulars given in the tables in the two next paragraphs relate to financial years ending as follow:—New South Wales: for the calendar year 1917. Victoria: 30th September, 1917, except Melbourne, 31st December, and Geelong, 31st August, 1917. Queensland: calendar year 1917. South Australia: Corporations, 30th November, and district councils, 30th June, 1917. Western Australia: 31st October, 1917, except road districts, 30th June, 1917. Tasmania: calendar year 1917.

2. **Number, Revenue, Expenditure, and Valuation of Local Authorities.**—The following table gives particulars of the number, revenue, expenditure, and valuation of local authorities in each State and in the Commonwealth during the year indicated above. It should be noted that, excepting in Tasmania, the metropolitan water supply systems are not under municipal control; the particulars given of revenue and expenditure for the five States other than Tasmania do not, therefore, include revenue and expenditure on account of these systems.

NUMBER, REVENUE, EXPENDITURE, AND VALUATION OF LOCAL AUTHORITIES(a) IN EACH STATE, 1917.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
No. of local authorities (a) ..	321	191	174	183	145	51	1,072
RECEIPTS.							
	£	£	£	£	£	£	£
Rates—							
General ..	2,136,229	1,395,723	709,993	255,679	210,337	51,626	4,759,497
Other (b) ..	197,639	293,250	270,982	89,592	71,346	150,493	1,073,302
Government grants ..	347,545	68,364	46,150	60,758	38,039	18,527	579,383
Loans (c) and other sources ..	1,091,187	606,029	168,135	107,660	430,924	249,756	2,653,691
Total ..	3,772,600	2,363,366	1,195,170	513,689	750,646	470,402	9,065,873
EXPENDITURE.							
Works, services, etc.	2,891,092	1,508,491	871,376	361,418	405,690	345,500	6,383,567
Interest on loans and overdrafts ..	424,847	274,113	17,492	16,398	87,283	69,404	1,125,059
Redemptions, sinking funds, etc. ..							
Administration ..	315,183	210,034	142,291	51,394	60,288	38,923	818,113
Other ..	93,993	234,353	136,021	49,502	123,162	16,901	653,932
Total ..	3,725,115	2,339,011	1,203,492	494,314	731,124	487,615	8,980,671
VALUATIONS.							
Capital value of property ..	d199,984,912	331,336,715	42,991,857	94,405,313	f24,933,426	35,447,336	729,099,559
Annual value of property ..	(e)	17,648,097	(e)	5,059,023	(f)1,512,643	1,769,443	(e)

(a) Including particulars for all areas controlled by local governing bodies responsible for the construction and maintenance of roads and streets, such areas being variously known in the several States as cities, towns, boroughs, shires, municipalities, road districts, etc. (b) Exclusive of rates for water supply and sewerage in metropolitan and most other principal towns, such rates being collected by special boards or general Government. (c) Exclusive of loans in connection with extraordinary works of construction. (d) Unimproved capital value. (e) Not available. (f) Excluding District Road Boards.

3. Local Government Loans, 1917.—The following table gives particulars for each State of loans raised by local authorities during the year 1917, of loans current at the end of that year, of liability on account of interest and sinking fund, and of loans maturing during 1917 :—

PARTICULARS OF LOANS RAISED BY LOCAL AUTHORITIES, 1917.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
Loans from general Govern- ment—							
Raised during year ..	..	112,868	39,479	..	125	15,370	167,842
Current at end of year ..	..	641,233	440,308	..	82,365	603,798	1,767,704
Loans from other sources—							
Raised during year ..	639,178	290,097	..	30,339	56,980	108,993	1,125,587
Current at end of year ..	9,268,400	5,389,110	979,187	371,916	1,807,872	1,119,656	18,936,141
Total—							
Raised during year ..	639,178	402,965	39,479	30,339	57,105	124,363	1,293,429
Current at end of year ..	9,268,400	6,030,343	1,419,495	371,916	1,890,237	1,723,454	20,703,845
Current loans, exclusive of those obtained from general Government, raised within the Commonwealth ..	8,445,957	5,389,110	..	371,916	1,336,072	1,119,656	616,662,711
Annual liability on account interest	(a)	257,729	18,752	16,070	84,488	93,127	(a)
Total sinking fund at end of year	(a)	747,516	119,417	22,623	300,871	139,688	(a)
Amount loans maturing dur- ing year—							
Redeemed	(a)	(a)	..	10,528	30,675	203,299	(a)
Renewed .. ..	..	(a)	..	..	..	(a)	(a)

(a) Not available. (b) Incomplete.

SECTION XXVII.

INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

§ 1. Development of Trade Unions in Australia.

1. **Historical Development of Trade Unionism in Australia.**—A special article, reviewing the development of trade unionism from its inception, appeared in Year Book No. 9, pp. 937-41.

2. **Registration under Trade Union Acts.**—The benefits conferred by registering trade unions under the Trade Union Acts in force in the various States are not held in much repute; consequently the statistics of registered trade unions of employees not only do not represent the position of unionism, but, in addition, the statistics themselves for past years are so defective as to be practically valueless. The particulars furnish no reliable indication of the numerical and financial position of trade unions. Some of the registered unions fail to supply returns; this non-supply may lead to cancellation of the registration. Some of the unions have obtained the cancellation of their certificates of registration, the apparent reason being that they proposed registering under the Commonwealth Conciliation and Arbitration Act or a State Arbitration Act. In Queensland, some of the largest labour unions withdrew from registration during 1911, mainly on account of the necessity for closer restriction of their objects as set forth in their rules, consequent on legal decisions affecting trade unions. In Victoria, only seven unions of employees are registered, and in South Australia sixteen unions were registered at the end of 1916. Particulars relating to membership and financial position of many of these unions were not furnished. It will be seen, therefore, that the available information is too meagre for statistical purposes.

3. **Registration under Industrial Arbitration Acts.**—Western Australia and New South Wales up to 30th June, 1908, were the only States with Industrial Arbitration Acts under which industrial associations could be, and actually were, registered. The number of registered unions in New South Wales shewed a gradual increase from 1902 to 1907, the figures in the latter year being 109 unions of employers, with 3,165 members, and 119 unions of employees, with 88,075 members. Under the Industrial Disputes Act, which succeeded the Arbitration Act of 1901, it was not necessary to furnish the information. Since the Act of 1908, industrial organisation proceeded rapidly, owing to a general desire on the part of the workers to obtain the status necessary to entitle them to the advantages offered by the Act. The Act of 1908 was repealed by that of 1912, and in 1912 there were 117 industrial unions of employers and 192 industrial unions of employees on the register. On the 31st August, 1914, there were 105 industrial unions of employers and 160 industrial unions of employees registered. On the 25th April, 1919, there were 114 industrial unions of employers, and 161 industrial unions of employees on the register. Registration had been granted to 5 of the 161 employees' unions subject to amendment of rules. In Western Australia, the employers' unions numbered 45, with 441 members, in 1904; 59 unions, with 520 members, in 1905; 57 unions, with 534 members, in 1906; 56 unions, with 552 members, in 1907; 48, with 409 members, in 1908; 47, with 408 members, in 1909; 46, with 444 members, in 1910; 46, with 554 members, in 1911; 49, with 749 members, in 1912; 48, with 581 members, in 1916; and 52, with 810 members, in 1917. From 1904 to 1908 unions of employees were in a fairly stationary condition. Since 1909, however, there has been a rapid

expansion. At the end of 1904 and 1905 there were 140 unions, with 15,743 and 15,461 members respectively; in 1906 there were 130 unions, with 16,015 members; in 1907, 121 unions, with 14,544 members; in 1908, 121 unions, with 15,187 members; in 1909, 122 unions, with 17,282 members; in 1910, 130 unions, with 20,429 members; in 1911, 152 unions, with 28,934 members; in 1912, 153 unions, with 30,453 members; in 1916, 134 unions, with 25,403 members; and in 1917, 137 unions, with 26,359 members. These figures include councils and associations. Registration under Commonwealth legislation began in 1906. In that and the four following years, there was but one union of employers; another was registered in 1911. The unions of employees registered were 20 in 1906, with 41,413 members; 24, with 57,306 members, in 1907; 37, with 69,536 members, in 1908; 7, with 14,161 members, in 1909; 10, with 3,760 members, in 1910. Twenty-four unions of employees were registered in 1911. The membership given above is that at time of registration. At the end of 1912 there were 3 employers' organisations, with 351 members, and 96 employees' organisations, with 245,735 members, on the register under the Commonwealth Conciliation and Arbitration Act. On the 31st December, 1916, there were 5 organisations of employers, with 5,181 members, and 110 organisations of employees, with 422,787 members on the register.

4. **Types of Trade Unions in Australia.**—The trade unions in Australia are very diverse in character, and range from the small independent association to the large interstate organisation, which, in its turn, may be merely a branch of a British or international union. Broadly speaking, there are four distinct classes of labour organisations, viz. :—(i) the *local independent*, (ii), the *State*, (iii) the *interstate*, and (iv) the *Australasian or International*, but a number of variations occur from each of these classes. The leading characteristics of each of these types was briefly outlined in Labour Report No. 2 (pp. 7 to 9) issued by this Bureau.

5. **Total Number of Unions, 1918.**—As already stated, the figures for trade unions registered under the Acts do not represent the position of unionism in Australia. In 1912 the Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics was established, and by the cordial co-operation of the officials of the labour organisations, comprehensive figures relating to the development of organised labour are now available. The following table gives particulars of the number of trade unions, the number of branch unions, and the number of members in each State, the Northern Territory and the Commonwealth at the end of 1918 :—

TRADE UNIONS, BRANCH UNIONS, AND MEMBERS, STATES, NORTHERN TERRITORY, AND COMMONWEALTH, 1918.

State or Territory.	Number of Separate Unions.	Number of Branches.	Number of Members.
New South Wales	217	785	243,176
Victoria	158	346	152,063
Queensland	102	298	87,737
South Australia	101	137	51,559
Western Australia	111	195	33,761
Tasmania	74	75	11,900
Northern Territory	4	..	1,559
Total	767	1,836	581,755
Commonwealth*	394†	2,200†	581,755

* Allowing for interstate excess. † Number of distinct organisations and interstate groups of organisations in the Commonwealth—not the total number of organisations, which are practically independent and self-governing. (See next page).

In the preceding table the number of separate unions in each State refers to the number of unions which are represented in each State, exclusive of branches within a State. That is to say, each union represented in a State is only counted once, regardless of the number of branches in that State. Except in the last line, the number of branches indicates the number of branches of State head offices, which may, of course, themselves be branches of an interstate or larger organisation. In taking the total number of separate unions in the Commonwealth (see last line but one), it is obvious that, in the case of interstate and similar unions, there will be duplication, since each such union is counted once in each State in which it has any branches. In the figures given in the last line allowance has been made for this duplication. State branches of interstate or federated unions, as well as sub-branches within a State, are included under the heading "Branches" in the third column—last line. It should be observed, however, that the scheme of organisation of these interstate or federated unions varies greatly in character, and the number of separate Commonwealth unions does not fairly represent the number of practically independent organisations in Australia. In some of these unions the State organisations are bound together under a system of unification and centralised control while in others the State units are practically independent and self-governing, the federal bond being loose and existing only for one or two specified purposes. It may be seen, therefore, that there are 394 distinct organisations and interstate groups of organisations in the Commonwealth, having 2,200 State branches and sub-branches, and a total of 581,755 members.

6. Number of Unions and Membership in Industrial Groups, 1918.—The following table shews the number of unions and members thereof in each State at the end of the year 1918. The number of unions specified for each State refers to the number of different unions represented in each State; that is to say, interstate or federated unions are counted once in each State in which they are represented, but sub-branches within a State are not counted. In order to avoid disclosing the affairs of individual unions, in cases where there are only either one or two unions in any group in a State, the membership is not given separately.

NUMBER OF UNIONS AND MEMBERSHIP IN INDUSTRIAL GROUPS IN EACH STATE, DECEMBER, 1918.

Industrial Groups.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N. Ter.	Total.
NUMBER OF UNIONS.								
I. Wood, Furniture, etc.	4	3	2	3	4	4	..	20
II. Engineering, Metal Works, etc.	21	19	11	11	8	6	1	77
III. Food, Drink, Tobacco, etc.	23	18	7	10	14	8	..	80
IV. Clothing, Hats, Boots, etc.	9	7	2	3	3	4	..	28
V. Books, Printing, etc.	8	10	3	2	5	2	..	30
VI. Other Manufacturing	28	20	9	14	8	5	..	84
VII. Building	14	13	9	8	9	4	1	58
VIII. Mining, Quarries, etc.	14	3	1	2	4	2	..	26
IX. Railway and Tramway Services	11	6	4	6	9	4	..	40
X. Other Land Transport	9	5	3	2	2	2	..	23
XI. Shipping, etc.	19	8	18	10	7	10	..	72
XII. Pastoral, Agricultural, etc.	3	2	1	1	1	1	..	9
XIII. Domestic, Hotels, etc.	8	4	1	2	5	..	..	20
XIV. Miscellaneous	46	40	31	27	32	22	2	200
Total	217	158	102	101	111	74	4	767

NUMBER OF UNIONS AND MEMBERSHIP IN INDUSTRIAL GROUPS IN EACH STATE, DECEMBER, 1918—*continued*.

Industrial Groups.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N. Ter.	Total.
NUMBER OF MEMBERS.								
I. Wood, Furniture, etc.	7,536	5,446	*	1,163	1,708	1,213	..	†17,066
II. Engineering, Metal Works, etc.	23,685	11,140	4,977	4,545	2,317	471	*	47,135
III. Food, Drink, Tobacco, etc.	16,523	12,251	6,518	2,778	1,426	1,457	..	40,953
IV. Clothing, Hats, Boots, etc.	9,542	17,268	*	1,823	813	462	..	†29,908
V. Books, Printing, etc.	5,263	3,907	1,269	*	463	*	..	11,972
VI. Other Manufacturing	15,570	10,132	1,247	2,057	1,427	240	..	30,673
VII. Building	18,377	11,588	4,553	2,531	1,164	548	*	35,761
VIII. Mines, Quarries, etc.	21,695	3,126	2,975	*	4,278	*	..	35,519
IX. Railway and Tramway Services	30,974	18,387	11,397	6,387	6,712	956	..	74,813
X. Other Land Transport	6,143	3,813	2,297	*	*	*	..	14,487
XI. Shipping, etc.	24,042	12,938	5,546	5,809	1,206	892	..	50,433
XII. Pastoral, Agricultural, etc.	15,060	§	*	*	*	*	..	44,176
XIII. Domestic, Hotels, etc.	5,975	2,499	*	*	1,306	..	..	11,169
XIV. Miscellaneous	45,791	39,568	32,148	15,947	9,299	2,229	*	133,855
Total	243,176	152,063	87,737	51,559	33,761	11,900	‡1,559	581,755

* Not available for publication separately; included in State and Commonwealth totals. † Incomplete, see footnote *. ‡ Membership of Groups II., VII., and XIV. included in the South Australian numbers. § Membership included in total for Group XIV.

Particulars are given in Labour Report No. 9 (pp. 13-14) of the number of male and female members of unions and the percentage of such members on the total number of adult wage earners. Other tables in the same Report shew the classification of unions according to number of members and the number of central labour organisations. Information is also given below as to the development of trade unionism since 1901.

7. Development of Trade Unions in Australia, 1901 to 1918.—The following table shews for the years specified the total number of trade unions in the Commonwealth, and the number and membership of those unions for which returns are available. The estimated total membership of all unions for years prior to 1912 is shewn in the last line:—

NUMBER AND MEMBERSHIP OF TRADE UNIONS IN COMMONWEALTH, 1901 TO 1918.

Particulars.	1901.	1906.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
Total number of unions	198	302	573	621	710	712	713	705	747	767
Number of unions for which membership available	139	253	542	621	710	712	713	705	747	767
Membership of these unions	68,218	147,049	344,999	433,224	497,925	523,271	528,031	546,556	564,187	581,755
Estimated total membership of all unions	97,174	175,529	364,732	..	..	..	..	..	..	..

NOTE.—Particulars for 1907, 1908, 1909, and 1910 are given in Labour Report No. 2, p. 13.

These figures shew that while the number of unions in 1918 was more than double the number in 1906, the estimated membership during the same period increased nearly fourfold. During the last nine years the estimated annual increase in membership was greatest in the year 1912, when it amounted to no less than 68,492, and least in 1915, when it was only 4,760.

8. **Interstate or Federated Unions, 1918.**—The following table gives particulars as to the number and membership of interstate or federated unions in 1918 :—

NUMBER AND MEMBERSHIP OF INTERSTATE OR FEDERATED UNIONS IN THE COMMONWEALTH, 1918.

Particulars.	Unions Operating in—					Total.
	2 States.	3 States.	4 States.	5 States.*	6 States.†	
Number of Unions	14	17	13	18	33	95
Number of Members	14,709	35,885	58,376	95,042	265,135	469,147

* One union in this group has, in addition to branches in each of the five States, a branch in the Northern Territory.

† Three Unions in this Group have, in addition to Branches in each of the six States, a Branch in the Northern Territory.

It appears, therefore, that 95 out of the 394 separate associations and groups of associations in the Commonwealth are organised on an interstate basis. The membership of these 95 unions amounts to 469,147, or no less than 80.6 per cent. on the total membership (581,755) of all unions.

9. **Central Labour Organisations.**—In each of the metropolitan towns, as well as in a number of other industrial centres, delegate organisations, consisting of representatives from a group of trade unions, have been established. Their revenue is raised by means of a per capita tax on the members of each affiliated union. In most of the towns where such central organisations exist, the majority of the local unions are affiliated with the central organisation, which is usually known as the Labour or the Trades Hall Council or the Labour Federation. In Western Australia a unified system of organisation extends over the industrial centres throughout the State. In this State there is a provincial branch of the Australian Labour Federation, having a central council and executive, and metropolitan and branch district councils, to which the local bodies are affiliated. The central council, on which all district councils are represented, meets periodically. In the other five States, however, the organisation is not so close, and though provision usually exists in the rules of the central council at the capital town of each State for the organisation of district councils or for the representation on the central council of the local councils in the smaller industrial centres of the State, the councils in each State are, as a matter of fact, independent bodies.

The table below shews the number of metropolitan and district or local labour councils, together with the number of unions and branches of unions affiliated therewith, in each State at the end of the year 1918 :—

CENTRAL LABOUR ORGANISATIONS.—NUMBER, AND UNIONS AFFILIATED, 1918.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Number of Councils	4	5	5	3	10	1	28
Number of Unions and Branch Unions affiliated	143	188	58	80	159	18	646

The figures given in the preceding table as to number of unions do not necessarily represent separate unions, since the branches of a large union may be affiliated to the local trades councils in the several towns in which they are represented.

Between the trade union and the central organisation of unions may be classed certain State or district councils, organised on trade lines and composed of delegates from separate unions, the interests of the members of which are closely connected by reason of the occupations of their members, such, for example, as delegate councils of bakers, bread carters, and mill employees, or of unions connected directly or indirectly with the iron, steel, or brass trades, or with the building trades.

§ 2. Laws Relating to Conditions of Labour.

1. **Tabular Statement of Statutes affecting Labour.**—The statutes in force at the end of 1918 in the several States of the Commonwealth, which, more or less directly, affect the general conditions of labour, are shewn in the tables on pages 991-2 of Year Book No. 11. The following additions have been made to the Statutes in force therein: in New South Wales an amendment of the Industrial Arbitration Act 1918; in Western Australia an amendment to the Early Closing Act in 1917; and in Tasmania an amended Workmen's Compensation Act 1918.

2. **Provisions and Administration of the Acts.**—For information regarding the benefits sought, and the provisions for the registration, administration, and record-keeping, etc., under these Acts, reference should be made to Year Book No. 9, pp. 949 to 952.

3. **Registered Factories.**—The number of establishments registered under Factories Acts is shewn below:—

FACTORIES REGISTERED UNDER ACTS, 31st DECEMBER, 1917.

State.	Number of Registered Factories.	Numbers Employed.		
		Males.	Females.	Total.
New South Wales	8,099	66,066	29,185	95,251
Victoria	7,772	60,684	36,877	97,561
Queensland*	2,639	21,014	7,939	28,953
South Australia	1,809	12,490	5,334	17,824
Western Australia	1,145	7,904	3,101	11,005
Tasmania†	975	6,553	1,542	8,095
Commonwealth	22,439	174,711	83,978	258,689

* At 31st March, 1918.

† At 30th June, 1918.

4. **Comparative Statement of Factories Law in Australia.**—The tables on pp. 994 to 999 of Year Book No. 11 shew at a glance the chief provisions of the Factories and Shops Acts in the Commonwealth. An amendment to the Early Closing Act in Western Australia was enacted in 1917.

5. **Mining Acts.**—Under the Mining Acts the employment underground of all females and of boys under fourteen years is prohibited. A minimum age, usually seventeen, is fixed for employment as lander or braceman at plats and landing places; no lander, braceman, underground worker, or man in charge of motive power may be employed more than eight hours a day. A large number of scientific provisions for the protection of the lives and health of miners is also inserted in the Acts. Enginedrivers must hold certificates of competency. Persons may be licensed to certify to the condition of boilers. Provision is made to enable injured persons or the relatives of persons killed to recover damages if the injury or death results from a breach of the regulations referred to above. Inspection of mines is fully provided for. Sunday labour is forbidden. In New South Wales and (since 1st February, 1910) Victoria still more advanced mining legislation exists; numerous sections are designed to ensure the well-being of the workers, such as limitation of hours, etc.

6. **Employers' Liability and Workmen's Compensation Acts.**—In each of the States, Acts have been passed allowing compensation to workers who have been killed or injured while engaged in industrial occupations. In the Commonwealth, one Act provides for compensation to all workers employed by the Commonwealth, and another to all seamen working on ships registered in Australia. A conspectus of these Acts is given below.

CONSPECTUS OF WORKMEN'S

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.	SOUTH AUSTRALIA.
<i>Name of Act</i>	Workmen's Compensation Act 1916	Workmen's Compensation Act 1915	The Workers' Compensation Act 1916	The Workmen's Compensation Act 1911 and 1918
<i>Definition of Employer</i>	Includes any body of persons, corporate or incorporate, and the legal representative of a deceased employer.	Includes any body of persons, corporate or incorporate.	Includes persons, firms, companies and corporations employing workers.	Includes any body of persons, corporate or incorporate.
<i>Nature of work to which Act applies.</i>	Any person who is under contract of service or apprenticeship, whether by way of manual labour, clerical work or otherwise.	Manual workers. Other workers with incomes up to £250.	Industrial, commercial, manufacturing, building, agricultural, horticultural, pastoral, mining, quarrying, engineering, or hazardous work.	Manual only, with incomes up to £5 a week.
<i>Workers expressly excluded.</i>	Casuals, persons whose remuneration exceeds £312 per annum.	Workers other than manual earning over £250. Police, outworkers, members of employer's family.	Casuals, police, subscribers to superannuation fund, members of employer's family.	Persons earning over £5 a week. Outworkers, members of employer's family, seamen whose injury occurs outside jurisdiction, agricultural, horticultural, viticultural, dairying or pastoral workers where machinery is not used, clerks, domestic servants.
<i>Employer not liable to pay compensation for</i>	Injury disabling for less than one week.	Injury incapacitating for less than a week.	Injury incapacitating for less than three days.	First week of injury if disabled for less than two weeks.
<i>In event of insolvency maximum amount of compensation admitted as first charge on assets per individual.</i>	£200.	£200.	Insurance compulsory in State Accident Insurance Fund.	£100.
<i>Compensation in case of Death.</i> If dependents left	3 years' earnings, or £300, whichever larger; maximum, £500.	3 years' earnings, or £200, whichever is the larger; maximum, £500.	3 years' earnings, or £300, whichever larger; maximum, £600.	4 years' earnings, or £200, whichever larger; maximum, £300.
If no dependents, maximum amount for medical attendance and funeral expenses.	£20.	£50.	£50.	£20.
<i>Compensation in case of Incapacity.</i> Weekly payment	Half average weekly earnings; maximum, £2.	Half average weekly earnings; maximum, 30s.	Half average weekly earnings; maximum, £2, minimum, £1.	Half average weekly earnings; maximum, single man 30s., married man £2.
Maximum total liability	£750.	£500.	£750.	£400.
<i>Compensation for Workers over 60 years of age who have entered into an agreement.</i> Death, with dependents—Minimum	..	£50.	..	£50.
Incapacity—Minimum weekly payment	..	5s., or quarter of weekly earnings, whichever larger.	..	5s.
Maximum total liability	..	£50.	..	£50.

COMPENSATION ACTS IN AUSTRALIA.

WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH. (Employees.)	COMMONWEALTH. (Seamen.)
Workers' Compensation Act 1912.	The Workers' Compensation Act 1918.	Commonwealth Workmen's Compensation Act 1912.	Seamen's Compensation Act 1911.
Same as South Australia.	Same as South Australia.	The Commonwealth.	Same as South Australia.
Manual, clerical, or otherwise with income up to £300 a year.	Work under contract of service or apprenticeship by way of manual labour, clerical work, or otherwise, on land or water.	Manual, clerical, or otherwise.	Navigation or working of ships registered in Australia. Seamen shipped under Articles of Agreement in Australia while under Commonwealth law included.
Persons whose remuneration exceeds £300 a year. Casuals, police, outworkers, members of employer's family.	Casuals, outworkers, police force, domestic servants under 16 years and not working 8 hours per day, and persons whose weekly earnings do not exceed £4.	Persons not employed in manual labour earning over £500 a year. Outworkers, naval and military forces on active service.	Seamen on vessels ordinarily propelled by oars, and those in naval or military service.
Same as South Australia.	Injury incapacitating for less than three days.	..	Same as South Australia.
£150.	£100.	..	Full amount.
3 years' earnings, or £300, whichever larger; maximum, £400.	3 years' earnings, or £200, whichever larger; maximum, £400.	3 years' earnings, or £200, whichever larger; maximum, £500.	3 years' earnings, or £200, whichever larger; maximum, £500.
£100.	£30.	£30.	£30.
Medical attendance up to £1. Half average weekly earnings; maximum, £2.	Half average weekly earnings; maximum, £2, minimum, £1.	Half average weekly earnings; maximum, £2.	Half average weekly earnings; maximum, 30s.
£400.	£500.	..	..
£100.	£100.	..	(If seamen entitled to Commonwealth Old-age pension, amount of compensation and pension together not to exceed 30s. weekly.)
10s.	20s.	..	
£100.	£100.	..	

CONSPECTUS OF WORKMEN'S

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.	SOUTH AUSTRALIA.
<i>Compensation for in-firm workers who have entered into an agreement.</i>				
Death, Minimum payment .. ..	..	£50.	..	£50.
Incapacity—Minimum weekly payment ..	..	5s., or quarter of weekly earnings, whichever larger.	..	5s.
Maximum total liability .. ..	..	£50.	..	£50.
<i>Compensation for workers under 21 years of age earning less than 20s. weekly.</i>				
Weekly payment ..	Average weekly earnings; maximum, 15s.	Average weekly earnings; maximum, 10s.	..	Average weekly earnings; maximum, 10s.
<i>Waiting time</i> ..	None.	One week.	Three days. Compensation from date of accident if incapacity lasts over three days.	One week. No compensation for first week unless incapacity lasts two weeks.
<i>Period after which lump sum can be substituted for weekly payment.</i>	Six months.	Six months.	Any time.	Six months.
<i>Tribunal, if claim not settled by agreement.</i>	Committee representative of employer and his workmen, if existing, or arbitration, or Judge of District Court.	Judge of County Court or Police Magistrate.	Insurance Commissioner, Industrial Referee, Supreme Court.	Arbitrator. If arbitrator not agreed on within one month, special Magistrate. Appeals to Supreme Court.
<i>Regulations for worker leaving the State in which he was injured.</i>	If permanent incapacity likely, quarterly substituted for weekly payments in case of worker ceasing to reside in the State.	Same as South Australia.	If permanent incapacity proved, 156 times weekly payments substituted for weekly payments in case of worker leaving Commonwealth.	If permanent incapacity likely, quarterly substituted for weekly payments in case of worker leaving State.
<i>Proceedings for compensation not maintainable unless commenced within</i>	Six months.	Six months.	Six months.	Six months.

7. *Other Acts.*—Other legislation regulating conditions of labour has been enacted by the States. The British *Conspiracy and Protection of Property Act* (38 and 39 Vic., c. 86) has been adopted in all the States except New South Wales and Queensland. Servants' registry offices are placed under administrative control, and the rates of commission chargeable are fixed by regulation. Power is given to workmen to attach moneys due to a contractor who employs them, in order to satisfy a claim for wages, such wages being made a first charge on moneys due to a contractor. Workmen are given a lien for wages over material whereon they are working, even if it becomes part of other property. This is in addition to the common law lien, which ceases when possession of the property is parted with. Workmen's wages are protected from attachment. In Victoria, provision is made for the compulsory resumption of suburban lands to provide workmen's homes.

COMPENSATION ACTS IN AUSTRALIA—*continued.*

WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH. (Employees).	COMMONWEALTH. (Seamen).
£100.	£50, or 39 times average weekly earnings, whichever larger.	..	..
10s.	10s., or quarter of weekly earnings, whichever larger.	..	..
£100.	£100.	..	..
Average weekly earnings; maximum, 20s.	Average weekly earnings, maximum, £1.	Same as New South Wales.	Same as New South Wales.
Same as South Australia.	None.	None.	One week. No compensation for first week unless incapacity lasts two weeks.
Six months.	Two months.	Six months.	Six months.
Local Court.	Commissioner (under Local Courts Act 1896) in Court of Requests.	Arbitrator or County Court.	Arbitrator or County Court
Weekly payments continue in case of worker leaving State.	Same as South Australia.	If permanent incapacity likely, quarterly substituted for weekly payments in case of worker leaving Australia.	If permanent incapacity likely, quarterly substituted for weekly payments in case of worker leaving Australia.
Six months.	Six months.	Six months.	Six months, or 18 months if ship lost at sea.

8. **General Results of Industrial Legislation.**—The results of the legislation described must be sought in the Reports of the Inspectors of Factories of the several States. Generally speaking, the perusal of these reports and of the reports of Royal Commissions which have inquired into the working of the Acts, affords satisfactory evidence that the Acts have, on the whole, effected their objects.

§ 3. Legislative Regulation of Wages and Terms of Contract.

1. **General.**—Two systems, based upon different principles, exist in Australia for the regulation of wages and general terms of contracts of employment. A "Wages Board" system exists in Victoria and Tasmania, and an Industrial Arbitration Court in Western

Australia. In the industrial legislation of New South Wales, Queensland, and South Australia, both systems are embodied, Industrial or Wages Boards, as well as Industrial Courts, being instituted. In Victoria, Wages Boards' decisions may be reviewed by the Court of Industrial Appeals. In New South Wales, Industrial Arbitration Acts of 1901 and 1905 instituted an Arbitration Court. This court expired on 30th June, 1908, having delivered its last judgment on the previous day. Wages Boards were substituted under the Industrial Disputes Act 1908, and subsequent years; while the Act of 1912 introduced the mixed system. The Industrial Arbitration (Amendment) Act, assented to on 22nd March, 1918, amends the law for the regulation of the conditions of industries and industrial arbitration. The Act provides for the establishment of a Board of Trade and of special and deputy Courts of Industrial Arbitration, and also for the appointment of Industrial Boards on the recommendation of the Court. There is also the Arbitration Court of the Commonwealth, which has power, however, to deal only with matters extending beyond the limits of a single State.

The chief aims of the Wages Board system are to regulate hours, wages, and conditions of labour and employment, by the determination of a Board usually brought into existence for any specified industry or group of industries by petition or application. Under the Industrial Arbitration Court system an industry does not technically come under review until a dispute has actually arisen. Most of the Acts, however, have given the President of the Court power to summon a compulsory conference. In Victoria, where the Wages Board system is in force, there is no provision against strikes, but in Tasmania, where that system has also been adopted, penalties are provided for a lock-out or strike on account of any matter in respect of which a Board has made a determination.

TRIBUNALS FOR THE REGULATION OF

<i>Particulars.</i>	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>Name of Acts</i>	Industrial Arbitration Acts 1912, 1916, 1918	Factories and Shops Act 1915	Industrial Arbitration Act 1916
<i>Nature of Tribunals</i>	Court of Industrial Arbitration. Industrial Boards. Board of Trade	Court of Industrial Appeals. Wages Boards	Industrial Court. Industrial Boards
<i>How the Tribunals are brought into existence</i>	Industrial Court (Judge) constituted by Act. Industrial Boards by the Minister on recommendation of Industrial Court. Board of Trade constituted by Act	Court constituted by Act. Wages Boards by Governor-in-Council on resolution of Parliament	Industrial Court constituted by the Act. Industrial Boards by Minister on recommendation of Court
<i>Scope of Acts</i>	To industrial groups named in Schedule to Act, and those added by Proclamation. Includes Government servants. Board of Trade declarations re living wage, apprenticeship, etc.	To any process, trade, business, or occupation specified in a resolution. Government servants are not included	To all callings and all persons (including Government servants) except (1) State children; (2) domestic servants; (3) persons engaged in farming operations on dairy, fruit and agricultural farms

Particulars were given as to the historical development, mode of constitution and general provisions of Wages Boards and Arbitration Courts in Year Book No. 9, pages 960 to 966. These refer to the regulation of wages and working conditions, and the prevention and settlement of industrial disputes.

2. **Comparative Statement of Tribunals for Regulating Wages in Australia.**—The table on pages 990 to 993 shews at a glance the Acts which operate in fixing wages, the constitution and function of tribunals enacted under them, and the effect and extent of the tribunal's decisions. It will be seen that in all the States there is machinery for the regulation of wages.

3. **Movement Towards Uniformity.**—The wide difference between the development in the several States of the Commonwealth of the regulation by State institutions of the remuneration and conditions of the workers has given rise to a desire on the part of the Commonwealth Government to secure uniformity throughout Australia by any suitable and constitutional action on the part of the Commonwealth. The provisions of States' wages laws vary considerably. In New South Wales, Victoria, and Western Australia considerable experience has been gained of their working. The system is newer in South Australia, Queensland, and Tasmania. The desirability for uniformity has, as already mentioned, been recognised by the New South Wales Arbitration Court, which refused the Bootmakers' Union an award which would increase the wages of its members to amounts exceeding those paid in Victoria in the same trade, the express ground of the refusal being that New South Wales manufacturers would be handicapped by the payment of a higher rate of wage than that prevailing in Victoria.

WAGES IN TRADES IN AUSTRALIA, 1918.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH.
The Factories Acts 1907, 1908, 1910 and 1915. Industrial Arbitration Act 1912. Industrial Arbitration Act Amendment Acts 1915 and 1916	Industrial Arbitration Act 1912	Wages Boards Acts 1910, 1911, 1913, and 1917	Conciliation and Arbitration Act 1904-18. Arbitration (Public Service) Act 1911
Industrial Court. Wages Boards	Arbitration Court	Wages Boards	Court of Conciliation and Arbitration
Court constituted by Act of 1912. Wages Boards by the Governor-in-Council, pursuant to resolutions of Parliament	Constituted by the Act	By Governor-in-Council pursuant to resolutions of Parliament	Court of Record constituted by the Act
To processes, trades, etc., specified in Act, and such others as may be authorised by Parliament	All industrial occupations other than domestic service	To clothing and apparel trades and any other trades or groups or parts	Industrial disputes extending beyond limits of any one State or in Federal Capital or Northern Territories

TRIBUNALS FOR THE REGULATION OF

<i>Particulars.</i>	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>How a trade is brought under review</i>	Reference by Court or Minister, or by application to the Board by employers (having not less than 20 employees) or industrial unions	Usually by petition to Minister	Upon reference by an industrial union or employer, or any twenty employees in any calling, or the Minister, or of the Court
<i>President or Chairman of Tribunal</i>	Industrial Boards—Appointed by Minister on recommendation of Court. Board of Trade—Appointed by the Governor-in-Council	Appointed by Governor-in-Council on nomination of Board, or failing that on nomination by Minister	Appointed by Board, or failing such, by the Minister
<i>Number of Members of Tribunal</i>	Industrial Boards—Chairman and 2 or 4 other members. Board of Trade—President, Deputy-President, 4 commissioners and 1 or more for rural industries	Not exceeding 11 (including chairman)	Industrial Court, not exceeding 3, including president. Industrial Boards, 2 or 4 in addition to chairman
<i>How ordinary members are appointed</i>	Industrial Boards—Appointed by Minister on recommendation of Industrial Court. Board of Trade—By Governor-in-Council	Nominated by Minister. But if one-fifth of employers or employees object, representatives are elected by them	Members of Industrial Court by Governor-in-Council. Members of Industrial Boards by Minister on nomination by employers and employees respectively, and on the recommendation of the Court
<i>Decisions—how enforced</i>	By Registrar and Industrial Magistrate	By Factories Department in Courts of Petty Sessions before Police Magistrates	By Industrial Court on application of any party to the award or agreement, or of Registrar, or Industrial Inspector
<i>Duration of decision</i>	For period fixed by Tribunal, but not more than 3 years, and after such period until varied or rescinded	Until altered by Board or Court of Industrial Appeals	12 months and thereafter, unless sooner rescinded or varied
<i>Appeal against decision</i>	To Industrial Court against decision of Boards	To the Court of Industrial Appeals	To Industrial Court against decision of Boards. Case may be stated for opinion of Full Bench
<i>Is suspension of decision possible pending appeal?</i>	No; except by temporary variation of award by the Court	Yes; for not more than 12 months	Yes, if Court so orders
<i>Can Preference to Unionists be declared?</i>	Yes	No	Yes
<i>Provision against strikes and lock-outs</i>	Fourteen days' notice of intention must be given. Secret ballot, two-thirds of members must vote. Penalty for illegal strike, £500; for lock-out, £1,000	Determination may be suspended by Governor-in-Council for any period not exceeding 12 months	Provision made for taking ballot; majority must vote in favour of strike or lock-out. Penalties for strikes or lock-outs, employer or industrial union, £100; other cases, £10
<i>Special provisions for Conciliation</i>	Special Commissioner. Conciliation Committees for colliery and other districts. Registered agreements	None	Compulsory Conference. Registered agreements

WAGES IN TRADES IN AUSTRALIA, 1918—*continued.*

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH.
Court—matters or disputes submitted by Minister, Registrar, employers or employees, or by report of Wages Board. Wages Boards by petitions, etc.	Industrial disputes referred by President or by an Industrial Union or Association	Usually by petition to Minister	Industrial disputes either certified by Registrar, submitted by organisation, referred by a State Industrial authority or by President after holding abortive Compulsory Conference
Court — President. Wages Board, appointed by Governor on nomination of Board, or failing nomination, a Stipendiary Magistrate	A Judge of the Supreme Court	A Police Magistrate appointed by the Governor	President
Court — President. Provision made for appointment of Deputy-President. Wages Board, not less than 5 nor more than 11 (inclusive of chairman)	Three, including President	Chairman, and not less than 4 nor more than 10	President. Provision is made for appointment of Deputy-President
By Governor on nomination of employers and employees respectively	Appointed by Governor, President directly, and one each on recommendation of unions of employers and workers respectively	By Governor - in - Council on nomination by employers and employees	President appointed by Governor-General from Justices of High Court for a term of 7 years. Deputy-President appointed by Governor-General from Justices of High Court or Judges of Supreme Court of a State
By Factories Department	By Arbitration Court on complaint of any party to the award or Registrar or an Industrial Inspector	By Chief Inspector under Factories Act with consent of the Minister	By proceedings instituted by Registrar, or by any organisation affected, or a member thereof
Until altered by Board or by order of Industrial Court	For period fixed by Court, not exceeding 3 years, or for 1 year and thenceforward from year to year until 30 days' notice given	Until altered by Board	For period fixed by award, not exceeding 5 years
Industrial Court	No appeal except against imprisonment or a fine exceeding £20	To Supreme Court against validity of determination only	No appeal. Case may be stated by President for opinion of High Court
Yes	No suspension. Court has power to revise an award after the expiration of 12 months from its date	Yes	No appeal
No	No	No	Yes; ordinarily optional, but mandatory if in opinion of Court preference is necessary for maintenance of industrial peace or welfare of society
Penalty £500, or imprisonment for 3 months	Employer or Industrial Union, £100; other cases, £10	Organisations, £500; individuals, £20	Penalty, £1,000
Compulsory Conference. Registered agreements	Compulsory Conference. Registered agreements	None	Compulsory Conference. Court may temporarily refer to Conciliation Committee. Registered agreements

4. **Constitution Alteration Proposals.**—Two proposed laws for the alteration of the constitutional powers of the Commonwealth in regard to industries and businesses were submitted to the people for acceptance or rejection on the 26th April, 1911. The first law proposed to amend section 51 of the Constitution Act (see p. 21 hereinbefore) so as to give the Commonwealth Government increased powers to deal with (a) trade and commerce, (b) corporations, (c) industrial matters, and (d) trusts and monopolies. The second law proposed to insert, after section 51 of the Constitution Act, a section empowering the Commonwealth Government to make laws with respect to monopolies. Neither of the proposals was approved by the people. Fuller particulars are given on page 922 of Year Book No. 11. At the general elections, held on the 31st May, 1913, these and other matters were again submitted by referendum and again rejected.

§ 4. Operations under Wages Board and Industrial Arbitration Acts.

1. **General.**—Particulars regarding operations under the Commonwealth Arbitration Acts and the various State Acts for the regulation of wages, hours, and conditions of labour, shewing the number of boards authorised and constituted, and which had or which had not made any award or determination in each State; the number and territorial scope of awards or determinations, and the number of industrial agreements in force, were first compiled to the 31st December, 1913.*

These particulars have from time to time been revised, and reviews to the end of approximately quarterly periods have been published in the periodical Labour Bulletins to the 30th June, 1917, and thereafter in the Quarterly Summaries to the 31st December, 1918. Information has also been compiled and included in the later issues of the Labour Bulletin and Quarterly Summary respecting the estimated number of work-people affected by awards or determinations and industrial agreements in each State. In addition, a brief quarterly epitome has been given of the number of awards and determinations made and industrial agreements filed under the Act in force in each State and the Commonwealth Conciliation and Arbitration and the Commonwealth (Public Service) Arbitration Acts. The following tabular statement gives particulars of the operations in each State and under the Commonwealth Statutes during each quarter of the years 1917 and 1918 respectively :—

AWARDS AND DETERMINATIONS MADE AND INDUSTRIAL AGREEMENTS FILED IN EACH QUARTER OF 1917 AND 1918.

State and Commonwealth.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Full Year.	
	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.
1917.										
New South Wales	35	14	23	11	31	7	19	11	108	43
Victoria ..	18	..	19	..	22	..	6	..	65	..
Queensland ..	15	3	6	12	21	16	21	11	63	42
South Australia	13	..	11	..	11	1	4	2	39	3
Western Australia	..	1	2	11	..	8	2	8	4	28
Tasmania ..	1	..	..	..	3	..	3	..	7	..
Commonwealth ..	1	65†	10	5	12	9	10	56	33	135
Total ..	83	83	71	39	100	41	65	88	319	251

* Information as to the main provisions of the various Acts in force was given in the Official Year Book No. 11, pp. 1004 and 1005. † Including 55 separate agreements made between the Australian Saddlery and Leather Workers' Trades Employees' Federation, and various employers.

AWARDS AND DETERMINATIONS MADE AND INDUSTRIAL AGREEMENTS FILED IN EACH QUARTER OF 1917 AND 1918—*continued.*

State and Commonwealth.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Full Year.	
	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.
1918.										
New South Wales	18	8	25	5	21	14	33	12	97	39
Victoria ..	13	..	12	..	20	..	31	..	76	..
Queensland ..	9	12	35	24	26	19	55	6	125	61
South Australia	3	2	2	5	7	2	17	1	29	10
Western Australia	4	7	1	3	3	9	1	7	9	26
Tasmania ..	2	..	3	..	6	..	4	..	15	..
Commonwealth	3	5	5	6	4	151*	10	51†	22	213
Total ..	52	34	83	43	87	195	151	77	373	349

* Including 140 separate agreements made between the Federated Engine-Drivers and Firemen's Association and various employers. † Including 37 separate agreements made between the Federated Coopers' Association and various employers.

Owing to the prevailing drought conditions and the advent of war during the year 1914, varying restrictive measures were introduced either for the suspension or curtailment of the operations of industrial tribunals in each of the States. During the second quarter of 1915 these restrictions were somewhat relaxed in New South Wales and Queensland, and early in the third quarter operations gradually assumed normal conditions in all the States. During the third and fourth quarters of 1915 greater activity was evidenced in each State, and this activity continued during the years 1916, 1917, and 1918. The number of awards and determinations (373) made by the Commonwealth Conciliation and Arbitration Court, the State Industrial Courts and Wages Boards, during the year 1918, was higher than the number made during the previous twelve months, when 319 awards and determinations were issued. The number of industrial agreements entered into during 1918 was 349, as compared with 251 during the year 1917. The number of awards issued by the Commonwealth Conciliation and Arbitration Court was 22, as compared with 33 during the previous year. The number of industrial agreements filed under the provisions of the Commonwealth Act shewed a large increase in comparison with the number filed during the previous year, the number filed during 1918 being 213, as against 135 during the year 1917.

2. Boards Authorised, and Awards, Determinations, and Agreements in Force.—In the following table particulars are given for all States, excepting Western Australia, of the number of Boards authorised and constituted, and including operations under the

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Commonwealth and the Western Australian Arbitration Acts, of the number of awards, determinations, and industrial agreements in force in all States at the 31st December, 1913 and 1914, and at quarterly intervals during the succeeding four years :—

PARTICULARS OF BOARDS AND OF AWARDS, DETERMINATIONS, AND INDUSTRIAL AGREEMENTS IN FORCE AT 31st DECEMBER, 1913 AND 1914, AND AT QUARTERLY INTERVALS TO 31st DECEMBER, 1918.*

Dates.	Boards Autho- rised.	Boards Con- stituted.	Boards which had made Awards or Deter- minations.	Awards or Deter- minations in Force.†	Industrial Agree- ments in Force.
31st December, 1913	504	501	387||	575§	401
31st December, 1914	553	544	478	576‡	369
31st March, 1915	560	551	486	589‡	371
30th June, 1915	568	557	495	638	481
30th September, 1915	582	570	495	644	498
31st December, 1915	573¶	554¶	498	663	546
31st March, 1916	580	558	495	651	553
30th June, 1916	589	571	512	678	581
30th September, 1916	591	573	519	683	596
31st December, 1916	594	572	525	706	609
31st March, 1917	475**	470**	529	722	666
30th June, 1917	476	471	530	714	663
30th September, 1917	478	473	441††	734	666
31st December, 1917	478	473	442	744	732
31st March, 1918	478	473	444	767	722
30th June, 1918	478	473	445	799	722
30th September, 1918	480	475	445	843	812
31st December, 1918	267‡‡	260‡‡	445	866	833

* Details for each quarter have already been published in Labour Bulletins, in Labour Reports Nos. 5 to 9, and in Quarterly Summaries. † Including awards made by Arbitration Courts. ‡ Owing to certain restrictions being imposed on the operations of Industrial Boards in each State, a number of awards which expired in New South Wales during these periods were not immediately reviewed § Excluding awards or determinations which expired in New South Wales (under the Act of 1908) on 31st December, 1913. || Owing to a number of awards made under the New South Wales Industrial Disputes Act (1908) being still in force, the Boards constituted for such industries under the Industrial Arbitration Act (1912) had not made any awards. ¶ See remarks with respect to re-authorisation of Boards in New South Wales Labour Bulletin No. 12, p. 47. ** Reduction in the number of Boards authorised and constituted is due to the dissolution of all Boards appointed under the Queensland Industrial Peace Act 1912. †† Exclusive of Queensland Boards appointed under the Industrial Peace Act 1912. The work of these Boards is now undertaken by the Court of Arbitration constituted under the Industrial Arbitration Act of 1916. ‡‡ On the 13th December, 1918, an order was made by the New South Wales Court of Industrial Arbitration recommending the reconstitution of 220 Industrial Boards which had expired by effluxion of time, and on the 19th February, 1919, such Boards were constituted.

It will be observed from the particulars set out in the above table that considerable expansion of the principle of the fixation of a legal minimum rate of wage and of working conditions took place during the five years ending 31st December, 1918. At the end of 1918, 291 additional awards or determinations were in force in the Commonwealth. The number of industrial agreements* made and in force under the various Acts increased during the five years under review by 432.

* The registration of industrial agreements is not provided for under the Acts in force in Victoria and Tasmania, but such agreements may be registered and filed under the provisions of the Commonwealth Conciliation and Arbitration Act to operate in any or in all States.

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In the following table particulars are given for each State and the Commonwealth of the number of Boards authorised, etc., at the 31st December of the years 1913 to 1918 inclusive :—

BOARDS AUTHORISED AND CONSTITUTED, AWARDS, DETERMINATIONS AND AGREEMENTS IN FORCE AT 31st DECEMBER IN EACH OF THE YEARS 1913 TO 1918.

Particulars.	At 31st Dec.	C'with.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
<i>Boards Authorised, etc.*—</i>									
Boards authorised	1913	..	216†	135	75	56	..	23	505
	1914	..	230†	139	101	56	..	27	553
	1915	..	226	147	112	56	..	32	573
	1916	..	254	147	122	57	..	34	594
	1917	..	237	149	2§	57	..	33	478
	1918	..	17‡	153	2§	58	..	37	267‡
Boards constituted	1913	..	223†	132†	74	51	..	21	501
	1914	..	238†	135†	94	51	..	26	544
	1915	..	226	142†	104	51	..	31	554
	1916	..	234	143†	111	51	..	33	572
	1917	..	237	147†	2§	55	..	32	473§
	1918	..	17‡	149	2§	56	..	36	260‡
Boards which have made Awards or Determinations	1913	..	123	123	74	47	..	19	386
	1914	..	186	130	92	47	..	23	478
	1915	..	196	133	96	47	..	26	498
	1916	..	211	137	97	49	..	31	525
	1917	..	219	140	1§	50	..	32	442§
1918	..	219	142	2§	50	..	32	445	
<i>Awards and Determinations—</i>									
Awards and Determinations in force	1913	17	265||	127	73	54	18	21	575
	1914	18	242	133	89	55	46	26	609
	1915	20	261	137	103	56	57	29	663
	1916	30	258	141	120	62	64	31	706
	1917	64	251	145	125	71	56	32	744
1918	85	234	147	184	80	54	32	866	
<i>State Awards and Determinations—</i>									
Applying to whole State	1913	..	32	8	3	..	..	15	58
	1914	..	17	10	4	..	..	19	50
	1915	..	26	12	7	..	..	20	65
	1916	..	8	12	8	..	..	21	49
	1917	..	17	16	14	..	..	25	72
	1918	..	24	16	23	..	5	26	94
Applying to Metropolitan area	1913	..	58	..	28	53	13	1	153
	1914	..	63	..	30	54	25	1	173
	1915	..	75	..	30	54	32	1	192
	1916	..	74	1	33	58	37	2	205
	1917	..	80	1	31	62	30	1	205
	1918	..	86	1	46.	66	32	..	231
Applying to Metropolitan and Country areas	1913	..	49	105	1	..	1	5	161
	1914	..	41	109	12	..	5	6	172
	1915	..	38	111	17	..	7	8	181
	1916	..	49	114	20	..	7	8	198
	1917	..	89	118	26	2	5	6	246
	1918	..	108	120	39	4	3	6	280
Applying to Country areas	1913	..	126	14	41	1	4	..	186
	1914	..	121	14	43	1	16	..	195
	1915	..	122	14	49	2	18	..	205
	1916	..	127	14	59	4	20	..	224
	1917	..	65	19	54	7	21	..	157
1918	..	66	10	76	10	14	..	176	
<i>Commonwealth Awards—</i>									
Awards in force in each State	1913	..	13	17	15	16	9	13	..
	1914	..	16	17	15	15	8	12	..
	1915	..	17	19	15	16	10	14	..
	1916	..	25	25	18	22	13	18	..
	1917	..	41	41	30	37	25	34	..
1918	..	63	62	48	57	41	51	..	

NOTE.—For continuation of table see next page.

* The figures for New South Wales are exclusive of Demarcation Boards. † Including Boards which were subsequently dissolved, owing to alteration in the sectional arrangement of industries and callings. ‡ Including one Board subsequently superseded by three Boards. § In pursuance of the provisions of the Industrial Arbitration Act of 1916, all Industrial Boards appointed under the Industrial Peace Act of 1912 were dissolved on the 12th January, 1917, with the exception of those Boards which had matters pending or partly heard. At the 31st December, 1917, these Boards had also been dissolved. The work of the Boards appointed under the old Act is being undertaken by a Court of Arbitration constituted under the new Act. || Omitting a number of awards which expired on the 31st December, 1913. ¶ On the 13th December, 1918, an order was made by the New South Wales Court of Industrial Arbitration recommending the reconstitution of 220 Industrial Boards which had expired by effluxion of time, and on the 19th February, 1919, such Boards were constituted.

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BOARDS AUTHORISED AND CONSTITUTED, AWARDS, DETERMINATIONS, AND AGREEMENTS IN FORCE AT 31st DECEMBER, 1913 TO 1918—*continued.*

Particulars.	At 31st Dec.	C'wth.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
<i>Industrial Agreements—</i>									
In force	1913	228	75	..	5	11	82	..	401
	1914	179	78	..	10	17	85	..	369
	1915	361	73	..	15	16	83	..	548
	1916	374	85	..	49	18	83	..	609
	1917	465	82	..	75	18	92	..	732
	1918	569	79	..	71	26	88	..	833
Commonwealth Agreements in force in each State	1913	..	132	129	68	62	57	61	..
	1914	..	96	76	28	34	29	30	..
	1915	..	119	229	29	36	30	33	..
	1916	..	125	236	32	40	37	39	..
	1917	..	137	281	43	50	36	37	..
1918	..	145	359	74	93	54	54	..	
Number of Persons working under State Awards and Determinations (estimated) ..	1918	..	260,000	150,000	90,000	25,000	32,000	12,000	569,000

From the particulars set out in the above table, ready comparison can be made with respect to the progress in each of the States during the years 1913 to 1918 as to the number of Boards operating, and the number of awards and determinations and industrial agreements in force at the end of each annual period.

SECTION XXVIII.

DEFENCE.

§ 1. Military Defence.

1. **Development of State Military Systems.**—Prior to 1870, the main defence of Australia was entrusted to small garrisons of British troops quartered in the leading cities, whose primary purpose was to serve as a convict guard. From time to time, rumours of wars and of attacks upon Australia, deemed imminent as a result of European entanglements, caused the raising of local companies and batteries, which were generally disbanded upon the cessation of hostilities or the quietening of the rumours. The first of such bodies was the "Loyal Association" formed in 1801 as a volunteer corps, on account of the Napoleonic wars, and at the express invitation of the Governor. Half a century later, and at other later dates, fear of Russian aggression induced the people to take measures for self-defence. Efforts to permanently establish a defence force, however, failed until 1870. In that year, the withdrawal of the last Imperial regiment from Australia, and the sense of insecurity which the Continental wars had engendered, resulted in a definite basis for defence being settled. Small detachments of permanent soldiery were established to act chiefly as a nucleus about which the citizen soldiery should be shaped, and, generally, to look after the forts and defence works, which were then in course of erection. The system rested upon a volunteer basis, training and service being freely and enthusiastically given by the citizens, the Governments supplying arms and accoutrements and sometimes uniforms. Reward for five years' service frequently took the shape of grants of land. About 1880, Imperial experts advised that the purely volunteer system should be replaced by a "militia" or partially-paid system. The provision of a small annual allowance, generally £10 or £12 per annum for the gunner or private, with a sliding scale for higher ranks, together with arms, accoutrements, ammunition, and all military necessaries free, enabled the "militia" system to be introduced about 1883-4. The expenditure was thereby increased, but it was held that the efficiency was greatly enhanced. With reductions in the rates of pay the system remained till the introduction of compulsory military training. The permanent forces were from time to time augmented. Cadet corps were also instituted in the larger schools. A detailed historical account of the Australian defence forces prior to federation will be found in the Official Year Book No. 2, pp. 1075-1080.

The strength of the military forces of the several States prior to federation was generally nearly up to establishments. On 31st December, 1900 (the eve of federation), it was:—New South Wales, 9,338; Victoria, 6,335; Queensland, 4,028; South Australia, 2,932; Western Australia, 2,696; Tasmania, 2,024; total for Commonwealth, 27,353. Cadets, reservists, and rifle club members are excluded.

2. **Development of Commonwealth System.**—Under the terms of the Constitution Act 1900, the Commonwealth took over control of defence matters in March, 1901. For four years from that date the land forces were administered by a general officer commanding, under the ministerial headship of the Minister for Defence.

Early in 1905, a Council of Defence (since enlarged) was constituted to deal with questions of policy; also a Military Board, in lieu of the general officer commanding, to supervise the administration of the forces. The principal aims in view were:—(i) Continuity of policy and administrative methods; (ii) effectual parliamentary responsibility; (iii) continuous inspection by an independent officer, the Inspector-General; (iv) development of an efficient citizen force; (v) decentralisation of authority by developing the independence of district commands. The Commonwealth has been divided into six military districts, roughly continuous with boundaries of the States.

The citizen soldiery, or militia, makes up the main portion of the land forces of the Commonwealth. For administration at central and district headquarters, and for instruction of the citizen forces and assistance in the administration of units, there is an administrative and instructional staff of professional soldiers. Other permanent troops are the regiment of Royal Australian Garrison Artillery, which provides the garrison (with citizen troops as reliefs) for strategic positions and defended ports, and maintains the forts and armament in connection with them; three batteries of Royal Australian Field Artillery; the Royal Australian Engineers; and small detachments of Army Service, Medical, Veterinary, and Ordnance Corps. These form a nucleus, each in its own arm, for instruction and administration of the citizen forces. In addition to the active forces, officers who have retired after having passed through a course of training, and members of rifle clubs, who each year fire a prescribed musketry course, are classed as reserves.

The mobile field force, which absorbs the great bulk of the citizen army, consists of two light horse divisions, and six divisions, besides two regiments of light horse, two field artillery brigades and two infantry brigades, four companies of engineers, two companies of army service corps and three field ambulances which are not allotted in divisional organisation. The garrison troops find the necessary garrisons for the defended ports. Fuller particulars regarding administration and organisation will be found in Official Year Book No. 6, page 1046.

3. The Present Military System.—The defence of Australia at the present time is enacted and prescribed by the Defence Acts 1903–1918 of the Federal Parliament. The provisions of the Acts of 1903, 1904, and the regulations under them contain the main working principles of Australian defence, the necessary expansion being provided for in the amendments of 1909, 1910, 1911, 1912, 1914, 1915, 1917, and 1918. The main provisions of the Acts up to 1912 inclusive will be found in Official Year Book No. 6, pp. 1050 *et seq.* The principal provision of the Act of 1909 is the enactment of compulsory military or naval training, with regulations for registration, enrolments, and exemption. Statutes were passed subsequently, extending or modifying the legislative provisions, removing obstacles and difficulties, and, where necessary, providing machinery.

Owing to experience gained during the progress of the present war, many deficiencies and defects were discovered in the Defence Act 1903–15, and in order to adjust these matters, and to embody further provisions necessary in view of the emergencies arising out of a state of war, further legislation was passed in 1917. The principal features of this amending Act were as follows:—(a) Delegation by Governor-General of power to appoint or promote officers; (b) provision for maintenance of additional permanent forces in time of war; (c) validation of irregular appointments and enlistments; (d) amendment of definition of "active service"; (e) application of the Army Act to Australian troops; (f) powers in relation to courts martial and laws applicable thereto; (g) medals and decorations. Further amendments of a minor character were enacted in 1918.

(i) *Peculiar Position of Australia.* The Acts of 1909 and later years were the direct outcome of the feeling existing in a large majority of the citizens of the community, that Australia was insecure under the voluntary system. Recently, a Minister of State for Defence referred to the fact that if on a map of the world all the countries stained with blood were to be marked, Australia would be the only white spot. It is the national policy to effect a guarantee, by thorough preparation for war, that this exemption shall continue.

(ii) *Military Population.* In connection with the numbers available, the figures of male population are of interest. The total number at cadet age, *i.e.*, between 12 and 18, at the Census of 1911 (3rd April) was about 260,000; at citizen soldier age, *i.e.*, between 18 and 26, 366,000; these latter, with 330,000 at ages between 26 and 35, give 696,000 as the total males at the best period for military service. In addition, there were about 614,000 between 35 and 60.

(iii) *Record for Anthropometric Purposes.* In connection with the medical inspection it has been arranged that the colour and character of hair, and the colour of eyes of those examined, shall be recorded for statistical purposes.

A systematic record of height, weight and chest measurement of each trainee is also made.

It is possible that later the recommendations of the British Anthropometric Committee will be adopted.

The object of the investigation is to study the development of the Australian nation, the necessary statistic for military identification purposes affording a unique opportunity. A possibility exists of co-ordinating anthropometric work in the schools with that done in connection with compulsory military service.

In Official Year Book No. 11, pp. 1203-1209, an analysis is given of the data collected for the year ended 30th June, 1912.

(iv) *Compulsory Training.* By the Defence Acts of 1903 and 1904 all male inhabitants between the ages of eighteen and 60 years were made liable to serve in Australia with the defence forces *in time of war*. The more recent Acts make training and service compulsory *in time of peace*. By the Act of 1909 the principle of universal liability to be trained was made law for the first time in any English-speaking community. It prescribed junior cadet training for lads twelve and thirteen years of age, followed by senior cadet training for lads from fourteen to eighteen years of age; and thereafter adult training for two years in the citizen forces, to equal sixteen days annually, followed by registration (or a muster parade) each year for six years. Arrangements for registration, enrolment, inspection, and medical examination of persons liable to be trained were made. The latter Acts introduced necessary modifications, the principal being the extension of adult service to eight years. On 1st January, 1911, by proclamation, compulsory training was established. The already existing militia (voluntarily enlisted) were free to complete the three years for which they had engaged to serve, but conformity to the new system was essential. Officers and non-commissioned officers might re-engage. All male inhabitants of Australia, who are British subjects, and have resided in the Commonwealth for six months, are liable to serve. Exemptions (see *infra*, p. 1003) exist for certain individuals and classes of people, and may be granted in the case of unpopulated and sparsely populated areas. The training is as follows:—

- (a) From 12 to 14 years of age, in the junior cadets.
- (b) From 14 to 18 years of age, in the senior cadets.
- (c) From 18 to 26 years of age, in the citizen forces.

(v) *Visit and Report of Viscount Kitchener.* At the end of 1909 and before the Act of that year came into operation, the late Field-Marshal Lord Kitchener visited Australia at the invitation of the Government, and after inspection of the military forces and the forts and defence works erected or in course of erection, reported upon the whole scheme of land defence. His scheme was based on the provisions of the Defence Acts 1903-9. The trend and purport of the published report are given in Official Year Book No. 4, pp. 1085-1088. The adoption of some of Lord Kitchener's recommendations necessitated further amending Acts. The proposed organisation is based upon necessary considerations of (a) the numbers available; (b) the length of service demanded; (c) the proportion of the various arms required. It differs in some of its details from the scheme propounded by Lord Kitchener and includes—

- 28 regiments of light horse;
- 56 batteries of field artillery;
- 92 battalions of infantry;

and a due proportion of engineers, army service and army medical corps, troops for forts, and other services.

(vi) *Junior Cadets.* Junior cadet training, lasting for two years, consists of 90 hours each year, and begins on the 1st July in the year in which the trainee reaches the age of twelve years. No registration is made, but when the cadet presents himself for registration in the senior cadets in the year in which he attains the age of fourteen years, he is required to shew that he has completed the necessary training in his 13th and 14th years. This training is aimed at developing the cadet's physique. It consists principally of physical training for at least fifteen minutes on each school day, and elementary marching drill. The following subjects are also taught, viz. :—Miniature rifle shooting; swimming; running exercises in organised games; first aid; and (in schools in naval training areas) mariner's compass and elementary signalling. The junior cadets are not organised as military bodies, and do not wear uniform. The Commonwealth Government maintains a staff of special instructors of physical training, by whom classes are held for school teachers in all districts throughout the Commonwealth. The school teachers, in turn, impart the lessons to the boys. The inspectors of schools supervise the training and inspect the cadets of State schools on behalf of the Defence Department. The instructors of physical training perform these duties for the non-State schools and are also employed in the training of women teachers; but the instruction of girl scholars rests wholly with the States' Education Departments.

(vii) *Senior Cadets.* Senior cadet training, lasting for four years, begins on the 1st July of the year in which the trainee reaches the age of fourteen years. It consists of 40 drills each year, of which 4 are classed as whole days of not less than four hours, 12 as half-days of not less than two hours, the remainder being either night drills or quarter-day drills of not less than one hour. To meet special cases (including extremity of weather) modifications and substitutions are permitted, but the minimum efficient service required of senior cadets is invariably 64 hours per annum, a minimum of 36 hours of which is to be done in the employer's time, the remainder in the cadet's leisure time. Registration of every male born in 1894 or subsequently, and who has resided for six months in the Commonwealth, must, if his bona fide place of residence is within 5 miles of the nearest place appointed for training, be effected in the first two months of the calendar year in which he completes his 14th year. The four years' training covers the foundation work necessary for service in any arm. It comprises marching, handling of arms, musketry, physical training, section and platoon drill, extended order drill, and tactical training as a company in elementary field work. Senior cadets are not required to attend camp.

Schools containing at least 60 senior cadets may form separate units, and may arrange their parades to suit school time tables, but battalion parades must be attended.

(viii) *Adult Forces.* Training in the citizen forces, lasting for eight years, begins on 1st July of the year in which the soldier reaches the age of eighteen years. Except in the last year of this service (when only one registration muster parade is necessary in normal peace time) the work consists of continuous training in camp for seventeen days in the case of the naval forces, artillery, and engineer arms, and eight days for other arms, and eight days' (or equivalent) home training for all arms. The total service is thus 25 days per annum for the specialist and technical corps, and sixteen days per annum for other corps, the main body of whom are light horse and infantry (see table on p. 1005 *infra*). The home training (total eight days) is divided into whole days, half-days, and nights, the respective minimum duration of these being six, three, and one and a-half hours; two half-days or four nights counting as one whole day.

(ix) *Allotment to Arms.* Trainees to the number required are first allotted to the naval forces. There is no allotment during senior cadet training to particular branches of the military service. Upon transfer to the citizen soldiery, cadets with special educational or technical qualifications are drafted as recruits to one or other of the specialist or departmental corps to the required number; the bulk go to infantry. All other arms, except light horse, are maintained by annual quotas transferred from the senior cadets,

as laid down in annual establishments. In the light horse, enrolment is not compulsory, since each recruit is required to provide his own horse; and, while every encouragement is given to eligible trainees to enrol, voluntary enlistment by those not liable for compulsory service is continued for the present.

Persons who are forbidden by the doctrines of their religion to bear arms are, as far as possible, allotted to non-combatant duties, as stretcher-bearers in infantry companies, or as members of the Army Medical Corps.

(x) *Exemptions.* Status, condition, employment, or place of abode, may exempt from service. In time of war the exemptions are as follows:—Aliens and non-Europeans; persons certified as medically unfit; members and officers of Commonwealth and State parliaments; judges and magistrates; clergymen and theological students; police and prison officials; lighthouse-keepers; medical practitioners and nurses in public hospitals; and persons having conscientious objections to bear arms. Medical practitioners, non-Europeans, and conscientious objectors are not exempt from non-combatant duties.

In time of peace the exemptions are:—Persons whose bona fide place of residence is more than 5 miles from the nearest place appointed for training; those certified as medically unfit; aliens; non-Europeans (exempt from combatant duties only); school teachers qualified as instructors of drill; members of the permanent naval or military forces. Theological students may be exempted from training. Prior to the passing of the Defence Act 1915, all male inhabitants of Australia who had resided therein for six months were required to register for military or naval training in the year in which they became fourteen years of age, but the 1915 Act requires only those to register who reside within 5 miles of a place of training.

Burden of proving exemption rests upon the person claiming it, a final appeal lying to the civil courts. Any person convicted by a court of a disgraceful or infamous crime, or who is a notoriously bad character, is permanently disqualified.

(xi) *Penalties for Prevention or Evasion.* Employers, parents, and guardians may not, under a heavy penalty, prevent or attempt to prevent any employee, son or ward, who is a trainee, from rendering service; nor may any employer penalise or prejudice any employee in his employment, or attempt to do so, because of the latter's service or liability for service; and the employer is compelled to pay the senior cadet's wages for the time he is away from work for the purpose of training (see Section 134 (1A) of Defence Act 1903-17).

A heavy penalty is enacted for evasion of service as required under the Act by those liable to serve. Penalties take the form of money fine, or detention in military custody under enforced training and discipline. Non-efficients must attend additional training for each year they are non-efficient. Evasion renders the person evading or failing to serve ineligible for employment of any kind in the Commonwealth Public Service.

Children's courts are used where possible for the prosecution of cadets under the age of sixteen years.

(xii) *Efficiency.* Each trainee must be efficient in each year. Parades, as ordered, must be attended, and a standard of efficiency, based on the number of years' training and the work performed, must be attained.

Parades are classed as compulsory, alternative, and voluntary. The former make up the exact amount of training required (25 days per annum for technical arms, sixteen days for others), and may not be missed without leave formally given. Alternative drills are appointed for those absent with leave from compulsory parades, and are allowed to count for pay and efficiency. Voluntary parades are held for those desiring further proficiency, and for candidates for promotion. Any trainee failing to qualify as efficient in any year must do an extra year's training for each failure. Thus, there must be twelve annual entries of efficiency or exemption in each soldier's record before he receives his discharge—four as a senior cadet, and eight as a citizen soldier.

(xiii) *Pay.* In addition to the remuneration of professional soldiers, pay is provided for all members of the militia. Citizen soldiers who voluntarily enlisted under the old system receive the same rates of pay as formerly, the basis being 8s. per day for gunner, sapper, or private. Trainees under the compulsory system receive 3s. per day during the first year, and 4s. per day during the subsequent years of their training. Higher ranks are paid higher rates. For corporals the daily pay is 9s., for sergeants, 10s., for sergeants-major 10s. 6d. and 11s. Light horse trainees receive in addition £4 per annum for keep of horse. In the commissioned ranks the daily rates of pay are 15s. for lieutenants, 22s. 6d. for captains, 30s. for majors, 37s. 6d. for lieutenant-colonels, and 45s. for colonels. Mounted officers also receive horse allowance.

(xiv) *Uniform and Equipment.* The uniform is simple and inexpensive, but suitable. It is free, and the principal articles are issuable every second year. The clothing is of universal pattern, and, beyond distinguishing corps' badges and a coloured hat-band, there is no distinction (except rank marks). Uniform is worn on all parades and drills, but its wearing is forbidden when not on military duty. Rifles and free ammunition are provided. Citizen soldiers have their rifles on issue, but arms for senior cadets are stored in local depots, and are issued as required for drill and musketry. An allowance of free ammunition is made to commanders of units to encourage rifle shooting. The uniform issued to each citizen soldier is such as to enable him to parade (upon notice) with jacket, breeches, hat, cap, puttees or leggings, military boots, and kit bag.

The task of fully equipping the rapidly expanding Australian Army has been undertaken. Some of the required technical stores have been indented; but the Commonwealth itself has established factories for the supply of cloth and clothing, small arms, cordite, harness, and saddlery.

(xv) *Reserves.* The reserves consist of (a) certain officers transferred from the active list to the reserve of officers; (b) members of the Australian Army Reserve; (c) members of rifle clubs. The reserve of officers includes (i) officers who have been fully trained and are still capable of serving, but who, being unable to continue on the active list through pressure of business engagements, removal to rural districts or such like causes, have joined the reserve; (ii) officers of the Australian Army Medical Corps for whom no vacancies exist in the active list, but who are required for medical duties with units and in areas. The Australian Army Reserve was formed in November, 1916, with the object of (1) utilising the experience gained by members of the Expeditionary Forces as a national insurance for the future safety of Australia; (2) affording those who have served in any of the Empire's wars prior to 1914 an opportunity to give the benefit of their war-won experience should the necessity arise; (3) to preserve for all time the traditions and honors of the Australian Imperial Force. To enable this to be done the units of the Citizen Forces have been renumbered and given Australian Imperial Force numbers. Enlistment is voluntary, and members, with the exception of those liable for training under Part XII. of the Defence Act, may resign by giving fourteen days' notice in writing to their Commanding Officers. The membership on 30th April, 1919, was over 28,000. In December, 1918, the Federal Cabinet decided to allow those persons who have returned from active service overseas and are liable for training under Part XII. of the Defence Act to join the Australian Army Reserve in lieu of completing their training with the Citizen Forces; they will thus undergo four days' training per annum instead of sixteen. The annual training of the Australian Army Reserve will consist of four days in camp, but this will not commence until 1920. The pay and allowances of all ranks during their annual training will be at the same daily rate as that for the Citizen Forces. Uniforms, arms, and equipment will be provided free of charge when the Reserve Units are formed. This is not possible until the demobilization of the Australian Imperial Force has been completed. All members of the Australian Army Reserve wear the brass letter "R" in front of the head-dress. The Australian Army Reserve will not be called upon to serve beyond the limits of the Commonwealth. Rifle clubs which form Class (c) of the Australian Army Reserve, are established in a large number of localities throughout the Commonwealth. On the 31st December, 1918, there were 1,454 clubs with a membership of 86,144, and in addition 149 miniature rifle clubs having a membership of 7,779. Applications to form rifle clubs are made to the commandant of a district, and

must be signed by not less than thirty male persons between the ages of sixteen and sixty, who are required to be natural-born or naturalised British subjects, and are not undergoing training under the universal clauses of the Defence Act. Persons, however, who are temporarily exempted from universal training may be permitted to join rifle clubs during the period of their temporary exemption. Members of rifle clubs must fire an annual course of musketry, but do not undergo any systematic drill. From the outbreak of the present war until the 31st March, 1917, 24,735 members of rifle clubs enlisted for service abroad with the Expeditionary Forces. Commissions as lieutenants and appointments as non-commissioned officers in the reserve forces may be granted to members of rifle clubs who pass the prescribed examinations and fulfil other conditions in regard to efficiency, etc.

(xvi) *Allotment of Units to Divisional Brigade, Battalion, and Training Areas.* The organisation is territorial, and the divisions based upon infantry units. There are 92 battalion areas, forming 23 brigades. The areas have approximately equal numbers of males of citizen soldier age (about 1,300), and each furnishes a battalion of infantry, and a proportion of other troops. For administrative purposes, areas are subdivided into two or three training districts. Three brigades will form a division. Two brigade areas will each provide four battalions of infantry, one field artillery brigade (with proportion of divisional ammunition column), one field company of engineers, one company army service corps, and one field ambulance. The other brigade area of the division provides four battalions of infantry, two squadrons of divisional light horse, one howitzer brigade, one divisional signal company of engineers, one company army service corps, and one field ambulance. Light horse and field artillery units for light horse brigades will also be furnished by some of the areas. *Personnel* for garrison artillery and submarine and electric engineers for garrison forces will eventually be supplied in the areas nearest to such localities. The average annual contingent of recruits will be about 155 for each battalion area, plus such additions as are required for light horse and field artillery units raised therein. The figures shewn in the following tables are approximate, and include the recruits (18-19) year, but not the 25-26 year men.

ULTIMATE ALLOTMENT OF UNITS TO BRIGADE, BATTALION, AND TRAINING AREAS.

State.	Brigade Areas. No.	Battalion Areas.						Training Areas. No.	
		No. of Battalions.	Providing the undermentioned units.				Total Nos. in Training Areas.		
			Infantry and Engineers, A.S.C. and A.M.C. Nos.	Light Horse.		Field Artillery.			
				Squadrons.	Nos.	Batteries.			Nos.
New South Wales ..	7	32	26,604	32	3,200	16	2,080	31,884	69
Victoria ..	7	31	25,721	31	3,550	19	2,470	31,741	67
Queensland ..	3	12	10,081	14	1,600	7	910	12,591	35
South Australia ..	2	9	7,695	9	1,250	4	520	9,465	25
Western Australia ..	1	5	4,235	5	350	3	390	4,975	14
Tasmania ..	1	4	3,454	4	350	3	390	4,194	11
Total ..	21	93	77,790	95	10,300	52	6,760	94,850	221

(xvii) *Instructional Staff.* The instructors provided for training consist of 210 officers and 779 warrant and non-commissioned officers of the instructional staff (permanent), and 214 area officers (temporary). They supervise the training of light horse, infantry,

and senior cadet units, and instruct in the non-technical duties of specialist corps. Additional officers and non-commissioned officers in the permanent troops instruct in technical work.

The officers of the instructional staff act as Brigade-Majors, and as such represent the Commandant in the brigade area. They are responsible for the instruction of officers of the existing citizen forces, conduct local schools of instruction, supervise and instruct the area officers, and allot the non-commissioned officers of their detail to various duties. Assistant Brigade-Majors are also furnished from the instructional staff. The duties of area officers vary both in nature and extent, and comprise registration and organisation of those to be compulsorily trained, and clothing, arming, equipping, and training the senior cadets. They also perform the duties of Adjutant to senior cadet battalions.

The staff instructors (warrant and non-commissioned officers) assist in carrying out the administrative work of their areas or units, and instruct cadets and recruits in light horse and infantry drill.

(xviii) *Higher Training.* At present there is no institution in Australia corresponding to the staff colleges at Camberley (England), or Quetta (India), for the higher training of officers.

Officers of the permanent forces who pass the required examinations are sent to these institutions from time to time, and on return to Australia are appointed to positions on the General Staff, etc.

The higher training of officers of the citizen forces is, as far as possible, carried out in special schools of instruction, and staff tours held in the various military districts.

Government aid is also furnished to United Service Institutions, which have been established in the larger centres. Lectures of great value are delivered by specialists, and war games, manœuvres, etc., carried out. Some of the institutions have large and well-selected libraries.

Schools of instruction are also conducted for junior officers.

(xix) *The Royal Military College, Duntroon, Federal Territory,* is established for the purpose of providing trained officers for the permanent forces. Admission is by open competitive examination, a definite number of vacancies being allotted to each State of the Commonwealth on a population basis. About 30 staff-cadets are thus admitted annually, and, in addition to these, ten staff-cadets from New Zealand are nominated yearly by the Dominion Government, which pays £377 10s. per annum for each. The age for admission is between sixteen and nineteen years, though there is a provision in the regulations by which members of the forces over nineteen years of age who pass the prescribed examination, and are approved by the Governor-General-in-Council, may be admitted. The college was opened in June, 1911.

The normal college course lasts for four years, and is followed by a tour of duty in England or India, after which graduates will be appointed to staffs or permanent troops in Australia and New Zealand.

During the war the course has been temporarily modified. Over 158 staff-cadets were (June, 1918) specially graduated, and appointed to units serving at the front with the Australian and New Zealand forces.

No fees are charged for maintenance and instruction, each staff-cadet being credited with an allowance of 5s. 6d. per diem to meet expenses of necessary uniform, books, instruments, etc.

The full establishment of cadets is 150, but owing to special graduations for active service the strength (31st December, 1918), is at present 120.

The course of instruction comprises both educational and military work, the former being mainly completed in the first two years. Cadets are prepared for light horse, artillery, engineer, and infantry duties.

In December, 1918, the staff numbered—military, 33; civil, 19.

(xx) *Railways and Defence.* A War Railway Council, consisting of military and railway officers, was instituted in 1911. Its chief duties are to furnish advice and information regarding railway transport for military purposes, and to secure co-operation between the Commonwealth Defence Department and the States' Railway Departments in regard to concentration and mobilisation of troops. To prevent delay in the transport of troops, particularly that caused by the transshipment of baggage and implements of war, the Council has recommended the adoption of a uniform railway gauge on lines linking up the States' capitals. An Engineer and Railway Staff Corps has been instituted, and numbered 47 officers on 30th June, 1918. Fuller details will be found in Official Year Book No. 6, pp. 1070-1.

(xxi) *The Universal Training System in Operation.*—(a) *Special Instructional Staff.* The first work in the active carrying out of the scheme commenced with the training of 200 non-commissioned officers for the instruction of the projected army in a six months' camp. Area officers were chosen from the citizen forces, and underwent a six weeks' course of instruction. With the year 1911 came the active enrolment of the new cadets, who commenced training on the 1st July following. These comprised all males in training areas who were born in 1894, 1895, 1896, and 1897.

(b) *Stages.* The stages are as follows:—

First stage, January to June, 1911.—Existing junior and senior cadets continued to 30th June, 1911, but all equipment returned by that date; registration, inspection, and medical examination of lads whose 14th, 15th, 16th, and 17th birthdays occurred in 1911; preparations made to clothe and equip the new senior cadets.

Second stage, July, 1911, to June, 1912.—Registration, etc., in January and February, of lads whose 14th birthday occurred in 1912; new junior and senior cadet training from 1st July, 1911. About 17,000 of the latter passed as recruits upon completion of this period, inaugurating the new citizen forces in the third stage (1st July, 1912).

Third stage, July, 1912, to June, 1913.—Registration, etc., in January and February, of lads whose 14th birthday occurred in 1913; new citizen forces:—Training began with about 17,000 recruits (eighteen-year-old persons allotted from the new senior cadets). During the third, fourth, and subsequent stages the new senior cadet force, numbering about 90,000, continues. Upon expiry of this period, the second quota of senior cadets (1895 lads) to the number of 17,000 passed as recruits to the citizen forces (1st July, 1913).

Fourth and subsequent stages, after July, 1913 (and each year to 1919).—Registration, etc., of lads whose 14th birthday occurred in 1914, and so on. In the fourth and subsequent stages to the tenth, the new citizen forces will also be increased by eighteen-year-old recruits from senior cadets, numbering about 17,000 each year. In 1919, the 1894 quota, being in their 25th year, will be liable for one registration or muster parade, and will in the following year be free of compulsory service.

(c) *Summary of Working of the System in 1911-12 (Second Stage).* On 31st December, 1911 (six months after commencement of the new senior cadet training), the total registrations in training areas numbered 155,132. Of these, 105,133 had been medically examined, and 93.2 per cent. passed as fit. Exemptions in training areas (generally cases so far from places of training that attendance would involve great hardship) numbered 57,949. Of the total number liable for service 89,138 were actually in training.

The junior cadets do not register, but are medically examined. On 31st December, 1911, 33,767 had been examined, and 97.8 per cent. certified as fit.

(d) *Summary of the Working of the System from 1913 (Third, Fourth, and Subsequent Stages).* The numbers up to 31st December, 1918, include the 1894 to 1900 annual quotas, who on 1st July, 1912, and each 1st July thereafter to 1918, passed to the citizen forces. They are shewn hereinafter.

(xxii) *Success of the System.* A slight amount of opposition to the system has been manifested. Though principally from shirkers, there are also a small number of persons who oppose military service on religious grounds. As already stated, however, conscientious objectors are allotted duties of a non-combatant nature. The prosecutions and penalties for evasion, etc, though not wholly, are mainly operative against shirkers. It is claimed that the scheme, both before its inception and since its successful inauguration, has had the support of leading statesmen of all political views, as well as the vast majority of the citizens of the Commonwealth. In general, the trainees are alert and well disciplined while on parade; and the interest and the enthusiasm of the lads is shewn by the large number of candidates seeking promotion at competitive examinations (practical and oral), after courses of lectures, demonstrations and special parades. Another evidence of enthusiasm is the fact that the applicants for enrolment in the technical arms, where the total service is considerably greater than the absolute minimum of sixteen days annually required from infantry and light horse, is always greatly in excess of the requirements of those arms. Further, a great deal of voluntary work is rendered in all branches of the service, and the rifle clubs of the citizen units are well patronised. Many of the regiments have athletic, gymnastic, and swimming clubs, and sports meetings are frequently held. Patriotic citizens in local centres have contributed generously to funds for establishing bands, regimental clubs, annual sports gatherings, etc. Moreover, a marked improvement has become apparent in the general conduct and bearing of the youths of Australia, and it is claimed that this is the effect of the system of universal training. As a result of inquiries made in 1914, the police authorities in all the States concurred in the opinion that the behaviour of the youths who are subject to the training is vastly improved. It is stated that both mentally and morally, as well as physically, the benefits are very definite, and that "the principal effects of a beneficial nature are increased self-respect, diminution of juvenile cigarette smoking and 'larrikinism,' and generally a tendency towards a sense of responsibility and a desire to become good citizens."

4. **Strength of Military Forces.**—(i) *Strength in each District, 1901 to 1918.* There was little alteration in the numbers serving in the Australian military forces from the institution of the Commonwealth to the year of the introduction of the compulsory training system. From 1913, however, the annual increase has been considerable. The following table shews the development:—

STRENGTH OF MILITARY FORCES, 1901 AND 1912 TO 1918.

(a) District.	1901. (b) 1/3/01	1912. 30/6/12.	1913. 30/6/13.	1914. 30/6/14.	1915. 30/6/15.	1916. 30/6/16.	1917. 30/6/17.	1918. 30/6/18.
Headquarters ..	..	(c)140	(c)277	(c)330	(c)416	(c)360	(c)377	(c)473
1st Queensland ..	4,310	3,357	4,625	5,844	7,734	9,379	11,415	15,899
2nd New South Wales	9,772	8,163	12,105	16,365	21,661	24,761	28,783	41,751
3rd Victoria ..	7,011	6,896	10,840	14,326	18,823	23,830	29,131	39,492
4th South Australia	2,956	1,869	3,228	4,708	6,527	8,154	9,767	12,629
5th Western Australia	2,283	1,451	1,685	2,046	3,004	4,197	4,882	6,333
6th Tasmania ..	2,554	1,820	1,777	2,026	2,807	3,446	4,007	5,609
Total ..	28,886	23,696	34,537	45,645	60,972	74,127	88,362	122,186

(a) Approximately coterminous with boundaries of States. (b) Date of Commonwealth taking over the military forces from States. (c) Including cadets at Royal Military College of Australia, Duntroon.

(ii) *Strength of the Various Arms.* The numbers of the different arms of the service on the 30th June, 1918, were as follows:—

ARMS OF THE COMMONWEALTH DEFENCE, 1918.

Light Horse ..	10,676	Army Nurs'g Service	513	Engineer and Rail- way Staff Corps	47
Field Artillery ..	5,802	Army Pay Corps ..	1,144	Pay Department, Rifle Ranges, Rifle Clubs, Officers, etc.	287 ^a
Garrison Artillery	2,934	Army Vet'ary Corps	38	Royal Milit'ry C'lege	200 ^a
Engineers ..	5,757	Ordnance Departm't (including Arma- ment Artificers) ..	321	Grand Total ..	110,072
Infantry ..	74,312	Area Officers ..	294		
Intelligence Corps	13	Administrative and Instructional Staff	1,173		
Army Service Corps	2,514				
Army Medical Corps	3,997				
Aust. Flying Corps	50				

^a Includes civilians.

(iii) *Classification of Land Forces.* The following table shews the strength of the land forces in each State, classified according to nature of service, on the 30th June, 1918:—

CLASSIFICATION OF LAND FORCES, 1918.

Branch of Service.	Head- quarters.	1st Military District.	2nd Military District.	3rd Military District.	4th Military District.	5th Military District.	6th Military District.	Total.
Permanently employed	506 ^a	420	1,242	1,152	239	296	159	4,014
Citizen Soldiers	13,455	36,382	33,502	12,577	4,993	4,295	105,204
Engineer and Railway Staff Corps	10	11	8	5	8	5	47
Army Nursing Service	32	118	26	16	204	117	513
Area Officers	31	109	90	35	15	14	294
Rifle Clubs	15,578	29,474	23,240	9,696	9,464	5,479	92,931
Senior Cadets	11,941	32,190	28,110	9,251	5,852	3,450	90,794
Unattached List of Offi- cers	56	71	63	22	15	14	241
Reserve of Officers	155	206	323	68	121	30	903
Chaplains	56	119	117	43	45	33	413
Grand Total ..	506	41,734	99,922	86,631	31,952	21,013	13,596	295,354

^a Including cadets at Royal Military College of Australia, Duntroon.

(iv) *Numbers Serving under Compulsory Provisions.* The next table shews those registered and training under the compulsory system, distinguishing citizen forces, senior cadets, and junior cadets.

UNIVERSAL TRAINING. — REGISTRATIONS, MEDICAL EXAMINATIONS, EXEMPTIONS, AND NUMBERS SERVING, CITIZEN FORCES, 31st DECEMBER, 1918 (1894, 1895, 1896, 1897, 1898, 1899, AND 1900 QUOTAS).

Military District.	Total Registrations.	Total Medically Examined.	Number Medically Fit.	Percentage Medically Examined who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Examined who are Unfit and Temporarily Unfit.	Total Exemptions Granted in Training Areas.	Total Number Liable for Training.
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1900 QUOTA.

1st ..	3,247	3,148	2,532	80.43	616	19.57	679	2,568
2nd ..	8,475	7,241	5,870	81.06	1,371	18.94	1,991	5,870
3rd ..	7,545	7,077	5,861	82.82	1,216	17.18	1,322	5,861
4th ..	2,436	2,384	1,999	83.85	385	16.15	403	2,033
5th ..	1,310	1,279	1,072	83.82	207	16.18	207	1,072
6th ..	1,103	1,000	819	81.90	181	18.10	227	819
Total ..	24,116	22,129	18,153	82.03	3,976	17.97	4,829	18,223

UNIVERSAL TRAINING.—REGISTRATIONS, ETC.—*continued.*

1894, 1895, 1896, 1897, 1898, AND 1899 QUOTAS.

Military District.	Total Registrations in Training Areas.						
	Quota, 1894.	Quota, 1895.	Quota, 1896.	Quota, 1897.	Quota, 1898.	Quota, 1899.	Total.
1st	2,998	3,210	3,076	3,204	2,987	3,006	18,481
2nd	7,772	7,944	8,147	8,094	7,528	7,764	47,249
3rd	7,013	7,308	7,445	7,074	6,402	7,152	42,394
4th	2,542	2,811	2,807	2,517	2,011	2,332	15,020
5th	1,378	1,451	1,330	1,417	1,372	1,326	8,274
6th	926	900	1,005	887	858	856	5,432
Total ..	22,629	23,624	23,810	23,193	21,158	22,436	136,850

Military District.	Exemptions Granted.							Number Liable for Training.
	Quota, 1894.	Quota, 1895.	Quota, 1896.	Quota, 1897.	Quota, 1898.	Quota, 1899.	Total.	
1st	1,025	992	962	864	816	862	5,521	12,960
2nd	1,871	2,107	2,184	2,044	1,728	1,998	11,932	35,317
3rd	1,772	1,868	1,998	1,773	1,417	1,361	10,189	32,205
4th	647	648	693	720	325	475	3,508	11,512
5th	300	368	314	390	175	186	1,733	6,541
6th	178	148	193	209	194	164	1,086	4,346
Total ..	5,793	6,131	6,344	6,000	4,655	5,046	33,969	102,881

UNIVERSAL TRAINING.—REGISTRATIONS, MEDICAL EXAMINATIONS, AND
EXEMPTIONS TO THE 31st DECEMBER, 1918 (1901 TO 1904 QUOTAS).

SENIOR CADETS.

Military District.	Total Registrations in Training Areas.	Total Medically Examined.	Number Medically Fit.	Percentage Medically Examined who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Examined who are Unfit and Temporarily Unfit.	Total Exemptions Granted in Training Areas.	Total Number Liable for Training.	Total Number Actually in Training.
1st ..	14,813	14,682	13,116	89.33	1,566	10.67	1,622	13,191	12,987
2nd ..	39,725	39,036	35,649	91.32	3,387	8.68	3,767	35,649	34,816
3rd ..	32,412	32,275	29,446	91.23	2,829	8.77	2,868	29,446	29,014
4th ..	10,547	10,532	9,731	92.39	801	7.61	817	9,740	9,731
5th ..	6,769	6,764	6,188	91.48	576	8.52	576	6,188	6,124
6th ..	4,589	4,498	3,973	88.33	525	11.67	603	3,973	3,927
Total	108,855	107,787	98,103	91.02	9,684	8.98	10,253	98,187	96,599

**UNIVERSAL TRAINING.—MEDICAL EXAMINATIONS TO THE
31st DECEMBER, 1918.**

JUNIOR CADETS.

Military District.	Total Number Medically Examined.	Number Medically Fit.	Percentage Medically Examined who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Examined who are Unfit and Temporarily Unfit.
1st	7,188	7,008	97.50	180	2.50
2nd	21,266	20,772	97.68	494	2.32
3rd	16,387	16,129	98.43	258	1.57
4th	5,760	5,658	98.23	102	1.77
5th	4,367	4,305	98.58	62	1.42
6th	1,795	1,753	97.66	42	2.34
Total ..	56,763	55,625	98.00	1,138	2.00

§ 2. Naval Defence.

1. *Naval Defence under the States.*—(i) *Independent State Systems.* Prior to 1890, when arrangements were made with the British Government for the maintenance of an Australian squadron, provision for naval defence had been instituted in New South Wales, Victoria, Queensland, and South Australia, where gunboats, torpedo boats, or small cruisers were commissioned and naval volunteers raised. A fuller historical account of the Australian naval forces under the States is given in Official Year Book No. 2, pp. 1084–1085.

(ii) *The Naval Agreement with the British Government.*—(a) *The Original Compact.* The naval defence of Australasia and its trade was entrusted primarily to ships of the Imperial Navy, maintained under an agreement entered into between the British Government and the Governments of the Commonwealth and New Zealand, and at their joint charge. This agreement was embodied in Acts passed by the several Legislatures some ten years prior to Australian federation. According to its terms, a naval force, additional to the vessels of the Australian Naval Station, which were to be maintained at their normal strength, was to act as an auxiliary squadron. It consisted of five fast third-class cruisers and two torpedo gunboats, and its special function was the protection of the floating trade in Australasian waters. The agreement was made for ten years, and was then, or at the end of any subsequent year, to be terminable only upon two years' notice being given. On its termination, the vessels were to remain the property of the Imperial Government. Three cruisers and one gunboat were to be kept continuously in commission, and the remainder in reserve in Australasian ports, but ready for commission whenever occasion might arise. The vessels were to remain within the limits of the Australasian station, and were to be employed, in times of peace or war, within such limits, in the same way as the Sovereign's ships of war, or employed beyond those limits only with the consent of the Colonial Governments. The first cost of the vessels was paid out of Imperial funds, but the Colonial Governments paid interest on the prime cost at 5 per cent. (up to a maximum of £35,000 per annum), and a sum not exceeding £91,000 for annual maintenance of the vessels, or a total annual contribution of £126,000. In times of emergency or actual war, the cost of commissioning and maintaining the three vessels kept in reserve during peace was to be borne by the Imperial Government, and, in every respect, the vessels were on the same status as the

ships of war of the Sovereign, whether in commission or not. The officers and men of those in commission were subject to a triennial change. The tenth annual contribution, which was payable in advance on 1st March, 1900, apportioned on a population basis, was as follows:—New South Wales, £37,973; Victoria, £32,749; New Zealand, £21,304; Queensland, £13,585; South Australia, £10,439; Western Australia, £4,316; Tasmania, £4,776.

(b) *The Agreement of 1903.* The agreement was not dissolved by the union of six of the contracting colonies; but during the negotiations for its renewal, conducted in England between Sir E. Barton (then Prime Minister) and the Admiralty, it was completely reshaped. The auxiliary squadron for local defence, paid for by Australia and New Zealand, altogether disappeared. The Admiralty guaranteed to maintain on the Australian station during peace time a squadron of a certain strength, and to train in one or two of its vessels a certain number of Australian seamen. The colonial contribution, considerably increased, became a direct subsidy to Imperial defence. The total payment into Imperial funds was now to be £240,000, of which New Zealand was responsible for £40,000, and the Commonwealth for the balance. The agreement, like the earlier one, was for ten years.* By a subsequent arrangement the strength of the squadron was established at one first-class armoured cruiser, three second-class cruisers, and five third-class cruisers.

2. **Development of Commonwealth System from 1901 to 1914.**—The floating trade of the Commonwealth exceeds £200,000,000 per annum, and (quite apart from any Imperial service) its adequate protection involves corresponding naval provision, with such naval war material as will permit the principal lines of sea communication being kept open, and ensure that Australian ports are fully defended. Australian defence, in both its branches (military and naval), passed to the Commonwealth in 1901. Prior to 1905 a naval officer commanding administered the naval forces under the Minister. When the Council of Defence was established in that year, the Naval Board was constituted and took over the administration of the Commonwealth naval forces, thereby ensuring continuity of policy and administration; whilst efficiency and uniformity were provided for in the scheme of inspection and report by an officer who, as Director of Naval Forces, was appointed to deal with the training of the *personnel*, and the condition of the *matériel*, of naval forces and works.

3. **The Present System.**—(i) *Australian Naval Policy.* An outline of the development of Australian naval policy will be found in Official Year Book No. 3, pp. 1060–1061. For the more effective coastal defence of the Commonwealth it was decided in 1909 to create an Australian naval force, to replace the squadron previously maintained under the naval agreement with the British Government. It was agreed at the Imperial Defence Conference in 1909 that Australia should provide a fleet unit, consisting of an armoured cruiser† of the *Indomitable* class, three unarmoured cruisers of the *Bristol* class, six destroyers of the improved “River” class, and three submarines of “C” class‡; also the necessary auxiliaries, such as docks and depot ships. The cost of construction at English prices would be about £3,700,000, and the estimated annual cost about £750,000. Of this sum the Imperial Government offered to contribute £250,000, but the Commonwealth Government decided to bear the whole cost.

(ii) *The Building of the Australian Fleet.* The building of the fleet and the training of the crews were immediately begun. Skilled artisans were despatched from Australia to gain practical experience in naval shipbuilding, construction proceeding both in Britain and Australia. Sailors of all ratings were also trained for the Commonwealth service. The first instalment of the Australian fleet unit consisted of two torpedo boat destroyers, of British construction, commissioned in September, 1910, and named *Parramatta* and *Yarra*. A third destroyer, the *Warrego*, was shipped to Sydney in parts, and was re-erected at the Commonwealth dockyard, Cockatoo Island, Sydney, and commissioned on 1st June, 1912. A description of these and the other vessels of the fleet will be found in Official Year Book No. 6, pp. 1066–7.

* Since modified; see page 1013, *infra*.

† Now called “battle cruiser.” ‡ Since altered to two submarines of “E” class.

The battle cruiser *Australia* was commissioned in June, 1913, and arrived in Australian waters in the following September. Two light cruisers, the *Melbourne* and *Sydney*, arrived in Australian waters in 1913. A third cruiser, the *Brisbane*, was built at the Commonwealth Naval Dockyard, Sydney. The two submarines arrived in Australian waters in May, 1914. Another cruiser, the *Adelaide*, is now building at the Commonwealth Naval Dockyard, at Cockatoo Island.

(iii) *Modifications Adopted and Proposed.* Certain modifications have been made in the original scheme. These have been prepared in tabular form, and are as follows:—

FLEET UNIT.—ORIGINAL ESTIMATED COST.

(Imperial Defence Conference, 1909.)

1 Battle cruiser	.. .. .	£2,000,000
3 Protected cruisers, £350,000 each	.. .. .	1,050,000
6 Destroyers (including 3 ordered before the Conference), £80,000 each	.. .. .	480,000
3 Submarines, "C" class, £55,000 each	.. .. .	165,000
Total	.. .. .	<u>£3,695,000</u>

AMENDED ESTIMATED COST.

(Consequent on Alteration of Type of Vessels on Admiralty Recommendation.)

1 Battle cruiser	.. .. .	£2,000,000
3 Protected cruisers, £450,000 each	.. .. .	1,350,000
6 Destroyers, £80,000 each	.. .. .	480,000
2 Submarines, "E" class, £105,000 each	.. .. .	210,000
Total	.. .. .	<u>£4,040,000</u>

LATER ESTIMATED COST OF FLEET UNIT, TOGETHER WITH COST OF VESSELS NOT INCLUDED IN ORIGINAL FLEET UNIT.

1 Battle cruiser	.. .. .	£1,705,000
*3 Protected cruisers	.. .. .	1,400,000
*6 Destroyers	.. .. .	653,000
2 Submarines	.. .. .	233,500
Auxiliaries—		
1 Submarine depot ship	.. .. .	£160,000
1 Oil tank vessel	.. .. .	120,000
4 Oil fuel storage vessels (building in Australia)	.. .. .	75,766
4 Hulks	.. .. .	25,000
		<u>380,766</u>
Total	.. .. .	<u>£4,372,266</u>

The following additional amount has been approved for new construction outside the original fleet unit and for increase in cost over estimate

	.. .. .	935,563
Total	.. .. .	<u>£5,307,829</u>

* Extra cost of building certain of these vessels in Australia is responsible for increase.

(iv) *Expenditure on Fleet Construction for the Royal Australian Navy.* The following is a statement of expenditure out of sums appropriated for construction of fleet :—

EXPENDITURE ON FLEET CONSTRUCTION 1909 TO 1919.

Year.	Appropriation.	Expenditure.
		£
1908-9	Act No. 19 of 1908	24,855
1909-10	Act No. 19 of 1908	223,959
1909-10	Division No. 11A, New Works, etc.	60,000
1910-11	Act No. 18 of 1910	285,863
1910-11	Division No. 12, New Works, etc.	850,000
1911-12	Act No. 18 of 1910	1,108,494
1912-13	Act No. 18 of 1910	524,037
1912-13	Division No. 10, New Works, etc.	
1913-14	Division No. 12, New Works, etc.	637,606
1914-15	Division No. 13, New Works, etc.	467,296
1915-16	Division No. 13, New Works, etc.	396,073
1916-17	Division No. 17, New Works, etc.	374,249
1917-18	Act No. 30 of 1917, New Works, etc.	355,397
1918-19	War Loan Act No. 23 of 1917	500,000(a)
	Total	5,807,829

(a) Estimated.

(v) *Visit and Report by Sir Reginald Henderson.* At the invitation of the Government, Admiral Sir Reginald Henderson visited Australia to advise upon naval matters generally. A summary of his report will be found in Official Year Book No. 6, pp. 1067-8. It provided for 52 vessels and 15,000 men: expenditure on construction, works, etc., £40,000,000, with an ultimate annual naval vote of £4,794,000. Six naval bases, and eleven sub-bases, were recommended. The 52 vessels would consist of 8 armoured cruisers, 10 protected cruisers, 18 destroyers, 12 submarines, 3 depot ships, 1 fleet repair-ship, and the construction would extend over 22 years. The annual cost of *personnel* would be £601,000 in 1913-14, and would increase to £2,226,000 in 1933-4. Annual cost of maintenance of ships in commission would be £262,000 in 1913-14, rising to £1,226,000 in 1933-4. Annual expenditure on construction and maintenance of ships would increase from £2,349,000 in 1913-14 to £4,824,000 in 1932-3. The strength of the fleet would be 23 ships in 1918, 42 ships in 1923, 48 ships in 1928, and 52 ships in 1933. In the earlier years portion of the crews would be obtained from Great Britain, but this would cease in the period 1923-8.

(vi) *The Compact with the Imperial Government.* The Australian Government is building its navy according to the terms of an official paper (cd. 5746-2) submitted to the Imperial Conference held in London in 1911, and on the plan formulated by Admiral Henderson (after an inspection of Australia's capitals and other ports and coast line, in 1911). There is no formal contract or agreement between the British and the Commonwealth Governments. The last actual agreement was that of 1903, already described on p. 1012. Before the expiration of the time for which this agreement was made the Commonwealth began the work of fleet construction. Up to the year 1911-12, £200,000 was annually paid. For 1912-13, £175,000 was set down in the estimates, and £166,600 paid. The Commonwealth Parliament amended the *Naval Agreement Act 1903*, by No. 10 of 1912 (*Naval Agreement Act 1912*), providing that the Governor-General may, from time to time, arrange with the Imperial Government for the reduction of the Australian squadron, and for reduction in the naval subsidy. No amount under "Naval Agreement Act" will be found in the estimates for 1913-14 and later years. Some departures are made from Admiral Henderson's recommendations, but generally they have been

adopted. The Commonwealth is now fulfilling the larger obligation of fleet-building, and is maintaining its own vessels. The establishment of naval bases and sub-bases required for the fleet unit is also proceeding.

As already stated, the present situation is not governed by a formal contract or agreement. The Commonwealth Government has, by regulations and orders, given effect to some, and intends giving effect to others, of the items submitted to the Conference.

(vii) *Naval College.* A naval college has been established at Captain's Point, Jervis Bay, consisting of numerous buildings necessary for the training of naval officers. The course is similar to that carried out in naval colleges in England. In December, 1918, there were 120 cadet midshipmen under training. There were also 17 officers, including naval instructors, and 68 members of the ship's company in residence at the college. A boy whose thirteenth birthday falls in the year in which the entrance examination is held, is eligible to compete provided he is the son of natural-born or naturalised British subjects. From amongst those qualified the Selection Committee chooses the number required. The Commonwealth Government bears the whole expense of uniforms, victualling, travelling, as well as that of the educational course.

(viii) *Training Ships.* H.M.A.S. *Tingira*, moored in Rose Bay, Sydney, was commissioned in April, 1912, to train boys for the *personnel* of the Royal Australian Navy. The age of entry is fourteen and a half to sixteen years. Only boys of very good character and physique are accepted, after a strict medical examination. The boys must engage to serve until they reach the age of 25. The training lasts about one year, and they are then drafted to a sea-going warship of the Australian fleet. Recruiting has been satisfactory, there being 285 boys under training on 31st December, 1918.

(ix) *The Naval Station of the Commonwealth of Australia.* The following are the limits* of the Naval Station which, since 1st July, 1913, have been controlled by the Commonwealth Government, acting through the Naval Board:—On the North: From 95 degrees East longitude by the parallel of 13 degrees South to 120 degrees East longitude; thence North to 11 degrees South latitude; thence to the boundary with Dutch New Guinea, on the South coast, in about longitude 141 degrees East; thence along the coast of British New Guinea (Papua) to the boundary with German New Guinea, in latitude 8 degrees South; thence East to 155 degrees East longitude. On the East: By the meridian of 155 degrees East longitude to 15 degrees South latitude; thence to 28 degrees South latitude to the meridian of 170 degrees East longitude; thence South to 30 degrees South latitude; thence west to the meridian of 160 degrees East longitude; thence south. On the South: By the Antarctic Circle. On the West: By the meridian of 95 degrees East longitude.

* As defined.

4. *Vessels and Personnel of the Australian Navy.*—The following table shews the vessels of the Royal Australian Navy:—

LIST OF SHIPS OF THE ROYAL AUSTRALIAN NAVY, MAY, 1919.

Vessel.	Description.	Displacement.	Power.	Position.
		Tons.	H.P.	
<i>Adelaide</i>	Light Cruiser ..	5,500	25,000	Building at Sydney
<i>Anzac</i>	Flotilla Leader ..	1,660	36,000	Commissioned
<i>Australia</i>	Battle Cruiser ..	19,200	44,000	"
<i>Brisbane</i>	Light Cruiser ..	5,400	25,000	"
<i>Cerberus</i>	Turret Ship ..	3,480	1,660	"
<i>Countess of Hopetoun</i>	First Class Torpedo Boat	75	..	"
<i>Encounter</i>	Light Cruiser ..	5,880	12,500	"

LIST OF SHIPS OF THE ROYAL AUSTRALIAN NAVY, MAY, 1919—*continued.*

Vessel.	Description.	Displacement.	Power.	Position.
		Tons.	H.P.	
<i>Franklin</i>	Yacht	288	68	Commissioned
<i>Gayundah</i>	Gunboat	360	400	"
<i>Huon</i>	T.B. Destroyer	700	10,600	"
<i>Melbourne</i>	Light Cruiser	5,400	25,000	"
<i>Parramatta</i>	T.B. Destroyer	700	10,600	"
<i>Penguin</i>	Depot Ship	1,130	..	"
<i>Pioneer</i>	Light Cruiser	2,200	9,000	"
<i>Platypus</i>	Submarine Depot Ship	3,476	2,650	"
<i>Protector</i>	Gunboat	920	1,641	"
<i>Sleuth</i>	Patrol Vessel	108	160	"
<i>Stalwart</i>	T.B. Destroyer	1,250	27,000	"
<i>Success</i>	"	1,250	27,000	"
<i>Swan</i>	"	700	10,600	"
<i>Swordman</i>	"	1,250	27,000	"
<i>Sydney</i>	Light Cruiser	5,400	25,000	"
<i>Tasmania</i>	T.B. Destroyer	1,250	27,000	"
<i>Tattoo</i>	"	1,250	27,000	"
<i>Tingira</i>	Boys' Training Ship	1,800	..	"
<i>Torrens</i>	T.B. Destroyer	700	10,600	"
<i>Una</i>	Sloop	1,438	1,350	"
<i>Warrego</i>	T.B. Destroyer	700	10,600	"
<i>Yarra</i>	"	700	10,600	"
FLEET AUXILIARIES—				
<i>Biloela</i>	Fleet Collier	5,700	2,300	"
<i>Kurumba</i>	Fleet Oiler .. ..	..	..	"
SUBMARINES, "J" CLASS—				
1, 2, 3, 4, 5, 7 .. ..	.. ..	1,900	1,400	"
		(submerged)		
		1,170	3,600	"
		(on surface)		

Besides the Sea-going Forces, there is a R.A.N. Brigade, which is composed of Citizen Naval Trainees and men enlisted for Home Naval Service on shore (mostly returned soldiers). The *personnel* of the Sea-going Forces, which was originally largely composed of Imperial officers and men, is now mainly Australian in character and will become more so as training schools and establishments for the higher and more technical grades are established after the war.

STRENGTH OF NAVAL FORCES (PERMANENT AND RESERVES), 31st DECEMBER, 1918.

Description of Force.	Numbers Borne.		
	Officers.	Men.	
Royal Australian Navy (<i>Seagoing</i>)	330	4,933	
Cadet Midshipmen undergoing training at R.A.N. College	120	..	
Boys undergoing training in H.M.A.S. <i>Tingira</i>	285	..	
Royal Australian Naval Reserve (<i>Seagoing</i>)	40	..	
Royal Australian Naval Brigade	166	5,566	

§ 3. Expenditure on Defence.

1. Expenditure, 1913-14 to 1918-19.—The following table gives the expenditure on Defence from 1913-14 to 1917-18, and the estimate for 1918-19:—

EXPENDITURE ON DEFENCE, 1913-14 TO 1918-19.

Branch or Department.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19. Estimate.
	£	£	£	£	£	£
Defence—Central Administration	(a)217,804	(a)211,327	(a)367,967	(a)247,028	(a)134,537	(a)156,329
Naval Forces	1,005,649	1,383,030	1,447,068	1,449,062	1,463,945	1,511,771
Military Forces	1,538,544	1,125,949	988,787	1,120,510	965,769	1,446,809
Rent, Repairs, and Maintenance	70,471	79,665	94,146	84,233	73,134	84,807
Additions, New Works, Lands, etc.	275,765	258,081	390,774	163,832	46,679	40,190
Military Stores	416,842	265,252	242,527	183,091	87,893	77,986
Audit Office	1,362	2,307	6,652	12,297	23,696	10,100
Pensions and Retiring Allowances	1,103	1,427	1,262	1,115	1,277	1,380
Supervision of Public Works by						
State Officers	7,773	6,119	4,573	2,831	1,315	1,800
Fleet Unit	753,633	568,204	396,072	374,249	355,397	(b)
Naval Works	218,839	362,782	789,400	913,265	495,836	683,733
Interest and Sinking Fund on						
Transferred Properties ..	94,858	177,741	128,439	129,570	129,548	129,600
Miscellaneous	252	3,320	5,798	522	126,069	329,938
Sites for Defence purposes ..	136,497	66,364	120,558	129,809	(c)	(c)
Machinery, etc., Cockatoo Island, etc. .. ..	..	42,782	66,840	(d)	(d)	(d)
Proportion Public Works Staff						
Salaries	12,908	13,881	21,320	19,200	17,710	20,800
Total (ordinary)	4,752,300	4,568,321	5,072,183	4,830,664	3,922,855	4,495,243
Buildings and Sites provided from loan funds .. ..	..	..	..	..	115,700	321,500
War Expenditure(e) .. ..	..	15,111,335	41,201,946	61,535,891	66,742,350	100,044,411
Total Expenditure on Defence ..	4,752,300	19,679,656	46,274,129	66,366,555	70,665,205	104,539,654

Figures are in some cases liable to small adjustments by audit.

(a) Includes establishments under the control of the Central Administration. (b) Provided from War Loan Fund. (c) Provided from Loan Fund. (d) Included in naval works above. (e) Details of war expenditure will be found on page 1028.

2. Appropriation for Defence Purposes, 1901-2 to 1918-19.—In the following table the Defence expenditure for the whole Commonwealth period, 1901-2 to 1918-19, is given:—

ANNUAL DEFENCE EXPENDITURE.

Year.	Naval.			Military.			Total Defence Expendi- ture.
	Under Ordinary Votes and Appropri- ations.	Works, Arms, Equipment, etc. (provided under Estimates for New Works and Buildings).	Total Naval.	Under Ordinary Votes and Appropri- ations.	Works, Arms, Equipment, etc. (provided under Estimates for New Works and Buildings).	Total Military.	
	£	£	£	£	£	£	£
1901-2 ..	178,819	..	178,819	777,620	2,640	780,260	959,079
1902-3 ..	149,701	..	149,701	595,115	5,537	600,652	750,353
1903-4 ..	240,005	86	240,091	502,517	113,156	615,673	855,764
1904-5 ..	200,394	5,394	205,788	533,945	194,865	728,810	934,598
1905-6 ..	250,273	1,743	252,016	548,439	169,890	718,329	970,345
1906-7 ..	255,120	652	255,772	585,516	194,507	780,023	1,035,795
1907-8 ..	259,247	250,958	510,205	634,579	189,960	824,539	1,334,744
1908-9 ..	263,207	4,055	267,262	686,365	96,965	783,330	1,050,592
1909-10 ..	269,051	60,688	329,739	928,393	277,273	1,205,666	1,535,405
1910-11 ..	303,493	1,161,541	1,465,034	1,092,305	448,687	1,540,992	3,006,026
1911-12 ..	461,546	1,172,920	1,634,466	1,667,103	780,279	2,447,382	4,081,848
1912-13 ..	806,881	853,735	1,660,616	1,805,806	879,883	2,685,689	4,346,305
1913-14 ..	1,006,424	980,677	1,987,101	1,944,297	820,902	2,765,199	4,752,300
1914-15 ..	5,991,776	936,081	6,970,639a	12,124,415	584,602	12,709,017	19,679,656
1915-16 ..	7,501,565	1,216,637	8,785,042b	36,765,044	724,043	37,489,087	46,274,129
1916-17 ..	7,907,556	1,359,919	9,267,475	56,693,746	405,334	57,099,030	66,366,555
1917-18 ..	3,508,244	111,426	4,357,477c	66,066,283	134,572	66,307,723d	70,665,205
1918-19 ..	8,032,436	14,000	8,716,169d	95,428,809	118,176	95,823,435f	104,539,654

(a) Includes £42,782 loan expenditure on works. (b) Includes £66,840 loan expenditure on works.
(c) Includes £733,807 loan expenditure on works. (d) Includes £569,733 loan expenditure on works.
(e) Includes £106,918 loan expenditure on works. (f) Includes £276,500 loan expenditure on works.

NOTE.—In the year 1900-1 the approximate Defence Expenditure made by the States was:—

Ordinary Services	£800,000
Works, Arms, Equipment, etc. ..	200,000
Total	£1,000,000

3. **Special War Expenditure.**—The special war expenditure during the present war will be found on page 1028.

4. **Expenditure in Various Countries.**—The total expenditure on defence and the expenditure per inhabitant in various countries according to estimates made immediately prior to the present war, were as follows :—

ESTIMATED PRE-WAR EXPENDITURE ON DEFENCE.—VARIOUS COUNTRIES.

Country.	Year.	Army.	Navy.	Total.	Per Inhabitant.
		£	£	£	s. d.
Great Britain	1913-14	23,220,000	46,309,000	74,529,000	32 3
Germany	1913-14	73,833,000	24,012,000	97,845,000	30 2
France.. ..	1913	38,286,000	18,452,000	56,738,000	28 7
Italy	1913-14	14,546,000	9,068,000	23,614,000	13 7
Austria-Hungary ..	1913	16,500,000	3,100,000	19,600,000	7 8
Switzerland	1913	1,772,000	..	1,772,000	9 1
Russia	1913	64,136,000	22,817,000	86,953,000	10 5
Spain	1913	6,391,000	2,827,000	9,218,000	9 3
Portugal	1913-14	2,190,000	851,000	3,041,000	10 3
Norway	1913-14	867,000	337,000	1,204,000	9 11
Sweden	1913	3,063,000	1,447,000	4,510,000	16 0
Denmark	1913-14	1,081,000	544,000	1,625,000	11 5
Holland	1913	2,780,000	1,678,000	4,458,000	14 6
Belgium	1913	3,260,000	..	3,260,000	8 7
United States	1913-14	35,073,000	29,464,000	64,537,000	14 0
Canada	1912-13	1,872,000	..	1,872,000	5 2
Japan(a)	1913-14	7,815,000	4,224,000	12,039,000	3 6
Australia(b)	1913-14	3,291,000	2,456,000	5,747,000	23 7

(a) Excluding extraordinary expenditure.

(b) Total excluding special war expenditure.

§ 4. Industrial Establishments and Remount Depot.

1. **Commonwealth Factories.**—There are seven factories established under the authority of the Defence Act in connection with the Defence Department. The Commonwealth Harness, Saddlery, and Leather Accoutrements Factory at Clifton Hill, Victoria, was opened in September, 1911. On 30th June, 1918, there were 142 persons employed, including 55 females. A large quantity of harness and saddlery, leather and canvas equipment has been turned out for the Defence and Postmaster-General's Departments. The factory is now able to cope with practically the whole of the peace requirements of these departments in the way of leather and canvas equipment. At the Cordite Factory at Maribyrnong, Victoria, cordite is manufactured for the cartridges required for military purposes. On 30th June, 1918, the employees numbered 183. The Clothing Factory at South Melbourne, Victoria, commenced operations on 3rd January, 1912. Since 1st July, 1912, a satisfactory output has been maintained. The number of employees on 30th June, 1918, was 668, of whom 581 were females. The establishment is able to supply the whole of the uniform clothing required for the Defence Forces and the Postmaster-General's Department. The Small Arms Factory at Lithgow, New South Wales, was opened on 1st June, 1912. The first instalment of Australian arms was delivered in May, 1913. Employees numbered 1,161 on 30th June, 1918. The Commonwealth Woollen Cloth Factory was established at Geelong, Victoria, for the supply of uniform materials and woollen fabrics, and commenced operations in the latter part of 1915; 256 persons, including 122 females, were employed on the 30th June, 1918.

A sixth Commonwealth Factory has been established at Bulimba, Brisbane, for the manufacture of acetate of lime (a raw material used in the production of acetone) and commenced operations in September, 1918. This factory is run in conjunction with the Cordite Factory.

A seventh Commonwealth Factory was established at Caulfield, Victoria, for the manufacture of artificial limbs.

2. Expenditure.—The value up to 30th June, 1918, of land, machinery and plant, factory fittings and furniture in connection with the factories now in operation was approximately as follows:—

Small Arms Factory	£225,478
Cordite Factory	153,345
Clothing Factory	23,838
Harness Factory	15,202
Woollen Cloth Factory	160,959
Acetate of Lime Factory	76,484

3. Remount Depot.—The Act of 1910 authorised the establishment and maintenance of horse depots, farms, and stations for the breeding of horses. Up to the present nearly 2,000 remounts have been purchased. They are primarily to supply the requirements of the Field Artillery Batteries, but are also available for the use of other mounted units. Remount depots have been purchased or are leased in each of the military districts, and veterinary hospitals have also been established in the larger States. In Victoria and South Australia stables have been built. A remount section of the Army Service Corps has been formed for the purpose of breaking, training and looking after remounts generally. These sections were so organised as to be capable of rapid expansion in case of emergency, and when war was declared in 1914 little difficulty was experienced by the Remount Service in coping with the enormous task of obtaining and training horses for the mounted units of the A.I.F. and in providing for the shipment of horses to Egypt and India as required.

§ 5. Australian Contingents.

1. New Zealand and Sudan Campaigns.—Many residents of New Zealand served with the Imperial forces in the New Zealand war. Fuller particulars will be found in Official Year Book No. 6, p. 1071. In 1885 a field battery, an infantry battalion, and an ambulance corps, numbering in all 770, with 218 horses, left New South Wales to take part in the Suakin campaign.

2. South African War.—In 1899 the outbreak of war with the Boers led to the several States of Australia offering contingents. This service was continued when, on 1st March, 1901, the control of the defence forces passed over to the Commonwealth. Besides the troops officially organised, many Australians served as members of units raised in Great Britain and South Africa. The following table shews the strength of the military contingents sent at various times from Australia to South Africa:—

STRENGTH OF MILITARY CONTINGENTS SENT FROM AUSTRALIA TO SOUTH AFRICA.

State.	State Troops at State Expense.			State Troops at Imperial Expense.			Commonwealth Troops.			Grand Total.		
	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.
New South Wales	160	3,217	3,135	76	1,308	1,443	78	1,271	1,294	314	5,796	5,872
Victoria	47	751	830	77	1,569	1,877	69	1,052	1,118	193	3,372	3,825
Queensland	39	694	868	73	1,346	1,603	37	699	736	149	2,739	3,207
South Australia .. .	20	326	258	46	644	696	23	467	490	89	1,437	1,444
Western Australia ..	18	331	269	34	540	608	15	291	306	67	1,162	1,183
Tasmania	6	173	58	17	358	422	13	290	303	36	821	783
Total	290	5,492	5,418	323	5,765	6,649	235	4,070	4,247	848	15,327	16,314

There were, in addition, several special service officers attached, at the request of the colonial Governments, to the British forces; these officers served with the Imperial troops with a view to aiding the development of the Commonwealth forces, particularly in regard to the routine and administration of troops on service.

3. *The China War, 1900.*—The Home Government also accepted the offer of contingents from Australia on the outbreak of the Boxer rebellion in China. Naval volunteers were furnished by New South Wales and Victoria, and South Australia equipped a gunboat for the Imperial service. The strength of the New South Wales contingent was 260, and that of the Victorian 200, of all ranks.

4. *The European War, 1914.*—Upon the imminence of war between Great Britain and Germany, but prior to its actual outbreak, viz., on 3rd August, 1914, the Commonwealth Government notified Great Britain of its readiness, in the event of war, to place the vessels of the Australian Navy under the control of the British Admiralty when desired, and to despatch an expeditionary force of 20,000 men of any suggested composition to any destination desired by the Home Government, cost of despatch and maintenance to be borne by the Commonwealth. On 10th August, war having meanwhile been declared on the 4th August, all vessels and all officers and seamen of the Royal Australian Naval Forces were transferred to the King's Naval Forces for the period of the war. Upon the suggestion of the Imperial authorities it was decided that the composition of the expeditionary force of 20,000 should be a division, on the basis of the Imperial Army (of staff, three brigades, and divisional troops, but without howitzer brigade and heavy battery), and one light-horse brigade. After this force had been raised, the Commonwealth notified the Home Government that a further body of troops, comprising lines of communication units, supply units, and hospitals (about 2,000), first reinforcements (about 3,000), two additional light-horse brigades (about 4,000), an additional infantry brigade (about 4,500), and certain veterinary units, would be despatched. The first convoy left the rendezvous in Australian waters on 1st November, and landed in Egypt on 5th December, for the defence of that country—which was shortly afterwards proclaimed a British protectorate—and to undergo war training in the vicinity of Cairo. The second convoy left Australia late in December. After the departure of the second convoy, the system of despatching troops in convoys was discontinued. Troops continued to be sent overseas until the termination of the war. An expeditionary force was despatched to German possessions in the Pacific, and other units to various places in the war zone.

(i) *Australian Imperial Force.* Up to 31st December, 1918, the troops despatched from Australia for active service numbered 329,682. These were organised chiefly into the undermentioned units, some of which have since been disbanded or absorbed into other units :—

(a) *Army Corps Troops*—

- 2 Army Corps Mounted Regiments.
- 2 Corps Cyclist Battalions.
- 3 Army Field Artillery Brigades.
- Army Field Artillery Signal Sub-sections.
- Army Corps Engineers.
- Army Corps Wireless Telegraph Section Engineers.
- Entrenching Battalion.
- Topographical Section.
- Provost Corps.

(b) *Mounted Division*—

- 5 Light Horse Brigades (15 Regiments).
- 5 Machine Gun Squadrons.
- Field Squadron Engineers.
- 2 Field Troops "
- Signal Squadron "
- 5 Signal Troops "
- Mounted Divisional Train (A.S.C.).
- 2 Depot Units of Supply.
- 5 Mobile Veterinary Sections.

(c) 5 Divisions—

- 15 Infantry Brigades (60 Battalions).
- 5 Pioneer Battalions.
- 5 Machine Gun Battalions (20 Companies).
- 10 Field Artillery Brigades (40 Batteries).
- 5 Divisional Ammunition Columns.
- 35 Trench Mortar Batteries.
- 15 Field Companies Engineers.
- 5 Divisional Signal Companies Engineers.
- Wireless Signal Sections Engineers.
- 5 Divisional Trains, 20 Companies (A.S.C.).
- 5 Field Bakeries.
- 5 Field Butcheries.
- 25 Depot Units of Supply.
- Motor Ambulance Workshop.
- 5 Mobile Veterinary Sections.
- 15 Field Ambulances.
- 5 Sanitary Sections.
- 5 Infantry Base Depots.

(d) Miscellaneous Units—

- Siege Artillery Brigade (2 Batteries).
- 4 Service Flying Squadrons.
- 4 Training Flying Squadrons.
- Aeroplane Squadron ($\frac{1}{2}$ Flight) for service in Mesopotamia.
- Mining Corps (3 Companies).
- 3 Tunnelling Companies.
- Electrical and Mechanical Mining and Boring Company.
- Naval Bridging Train.
- Divisional Ammunition Park.
- 5 Divisional Supply Columns (Mechanical Transport).
- Reserve Park.
- Armoured Motor Car Section.
- Railway Supply Detachment.
- 3 Light Railway Operating Companies.
- 3 Broad-gauge Railway Operating Companies.
- 2 Remount Units.
- Remount Section.
- 2 Veterinary Sections.
- Veterinary Hospital.
- Wireless Signal Squadron Engineers for service in Mesopotamia.
- 3 Battalions Imperial Camel Corps (12 Companies).
- Camel Brigade Field Ambulance.
- Cavalry Divisional Signal Squadron Engineers for service in Mesopotamia.
- 4 General Hospitals.
- 3 Casualty Clearing Stations.
- 3 Auxiliary Hospitals.
- 2 Stationary Hospitals.
- Dermatological Hospital.
- Salvage Corps.
- Army Ordnance Corps.
- Army Ordnance Corps (I.O.M. Section).
- 2 Hospital Ships.
- Dental Services.
- Nursing Services.
- Other Administrative, Training and Departmental Units.
- Naval and Military Expeditionary Force (for service in New Guinea).

Troops in Training.—In addition to the above units, on the 11th November, 1918, the date of signing of the armistice, 7,442 troops were in training throughout Australia in preparation for despatch to the front.

Reinforcements.—Reinforcements were despatched monthly for all units of the A.I.F., and from time to time as required for the troops serving in Mesopotamia and German New Guinea.

(ii) *The Dardanelles, France, and Flanders.* Towards the end of April, 1915, a body of Australian troops left Egypt for the Dardanelles, and on the 25th April came under fire. Acting in conjunction with British, Indian, and French troops, and under the command of General Sir Ian Hamilton, who, as Inspector-General of Oversea Forces, had visited Australia shortly before the outbreak of war (see Official Year Book No. 7, p. 1067), they attacked the positions on Gallipoli Peninsula (Dardanelles). The operation was regarded as formidable, but the allied troops effected a landing in the face of determined resistance. Towards the end of 1915, it was decided to evacuate the Gallipoli Peninsula, which difficult operation was successfully carried out, so far as the Australian troops were concerned, on the 20th December, 1915.

The Australian troops from the Dardanelles, after a brief rest in Egypt, were used for the defence of Egypt and the Suez Canal, taking up a line of trenches in Sinai desert, about ten miles east of the Canal, and roughly parallel with it. Other divisions were formed in Egypt from the troops who had been despatched as monthly reinforcements for the Gallipoli Campaign, but who, when the withdrawal had been decided upon, were massed at Tel-el-Kebir. The 1st and 2nd divisions were consolidated and reorganised, and the 4th and 5th divisions were organised and trained. In April and the following months, these four divisions were transferred to France, leaving the Light Horse (except two regiments who were joined with the infantry divisions to act as divisional cavalry) in Egypt. A further division, the 3rd, raised in Australia and trained in England, moved over to France towards the end of 1916.

For the first few weeks on the Western front, the Australians were in a quiet sector, about Armentières, Laventie, Wytschaete, and Messines. In July, 1916, an engagement at Fleurbaix proved costly to one of the divisions, but it prevented the German reserves from going south to the Somme, where British and French troops attacked the enemy with the object of easing the pressure of the German onslaught on Verdun. Pozières and the Thiepval Ridge fell to the Australians, strenuous counter-attacks proving futile. Mouquet Farm, on the ridge, changed hands repeatedly at short intervals, but was ultimately held by Australian troops, though only after a heavy toll in lives had been taken. After continuous fighting, the position was consolidated, and by the end of August was definitely won. After a short rest in the vicinity of Ypres, October found four divisions of the Australian army again on the Somme, where they remained through the winter months.

In March, 1917, Australian troops attacked to the north of the Somme, pushing back the enemy, and capturing Bapaume and Peronne. The Germans fell back on the Hindenburg line, where they were attacked in exceptionally strong positions near Lagnicourt in April.

In the assault on the Bullecourt-Quéant redoubt—a most important junction-point in the German line—the Australians were subjected to intense artillery fire and a succession of rapid and determined counter-attacks, notwithstanding which, Bullecourt was taken, though a week elapsed from the time the first troops fought their way in until the occupation was completed. The position was held, despite the most strenuous efforts of the Germans to retake it.

Meanwhile the Tunnelling Corps had, in months of laborious work on the Flanders front, mined the Messines Ridge and Hill 60. All was ready by June, and a tremendous explosion which blew the Hill out of existence, was followed by an attack of the 3rd division, in which the high ground around Wytschaete and Messines was taken. Some guns were also captured in the vicinity of Bethlehem Farm.

In September great activity was again shown on the Ypres front. Polygon Wood fell to a desperate onslaught, unrelieved by no less desperate enemy counter-attacks. Within a few days, Zonnebeke was also taken.

In the attack on Passchendaele Ridge in October, nearly 100,000 Australian troops were engaged. At a heavy sacrifice, these troops overcame all difficulties, and pushed

the opposing troops back over a wide area. The rapid approach of winter conditions prevented for a time any further fighting of importance.

Towards the end of March, 1918, the Germans advanced to a heavy attack, which, developing along a wide front, was concentrating about Amiens, in the hope of opening thereby a way to Paris. As the result of a brilliant action at Villers-Bretonneux, the Australians were named the Saviours of Amiens. There followed a series of small battles on the Ancre-Somme front, and in the vicinity of Amiens.

In July, Hamel front was won, the action being notable as that in which Americans were first associated with Australian troops. On 8th August, a smashing blow was delivered over a wide area which broke the enemy defence. All the five Australian divisions were in the line. Within a few days the position on the Somme was turned, and the enemy was thoroughly beaten. The Australian troops were given a short rest, and were again re-entering the line, when the news was received that the Armistice had been signed.

(iii) *Other Land Operations.* The Light Horse, which had remained in Egypt when the Australian infantry left for France, were reinforced by fresh arrivals from Australia, and organised into mounted divisions. Other reinforcements, together with some Yeomanry and New Zealanders, were organised into a Camel Corps. These troops became known as the Anzac Mounted Division, and formed the larger portion of the Desert Column of mounted troops. The Signal Service of this army was furnished by an Australian Signal Squadron.

In the Canal region, activity was shown by enemy forces at the beginning of 1916. After a futile attempt on the Canal early in February, 1916, Turkish troops were defeated at Jiff Jaffa in April. In June, Arabia revolted from Turkish suzerainty. At Romani, in the following August, a Turkish defeat was followed by rout.

Meanwhile the desert railway eastward from the Canal was being rapidly constructed, from its western base at El Kantara. The capture of El Arish and Magdhaba in December was followed by the battle of Rafa in January, 1917, where the Desert Column inflicted severe loss on the harassed enemy, and by clearing the Sinai desert of regular enemy troops, opened the way into Syria.

Strong Turkish positions were prepared about Gaza and Beersheba. In March and April, British attacks on these positions failed. A period of comparative inaction followed during the hot season. Here, as on the Western front, the Australians took part in a succession of dashing raids. In November, a great victory was scored in the third attack on Gaza. The occupation of Jaffa and Ramleh followed; Jerusalem surrendered on 10th December. By Christmas, Southern Palestine was almost clear of the enemy.

Early in 1918 the Australians dashed into Jericho. Thereafter for some months, the advance was slow, but steady. In September the plain of Sharon was crossed, and the Light Horsemen greatly harassed the retreating enemy. Nazareth, Samaria, and Jenin fell in rapid succession. The Upper Jordan was crossed. Damascus was encompassed, and capitulated. The loss of Aleppo a few days before the cessation of hostilities, threatened the Turkish line of communications with Mesopotamia.

The Senussi, a tribe inhabiting the western frontiers of Egypt, had, through Turco-German intrigues, shewn open disaffection since the commencement of hostilities. On Christmas Day, 1915 (almost co-temporaneous with the evacuation of Gallipoli), the tribesmen were brought to a stand and totally defeated by a desert column in which was a large proportion of Australian horsemen. Further trouble developed in the following year, and in the battle of Matruh a large force of Arabs was defeated. A fresh revolt was crushed by the victory over the troops of the Sultan of Darfur at Fashen. After a period of inaction, the revolt was finally crushed in November, 1916.

Late in October, 1917, bodies of Australian troops were diverted to aid the Italians in their defence against the great Austro-German advance which began on the north-east Italian border.

In various theatres of war, Australian *personnel* was engaged on special duties, or on lines of communication. A Divisional Supply Park left Australia in 1915, and was on service in France before the Australian Infantry arrived there in April, 1916. In the

same year, the Siege Artillery left for England, whence, training being completed, the unit crossed to France to work in conjunction with the Allied forces. Flying squadrons and wireless units served in Mesopotamia. A corps was recruited from men whose daily work is in the mines.

Flying units also undertook independent action in Egypt, Palestine, and other places. On the European Western front, much use was made of this new arm. The provision of medical units, in addition to the three Field Ambulances that form an integral part of a division, was made possible by the large numbers of the medical and nursing professions who offered for service. Hospital ships, and general, auxiliary, stationary and casualty clearing hospitals were established and maintained in Egypt, the Mediterranean, Great Britain, and France. Upon special request of the Imperial authorities, a number of Australian medical men served with the Imperial Army, and a number of trained nurses with the Salonika force. Other localities where medical and nursing work has been accomplished by Australians were New Guinea, Mesopotamia, India, the Persian Gulf, East Africa, and Vladivostock.

The number of casualties announced by the Defence Department to 31st December, 1918, was as follows :—

CASUALTIES IN AUSTRALIAN IMPERIAL FORCE TO 31st DECEMBER, 1918.

	All Ranks.
Deaths from wounds or disease	*58,961
Missing and prisoners of war	*4,098
Casualties from wounds or gas	166,811
Sick	87,865
Casualties not specified	*218
Total	317,953

The figures marked * represent actual net totals after all corrections consequent upon erroneous and later advice, etc., have been taken into account. The wounded and sick represent totals reported by cable and are in excess of the actual number of men affected, because many are admitted to hospital more than once.

(iv) *The Expeditionary Force in the Pacific.* Upon the suggestion of the Imperial Government, the Commonwealth also despatched an expeditionary force against certain German possessions in the Pacific Ocean. The force contained both naval and military details, and consisted of six companies of the Royal Australian Naval Reserve, one battalion (eight companies) of infantry, two sections of machine guns, a signalling section, and army medical details.

The main objects of the expedition were to seize German wireless stations in the Pacific, to occupy German territory and hoist the British flag, and to arrange for temporary administration.

A complete self-contained force of the above-named units, fully armed and equipped, left Sydney on 19th August, 1914, under escort of vessels of the Royal Australian Navy.

The Naval Board, besides distributing the orders and instructions of the Admiralty, under whose control the Royal Australian Navy was placed, arranged for the supply of coal, oil, stores, munitions, etc., and for the dissemination of intelligence. The task of the Australian Navy was of a three-fold nature: (a) to police the seas and ensure that they should be uninterruptedly free to commerce; (b) to co-operate in ridding the seas of the enemy's cruisers and in destroying his bases and sources of supply; (c) to assist in conveying the expeditionary forces to Europe and to the German Pacific possessions.

The operations against the German colonial troops resulted, within two months, in the capture of the whole of the enemy's possessions in the Pacific. The German Pacific wireless chain was broken. Several of her ships were captured. Samoa was occupied by a force from New Zealand. The German Pacific Protectorate (*Das Deutsches Sudsee Schutzgebiet*) was terminated. It comprised German New Guinea, the Bismarck Archipelago, the two northernmost islands of the Solomon group (Bougainville and Bulka), the choicest island of the Samoan group (now occupied by New Zealand), the Marshall Islands, the Carolines, Pelew, and the Ladrões (except Guam, which belongs to America). Of these groups, the Bismarck Archipelago is the most important. It includes New Britain, New Ireland, New Hanover, and several small islands—the Admiralty, Natty, Exchequer, Hermit, Anchorite, French, Gervit Denys, Sir Charles Hardy, St. John, St. Mathias, Squaly Islands, and others.

(v) *The Australian Navy in the War.* While in peace time the Australian Navy is under the sole control of the Commonwealth Government (subject to the maintenance of a general uniformity of training and discipline, which allows interchangeability of officers and men between the British and Australian naval forces), it has been understood from the outset that in time of war the Commonwealth Government would place its Navy at the disposal of the Imperial Authorities, and that thereupon the squadron would become an integral part of the Imperial fleet for the duration of the war. In 1909 the Fisher Ministry offered to make this transfer automatic; but at that year's Conference it was arranged that it should be left to the good feeling of whatever Government should be in office when a war broke out.

The first actual warning of the impending war in 1914 reached Australia on 30th July from the officers commanding the East Indies and the China squadrons. The Naval Board had already taken preliminary steps towards a war organisation, and on the 31st it was established. On 3rd August the Federal Government made a definite offer to place the squadron under Admiralty control in the event of war, and this was formally done on the 10th. From that date, all ships, officers and seamen of the Commonwealth Naval Forces became an integral part of the Imperial Navy "during such period as the state of war against Germany shall continue."

At the outbreak of war the *Australia* and *Sydney* had been in Australian waters barely nine months, but the greater part of this time had been spent in hard training for active service. When war became imminent, the squadron was off the Queensland coast; in four days it was ready for war, although most of the ships had to be recalled to Port Jackson for refit. Directly war was declared, it was sent north to search the German Islands for the German squadron, of which nothing was known except that it was somewhere in the Pacific. The search had scarcely begun, however—Simpsonshafen and a few other bays in the Bismarck Archipelago had been drawn blank—when the *Australia* was recalled by Imperial orders to escort New Zealand troops to Samoa, returning from that task to escort Australian troops (including a contingent of the Naval Brigade) to Rabaul, while the light cruisers visited Nauru and Anguar and destroyed the German wireless stations on those islands. Directly these operations had been carried out, the light cruisers were withdrawn from the Pacific altogether, and allotted to escort to Egypt the first convoy of Australian troops for European service.

This left the *Australia*, the *Encounter*, and the three destroyers to resume the search for the German squadron, which meanwhile had appeared for a moment off Samoa and incidentally raided the cable station at Fanning Island. Accordingly the *Australia*, after helping to complete the occupation of German New Guinea, proceeded to Fiji and instituted a series of sweeping movements eastwards, in case the German ships should design to recapture Samoa or attack Australasian trade. When, early in November, the German squadron was found on the Chilean coast (where it fought a successful action with a weaker British squadron), the *Australia* was despatched to Mexican waters to join an allied squadron, and in the end followed the Germans into the Atlantic. There she captured their store-ship—and the warships themselves having been destroyed off the Falklands by Admiral Sturdee—and went to England to become one of the Grand Fleet's battle cruisers in the North Sea.

The destroyers had from the first taken a very active part in New Guinea operations. They had by night penetrated the harbour at Simpsonshafen during the first visit to Rabaul; they had shared in the second attack on Rabaul, and landed a contingent to assist in the fighting for the wireless station; when the *Australia* left for Fiji, they searched the coast of German New Guinea and the adjacent islands for any small German warcraft that might be lying hidden up one or other of the big rivers. In the course of this work they explored the Sepik River, the most important in New Guinea, for several hundred miles inland. Subsequently, up to the spring of 1915, they maintained a patrol of the north-eastern coasts of Australia, and were then despatched to join the China squadron, which was chiefly employed in destroying enemy trade and thwarting enemy plots in the area between Colombo and Timor.

The rest of the Australian squadron was now scattered over the oceans. The *Melbourne* and *Sydney*, having convoyed the troops safely to Egypt (on the voyage the *Sydney* intercepted and destroyed the raider *Enden* which had gravely damaged British commerce in the Indian Ocean), were allotted to the North Atlantic patrol and spent the next two years in guarding trade and searching for enemy raiders between Halifax and the Amazons. The *Pioneer*, which had begun the war as patrol-ship off Western Australia, joined a squadron at work on the East African coast, and took part in the destruction of the *Koenigsberg* and the occupation of German East Africa. Of the two Australian submarines, one was lost near Rabaul, apparently not by enemy action; the other was sent to the Dardanelles, was one of the first submarines to enter the sea of Marmora, and was wrecked there by the Turks. Two small vessels, the *Psyche* and *Fantome*, placed by the Admiralty under Australian control, joined the China squadron in July, 1915, and took up patrol work in the Bay of Bengal, and a German yacht, the *Komet*, which had been captured in a New Britain harbour and converted into H.M.A.S. *Una*, was used to patrol the coast of New Guinea and the Bismarck Archipelago.

Between December, 1915, and October, 1916, three destroyers and a light cruiser, all built at Cockatoo Island, were commissioned and put on active service. The destroyers went to Singapore to relieve those already with the China squadron, the *Brisbane* was sent to the Mediterranean. But events of the early months of 1917—when the German submarine campaign was intensified, and evidence came to hand of the presence of raiders in both the Indian and the Pacific oceans—altered the whole disposition of the Australian ships. The *Melbourne* and *Sydney* were recalled from the Atlantic patrol to join a light cruiser squadron of the Grand Fleet; the *Brisbane* came back from the Mediterranean to search the Indian Ocean, and afterwards patrolled the ex-German islands; the destroyers, all six of them, were sent to the Mediterranean to escort convoys and support an anti-submarine barrage in the mouth of the Adriatic. The *Encounter*, which had for a long time been patrol vessel off Fremantle, convoyed troopships between New Zealand and Colombo and at intervals visited the Western Pacific; and the safety of the Australian coast was ensured by a system of local patrols carried out by specially commissioned sloops and gunboats, while mines laid by the Indian Ocean raider *Wolf* before these precautions had been taken were swept up by specially equipped mine-sweepers. At the close of hostilities the *Australia*, two light cruisers, and the two fleet auxiliaries were serving in British waters; the third light cruiser and six destroyers in the Mediterranean; the *Encounter* was guarding the Australian trade route in the Indian Ocean, and the *Fantome* that through the Western Pacific; the *Una* was patrolling New Guinea waters; and seven smaller vessels were on the coastal patrol.

It is worth note that during the war Australian vessels were twice called on to assist the Condominium authorities in maintaining order in the New Hebrides—the *Una* acting with a French warship in 1916, and the *Fantome* by herself in 1918.

Apart from the doings of the sea-going Navy, important work was done throughout the war by Naval forces acting on land and along the Australian coast. Thus the Royal Australian Naval Brigade conducted the examination services in force at each defended

port, the signal and lookout stations, harbour patrols, wharf and dock defences, and other similar duties, besides manning the coastal patrol vessels and mine-sweepers already mentioned. It also contributed to the fighting forces overseas a contingent which fought in German New Guinea, and a Bridging Train which operated at Gallipoli and in Egypt; supplied many ratings both to the sea-going navy and to the naval radio service; and provided gun crews and signalmen to many transports and merchantmen.

The Naval Dockyards and similar establishments during the war built one light cruiser (a second is nearly ready), three destroyers, a fleet collier and numerous small craft, fitted up more than 70 transports, with accommodation for 113,000 men and 17,000 horses, converted the *Komet* into the *Una*, and supplied gun platforms to 64 merchant vessels for defensive purposes. The Transport Branch organised and completed the despatch to Europe of about 350,000 troops and Naval forces, besides nearly 38,000 horses, and—until the control of shipping was taken over by a separate Department—sent away cargo to the value of nearly 13 millions sterling. Important work was also carried out by the other Naval establishments.

The operations of the R.A.N. Radio Service during the war included organisation and control of the Naval Wireless Telegraph Shore Stations of Australia and the Pacific for the conduct of communications with H.M. and H.M.A. ships, transports, and all vessels of the mercantile marine.

The success of Fleet operations in Australian, Pacific or Indian waters depends to a considerable extent upon efficient wireless communications. Movements of transports and all other vessels on the high seas during the war are controlled by wireless telegraphy, and their safety against enemy submarines, mines, raiders, etc., is largely dependent upon the efficiency of apparatus and operators.

About 350,000 Australian troops were transported to the seat of war. No ship was permitted to proceed to sea without a certificate that her wireless equipment was in first-class order, and that efficient operators were on board. This was only possible by adopting a system of rigid inspection of ships' installations at the various ports in Australia, and the training, instruction, and appointment of wireless operators to the various ships. Over 300 operators were trained and appointed as additional operators to transports. All ships carrying troops throughout the war carried not less than three operators, and kept continuous watch.

Besides the general conduct of communications with the Fleet, transmission of instructions to transports and ships of the mercantile marine, transmission of warnings, etc., the stations were engaged in looking out for and intercepting enemy signals, the origin of which had to be traced.

During the last two years of the war, Australian stations intercepted messages from England, Germany, France, and also from American stations. British stations were heard from time to time. The daily intercept from Nauen High-power Wireless Station in Germany on many occasions reached over 2,000 words, the distance bridged being over 12,000 miles.

The work of the Department further included the manufacture, supply, and fitting of wireless plant and equipment required for H.M. and H.M.A. ships, transports, and shore stations, besides carrying out the necessary repairs to wireless plant, and providing additional new apparatus to keep the installations abreast of scientific development.

About 20 new wireless installations were manufactured, and a considerable amount of new apparatus had to be fitted in transports, etc., for Admiralty purposes. The acquisition of suitable wireless telegraphy works enabled the Naval Service to adequately meet the requirements of the war.

(vi) *Special War Expenditure, 1914-18.* The estimate of special war expenditure as given in the annual estimates, 1917-18, is shown below. The war expenditure for the three previous years is also given. Reference to War Finance will be found in Section XIX., Commonwealth Finance, pp. 763, 764 and 771.

SPECIAL WAR EXPENDITURE, 1914 TO 1918.

Particulars.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.*(a)
	£	£	£	£	£
Special expenditure on Expeditionary and Australian forces—					
Naval	4,288,253	5,249,166	4,089,919	3,893,627	3,867,300
Military	10,232,787	32,474,340	47,667,248	50,956,888	65,655,000
Interest on outstanding amounts due for maintenance of Australian troops at the front .. .. .	..	..	..	..	3,430,000
Interest on loan from British Government for war purposes	36,480	843,893	2,082,258	2,477,288	2,377,656
Interest on Commonwealth War Loan .. .. .	..	999,976	2,723,823	4,753,355	7,744,000
Interest on Treasury Bills in aid of Revenue	78,656	14,845	14,485	..	..
Sinking Funds on Loans for War Purposes .. .. .	..	200,777	1,167,127	761,191	1,194,410
Grant to Australian Soldiers' Repatriation Fund .. .. .	..	250,000	..	200,000	1,000,000
War Pensions	437	139,460	1,185,907	2,831,386	5,180,853
War Census .. .. .	..	57,444	11,711	40	100
Referenda, Military Service .. .. .	..	..	79,427	85,385	1,000
Trading Vessels	153,973	318,285	674,565	994,520	275,000
Miscellaneous	219,305	643,170	1,817,275	3,026,710	9,289,092
Premiums on Life Assurance policies of Commonwealth public servants who are members of Expeditionary forces	1,435	10,590	22,146	29,268	30,000
Total	15,011,335	41,201,946	61,535,891	67,009,658	100,044,411

Figures are in some cases liable to small adjustments by audit.

(a) Estimate.

(b) Includes a credit of £3,287,308.

(vii) *War Pensions.* Pensions payable under the War Pensions Act 1914 in case of death or incapacity are on the following scale:—

SCALE OF PENSIONS PAYABLE.

(a) To widow on death of member of forces, or to member upon total incapacity:—

Rate of Pay of Member per day at date of Death or Incapacity.	Pension Payable to Widow per fortnight.	Pension Payable to Member upon Total Incapacity per fortnight.	Rate of Pay of Member per day at date of Death or Incapacity.	Pension Payable to Widow per fortnight.	Pension Payable to Member upon Total Incapacity per fortnight.
<i>s. d.</i>	£ <i>s. d.</i>	£ <i>s. d.</i>	<i>s. d.</i>	£ <i>s. d.</i>	£ <i>s. d.</i>
6 0	2 0 0	3 0 0	13 0	2 19 0	3 14 0
7 0	2 3 0	3 2 0	17 6	3 10 0	4 0 0
9 0	2 9 0	3 6 0	22 6	3 17 6	4 5 0
10 0	2 12 3	3 8 0	30 0	4 9 0	4 15 0
10 6	2 13 9	3 9 0	37 6	5 0 9	5 5 0
11 6	2 16 0	3 11 0	45 0	5 12 3	5 15 0
12 0	2 17 3	3 12 0	50 0	6 0 0	6 0 0
			and upwards		

(b) To each child (son, daughter, stepson, stepdaughter, or adopted child of member of forces, under 16):—Twenty shillings per fortnight for the first child, fifteen shillings per fortnight for the second child, and ten shillings per fortnight for the third and each subsequent child.

(c) To other dependents (dependent members of family of deceased or incapacitated member of forces):—Rates as assessed by Commissioner or Deputy-Commissioner, but not exceeding for one person the rate specified in the second column above as payable to the widow, and not exceeding in the aggregate that sum, plus £2 per fortnight.

(d) To wife of member of forces upon his total incapacity:—50 per cent. of rate payable to husband.

(e) To each child of member upon his total incapacity:—Same as (b) above.

(f) To member upon partial incapacity:—Loss of leg or foot or hand or arm—maximum rate for six months, thereafter three-fourths of the maximum rate. Loss of one eye—half the maximum rate. Loss of both legs or both feet, or both arms or both hands, or arm and leg or hand and foot, or both eyes, or one eye together with loss of leg, foot, hand or arm—the maximum rate.

§ 6. Special Defence Legislation.

1. *War Precautions Acts*.—On the outbreak of war in Europe, the Federal Parliament passed an Act to enable the Governor-General to make regulations and orders for the safety of the Commonwealth during the state of war. The provisions of this Act, which was assented to on 29th October, 1914, will be found in Official Year Book No. 8, page 1092. Particulars of the *Enemy Contracts Annulment Act* will be found in the same issue of the Year Book, page 1095.

The War Precautions Act 1918 provides that the War Precautions Act 1914–16 shall remain in force only until 31st July, 1919, or for a period of three months after the issue of a proclamation that the state of war has ceased, whichever period is the longer. All regulations made under the Act will lapse with it.

Under the powers conferred by the above Acts, the *War Precautions Regulations* were made. They provided for the appointment of competent naval or military authorities to exercise certain powers under the regulations, and other matters. The principal provisions of the regulations are given in Official Year Book No. 11, pp. 1035–1043.

§ 7. Persons of Enemy Birthplace.

The following table shews the estimated number of males of enemy birthplace (natives of Germany, Austria-Hungary, Turkey, and Bulgaria, whether naturalised or otherwise, but exclusive of persons of British parentage), in each State at the 31st July, 1915, and the estimated number naturalised. While the States and military districts are not quite conterminous, they approximate sufficiently to admit of the comparison:—

MALES OF ENEMY BIRTHPLACE IN THE COMMONWEALTH AT 31st JULY, 1915.

State and Military District.		Male Enemy Subjects.*	Number Naturalised.*	Number not Naturalised.*
Queensland	1st Military District	8,080	6,640	1,440
New South Wales	2nd " "	6,460	4,330	2,130
Victoria	3rd " "	4,920	3,300	1,620
South Australia	4th " "	3,270	2,630	640
Western Australia	5th " "	3,190	1,280	1,910
Tasmania	6th " "	380	320	60
Total		26,300	18,500	7,800

* These figures are based on Census returns, and can only be considered as a rough approximation.

The number of females of enemy birthplace in the Commonwealth at 31st July, 1915, is estimated at about 12,000.

§ 8. Repatriation.

1. **General.**—In common with all the recently warring countries of the world, Australia has had to face the problem of the returned soldier—to find employment for the fit, to re-establish the disabled, to provide for the dependents of those who have died or of those who are no longer able to support themselves, and to supply medical and surgical treatment for disabilities due to or aggravated by war services.

During the early stages of the war this work was carried out mainly by voluntary effort, assisted by Government funds, and supplemented by private contributions. Disconnected and divergent schemes were extemporised to meet the pressing needs of soldiers and their families, with the result that there was overlapping in some directions and insufficiency in others. The Commonwealth Parliament therefore decided that Repatriation should become a national undertaking, and that a comprehensive scheme should be designed to meet the various claims in connection therewith. On 8th April, 1918, the Department of Repatriation, charged with this responsibility, was established, the first Minister being Senator the Hon. E. D. Millen.

2. **Organisation of the Department.**—The organisation of the Department provides for a Central Administrative Commission of seven members, termed the Repatriation Commission, of which the Minister is chairman, and upon which returned soldiers are represented. The Commission acts in an honorary capacity. Its duties are to prescribe by regulation the nature and extent of the assistance that may be granted, and to hear appeals from decisions of the State Boards. The permanent head of the Department is the Comptroller. Repatriation headquarters are in Melbourne. District branches have been established in the capital city of each State, and associated with these branches are State Boards, comprising seven members, and providing for the representation of returned soldiers. Members of these Boards act also in an honorary capacity. The permanent official at the head of each State organisation is termed Deputy-Comptroller. A network of local committees is connected with the district branches. The local committees are voluntary organisations possessing dual functions. They act as sub-agents under the control and direction of the Department so far as the disbursement of assistance specifically provided by the Department is concerned; and they are vested with discretionary powers in regard to the disbursement of supplementary assistance, organised and raised locally. Local Committees work within clearly defined territorial boundaries. Under this scheme every square mile of the whole continent of Australia is brought directly under the operation of the departmental policy.

3. **Policy of the Department.**—The policy of the Department is based upon four main principles:—

- (a) To secure the re-establishment of returned soldiers in the industrial life of the community to the fullest extent that circumstances permit;
- (b) To sustain these soldiers until an opportunity for such re-establishment is assured;
- (c) To provide for the care of the dependents of soldiers who have died on active service, as well as the dependents of soldiers who, on account of injuries sustained, are unable to provide for those formerly dependent upon them;
- (d) To provide post-war medical treatment for returned nurses, sailors and soldiers who are suffering from disabilities caused or aggravated by war service.

To give effect to these principles the Department undertakes :—

- (1) To provide suitable employment for those who are able to follow their previous occupation or one similar to it, and to pay sustenance until such opportunities are presented ;
- (2) To restore to the fullest degree of efficiency possible, by means of vocational training, those who on account of war service are unable to follow their pre-war occupations, and during the period of such training to assure trainees adequate sustenance ;
- (3) To maintain totally and permanently incapacitated soldiers and their dependents, and soldiers' widows with children.
- (4) To supply gratis all necessary treatment, surgical aids, and medicaments ; all hospital fees, and transport expenses thereto and therefrom, with sustenance for the period of treatment (where hospital treatment is not feasible the same may be given in the home or in such place as may be approved).

An important feature of the scheme is the means taken to get into touch with soldiers returning to Australia, and to ascertain as far as possible, prior to their discharge, what assistance they will require, and so make preparations in advance for dealing with applications. Information regarding the activities of the Department is given to the men on board transports coming to Australia, and at the same time information is obtained from them, or concerning them, regarding their pre-war occupations, their physical condition and other matters essential to expeditious treatment.

4. Activities of the Department.—(a) *Assistance and Employment.* The activities of the Department are classified under five sections—employment, vocational training, land settlement, housing, and assistance. Under assistance, a wide variety of benefits, including the provision of surgical aids, medical treatment, establishment in small businesses, furniture loans and grants, relief from onerous mortgages, educational grants and equipment with tools of trade, are provided. In co-operation with the State Governments a land settlement scheme, whereby the Federal Government lends the States the necessary money to acquire the estimated number of holdings required, and to construct railways or other works necessary to their successful occupation, has been devised. Under this scheme the Commonwealth Government will also make available working capital up to £625 per settler. This will afford every soldier possessing the natural aptitude and fitness an opportunity of ultimately owning his own farm.

Under the provisions of the housing scheme a nurse, a returned soldier, a munition or war worker, a soldier's widow, or his dependents are entitled to a maximum advance of £700 for the purpose of acquiring a dwelling. According to the material of the house, the period of repayment will vary. Principal and interest are repayable as rent at the rate of 5 per cent. per annum.

(b) *After-war Treatment of War Service Disabilities.* Discharged nurses, sailors and soldiers are entitled to free medical treatment, surgical aids, drugs, and necessary medicines. The expenses of unavoidable travel for any medical or surgical purposes are undertaken by the Department, which likewise defrays any necessary expenses in a hospital or other approved place. While undergoing such treatment and upon the certificate of a Departmental Medical Officer, a married soldier receives sustenance at the fixed rate of £2 12s. per week (inclusive of pension), with 3s. 6d. per week added for each child. In a like situation a soldier without dependents receives sustenance at the rate of

£2 2s. per week. By arrangement with the Pharmaceutical Society, upon the production of the medical officer's prescription to any pharmacist in the Commonwealth, such medicines, lotions or dressings as may be required will be immediately supplied free to the soldier.

5. **Sustenance Rates.**—The sustenance rate that may be granted to applicants awaiting fulfilment by the Department of certain specified obligations is:—

- (a) To a soldier without dependents a weekly income inclusive of pension of £2 2s. ;
- (b) To a soldier with a wife a weekly income inclusive of their combined pensions of £2 12s.

An additional allowance of 3s. 6d. per week is made for each child up to four, the maximum sum payable being £3 6s. per week.

Those who are eligible for this benefit are applicants awaiting employment; approved applicants waiting to take up land; blind soldiers undergoing training; students receiving training in commercial or professional occupations; trainees in technical schools; convalescents; and soldiers receiving medical treatment.

Living allowances payable to totally and permanently incapacitated soldiers and to soldiers' widows with children are on the following scale:—

	<i>s.</i>	<i>d.</i>	
Soldier and wife (inclusive of pensions)	60	0	per week
Soldier, wife, and 1 child (inclusive of pensions)	63	6	„
„ „ 2 children „ „ „ „	67	0	„
„ „ 3 „ „ „ „	70	6	„
„ „ 4 „ „ „ „	74	0	„
„ „ 5 or more „ „ „ „	77	6	„

Widows with Children—

Widow with 1 child (inclusive of pensions)	51	0	„
„ 2 children „ „ „ „	54	6	„
„ 3 „ „ „ „	58	0	„
„ 4 „ „ „ „	61	6	„
„ 5 or more „ „ „ „	65	0	„

6. **Summary of Work of Department from 8th April, 1918, to 31st May, 1919.**—The following is a summary of the work of the Department from its inception to the latest available date:—

(a) *Employment—*

Number of applications	47,260
„ „ positions filled	42,470

(b) *Vocational Training.* Vocational training is designed for—

- (a) Soldiers incapacitated from following their usual occupations.
- (b) Apprentices whose indentures were interrupted by war service.
- (c) Widows without children. (In cases where a widow with children satisfies the State Board that adequate arrangements can be made for the care of her children during training hours, applications for vocational training may be approved.)
- (d) Students whose studies were interrupted by war services.
- (e) Members of the A.I.F. who enlisted under the age of twenty years.

Classes representing 95 trades and callings have been established, with results as follows:—

Number of men completed training	2,466
" " in training	4,222

(c) Assistance other than Vocational Training and Employment—

Applications received	116,711
" approved	100,367

7. Assistance Granted.—The table hereunder shows the sums granted by way of assistance in each State during the period from the inauguration of the Department (8th April, 1918) to 31st May, 1919:—

DEPARTMENT OF REPATRIATION.—ASSISTANCE GRANTED FROM
8th APRIL, 1918, TO 31st MAY, 1919.

	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
Sustenance—							
Awaiting employment	106,201	133,057	52,110	26,709	40,849	10,465	369,391
Under treatment	21,190	13,692	245	2,698	3,831	1,569	43,225
Undergoing training	17,984	68,021	4,359	6,877	4,824	1,951	104,028
Incapacitated soldiers	6,648	21	14	5,478	366	..	12,527
Children's education	2	4	..	..	18	20	44
Awaiting return on land .. .. .	..	2,553	..	2,671	2,215	2,058	9,497
Awaiting vocational training .. .. .	..	12,162	..	3,348	117	283	15,910
Miscellaneous .. .. .	..	72	222	..	1,902	5	2,201
Sustenance Total	152,035	229,582	56,950	47,781	54,122	16,351	556,821
Surgical aids	4,089	2,470	569	181	334	92	7,735
Vocational training	5,563	20,409	636	1,466	2,082	647	30,803
Furniture—							
Widows .. .. .	..	..	..	..	..	..	..
Totally incapacitated soldiers	33,104	44,908	13,756	21,900	6,458	4,872	124,998
Other cases .. .. .	..	..	..	..	..	..	..
Tools of trade	15,896	12,215	10,387	1,997	3,307	693	44,495
Small businesses	16,985	25,117	8,971	2,565	6,906	2,391	62,935
Plant	8,108	13,438	7,261	1,323	1,995	2,824	34,969
Live stock	174	3,019	5,771	120	295	20	9,399
Homes—							
Conversion of mortgages .. .. .	..	..	..	..	..	..	..
Rental allowances	20,144	14,715	11,241	20,121	1,270	262	67,753
Other cases .. .. .	..	..	..	..	..	..	..
Free passages beyond the Common-wealth	6,709	7,550	2,447	2,825	2,473	683	22,696
Transportation expenses	4,989	5,255	5,879	1,610	2,554	755	21,042
Educational grants .. .. .	..	117	..	8	87	..	212
Medical treatment	3,799	264	156	1,220	124	173	5,736
Funeral expenses	970	1,200	406	411	242	116	3,345
Miscellaneous	1,094	7,328	9	254	2,786	128	11,599
Expenses of allotment	534	623	192	50	201	16	1,616
Maintenance of institutions .. .. .	..	346	..	..	..	..	346
Grants to Local Government bodies	7,063	..	..	..	..	383	7,446
Total	281,256	388,565	124,651	103,832	85,236	30,406	1,013,946

8. **Conspectus of State Laws affecting Settlement of Returned Soldiers on the Land.**—The following table gives particulars of the laws of the various States relating to returned soldiers' land settlement:—

CONSPICUOUS OF ACTS IN FORCE RELATING TO THE

Particulars.	New South Wales.	Victoria.	Queensland.
(i) Name of Acts ..	Returned Soldiers' Settlement Acts 1916, 1917. Voluntary Workers' (Soldiers' Holdings) Act 1917	Discharged Soldiers' Settlement Act 1917	The Discharged Soldiers' Settlement Act of 1917
(ii) Acts under which land is made available for Discharged Soldiers	Closer Settlement Acts 1904 to 1916. Murrumbidgee Irrigation Act 1910. Crown Lands Consolidation Act 1913	Closer Settlement Act 1915. Land Act 1915	Land Acts 1910 to 1916
(iii) Minister administering Act	Minister for Lands ..	President of the Board of Land and Works	Secretary for Public Lands
(iv) Boards administering Act	Local Land Boards. Water Conservation and Irrigation Commission. Classification Committees of not over three members	Lands Purchase and Management Board under the Closer Settlement Act 1915. Advisory Committees consisting of Municipal Councils. Qualification Committee	..
(v) Definition of Discharged or Returned Soldier	(a) Resident in Commonwealth, who enlisted in naval or military forces of Commonwealth for service abroad or in United Kingdom and has served outside the Commonwealth (b) Resident in Commonwealth who enlisted as above but was unable to serve abroad through circumstances not within his own control (c) Who has received his discharge and is resident in Commonwealth. Minister may extend definition to other residents who are discharged and are resident in the Commonwealth	(a) Resident in Commonwealth who was appointed an officer or enlisted in His Majesty's or in Commonwealth naval or military forces for service abroad and served abroad, who was discharged and returned to or resides in Victoria (b) Any such person who enlisted and was unable through circumstances not within his own control to serve as aforesaid (c) Non-resident member of His Majesty's naval or military forces who has come to Victoria	Any person who has been a member of the A.I.F. or of any naval or military forces of the Commonwealth, or has joined the naval or military forces of the United Kingdom and who has received an honourable discharge. Governor may extend definition to include any member of His Majesty's military or naval forces or of the military or naval forces of any allied power, who received his discharge before arrival in Queensland
(vi) Discharged or Returned Soldiers excluded from Benefits of Act	Any person whose discharge was due to misconduct or incapacity resulting from his own default	Any person whose discharge was due to misconduct or incapacity resulting from his own default	Any person whose discharge was due to misconduct or incapacity resulting from his own default
(vii) Are Dependents of Deceased Soldier entitled to Benefit of Act?	Only under the Voluntary Workers' (Soldiers' Holdings) Act, when dependents were wholly or in part dependent on earnings or pension of soldier	Yes, if wholly or in part dependent upon earnings of deceased person during period beginning 12 months before enlistment and terminating on discharge or death in connection with war	Yes, in event of death before or within twelve months after discharge, if wholly or in part dependent upon earnings of soldier during 12 months prior to enlistment
(viii) Definition of Dependent	Wife, husband, father, mother, grandfather, grandmother, step-father, step-mother, son, daughter, grandson, granddaughter, step-son, step-daughter, brother, sister, half-brother, half-sister, illegitimate child or grandchild, parent or grandparent of illegitimate child	Widow, mother, child, ex-nuptial child, orphan brother, orphan sister	Widow, mother, sister, child, ex-nuptial child
(ix) Settlement on Crown Lands—Ordinary Provisions	Minister may set apart Crown land under Closer Settlement or Murrumbidgee Irrigation Acts, to be disposed of under Crown Lands Act or Closer Settlement Act to discharged soldiers exclusively. Discharged soldiers may obtain certificate of preferential right, obviating reference to local land board	Governor in Council may set apart any area of Crown land for disposal under Land or Closer Settlement Acts to discharged soldiers only	Minister may set apart Crown land to be open for selection as Perpetual Lease Selections by discharged soldiers, also as Perpetual Town Leases or Perpetual Suburban Leases

SETTLEMENT OF DISCHARGED SOLDIERS.

South Australia.	Western Australia.	Tasmania.
Discharged Soldiers' Settlement Acts 1917, 1918	Land Act Amendment Act 1917	The Returned Soldiers' Settlement Acts 1916, 1917, 1918
Crown Lands Act 1915. Irrigation and Reclaimed Lands Act 1914	Land Acts 1898 to 1917 ..	The Crown Lands Act 1911. The Closer Settlement Act 1913
Minister of Repatriation ..	Minister for Lands ..	Minister for Lands and Works
No Board appointed. (Land Board under Crown Lands Act must approve of land to be set apart or acquired)	Special Land Qualification Board may be appointed	Closer Settlements Board, consisting of not less than 4 nor more than 9 members, one-third of the members at least to be returned soldiers
Any person who (a) has been a member of the British Army or Navy or of the A.I.F. or of any naval or military force raised in any part of the British Empire for service in the war, (b) has served in connection with the war, (c) has received his discharge	Any person who has been on active service with His Majesty's naval or military forces	Any person (I.) who (a) has been a member of the A.I.F. or of any other naval or military force raised in the Commonwealth for service in the war, or, though a resident of the Commonwealth, has joined the naval or military forces of the United Kingdom, (b) has served abroad, (c) has returned to Tasmania; (II.) who enlisted and was unable to serve abroad owing to circumstances not within his own control; (III.) who has been a member of the naval or military force of the United Kingdom, and has been discharged and has come to Tasmania to farm or settle upon the land pursuant to arrangement with the Imperial Government
Any person (a) whose discharge was due to incapacity resulting from his own default or misconduct, (b) the terms of whose enlistment did not render him liable to serve abroad, (c) any prohibited immigrant		Any person whose discharge was due to misconduct or incapacity resulting from his own default
Yes, if soldier has died or hereafter dies from wounds inflicted, accident occurring or disease contracted while on service, and leaves children wholly or in part dependent upon his earnings at time of death	Yes	Yes. One dependent, or two or more dependents jointly of any deceased sailor or soldier who was resident in the State may be granted all or any of the benefits or assistance to which the deceased would have been entitled. Total amount of benefit not to exceed £100
Widow of soldier, leaving any children		Widow, mother, children, ex-nuptial children, father, brother, sister
Governor may set apart areas of Crown land for allotment to discharged soldiers. No land to be set apart, except on recommendation of Land Board, concurred in by the Inspector of Lands in the Department of Agriculture and at least two other members of the Land Board	Governor may declare any Crown land to be open to selection by discharged soldiers	Governor may set apart areas of Crown land or settlement land to be disposed of under Crown Lands and Closer Settlement Acts to discharged soldiers exclusively

CONSPECTUS OF ACTS IN FORCE RELATING TO THE

Particulars.	New South Wales.	Victoria.	Queensland
(x) Settlement on Crown or other Lands—Special Provisions for Discharged Soldiers	Governor may set apart area of Crown land to be subdivided into blocks and disposed of by sale or lease to discharged soldiers at such prices, etc., as Minister may determine. Qualification certificate to be obtained from Classification Committee. Crown Lands, Closer Settlement and Irrigation Acts not to apply to lands thus disposed of. Holder of lease may apply to purchase by 15 annual instalments with 2½% interest, conditional on residence for 5 years	Governor may set apart Crown land to be subdivided into blocks and disposed of upon such terms as Governor thinks fit. Qualification certificate to be obtained from Qualification Committee. Condition as to residence not enforced in case of discharged soldier	Not necessary to deposit any rent or instalment of survey fee. No rent for first 3 years, then from fourth to fifteenth year rent to be 1½% of capital value. After 3 years, survey fee to be paid in 10 annual instalments. After 5 years lessee may transfer to another discharged soldier, and after 10 years may mortgage, transfer or sublet. Town and suburban leases not offered at auction
(xi) Acquisition of Private Lands	Minister may acquire any land by agreement; and land exceeding £20,000 in value, or, if within 15 miles of a proposed railway, £10,000 in value, compulsorily	Board may, under the Closer Settlement Act, acquire either by agreement or compulsorily blocks of private land to such extent as is actually required. Land cannot be acquired compulsorily from an owner on active service abroad	Minister may, under the Public Works Land Resumption Acts, acquire, either by agreement or compulsorily, country land, town land, or suburban land, as may be required. Purchase may be paid for in debentures at 4½%, not negotiable for 5 years
(xii) Amount which may be borrowed by Parliament	..	£2,250,000 during 3 years from commencement of Act	As may be necessary for the purposes of the Act
(xiii) Preparation of Land	Minister or Water Conservation and Irrigation Commission may effect improvements on or prepare blocks of land prior to being set apart	Board may clear, drain, sow, plant, or fence or erect buildings on or improve land prior to disposal in allotments, within 3 years after disposal under conditional purchase lease, or prior to being resold after forfeiture	..
(xiv) Training Farms, etc.	Governor may provide and maintain training farms or may make arrangements with owners of private lands for enabling discharged soldiers to acquire knowledge of farming, etc.	Governor may provide and maintain training farms for discharged soldiers	..
(xv) Advances to Discharged Soldiers on the land. Purposes for which money is advanced	(a) Clearing, fencing, draining, water supply, and general improvement (b) Erection of buildings (c) Purchase of implements, stock, seeds, plants, trees, etc.	(a) Clearing, fencing, supplying with water, draining, grading, preparing for irrigation and general improvement (b) Erection of buildings (c) Purchase of implements, live stock, seeds, plants, trees, etc. Maximum amount, £500	Improvements on Perpetual Lease Selections and the erection of workers' dwellings Maximum amount, £500 Term of advance, 40 years
(xvi) Security for Advances	First mortgage on lands and improvements	(a) Lien on improvements to an amount not exceeding 100% of unencumbered value thereof (b) Stock mortgage (c) Hire purchase agreement (d) Any security in the Closer Settlement Act with respect to advances (e) All or some of them	Mortgage in favour of the Government Savings Bank.
(xvii) Rate of Interest on Advances	As determined by the Minister or the Water Conservation and Irrigation Commission. Maximum 3½% for the first year, increasing by ½% annually until rate determined reached	As determined by Minister. Maximum 3½% for first year, increasing by ½% annually until rate determined reached	3½% for first year, increasing by ½% annually until rate payable by State in respect of loan out of which advance is made is reached, but not exceeding 5%. If land acquired compulsorily, rate not exceeding 5%, fixed by Minister

SETTLEMENT OF DISCHARGED SOLDIERS—*continued.*

South Australia.	Western Australia.	Tasmania.
<p>Land set apart under § ix., if, in the opinion of the Land Board, the area is too large to be allotted as a separate holding, is to be subdivided into such blocks as the Land Board, with the approval of the Minister, determines. Such blocks may be offered to discharged soldiers on perpetual lease or on leases for such terms as Minister thinks convenient</p>		<p>Discharged soldier to obtain qualification certificate from Closer Settlements Board. Land may be sold or leased to discharged soldiers, after subdivision. No deposit on application necessary. No rent for the first year at least. No rates or taxes for 4 years. Discharged qualified soldier may select up to 100 acres of first-class rural land or its equivalent in value of second or third class land. No price paid, but residential conditions apply</p>
<p>Minister may purchase land of any tenure, including land held under Crown lease or agreement. No land to be acquired except on recommendation of Land Board, concurred in by Inspector of Lands in the Department of Agriculture, and at least two other members of the Land Board</p>	<p>Governor may acquire private land, either by purchase or in exchange for Crown land</p>	<p>Minister may, under the Closer Settlement Act, purchase by agreement or compulsorily acquire private land</p>
		<p>£350,000, but not more than five-sixths to be expended for private lands</p>
<p>Minister may clear or prepare land for settlement, and may employ discharged soldiers for such purposes</p>	<p>Land set apart may be improved before selection</p>	<p>Minister may effect improvements on or prepare land prior to its being set apart for application by discharged soldiers</p>
<p>Minister may provide and maintain farms to enable discharged soldiers to acquire knowledge requisite for agricultural, horticultural, viticultural, or dairying pursuits, pig-raising or poultry farming, and to test their aptitude therefor</p>	<p>Applicant for land may be required to acquire experience on a training farm or with some established farmer</p>	
<p>(a) Clearing, fencing, grading, draining, irrigating, and general improvement (b) Erection of buildings (c) Purchase of implements, stock, seeds, plants, trees, etc.</p>	<p>(a) Improvements up to £500 (b) Fertilisers, seeds, sacks, etc. (c) Machinery, drays, stock, etc. (d) Stores (e) Fees</p>	<p>(a) Clearing, fencing (including wire-netting), draining, irrigating, and general improvement (b) Erection of buildings at a cost not exceeding £400 (c) Purchase of implements, stock, seeds, plants, trees, etc.</p>
<p>As regards § xv. (a) and (b), first mortgage on land and (c) bill of sale or other security on goods and chattels</p>	<p>Mortgage in favour of the Agricultural Bank</p>	<p>Moneys advanced remain a charge on the land and may be further secured by a hire-purchase agreement</p>
<p>As determined by Minister</p>	<p>3½% for first year, increasing by ½% annually until maximum fixed by agreement is reached. After 5 years, advances repayable by instalments over 25 years. Advances for machinery on 8 years' terms. During first 3 years interest only</p>	<p>As determined by Minister</p>

CONSPECTUS OF ACTS IN FORCE RELATING TO THE

Particulars.	New South Wales.	Victoria.	Queensland.
(xviii) Remission of Interest, Rent, etc.	Minister or Water Conservation and Irrigation Commission may, in case of hardship, dispense with payment of interest, or may remit rent or charges for water, or may postpone instalments of purchase money	Minister may direct that no instalment of purchase money and interest and rent be payable for the first 3 years	Minister may remit or postpone the payment of rent
(xix) Conditions of Residence	Conditions of residence on lease fixed by Regulation. Purchase of lease subject to condition of residence for 5 years	Conditions of residence in Closer Settlement and Land Acts waived	Lease subject to the condition of personal residence by the lessee during the whole term
(xx) Transfer of Land, etc.	Not transferable, except by way of mortgage, for 5 years, and then only with consent of Minister or Commission, only in case of sickness or other adverse circumstances can consent be given sooner. Transfer to discharged soldier only allowed during first 10 years	Holding transferable only in accordance with Closer Settlement or Land Acts, except where Governor in Council is satisfied that soldier is compelled by sickness or other adverse circumstances to leave	After 5 years lease may be transferred to another discharged soldier. After 10 years lessee may mortgage, transfer, or sublet his lease
(xxi) Application of Act to Soldiers already settled on Land and others	Residence condition attaching to holding held by soldier on active service deemed to be complied with by such service abroad for period of same	Privileges conferred by Act extended to a discharged soldier (a) to whom the interest in a conditional purchase lease has been assigned, or (b) who is a lessee under the Land or Closer Settlement Act	Benefits relating to advances extended to holders of agricultural land under lease or licence who are serving abroad. Minister may suspend condition of residence during absence on active service and for 6 months after return, and rent and instalment of survey fee need not be paid
(xxii) Voluntary Workers' Associations, etc.	Governor may issue Crown Grants to Public Trustee of land. Public Trustee may acquire, hold, subdivide, alienate, and mortgage land, may borrow money and make advances to Voluntary Workers' Associations for purchase of materials. Completed building conveyed to discharged soldier or dependents subject to mortgage to secure repayment for materials. Houses, while property of soldier or dependent, exempt from insolvency or bankruptcy or from being distrained upon	Where any person or body of persons has settled or proposes to settle discharged soldiers on private land Governor may extend benefits of Act to such discharged soldiers	

SETTLEMENT OF DISCHARGED SOLDIERS—*continued.*

South Australia.	Western Australia.	Tasmania.
<p>Minister, in case of hardship, may dispense with the payment of interest. Minister may remit or postpone the payment of rent or purchase money</p>	<p>..</p>	<p>Minister may, in case of hardship, dispense with payment of interest, and remit any rent payable under a lease, or may postpone such rent, or may postpone payment of any instalment of purchase money</p>
<p>No lease or agreement granted until applicant has occupied the block on permit for a period of at least 12 months, and has complied with the terms and conditions of the permit</p>	<p>Residence compulsory for at least 6 months in each year for the first 5 years</p>	<p>Governor may make regulations with provisions as to the residence of lessees on the land</p>
<p>No lease granted or agreement entered into to be transferred, assigned, sublet, mortgaged, or encumbered, except with the consent of the Minister</p>	<p>No transfer can be effected without the approval of the Minister on the recommendation of the Land Qualification Board</p>	<p>No land leased or sold to be transferred for 10 years, except with consent of Minister</p>
<p>Advances may be made to discharged soldiers who are holders of Crown land on lease or agreement, who are owners of freehold or leasehold with not less than 3 years to run, or are share farmers</p>	<p>Any settler, who has enlisted, may obtain protection against forfeiture for non-compliance with conditions and non-payment of rent, or if he held land under conditional purchase, may have land brought under these Regulations</p>	<p>Advances may be made to discharged soldier, who has purchased Crown land on credit or is a selector of Crown land, or is a lessee of any privately-owned land or land leased under the Closer Settlement Act</p>
<p>..</p>	<p>..</p>	<p>..</p>

SECTION XXIX.

PAPUA (BRITISH NEW GUINEA).

§ 1. New Guinea.

1. **Geographical Situation of New Guinea.**—New Guinea, frequently described as the largest island in the world, lies to the north of Australia, between $0^{\circ} 25'$ and $10^{\circ} 40'$ S. latitudes, and between $130^{\circ} 50'$ and $150^{\circ} 35'$ E. longitudes. Its estimated area exceeds 300,000 square miles, the greatest length being 1,490 miles and the greatest breadth 430 miles.

2. **Discovery.**—The island was probably sighted by Abreus in A.D. 1511. The first visit by Europeans was apparently either that by the Portuguese Don Jorge de Meneses on his way from Goa to Ternate in 1526, or that by the Spaniard Alvaro de Saavedra in 1528. In 1606 Torres, having parted company with De Quiros at the New Hebrides, sailed, on his way to the Philippines, through the strait which separates the island from Australia, and which now bears his name.

3. **Colonisation.**—Little progress was made for many years in exploration and settlement. First the Portuguese, and afterwards the Dutch, who to a great extent replaced them as the principal European traders in the East, seem to have jealously excluded other traders and adventurers, and to have kept the knowledge of their discoveries to themselves. The coasts were visited by Roda, Schouten, Lemaire, Tasman, Dampier, Torres, Bougainville, and Cook; but the difficulties of navigation, the savagery of the islanders, and the tempting fields for enterprise in the more temperate regions further south, diverted the energy of traders and voyagers. Forrest describes a voyage by himself in 1774. In 1793, New Guinea was annexed by two commanders in the East India Company's service. Since that date the Dutch have made extensive surveys of the western portion, and the British and Germans have occupied and colonised the eastern. In September, 1914, German New Guinea was seized and occupied by Great Britain by means of a force raised and despatched by the Australian Government.

4. **Partition.**—The three colonising powers agreed to the partition of New Guinea, each having suzerainty over islands adjoining its own territory. The whole of the portion west of the 141st degree of latitude, comprising about 150,000 square miles, or nearly half the island, belongs to the Dutch. The eastern half was divided in almost equal portions between Great Britain and Germany, the area possessed by each (with adjacent islands) being about 90,000 square miles. An Anglo-German boundary commission, appointed for the purpose of defining the boundary between the territories of the two nations, started operations on 26th December, 1908, and completed the field-work on 27th October, 1909. The total length of boundary delimited was $66\frac{1}{2}$ miles. The work was both important and difficult. For a considerable portion of the survey, the country was exceedingly rough and mountainous, and the natives hostile. In one instance, the line was carried over a range at an elevation of 11,110 feet. The Dutch colony forms part of the residency of Ternate in the Moluccas, and has not been extensively developed. The German protectorate, where considerable commercial development had taken place, included the northern part of the eastern half of the mainland, known as Kaiser Wilhelm

Land, and the large islands of the Bismarck Archipelago and the Solomon Group, as well as nearly 200 smaller islands. The south-eastern portion of New Guinea, nearest Australia, is a dependency of the Commonwealth of Australia. The German Pacific protectorate was terminated in 1914.

§ 2. The Australian Dependency of Papua.

1. **Australian Dependency of Papua.**—Surveys of the east coast of New Guinea by Stanley, Yule, Blackwood, Moresby, and others, brought home to Queensland, and to Australia generally, the danger to her commerce which would result from foreign possession of the islands and coasts opposite to Cape York, and from the holding by a hostile power of the entrance to the splendid waterway inside the Barrier Reef. The mainland opposite the shores of Queensland east of the 141st meridian was therefore annexed by that colony in 1883, but the action was disallowed by the British Government. In 1884, however, a British protectorate was authoritatively proclaimed by Commodore Erskine over the region lying east of the 141st meridian as far as East Cape, with the adjacent islands as far as Kosman Island. In the year following, an agreement with Germany fixed the boundaries between the possessions of the two countries, and to Great Britain was assigned the portion now known as Papua, lying between the extreme limits of 5° and 12° S., and 141° and 155° E. The British protectorate was subsidised by Queensland, New South Wales, and Victoria, and lasted until 30th September, 1888, when it was proclaimed a possession of the Empire. Its constitution was then that of a Crown colony, in association, however, with Queensland. Administration was in the hands of a Lieutenant-Governor, aided by an Executive and a Legislative Council, and advised by a Native Regulation Board. Port Moresby, on the south coast, was made the headquarters of the official establishment; a supreme court was established there, and magisterial courts in the districts; and an armed native constabulary force (numbering 343 on the 30th June, 1918), under a European officer, was instituted for the maintenance of order. There were also, on the same date, 767 native village constables employed by the Crown.

2. **Annexation by Commonwealth.**—The territory was placed under the authority of the Commonwealth on 1st September, 1906, by proclamation issued in pursuance of Letters Patent of the 18th March, 1902, and was accepted by the Commonwealth by the Papua Act 1905, which came into force by virtue of the proclamation aforesaid. The transfer was made under the authority of section 122 of the Constitution (see p. 30 hereinbefore). The territory is now under the administration of the Commonwealth, but not included within it, and is divided into eleven magisterial districts.

3. **Physical Characteristics.**—Papua lies wholly within the tropics. The northernmost point touches 5° S. latitude; its southernmost portion, comprising Sudest and Rossel Islands, lies between 11° S. and 12° S. latitude. It is separated from Australia by Torres Strait. The length of Papua from east to west is upwards of 800 miles; towards either end the breadth from north to south is about 200 miles, but about the centre it is considerably narrower. The territory comprises also the islands of the Trobriand, Woodlark, D'Entrecasteaux, and Louisiade groups. The length of coast-line is computed at 3,664 miles—1,728 on the mainland, and 1,936 on the islands. The total area is about 90,540 square miles, of which 87,786 are on the mainland, and 2,754 on the islands. From the eastern end of the territory rises a chain of mountains, which forms a great central ridge and attains its greatest altitude, as it extends westwards, in the Owen Stanley Range, the highest points of which are Mount Victoria (13,200 feet), Mount Scratchley, the Wharton Range, and Mount Albert Edward. The western end of the possession is for nearly 300 miles generally low and swampy for some distance along the coast. The whole territory is well watered. The great mountains and a great portion of the lower country are covered with forest. The islands are mountainous, and, with the exception of the low coral islands of the Trobriand Group, part of Murua, and a few others of small dimensions, principally of volcanic formation. The highest is Goodenough Island, 8,000 feet. The largest rivers of the mainland flow into the Gulf of Papua. The Fly River,

with its tributaries, drains an extensive area of the territory of the Netherlands, as well as of the British. Its length in British territory is about 620 miles, and it is navigable by a steam launch for over 500 miles. Other important rivers are the Turama and the Purari. There are many excellent harbours.

§ 3. Population.

The total white population of Papua on 30th June, 1918, was 962, made up of 636 adult males and 189 adult females (adults being persons over 16 years of age), and 73 male and 64 female children. The following table gives the white population of Papua for the last five years :—

WHITE POPULATION OF PAPUA, 1914 TO 1918.

YEAR ENDED 30TH JUNE.

1914.	1915.	1916.	1917.	1918.
1,186	1,037	992	1,036	962

The chief occupations of adult male Europeans were :—Planters (including managers and assistants), 134; miners, 82; Government officials and employees, 97. The number of missionaries is stated as 57.

It is not possible to make a reliable estimate of the number of natives, owing to the fact that much of the interior country is unexplored. It is generally assumed to be somewhere between 250,000 and 500,000. These speak many languages and dialects. The coloured population, other than Papuans, numbered on 30th June, 1918, 277, of whom 191 were mission teachers principally from Samoa, Fiji, Solomon Islands, and other South Sea Islands. On the same date, half-castes, including Papuan half-castes, totalled 301. An Immigration Restriction Ordinance prohibits the immigration into the territory of persons who fail to pass the dictation test, or who are persons of bad character, or likely to become a charge upon the public. Exemptions may, however, be granted by the Lieutenant-Governor to persons of special skill whom it is desired to employ as overseers or foremen.

§ 4. Native Labour.

The rights of both employer and labourer are conserved by the Native Labour Ordinances. Service on the part of the native is voluntary, and he must be justly treated, and properly housed and fed. Employers may recruit personally, or obtain their natives through a licensed recruiter. Contracts of service must be in writing, entered into before a magistrate or other qualified officer, and the natives must be returned to their homes on completion of engagement. The labour question is complicated by the communistic system which prevails in the villages. Native custom demands that the friends or fellow-clansmen of the returned labourer receive a share in whatever he gets. The result is that the stimulus of individual interest is largely absent. During the period of service the recruiter or employer is personally responsible for the native's welfare. Refusal to work after engagement, or desertion from service, renders the labourer liable to imprisonment. On the other hand, a magistrate may terminate an engagement where unjust or harsh treatment by the employer is proved. The term of indenture must never exceed three years, and in the case of miners and carriers eighteen months is the limit, but re-engagements may be made. The magistrate must satisfy himself that the remuneration is fair, that the native is willing to undertake the service,

and that there is no probability of unfair treatment or detention. Wages must be paid in the presence of an officer. A medicine chest, stocked with necessary drugs and first aid instruments, must be kept by all employers.

Just treatment, good food, and satisfactory remuneration for his labour have made the Papuan savage an excellent servant. With considerable natural aptitude and intelligence, he is able to understand readily what is required by his employer; consequently native labour is very largely engaged by the Administration for the construction of roads and public works, and by the private employer for the clearing and upkeep of plantations. While in some districts the natives manifest a marked unwillingness to work, in other cases, during 1917-18, inland villagers offered themselves as labourers without suggestion from recruiters or other officers. Actual ill-treatment of native employees may be said to be non-existent.

In his Report for 1917-18 the Lieutenant-Governor draws attention to the adaptability shewn by some of the natives in the way of house-building, boat-building, the management of sailing vessels and oil launches, and in some cases as clerks.

The number engaged under contract of service during the year ended 30th June, 1918, was 7,059. In addition, there were 1,500 natives employed who were not under contract of service, 1,067 armed constabulary and village constables, and 33 local constables. There were also on the same date 63 mandated children, nearly all of whom were under care of missionary agencies.

§ 5. Production.

1. **Papuan Products.**—The products of the territory are obtained from its agricultural, forestal, fishing, mining, and manufacturing industries. There is a Papuan court at the Imperial Institute, London, where, beside maps, handbooks and reports, a representative collection of products is shewn, additions being made to the exhibits from time to time. Displays of Papuan produce are also made at exhibitions held in the Commonwealth. The industries of Papua are not numerous, but they are becoming more diversified. In many cases, some years must elapse before the raw material is available for commerce.

2. **Agriculture.**—(i) *Soil and Rainfall.* The physical features of Papua are favourable to agriculture. Rich soils at varying elevations, and heavy and evenly-distributed rainfall, have ensured success in cultivating almost every tropical product of value. The territory comprises immense areas of rich alluvial and volcanic soils along the coast, and equally fertile land at elevations up to 6,000 feet. Splendid rainfalls are recorded, except over a belt of country which runs back from the coast to the hills, and which has its dry season from May to November. This "dry" area is admirably suited for the production of tobacco, fibres, cotton, etc. There are 22 meteorological stations throughout the territory. An economic museum and agricultural library have been established. By anticipating and removing many of the pioneering difficulties, the Government has made the task of the colonist an easy one. The feature of recent years has been the steady investment of capital in the development of large areas previously acquired. One of the principal difficulties of planters is the heavy growth of weeds, and the Government has undertaken experiments with the planting of grasses to take the place of weeds, and so keep down rank vegetation.

(ii) *Plantations.* On 30th June, 1918, there were 224 plantations. Agricultural settlement has been mostly in the Central and Eastern Divisions, though plantations are rapidly spreading in other districts. The total area planted was 57,593 acres, or an average of 258 acres for each plantation. The principal plantation industries entered upon up to the present are coconuts, rubber, sisal hemp, and tobacco. Secondary agricultural industries are the cultivation of bowstring hemp, coffee, vanilla, kapok, cocoa, tapioca, cinnamon, tea, and maize. The natives are compelled by an ordinance to plant coconuts for food supply, and about 500,000 have been planted in the last five years. In the Kokoda district, which is not suitable for coconut planting, 8,000 rubber

seeds and plants were distributed amongst the native villages in 1918. In addition to the coconuts in these plantations many more are planted over small and widely scattered areas by the older natives in accordance with custom. The following table shews the areas under the different cultures on 30th June, 1918 :—

	Acres.
Coconuts	42,675
Rubber	8,311
Hemp	5,362
Tobacco	381
Maize	127
Other cultures (including fruit trees)	737
Total	57,593

It was estimated in 1917 that over £1,000,000 had been expended in plantations, and, with the exception of two large British companies, practically the whole of the capital was subscribed in Australia and locally.

(iii) *Government Plantations and Experimental Stations.* There are four Government plantations with a total area under cultivation of about 1,900 acres. The table hereunder shews their distribution :—

PAPUAN GOVERNMENT PLANTATIONS AND EXPERIMENTAL STATIONS.

Locality.	Nature of Cultivation.	Area.
		Acres.
Orangerie Bay	Coconuts	1,300
Kemp-Welch River	Rubber, coconuts, etc.	420
Milne Bay	Coconuts, etc.	59
Hombron Bluff	Rubber, etc.	160

Sylvicultural nurseries have been established in connection with the plantations with the object of supplying settlers with seeds and plants, which have been imported from the East and West Indies, Central America, tropical Australia, Ceylon, the Malay States, and the Solomon Islands. At the experimental stations, the suitability of the soil and climate for different products is tested, and correct methods of cultivation demonstrated. Large quantities of plants and seeds have been distributed to planters. A Government orchard, for supplying fresh fruit and vegetables, has been established at one of the stations, and yields considerable quantities of European fruit-foods.

(iv) *Indigenous Products.* There are many indigenous plants of great economic value. These comprise sandalwood and other timber trees, sugar-cane, cotton plants, rubber-both vine, nutmegs, ginger, bamboos, palms, bananas, bread-fruit, edible nuts, sago-palms, fruits, and vegetables. The export of mangrove bark for tanning purposes amounted in 1917-18 to 1,051 tons, valued at £7,228.

3. *Live Stock.*—On 30th June, 1918, the live stock in the Territory consisted of 191 horses, 2 donkeys, 518 head of cattle, 111 mules, 3 sheep, 295 goats, 331 pigs, and 3,758 fowls. A Government stud farm has been established for the breeding of horses. The introduction of rabbits, foxes, hares, and monkeys is prohibited.

4. **Forest Products.**—There is a large diversity of useful timbers in Papua. Of 120 varieties that have been catalogued, 16 are adapted to resisting heavy strains, and are suitable for girders, railway waggons, etc.; 10 for railway carriage and coach building; 15 for joinery, lining, flooring, etc.; 14 for butter boxes; 5 for boat building; 4 for piles, and 15 for cabinet work. Sandalwood is indigenous. It is largely used for cabinet work, and santal oil is distilled from its roots. Ebony is also produced for export. Rubber is a promising industry. There are considerable areas of native rubber (*Ficus Rigo*); but the planters generally prefer the imported Para rubber. Guttapercha is obtained from a species of *palaquium*, which grows on the hills. Drugs, dyewoods, and spices are also obtained from indigenous plants. The mountain firs offer possibilities in the shape of turpentine oils and timbers, while the conifer *Agathis alba* yields a valuable resin. Saw mills have been established, but the output has not been sufficient to supply the local demand for building and other timber, and large quantities of sawn timber have been imported from Australia. Contracts have been made by residents to ship timber to Great Britain. The timber licenses in force during 1917 covered 51,215 acres.

5. **Fisheries.**—Pearl-shell fishing occupies an important place in the industries of Papua. A considerable number of luggers is licensed, but the returns are mostly credited to Queensland, whose boundary approaches to within a few miles of the Papuan coast. The species of tortoise which supplies the commercial tortoise-shell is also a native of the territory. Bêche-de-mer and trochus are found along the shores and reefs. There is a dugong fishery on the coast of the Western Division. The value of fisheries exports in 1917-18 was £29,437, of which bêche-de-mer accounted for £3,557, pearls £19,250, trochus shell £6,625, and shell, other, £11.

6. **Mining.**—(i) *Variety of Minerals.* Minerals have been discovered in many places, and over an extremely wide range. Those discovered so far are—gold, copper, tin, lead, zinc, cinnabar, iron, osmiridium, gypsum, manganese, sulphur, graphite, chromite, brown coal, lignite, and petroleum. Indications of the existence of petroliferous strata have been found at scattered intervals over an area of country covering about 2,000 square miles between Yule Island and the Purari Delta, on the eastern side of the Gulf of Papua, and distant approximately 200 miles from Port Moresby. Operations are at present carried on at a locality on the Vailala River in difficult country, with steep hills, deep ravines, swampy valleys, and dense bush and undergrowth. The climate is damp and malarial, with a rainfall of 150 to 200 inches a year.

Since 1915 about 2,500 gallons of oil of good quality have been raised, but the production so far is regarded merely as an indication of supplies which must be tested by boring to greater depths. Eight bores have been put down. A sum of about £100,000 has been expended up to 30th June, 1918, this amount covering outlay of all kinds in connection with the search for oil. Like the oil from Dutch East Indies the Papuan product is rich in benzene, and probably will yield heavily in paraffin and fuel oil. Exploitation of the Papuan oil-fields by private companies is not permitted.

A scheme has been arranged under which the Imperial Government has entered into partnership with the Commonwealth Government in further exploitation of the field. Additional labour and machinery have been provided for, and the work will be under the control of a field manager selected in England.

Of precious stones, only the topaz and beryl have been obtained. Large beds of apparently good coal also exist. A geologist was added to the Government service at the beginning of the year 1911.

(ii) *Gold.* In 1888 the first gold was discovered. The search has now spread over every division, and finds have been recorded wherever the explorers have gone. Prospecting parties are subsidised by the Government. There are 63 white miners and

908 indentured labourers; the majority of the whites are working on the Murua, Louisiade and Yodda fields. The quantity, in fine ounces, and value of the gold yield for five years are given below :—

GOLD YIELD, PAPUA, 1913-14 TO 1917-18.

1913-14.		1914-15.		1915-16.		1916-17.		1917-18.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
fine ozs.	£	fine ozs.	£	fine ozs.	£	fine ozs.	£	fine ozs.	£
11,797	50,110	12,058	51,221	10,181	43,248	8,943	37,988	7,752	32,931

Most of the rivers, with the exception of those flowing into the Gulf of Papua, have been declared open to gold-dredging, and good yields have been obtained from many of the rivers thus dredged. The total value of gold won to 30th June, 1918, was £1,507,168.

(iii) *Copper.* Rich and extensive deposits of cupriferous ore have been located, and prospecting is still in progress. Owing to heavy transport charges, only the richest ore is, at present, shipped. The principal copper mining area is the Astrolabe field. During 1917-18, the production of ore amounted to 1,112 tons, valued at £11,572, the bulk of which was raised at the Dubuna mine. The total amount shipped to the end of June, 1918, was 7,878 tons, valued at £111,352.

(iv) *Other Minerals.* Some good samples of galena (sulphide of lead) have been obtained. Small quantities of cinnabar (sulphide of mercury), graphite (or plumbago), osmiridium (or iridosmine), zinc-blende, native sulphur, and other minerals are also found.

A mineral laboratory and museum has been fitted up, and is available to prospectors and others interested.

§ 6. Statistical Summary.

1. *Revenue and Expenditure.*—The revenue and expenditure for 1917-18, under principal heads, are given below; also a summary covering a period of five years. In addition to the revenue collected during the year, amounting to £72,594, a sum of £30,000 was granted by the Commonwealth Government.

REVENUE AND EXPENDITURE OF PAPUA, 1917-18.

REVENUE.		£	EXPENDITURE.		£
Customs and Excise .. ..	.. ..	48,067	Lieutenant-Governor and Civil list .. ..	.. ..	3,455
Post Office .. ..	.. ..	2,907	Government Secretary .. ..	.. ..	39,683
Native labour fees .. ..	.. ..	2,143	Treasury .. ..	.. ..	23,230
Hospital fees .. ..	.. ..	1,000	Lands and Agriculture .. ..	.. ..	5,270
Mining receipts .. ..	.. ..	914	Public Works .. ..	.. ..	16,347
Land leases .. ..	.. ..	2,159	Medical .. ..	.. ..	9,603
Harbour dues .. ..	.. ..	1,634	Department of Native Affairs .. ..	.. ..	3,766
Miscellaneous receipts .. ..	.. ..	13,770*	Central Court .. ..	.. ..	1,598
			Legislative Council .. ..	.. ..	224
Total .. ..	.. ..	£72,594	Total .. ..	.. ..	£103,176

* Includes Appropriation of former years, £6,881; Service of employees, £1,261; Fines and fees, £1,090, etc.

REVENUE AND EXPENDITURE OF PAPUA, 1913-14 TO 1917-18.

Item.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Revenue	54,704	51,960	49,311	63,568	72,594
Expenditure	81,095	82,535	77,913	83,740	103,176

2. Imports and Exports.—The value of imports and exports for the last five years is shewn in the table below :—

VALUE OF IMPORTS AND EXPORTS OF PAPUA, 1913-14 TO 1917-18.

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Imports.. .. .	212,134	202,055	223,040	271,640	283,792
Exports.. .. .	123,140	94,354	125,428	156,535	220,599
Total Trade .. .	335,274	296,409	348,468	428,175	504,391

As in all new countries, the imports consist chiefly of articles necessary for the primal needs of the community. Thus in 1917-18 the imports of agricultural products and groceries came to £88,600; drapery, £40,000; hardware, ironmongery, and machinery, £43,000; wood, wicker, and cane, £7,000; tobacco, £20,000; drugs, £5,000. Government stores to the value of £44,000 were also imported. The chief items of export during the last five years are as follows :—

EXPORTS OF PAPUA, 1913-14 TO 1917-18.

Article.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£
Gold	47,233	50,889	43,249	37,988	32,931
Copra	26,063	12,693	19,051	40,882	68,225
Rubber	1,536	1,501	14,846	26,682	37,020
Hemp	3,633	1,269	11,999	11,463	17,682
Copper Ore	19,733	5,607	9,971	14,050	11,572
Pearl Shell and Trochus Shell .. .	11,212	4,292	6,770	8,050	6,625
Pearls	4,602	6,113	1,000	2,400	19,250
Bêche-de-Mer	2,857	3,853	3,229	2,521	3,551
Bark .. .. .	..	..	..	4,423	7,228

The development of the plantations is reflected above in the increased exports of copra, rubber, and hemp, and as greater areas come into bearing, these figures will, of course, increase. Up to the end of 1914-15 the copra exports were almost wholly native products.

3. Postal and Shipping.—Considerable development has been shewn in means of communication—the postal returns, and the tonnage of vessels entered and cleared at ports, having largely increased. Particulars regarding postal matter are given hereunder :—

POSTAL STATISTICS OF PAPUA, 1913-14 TO 1917-18.

Year.	Letters.		Packets.		Newspapers.		Parcels.	
	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.
1913-14 ..	158,760	124,353	24,458	8,347	130,620	35,011	3,305	1,367
1914-15 ..	144,193	98,158	23,878	7,215	111,011	37,393	3,220	1,004
1915-16 ..	157,218	112,572	30,054	2,460	100,464	13,302	2,904	876
1916-17 ..	127,296	106,836	14,724	4,476	98,016	33,900	3,108	1,044
1917-18 ..	137,850	124,656	20,214	5,850	91,866	45,738	3,606	882

The value of money orders issued in 1913-14 was £6,069; of those paid, £906. In 1917-18, the respective values were £5,986 and £1,310.

The following table shews the number, tonnage, and nationality of vessels entered and cleared at ports during the years 1913-14 to 1917-18 :—

SHIPPING.—FOREIGN-GOING VESSELS ENTERED AND CLEARED AT PORTS OF PAPUA, 1913-14 TO 1917-18.

Nationality.	Vessels.									
	Number.					Tonnage.				
	1913-14	1914-15	1915-16	1916-17	1917-18	1913-14	1914-15	1915-16	1916-17	1917-18
British	863	610	166	121	117	159,776	262,897	96,753	72,414	57,955
Foreign	66	33	48	50	20	198,730	99,729	151,134	158,594	63,772
Total	929	643	214	171	137	358,506	362,626	247,887	231,008	121,727

Throughout, the figures are exclusive of ships of war and Government vessels.

§ 7. Land Tenure.

1. **Method of Obtaining Land.**—(i) *The Land Laws.* The broad principles upon which the land laws of Papua are based are :—(a) No land can be alienated in fee simple ; (b) the rental of the land leased is assessed on the unimproved value of the land, and is subject to reassessment at fixed periods.

A detailed account of the method of obtaining land was given in Official Year Book No. 6, pp. 1083-4.

(ii) *The Leasehold System.* With a view of attracting pioneer settlers, an ordinance was passed in 1906 under which leases were granted on very liberal terms. No rent was payable for the first ten years, the heavy expense of survey was borne by the Government, and no charge was made for the preparation and registration of the leases ; that is to say, no payments whatever had to be made to the Government for 10 years. Under this system, the area under lease increased in four years from 2,089 acres to 363,425 acres ; about 140 plantations were started, and nearly 1,000 acres planted during that period.

After allowing free survey for three years, it was decided that all future applicants for agricultural leases exceeding in area 100 acres should be required to pay the cost of survey. It was also found desirable to check a tendency amongst a proportion of land applicants to obtain areas so great that the improvement conditions could not be carried out. It was therefore enacted that no leases should be granted after 1st June, 1910, exceeding 5,000 acres in extent, and that rent at the rate of 3d. per acre must be paid from the commencement on all leases exceeding 1,000 acres in area. As a result of these enactments, several leases have been forfeited. On the other hand, a stricter enforcement of improvement conditions has resulted in a substantial raising of the standard.

2. **Land Tenures.**—On 30th June, 1918, the lands of the Territory were held as follows :—

	Acres.
Area of land held by the natives	57,020,786
Area of Crown land	677,719
Area of freehold land	23,085
Area of leasehold land	224,010
Area of Territory	57,945,600

Private sales of land in the Territory have now practically ceased. The Government buys from the natives, and then leases to planters, who are forbidden to have direct dealings in land with Papuans. The position as regards leasehold tenures may be seen from the following table :—

AREA HELD UNDER LEASE IN PAPUA, 1913-14 TO 1917-18.

Year ended 30th June.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
Land held under lease .. acres (as recorded)	230,879	235,072	228,013	227,476	224,010

Of the total area of 224,010 acres shewn above, about 196,000 acres were agricultural leases, and about 27,000 acres were held under pastoral lease.

In 1917-18, the area of leases granted was 5,284 acres; that of leases surrendered, revoked, and forfeited was 8,750 acres. The area of land acquired by the Crown from the natives was 43,850 acres.

The total area surveyed in the Territory is 22,523 acres of freehold, and 261,574 acres of leasehold.

§ 8. Progress of the Territory.

1. Statistical View of Eleven Years' Progress.—As already stated (§ 2, *supra*) the Territory was placed under the Commonwealth control on 1st September, 1906. The following table indicates the progress that has been made since that date :—

STATISTICAL SUMMARY, PAPUA, 1907 TO 1918.

Items.	Year ended 30th June.	
	1907.	1918.
White population	690	962
Native labourers employed (exclusive of Crown servants) ..	2,000	8,559
Number of white civil servants	65	97
Armed constabulary	185	300
Village constables	401	767
Territorial revenue	£ 21,813	72,594
Territorial expenditure	£ 45,335	103,176
Value of imports	£ 87,776	283,792
Value of exports	£ 63,756	220,599
Area under lease	acres 70,512	224,010
Area of plantations	acres 1,467	57,593
Meteorological stations established	3	21
Gold yield	fine ounces 12,439	7,752
Copper ore shipped	tons 137	1,112
Live stock in Territory—		
Horses	173	191
Cattle	648	518
Mules	40	111

SECTION XXX.

PUBLIC HYGIENE.

§ 1. Introduction.

1. **General.**—Though the safeguarding of the public health as an organised department of administration is of comparatively modern growth, few branches of law have expanded more rapidly than the one relating to that subject. The loss of potential wealth incurred through preventable diseases and deaths is of grave concern to the nation, and is a matter which has received an increased amount of attention during the last few years both from the Commonwealth and State Governments and from the Health and other authorities in Australia. Numerous Acts of Parliament have been passed dealing with various aspects of the subject of public hygiene.

2. **State Legislation.**—In the first place there is a number of statutes, passed by the State Legislatures, such as Public Health Acts, Pure Food Acts, and Milk and Dairy Supervision Acts, providing, *inter alia*, for the constitution of Central Health Authorities, vested with definite powers, and furnishing the machinery necessary to enforce those powers. The general effect of this legislation has been to place local sanitary regulations and the execution of the Acts in the hands of the local authorities, subject to a general superintendence by a Government Department.

3. **Commonwealth Legislation.**—Secondly, by the enactment of the Commerce (Trade Descriptions) Act 1905, the Quarantine Act 1908-1915, and the Customs Act 1910, the Commonwealth Government has taken the first steps towards the exercise of its constitutional powers for the protection of the public health. All these Acts are administered by the Department of Trade and Customs.

4. **Scope of Enquiry.**—In addition to the statutes already referred to, account should be taken of a large body of legislation which relates more or less indirectly to the subject of public hygiene. It deals with a great variety of subjects and matters, such as factories, conditions of employment, mines, merchant shipping, prevention of fire, buildings, dangerous performances, and other matters. There is also a number of statutes which have been passed with the object of protecting and supervising infant life. Owing to exigencies of space it is not possible in this section to do more than give a brief description of the scope and results of the legislation relating to public hygiene in its more important aspects.

§ 2. The Public Health Acts.

1. **General.**—The most important statutes relating generally to the subject of public hygiene are the Health Acts which have been passed in each State. While the scope of these Acts differs considerably in some of the States, there is a general similarity in their chief provisions and range of operation. The administration of the Acts is carried on by either a Central Board or a Commissioner of Health under Ministerial control, while their actual execution is imposed on local Boards of Health or on the local authorities constituted under the various Local Government Acts. Ordinarily the central authority has general supervisory powers over local Boards and authorities, and has power to act in case of default by or in the absence of a local Board or authority as to any duty under the Act, and to recover all expenses incurred. The central authority may also make regulations, and the central and local Boards may make by-laws for various purposes generally specified in the Health Acts. It may be said that the chief functions of the Central Health Authorities are :—(a) the collection and dissemination of useful information relating to health and the prevention of disease, and (b) to control, stimulate, and, where necessary, to supplement the efforts of the local authorities.

Inspectors are sent to make reports on the hygienic conditions of country towns or districts with a view to assisting the local authorities with advice, and keeping the central department posted as to the activity or otherwise of these various bodies.

Rating powers for sanitary purposes are conferred on local authorities by the Local Government Acts.

The general powers of local authorities under the Acts extend to a variety of subjects and matters, including :—sewers and drains, sanitary conveniences, scavenging, cleansing, privies and cesspools, abatement of nuisances generally, offensive trades, public buildings, dwelling-houses and lodging-houses, hospitals, mortuaries, cemeteries and burial grounds, prevention of adulteration of food and drugs, unsound food, pollution of water, supervision of abattoirs and dairies, prevention of infectious diseases, and infant life protection.

2. *New South Wales.*—The Department of Public Health is controlled by the Minister of Public Health. The Director-General of Public Health is the chief executive officer, and is assisted by various staffs—medical, bacteriological, chemical, veterinary, dairy inspection, meat inspection, sanitary, pure food, and clerical. Briefly put, the work of the Department extends over the whole of the State, and embraces all matters relating to public health and the general medical work of the Government; the Director-General of Public Health holding the position of Chief Medical Officer of the Government as well as being permanent head of the Department.

The Board of Health has certain statutory duties imposed upon it by various Acts of Parliament, and the Director-General is President of the Board. These duties consist largely in supervision of the work of local authorities (Municipal and Shire Councils), so far as that work touches upon public health matters connected with the following Acts :—Public Health Act 1902, Public Health (Amendment) Act 1915, Dairies Supervision Act 1901, Noxious Trades Act 1902, Cattle Slaughtering and Diseased Animals and Meat Act 1902, Pure Food Act 1908, and Private Hospitals Act 1908. The Board further possesses certain powers connected with public health matters under the Local Government Act 1906. It may be mentioned that the Board of Health is a nominee Board, created in 1881 and incorporated in 1894.

The Director-General of Public Health acts independently of the Board of Health as regards the State hospitals and asylums, and the various public hospitals throughout the State which receive subsidies from the Government.

3. *Victoria.*—In this State the Public Health Acts are administered by a Board composed of two members nominated by the Governor-in-Council and of seven members elected by the municipal councils. The medical and sanitary staffs of the Board consist of (a) the medical inspector, who is also chairman, (b) one assistant medical inspector, (c) two engineering inspectors, (d) three building inspectors, and (e) five health inspectors. The main function of the Board is to enforce the execution of the Health Acts by the local municipalities, but it has been found advisable to supplement this supervisory function by an active policy of inspection as to the sanitary condition of various districts, and the sampling of articles of food. The supervision of the sanitary condition of milk production is under the Dairy Supervision Branch of the Department of Agriculture, but distribution is supervised by the Board of Health. Acts administered by the Department of Public Health are :—The Health Acts, the Cemeteries Act, and the Meat Supervision Act. The Consolidated Health Act 1915 includes the Adulteration of Wine Act and the Pure Food Act. The Cremation Act is now included under the Cemeteries Act 1915. The Department administers also the Midwives Act and the Venereal Diseases Act. Under the last-mentioned Act it has been made compulsory for all persons affected with venereal disease to place themselves under the care of a duly qualified medical practitioner. Persons other than medical practitioners are prohibited from treating these diseases, or from supplying drugs or medicines. Registered pharmaceutical chemists may, however, dispense prescriptions to patients of medical practitioners. The Act contains various sections—with appended penalties for contravention—designed to check the spread of venereal diseases. A special clinic for the treatment of infected persons was

opened in Melbourne in June, 1918. Between 17th June and 31st December of that year, 1,459 males were treated, attendances numbering 32,165. It may be mentioned that the Act provides a heavy penalty in the event of a medical practitioner failing to notify cases of these diseases.

4. **Queensland.**—The Public Health Acts 1900 to 1917 are administered by the Commissioner of Public Health under the Home Secretary. The executive staff of the Department includes a health officer, a medical officer for the tuberculosis bureau, a medical officer for enthetic diseases, eleven food and sanitary inspectors, two staff nurses, in addition to rat squads in Brisbane. Northern offices, in charge of inspectors, are located at Rockhampton, Townsville, Cairns, and Mackay. A laboratory of microbiology and pathology, in charge of a medical director, is controlled by the Department, and performs a wide range of microbiological work for the assistance of medical practitioners and the Department.

One function of the Department is to stimulate and advise local sanitary authorities on matters pertaining to the Health Acts, and, where necessary, to rectify or compel rectification, at the cost of the local authority, of sanitary evils produced by local inefficiency or apathy. Its powers and responsibilities were widely increased by the Health Act of 1911-17.

A scheme for the limitation of venereal disease in the metropolitan area is in operation in Brisbane under statutory powers. It includes compulsory notification, free treatment, and the free supply of salvarsan and allied remedies at all public hospitals. Compulsory segregation of venereally infective persons, of either sex, may be effected on occasion. The Health Act Amendment Act 1917, has extended the venereal clauses to the whole State.

5. **South Australia.**—The Central Board of Health in South Australia consists of five members, three of whom (including the chairman, who is permanent head of the Department) are appointed by the Governor, while one each is elected by the city and suburban local Boards and the country local Boards. The Health Act 1898 provides that the municipal and district councils are to act as local Boards of Health for their respective districts. There are 183 of these local Boards under the general control and supervision of the Central Board. A chief inspector and two inspectors under the Health, Food, and Drugs Acts periodically visit the local districts, and see generally that the Boards are carrying out their duties. There is also a chief inspector of food and drugs (under the Food and Drugs Act 1908), who, in company with an analyst, visits country districts, and takes samples of milk, which are analysed on the spot. There are two nurse inspectors employed in advising and assisting local Boards in connection with outbreaks of infectious diseases. In the outlying districts there are fourteen inspectors directly responsible to the Board.

6. **Western Australia.**—The legislation in this State is the Health Act 1911, with three amending Acts 1912 (2) and 1915. The central authority is the Department of Public Health, controlled by a Commissioner, who must be a qualified medical practitioner. The local authorities constitute :—(a) Municipal Councils, (b) Road Boards which may be appointed as such, (c) Local Boards of Health, composed of persons appointed by the Governor for a certain period. These Local Boards are only utilised where neither Municipal Councils nor Road Boards are available. Generally speaking, the Act is administered by the local authorities, but the Commissioner has supervisory powers, also power to compel local authorities to carry out the provisions of the Act. In cases of emergency the Commissioner may exercise all the powers of a local health authority in any part of the State.

All the usual provisions for public health legislation are contained in the Act, and in addition, provision is made for the registration of midwifery nurses, and the medical examination of school children.

The amending Act of 1915 deals exclusively with venereal diseases. The main features are :—(1) that none but qualified medical practitioners shall treat these diseases ; (2) that all patients shall promptly place themselves under skilled treatment ; and (3) that advertisements of medicines and appliances for the treatment of these diseases, of

sexual infirmities, etc., shall no longer be published. For the carrying out of these objects, the Act provides, *inter alia* :—

- (a) For the notification (without name and address) of cases to the Commissioner of Public Health ;
- (b) For the notification to the Commissioner of patients who discontinue treatment before receiving a certificate of cure ;
- (c) For the exercise by the Commissioner, in certain circumstances, of compulsory powers against persons who neglect treatment ;
- (d) For the provision of free treatment at hospitals, and at the hands of salaried or subsidised medical practitioners.

A penalty of £50, or imprisonment with hard labour for six months, is provided for any person who knowingly infects any other with any venereal disease, or does anything likely to lead to that result.

The 1918 amending Act includes important amendments to that part of the principal Act dealing with venereal diseases. The general principles remain unaltered, but details are much improved.

7. *Tasmania*.—The Public Health Act 1903 vests central control in the Chief Health Officer, who is the permanent head of the Department of Public Health. He is charged with very wide functions and powers, and in the event of the appearance of dangerous infectious disease (small-pox, plague, etc.) in the State, is vested with supreme power, the entire responsibility of dealing with such an outbreak being taken over by him from the local authorities. Local executive is vested in local authorities, who possess all legal requirements for the efficient sanitary regulation of their districts. Controlling and supervisory powers over these bodies are possessed by the Department of Public Health, whereby many of the powers conferred upon them may be converted into positive duties. One function of the Department is to advise local authorities on matters pertaining to the Health Act, and, where necessary, to rectify sanitary evils produced by local inefficiency or apathy. The Department has three full-time inspectors, who assist and instruct the local sanitary inspectors, but full-time district health officers are not provided for. The number of local authorities under the Public Health Act has been reduced to fifty-one since the Local Government Act 1906 came into force. All parts of Tasmania are now furnished with the administrative machinery for local sanitary government.

The Public Health Act 1917 deals with venereal diseases. Medical practitioners are required to report persons suffering from such diseases. Such notification, however, does not disclose the names or addresses of the patients.

Regulations under the Public Health Act 1903, as amended, for checking or preventing the spread of any infectious disease, came into force in February, 1918.

§ 3. Inspection and Sale of Food and Drugs.

1. *Introduction*.—The importance of securing a pure and wholesome supply of food and drugs is recognised by both the Commonwealth and State Parliaments. Under the Acts referred to later, and the regulations made thereunder, the importation of articles used for food or drink, of medicines, and of other goods enumerated, is prohibited, as also is the export of certain specified articles, unless there is applied to the goods a "trade description" in accordance with the Act. Provision is made for the inspection of all prescribed goods which are imported, or which are entered for export.

2. *Commonwealth Jurisdiction*.—Under Section 51 (i) of the Commonwealth Constitution Act 1900, the Commonwealth Parliament has power to make laws with respect to trade and commerce with other countries and among the States. By virtue of that

power, the Commerce (Trade Descriptions) Act 1905, and the Customs Act 1910, to which reference has already been made in another part of this book (see pp. 556, 557), were passed.

3. State Jurisdiction.—The inspection and sale of food and drugs is also dealt with in each State, either under the Health Acts or under Pure Food Acts. There is, in addition, in the several States, a number of Acts dealing with special matters, such as the adulteration of wine and the supervision of meat. The sanitary condition of the milk supply is also subject to special regulations or to the provisions of special Acts.

(i) *General Objects of Acts.* The general objects of the Acts dealing with the inspection and sale of food and drugs are to secure the wholesomeness, cleanliness, and freedom from contamination or adulteration of any food, drug, or article, and for securing the cleanliness of receptacles, places, and vehicles used for their manufacture, storage, or carriage. The sale of any article of food or any drug which is adulterated or falsely described is prohibited, as also is the mixing or selling of food or drugs so as to be injurious to the health. A more detailed account of the various State Acts and of their administration and enforcement is given in previous issues of the Year Book (see No. 6, p. 1090).

(ii) *Inspection and Analysis.* Power is given to any authorised officer to enter any place for the purpose of inspecting any article intended to be used as a food or drug and also to inspect articles being conveyed through the streets, by water or by rail. He may take samples for examination or analysis, and may seize for destruction articles which are injurious to health or unwholesome. Chemical analyses and bacteriological examinations are made by qualified officers. Special provision is generally made in the Acts with regard to the sale of preservatives and disinfectants.

(iii) *Advisory Committees.* In New South Wales, Victoria, and South Australia Advisory Committees have been appointed for the purpose of prescribing food standards and for making recommendations generally with a view to carrying out the provisions of the Acts. The duty of enforcing these regulations is entrusted to the local authorities, but it is stated that up to the present comparatively few of the local councils seem to have realised the importance of guarding the food supplies of the people.

4. Food and Drug Standardisation.—With the object of securing uniformity of food and drug standards of the principal manufactured products sold in the Commonwealth, a conference, which was attended by representatives of the Commonwealth and all the individual States except Western Australia, was opened in Sydney on 8th June, 1910. The result of this conference was that several adoptions of standards of food and drugs, and labelling of articles for consumption were made, so as to obtain uniformity in the several States. In June, 1913, a second conference of the principal Health Officers of the Commonwealth and States was held in Melbourne. Emphasis was laid on the importance of fixing uniform standards throughout the Commonwealth for food and drugs, and of also securing uniformity of administration of the laws relating thereto. It was also urged that, as the uniform enforcement of standards throughout the Commonwealth depends to a great extent on the methods of analysis, the Commonwealth and State analysts should prepare standard methods for determination of the chemical standards adopted. The resolutions of the conference were submitted to the Premiers' Conference held in Melbourne in March, 1914. As a result of resolutions then adopted, each State has issued new regulations which have had the effect of ensuring uniformity throughout the Commonwealth.

5. The Sale and Custody of Poisons.—In Victoria, New South Wales, Western Australia, and Tasmania, the enactments for regulating the sale and use of poisons are administered by the Pharmacy Boards in the respective States. In South Australia, the sale of poisons is provided for by regulations under "The Food and Drugs Act 1908," administered by the Central Board of Health. In Queensland, the Poisons Act was formerly administered by the Police, but it is now administered by the Health Department.

In all the States the necessity of responsible control of poisons has been realised. The preamble to the Victorian Act, which State alone retains it, emphasises this necessity, and contains the key to the objects sought to be obtained. The preamble is as follows:—

“Whereas the unrestricted sale of poisons often leads to fatal accidents and the commission of crime: And whereas large quantities of arsenic, strychnine, and other poisons are used in Victoria for pastoral, agricultural, and other purposes, and fatal accidents occur by reason of the careless custody and use of such poisons by the owners thereof, or persons in their employ: And whereas it is expedient for the safety of the public to regulate the sale of poisons, and to make provision for the exercise of proper precautions in the use of same: Be it therefore enacted,” etc., etc.

In New South Wales and Victoria the Government subsidises the Pharmacy Board, in order to enable it to carry out the provisions of the Poisons Act. The subsidy is granted on the ground that the Act is passed for the public safety.

Generally, the poisons legislation throughout the Commonwealth seeks to protect the public, and aims at the prevention and detection of crime by restricting the class of persons allowed to deal in poisons, and by imposing conditions of sale. No persons, other than legally qualified medical practitioners and registered pharmaceutical chemists, are permitted to sell poisons without special license from the bodies administering the legislation in the respective States. These licenses are issued to persons in business distant from four to five miles from a registered chemist, on production of certificates from medical practitioners, police, or special magistrates or justices as to the applicant's character and fitness to deal in poisons. Annual license fees, ranging from 5s. to 20s., are charged in the several States.

Special conditions are imposed which must be observed by sellers of poisons, namely:—special labelling, the use of special containers, entry in the poisons book of sales of the more dangerous poisons, presentation of a doctor's order by the purchaser where hypnotic and narcotic drugs are required, colouring of arsenic and strychnine, prohibition of sale of certain poisons to persons unknown to the seller. In South Australia, the regulations provide that vendors other than legally qualified medical practitioners, wholesale dealers, and registered pharmaceutical chemists, shall keep all poisons in a cupboard or room with the word “poisons” printed on the door. In Victoria, such vendors must keep poisons in the original package or container. The Victorian, Queensland, and South Australian regulations also provide that poisons are to be delivered in bottles distinguished by touch from ordinary medicine bottles or from bottles ordinarily used for beverages.

Poisons may be sold by correspondence. In such cases the letter ordering the poisons shall be preserved by the vendor and a memorandum of the date of the letter, by whom it is written, and the quantity and particulars of the poison therein ordered shall be entered in the poisons book, and no person shall sell any such poison so ordered to any person with whose signature he is not acquainted, unless such signature has been witnessed or purports to have been witnessed by a justice, clergyman, or public officer, or is authenticated by some person known to the vendor.

In Victoria, New South Wales, and Queensland, arsenic and strychnine are not permitted to be sold unless—in the case of arsenic or such preparation thereof—it is before the sale mixed with soot or indigo in the proportion of at least one ounce of soot in Victoria and Queensland, and one ounce of soot or half an ounce of indigo in New South Wales, to one pound of arsenic—and in the case of strychnine or such preparation thereof—it is before the sale mixed with Armenian bole or other red durable colouring matter.

Partial exemptions from the regulations are made in some States in the case of sales of poisons for agricultural, horticultural and photographic purposes in so far that any person may sell them subject to the restrictions as to the class of container and the manner in which they may be sold. The sale of what are generally known as industrial poisons, such as sulphuric acid, nitric acid, hydrochloric acid, soluble salts of oxalic acid, etc., is governed by regulations, as also is the sale of poisons for the destruction of rats, vermin, etc.

The careless custody of poisons by householders and others is a punishable offence in some of the States.

In each State provision is made for the infliction of stringent penalties in all cases of non-observance of the law.

§ 4. Milk Supply and Dairy Supervision.

1. **Introduction.**—Milk is pre-eminently the food which needs most careful protection, at each successive stage of its production, carriage, storage, and delivery, from exposure to infection from extraneous matter. The problem of obtaining a pure and clean milk supply has accordingly, during the last few years, demanded an increasing amount of attention from the Health authorities, and in each State special laws and regulations have been passed governing the supervision of dairy farms and dairies.

(i) *General Provisions of Acts and Regulations.* In general, it may be said that it is not lawful to sell or offer for sale any milk which is not fresh or wholesome, or which has been watered, adulterated, reduced, or changed in any respect by the addition of water or any other substance, or by the removal of cream. Regulations made under the Acts provide for the carrying-on of dairy farms, dairies, factories, and creameries, under proper and wholesome conditions; and supervisors and inspectors are appointed to enforce these provisions. Generally, the execution and enforcement of the Acts are left to the local authorities.

(ii) *Registration of Dairymen and Milk Vendors.* Dairymen, milk vendors, and dairy-factory or creamery proprietors are required, under penalty, to be registered. In some States registration must be applied for before commencing to trade; in other States it must be applied for within a specified time after the premises are first used.

(iii) *Inspection of Premises.* Dairy inspectors employed by the central departments traverse the principal dairying districts, and inspect dairy premises, dairy herds, appliances, and utensils, and ascertain in what fashion the various local authorities carry out the duties imposed on them. Regulations and instructions are issued by the central departments for the information and guidance of local authorities, dairymen, milk vendors, and others, as to precautions to be observed in order to protect milk from contamination, and to ensure cleanliness as to the structural arrangements, dimensions and ventilation of premises, and as to the care and health of dairy cattle. If an inspector is satisfied that any premises or apparatus used therein are unclean, or unfit for the purposes of dairy produce, he may require the owner to put the same in a proper and wholesome condition.

(iv) *Notification of Diseases.* Every dairyman or milk vendor is required to report immediately any case of certain prescribed infectious diseases occurring in any human being engaged at or residing on his premises. It is the duty of the local authority to take care that communication between all persons belonging to the infected household and the milk business in all its details is prevented. Cases of notifiable diseases occurring in animals at a dairy farm or dairy must also be reported immediately, and the owner must at once isolate the diseased animal. The sale of milk from an infected cow is prohibited, and, under certain circumstances, an inspector may order an infected animal to be branded or destroyed.

(v) *Analysis of Dairy Produce.* The local authority generally has power to enter premises and to take away samples of the milk, cream, butter, or cheese there found, and of the water supply therein, for the purpose of examination or analysis.

2. **Number of Dairy Premises Registered.**—The following table shews so far as the particulars are available the number of dairy premises registered and the number of cattle thereon during the year 1918-19.

DAIRY PREMISES REGISTERED AND CATTLE THEREON, 1918-19.

Particulars.	N.S.W. (1918.)	Victoria.	Q'land. (1918-19.)	S. Aust. (1918-19.)	W. Aust. (1918-19.)	Tasmania.
Premises registered ..	18,435	12,662	13,341	1,025	927	(a)
Cattle thereon ..	936,681	107,949	341,181	5,885	8,539	(a)

(a) Not available.

3. **New South Wales.**—The provisions of the Dairies Supervision Act 1901 extend to the whole of the Eastern and Central Divisions of this State and to all important dairying districts further inland. Other districts are brought under the operation of the Act by proclamation from time to time. Every dairyman, milk vendor, and dairy factory or creamery proprietor is required, under penalty, to apply for registration to the local authority for the district in which he resides, and also to the local authority of every other district in which he trades. Registrations must be applied for before commencing to trade and must be renewed annually. The Chief Veterinary Inspector is in charge of all inspectorial work under the Dairies Supervision Act 1901, and has assisting him one assistant veterinary inspector and fourteen qualified dairy inspectors, each in charge of a district.

4. **Victoria.**—The inspection and supervision in Victoria of dairies, dairy farms, dairy produce, milk stores, milk shops, milk vessels, dairy cattle and grazing grounds are provided for by the Dairy Supervision Act 1915, administered by the Minister of Agriculture. Under the Health Act 1915, however, the Department of Public Health is empowered to take samples of food (including milk, cream, butter, cheese, and other dairy products) for examination or analysis, to institute prosecutions in case of adulterated or unwholesome food, and to carry out inspection of dairies, etc., in districts not yet proclaimed under the Act. By the end of the year 1918, 103 municipal districts, comprising about one-third of the area of the State, had been brought under the operation of the Dairy Supervision Act. The municipal councils have the option of carrying out the execution of the Act themselves or of electing for execution by the Department of Agriculture; up to the present all but one of the municipalities in which the Act has been proclaimed have elected for Departmental execution.

5. **Queensland.**—The control and supervision of the milk supply and of dairies and the manufacture, sale, and export of dairy produce in Queensland are provided for by the Dairy Produce Acts 1904 and 1911, administered by the Department of Agriculture and Stock. These Acts and the regulations made thereunder apply only to prescribed districts, which comprise the whole of the coastal district from Rockhampton down to the New South Wales border, and the Darling Downs, Maranoa, Mackay, and Cairns districts.

6. **South Australia.**—The Food and Drugs Act 1908, and the Regulations made thereunder, provide for the licensing of vendors of milk and the registration of dairies, milk stores and milk shops. The Metropolitan County Board carries out the requirements of the metropolitan area. In the Country, the majority of local authorities have not made statutory provision for the licensing of vendors of milk and the registration of dairy premises; and, in consequence, the Central Board of Health provides for such under the Act.

7. **Western Australia.**—Control of dairies throughout the State is in the hands of the Public Health authorities under the provisions of the Health Act. The inspectors under the Act supervise the sanitary condition of the premises, the examination of herds being carried out by officers of the Department of Agriculture for the Health Department. Inspection of herds is made at regular intervals, and the tuberculin test is applied in cases of suspected disease.

8. **Tasmania.**—Local authorities are responsible for the dairies in their respective districts. By-laws for the registration and regulation of dairies have been drafted by the Public Health Department, and in the majority of cases have been adopted by the local authorities. By the Food and Drug Act, which came into force March, 1911, milk sampling is carried out by the local authorities. During 1913, attention was drawn by circular to the requirements of local authorities with regard to dairies, and a special report is now required before licenses are granted. An Act also provides for the registration and inspection of dairies and other premises where dairy produce is prepared, and regulates the manufacture, sale, and export of dairy produce.

§ 5. Prevention of Infectious and Contagious Diseases.

1. **General.**—The provisions of the various Acts as to precautions against the spread and the compulsory notification of infectious diseases may be conveniently dealt with under the headings—(a) Quarantine; (b) Notifiable Diseases; and (c) Vaccination.

2. **Quarantine.***—Under the Commonwealth Quarantine Act 1908, the systems of State quarantine formerly in operation were abolished, and a branch of the Department of Trade and Customs, under the immediate control of a Director of Quarantine, was created on 1st July, 1909. Amending Quarantine Acts were passed in 1912 and 1915, correcting certain imperfections in the original Act, and conferring additional powers. Uniformity of procedure has been established throughout the Commonwealth in respect of all vessels, persons, and goods arriving from oversea ports or proceeding from one State to another, and in respect of all animals and plants brought from any place outside Australia. In regard to interstate movements of animals and plants, the Act becomes operative only if the Governor-General be of opinion that Federal action is necessary for the protection of any State or States; in the meantime the administration of interstate quarantine of animals and plants is left in the hands of the States.

(i) *Transfer of Quarantine Stations.* The transfer from the States to the Commonwealth of the quarantine stations, for the purposes of human quarantine, at the following places, has been effected:—(a) *New South Wales.* North Head (near Sydney). (b) *Victoria.* Point Nepean (near Melbourne). (c) *Queensland.* Colmslie and Lytton (near Brisbane), and Thursday Island. (d) *South Australia.* Torrens Island (near Adelaide). (e) *Western Australia.* Woodman's Point (near Fremantle), Albany, and Broome. (f) *Tasmania.* Bruni Island (near Hobart). Animal quarantine stations in each of the States have also been transferred to the Commonwealth. New buildings and improvements are in course of construction at several of the transferred stations. New stations have been constructed at Darwin, Thursday Island, Townsville, and Bunbury.

(ii) *Administration of Act.* The administration of the Act in respect of the general division, *i.e.*, vessels, persons, and goods, and human diseases, is under the direct control of the Commonwealth in all States except Tasmania. A medical chief quarantine officer, with assistant quarantine officers, has been appointed in each State. This officer is charged with responsible duties, and is under the control of the Director of Quarantine. In Tasmania, the chief health officer of the State acts as chief quarantine officer, and

* From information furnished by the Federal Director of Quarantine.

payment is made to the State for his services. The administration of the Act in the Northern Territory has been combined with that of Queensland under the chief quarantine officer for the North-eastern Division. The administration of the Acts and Regulations relating to oversea animal and plant inspection and quarantine is carried out by the officers of the State Agricultural Departments acting as quarantine officers.

(iii) *Chief Provisions of Act.* The Act provides for the inspection of all vessels from oversea, for the quarantine, isolation, or continued surveillance of infected or suspected vessels, persons, and goods, and for the quarantining and, if considered necessary, the destruction of imported goods, animals, and plants. The obligations of masters, owners, and medical officers of vessels are defined, and penalties for breaches of the law are prescribed. Power is given to the Governor-General to take action in regard to various matters by proclamation, and to make regulations to give effect to the provisions of the Act. Quarantinable diseases are defined as small-pox, plague, cholera, yellow fever, typhus fever, leprosy, or any other disease declared by the Governor-General, by proclamation, to be quarantinable. "Disease" in relation to animals means certain specified diseases, or "any disease declared by the Governor-General, by proclamation, to be a disease affecting animals." "Disease" in relation to plants means "any disease or pest declared by the Governor-General, by proclamation, to be a disease affecting plants." The term "plants" is defined as meaning "trees or plants, and includes cuttings and slips of trees and plants and all live parts of trees or plants and fruit."

(iv) *Proclamations.* The proclamations so far issued specify the diseases to be regarded as diseases affecting animals and plants; appoint first ports of landing for imported animals and plants and first ports of entry for oversea vessels; declare certain places beyond Australia to be places infected, or as places to be regarded as infected with plague; prohibit the importation (a) of certain noxious insects, pests, diseases, germs, or agents, (b) of certain goods likely to act as fomites, and (c) of certain animals and plants from any or from certain parts of the world; fix the quarantine lines, and define mooring grounds, in certain ports of Australia.

(v) *Regulations.* Regulations have been made prescribing the quarantine signal; the hours of clearance of vessels; forms of notices, orders, reports, and bonds to be used by masters, medical officers, quarantine officers, and importers; the period of detention of vaccinated and unvaccinated persons in quarantine; the conditions of removal of goods and mails; the method of disinfection of persons, animals, and infected or suspected articles; the notification of certain diseases, including venereal diseases; the conditions under which certain animals not prohibited may be imported; the sustenance charges for quarantined animals; the conditions of importations of hides, skins, wool, hair, bones, and animal manure; the method of carrying out the quarantining, disinfection, fumigation, and treatment of plants and packages. Regulations have also been made with the object of preventing the ingress to and the egress from vessels of rats and mice, and for the destruction of rats, mice, and other vermin.

(vi) *General.* The procedure has already been greatly simplified. Instead of all oversea vessels being examined in every State, as was formerly the case, those arriving from the south and west are now examined only at the first port of call, and pratique is given for the whole of the Commonwealth, except in cases of suspicious circumstances, while vessels arriving from the northern routes are examined only at the first and last ports. It is expected that the restrictions placed upon oversea vessels will be further removed as the machinery of quarantine is improved. The present freedom from certain diseases which are endemic in other parts of the world would, however, appear to justify the Commonwealth in adopting precautionary measures not perhaps warranted in the already infected countries of the old world.

3. *Notifiable Diseases.*—Provision exists in the Health Acts of all the States for precautions against the spread and for the compulsory notification of infectious diseases. When any such disease occurs, the Health Department and the local authorities must at once be notified. In some States notification need only be made to the latter body. The duty of giving this notification is generally imposed, first, on the head of the house to which the patient belongs, failing whom on the nearest relative present, and on his

default on the person in charge of or in attendance on the patient, and on his default on the occupier of the building. Any medical practitioner visiting the patient is also bound to give notice.

(i) *Notifiable Diseases Prescribed in each State.* In the following statement those diseases which are notifiable in each State are indicated by a cross :—

DISEASES NOTIFIABLE UNDER THE HEALTH ACTS IN EACH STATE.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.(d)	Tas.(e)
Acute lobar pneumonia ..	..	..	+	(g)	..	..
Anthrax ..	..	+	+	+	..	..
Ankylostomiasis ..	..	..	+	..	..	..
Beri-beri ..	..	..	..	..	+	..
Bilharziosis ..	..	..	..	+	+	+
Broncho-pneumonia ..	..	..	+	+	..	..
Bubonic plague ..	+	+	+	+	+	+
Cerebro-spinal fever ..	+	+	+	+	..	..
Cerebro-spinal meningitis ..	+	+	+	+	+	+
Chancroid (soft chancre) ..	..	+(b)	+	..	+	+
Cholera ..	..	..	+	+	+	+
Continued fever ..	..	+	+	..	+	..
Diphtheria ..	+	+	+	+	+	+
Dysentery ..	..	..	+(e)	..	..	..
Enteric fever ..	+	+	+	+	+	+
Erysipelas ..	..	+	+	+	+	+
Favus ..	..	..	..	+	..	..
Gonorrhœa ..	..	+(b)	+	..	+	+
Hæmaturia ..	..	+	..	..	+	..
Infantile paralysis ..	+	+	+	..	+	+
Infective granuloma of the pudenda ..	..	+(b)	+	..	+	..
Influenza ..	..	+	+	..	..	..
Leprosy ..	+	+	+	+	+	+
Malarial fever ..	+	+	+	+	+	..
Measles ..	..	+	+	+	..	..
Membranous croup ..	+	+	+	+	+	..
Ophthalmia neonatorum ..	..	+(b)	..	..	+	+
Pneumonic influenza ..	..	..	+	(g)	+	+
Poliomyelitis anterior acuta ..	+	+	+	..	+	+
Puerperal fever ..	..	+	+	+	+	+
Pulmonary tuberculosis (phthisis) ..	+(a)	+	+	+	+	+
Relapsing fever ..	..	+	+	+	+	..
Scarlet fever ..	+	+	+	+	+	+
Scarlatina ..	+	+	+	+	+	+
Septicæmia ..	..	+	..	..	+	..
Small-pox ..	+	+	+	+	+	+(f)
Syphilis ..	..	+(b)	+	..	+	+
Trichinosis ..	..	+	..	+	..	..
Typhoid ..	+	+	+	+	+	+
Typhus fever ..	..	+	+	+	+	+
Whooping cough ..	..	+	..	+	..	..
Yellow fever ..	..	+	+	+	+	..

(a) In metropolitan and certain proclaimed districts. (b) Under the Venereal Diseases Acts. (c) Thursday Island area only. (d) Other diseases enumerated as notifiable under "The Health Act 1911" of this State are pyæmia, and Malta, dengue, low and Colonial fevers. (e) Venereal diseases are notifiable under "The Public Health Act 1917." (f) Chicken-pox has been declared a notifiable disease to render certain its differential diagnosis from small-pox. (g) In South Australia influenza vera is notifiable, and any febrile toxic-septicæmic condition similar to influenza, including pneumonic influenza.

(ii) *Duties of Authorities.* As a rule the local authorities are required to report from time to time to the Central Board of Health in each State as to the health, cleanliness, and general sanitary state of their several districts, and must report the appearance of certain diseases. Regulations are prescribed for the disinfection and cleansing of

premises, and for the disinfection and destruction of bedding, clothing, or other articles which have been exposed to infection. Bacteriological examinations for the detection of plague, diphtheria, tuberculosis, typhoid, and other infectious diseases within the meaning of the Health Acts are continually being carried out. Regulations are provided in most of the States for the treatment and custody of persons suffering from certain dangerous infectious diseases, such as small-pox and leprosy.

(iii) *New South Wales.* The proclamation and notification of infectious diseases are dealt with in Part III. of the Public Health Act 1902. Special provision is made by that Act for the notification of small-pox and leprosy, and for the custody and treatment of lepers. Special reports dealing with outbreaks and the ætiology of plague, leprosy, and small-pox have been published.

(iv) *Victoria.* Under Part VI. of the Public Health Act 1915, the notification of cerebro-spinal fever or meningitis, continued, enteric and scarlet fever, diphtheria, infantile paralysis, influenza, membranous croup, poliomyelitis anterior acuta, pulmonary tuberculosis, scarlatina, puerperal fever, and typhoid is compulsory. An infectious disease cannot be declared notifiable unless it is prevalent; hence small-pox, cholera, etc., are not notifiable diseases. An Act, passed in 1907, requires medical practitioners and registrars to report all cases of notifiable diseases coming under their notice in any proclaimed district, and not merely those cases which occur in the district in which the practitioner or registrar is resident.

(v) *Queensland.* Under Part VII. of the Health Act 1900-1917, all cases of infectious diseases must be notified; special provision is made for notification of small-pox. No case of plague has occurred since 1908. Provision is made for the diagnosis of leprosy, and lepers are sent to Peel Island, Moreton Bay.

(vi) *South Australia.* In this State cases of infectious diseases must be reported to the local Board, under the provisions of Part VIII. of the Health Act 1898. The onus of notification is placed primarily on the head of the family, and, failing him, the nearest relative, the person in charge, or the occupier of the house; in any case, notification must be given by the medical practitioner attending.

(vii) *Western Australia.* The necessity for providing hospital treatment for infectious cases has been recognised by the Local Health authorities, and in several instances wards for the treatment of these cases have been erected.

(viii) *Tasmania.* Provisions regarding the prevention and notification of infectious diseases are contained in the Public Health Act 1903, as amended in 1908.

4. *Vaccination.*—In the State of New South Wales there is no statutory provision for compulsory vaccination, though in all the other States of the Commonwealth such provision has been made. With the exception of Victoria, the Vaccination Acts are, however, not generally enforced. Jennerian vaccine for vaccination against small-pox is prepared at the Commonwealth serum laboratories in Melbourne. A considerable demand exists for the vaccine in the State of Victoria, where infantile vaccination is compulsory, but in the other States the normal requirements are small. During the years 1912, 1913, and 1914, the output of the vaccine in doses from the depot was respectively 65,000, 570,000, and 146,000. The number of doses issued in 1913 was, however, abnormal, and was due to the epidemic of small-pox which broke out in Sydney at the end of June, this being followed by large numbers of vaccinations in each State.

The following table shows, so far as particulars are available, the number of persons vaccinated in each State from 1914 to 1918 inclusive :—

NUMBER OF PERSONS VACCINATED IN EACH STATE, 1914 TO 1918.

Year.	N.S.W.(a)	Victoria.(b)	Q'land.	S. Aust.	W. Aust.	Tasmania.
1914	6,629(d)	23,536	30,000	940	3,017	(c)
1915	4,080(d)	24,186	58(e)	854	(c)	(c)
1916	2,618	20,916	(c)	531	(c)	(c)
1917	4,663	19,759	(c)	251	(c)	(c)
1918	(c)	15,306	(c)	36	(c)	(c)

(a) By officers of the Health Department and at public depots. (b) Children only, who were vaccinated under the Act, see (ii) below. (c) Returns not available. (d) Exclusive of the military. (e) At Health Department, Brisbane.

(i) *New South Wales.* Although there is no provision for compulsory vaccination in this State, public vaccinators have been appointed. No statistics are available as to the proportion of the population who have been vaccinated, but a report of the Principal Medical Officer of the Education Department states that out of 94,918 children medically examined during 1914, 33,109, or 35 per cent., had been vaccinated.

(ii) *Victoria.* Compulsory vaccination is enforced throughout the State, under Part IX. of the Health Act 1890. From the year 1873 up to the present time, it is estimated that 72 per cent. of the children whose births were registered have been vaccinated. Free lymph is provided. The number of children vaccinated in Victoria during 1918 was 15,306.

(iii) *Queensland.* Although compulsory vaccination is provided for in this State, under Part VII. of the Health Act 1900–1917, its operation has not been proclaimed. Vaccination thus being purely voluntary, medical practitioners do not notify vaccinations. In the early part of 1912, the Queensland Government sent a medical expedition to the islands in Torres Straits. Over 1,200 natives were vaccinated with a view to reducing the risk of the introduction of small-pox from New Guinea. Information as to vaccinations in 1918 is not available.

(iv) *South Australia.* The Vaccination Act, 1882, which applies to South Australia and the Northern Territory, is administered by the vaccination officer of the State. Under this Act vaccination was compulsory, but in 1917 an Act to abolish compulsory vaccination was passed. The total number of vaccinations in 1918 was 36.

(v) *Western Australia.* In this State vaccination is compulsory under the Vaccination Act 1878, which, however, remains almost a dead letter, seeing that under the Health Act 1911, a "conscientious objection" clause was inserted, which is availed of by the majority of parents. The number of children vaccinated is very small. All district medical officers are public vaccinators, but they receive no fee for vaccinations. Nearly 3,000 vaccinations were effected during 1914 at Bunbury owing to an outbreak of small-pox which occurred there in May of that year.

(vi) *Tasmania.* All infants in Tasmania are nominally required, under the Vaccination Act 1898, to be vaccinated before the age of 12 months, unless either (a) a statutory declaration of conscientious objection is made, or (b) a medical certificate of unfitness is received. Information in regard to vaccinations in recent years is not available.

5. Commonwealth Serum Laboratories.—The establishment for the preparation of Jennerian Vaccine situated at Royal Park, near Melbourne (formerly known as the "Calf Lymph Depot"), has been enlarged and extended. The institution is now designated the "Commonwealth Serum Laboratories," and forms a branch of the Commonwealth Quarantine Service. Besides Jennerian vaccine, a large number of vaccines, serums, and other bacteriological products are prepared for the treatment of human and animal diseases. Price lists of the various products have been issued, and the institution is now in full working order.

§ 6. Tropical Diseases.

1. Introduction.—The remarkable development of parasitology in recent years and the increase in knowledge of the part played by parasites in human and animal diseases have shewn that the difficulties in the way of tropical colonisation, in so far as these arise from the prevalence of diseases characteristic of tropical countries, are largely removable by preventive and remedial measures. Malaria and other tropical diseases are coming more and more under control, and the improvements in hygiene which science has accomplished lend an entirely new aspect to the question of white settlement in countries formerly regarded as unsuitable for colonisation by European races. In Australia the most important aspect of this matter is at present in relation to such diseases as filariasis, malaria, and dengue fever, which, although practically unknown in the southern States, are of common occurrence in many of the tropical and sub-tropical parts of the Commonwealth.

2. Queensland.—(i) *Transmission of Disease by Mosquitoes.* The existence of filariasis in Queensland was first discovered about thirty-four years ago. The parasite of this disease (and probably of dengue fever also), is transmitted by *Culex fatigans*, the mosquito most prevalent in Queensland. The *Stegomyia fasciata*, conveyer of yellow fever, is another common domestic mosquito throughout Eastern Queensland during the summer, but so far has never been infected from abroad. Occasional limited outbreaks of malaria occur in the northern parts of the State; one at Kidston, in 1910, resulted in 24 deaths. The infection was traced to newcomers from New Guinea. For many years efforts were made to deal with the mosquito question in the larger centres, but owing to the absence of statutory powers these had only limited success. Special provisions of the Health Act Amendment Act of 1911 remedied this defect, and extensive operations, involving oiling, drainage, tank screening, the use of larvivorous fish, and other measures were organised by the Department of Public Health. The actual cost of the work during 1913 amounted to £795, of which the metropolitan local authorities contributed £420. Some 50,000 square yards of natural breeding places were attended to weekly by a special mosquito squad, over 2,000 street gullies were oiled, and tank screening with fine wire gauze was steadily enforced on owners and occupiers. The work was continued through the winter, in order to reach the eggs and larvæ at their period of lowest vitality. Operations have been, however, partly discontinued from May, 1914, owing to the unwillingness of the municipal councils to incur the expenditure entailed. It is hoped, however, by the Health Department, that a rigorous campaign will again be conducted against this pest, not only in Brisbane, but in every other closely inhabited part of the State, as it is considered that closer communication between the State and other countries, brought about through war conditions, is resulting in the return to Queensland of soldiers and sailors suffering from malaria.

Queensland Hookworm Campaign. It has recently been found that infection by the hookworm (*Ankylostoma duodenale*) is more widely spread in Queensland than was popularly realised. Of 13,720 whites and 401 aborigines examined,* 20.3 per cent. and 76.3 per cent. respectively were found to be infected, the examination embracing the

* By Dr. J. H. Waite, of the Rockefeller Institute, U.S.A., who has supplied the particulars given, and is conducting a research upon the ravages of the disease and a campaign for its elimination.

region between Cooktown and Townsville. The detailed results were as follow :—Cooktown, 10.8 per cent., Mossman, 16.4 per cent.; Cairns, 17.7 per cent. of the persons examined: Townsville, 8.4 per cent. of the school children examined. In the sugar districts, the Cairns district shewed 25.2 per cent. cases of infection; Johnstone River 24.7 per cent.; Cardwell, 43.1 per cent.; and Herbert River, 32.1 per cent.

Analysed according to age, it was found that from six to eighteen years of age the infection was 41.9 per cent. of the cases examined, and for all other ages, 11.7 per cent. According to race, aboriginals shewed 76.3 per cent. of infection; Italians, 43.7 per cent.; other white races, 20.3 per cent. The severity of the disease, as indicated by the resulting anæmia, was shewn by 1,322 cases of examinations of hæmoglobin: these gave an average of 72.9 per cent. of the normal, and a minimum of 20 per cent. of the normal. The effect of the disease was to produce marked dwarfing, retardation—both physical and mental—sexual immaturity, and impotence. The mental retardation in children was found to increase with age as follows :—

Age last birthday ..	10	11	12	13	14	15
Retardation in years ..	1.6	2.2	2.5	3.2	3.5	4.5

In the case of children, growth and development took place in quite a remarkable way as soon as cure was effected. Instruction given as to the necessary sanitation methods to safeguard the population from infection was appreciated and responded to. Since the hookworm can penetrate the skin very readily, it is essential that where the temperatures admit of its development, great care should be taken not to pollute the soil with human excreta. Experience has shewn that proper demonstrations of the origin and harmful effects of the disease are very effective in bringing about the personal hygiene through which the sources of infection can be minimised. (The above figures are provisional and may finally be modified.)

(ii) *Institute of Tropical Medicine, Townsville.* The Australian Institute of Tropical Medicine was founded at Townsville in January, 1910. During the first two years after its establishment the Institute was subsidised by the Commonwealth and Queensland State Governments, and was controlled by a committee consisting of representatives of both Governments and of the three Australian Universities—Sydney, Melbourne, and Adelaide. A director was appointed to organise the activities of the Institute, and after having accomplished a survey of Northern Australia and New Guinea, to advise as to the best centre where the work could be carried out most expeditiously.

The staff consisted at first of the director and one laboratory assistant, but soon the necessity arose of appointing an entomologist.

In 1913, after two years of preliminary work, the Commonwealth decided to increase the grant to the Institute considerably, and to take over the financial administration, which was vested in the Department of External Affairs, and later in the Home and Territories Department. The representatives of the three universities were retained as scientific advisers.

The decision to increase the scope of the Institute was greatly influenced by a resolution passed by the Australasian Medical Congress in Sydney, in 1911, recommending an organised inquiry into the various aspects likely to affect the establishment of a working white race in Australia.

The increased subsidy made the appointment of a larger staff possible. The services of three qualified assistants were secured, and the Institute was housed in a ferro-concrete building, situated within the precincts of the Townsville Hospital.

During the first two years a survey of tropical diseases existent in North Queensland was carried out, the incidence of human and animal parasites was investigated; and a number of problems which required elucidation were attacked. Amongst other suggestions a hookworm survey of Cairns and surrounding districts was recommended.

The staff undertook research on "nodules in beef" and made an important discovery, which at first seemed destined to advance our knowledge, by proving that living larvæ could penetrate through the unbroken skin of the beast and could be found under special conditions on the surface. Research in the consequent fate of the larvæ and the search for an intermediary host, in which the larvæ could undergo further development, proved fruitless, although many possibilities, such as biting flies, aquatic insects, etc., were considered and excluded after patient research.

It was shown that the parasites of wild animals, such as reptiles, birds, and small mammals resembled on the whole those found and described from other parts of the tropics, but no new general features of any importance could be discovered.

Attention was drawn to the prevalence in the dry western parts of North Queensland, of keratosis, a skin disease, characterised by a thickening of the horny layer of the skin, which develops into a chronic ulcer, and is apt to give rise to skin cancers. The occurrence of similar conditions in old people with atrophic skin in other parts of the world has been well known, but in Queensland mostly young people become affected, and the condition has been attributed to the effect of sunlight and dry heat on a skin lacking in normal pigment.

During a short journey through the Torres Strait islands, the occurrence and prevalence of such diseases as malaria, filariasis, elephantiasis, yaws and others was pointed out.

The increase in the staff made more extended field work possible, and in the course of time different districts were visited in order to study the local prevalence of fever and disease. A survey of the whole of the coastal districts of British New Guinea was undertaken and yielded interesting results. The prevalence of the different types of malaria, of filariasis and of leprosy was mapped out, the existence of agchylostomiasis (caused by the American variety of the hookworm, which is widely distributed in the far East) was noted, and the occurrence of a number of hitherto undescribed diseases was observed.

Amongst other diseases, a number of cases of gangosa, a condition that occurs not infrequently in some of the Pacific Islands, were encountered, and in the earliest stages of the disease a parasite was discovered which belongs to the genus of blastomyces and was named *Cryptococcus mutilans*, on account of the mutilation brought about by it.

The etiology of chronic conjunctival affections, so prevalent in Western Queensland, was investigated, and it was proved that true trachoma existed in Western Queensland and that an acute conjunctivitis was the most important predisposing cause.

The epidemiology and parasitology of the so-called "Mossman fever" were investigated, and it was found that the disease could be transmitted by direct inoculation of blood of patients in the early stage of the disease into monkeys. This observation indicated that this fever can be separated from other fevers which cannot be transmitted to these experimental animals.

A survey of the tropical diseases amongst the Europeans and aborigines of the Northern Territory was undertaken, and with the exception of yaws and ulcerative granuloma, the comparative absence of any serious tropical disease was established. Malarial fever was almost entirely absent from amongst the aboriginal population and, except in a few localities, attacked rarely the European population.

Unfortunately the outbreak of the war greatly curtailed the activities of the Institute, The energy of several of the workers was directed towards duties directly connected with the war, and the staff was obliged to assist as far as possible in relieving the tension caused by the scarcity of medical men throughout North Queensland and Australia in general.

Prior to the outbreak of the war the staff of the Institute had embarked on an enquiry on a larger scale into the physiological changes of a white race living under such climatic conditions as prevail in the coastal districts of tropical Australia. Special attention

was paid to the blood conditions of the white population, to the metabolism and to the influence of exercise, in order to gain an insight into the effects of manual labour upon the human organism under tropical conditions. At the same time the economic conditions as expressed in statistics were studied, and information collected in order to ascertain whether climatic conditions could be held responsible for any alterations of social conditions in North Queensland.

An examination of the blood condition of school children, who had resided during the whole or most of their lives in Townsville, was carried out in order to obtain definite evidence whether any deterioration had taken place, in other words whether there existed amongst the North Queensland school children an anæmia which could be directly attributed to climatic conditions. The result of the investigation proved that the blood condition, as far as formed elements and colouring matter were concerned, did not differ in any way from that considered as normal in children born and bred in a temperate climate.

In one respect, however, namely, in the relative preponderance of a certain type of cells—neutrophile leucocytes with a comparatively small number of nuclei—a definite alteration could be ascertained; the significance of this discovery is not yet clear.

A biochemical investigation into the metabolism of a white race living in the Tropics was undertaken by estimating the different excretory substances in the urine of a number of subjects who had lived for some time in the tropics, but hitherto no marked variations from the averages obtained in temperate climates has been found.

An extensive inquiry into the body temperature of a number of subjects under varying conditions has been carried out, and it was shown that during complete rest the rectal temperature did not show any variations from the limits of those observed in Europe, but a considerable rise was produced by slight muscular work, which rise was maintained for some time after the work had ceased.

Further experiments into the gaseous metabolism, the mechanism of sweating, the influence of extreme wet bulb temperatures, etc., have been, and are still being carried out, and will in time furnish definite figures and facts in connection with the solution of the question of the adaptation of a European race to conditions obtaining in the coastal districts of North Queensland.

Researches have been carried out into diseases prevalent in North Queensland such as malaria, sprue, filariasis and others. A malarial survey of Cairns and the Innisfail district has been accomplished, and in the former case definite proposals have been submitted which when carried out faithfully would minimise the incidence of this infection.

The staff of the Institute has also taken an active part in the hookworm campaign, undertaken by the Rockefeller Institute. A great deal of work has been done on the parasitic worms of men and beasts and a great number of genera and species new to science have been described in various publications.

General research has not been neglected, and a number of publications dealing with different subjects have been issued by the staff of the Institute.

The entomological department has carried out a survey of mosquitoes and biting flies in Northern Australia and parts of British New Guinea. A special journey was made by the entomologist to the irrigation areas of New South Wales and Victoria, in order to ascertain the distribution of anophelines, to which genus the malaria-transmitting mosquito belongs. The purpose of this survey was to advise as to whether the settlement of malaria-infected returned soldiers in these areas would form a menace by setting up conditions for the spread of this disease.

Prior to the outbreak of war definite arrangements had been made to hold annually a course in tropical medicine and parasitology, but war conditions made the course impossible.

In connection with the Institute the Townsville Hospital has set aside two wards containing twenty beds, which are under the direct control of the staff of the Institute, and are reserved for patients suffering from tropical complaints. Since their establishment, a number of cases have been admitted, treated, and their complaints investigated; amongst others, a number of returned soldiers and sailors suffering from a severe form of malarial fever were sent to the Institute for observation and treatment.

The results of the work of the Institute were published at first in the form of an annual report, but later in various scientific journals, and have been re-issued from time to time in the form of "Collected Papers," which contain a variety of scientific investigations.

The equipment has lately been perfected by installing electric power and by providing additional accommodation for the breeding of small experimental animals, which are indispensable for the carrying out of scientific research. An extensive library on tropical medicine and other allied subjects has been collected since the inception of the Institute.

The Institute extends hospitality to qualified workers who desire to investigate tropical disease or any problems in connection with Northern Australia, and room and equipment are provided.

3. **Northern Territory.**—While the Territory is conspicuously free from most of the diseases which cause such devastation in other tropical countries, a slight amount of malaria exists, and, although such cases as occur very rarely end fatally, the Administrator is taking measures for the destruction of mosquito larvæ wherever settlements or permanent camps are formed, while precautions are being taken to prevent the collection of stagnant water in such localities.

4. **Other States.**—In Western Australia it is stated that malaria is not known to exist south of the 20th parallel, while filariasis has never been discovered. Mosquito-borne diseases are unknown in Victoria, South Australia, or Tasmania, and it is stated that filariasis is uncommon in New South Wales, the only cases known being imported ones. Kerosene and petroleum have been successfully used to destroy mosquitoes at various places in these States, both by municipalities and private individuals.

§ 7. Supervision of Infant Life.

It has been frequently stated in recent years that when the social, climatic, and industrial conditions are taken into consideration, the infantile mortality of Australia, particularly in the large towns, is much higher than it should be. It is now generally recognised, however, that infant mortality is largely attributable to parental ignorance and neglect, and that, in particular, improper feeding is accountable for perhaps the majority of infant deaths. In all the States of the Commonwealth, Acts have been passed with the object of generally supervising the conditions of infant life and of reducing the rate of infantile mortality, and in many of the large towns measures have been adopted by private individuals to spread among the mothers a knowledge of the best methods of feeding and caring for their infants. Milk institutes have also been established after the manner of the *Gouttes de Lait** in Europe, with the object of reducing the number of deaths of infants from milk poisoning in the summer months.

* Organised action in this direction commenced in 1894 in Belgium. The original Belgian Society is known as the "*Société des Gouttes de Lait*." The movement has become an international one, and branches of the Society have been founded all over Europe. Similar philanthropic work was commenced in the United States of America before 1894.

Reference has been made in a previous part of this book (see page 182) to the number of infantile deaths and the rates of infantile mortality in each State, and it will be convenient to shew corresponding particulars here for the year 1918, classified according to metropolitan and other districts in each State :—

INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY FOR METROPOLITAN AND OTHER DISTRICTS, 1918.

Districts.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
NUMBER OF INFANTILE DEATHS.							
Metropolitan ..	1,252	1,175	393	299	233	111	3,463
Other ..	1,741	776	74	283	173	210	3,897
RATE OF INFANTILE MORTALITY.*							
Metropolitan ..	62.48	71.61	69.69	54.70	68.71	82.84	66.06
Other ..	56.76	51.56	51.38	48.04	46.57	53.30	53.26

* i.e., the number of deaths of infants under one year of age per thousand births.

It will be seen that in each State the rates of mortality are higher in the metropolitan than in other districts. The causes of "preventable" deaths may generally be attributed to milk poisoning, want of knowledge on the part of mothers, inability to nurse, and lack of the necessary medical facilities.

The figures in the foregoing table do not, however, completely represent the hygienic aspect of the question. For every infant death recorded there are probably three or four survivors who have sustained more or less serious permanent physical damage, quite apart from injuries at birth or congenital causes. It is stated that the far-reaching influence of the first year or two of life upon the whole subsequent physical welfare of the individual cannot be recognised too clearly, and it has been alleged that many serious defects and diseases occurring in later life may be credited to results ensuing from infantile disease. This is particularly the case in respect of digestive diseases.

The conditions regulating the employment of boys and girls in shops and factories are referred to in the section of this book dealing with *Industrial Unionism and Industrial Legislation* (Section XXVII.). Certain particulars have also been given in Section XXIV. (pages 894 to 896) of this book regarding Orphanages and Industrial and Reformatory Schools in Australia. In previous issues a short account has been given of the principal Acts which have been passed in each State dealing with the subject of child-life, and of the principal functions of the States' Children's Departments. (See Year Book No. 6, p. 1011).

§ 8. Medical Inspection of State School Children.

1. **Introduction.**—For many years medical officers of health and many others concerned in education generally have, from time to time, suggested the desirability of a medical inspection of school children. The State, which enforces school attendance under penalties, is also under the obligation of securing a satisfactory hygiene for the child during such attendance. Moreover, efficiency in education demands several things, viz., that the conditions under which the studies are made shall be physically and hygienically satisfactory; that there shall be no undue concentration of nervous effort on school work, and that the child shall be reasonably safeguarded against infection, etc. Only by an adequate scheme of medical supervision can these results be attained. It appears certain, from the results of the work so far undertaken in the several States by the Medical Inspectors, that, had the supervision of the children's health, more particularly with regard to dental and optic defects, been commenced some years previously, the number of rejects by the military authorities during the war would have been very materially reduced.

Several limited and isolated surveys of the physical proportions of Australian children have been made during the past 30 years in the various States. The first important systematic survey, however, was made in Sydney in 1901, and the results were reported by the Government Statistician of New South Wales to the Australasian Association for the Advancement of Science Conference in Hobart in 1902, and shewed that the Sydney boy was taller than the English boy, but that his chest expansion was small in comparison with European figures.

A series of measurements on 500 boys took place concurrently but independently in Hobart during 1901, which also gave similar results. It was recognised that the figures were based on limited numbers, but they at least challenged attention. The 1901 survey in Sydney, though small, was a valuable and suggestive contribution to anthropometric research in Australia, and may be regarded as the beginning of a systematic attempt to ascertain what characteristics of bodily form are exhibited in Australia. This enquiry roused considerable interest in the other States, and series of measurements have since been made in Western Australia, Tasmania, and South Australia, by various authorities, and in Victoria by the Education Department's medical officers. Each year since 1907 the Department of Education of New South Wales has carried out regular anthropometric measurements of the height and weight of school children. A card for each child allows his measurements for successive years to be recorded. The department perambulated the apparatus, each set serving about 20 schools, and the visits recur in the same month of each succeeding year. Data for the whole State have now been collected, and it is anticipated that a complete analysis of the results will shortly be published.

2. Co-ordination of Effort.—So far as it has been carried out, the medical inspection of school children tends to shew that in Australia, as in other lands, the hygiene, both of the schools and of the pupils therein, is more defective than is ordinarily recognised, and that not only preventable physical injury to the rising generation from school conditions can be avoided, but also instruction itself can be made more efficient by a proper regard to the demands of a good school hygiene. For the purpose of securing uniformity of procedure in the several States, the Commonwealth Government in 1907 formulated a scheme and communicated with the States asking their co-operation in obtaining measurements of school children with a view to establishing the relations between age, weight and height, chest measurement, etc. Delays occurred from various causes, but in a paper read at the Science Congress in Sydney in 1911, the subject was again brought under notice, and this led to the appointment by the congress of a committee of experts to encourage anthropometric research and to consider the organisation of a systematic survey of school children throughout Australia. The scheme was essentially identical with the former proposal of the Federal Government, but in the interim the report of the British Anthropometric Committee became available, thus making possible a method uniform with that of Great Britain, and rendering the results immediately comparable with those of Europe.

The Australian Anthropometric Committee drew up a memorandum setting forth the importance and object of the survey, and suggestions as to method for the use of teachers, physical trainers and others interested.

A description of the proposed survey will be found in previous issues of the Year Book (see No. 6, p. 1104).

On the coming into operation of the Defence Act of 1910, military training became compulsory in the Commonwealth, and advantage has been taken of the prescribed medical examination to make a systematic record of the height, weight, and chest measurement of each trainee. There can be no doubt that these anthropometric records will in time furnish valuable data for the study of Australian physical development. Further reference is made to this subject in Official Year Book No. 11, pages 1203 to 1209.

3. New South Wales.—In this State, arrangements were made in May, 1907, for the medical inspection of school children in Sydney, and later in the year the work was extended to Newcastle. In 1911 the scheme was extended to the South Coast District and to a number of inland towns.

In 1913, the scheme of school medical inspection was re-organised so as to embrace every pupil in the State whose parents desired such medical inspection of their children. The employment of part-time medical officers was discontinued, and a staff consisting of a principal medical officer and nine full-time medical officers was appointed. Arrangements were made to provide facilities whereby all school children found physically defective would have an opportunity of being treated by the Department's officers. With these additions, the staff of the medical branch consisted of twenty full-time medical officers, three part-time medical officers, seven full-time and six part-time dentists, besides nurses, dental assistants, and clerks. The work now being carried on by the medical branch may be classified under the following heads :—

(1) The medical inspection of all school children in the State, whether attending public or non-State schools; (2) The investigation of epidemics of infectious diseases affecting school children; (3) Inspection of school buildings; (4) Delivering of systematic courses of lectures at the training college; (5) Delivering lectures to the senior girls in all metropolitan schools on the care of babies, personal cleanliness, home hygiene, sick nursing, etc.; (6) Delivering lectures to parents; (7) The medical examination of candidates for admission to the teaching service; (8) Giving first treatment in the back-country schools to the eyes of scholars suffering from ophthalmia, and instructing the children and parents regarding future treatment and prevention; also supplying afflicted children with sufficient drugs to carry on the treatment; (9) Visitation by nurses to the parents of defective children in order to better secure the treatment of those children; (10) Preparation and publication of books, pamphlets, etc., dealing with important aspects of hygiene. Since the reorganization alluded to above, 332,220 children have been examined, and of these, 198,336, or nearly 60 per cent., were found to be suffering from physical defects needing treatment. It is stated that considerably less than half of these received treatment.

During the year 1917, 64,804 children were medically examined, exclusive of the number examined by the Travelling Hospital and Travelling Clinics, referred to hereafter. Of these children, 40,347, or 62.2 per cent. were found suffering from physical defects, and of these, 39,003 were treated, 23,288 being attended to by the Departmental officers, while 15,715 were treated by outside agencies, including hospitals, lodge doctors, private practitioners, and dentists.

During the year 1914 a Travelling Hospital and a Travelling Ophthalmic Clinic were inaugurated, being followed by the Metropolitan Dental Clinic and the Travelling Dental Clinic in 1915. At the end of 1917 the treatment schemes in operation consisted of (1) a Travelling Hospital, staffed by two medical officers, a dentist, and a nurse; (2) six Travelling Dental Clinics, each staffed by a dentist and a dental assistant; (3) a Travelling Ophthalmic Clinic; (4) a Dental Clinic in Sydney, staffed by six half-time dentists and three full-time dental assistants. Provision was made for further extensions, but owing chiefly to the war it was not found possible to obtain suitable officers. The Travelling Hospital works in those parts of the State where there are no resident doctors or dentists. The number of children treated by the Department's treatment schemes during 1917 was as follows :—Travelling Hospital, 1,947 children; Travelling Dental Clinics, 14,158 children; Metropolitan Dental Clinic, 3,576 children; and Travelling Ophthalmic Clinic, 2,909 children; Metropolitan General Treatment Clinic, 610 children, or a total of 23,200.

The Sydney University has established a special course for the training of school medical officers. It is expected that a supply of school medical officers, trained to meet the special requirements, will always be available in the future.

4. **Victoria.**—In Victoria three medical inspectors were appointed by the Education Department at the end of 1909, and a fourth was added in 1915. Owing to war requirements, however, the staff was reduced to two. Medical inspection in this State now includes (a) Medical examination of pupils in State high schools, higher elementary schools and elementary schools; (b) Medical examination of teachers; (c) Lectures on hygiene to teachers; (d) Reports on school buildings and equipment; (e) Investigations *re* epidemic diseases; (f) Supervision of work of school nurses, bush nurses, special schools, and of the cleansing and disinfecting of schools. Arrangements have been

made to examine children four times during their eight years of school life, beginning with children at their entrance to the infant schools. Complete records are kept of the various measurements made and physical and mental defects noted. Notices regarding defects and advice as to consultation of doctor, oculist, etc., are forwarded to parents. After an interval of six weeks the head teachers enquire as to what course of action parents have pursued, and a further enquiry is made four months later. Prior to the long vacation in December, urgent notice is sent to all parents or guardians of children who need treatment, calling attention to the necessity and importance of having defects remedied. In the metropolitan area the School Nurse visits parents, urges treatment, and makes arrangements for visits to public hospitals of children needing attention. During the year ended 30th June, 1918, 6,613 children were examined, of whom 2,116 boys and 2,006 girls attended elementary and special schools, and 1,292 boys and 1,199 girls attended high schools. Teachers examined numbered 716, all of whom were women.

The appointment of bush nurses has proved a boon in remote localities beyond convenient reach of medical aid.

5. **Queensland.**—In this State a systematic scheme for the inspection of State school children came into operation on 1st January, 1911, under which a Medical Branch of the Department of Public Instruction was created, consisting of a Medical Inspector of Schools, a School Nurse, and a Dental Inspector. To this staff were added an assistant Medical Inspector, an Ophthalmic Inspector, two assistant Dental Inspectors, and three part-time Medical Inspectors. Owing to difficulties resulting from war conditions certain modifications have been rendered necessary. The services of both medical inspectors were requisitioned by the military authorities, and the Ophthalmic Inspector was killed while on active service in France. During 1917, thirteen part-time medical inspectors were engaged, three of whom were stationed in the Brisbane district and the balance in the chief country centres. Three full-time School Nurses are also employed. While careful attention is given to the ordinary medical examination, special effort is directed to what is known as the "follow-up" scheme. This consists in keeping in close touch with all cases of physical defect until the necessary treatment has been given. In cases where parents are unable to pay for private treatment, arrangements are made to have the children attended to at a hospital. During 1917, 20,071 individual medical examinations were made; the number of children reported as suffering from physical defects being 5,078.

The staff of Dental Inspectors now consists of a Chief Inspector, two male and three female assistants. At present the principal work undertaken is the inspection of the teeth of pupils between the ages of 6 and 8 years, although special cases brought under notice by head teachers are attended to, and in the smaller schools the whole of the children are dealt with. It is proposed to follow, if possible, all children throughout the period of their school existence, and to take effective action to remove dental defects. The number of pupils dentally inspected during 1917 was 16,594.

While adenoids and enlarged tonsils appear to be the principal defects throughout all the State schools, the children in the Northern and Western districts suffer largely from defective vision and trachoma. The work of the Ophthalmic Inspector is chiefly confined to these districts. The conclusion has been arrived at, as a result of the examinations, that such climatic conditions as dust, glare, heat, etc., so prevalent in the Western districts, which are often looked upon as the direct cause of serious blight or trachoma, are only predisposing causes, and can be safely ignored, provided elementary precautions are taken. The report of the Dental Inspectors, while still disclosing an appalling percentage of defects in the teeth of the children, shews, even in the short time in which the scheme has been in existence, a marked improvement in the schools that were examined twelve months previously.

6. **South Australia.**—In 1909, at the desire of the Government, Dr. Rogers examined 1,000 school-going children in different parts of the State. Children under seven years and over fifteen years of age were not examined. Investigations were made with regard to personal appearance, cleanliness, height, weight, chest measurements, teeth, eyesight, hearing, nose and throat, etc., and the report was presented to the Minister for Education

in September, 1910, the results being, on the whole, satisfactory. A summary of this report, which contains statistical details exhibiting many interesting comparisons between various States in the Commonwealth and other parts of the world, was given in a previous issue of this book (see Official Year Book No. 5, pp. 1132 to 1138).

No State medical supervision of its school children was, however, undertaken in South Australia until 1913, when a medical officer, a fully trained nurse, and a health inspector were appointed for the work. Under the system adopted, the children are weighed and measured, their sight and hearing tested, and their chests, throats, and teeth examined. After examination, a notice is sent to the parents of any child who is found defective to an extent likely to interfere with its educational progress. No treatment is undertaken by the State. During the year 1917, 3,972 children were examined, showing a considerable percentage with defects of sight, hearing, nose and throat, sufficiently serious to interfere with their educational progress. In addition, the teeth of 3,000 children required attention, 853 having teeth in so bad a condition as to affect their general health. It was found that, while teeth were bad in all the schools examined, the other defects mentioned were exhibited in a considerably greater degree among the city children as compared with those living in country districts.

7. **Western Australia.**—Until the year 1911 no general scheme for school medical inspection existed in Western Australia, although examination in a few metropolitan schools had been intermittently carried on. During the latter part of 1906 and the first half of 1907, an extended examination of about 3,300 children was conducted by the Department of State Medicine and Public Health with the co-operation of the Education Department. Many physical defects among the children were detected, and the co-operation of the Inspector-General of Schools resulted in steps being taken, where possible, to provide better hygienic conditions. The system followed during 1909 was that, wherever possible, a visit was made to a school, the teacher bringing up all children who appeared to be suffering from any physical defects or bodily ailments. The exact condition of the child having been determined, a notice was sent to the parents calling attention to the necessity of obtaining treatment for the defect. Under the Health Act 1911, Medical Officers of Health become medical officers of schools and school children. During 1917, a medical officer for schools was appointed, and inspections were carried out in some of the large schools in the metropolitan district. The number of children examined was 6,072.

In the Metropolitan District the members of the Dental Society have carried out a regular system of examination of children's teeth. In connection with this, and also in connection with the general system of medical inspection, free treatment is provided for those children whose parents are unable to pay.

8. **Tasmania.**—The credit of being the first State in the Commonwealth to provide for the medical inspection of schools and school children in a systematic way rests with Tasmania, where, under the direction of the Chief Health Officer and the Director of Education, about 1,200 children attending schools in Hobart were inspected in 1906.

Medical inspection of school children as now existing in Tasmania is carried out by four medical officers, each controlling respectively one of four areas, which for medical inspection purposes are known as Hobart District, Launceston District, the Southern Country and Northern Country Districts of the State. Additional assistants in the persons of school nurses have been appointed to follow up the work of the Medical Inspectors. Reports on the physical condition of the children are furnished, and parents advised when medical attention is considered necessary, and in the case of parents unable to pay for such attention, orders are given for free treatment at the hospital. The system of medical inspection of school children was extended during 1916 to the pupils of private primary schools, where the teacher makes application for such inspection to be made. Under the scheme in operation, practically all of the primary school children of the State come under medical examination at least once in every two years. The examination in 1917 covered about 14,000 children. During 1916 school dental clinics were established in Hobart and Launceston. In that year 3,282 individual children were examined and 4,573 in 1917.

SECTION XXXI.

THE COMMONWEALTH SEAT OF GOVERNMENT.

1. **Introductory.**—In Year Books Nos. 4 and 5, information was given in this section as to the events leading to the selection of the Federal Capital Territory, and as to the necessary legislation and the progress of operations in connection with the establishment of the capital city. The physiography of the Territory was dealt with *in extenso*, and topographical and contour maps accompanied the letterpress, as well as reproductions of the premiated designs for the laying out of the city. Considerations of space, however, preclude the repetition of this information. On the 12th March, 1913, the official ceremony to mark the initiation of operations in connection with the establishment of the Seat of Government was carried out. At this ceremony the selection of "Canberra" as the name of the capital city was announced.

2. **Progress of Work.**—The design for the laying out of the capital city having been approved, the survey of the main axial lines has been completed, and the marking on the ground, grading, and construction of portion of the roads are proceeding. Considerable progress has been made with the nursery in connection with the afforestation scheme, and the horticultural work undertaken includes cultivating plants for the Continental Arboretum, red park plantation for Narrabundah, pink park plantation for Mount Ainslie, yellow park plantation for Mount Black, and white forest on Mugga-Mugga, for the extensive redwood, pinetum, cedar, and cork oak economic forests. In addition, the previous pine, wattle, and eucalypt plantations have been maintained, and the propagation of native trees in quantities for parkway embellishment undertaken. The power plant is supplying current to all the important points. Active progress with construction has been restricted for the present, and operations are practically being confined to maintenance work.

The following figures indicate the actual work done in road development since the roads were taken over:—

Forming and finishing	..	..	..	..	93½ miles
Gravelling and metalling	..	..	..	..	95¼ miles
Clearing out, repairing culverts, etc.	..	..	..	..	162½ miles
General road repairs	..	..	..	..	178½ miles
Cutting water tables, drains, etc.	..	..	..	..	146½ miles

3. **Lands in the Territory.**—As a considerable portion of the Commonwealth lands within the Territory is not required in connection with the establishment of the city, such areas are being made available for leasing under certain conditions. A large number of leases have been disposed of under conditions requiring the extermination of rabbits, and the lessees are proceeding with the erection of rabbit-proof fencing in a satisfactory manner. 17,800 sheep and 380 head of large stock are on agistment on land that will be required for departmental use at a later date. Reference has already been made on page 292 to the area of alienated, acquired and leased land within the Territory. All areas are classified into three classes of agricultural and three classes of grazing lands.

4. **Lands at Jervis Bay.**—Sovereign rights over certain lands, comprising about 18,000 acres, and water, at Jervis Bay, to be used for the Naval College and other Federal purposes, have been granted by the New South Wales Government and accepted by the Commonwealth.

5. **Railways.**—The line from Queanbeyan to Canberra, 4 miles 75 chains long, was opened for goods traffic on 25th May, 1914, and is being worked by the New South Wales Railways Commissioners. The construction of a tramway for the carriage of material from the depot yards and power house into the city area is proceeding. The trial survey of the Canberra-Jervis Bay line has been completed, and plans have been prepared sufficient to enable an estimate of the cost of the line to be arrived at. The trial survey from Canberra to the boundary of the Federal Territory (towards Yass), a distance of 11 miles, has been completed, as well as the survey of the line by the New South Wales Government from Yass to the Territory boundary, 32 miles.

6. **Population and Live Stock.**—A complete count of the population was taken on 31st December, 1918, when a total of 1,942 was enumerated. It is estimated that 337 persons were absent from the Territory on the date in question. The live stock in the Territory, according to the latest returns, comprises:—Horses, 1,250; cattle, 8,900; sheep, 155,000; and pigs, 200.

7. **Educational Facilities.**—Arrangements have been made for the New South Wales Education Department to continue, for the time being, the administration of education in the Territory, the expenditure involved to be refunded annually by the Commonwealth to the State. Additions have been made to the public school at the Royal Military College, Duntroon, to accommodate the increased number of children.

8. **Revenue and Expenditure.**—The expenditure in the Federal Territory subsequent to the passing of the "Seat of Government Acceptance Act 1909," and up to the 30th June, 1918, was for 1910-11 £20,319, 1911-12 £64,772, 1912-13 £135,270, 1913-14 £251,669, 1914-15 £212,506, 1915-16 £166,052, 1916-17 £105,971, 1917-18 £32,111, making a total of £988,670. A detailed statement of the various items of expenditure since 1910 is given in the following table:—

COMMONWEALTH SEAT OF GOVERNMENT.—EXPENDITURE TO 30th JUNE, 1918.

Item.	Total Expenditure to 30th June, 1917.	Expenditure (or Credit), 1917-18.		Total Expenditure to 30th June, 1918.
		Dr.	Cr.	
	£	£	£	£
Afforestation	12,977	2,871	..	15,848
Bridges, Roads, and Culverts	80,183	2,576	..	82,759
Buildings, Repairs, etc.	113,526	10,613	..	124,139
Brickworks	46,130	..	328	45,802
Cement and Quarrying	5,086	25	..	5,111
Electric Lighting (Mains and Plant only)	77,374	..	2,039	75,335
Fire Brigade	1,268	..	..	1,268
Fencing	3,632	5	..	3,637
General Expenditure (including Administrative Charges)	140,830	11,202	..	152,032
Manufacturing Accounts	5,494	..	10,334	Cr. 4,840
Maintenance Accounts	1,880	..	..	1,880
Motor Cars and Upkeep	8,461	753	..	9,214
Medical Services	10,378	1,464	..	11,842
New South Wales Government (Services Rendered)	12,209	2,830	..	15,039
Plant, Instruments, etc.	19,828	..	55	19,773
Railways	62,409	3,497	..	65,906
Rabbit Destruction	18,118	1,986	..	20,104
Stock (Material)	38,159	5,826	..	43,985
Sewerage, Mains, etc.	39,002	..	573	38,429
Water Supply	253,145	1,400	..	254,545
Wire Netting Lessees	6,470	392	..	6,862
Total	956,559	45,440	13,329	988,670

The revenue of the Federal Territory for the year ended 30th June, 1918, was £31,221, including £754 from rates.

9. **Military College.**—In June, 1911, a Military College was opened at Duntroon for occupation by the cadets and staff. Particulars regarding the establishment of this College may be found in Year Book No. 4 (p. 1159). Previous reference has been made to it in the section of this book dealing with Defence (see page 1006).

10. **Naval College at Jervis Bay.**—See section of this book dealing with Defence, page 1015.

SECTION XXXII.

THE NORTHERN TERRITORY.

§ 1. Area and Population.

1. *Introductory.*—Upon the extension of New South Wales westward to the 129th meridian in 1827, the Northern Territory was comprised within that colony (see Year Book No. 4, page 16), and in 1863 was annexed by Royal Letters Patent to the province of South Australia. With the adjacent islands, it was transferred to the Commonwealth on 1st January, 1911.

2. *Area and Boundaries.*—The total area of this Territory is 523,620 square miles, or 335,116,800 acres. Its length from north to south is about 900 miles, while its breadth from east to west is 560 miles. Its eastern boundary, dividing it from Queensland, is the 138th meridian of east longitude; and its western boundary, separating it from Western Australia, the 129th meridian. Its southern boundary is the 26th parallel of south latitude, dividing it from South Australia. The northern boundary is the coast line of those parts of the Indian Ocean known as the Timor and Arafura Seas. Near the mouth of the Wentworth River, in the Gulf of Carpentaria, the coast line is met by the eastern boundary; at Cape Domett, near Cambridge Gulf, the western boundary cuts the northern coast line. The length of coast line is about 1,040 miles, or 503 square miles of area to one mile of coast line; an exact survey has, however, not yet been made.

3. *Population.*—(i) *Character.* In 1881 there were 670 Europeans in the Territory, and at the end of 1913 the number was estimated at 2,143. The Chinese population, at its maximum during the years of railway construction, 1887 and 1888, has gradually dwindled, the estimate for 1914 being 1,033. Japanese, first recorded in 1884, increased up to the year 1898, falling again after five years. The highest recorded population, excluding aborigines, was 7,533 in 1888; the estimate for 1918 was 4,781. The year 1911 was the first in which the population was dominated by the European race. A thirty years table of population, distinguishing races, will be found on page 1156 of the Commonwealth Official Year Book No. 5. Subsequent to the Census of 1911, a revision of the estimates, back to 1901, was made. The results are incorporated in the following table:—

POPULATION OF NORTHERN TERRITORY (EXCLUSIVE OF ABORIGINES),
1901 TO 1918.

Year ended 31st December.	Male.	Female.	Total.	Year ended 31st December.	Male.	Female.	Total.
1901 ..	3,999	674	4,673	1910 ..	2,738	563	3,301
1902 ..	3,847	627	4,474	1911 ..	2,662	586	3,248
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The census population (3rd April, 1911) was 2,734 males, 576 females; total, 3,310. The estimate for 31st December, 1918, gives 3,677 males, 1,104 females, a total of 4,781.

(ii) *Movement of Population.* The following is a summary of movement of population in 1918 (excluding overland migration):—

MOVEMENT OF POPULATION, NORTHERN TERRITORY, 1918.

Inwards	1,259	Outwards	1,417	Excess of immigration over emigration ..	-158
Births	105	Deaths	74	Excess of births over deaths ..	31
Increase	1,364	Decrease	1,491	Net result	-127

Note (-) signifies decrease.

The immigration and emigration of the Territory in five-year periods from 1881 to 1910, and for each of the years 1911 to 1918, are shown in the following table:—

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Year.	Immigra- tion.	Emigra- tion.	Year.	Immigra- tion.	Emigra- tion.	Year.	Immigra- tion.	Emigra- tion.
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			1913 ..	1,033	824	1918 ..	1,259	1,417

(iii) *The Aborigines.* An account of the Australian aborigines, by Dr. W. Ramsay-Smith, was given in Year Book No. 3 (pp. 158-176). The interior of the continent is the most thickly populated by the natives, but it is believed that they are rapidly dying out. In these regions, remote from contact with other races, the native has maintained his primitive simplicity, and furnishes an interesting subject of study to the anthropologist and ethnologist. At the census of 1911, full-blooded aboriginals in the employ of whites and those who are living in a civilised or semi-civilised condition in the vicinity of European settlements, were enumerated—the males being 743, females 480; total, 1,223. Estimates of the total black population of the Territory vary from 20,000 to 50,000.

§ 2. Legislation and Administration.

1. *Transfer to Commonwealth.*—(i) *The Northern Territory Acceptance Act.* A short historical sketch is given in Year Book No. 6, pp. 1113-4. On 1st January, 1911, the Territory was transferred by South Australia to the Commonwealth, upon terms previously agreed upon by the respective Cabinets, and ratified by the Commonwealth *Northern Territory Acceptance Act* (No. 20 of 1910). It is enacted that laws and courts of justice remain in operation, powers and functions of magistrates and officials remain vested; estates and interests continue upon the same terms; trade with Australian States is declared free. The Commonwealth assumes responsibility for the State loans in respect of the Territory, paying the interest yearly to the State, providing a sinking fund to pay off the loans at maturity, and paying off the deficit in respect of the Territory. It also purchases the Port Augusta to Oodnadatta railway, and agrees to complete the construction of the transcontinental railway from Port Darwin to Port Augusta.

(ii) *The South Australian Surrender Act.* The State Act approves and ratifies the agreement surrendering the Territory.

(iii) *The Northern Territory (Administration) Act 1910.* The Act provides for Government authorising the appointment of an Administrator and officials. South Australian laws are declared to continue in force as laws of the Territory, and certain Commonwealth Acts to apply. Power is given to the Governor-General to make Ordinances having the force of law.

(iv) *Administration.* A Resident Administrator, vested with supreme authority in internal affairs, was appointed in the Department of the Minister for External Affairs in February, 1912. Many other important administrative offices have also been filled.

(v) *Legislation.* The main provisions of the Ordinances passed are as follows :— The powers and duties of the Administrator vested in the appointee, include custody of the public seal, appointment and suspension of officials, and execution of leases of Crown lands. A Supreme Court with original and appellate jurisdiction is instituted, the method of appointment of the Judge is prescribed, and provision is made for trial by jury, and for the registration and summoning of jurors. A Sheriff, a Registrar-General, and a Health Officer are provided for, also the registration of births, marriages and deaths, and of deeds and documents. Custody and control of aborigines, with extensive powers of supervision, are vested in the Chief Protector. Provision is made for the control of fisheries. Birds protected during the whole or part of the year are scheduled. Crown lands are classified, and their mode of acquisition, entry and holding defined. The prevention and eradication of diseases in plants have been provided for. Under the Stock Diseases Ordinance the Chief Inspector of Stock has wide powers in regard to the movements of stock, prevention and control of diseases, etc. Shop assistants are to have a weekly half-holiday, and the establishments must be closed at a certain time. A town council has been constituted for Darwin, and provision made for assessments, rates, etc. Mining is encouraged by the provision of rewards for the invention of new processes, and the discovery of valuable deposits and of new mineral fields; subsidisation of the industry and the issue of prospecting licenses are also provided for. Licenses to search for mineral oil, and leases for working, are available. Provision has been made for the granting of leases for oyster culture. A Board is constituted for the purpose of making advances to settlers who intend to improve and stock their holdings, to purchase farm implements, plant, etc., or to pay off mortgages, the rate of interest and terms of repayment being set out. Reference to the Liquor Ordinance will be found hereunder.

(vi) *Liquor Traffic.* By the Liquor Ordinances of 1915–17–18, the Commonwealth Government assumed the control of the importation, manufacture, and sale of liquor in the Territory. The hotels in Darwin and Pine Creek have been taken over, and a supervisor of hotels has been appointed to oversee the liquor business generally. Extensive additions and improvements to the hotels have been effected. The business as a whole is carried on at a profit, although the Victoria Hotel, which has no public bar, shews a heavy loss. Since the rail head was transferred to the Katherine, the Pine Creek Hotel also failed to meet expenses.

(vii) *Schedule of Ordinances.* A schedule of the ordinances promulgated up to the end of 1918 is given hereunder :—

- 1911.—1, Northern Territory Government; 2, Council of Advice; 3, Sheriff; 4, Tin Dredging; 5, Marine; 6, Registration of Births, Marriages, and Deaths; 7, Interpretation; 8, Stamp Duties Abolition; 9, Supreme Court; 10, Registration; 11, District Council Assessment; 12, Registration; 13, Fisheries; 14, Lands Acquisition; 15, Interpretation; 16, Aborigines.
- 1912.—1, Native Birds Protection; 2, District Council Assessment; 3, Crown Lands; 4, Supreme Court; 5, Health; 6, Thorngate Estate; 7, Jury; 8, Crown Lands; 9, Early Closing.

1078 NORTHERN TERRITORY.—PHYSIOGRAPHY.—CLIMATE, FAUNA AND FLORA.

- 1913.—1, Mineral Oil ; 2, Birds Protection ; 3, Registration of Births ; 4, Encouragement of Mining ; 5, Advances to Settlers ; 6, Public Service ; 7, Crown Lands ; 8, Marriage Validating.
- 1914.—1, Brands ; 2, Crown Lands.
- 1915.—1, Licensing ; 2, Birds Protection ; 3, Roads ; 4, District Council ; 5, Health ; 6, District Council Amendment ; 7, Darwin Town Council ; 8, Liquor.
- 1916.—1, Liquor Amendment ; 2, Eradication of Noxious Weeds.
- 1917.—1, Crown Lands Amendment ; 2, Darwin Town Council Amendment ; 3, Marriage ; 4, Appointment of Acting Administrator ; 5, Education ; 6, Crown Lands Amendment ; 7, Prevention and Eradication of Diseases in Plants ; 8, Liquor Amendment ; 9, Stamp ; 10, Darwin Pound ; 11, Crown Lands Amendment.
- 1918.—1, Supreme Court Amendment ; 2, Crown Lands Amendment ; 3, Darwin Town Council Amendment ; 4, Darwin Pound Amendment ; 5, Plant Diseases ; 6, Liquor Amendment ; 7, Oyster Culture Leases ; 8, Liquor Amendment ; 9, Aborigines ; 10, Stock Diseases ; 11, Liquor Amendment ; 12, Supreme Court Amendment ; 13, Real Property ; 14, Crown Lands Amendment ; 15, Closing of Roads.

§ 3. Physiography.

1. **Tropical Nature of the Country.**—The Territory is within the torrid zone, with the exception of a strip $2\frac{1}{2}$ degrees wide, which lies south of the Tropic of Capricorn.

2. **Contour and Physical Characteristics.**—The low flat coast line seldom reaches a height of 100 feet. Sandy beaches and mud flats, thickly fringed with mangroves, prevail. Sandstone, marl, and ironstone form the occasional cliffy headlands. The sea frontage of more than 1,000 miles is indented by bays and inlets and intersected by numerous rivers, many of which are navigable for considerable distances from their estuaries.

The principal features of the coast line are enumerated in Year Book No. 1, p. 66 ; the rivers in Year Book No. 2, p. 76 ; the mountains in Year Book No. 3, p. 67 ; the lakes in Year Book No. 4, p. 77 ; the islands in Year Book No. 5, pp. 71, 72, and the mineral springs in Year Book No. 6, p. 65.

Inland, the country generally is destitute of conspicuous landmarks. From the coast there is a general rise southwards to the vicinity of the 17th or 18th parallel of south latitude, where the higher lands form the watershed between the rivers that flow northwards to the sea, and those that form the scanty supply of the interior systems. Towards the centre of the continent, the land over a wide area is of considerable elevation, and there are several mountain ranges, generally with an east and west trend.

§ 4. Climate, Fauna and Flora.

1. **The Seasons.**—There are two main climatic divisions—the wet season, November to April, and the dry season, May to October, with uniform and regular changes of weather. Nearly the whole of the rainfall occurs in the summer months. Fuller particulars will be found in Year Book No. 6, p. 1116.

2. **Fauna.**—The ordinary types of native Australian fauna inhabit the territory. As elsewhere on the continent, the higher *Theria* are rare, but marsupials, birds, crocodiles, fresh-water tortoises, snakes (mostly non-venomous), and frogs abound. There are many varieties of freshwater fish and littoral mollusca. Butterflies and beetles are strongly represented. The white ant is a pest, anthills in the Territory sometimes attaining great dimensions. Mosquitoes and sandflies are very troublesome, particularly in the wet season. Native fauna are in some cases protected. The domesticated animals have been introduced, and buffalo also exist in large herds.

3. **Flora.**—The vegetation is North Australian in type, but a number of the forms belong to the Malayan and Oceanic regions. The timber trees are not of great commercial value, but in the coastal regions tropical vegetation grows luxuriantly to the water's

edge. On the wide expanses of plain country of the interior, there is little vegetation. The principal orders represented in the Territory are :—*Euphorbiaceæ*, *Compositæ*, *Convolvulaceæ*, *Rubiaceæ*, *Goodeniaceæ*, *Leguminosæ*, *Urticæ*.

Fuller particulars regarding fauna and flora are given in Year Book No. 6, pp. 1116-7.

§ 5. Production.

1. **Agriculture.**—Up to the present, agriculture has made little progress in the Territory, although it has been demonstrated that rice may be grown as an ordinary crop suitable for chaff as fodder, and in certain situations for milling; while maize, cowpeas, sorghum, amberscane, millets of various kinds, and sugar-cane can also be cultivated. The drawbacks to success at the present are lack of suitable labour, and deficient means of communication. Purely tropical products such as cotton, tea, coffee, sisal hemp, and cigar tobacco can also flourish, but their profitable cultivation depends on a supply of cheap labour, which is unobtainable. The Commonwealth Government has established demonstration farms at Daly River and Batchelor.

2. **Stock.**—(i) The spacious, well-grassed “runs” of the Territory are, with adequate water supply, suitable for horse and cattle breeding. Large numbers of cattle are overlanded to neighbouring States, which also take considerable quantities of horse hides. The Government has a small experimental sheep station at Mataranka on the head waters of the Roper River, the flock consisting of about 3,000 merino sheep. The total area fenced in with dingo and marsupial proof fencing is about 8,000 acres, including two small home paddocks. The fencing of a large horse and cattle paddock comprising about 45 square miles has also been completed. The total area of the Mataranka Station is about 770 square miles. The estimated number of stock in the Territory on 31st December, 1917, is given in the appended statement :—

LIVE STOCK, NORTHERN TERRITORY, 31st DECEMBER, 1917.

Horses.	Cattle.	Sheep.	Pigs.
26,231	638,431	54,709	500

In addition there were 8,686 goats, 314 camels, 29 mules, and 316 donkeys.

The dairying industry has not been developed, although it has been shewn that it is possible to make butter of good quality. A sample from Oenpalli has been very favourably reported on by the Chief Dairy Produce Expert. Fresh milk is procurable in Darwin from the Government dairy, which was leased to a private supplier in 1914. It is found that the rank indigenous grasses in some localities are greatly improved by constant stocking, and become largely replaced by shorter and sweeter varieties.

Herds of wild buffaloes are found on the mainland and on Melville Island, and are descendants of swamp buffaloes, introduced in the early part of last century. They have no value beyond that of their hides, of which large quantities are exported annually.

(ii) *Meat Preserving Works.* Extensive Meat Preserving works capable of dealing with all the stock available for export have been established in the vicinity of Darwin. Although the works are privately owned, the Government has arranged with the proprietors to treat stock from other station holders. In his Report for 1918, however, the Administrator states that owing to cost of treatment private owners find it more advantageous to overland their cattle to Queensland or even to South Australia. The works commenced operations in April, 1917. For further information see section XIII. § 8, 12, page 515.

3. **Mining.**—Small quantities of the precious and commercial metals are mined. The discovery of gold and tin in various localities, and the measure of success that has attended their working, indicate scope for development. An important discovery of tin at Maranboy Springs was made in 1913, and this field is now the most productive in the Territory. The workings up to date have, however, not gone beyond the 50 foot level.

At Coronet Hill copper mine values are being tested below the oxidised zone, and should the property prove payable at the deep levels it is intended to instal a smelter and other modern appliances.

Wolfram is produced at the Wauchope and Hatches Creek fields in the Davenport Ranges near the centre of the continent.

(i) *Mineral Production.* Both alluvial and reef gold are found, and there are several batteries and cyanide plants. Other minerals are also raised. The following table shews the total mineral production for the last five years :—

VALUE OF MINERAL PRODUCTION, NORTHERN TERRITORY, 1913 TO 1917-8.

Year.	Gold.	Tin Ore.	Wolfram.	Silver-Lead Ore.	Copper Ore.	Total Value.
	£	£	£	£	£	£
1913	13,250	25,526	3,140	2,228	482	44,626
1914	10,757	15,200	4,025	545	4,860	35,807*
1915	4,182	13,245	5,278	1,073	10,710	34,498†
1916	2,554	27,120	20,269	275	5,517	55,780‡
1917-18	2,229	41,432	38,788	200	9,648	92,730§

* Includes mica valued at £420. † Molybdenite, £10. ‡ Molybdenite, £45.
§ Scheelite, £350 ; molybdenite, £58 ; bismuth, £25.

(ii) *Employment of Miners, 1913 to 1917-18.* The following table shews the average number employed in mining during the last five years, distinguishing Chinese :—

MINERS, NORTHERN TERRITORY, 1913 TO 1917-18.

Year.	Europeans.	Chinese.	Total.
1913	90	530	620
1914	136	462	598
1915-16	137	371	508
1916-17	141	350	491
1917-18	194	282	544*

* Including 68 aboriginals and other coloured men.

(iii) *Mining Accidents, 1900 to 1917-8.* In 1911 five mining accidents were recorded, four resulting in death. There were no serious accidents in 1910, 1912, and 1913, and only one, resulting in death, in 1914, and one in each of the years 1915, 1916, and 1917-18. During the nine years preceding (1901-1909), nine fatal accidents and seven cases of serious injury were recorded. The majority of the victims were Chinese.

4. *Pearl Fishing.*—In 1884 mother-of-pearl shell was discovered in the harbour of Port Darwin. Difficulty in working, principally through heavy tides and muddy water, retarded the development of the industry for many years. Latterly, however, the opening up of new patches led to a revival, but the outbreak of war has given the industry a setback for a time. The latest figures available refer to the year ended 30th June, 1918, when 20 boats were engaged, and 115 men were employed, including 55 Japanese and 60 Timorese. Forty-six tons of pearl shell were obtained, valued at £6,319. About 43 tons of bêche-de-mer, valued at £3,500, were also obtained.

§ 6. Commerce and Shipping.

1. *Trade.*—The following table shews the total trade of the Territory for 10 years from 1901 to 1910 :—

VALUE OF TOTAL IMPORTS AND EXPORTS, NORTHERN TERRITORY, 1901 TO 1910.

Items.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£	£	£
Imports ..	108,886	107,217	125,244	113,461	86,878	74,659	78,996	68,905	57,994	52,398
Exports ..	302,931	191,558	178,266	235,630	216,279	254,222	345,721	241,028	278,555	269,063
Total Trade	411,817	298,775	303,510	349,111	303,157	328,881	424,717	309,933	336,549	321,461

No record is now kept of the direction of trade between the Commonwealth States and Territories. It is, therefore, impossible to give the total imports and exports of the Northern Territory for years later than 1910. The value of the direct oversea trade for 1901, and for each of the years 1913 to 1917-18, is given hereunder:—

**VALUE OF DIRECT OVERSEA TRADE, NORTHERN TERRITORY,
1901 AND 1913 TO 1916-17.**

Items.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
Imports	37,539	20,977	83,708	74,424	82,775	32,287
Exports	29,191	67,911	13,319	20,953	13,251	268,419
Total	66,730	88,888	97,027	95,377	96,026	300,706

The principal items of oversea export in 1917-18 were beef, preserved by cold process, £116,464; tinned meats, £98,380; potted meats, £15,435; meats, other, £14,509; tallow, £12,030; and pearl shell, £4,951. The large increase as compared with previous years is due to the operations of the meat preserving works at Darwin.

2. *Shipping.*—Shipping facilities are at present somewhat irregular, as three lines have ceased making Darwin a port of call. The Territory is now dependent chiefly on the services of the "Montoro" and "Mataram," trading between Sydney and Singapore. During the season the "Victoria," chartered by the Meat Company, made regular trips between Sydney and Darwin.

SHIPPING, NORTHERN TERRITORY, 1881 TO 1917-18.

Period.	Arrivals.		Departures.	
	No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage.
1881-1885 (Annual Average) ..	72	71,814	72	71,692
1886-1890 .. " .. " ..	95	94,452	103	94,724
1891-1895 .. " .. " ..	75	81,128.	73	81,090
1896-1900 .. " .. " ..	71	88,284	70	88,244
1901-1905 .. " .. " ..	63	93,751.	63	91,556
1906-1910 .. " .. " ..	87	128,502.	88	128,408
1911 .. " .. " ..	71	130,178	71	130,178
1912 .. " .. " ..	74	138,052.	74	133,052
1913 .. " .. " ..	83	171,504.	84	171,594
1914-15 .. " .. " ..	82	173,943	81	172,482
1915-16 .. " .. " ..	91	208,441	91	208,441
1916-17 .. " .. " ..	70	161,636	68	161,313
1917-18 .. " .. " ..	51	115,288	50	107,497

§ 7. Internal Communication.

1. *Railways.*—Under the agreement ratified by the Act, the Commonwealth is to construct the Northern Territory portion of the transcontinental railway line (connecting Adelaide and Darwin, *via* Port Augusta).

The Northern line from Adelaide terminates at Oodnadatta, about 100 miles south of the southern boundary of the Territory. The only line at present in the Territory is one from Darwin to Katherine, a length of 200 miles, of 3 ft. 6 in. gauge. The line to connect Katherine River with Oodnadatta (about 1,010 miles) has been surveyed, the greater part of the survey being exploratory in character. It is stated that this transcontinental railway would bring London within seventeen days of Adelaide. The Commonwealth also acquired on 1st January, 1911, the property in the line from Port Augusta to Oodnadatta (478 miles).

SECTION XXXII.

THE NORTHERN TERRITORY.

§ 1. Area and Population.

1. *Introductory.*—Upon the extension of New South Wales westward to the 129th meridian in 1827, the Northern Territory was comprised within that colony (see Year Book No. 4, page 16), and in 1863 was annexed by Royal Letters Patent to the province of South Australia. With the adjacent islands, it was transferred to the Commonwealth on 1st January, 1911.

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(iii) *The Aborigines.* An account of the Australian aborigines, by Dr. W. Ramsay-Smith, was given in Year Book No. 3 (pp. 158-176). The interior of the continent is the most thickly populated by the natives, but it is believed that they are rapidly dying out. In these regions, remote from contact with other races, the native has maintained his primitive simplicity, and furnishes an interesting subject of study to the anthropologist and ethnologist. At the census of 1911, full-blooded aboriginals in the employ of whites and those who are living in a civilised or semi-civilised condition in the vicinity of European settlements, were enumerated—the males being 743, females 480; total, 1,223. Estimates of the total black population of the Territory vary from 20,000 to 50,000.

§ 2. Legislation and Administration.

1. *Transfer to Commonwealth.*—(i) *The Northern Territory Acceptance Act.* A short historical sketch is given in Year Book No. 6, pp. 1113-4. On 1st January, 1911, the Territory was transferred by South Australia to the Commonwealth, upon terms previously agreed upon by the respective Cabinets, and ratified by the Commonwealth *Northern Territory Acceptance Act* (No. 20 of 1910). It is enacted that laws and courts of justice remain in operation, powers and functions of magistrates and officials remain vested; estates and interests continue upon the same terms; trade with Australian States is declared free. The Commonwealth assumes responsibility for the State loans in respect of the Territory, paying the interest yearly to the State, providing a sinking fund to pay off the loans at maturity, and paying off the deficit in respect of the Territory. It also purchases the Port Augusta to Oodnadatta railway, and agrees to complete the construction of the transcontinental railway from Port Darwin to Port Augusta.

(ii) *The South Australian Surrender Act.* The State Act approves and ratifies the agreement surrendering the Territory.

(iii) *The Northern Territory (Administration) Act 1910.* The Act provides for Government authorising the appointment of an Administrator and officials. South Australian laws are declared to continue in force as laws of the Territory, and certain Commonwealth Acts to apply. Power is given to the Governor-General to make Ordinances having the force of law.

(iv) *Administration.* A Resident Administrator, vested with supreme authority in internal affairs, was appointed in the Department of the Minister for External Affairs in February, 1912. Many other important administrative offices have also been filled.

(v) *Legislation.* The main provisions of the Ordinances passed are as follows :— The powers and duties of the Administrator vested in the appointee, include custody of the public seal, appointment and suspension of officials, and execution of leases of Crown lands. A Supreme Court with original and appellate jurisdiction is instituted, the method of appointment of the Judge is prescribed, and provision is made for trial by jury, and for the registration and summoning of jurors. A Sheriff, a Registrar-General, and a Health Officer are provided for, also the registration of births, marriages and deaths, and of deeds and documents. Custody and control of aborigines, with extensive powers of supervision, are vested in the Chief Protector. Provision is made for the control of fisheries. Birds protected during the whole or part of the year are scheduled. Crown lands are classified, and their mode of acquisition, entry and holding defined. The prevention and eradication of diseases in plants have been provided for. Under the Stock Diseases Ordinance the Chief Inspector of Stock has wide powers in regard to the movements of stock, prevention and control of diseases, etc. Shop assistants are to have a weekly half-holiday, and the establishments must be closed at a certain time. A town council has been constituted for Darwin, and provision made for assessments, rates, etc. Mining is encouraged by the provision of rewards for the invention of new processes, and the discovery of valuable deposits and of new mineral fields ; subsidisation of the industry and the issue of prospecting licenses are also provided for. Licenses to search for mineral oil, and leases for working, are available. Provision has been made for the granting of leases for oyster culture. A Board is constituted for the purpose of making advances to settlers who intend to improve and stock their holdings, to purchase farm implements, plant, etc., or to pay off mortgages, the rate of interest and terms of repayment being set out. Reference to the Liquor Ordinance will be found hereunder.

(vi) *Liquor Traffic.* By the Liquor Ordinances of 1915–17–18, the Commonwealth Government assumed the control of the importation, manufacture, and sale of liquor in the Territory. The hotels in Darwin and Pine Creek have been taken over, and a supervisor of hotels has been appointed to oversee the liquor business generally. Extensive additions and improvements to the hotels have been effected. The business as a whole is carried on at a profit, although the Victoria Hotel, which has no public bar, shews a heavy loss. Since the rail head was transferred to the Katherine, the Pine Creek Hotel also failed to meet expenses.

(vii) *Schedule of Ordinances.* A schedule of the ordinances promulgated up to the end of 1918 is given hereunder :—

- 1911.—1, Northern Territory Government ; 2, Council of Advice ; 3, Sheriff ; 4, Tin Dredging ; 5, Marine ; 6, Registration of Births, Marriages, and Deaths ; 7, Interpretation ; 8, Stamp Duties Abolition ; 9, Supreme Court ; 10, Registration ; 11, District Council Assessment ; 12, Registration ; 13, Fisheries ; 14, Lands Acquisition ; 15, Interpretation ; 16, Aborigines.
- 1912.—1, Native Birds Protection ; 2, District Council Assessment ; 3, Crown Lands ; 4, Supreme Court ; 5, Health ; 6, Thorngate Estate ; 7, Jury ; 8, Crown Lands ; 9, Early Closing.

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- 1913.—1, Mineral Oil ; 2, Birds Protection ; 3, Registration of Births ; 4, Encouragement of Mining ; 5, Advances to Settlers ; 6, Public Service ; 7, Crown Lands ; 8, Marriage Validating.
- 1914.—1, Brands ; 2, Crown Lands.
- 1915.—1, Licensing ; 2, Birds Protection ; 3, Roads ; 4, District Council ; 5, Health ; 6, District Council Amendment ; 7, Darwin Town Council ; 8, Liquor.
- 1916.—1, Liquor Amendment ; 2, Eradication of Noxious Weeds.
- 1917.—1, Crown Lands Amendment ; 2, Darwin Town Council Amendment ; 3, Marriage ; 4, Appointment of Acting Administrator ; 5, Education ; 6, Crown Lands Amendment ; 7, Prevention and Eradication of Diseases in Plants ; 8, Liquor Amendment ; 9, Stamp ; 10, Darwin Pound ; 11, Crown Lands Amendment.
- 1918.—1, Supreme Court Amendment ; 2, Crown Lands Amendment ; 3, Darwin Town Council Amendment ; 4, Darwin Pound Amendment ; 5, Plant Diseases ; 6, Liquor Amendment ; 7, Oyster Culture Leases ; 8, Liquor Amendment ; 9, Aborigines ; 10, Stock Diseases ; 11, Liquor Amendment ; 12, Supreme Court Amendment ; 13, Real Property ; 14, Crown Lands Amendment ; 15, Closing of Roads.

§ 3. Physiography.

1. **Tropical Nature of the Country.**—The Territory is within the torrid zone, with the exception of a strip $2\frac{1}{2}$ degrees wide, which lies south of the Tropic of Capricorn.

2. **Contour and Physical Characteristics.**—The low flat coast line seldom reaches a height of 100 feet. Sandy beaches and mud flats, thickly fringed with mangroves, prevail. Sandstone, marl, and ironstone form the occasional cliffy headlands. The sea frontage of more than 1,000 miles is indented by bays and inlets and intersected by numerous rivers, many of which are navigable for considerable distances from their estuaries.

The principal features of the coast line are enumerated in Year Book No. 1, p. 66 ; the rivers in Year Book No. 2, p. 76 ; the mountains in Year Book No. 3, p. 67 ; the lakes in Year Book No. 4, p. 77 ; the islands in Year Book No. 5, pp. 71, 72, and the mineral springs in Year Book No. 6, p. 65.

Inland, the country generally is destitute of conspicuous landmarks. From the coast there is a general rise southwards to the vicinity of the 17th or 18th parallel of south latitude, where the higher lands form the watershed between the rivers that flow northwards to the sea, and those that form the scanty supply of the interior systems. Towards the centre of the continent, the land over a wide area is of considerable elevation, and there are several mountain ranges, generally with an east and west trend.

§ 4. Climate, Fauna and Flora.

1. **The Seasons.**—There are two main climatic divisions—the wet season, November to April, and the dry season, May to October, with uniform and regular changes of weather. Nearly the whole of the rainfall occurs in the summer months. Fuller particulars will be found in Year Book No. 6, p. 1116.

2. **Fauna.**—The ordinary types of native Australian fauna inhabit the territory. As elsewhere on the continent, the higher *Theria* are rare, but marsupials, birds, crocodiles, fresh-water tortoises, snakes (mostly non-venomous), and frogs abound. There are many varieties of freshwater fish and littoral mollusca. Butterflies and beetles are strongly represented. The white ant is a pest, anthills in the Territory sometimes attaining great dimensions. Mosquitoes and sandflies are very troublesome, particularly in the wet season. Native fauna are in some cases protected. The domesticated animals have been introduced, and buffalo also exist in large herds.

3. **Flora.**—The vegetation is North Australian in type, but a number of the forms belong to the Malayan and Oceanic regions. The timber trees are not of great commercial value, but in the coastal regions tropical vegetation grows luxuriantly to the water's

edge. On the wide expanses of plain country of the interior, there is little vegetation. The principal orders represented in the Territory are :—*Euphorbiaceæ*, *Compositæ*, *Convolvulaceæ*, *Rubiaceæ*, *Goodeniaceæ*, *Leguminosæ*, *Urticæ*.

Fuller particulars regarding fauna and flora are given in Year Book No. 6, pp. 1116-7.

§ 5. Production.

1. **Agriculture.**—Up to the present, agriculture has made little progress in the Territory, although it has been demonstrated that rice may be grown as an ordinary crop suitable for chaff as fodder, and in certain situations for milling; while maize, cowpeas, sorghum, amberscane, millets of various kinds, and sugar-cane can also be cultivated. The drawbacks to success at the present are lack of suitable labour, and deficient means of communication. Purely tropical products such as cotton, tea, coffee, sisal hemp, and cigar tobacco can also flourish, but their profitable cultivation depends on a supply of cheap labour, which is unobtainable. The Commonwealth Government has established demonstration farms at Daly River and Batchelor.

2. **Stock.**—(i) The spacious, well-grassed “runs” of the Territory are, with adequate water supply, suitable for horse and cattle breeding. Large numbers of cattle are overlanded to neighbouring States, which also take considerable quantities of horse hides. The Government has a small experimental sheep station at Mataranka on the head waters of the Roper River, the flock consisting of about 3,000 merino sheep. The total area fenced in with dingo and marsupial proof fencing is about 8,000 acres, including two small home paddocks. The fencing of a large horse and cattle paddock comprising about 45 square miles has also been completed. The total area of the Mataranka Station is about 770 square miles. The estimated number of stock in the Territory on 31st December, 1917, is given in the appended statement :—

LIVE STOCK, NORTHERN TERRITORY, 31st DECEMBER, 1917.

Horses.	Cattle.	Sheep.	Pigs.
26,231	638,431	54,709	500

In addition there were 8,686 goats, 314 camels, 29 mules, and 316 donkeys.

The dairying industry has not been developed, although it has been shewn that it is possible to make butter of good quality. A sample from Oenpalli has been very favourably reported on by the Chief Dairy Produce Expert. Fresh milk is procurable in Darwin from the Government dairy, which was leased to a private supplier in 1914. It is found that the rank indigenous grasses in some localities are greatly improved by constant stocking, and become largely replaced by shorter and sweeter varieties.

Herds of wild buffaloes are found on the mainland and on Melville Island, and are descendants of swamp buffaloes, introduced in the early part of last century. They have no value beyond that of their hides, of which large quantities are exported annually.

(ii) *Meat Preserving Works.* Extensive Meat Preserving works capable of dealing with all the stock available for export have been established in the vicinity of Darwin. Although the works are privately owned, the Government has arranged with the proprietors to treat stock from other station holders. In his Report for 1918, however, the Administrator states that owing to cost of treatment private owners find it more advantageous to overland their cattle to Queensland or even to South Australia. The works commenced operations in April, 1917. For further information see section XIII. § 8, 12, page 515.

3. **Mining.**—Small quantities of the precious and commercial metals are mined. The discovery of gold and tin in various localities, and the measure of success that has attended their working, indicate scope for development. An important discovery of tin at Maranboy Springs was made in 1913, and this field is now the most productive in the Territory. The workings up to date have, however, not gone beyond the 50 foot level.

At Coronet Hill copper mine values are being tested below the oxidised zone, and should the property prove payable at the deep levels it is intended to instal a smelter and other modern appliances.

Wolfram is produced at the Wauchope and Hatches Creek fields in the Davenport Ranges near the centre of the continent.

(i) *Mineral Production.* Both alluvial and reef gold are found, and there are several batteries and cyanide plants. Other minerals are also raised. The following table shews the total mineral production for the last five years :—

VALUE OF MINERAL PRODUCTION, NORTHERN TERRITORY, 1913 TO 1917-8.

Year.	Gold.	Tin Ore.	Wolfram.	Silver-Lead Ore.	Copper Ore.	Total Value.
	£	£	£	£	£	£
1913	13,250	25,526	3,140	2,228	482	44,626
1914	10,757	15,200	4,025	545	4,860	35,807*
1915	4,182	13,245	5,278	1,073	10,710	34,498†
1916	2,554	27,120	20,269	275	5,517	55,780‡
1917-18	2,229	41,432	38,788	200	9,648	92,730§

* Includes mica valued at £420. † Molybdenite, £10. ‡ Molybdenite, £45.
§ Scheelite, £350 ; molybdenite, £58 ; bismuth, £25.

(ii) *Employment of Miners, 1913 to 1917-18.* The following table shews the average number employed in mining during the last five years, distinguishing Chinese :—

MINERS, NORTHERN TERRITORY, 1913 TO 1917-18.

Year.	Europeans.	Chinese.	Total.
1913	90	530	620
1914	136	462	598
1915-16	137	371	508
1916-17	141	350	491
1917-18	194	282	544*

* Including 68 aboriginals and other coloured men.

(iii) *Mining Accidents, 1900 to 1917-8.* In 1911 five mining accidents were recorded, four resulting in death. There were no serious accidents in 1910, 1912, and 1913, and only one, resulting in death, in 1914, and one in each of the years 1915, 1916, and 1917-18. During the nine years preceding (1901-1909), nine fatal accidents and seven cases of serious injury were recorded. The majority of the victims were Chinese.

4. *Pearl Fishing.*—In 1884 mother-of-pearl shell was discovered in the harbour of Port Darwin. Difficulty in working, principally through heavy tides and muddy water, retarded the development of the industry for many years. Latterly, however, the opening up of new patches led to a revival, but the outbreak of war has given the industry a setback for a time. The latest figures available refer to the year ended 30th June, 1918, when 20 boats were engaged, and 115 men were employed, including 55 Japanese and 60 Timorese. Forty-six tons of pearl shell were obtained, valued at £6,319. About 43 tons of bêche-de-mer, valued at £3,500, were also obtained.

§ 6. Commerce and Shipping.

1. *Trade.*—The following table shews the total trade of the Territory for 10 years from 1901 to 1910 :—

VALUE OF TOTAL IMPORTS AND EXPORTS, NORTHERN TERRITORY, 1901 TO 1910.

Items.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£	£	£
Imports ..	108,886	107,217	125,244	113,461	86,878	74,659	78,996	68,905	57,994	52,398
Exports ..	302,931	191,558	178,266	235,630	216,279	254,222	345,721	241,028	278,555	269,063
Total Trade	411,817	298,775	303,510	349,111	303,157	328,881	424,717	309,933	336,549	321,461

No record is now kept of the direction of trade between the Commonwealth States and Territories. It is, therefore, impossible to give the total imports and exports of the Northern Territory for years later than 1910. The value of the direct oversea trade for 1901, and for each of the years 1913 to 1917-18, is given hereunder:—

**VALUE OF DIRECT OVERSEA TRADE, NORTHERN TERRITORY,
1901 AND 1913 TO 1916-17.**

Items.	1901.	1913.	1914-15.	1915-16.	1916-17.	1917-18.
	£	£	£	£	£	£
Imports	37,539	20,977	83,708	74,424	82,775	32,287
Exports	29,191	67,911	13,319	20,953	13,251	268,419
Total	66,730	88,888	97,027	95,377	96,026	300,706

The principal items of oversea export in 1917-18 were beef, preserved by cold process, £116,464; tinned meats, £98,380; potted meats, £15,435; meats, other, £14,509; tallow, £12,030; and pearl shell, £4,951. The large increase as compared with previous years is due to the operations of the meat preserving works at Darwin.

2. *Shipping.*—Shipping facilities are at present somewhat irregular, as three lines have ceased making Darwin a port of call. The Territory is now dependent chiefly on the services of the "Montoro" and "Mataram," trading between Sydney and Singapore. During the season the "Victoria," chartered by the Meat Company, made regular trips between Sydney and Darwin.

SHIPPING, NORTHERN TERRITORY, 1881 TO 1917-18.

Period.	Arrivals.		Departures.	
	No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage.
1881-1885 (Annual Average) ..	72	71,814	72	71,692
1886-1890	95	94,452	103	94,724
1891-1895	75	81,128.	73	81,090
1896-1900	71	88,284	70	88,244
1901-1905	63	93,751.	63	91,556
1906-1910	87	128,502.	88	128,408
1911	71	130,178	71	130,178
1912	74	138,052.	74	133,052
1913	83	171,504.	84	171,594
1914-15	82	173,943	81	172,482
1915-16	91	208,441	91	208,441
1916-17	70	161,636	68	161,313
1917-18	51	115,288	50	107,497

§ 7. Internal Communication.

1. *Railways.*—Under the agreement ratified by the Act, the Commonwealth is to construct the Northern Territory portion of the transcontinental railway line (connecting Adelaide and Darwin, *via* Port Augusta).

The Northern line from Adelaide terminates at Oodnadatta, about 100 miles south of the southern boundary of the Territory. The only line at present in the Territory is one from Darwin to Katherine, a length of 200 miles, of 3 ft. 6 in. gauge. The line to connect Katherine River with Oodnadatta (about 1,010 miles) has been surveyed, the greater part of the survey being exploratory in character. It is stated that this transcontinental railway would bring London within seventeen days of Adelaide. The Commonwealth also acquired on 1st January, 1911, the property in the line from Port Augusta to Oodnadatta (478 miles).

2. Posts.—The principal mail services are as follows :—

(i) *Marine.* Postal communication is maintained between Sydney, Melbourne, and Adelaide, *via* North Queensland ports. There is also a service four times a year between Darwin and Boroloola by Government auxiliary vessel, calling at Roper River (this is not largely availed of owing to the more frequent inland service); and a service every two months between Darwin and Wyndham, on the estuary of Ord River, in the north-east of Western Australia, by the Western Australian Government steamers.

(ii) *Inland.* Posts are also despatched into the interior of the Continent. One route is from the Katherine Telegraph Station southwards as far as Alice Springs; others are from Katherine to Boroloola, from Camooweal to Boroloola, from Katherine to Victoria River and Wave Hill, and from Oodnadatta to Alice Springs.

3. *Telegraphs.*—The transcontinental telegraph line, covering a length of 2,230 miles, was completed on 2nd August, 1872, at a cost of nearly half-a-million sterling. The line runs in a northerly direction from Adelaide to Darwin, whence telegraphic communication is provided with Asia and Europe, *via* Banjoewangie (Java), Singapore, and Madras.

Between Darwin and Banjoewangie the submarine cable is duplicated.

§ 8. Finance.

1. *Revenue and Expenditure, 1917-18.*—In the Commonwealth finance statement for 1917-18, separate accounts are given for Northern Territory administration. The following shews the receipts and expenditure for the financial year named :—

REVENUE AND EXPENDITURE, NORTHERN TERRITORY, 1917-18.

REVENUE.	£	EXPENDITURE (CHIEF ITEMS)— <i>continued.</i>	£
Customs and Excise ..	13,919	Port Augusta Railway Loans (Interest, etc.)	116,492
Postal, Telegraph, & Telephone Darwin-Katherine River Railway	10,711	New Works	26,227
Territorial	35,172	Darwin-Katherine River Railway—	
Land and Income Tax	19,545	Salaries, etc.	56,144
Miscellaneous	13,344	Gold Fields and Mining—	
Quarantine	6,732	Salaries, etc.	17,678
Lighthouses and Light Dues ..	61	Lands and Surveys—	
Port Augusta-Oodnadatta Railway	972	Salaries, etc.	10,174
Deficiency on year's transactions ..	1,027	Postal Department	20,769
	389,339	Interest and Sinking Fund on Stock and Treasury Bills in aid of Loans and Railways	56,739
	490,822	Miscellaneous	11,751
EXPENDITURE (CHIEF ITEMS).	£	Total	490,822
Northern Territory Loans (excluding Port Augusta Railway)	112,925		
Administrator's Office	61,923		

The amounts hereunder were expended from the loan funds :—

	£
Construction of Railway Pine Creek to Katherine River and southwards ..	16,317
Darwin-Katherine River Railway	25,861
New Lighthouses	2,456
Total	44,634

2. **Loans.**—The first loan on Northern Territory account was floated in London in 1876; the nominal amount was £75,000, at 4 per cent., due date 1st January, 1916. The public debt on 30th June, 1918, was £2,772,516, distributed as follows:—

PUBLIC DEBT, NORTHERN TERRITORY, 30th JUNE, 1918.

Principal. £	Rate: %	Annual Interest. £
27,216	3	816
154,992	3½	5,425
1,394,008	3½	52,275
1,196,300	4	47,852
Total .. 2,772,516	—	106,368

Of the principal sum, the amounts redeemable in London and Australia are £1,405,400 and £1,367,116 respectively.

§ 9. Land Tenure.

1. **Present Policy.**—A description of the system of land settlement in force in the Territory will be found in the chapter "Land Tenure and Settlement," see pages 259 and 260 *supra*. Prior to the transfer of the Territory to the Commonwealth on 1st January, 1911, the sale and occupation of lands were regulated by the South Australian Legislature in Statutes applying particularly to the Territory. Under the Commonwealth Government a complete reorganisation was effected, and the system adopted was embodied in the Crown Lands Ordinances of 1912 to 1918. A leasehold system only is provided for, and no further alienation of Crown lands is permitted, except in pursuance of existing agreements. The land is classified and appraised, and leased in blocks, the maximum areas ranging from 300 square miles of first class pastoral, to 1,280 acres of first class agricultural land. The terms for pastoral leases are for Class 1, 21 years; Classes 2 and 3, 42 years; and for any miscellaneous lease, 21 years. All other leases are to be in perpetuity, making them almost equivalent to freeholds, but with re-appraisal of rent values every 14 years in the case of town lands, and every 21 years in the case of agricultural and pastoral lands. The conditions are of a very favourable nature, with low rents and elastic conditions of tenure. In order to provide for cases where allottees on inspection of their blocks have reasonable grounds for preferring another block, the Administrator is empowered to revoke leases, under certain conditions. Under the Advances to Settlers Ordinance 1913, provision was made for giving settlers financial assistance in the pioneering years. Repayment of loans can be extended over a period of 30 years. Loans granted during the year amounted to £695, of which £116 was repaid. Up to the 30th June, 1918, the total amount outstanding was £7,765. Owing to the high evaporation rate, the surface waters in the Territory dwindle rapidly during the dry season, and, except in favoured localities, sub-artesian supplies must be resorted to where obtainable. In order to encourage the provision of water supply, it is proposed, in granting leases, to allow minimum rentals in the case of lessees who make satisfactory provision by means of bores, wells, or dams.

The revenue from pastoral leases and permits for the year 1917-18 was about £14,000.

2. **Number of Holdings.**—The table on page 259 *supra* shews the total area under lease, license, and permit in 1901 and in each year from 1913 to 1918. At the end of 1918 there were in existence, under South Australian Acts, 224 pastoral leases covering 63,998,080 acres, and 54 pastoral permits covering 9,034,240 acres. Under the Crown Lands Ordinance of 1912, there were 86 grazing licenses covering 16,465,280 acres, and 115 pastoral leases covering 24,703,360 acres.

SECTION XXXIII.

LABOUR AND INDUSTRIAL STATISTICS.

§ 1. Introductory.

1. **General.**—In Year Book No. 7 (pages 992-3), a résumé was given of the functions and scope of the Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics. Owing to considerations of space, this information is not repeated in the present issue of the Year Book.

§ 2. Fluctuations in Employment and Unemployment.

1. **General.**—In Australia, but few of the trade unions pay any form of unemployment benefit, and consequently accurate and complete records of unemployment are difficult to obtain. For that reason the investigation for past years was advisedly limited to a record of the numbers unemployed at the end of each year. The results are, therefore, subject to certain limitations, inasmuch as they do not take into account variations in employment and unemployment throughout the year due to seasonal activity and other causes.

For the above reasons it is not safe to conclude that the actual percentage returned as unemployed in past years by trade unions at the end of each year is equal to the average percentage unemployed during the year. Nevertheless, for the purpose of making comparisons and shewing tendencies over a period of years, the percentages returned as unemployed, though not exact, are the most satisfactory figures available, and the average percentages and index-numbers computed for the several States and groups of unions may be taken as denoting the true course of events with substantial accuracy.

It may be mentioned that, in order to overcome the difficulties alluded to in regard to seasonal fluctuations, returns as to numbers unemployed have been collected from trade unions for each quarter since the beginning of the year 1913.

2. **Number Unemployed in Various Industries, 1891 to 1918.**—The following table shews for each of the years specified :—

- (a) The number of unions for which returns as to unemployment are available.
- (b) The number of members of such unions.
- (c) The number of members unemployed, and
- (d) The percentage of members unemployed on the total number of members of those unions for which returns are available.

The information given in this table obviously does not furnish a complete register of unemployment. In the first place, with the exception of the years 1913 to 1918 it relates only to the number unemployed at the end of the year (see preceding paragraph hereof), and, secondly, it does not cover more than a part of the industrial field. Attention should here be drawn to the fact that the value of the comparisons which can be made is, to some extent, vitiated by the fact that returns are not available for the same unions throughout. For most of the important industries, returns have been available for a considerable number of unions and members since 1912. It is not unlikely, however, that particulars of unemployment are, on the whole, more generally available for those trades in which liability to unemployment is above the average of skilled occupations.

Thus the building and engineering industries are heavily represented in the returns, while such comparatively stable industries as railway service are hardly represented at all. On the other hand, unskilled casual labour cannot, in the nature of the case, be well represented in the returns, which relate mainly to skilled workmen.

Thus, for some reasons, the percentage given is likely to be greater, and for other reasons, less than the true average percentage unemployed throughout the country.

UNEMPLOYMENT.—NUMBER OF UNIONS AND MEMBERS REPORTING AND NUMBER AND PERCENTAGE UNEMPLOYED, 1891 TO 1918 (4th QUARTER).

Particulars.	Unions.	Membership.	Unemployed.	
			Number.	Percentage.
1891	25	6,445	599	9.3
1896	25	4,227	457	10.8
1901	39	8,710	574	6.6
1906	47	11,299	753	6.7
1907	51	13,179	757	5.7
1908	68	18,685	1,117	6.0
1909	84	21,122	1,223	5.8
1910	109	32,995	1,857	5.6
1911	160	67,961	3,171	4.7
1912	464	224,023	12,441	5.5
1913, 1st Quarter* ..	451	237,216	15,234	6.4
2nd " " ..	458	243,523	17,854	7.3
3rd " " ..	472	252,325	17,698	7.0
4th " " ..	465	251,207	13,430	5.3
1914, 1st " " ..	462	262,133	15,541	5.9
2nd " " ..	467	279,318	15,856	5.7
3rd " " ..	466	283,584	30,367	10.7
4th " " ..	439	250,716	27,610	11.0
1915, 1st " " ..	476	279,388	33,465	12.0
2nd " " ..	456	273,190	26,015	9.5
3rd " " ..	484	279,133	24,682	8.8
4th " " ..	465	273,149	18,489	6.8
1916, 1st " " ..	475	291,525	17,178	5.9
2nd " " ..	476	298,675	15,741	5.3
3rd " " ..	472	278,047	14,649	5.3
4th " " ..	470	292,051	19,562	6.7
1917, 1st " " ..	455	290,849	21,892	7.5
2nd " " ..	453	303,507	19,257	6.3
3rd " " ..	432	255,949	18,197	7.1
4th " " ..	459	296,937	21,989	7.4
1918, 1st " " ..	466	290,048	16,089	5.5
2nd " " ..	478	294,725	18,385	6.2
3rd " " ..	494	305,550	18,752	6.1
4th " " ..	475	308,850	16,919	5.5

* For years prior to 1913 the figures refer to the end of the year only, and not to separate quarters. The quarterly figures shew the number of persons who were out of work for three days or more during a specified week in each quarter; they do not include persons out of work through strikes or lockouts.

The figures shew that the percentage of unemployment was lower in the fourth than in the third quarter of the current year, and also lower than in the corresponding quarter of last year.

3. Unemployment in Different Industries, 1918.—The following table shews the percentages unemployed in several of the fourteen industrial groups. It may be observed that for those industries in which employment is either unusually stable or, on the other hand, exceptionally casual, information as to unemployment cannot ordinarily be obtained from trade unions. Hence, certain industries such as railways, shipping

agricultural, pastoral, etc., and domestic, hotels, etc., are insufficiently represented in the returns. Particulars are not, therefore, shewn separately for these groups, such returns as are available being included in the last group, "Other and Miscellaneous."

UNEMPLOYMENT IN DIFFERENT INDUSTRIES AT THE END OF YEAR, 1918.

Industrial Group.	Number Reporting.		Unemployed.	
	Unions.	Members.	Number.	Percentage.
I. Wood, Furniture, etc. ..	18	16,926	395	2.3
II. Engineering, Metal Works, etc. ..	55	39,762	2,655	6.7
III. Food, Drink, Tobacco, etc. ..	66	29,865	2,164	7.2
IV. Clothing, Hats, Boots, etc. ..	23	26,998	1,172	4.3
V. Books, Printing, etc. ..	29	10,586	213	2.0
VI. Other Manufacturing ..	76	26,758	1,302	4.9
VII. Building ..	57	33,019	925	2.8
VIII. Mining, Quarrying, etc. ..	22	28,518	1,691	5.9
X. Other Land Transport ..	13	10,819	159	1.5
IX., XI., XII., XIII., and XIV., Other and Miscellaneous ..	116	85,599	6,243	7.3
All Groups	475	308,850	16,919	5.5

4. Unemployment in each State, 1918.—Any deductions which can be drawn from the data collected as to the relative degree of unemployment in the several States are subject to certain qualifications (in addition to those already stated on page 1084), inasmuch as the industries included in the trade union returns are not uniform for each State. In comparing the results for the individual States, it must therefore be borne in mind that, to some extent at least, comparisons are being drawn between different industries and not only between different States. Nevertheless, since the industrial occupations of the people vary considerably in the several States, all comparisons between the States based on comprehensive data as to unemployment must, to some extent, suffer from the defect indicated.

UNEMPLOYMENT IN DIFFERENT STATES AT THE END OF YEAR, 1918.

State.	Number Reporting.		Unemployed.	
	Unions.	Members.	Number.	Percentage.
New South Wales	143	132,232	4,779	3.6
Victoria	106	84,207	5,218	6.2
Queensland	57	48,577	5,648	11.6
South Australia	54	18,686	417	2.2
Western Australia	72	17,426	729	4.2
Tasmania	43	7,722	128	1.7
Commonwealth	475	308,850	16,919	5.5

§ 3. Variations in Nominal and Effective Wages.

1. Variations in Wage Index-Numbers in Various Industries, 1901 to 1918.—The total number of different occupations for which particulars as to wages are available back to 1901 is 652. In 1913 the number of occupations was increased to 3,948. These wages relate generally to award rates, but in a few cases, more especially for the earlier years, when there were no award rates fixed, predominant or most frequent rates have been taken. The occupations have been distributed over the fourteen industrial groups already specified, and index-numbers computed for each group for the whole Commonwealth. The wages refer generally to the capital town of each State, but in industries such as mining and agriculture, the rates in the more important industrial centres have been taken.

The following table shews wage index-numbers for the whole Commonwealth in each of the fourteen industrial groups during the years specified. Rates of wages for females are not included. The index-numbers are "weighted" according to the number of persons engaged in different industrial groups in each State and the Commonwealth (see Report No. 9, page 81). In the tables of index-numbers given in this Section, the weighted average wage in 1911 for all States or industries, as the case may be, is taken as base (= 1,000). The result is that the index-numbers are comparable in all respects, that is to say, they shew not only the variations in wages from year to year in each State or industrial group, but they also furnish comparisons as to the relative wages in each State or industry, either in any particular year, or as between one year and another, and one State or industry and another.

VARIATIONS IN NOMINAL WAGE INDEX-NUMBERS IN DIFFERENT INDUSTRIES IN THE COMMONWEALTH, 1901 TO 1918. (WEIGHTED AVERAGE FOR ALL GROUPS IN 1911 = 1,000.)

Particulars.	Number of Occupations included.		1901.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
	1901 to 1912.	1913 to 1917.											
I. Wood, Furniture, etc.	27	270	1,019	1,055	1,097	1,125	1,144	1,142	1,161	1,174	1,245	1,288	1,345
II. Engineering, Metal Works, etc. . . .	101	636	945	995	1,006	1,064	1,104	1,113	1,127	1,174	1,211	1,268	1,340
III. Food, Drink, etc.	34	576	871	914	928	991	1,038	1,074	1,085	1,127	1,194	1,241	1,288
IV. Clothing, Hats, Boots, etc. . . .	13	124	708	935	976	981	990	1,019	1,034	1,037	1,104	1,163	1,198
V. Books, Printing, etc.	25	205	996	1,070	1,102	1,149	1,188	1,234	1,246	1,259	1,328	1,376	1,446
VI. Other Manufacturing	102	875	907	923	947	1,013	1,037	1,076	1,093	1,125	1,203	1,245	1,289
VII. Building	67	190	1,050	1,130	1,163	1,213	1,245	1,270	1,276	1,285	1,359	1,413	1,449
VIII. Mining, Quarries, etc.	71	161	1,067	1,120	1,168	1,194	1,216	1,270	1,272	1,299	1,420	1,528	1,532
IX. Rail and Tram Services	68	224	1,021	1,064	1,074	1,113	1,164	1,165	1,165	1,187	1,236	1,286	1,345
X. Other Land Transport	9	70	795	836	889	910	993	996	1,026	1,041	1,128	1,210	1,237
XI. Shipping, etc.	74	198	751	856	857	871	942	953	972	1,026	1,153	1,194	1,257
XII. Agriculture, Pastoral, etc.	8	72	627	787	798	839	944	965	965	969	1,073	1,192	1,231
XIII. Domestic, Hotels, etc.	17	114	598	727	743	887	894	918	935	948	995	1,052	1,104
XIV. Miscellaneous	36	233	759	843	889	929	1,015	1,045	1,054	1,065	1,137	1,185	1,234
All Groups*	652	3,948	848	923	955	1,000	1,051	1,076	1,085	1,102	1,184	1,252	1,296

Note.—The figures in the above table are comparable both horizontally and vertically.

* Weighted average: see graph on page 1103 hereof. † The decrease in this group is due to a reduction in the award rates in the furniture trade resulting from an appeal made by employers.

It may be seen that the index-numbers increased during the whole period under review from 848 in 1901 to 1,000 in 1911, 1,051 in 1912, 1,184 in 1916, 1,252 in 1917, and to 1,296 in 1918.

It was pointed out in Labour Report No. 2 (see pages 25 and 26) that the index-numbers given in the preceding table are readily *reversible*, that is to say, any year other than the year 1911 can be taken as base, and an example was given, shewing the amount of wages payable in 1901, 1911 and 1912 in each industrial group for every £1 payable in 1891.

2. **Variations in Wage Index-Numbers in Different States, 1901 to 1918.**—The following table shews the progress in rates of wages for all industries in each State, the weighted average wage for the Commonwealth in 1911 being taken as the base (=1,000). These results are based generally upon rates of wages prevailing in the capital town of each State, but in certain industries, such as mining, rates are necessarily taken for places other than the capital towns.

These index-numbers are, of course, also reversible, and an illustration was given in Labour Report No. 2 (see page 27).

VARIATIONS IN NOMINAL WAGE INDEX-NUMBERS IN DIFFERENT STATES, 1901 TO 1918.

(WEIGHTED AVERAGE WAGE FOR COMMONWEALTH IN 1911=1,000.)

States.	Number of Occupations included.		1901.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
	1901 to 1912.	1913 to 1917.												
New South Wales	158	874	858	913	942	968	1,003	1,058	1,088	1,096	1,124	1,208	1,257	1,286
Victoria ..	150	909	796	871	887	924	985	1,038	1,058	1,065	1,078	1,148	1,229	1,278
Queensland ..	87	627	901	925	946	960	997	1,010	1,027	1,042	1,060	1,177	1,273	1,356
South Australia	134	567	819	868	905	951	1,013	1,048	1,061	1,062	1,067	1,151	1,231	1,278
Western Australia	69	489	1,052	1,061	1,068	1,116	1,152	1,191	1,214	1,226	1,236	1,272	1,345	1,372
Tasmania ..	54	482	719	725	732	772	799	934	1,025	1,028	1,039	1,112	1,163	1,193
Commonwealth*	652	3,948	848	900	923	955	1,000	1,051	1,076	1,085	1,102	1,184	1,252	1,296

* Weighted average.

Note.—The figures in the above table are comparable both horizontally and vertically.

The significance of the above figures since 1906 can be better appreciated by reference to the graph on page 1103, which shews, of course, not only variations in wages in each State from year to year, but also the difference in wage level as between the several States. From this graph it is clearly seen that, excluding Western Australia, the difference between nominal wages in the several States has decreased very considerably since 1906. This difference is shewn at any point by the vertical distance between the graphs. Wages in Queensland increased since 1914 at a higher rate than in any other State, and the general level in that State is now higher than in any other State except Western Australia. The graphs for Victoria and South Australia lie very close together throughout the period. In Tasmania the first determination under the Wages Boards Acts 1910 and 1911 came into force in 1911. Since then wages in that State have increased rapidly, and their general level is now not far below those of the other States, except Western Australia.

3. **Variations in Effective Wages.**—In order to obtain an accurate measure of the progress of wage-earners, regard must be had to the purchasing-power of wages, and the index-numbers based merely upon records of rates of wages must consequently be subject to some modification, inasmuch as they take no account of variations in the purchasing-power of money. In computing these effective wage index-numbers, the

nominal wage index-numbers given in sub-section 2 hereof have been divided by the purchasing-power-of-money index-numbers in Section IV., paragraph 5 of Labour Report No. 9, p. 28. The resulting index-numbers shew for each State and for the Commonwealth for the years specified the variations in *effective* wages.

The following table shews the effective wage index-numbers for each State for each of the years indicated from 1901 to 1918 :—

VARIATION IN EFFECTIVE WAGES IN EACH STATE AND COMMONWEALTH, 1901 TO 1918.*

Particulars.	1901.	1907.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918
New South Wales	961	983	952	973	973	922	924	909	850	867	893	902
Victoria	915	979	980	981	1,037	981	1,007	964	844	877	950	947
Queensland	1,172	1,151	1,112	1,095	1,090	1,032	1,060	1,045	912	991	1,078	1,083
South Australia	948	960	914	943	957	906	947	929	847	896	989	957
Western Australia	1,024	1,068	1,081	1,091	1,023	1,032	1,076	1,073	1,011	1,005	1,079	1,107
Tasmania	827	818	769	812	838	896	976	943	843	870	894	880
Commonwealth	964	996	974	985	1,000	955	975	952	862	894	950	952

* As to the effect in abnormal periods, see Labour Report No. 6, pp. 20-2, Section IV., par. 3.

The figures in the above table from the year 1907 onwards are shewn in the graph on page 1104. A comparison between this graph and the succeeding one shews that the difference between nominal and effective wages is very marked. In the first place, the whole nature of the graphs is entirely different. Instead of having a series of lines showing a practically continuous and rapid upward trend, the effective wages shew (except for Tasmania) a series of fluctuating points, in which no very marked tendency is immediately discernible. It will be seen that, generally speaking, the years 1907, 1909, 1910, 1911, 1913, 1916, 1917 and 1918 were marked by increases in effective wages, but that in each of the years 1908, 1912, 1914 and 1915, there were rapid decreases. In each of these years in which effective wages declined there was a rapid increase in cost of food and groceries. In 1914 wages increased 0.9 per cent., but the purchasing-power-of-money index-number went up to 3.1 per cent., with the result that effective wages decreased 2.3 per cent. In 1915 the nominal wage index-number increased 1.6 per cent., while the purchasing-power of money index-number increased 12.1 per cent., resulting in a decrease of 9.5 per cent. in the effective wage. In 1916 the nominal wage index-number increased 7.4 per cent., and the purchasing-power-of-money index-number only 3.6 per cent., which resulted in the effective wage index-number shewing an increase of 3.7 per cent. In 1917 the nominal wage index-number increased 5.7 per cent., and the purchasing-power-of-money index-number decreased 0.5 per cent., resulting in an increase in the effective wage index-number of 6.3 per cent. In 1918 the nominal wage index-number increased 3.5 per cent., and the purchasing-power-of-money index-number 3.3 per cent. The effective wage index-number, therefore, shews a small increase of 0.2 per cent.

One important feature common to both graphs (nominal and effective wages) is the manner in which the graphs for the individual States have, on the whole, approached more closely together. With the adoption of differential rates of wages fixed according to the relative purchasing-power of money, it appears probable that this tendency will continue in the future.

4. Variations in Effective Wages and Standard of Comfort, 1901 to 1918.—In the preceding paragraph particulars are given as to variations in effective wages in each State, due allowance having been made for variations in purchasing-power of money, though not for unemployment. Attention has also been drawn to the limitations to which they are subject in abnormal times.

For years prior to 1913 the data available as to unemployment are so meagre that comparative results allowing for variations both in purchasing-power of money and in unemployment cannot be accurately computed for the several States. In the subjoined

table, however, the percentage of unemployment for the whole Commonwealth at the end of the years specified has been used in order to obtain results shewing the variations in unemployment upon effective wages. Column I. shews the nominal rate of wage index-numbers, and Column II. the relative percentages unemployed. Applying these percentages to the numbers shewn in Column I., and deducting the results from each corresponding index-number, so as to allow for relative loss of time, the figures in Column III. are obtained. These figures are then re-computed with the year 1911 as base, and are shewn in Column IV. In Column V. the purchasing-power-of-money index-numbers are shewn, and in Columns VI. and VII. the effective wage index-numbers are given, firstly, for full work, and, secondly, allowing for lost time. These are obtained by dividing the figures in Columns I. and IV., respectively, by the corresponding figures in Column V. The resulting index-numbers shew for the Commonwealth, for the years specified, the variations in *effective wages*, or in what may be called the "standard of comfort."*

A comparison between the figures in Columns I. and VI. shews the relation between the nominal rates of wages and the purchasing efficiency of these rates. The figures in Column VII. shew variations in *effective wages* after allowing not only for variations in purchasing-power of money, but also for the relative extent of unemployment.

UNEMPLOYMENT, PURCHASING-POWER-OF-MONEY AND NOMINAL AND EFFECTIVE WAGE-INDEX NUMBERS, 1901 TO 1918.†

Year.	I. Nominal Wage Index- Numbers.	II. Percentage Unem- ployed.	Rate of Wages Index- Numbers, allowing for Lost Time.		V. Purchasing- power- of-money Index- Numbers.	Effective Wage Index-Numbers.	
			III. Actual.	IV. Re-com- puted. (1911 = 1,000).		VI. Full Work.	VII. Allowing for Unemploy- ment.
1901 ..	848	6.6	793	832	880	964	945
1906 ..	866	6.7	808	848	902	960	940
1907 ..	893	5.7	842	884	897	996	986
1908 ..	900	6.0	846	888	951	946	934
1909 ..	923	5.8	870	913	948	974	963
1910 ..	955	5.6	901	945	970	985	974
1911 ..	1,000	4.7	953	1,000	1,000	1,000	1,000
1912 ..	1,051	5.5	993	1,042	1,101	955	946
1913 ..	1,076	5.3	1,021	1,071	1,104	975	970
1914 ..	1,085	11.0	966	1,014	1,140	952	889
1915 ..	1,102	6.8	1,027	1,078	1,278	862	844
1916 ..	1,184	6.7	1,105	1,159	1,324	894	875
1917 ..	1,252	7.4	1,159	1,216	1,318	950	923
1918 ..	1,296	5.5	1,225	1,285	1,362	952	943

† As to the effect in abnormal periods, see Section IV., par. 3, of Labour Report No. 6.

It may be seen that the nominal wage index-number has steadily increased, and that the increase has been at a somewhat greater rate (except in the years 1908, 1912, 1914 and 1915) than the increase in the cost of food, groceries and house rent. Owing to the decreases in these years the effective wage index-numbers (both "Full Work" and "Allowing for Unemployment") do not, on the whole, shew any general increase, but fluctuate between a range which reached its maximum in 1911, and its minimum in 1915. In 1916, 1917 and 1918 the effective wage index-numbers both for "Full Work" and "Allowing for Unemployment" exhibit an increase. This is due to the fact that the increase in the nominal wage index-number has been greater than the increase in the index-number which embraces cost of food, groceries, and house rent.

* This expression must not be confused with "standard of living." A change in the standard of living necessarily involves a change in regimen (see Labour Report No. 1), that is, a change in the nature or in the relative quantity of commodities purchased, or both. A change in the "standard of comfort" merely implies a variation in effective wages, which variation may, or may not, result in, or be accompanied by, a change in the "standard of living."

§ 4. Changes in Rates of Wage.

1. **General.**—The collection of information regarding changes in rates of wage throughout the Commonwealth dates from the 1st January, 1913.

(i) *Definition of a Change in Rate of Wage.* For the purpose of these statistics a change in rate of wage is defined as a change in the weekly rates of remuneration of a certain class of employees, apart from any change in the nature of the work performed or apart from any revision of rates due to increased length of service or experience. It is obvious that under this definition certain classes of changes are excluded, such, for example, as (a) changes in rates of pay due to promotion, progressive increments, or, on the other hand, to reduction in pay or grade to inefficient workers, and (b) changes in average earnings in an occupation due to a change in the proportions which higher paid classes of workers bear to lower paid classes. Bonuses to employees have not been taken into account in the tabulations. Each single change recorded relates to a change in the rates of wage effected in a specific industry or calling, and includes any and all changes to workers in that industry, irrespective of the different number of separate occupations or trades affected. Further, it should be observed that in some instances a change may relate to the employees of a single employer or to those of a number of employers, according to the instrument or method operating to bring about the change.

(ii) *Sources of Information.* Primary information merely as to the fact that a change in rate of wage has occurred is obtained through the following channels :— (a) the Industrial Registrar or Chief Inspector of Factories in each State ; (b) Reports from Labour Agents and Correspondents ; (c) Quarterly reports from Secretaries of Trade Unions ; (d) Returns relating to industrial disputes which resulted in changes in rates of wage ; (e) Reports in newspapers, labour and trade reviews, and other publications.

(iii) *Collection of Particulars concerning Changes.* On the occurrence of a change in rate of wage, forms* (prescribed under the Census and Statistics Act 1905) are issued to employers and employers' associations (if any) and also to the secretaries of the trade union, the members of which are affected by the change. In certain cases forms are also issued, if necessary, to individual employers. The particulars which have to be inserted in these forms furnish information regarding the occupations of the workers affected, the number of workers in each occupation, the rates of wage paid before and after the change, the locality affected, and the date on which the change took effect. Information must also be furnished regarding employers and employers' associations concerned (if any), and the method by which the change was effected.

When the forms are returned from the various persons who are required to complete them, the returns are checked and compared with each other and with copies of awards, determinations, and agreements. In all cases when the information furnished on the forms is incomplete or unsatisfactory, further inquiries are made, and the figures checked by reference to census results, industrial statistics, factory reports, etc.

2. **Comparative Summary of Changes in Rates of Wage in each State for 1913, 1914, 1915, 1916, 1917 and 1918.**—The following table gives particulars of changes which occurred in each State of the Commonwealth during the years specified. As regards the number of persons affected, the particulars given refer to the total number of persons ordinarily engaged in the various industries. The results as to the amount of increase in wages are computed for a full week's work for all persons ordinarily engaged in the several industries and occupations affected, and in cases of changes in existing minimum rates

* Since these forms are issued under the authority of the Census and Statistics Act 1905, it is compulsory upon prescribed persons to furnish the information required.

under awards or determinations of industrial tribunals, it has ordinarily been assumed (in the absence of any definite information to the contrary) that the whole of the employees in each occupation received the minimum rates of wage before and after the change.

It should be clearly understood that the figures given in the third division of the following table (amount of increase per week) do not relate to the increase each week, but only to the increase in a single week on the assumption that the full number of persons ordinarily engaged in the particular trade or occupation affected by the change were employed during that week. It is obvious, therefore, that the aggregate effect per annum cannot be obtained without making due allowance for unemployment and for occupations in which employment is seasonal or intermittent. It is also obvious that since unemployment and activity in all branches of industry may vary from year to year, and in many branches from season to season also, no accurate estimate of the actual effect of the changes in the total amount of wages received or paid per annum can be made until the determining factors have been investigated. These factors are (a) the amount of unemployment, and (b) the period of employment in seasonal industries.

It should be observed that changes brought about by awards and agreements under the Commonwealth Conciliation and Arbitration Act 1904-18 and the Commonwealth Arbitration (Public Service) Act 1911 are necessarily included hereunder as changes in each State to which such awards and agreements apply. The average increase per head per week is computed to the nearest penny.

CHANGES IN RATES OF WAGE.—NUMBER AND EFFECT OF CHANGES IN EACH STATE AND TERRITORY, 1913 TO 1918.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N.T.	F.C.T.	C'wealth.	
No. of Changes	1913	149	81	41	26	20	12	..	..	329
	1914	185	69	50	18	42	19	..	..	384*
	1915	169	87	60	31	25	24	3	..	401†
	1916	377	168	134	98	42	37	4	..	870‡
	1917	201	106	142	78	55	38	16	..	637§
	1918	229	201	236	113	63	46	4	..	896||
No. of Persons Affected	1913	89,618	49,254	16,645	4,574	3,036	3,005	..	..	166,132
	1914	56,469	29,876	20,198	5,624	8,399	4,262	..	..	125,218*
	1915	109,260	39,087	22,864	10,206	2,661	3,147	185	..	197,410†
	1916	242,564	119,878	72,079	40,925	5,848	7,232	258	157	492,487‡
	1917	101,158	68,272	72,843	20,209	12,997	5,288	1,143	..	292,910§
	1918	146,399	110,027	74,174	16,239	9,871	3,631	624	..	361,581||
Total Net Amount of Increase per Week	£	£	£	£	£	£	£	£	£	£
	1913	21,789	9,880	3,702	1,279	428	635	..	..	37,713
	1914	13,558	6,688	5,128	1,941	2,423	804	..	..	30,685*
	1915	29,525	8,078	6,398	3,539	562	778	87	..	51,905†
	1916	56,835	30,566	40,451	9,930	1,440	1,980	88	40	142,923‡
	1917	28,896	15,129	20,083	6,070	3,407	1,987	635	..	81,007§
1918	32,194	25,514	19,699	3,885	2,133	1,323	273	..	85,260||	
Average Increase per Head per Week	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
	1913	4 10	4 0	4 5	5 7	2 10	4 3	..	..	4 6
	1914	4 10	4 6	5 1	6 11	5 9	3 9	..	..	4 11*
	1915	5 5	4 2	5 7	6 11	4 3	4 11	9 5	..	5 3†
	1916	4 8	5 1	11 3	4 10	4 11	5 6	6 10	5 1	5 10‡
	1917	5 9	4 5	5 6	6 0	5 3	7 6	11 1	..	5 6§
1918	4 5	4 8	5 4	4 9	4 4	7 3	8 9	..	4 9||	

* Including one change (common to all States) of £143 per week to 390 workpeople. † Including two changes (common to all States) which resulted in an increase in wages of £2,938 per week to 10,000 workpeople. ‡ Including six changes (common to all States), which resulted in an increase in wages of £1,593 per week to 3,546 workpeople. § Including one change (common to all States) which resulted in an increase in wages of £4,800 per week to 11,000 workpeople. || Including four changes (common to all States), which resulted in an increase in wages of £239 per week to 616 workpeople. The particulars relating to the numbers of workpeople who were affected by these changes, and the net amount of increase per week in each State, were not ascertainable.

In point of number of changes in each State, New South Wales was first, Victoria second, and Queensland third, in each of the years 1913 to 1916. During the year 1917 the number of changes in Queensland exceeded the number recorded in Victoria, while during the year 1918 the number of changes in Queensland was greater than the number recorded as having taken place in New South Wales. It will be seen from the table that, with the exception of New South Wales, the number of changes in rates of wage recorded during the year 1918 is higher in each State than during any previous year. The relative position of the States in point of the numbers of changes effected, and also in regard to the numbers of workers affected in each year is, of course, largely due to the magnitude of the different industries and callings in which changes took place.

The number of workpeople who were affected by changes in rates of wage during the year 1918 was 361,581, and the total net amount of increase per week was £85,260. The corresponding figures for the year 1917 were 292,910 workpeople and £81,007 net amount of increase per week. Only four decreases in rates of wage were recorded during 1918, so that 892 of the changes recorded gave increased rates of pay. The average increase per head per week during the year 1918 was 4s. 9d., as compared with 5s. 6d. during the previous year, and 5s. 10d. during 1916, during which year the highest average increase per head per week was recorded.

Included in the particulars contained in the foregoing table are those relating to five decreases during the year 1914, seven during the year 1915, eight during the year 1916, eleven during the year 1917, and four during the year 1918. The States in which these decreases were recorded were, in 1914, New South Wales three, Victoria one, and Tasmania one, affecting 272 persons in all, with a decrease of £59 per week; in 1915, New South Wales two, Tasmania two, and in Victoria, South Australia, and Western Australia one each, affecting in all 494 workers to the extent of a decrease of £81 per week. Of the eight decreases recorded during 1916 in rates of wage, six affected workpeople in New South Wales, one in Victoria, and one in Western Australia. The total number of persons affected was 1,730, and the amount of decrease per week was £286. In 1917, eleven decreases, affecting 12,828 workpeople, were recorded. Seven of these decreases occurred in New South Wales, two in Queensland, and one each in Victoria and South Australia. The total amount of decrease per week was £3,267. In 1918, four decreases, affecting 1,525 workpeople to the extent of £284 per week, were recorded. Of these four decreases two occurred in Queensland and one each in New South Wales and Victoria.

3. Number and Magnitude of Changes in Rates of Wage in the Commonwealth Classified according to Industrial Groups, 1913 to 1918.—(i) *Total Workpeople (Male and Female) affected by Changes.* In the following table particulars are given of the number of changes, the number of persons (males and females) affected, and the total amount of increase per week, classified according to Industrial Groups throughout the Commonwealth during the six years 1913 to 1918.

CHANGES IN RATES OF WAGE IN THE COMMONWEALTH ACCORDING TO INDUSTRIAL GROUPS, 1913 TO 1918.

Particulars.	Industrial Group.							
	I. Wood, Furniture, Timber, etc.	II. Engineering, Metal Works, etc.	III. Food, Drink, Tobacco, etc.	IV. Clothing, Hats, Boots, etc.	V. Books, Printing, etc.	VI. Other Manufacturing.	VII. Building.	VIII. Mines, Quarries, etc.
1913.								
Number of Changes ..	10	20	45	15	11	55	21	17
Number of Persons affected ..	7,975	6,594	17,428	11,727	4,602	17,110	19,237	6,112
Amount of increase per week £	1,569	1,607	4,255	2,082	1,128	3,480	5,696	1,210
1914.								
Number of Changes ..	14	30	58	10	17	41	19	25
Number of Persons affected ..	10,762	9,582	22,692	14,970	2,686	9,061	8,380	7,776
Amount of increase per week £	2,516	1,834	4,958	2,461	523	2,181	2,471	1,581
1915.								
Number of Changes ..	18	51	48	7	7	61	13	37
Number of Persons affected ..	4,912	32,322	18,214	1,023	1,724	15,451	6,616	19,925
Amount of increase per week £	1,131	8,835	4,204	339	539	2,921	1,173	5,507
1916.								
Number of Changes ..	35	74	107	21	27	108	37	63
Number of Persons affected ..	16,111	27,412	38,171	30,918	10,210	34,037	37,536	63,308
Amount of increase per week £	4,255	6,894	16,383	6,858	2,270	9,172	12,400	17,827
1917.								
Number of Changes ..	14	60	66	21	31	53	38	28
Number of Persons affected ..	10,495	16,994	30,515	25,652	6,386	12,585	11,426	25,022
Amount of increase per week £	2,568	3,394	2,015	6,104	1,981	4,046	3,477	12,544
1918.								
Number of Changes ..	61	42	93	26	24	78	30	25
Number of Persons affected ..	14,651	31,804	32,411	23,215	8,707	15,160	17,419	14,285
Amount of increase per week £	4,343	10,565	9,025	5,252	1,804	3,944	5,420	2,988

Particulars.	Industrial Group—continued.						
	IX. Rail and Tram Services.	X. Other Land Transport.	XI. Shipping, etc.	XII. Pastoral, Agricultural, etc.	XIII. Domestic, Hotels, etc.	XIV. Miscellaneous.	ALL GROUPS.*
1913.							
Number of Changes ..	16	12	19	3	9	59	312
Number of Persons affected ..	20,046	7,335	1,839	828	6,481	38,818	166,132
Amount of increase per week £	3,219	2,324	543	436	1,922	8,264	37,713
1914.							
Number of Changes ..	15	10	26	2	4	94	365
Number of Persons affected ..	5,313	4,020	16,753	590	939	11,689	125,218
Amount of increase per week £	1,334	716	6,933	120	188	2,869	30,685
1915.							
Number of Changes ..	19	15	21	3	11	54	365
Number of Persons affected ..	27,140	5,468	13,154	2,300	5,011	44,150	197,410
Amount of increase per week £	4,629	2,082	3,702	852	1,095	14,896	51,905
1916.							
Number of Changes ..	64	31	44	11	13	186	821
Number of Persons affected ..	83,526	19,232	12,898	16,266	9,832	92,980	492,487
Amount of increase per week £	17,450	5,282	3,411	16,858	2,016	21,847	142,923
1917.							
Number of Changes ..	50	19	25	10	15	144	574
Number of Persons affected ..	37,264	10,261	12,613	3,440	15,359	74,988	292,910
Amount of increase per week £	12,711	3,054	5,629	1,096	3,720	18,668	81,007
1918.							
Number of Changes ..	38	25	38	6	23	270	779
Number of Persons affected ..	59,625	12,782	1,990	1,717	9,230	118,585	361,581
Amount of increase per week £	10,320	2,185	719	350	2,167	26,178	85,260

* In this table an Industrial Award or Agreement under the Commonwealth Conciliation and Arbitration Act or an Order of the War Precautions Coal Board is counted as one change only, although such Award, Agreement or Order may be operative in more than one State.

(ii) *Changes in Rates of Wage in Female Occupations, according to Industrial Groups, 1913 to 1918.* Included in the changes in rates of wage recorded in the immediately preceding table are those which in the whole or part thereof affected female occupations. Particulars in respect to these changes in so far as they relate to the numbers of female workers, etc., are set out hereunder:—

CHANGES IN RATES OF WAGE IN FEMALE OCCUPATIONS, CLASSIFIED ACCORDING TO INDUSTRIAL GROUPS.—COMMONWEALTH, 1913 TO 1918.

Particulars.	I. II. III. IV. V. VI. IX.							
	Wood, Furniture, etc.	Engineering, Metal Works, etc.	Food, Drink, etc.	Clothing, Hats, Boots, etc.	Books, Printing, etc.	Other Manufacturing.	Rail and Tram Services.	
1913.								
Number of Persons affected	1,100	6,802	555	748	..	
Amount of increase per week	£	133	1,052	70	90	..	
1914.								
Number of Persons affected	2,139	8,900	970	195	..	
Amount of increase per week	£	303	1,462	173	40	..	
1915.								
Number of Persons affected	2,291	173	138	1,783	..	
Amount of increase per week	£	267	58	26	281	..	
1916.								
Number of Persons affected	..	393	49	2,334	18,345	3,695	2,331	12
Amount of increase per week	£ ..	76	8	337	3,690	573	336	3
1917.								
Number of Persons affected	..	70	6	2,059	23,115	962	599	844
Amount of increase per week	£ ..	11	1	269	5,356	185	78	191
1918.								
Number of Persons affected	..	609	320	4,612	13,675	3,140	1,344	219
Amount of increase per week	£ ..	179	15	877	2,658	392	175	44

Particulars.	X. XI. XII. XIII. XIV. ALL GROUPS.						
	Other Land Transport.	Shipping, etc.	Pastoral, Agricultural, etc.	Domestic, Hotels, etc.	Miscellaneous.		
1913.							
Number of Persons affected	2,693	1,800	13,698	
Amount of increase per week	£	411	244	2,000	
1914.							
Number of Persons affected	263	844	13,311	
Amount of increase per week	£	97	213	2,238	
1915.							
Number of Persons affected	400	3,887	7,846	16,518	
Amount of increase per week	£	160	866	1,719	3,377	
1916.							
Number of Persons affected	13	100	2,550	13,132	42,954
Amount of increase per week	£	1	22	543	2,388	7,977
1917.							
Number of Persons affected	..	50	10,310	14,556	52,573
Amount of increase per week	£ ..	40*	2,259	2,852	11,162
1918.							
Number of Persons affected	6,720	24,380	55,019
Amount of increase per week	£	1,584	4,170	10,094

* Decrease.

4. Changes in Rates of Wage in Male and Female Occupations—Number and Effect of Changes in each State, 1913–1918.—Included in the changes in rates of wage recorded in the tables on pages 1092 to 1099 are those which in the whole or part thereof affected female occupations. Particulars in respect to these changes in so far as they relate to the numbers of male and female workers affected, etc., are set out hereunder.

CHANGES IN RATES OF WAGE.—MALE AND FEMALE OCCUPATIONS.—EFFECT OF CHANGES IN EACH STATE AND TERRITORY, 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Terr.	C'wealth.
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NUMBER OF MALE EMPLOYEES AFFECTED.

1913 ..	83,470	44,692	16,095	3,616	3,036	1,525	..	152,434
1914 ..	48,773	25,644	19,628	5,624	7,616	4,232	..	111,907*
1915 ..	97,672	36,022	21,831	9,807	2,588	2,787	185	180,892†
1916 ..	225,806¶	99,667	68,125	39,586	5,669	6,885	249	449,553‡
1917 ..	82,601	48,136	63,066	16,844	12,788	4,759	1,143	240,337§
1918 ..	128,728	91,857	59,909	12,889	8,452	3,487	624	306,562||

NET AMOUNT OF INCREASE PER WEEK TO MALE EMPLOYEES.

	£	£	£	£	£	£	£	£
1913 ..	20,682	9,317	3,647	1,127	428	512	..	35,713
1914 ..	12,158	6,146	5,055	1,941	2,157	797	..	28,397*
1915 ..	26,975	7,572	6,250	3,431	545	730	87	48,528†
1916 ..	53,395	26,877	39,874	9,774	1,414	1,937	82	134,946‡
1917 ..	25,773	11,080	17,106	5,244	3,329	1,878	635	69,845§
1918 ..	29,410	22,574	16,186	3,311	1,889	1,284	273	75,166||

AVERAGE INCREASE PER HEAD PER WEEK TO MALE EMPLOYEES.

	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
1913 ..	4 11	4 2	4 6	6 3	2 10	6 9	..	4 8
1914 ..	5 0	4 10	5 2	6 11	5 8	3 9	..	5 1
1915 ..	5 6	4 2	5 9	7 0	4 3	5 3	9 5	5 4
1916 ..	4 9	5 5	11 8	4 11	5 0	5 8	6 7	6 0
1917 ..	6 3	5 7	5 5	6 3	5 2	7 11	11 1	5 10
1918 ..	4 7	4 11	5 5	5 2	4 6	7 4	8 9	4 11

NUMBER OF FEMALE EMPLOYEES AFFECTED.

1913 ..	6,148	4,562	550	958	..	1,480	..	13,698
1914 ..	7,696	4,232	570	..	783	30	..	13,311
1915 ..	11,588	3,065	1,033	399	73	360	..	16,518
1916 ..	16,915	20,211	3,954	1,339	179	347	9	42,954
1917 ..	18,557	20,136	9,777	3,365	209	529	..	52,573
1918 ..	17,671	18,170	14,265	3,350	1,419	144	..	55,019

Note.—For continuation of Table see next page.

* Including one change (common to all States) of £143 per week to 390 workpeople. † Including two changes (common to all States) which resulted in an increase in wages of £2,938 per week to 10,000 workpeople. ‡ Including six changes (common to all States) which resulted in an increase in wages of £1,593 per week to 3,546 workpeople. § Including one change (common to all States) which resulted in an increase in wages of £4,800 per week to 11,000 workpeople. || Including four changes (common to all States) which resulted in an increase in wages of £239 per week to 616 workpeople. The particulars relating to the numbers of workpeople who were affected by these changes and the net amount of increase per week in each State were not ascertainable. ¶ Including effect of one change affecting 157 workpeople in the Federal Capital Territory.

CHANGES IN RATES OF WAGE.—MALE AND FEMALE OCCUPATIONS.—
EFFECT OF CHANGES IN EACH STATE AND TERRITORY, 1913 TO
1918—*continued.*

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Terr.	C'wealth.
NET AMOUNT OF INCREASE PER WEEK TO FEMALE EMPLOYEES.								
	£	£	£	£	£	£	£	£
1913 ..	1,107	563	55	152	..	123	..	2,000
1914 ..	1,400	542	73	..	266	7	..	2,288
1915 ..	2,550	506	148	108	17	48	..	3,377
1916 ..	3,480	3,689	577	156	26	43	6	7,977
1917 ..	3,123	4,049	2,977	826	78	109	..	11,162
1918 ..	2,784	2,940	3,513	574	244	39	..	10,094

AVERAGE INCREASE PER HEAD PER WEEK TO FEMALE EMPLOYEES.								
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1913 ..	3 7	2 6	2 0	3 2	..	1 8	..	2 11
1914 ..	3 8	2 7	2 7	..	6 9	4 8	..	3 5
1915 ..	4 5	3 4	2 10	5 5	4 8	2 8	..	4 1
1916 ..	4 1	3 8	2 11	2 4	2 11	2 6	13 4	3 9
1917 ..	3 4	4 0	6 1	4 11	7 6	4 1	..	4 3
1918 ..	3 2	3 3	4 11	3 5	3 5	5 5	..	3 8

5. Methods by which Changes were Effected.—(i) *Changes in Rates of Wage and Methods by which Effected—Commonwealth, 1917–1918.* In the following table particulars are given for the Commonwealth of the number of changes in rates of wage, the number of workpeople affected, and the total net amount of increase to the weekly wage distribution brought about either without, or after, stoppage of work, during the years 1917 and 1918 respectively, as a result of the application of one or other of the methods set out in the tables :—

CHANGES IN RATES OF WAGE.—METHODS BY WHICH EFFECTED,
1917 AND 1918.

Methods by which Changes were Effected.	Without Stoppage of Work.			After Stoppage of Work.			All Changes.		
	No. of Changes.	No. of Work-people Affected.	Total Net Amount of Increase per Week.	No. of Changes.	No. of Work-people Affected.	Total Net Amount of Increase per Week.	No. of Changes.	No. of Work-people Affected.	Total Net Amount of Increase per Week.
1917.									
By voluntary action of employers	24	9,531	£ 3,097	..	..	£ ..	24	9,531	£ 3,097
By direct negotiations ..	49	13,727	4,465	26	2,100	964	75	15,827	5,429
By negotiations, intervention or assistance of third party ..	7	3,583	1,634	7	15,917	9,362	14	19,500	10,996
By award of Court under Commonwealth Act*	35	20,759	7,654	..	..	..	35	20,759	7,654
By agreement registered under Commonwealth Act*	28	16,443	5,579	..	..	..	28	16,443	5,579
By award or determination under State Acts ..	306	197,941	44,439	4	782	38	310	198,723	44,477
By agreement registered under State Acts ..	86	11,777	3,659	2	350	116	88	12,127	3,775
Total* ..	535	273,761	70,527	39	19,149	10,480	574	292,910	81,007

* In this section of the table an Award or Agreement under the Commonwealth Conciliation and Arbitration Act, the Commonwealth (Public Service) Arbitration Act or an Order of the War Precautions Coal Board is counted as one change only, although such Award, Agreement, or Order may be operative in more than one State.

CHANGES IN RATES OF WAGE.—METHODS BY WHICH EFFECTED,
1917 AND 1918—*continued.*

Methods by which Changes were Effected.	Without Stoppage of Work.			After Stoppage of Work.			All Changes.		
	No. of Changes.	No. of Work-people Affected.	Total Net Amount of Increase per Week.	No. of Changes.	No. of Work-people Affected.	Total Net Amount of Increase per Week.	No. of Changes.	No. of Work-people Affected.	Total Net Amount of Increase per Week.
1918.									
By voluntary action of employers	14	12,916	2,396	..	..	..	14	12,916	2,396
By direct negotiations ..	103	41,085	8,579	29	2,343	894	132	43,428	9,473
By negotiations, intervention or assistance of third party ..	1	544	287	2	47	47	3	591	334
By award of court under Commonwealth Act* ..	39	20,502	4,481	..	..	..	39	20,502	4,481
By agreement registered under Commonwealth Act* ..	142	6,764	1,683	..	..	..	142	6,764	1,683
By award or determination under State Acts ..	353	266,977	63,502	1	3,800	1,140	354	270,777	64,642
By agreement registered under State Acts ..	90	6,337	2,114	5	266	137	95	6,603	2,251
Total* ..	742	355,125	83,042	37	6,456	2,218	779	361,581	85,260

* In this section of the table an Award or Agreement under the Commonwealth Conciliation and Arbitration Act, the Commonwealth (Public Service) Arbitration Act or an Order of the War Precautions Coal Board is counted as one change only, although such Award, Agreement, or Order may be operative in more than one State.

The total number of changes recorded during the year 1918 was 779, of which 354 or 45 per cent. of the total number were brought about by award or determination under State Industrial Acts. The number of workpeople who were affected by these changes was 270,777, and the total amount of increase per week in wages was £64,642. Of these 354 changes, 100 occurred in New South Wales, 68 in Victoria, 137 in Queensland, 29 in South Australia, 7 in Western Australia, and 13 in Tasmania. The number of changes in rates of wage which were recorded as having been made by awards or variations of awards under the provisions of the Commonwealth Conciliation and Arbitration Act was 39, as compared with 35 during the previous year. Direct negotiations between representatives of employers and employees brought about 132 changes in rates of wage during the year. A large number of industrial agreements were filed under the provisions of the Commonwealth and State Acts during the twelve months under review. Thirty-seven changes in rates of wage were arranged after stoppages of work. The number of workpeople affected by these changes was 6,456.

(ii) *Changes in Rates of Wage and Methods by which Effected—Commonwealth, 1913-1918.* Comparative particulars are contained in the following table of the total number and effect of all changes in rates of wage brought about throughout the

Commonwealth during the years indicated, as a result of the application of one or other of the specified methods :—

CHANGES IN RATES OF WAGE, CLASSIFIED ACCORDING TO METHODS BY WHICH EFFECTED—COMMONWEALTH, 1913-1918.

Particulars.	By Voluntary Action of Employers.	By Direct Negotiations.	By Negotiations, Intervention or Assisance of Third Party.	By Award of Court under C'wealth Act.	By Agreement Registered under C'wealth Act.	By Award or Determination under State Act.	By Agreement Registered under State Act.	TOTAL.*
1913.								
Number of Changes	2	30	4	3	24	213	36	312
Number of Workpeople affected	12,011	4,336	101	4,487	3,387	136,702	5,108	166,132
Amount of Increase per week £	1,543	1,120	20	1,679	831	31,328	1,192	37,713
1914.								
Number of Changes	12	57	1	5	31	197	62	365
Number of Workpeople affected	3,042	8,357	60	21,412	3,180	87,131	2,036	125,218
Amount of Increase per week £	478	2,503	18	7,451	953	18,719	563	30,685
1915.								
Number of Changes	21	63	20	9	14	202	36	365
Number of Workpeople affected	17,727	11,593	2,587	16,386	11,620	128,531	8,966	197,410
Amount of Increase per week £	3,941	2,872	593	4,317	3,080	34,290	2,812	51,905
1916.								
Number of Changes	51	175	9	17	30	467	72	821
Number of Workpeople affected	55,560	46,633	4,984	40,978	25,081	305,340	13,911	492,487
Amount of Increase per week £	10,831	12,114	1,518	14,965	6,800	94,005	2,690	142,923
1917.								
Number of Changes	24	75	14	35	28	310	88	574
Number of Workpeople affected	9,531	15,827	19,500	20,759	16,443	198,723	12,127	292,910
Amount of Increase per week £	3,097	5,429	10,996	7,654	5,579	44,477	3,775	81,007
1918.								
Number of Changes	14	132	3	39	142	354	95	779
Number of Workpeople affected	12,916	43,428	591	20,502	6,764	270,777	6,603	361,581
Amount of Increase per week £	2,396	9,473	334	4,481	1,683	64,642	2,251	85,260

* See footnote to table on page 1098.

It will be seen from the preceding table that, during each year for which particulars are furnished, the most frequent method by which changes in rates of wage were arranged was by award or determination under State Industrial Acts. Direct negotiations between employers and employees, or their representatives, were responsible for numerous changes during each of the years. Awards and agreements made and filed under the provisions of the Commonwealth Conciliation and Arbitration Act brought about large numbers of changes during the last three years. It must be mentioned that, so far as possible, the effect of awards or agreements are recorded in the figures for the year in which such awards or agreements are made and filed. In certain cases, however, the awards or agreements are made retrospective as to the date on which the increased rate of wage has to be paid, while in others the particulars as to the number of workpeople affected and the effect of the change are difficult to ascertain. In this regard it may be mentioned that the effect of the award of the Commonwealth Court of Conciliation and Arbitration regulating the wages, hours and working conditions of shearers, station hands and others in the pastoral industry, is not recorded in the tables. Further efforts are to be made to obtain reliable data as to the effect of this award, and in all probability, now that the rates have been in operation for some time, sufficient information will be obtained from the parties affected to enable summaries as to the effect of the change in rates of wage to be prepared.

§ 5. Current Rates of Wage in Different Occupations and States.

1. **Comparative Table of Minimum Rates of Wage, 31st December, 1918.**—The collection of material respecting the current rates of wage payable in different callings and in occupations in various industries carried on in each State of the Commonwealth was first undertaken by this Bureau in the early part of the year 1913. The particulars acquired were obtained primarily from awards, determinations and agreements under Commonwealth and State Acts, and therefore shew the minimum rates prescribed. In cases where no award, determination, or agreement is in force, particulars are given, where possible, of the ruling union or predominant rate as furnished by employers or secretaries of Trade Unions. All particulars obtained from this source are marked with an asterisk. It will be seen that for convenience of comparison the wages are in nearly all cases presented as a weekly rate, though in many industries they are actually based on daily or hourly rates, as specified in awards, determinations, or agreements. This caution is necessary, in view of the fact that it is often in those industries and occupations in which employment is of an exceptionally casual or intermittent nature that wages are fixed or paid at a daily or hourly rate. Hence the average weekly earnings in such occupations will probably fall considerably short of the weekly rates specified in the table. These particulars furnished the necessary data for the computation of average rates of wage in various industrial groups, and in each State and all States.

Since the 30th April, 1914, the number of occupations included in comparative computations has been kept constant, but the particulars of wages contained in the tables on p. 1107 *et seq.* include those for many additional occupations. In most instances these have been taken from awards or determinations made subsequent to that date by industrial tribunals or from agreements registered under Commonwealth or State Acts, or as a result of direct enquiry.

The rates specified refer generally to the capital town of each State, but in industries such as mining and agriculture rates are necessarily taken for places other than the capital towns. The figures given in the tables on p. 1107 *et seq.* relate to adult male workers, and in the second part to adult female workers, and in each case represent (except where otherwise specified in the footnotes) the amounts payable for a full week's work of 48 hours. In every case where the hours of labour constituting a full week's work are other than 48, the number of hours is indicated in the footnotes.

2. **Weighted Average Nominal Rate of Wage Payable to Adult Male Workers in each State, 31st December, 1918.**—The following table shews the weighted average nominal weekly rate of wage payable to adult male workers for a full week's work in each State and the Commonwealth. Taking the average for the whole Commonwealth as the base (=1,000), index-numbers for each State are also shewn. The number of occupations upon which these results are based amounts in the aggregate to no fewer than 3,948.

WEIGHTED AVERAGE NOMINAL WEEKLY RATE OF WAGE PAYABLE TO ADULT MALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH, 31st DECEMBER, 1918.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Number of Occupations included	874	909	627	567	489	482	3,948
Weighted Average Weekly Rate of Wage	65s. 11d.	65s. 6d.	69s. 6d.	65s. 6d.	70s. 4d.	61s. 2d.	66s. 5d.*
Index-Numbers	993	986	1,046	986	1,058	921	1,000*

* Weighted average.

The results shew that the weighted average nominal weekly rate of wage was highest in Western Australia, followed in the order named by Queensland, New South Wales, South Australia and Victoria (equal), and Tasmania.

3. **Weighted Average Nominal Weekly Rate of Wage Payable to Adult Male Workers in each Industrial Group, 31st December, 1918.**—The following table gives similar particulars in regard to the several industrial groups and to the weighted average for all groups combined. In computing the index-numbers the weighted average for all groups is taken as base (=1,000).

WEIGHTED AVERAGE NOMINAL WEEKLY RATE OF WAGE PAYABLE TO ADULT MALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH INDUSTRIAL GROUP, 31st DECEMBER, 1918.

Industrial Group.	No. of Rates Included.	Weighted Average Weekly Wage (for Full Week's Work).		Index Numbers.
		s.	d.	
I. Wood, Furniture, etc.	270	68	11	1,038
II. Engineering, Metal Works, etc. ..	636	68	8	1,033
III. Food, Drink, etc.	576	66	0	994
IV. Clothing, Boots, etc.	124	61	5	925
V. Books, Printing, etc.	205	74	1	1,115
VI. Other Manufacturing	875	66	1	995
VII. Building	190	74	3	1,118
VIII. Mining	161	78	6	1,181
IX. Rail and Tram Services	224	68	11	1,038
X. Other Land Transport	70	63	5	954
XI. Shipping, etc.	198	64	5†	970
XII. Pastoral, Agricultural, etc.:	72	63	1‡	950
XIII. Domestic, Hotels, etc.	114	56	7§	852
XIV. Miscellaneous	233	63	3	952
All Groups	3,948	66	5	1,000*

* Weighted average. † Including the value of victualling and accommodation where supplied. ‡ Including the value of board and lodging where supplied as follows:—In the pastoral industry, 15s. in Western Australia, 17s. in Tasmania, and 20s. in the remaining States. § Including the value of board and lodging where supplied as follows:—In Sydney 11s. to 19s., according to class of establishment; in Melbourne 14s.; in Perth 22s.; in Adelaide 14s. (Restaurants) and 15s. (Hotels); and in Brisbane and Hobart 15s. per week.

From the above table it may be seen that the highest weighted average wage was that paid in Group VIII. (Mining), 78s. 6d. per week, or approximately 18 per cent. above the weighted average for all groups. The rates of wage range from 78s. 6d. per week down to 56s. 7d. per week, the lowest being in Group XIII. (Hotels, etc.), which is nearly 15 per cent. below the average of all groups.

4. **Weighted Average Nominal Rate of Wage Payable to Adult Female Workers in each State, 31st December, 1918.**—The following table shews the weighted average nominal weekly rate of wage payable to adult female workers for a full week's work in each State and the Commonwealth. Taking the average for the whole Commonwealth as the base (=1,000), index-numbers for each State are also shewn:—

WEIGHTED AVERAGE NOMINAL WEEKLY RATE OF WAGE PAYABLE TO ADULT FEMALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH, 31st DECEMBER, 1918.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Number of Occupations included	85	87	37	47	24	28	308
Weighted Average Weekly Rate of Wage	31s. 10d.	31s. 3d.	32s. 10d.	29s. 5d.	38s. 10d.	28s. 9d.	31s. 9d.*
Index-Numbers	1,004	985	1,034	928	1,224	906	1,000*

* Weighted average.

It will be seen that the weighted average nominal rate of wage for adult female workers was highest in Western Australia, followed in the order named by Queensland, New South Wales, Victoria, South Australia, and Tasmania.

5. **Weighted Average Nominal Weekly Rates of Wage Payable to Adult Female Workers in Industrial Groups, 31st December, 1918.**—The following table gives separate particulars regarding the weighted average nominal weekly rates of wage of females in the chief industrial groups in which they are employed, and also shows the weighted average for all groups combined. Index-numbers based on the average for the Commonwealth as the base (=1,000) are also given :—

WEIGHTED AVERAGE NOMINAL WEEKLY RATES OF WAGE PAYABLE TO ADULT FEMALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN INDUSTRIAL GROUPS, 31st DECEMBER, 1918.

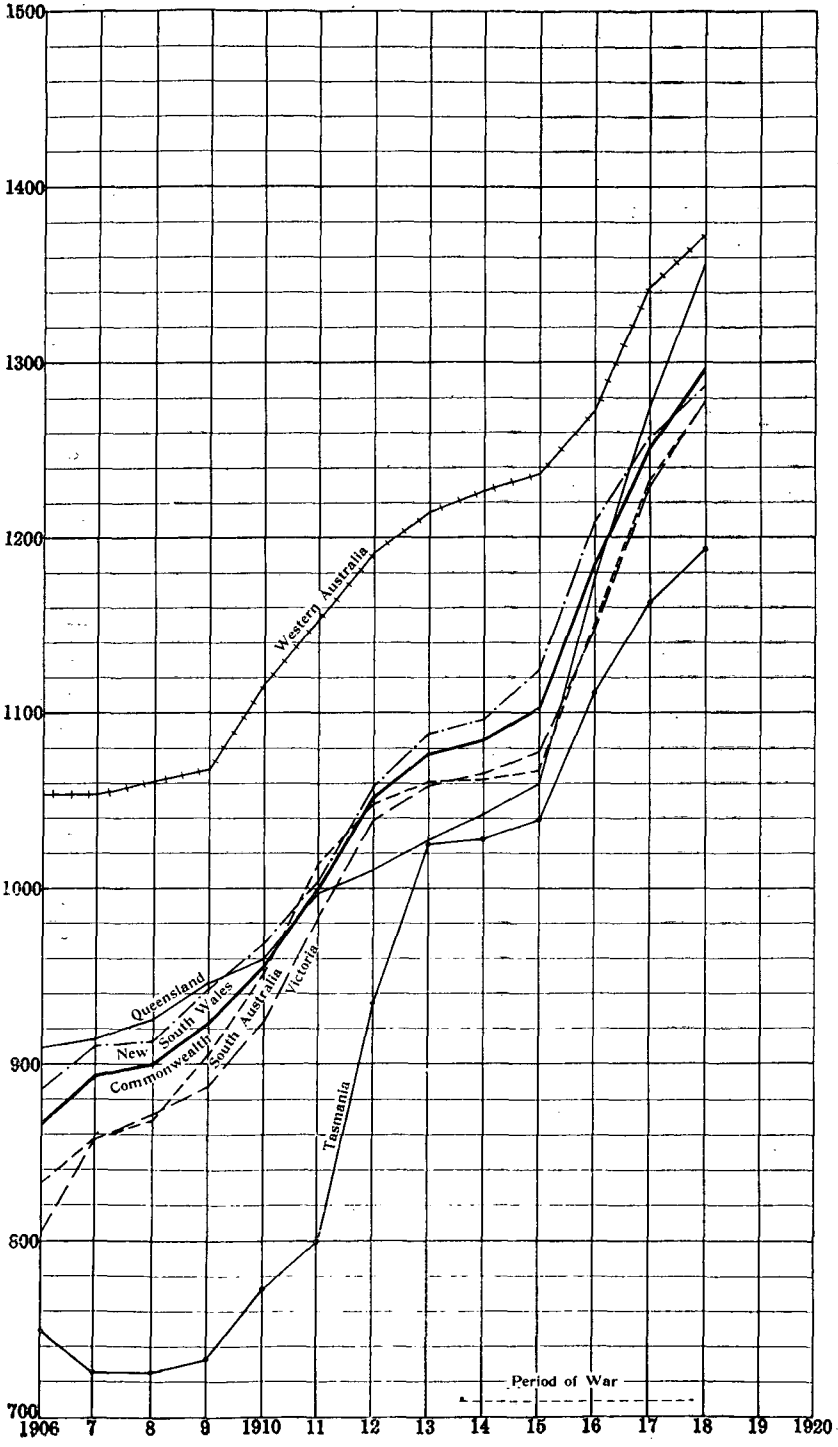
Industrial Group.	No. of Rates Included.	Weighted Average Weekly Wage (for Full Week's Work).		Index-Numbers.
		s.	d.	
III. Food, Drink, etc.	35	29	3	922
IV. Clothing, Boots, etc.	114	30	9	968
I., II., V., VI., All Other Manufacturing combined	84	32	0	1,008
XIII. Domestic, Hotels, etc.	57	34	1*	1,074
XIV. Shop Assistants, Clerks, etc.	18	32	4	1,018
All Groups	308	31	9	1,000†

* Including the value of board and lodging where supplied as follows :—In Sydney, 11s. to 19s., according to class of establishment ; in Melbourne, 14s. ; in Brisbane, 15s. ; in Adelaide, 14s. (Restaurants) and 15s. (Hotels) ; in Perth, 22s. ; and in Hobart, 15s. per week. † Weighted average.

6. **Relative Hours of Labour and Hourly Rates of Wage, 1914 to 1918.**—The rates of wage referred to in the preceding paragraphs of this section relate to the minimum rates payable for a full week's work. It should be observed, however, that the number of hours which constitutes a full week's work differs in many instances, not only as between various trades and occupations in each individual State, but also as between the same trades and occupations in the several States. In order to secure what may be for some purposes a more adequate standard of comparison, it is desirable to reduce the comparison to a common basis, viz., the rate of wage per hour. Particulars are given in the following table, classified according to States, for male and female occupations separately, at 30th April, 1914, and at the end of the years 1914 to 1918. These particulars relate to (a) the weighted average nominal weekly wage, (b) the weighted average number of working hours constituting a full week's work, and (c) the weighted average hourly wage. It should be observed that the weighted average weekly wage relates to all industrial groups combined, and includes the value of board and lodging, where supplied, in land occupations, and the value of victualling in marine occupations‡; whereas the number of working hours and the hourly wage relate to all industrial groups

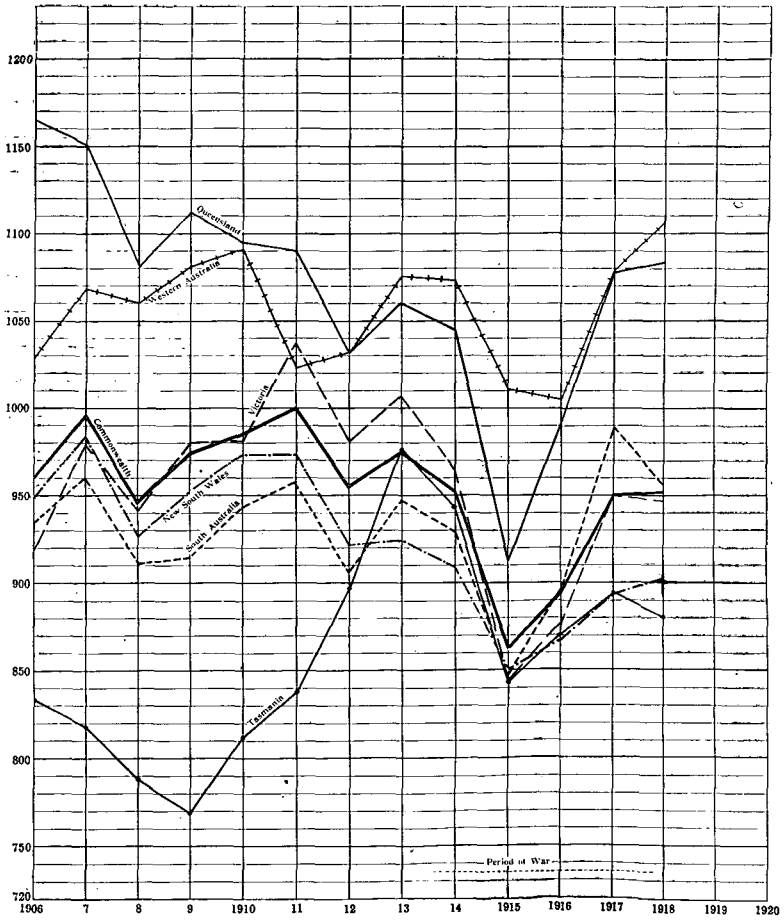
‡ See footnote to table on page 1101.

NOMINAL WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH, 1906 TO 1918.



(See page 1088.)

EFFECTIVE WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH,
1906 TO 1918.



(See page 1089.)

other than Groups XI. (Shipping), and XII. (Agricultural, Pastoral, etc.). Owing to the fact that many of the occupations included in these two groups are of a casual or seasonal nature, and that the hours of labour in these occupations are not generally regulated either by awards or determinations of industrial tribunals or otherwise, the necessary data for the computation of the average number of working hours are not available.

The general effect of reducing the rates of wage to a common basis (i.e., per hour) is to decrease the amount of the difference shewn when comparing the weekly wage in the several States.

WEIGHTED AVERAGE NOMINAL WEEKLY AND HOURLY RATES OF WAGE PAYABLE TO ADULT WORKERS, AND WEEKLY HOURS OF LABOUR, 30th APRIL, 1914, 31st DECEMBER, 1914 TO 1918.

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wth.
MALE WORKERS.								
30th April, 1914	Weekly Wage*	s. d. 55 9	s. d. 54 3	s. d. 52 8	s. d. 54 4	s. d. 62 2	s. d. 52 6	s. d. 55 1
	Working Hours†	49.42	48.80	48.78	48.60	47.78	48.62	48.93
	Hourly Wage‡	1/2	1/1¼	1/1½	1/1½	1/4½	1/1	1/2
31st Dec., 1914	Weekly Wage*	s. d. 56 2	s. d. 54 7	s. d. 53 5	s. d. 54 5	s. d. 62 10	s. d. 52 8	s. d. 55 7
	Working Hours†	49.35	48.66	48.64	48.59	48.18	48.62	48.87
	Hourly Wage‡	1/2	1/1¼	1/1½	1/1½	1/4½	1/1	1/2
31st Dec., 1915	Weekly Wage*	s. d. 57 7	s. d. 55 3	s. d. 54 4	s. d. 54 8	s. d. 63 4	s. d. 53 2	s. d. 56 6
	Working Hours†	49.28	48.50	48.56	48.50	48.12	48.56	48.77
	Hourly Wage‡	1/2½	1/2	1/2	1/2	1/4½	1/1½	1/2½
31st Dec., 1916	Weekly Wage*	s. d. 61 11	s. d. 58 10	s. d. 60 4	s. d. 59 0	s. d. 65 2	s. d. 57 0	s. d. 60 8
	Working Hours†	48.51	48.22	48.27	48.14	48.11	48.55	48.33
	Hourly Wage‡	1/3½	1/3	1/3½	1/3	1/4½	1/2	1/3½
31st Dec., 1917	Weekly Wage*	s. d. 64 5	s. d. 63 0	s. d. 65 3	s. d. 63 1	s. d. 68 11	s. d. 59 7	s. d. 64 2
	Working Hours†	48.41	48.14	47.19	47.82	48.10	48.48	48.10
	Hourly Wage‡	1/3½	1/4	1/5	1/4	1/5½	1/3	1/4½
31st Dec., 1918	Weekly Wage*	s. d. 65 11	s. d. 65 6	s. d. 69 6	s. d. 65 6	s. d. 70 4	s. d. 61 2	s. d. 66 5
	Working Hours†	48.16	47.98	46.90	47.77	47.69	48.39	47.88
	Hourly Wage‡	1/4½	1/4½	1/6	1/4½	1/6	1/3½	1/5
FEMALE WORKERS.								
30th April, 1914	Weekly Wage	s. d. 26 9	s. d. 27 4	s. d. 26 11	s. d. 24 1	s. d. 37 4	s. d. 25 10	s. d. 27 2
	Working Hours	49.34	48.54	49.32	49.33	48.69	50.76	49.08
	Hourly Wage	-/6½	-/6½	-/6½	-/5½	-/9½	-/6	-/6½
31st Dec., 1914	Weekly Wage	s. d. 26 10	s. d. 27 9	s. d. 27 1	s. d. 24 1	s. d. 37 4	s. d. 25 10	s. d. 27 5
	Working Hours	49.34	48.54	49.82	49.33	49.44	50.76	49.11
	Hourly Wage	-/6½	-/6½	-/6½	-/5½	-/9	-/6	-/6½
31st Dec., 1915	Weekly Wage	s. d. 27 5	s. d. 26 11	s. d. 26 11	s. d. 24 6	s. d. 37 5	s. d. 28 0	s. d. 27 4
	Working Hours	49.45	48.46	49.84	49.35	49.86	50.14	49.12
	Hourly Wage	-/6½	-/6½	-/6½	-/6	-/9	-/6½	-/6½
31st Dec., 1916	Weekly Wage	s. d. 28 7	s. d. 28 5	s. d. 27 3	s. d. 24 10	s. d. 38 10	s. d. 28 3	s. d. 28 5
	Working Hours	49.44	48.36	49.85	49.02	49.08	49.83	49.02
	Hourly Wage	-/7	-/7	-/6½	-/6	-/9½	-/6½	-/7
31st Dec., 1917	Weekly Wage	s. d. 30 5	s. d. 30 4	s. d. 30 5	s. d. 27 9	s. d. 38 10	s. d. 28 5	s. d. 30 5
	Working Hours	48.98	48.32	48.99	48.73	48.78	49.83	48.71
	Hourly Wage	-/7½	-/7½	-/7½	-/7½	-/9½	-/6½	-/7½
31st Dec., 1918	Weekly Wage	s. d. 31 10	s. d. 31 3	s. d. 32 10	s. d. 29 5	s. d. 38 10	s. d. 28 9	s. d. 31 9
	Working Hours	48.35	48.32	48.37	48.73	48.78	49.83	48.42
	Hourly Wage	-/8	-/7½	-/8½	-/7½	-/9½	-/7	-/7½

* Weighted average weekly wage in all industrial groups combined. † Weighted average working hours per week, and computed hourly rates of wage for all industrial groups excepting Groups XI. (Shipping, etc.), and XII. (Agricultural, Pastoral, etc.). Working hours have not been generally regulated by industrial tribunals for occupations classified in industrial groups XI. and XII.

From the foregoing table it may be seen that there has been a diminution in each of the States in the number of working hours constituting a full week's work for male occupations, and (with the exception of Western Australia) for female occupations also. The effect of these changes on the hourly rate of wage as compared with the general increase in the weekly wage is readily seen from the comparative index-numbers given in the following table. In each instance (male and female occupations separately) the basis taken is the weighted average for the Commonwealth at the 30th April, 1914, as base (=1,000).

RELATIVE INDEX-NUMBERS FOR WEEKLY AND HOURLY WEIGHTED AVERAGE WAGE, 30th APRIL, 1914, 31st DECEMBER, 1914 TO 1918.

NOTE.—Weighted Average for the Commonwealth at 30th April, 1914, as base (=1,000).

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
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MALE WORKERS.

30th April, 1914 ..	{ Weekly Wage ..	1,011	984	955	986	1,128	952	1,000
	{ Hourly Wage ..	998	980	963	991	1,170	933	1,000
31st Dec., 1914 ..	{ Weekly Wage ..	1,019	990	969	988	1,140	956	1,008
	{ Hourly Wage ..	1,010	990	985	993	1,173	936	1,009
31st Dec., 1915 ..	{ Weekly Wage ..	1,044	1,002	986	992	1,149	965	1,023
	{ Hourly Wage ..	1,039	1,006	1,008	1,001	1,182	946	1,030
31st Dec., 1916 ..	{ Weekly Wage ..	1,123	1,067	1,095	1,071	1,182	1,034	1,100
	{ Hourly Wage ..	1,127	1,074	1,097	1,075	1,206	1,011	1,105
31st Dec., 1917 ..	{ Weekly Wage ..	1,168	1,143	1,183	1,144	1,250	1,081	1,164
	{ Hourly Wage ..	1,162	1,138	1,209	1,145	1,252	1,079	1,164
31st Dec., 1918 ..	{ Weekly Wage ..	1,196	1,189	1,261	1,188	1,276	1,110	1,205
	{ Hourly Wage ..	1,196	1,192	1,297	1,176	1,282	1,120	1,210

FEMALE WORKERS.

30th April, 1914 ..	{ Weekly Wage ..	984	1,006	989	885	1,373	950	1,000
	{ Hourly Wage ..	980	1,021	976	881	1,386	920	1,000
31st Dec., 1914 ..	{ Weekly Wage ..	987	1,022	996	885	1,373	950	1,008
	{ Hourly Wage ..	983	1,035	983	881	1,364	920	1,009
31st Dec., 1915 ..	{ Weekly Wage ..	1,007	990	990	901	1,376	1,031	1,005
	{ Hourly Wage ..	1,002	1,005	976	898	1,357	1,011	1,006
31st Dec., 1916 ..	{ Weekly Wage ..	1,050	1,047	1,004	915	1,429	1,041	1,047
	{ Hourly Wage ..	1,044	1,063	991	916	1,431	1,027	1,048
31st Dec., 1917 ..	{ Weekly Wage ..	1,119	1,116	1,120	1,020	1,430	1,045	1,121
	{ Hourly Wage ..	1,122	1,134	1,122	1,027	1,440	1,029	1,130
31st Dec., 1918 ..	{ Weekly Wage ..	1,173	1,151	1,208	1,084	1,430	1,059	1,168
	{ Hourly Wage ..	1,191	1,169	1,226	1,092	1,426	1,044	1,185

7. Rates of Wage of Adult Males and Females.—In the tabular statement on page 1107 *et seq.* particulars are shown for adult males and females separately of the minimum rates of wage fixed by awards, determinations, or agreements, etc., at 31st December, 1918. (See §5, 1.)

MINIMUM RATES OF WAGE FOR ADULT MALE WORKERS IN THE MAIN OCCUPATIONS IN THE CAPITAL TOWN OF EACH STATE FOR A FULL WEEK'S WORK, AT 31st DECEMBER, 1918.

NOTE.—Ruling or predominant rates of wage are distinguished from Award, Determination, or Industrial Agreement rates of wages by an asterisk (*). Except where otherwise specified by a numerical prefix in small type, the hours of labour constituting a full week's work are forty-eight. Award, Determination or Agreement rates are quoted from the latest Awards, Determinations, or Agreements made, but which were not invariably in force on the 31st December, 1918. It is found, however, that in those States in which Awards, Determinations or Industrial Agreements are made for a specified period, that pending further review of the rates of wage and hours of labour, those previously determined or agreed upon are usually maintained. Where two or more Award, Determination or Agreement rates are quoted, the reason for such is that different rates of wage have been fixed for various classes or grades of work. It will be seen that in certain cases of this nature the wages are shewn in the form, say, 60s. to 67s., indicating that in addition to the two rates specified, there are also certain intermediate rates in force. In other cases the rates are shewn in the form 60s. and 65s., indicating that there are only two minimum or standard rates in force for different classes and grades of work, and that there are, of course, no intermediate minimum or standard rates.

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
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GROUP I.—WOOD, FURNITURE, SAWMILL AND TIMBER YARD.

	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Coopering.						
Coopers	81 0	81 0	*81 0	81 0	81 0	81 0
	& 85, 0	& 85 0	& 85 0			
Furniture and Bedding.						
Bedding Makers	75 0	66 0	*69 8	62 6	69 0	60 0
Boults Carver Operators	75 0	73 0	*77 11	62 6*	78 0	72 0
Cabinetmakers	79 0	70 0	*77 11	67 6	72 0	68 0
Carpet Cutters	86 0	75 0	..	..	..	68 0
„ Layers	72 0	70 0	47 6	56 0*	..	68 0
			to 68 0			
„ Planners	72 0	75 0	..	..	..	68 0
Chairmakers	79 0	70 0	*77 11	67 6	72 0	68 0
Drape Cutters	86 0	70 0	..	..	..	..
French Polishers	79 0	70 0	*71 6	67 6	69 0	68 0
Upholsterers	79 0	70 0	*71 6	67 6	69 0	68 0
Wood Carvers	79 0	70 0	*77 11	67 6	78 0	68 0
„ Machinists	79 0	67 0	*66 0	67 6	75 0	61 0
			to 77 11			to 65 0
„ Turners	79 0	70 0	*77 11	67 6	72 0	68 0

Various numbers of hours constituting a full week's work.

(1) 18 hours. (1a) 15 hours. (2) 30 hours. (3) 33 hours. (4) 36 hours. (4a) 41½ hours. (4b) 40 hours. (5) 42 hours. (5a) 43 hours. (5b) 43½ hours. (5c) 43¾ hours. (6) 44 hours. (7) 44½ hours. (8) 45 hours. (9) 45½ hours. (10) 46 hours. (10a) 46½ hours. (11) 46½ hours. (11a) 46¾ hours. (12) 47 hours. (12a) 47½ hours. (13) 47½ hours. (14) 49 hours. (15) 49½ hours. (16) 49½ hours. (17) 50 hours. (18) 51 hours. (18a) 51½ hours. (19) 52 hours. (20) 52½ hours. (21) 52½ hours. (22) 53 hours. (23) 53½ hours. (24) 53½ hours. (25) 54 hours. (26) 54½ hours. (26a) 54½ hours. (27) 55 hours. (27a) 55½ hours. (27b) 55½ hours. (28) 56 hours. (28a) 50½ hours. (29) 56½ hours. (30) 57 hours. (31) 58 hours. (32) 59 hours. (33) 60 hours. (33a) 62 hours. (34) 63 hours. (35) 65 hours. (36) 70 hours. (37) 72 hours. (38) 77 hours. (38a) 88 hours per fortnight. (38b) 86 hours per fortnight. (38c) 84 hours. (39) 7 nights. (39a) 96 hours per fortnight. (39b) 98 hours per fortnight. (39c) 112 hours per fortnight. (39d) 114 hours per fortnight. (40) 116 hours per fortnight. (40a) 120 hours per fortnight. (41) 136 hours per fortnight. (42) 144 hours per fortnight. (42a) 156 hours per fortnight. (43) 50 hours (summer), 46 hours (winter). (43a) 50 hours (summer), 48 hours (winter). (44) 52 hours (summer), 45 hours (winter). (44a) 52 hours (day), 48 hours (night). (45) 54 hours (summer), 48 hours (winter). (46) 54½ hours (summer), 52½ hours (winter). (47) 55 hours (summer), 46 hours (winter). (47a) 55 hours (summer), 50 hours (winter). (47b) 55 hours (summer), 52 hours (winter). (47c) 55 hours (summer), 54 hours (winter). (48) 56 hours (summer), 44 hours (winter). (48a) 56 hours (summer), 54 hours (winter). (49) 56 hours (summer), 48 hours (winter). (49a) 56 hours (summer), 52 hours (winter). (49b) 56 hours (summer), 53 hours (winter). (50) 57 hours (summer), 44 hours (winter). (50a) 57 hours (summer), 48 hours (winter). (50b) 57 hours (summer), 52½ hours (winter). (51) 58 hours (summer), 46 hours (winter). (52) 58 hours (summer), 50 hours (winter). (53) 58 hours (summer), 56 hours (winter). (54) 59 hours (summer), 58 hours (winter). (55) 60 hours (summer), 56 hours (winter). (56) 60 hours (summer), 58 hours (winter). (57) 84 hours and 72 hours alternate weeks. (58) 48 hours, 51 hours, 54 hours (four months each in each year). (59) 56 hours and 59 hours within certain radius. (60) 56 hours and 60 hours within certain radius. (61) 58 hours (summer), 54 hours (winter). (62) 176 hours per month. (63) 200 hours per month.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP I.—WOOD, FURNITURE, SAWMILL AND TIMBER YARD.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Mattress Making, (Wire).†						
Finishers	67 6	65 0	69 8	60 0	..	60 0
Makers	67 6	65 0	69 8	60 0	69 0	60 0
Varnishers	67 6	65 0	69 8	56 0	..	60 0
Organ Building.						
Journeymen	80 0	58 0	60 0 to 72 6	66 0*	..	..
Overmantels and Mantelpieces.						
Journeymen	67 0	70 0	66 0 to 77 11	65 0	72 0	68 0
Piano Making.						
Cabinet Makers	67 0	65 0	60 0 to 72 6	67 6*	..	..
Framemakers, Iron	72 0	66 0	..	..	..	..
" Wood	67 0	65 0	..	..	..	..
French Polishers	67 0	65 0	67 6	67 6*	..	..
Veneerers	67 0	50 0 & 60 0	72 6	..	..	..
Wood Carvers	67 0	60 0	..	67 6*	..	..
" Turners	67 0	60 0	..	67 6*	..	..
Picture Framing.						
Compo. Workers	60 0	59 0	71 6	..	..	..
Fitters Up	60 0	59 0	71 6	60 0*	1760 0	..
General Hands	60 0	57 0	60 0	50 0 to 60 0*	1760 0 to 66 0*	*160 0
Gilders	65 0	64 0	71 6	63 0*	..	..
Joiners	65 0	64 0	71 6	60 0 to 70 0*	1760 0 to 66 0*	..
Mount Cutters	65 0	64 0	71 6	60 0 to 70 0*	1760 0 to 66 0*	..
Sawyers (Band or Jig)	60 0	63 0 & 69 0	71 6	60 0 to 68 6*	..	..
Saw Milling and Timber Yards.						
Box and Case Makers	66 0	65 0	70 0	61 0	66 0	..
Labourers	60 6	61 0	69 0	58 0	57 6	55 6
Machinists—						
Box Printing	60 6	62 6	70 0	59 6	..	60 0
Boulds Carver	75 0	74 0	76 0	67 0*	..	72 0
Buzzer or Jointer	69 0	68 0	71 0	67 0	60 6	63 0
General Jointer	75 0	71 0	..	67 0*	75 6	72 0
Mortising or Boring	61 6	64 0	70 0	64 0	60 6	60 0
Moulding	68 0	68 0	76 0	67 0	63 6 & 69 6	63 0 & 67 6
" own Grinder	74 0	73 0	..	71 6	..	72 0
Nailing	60 6	65 0	70 0	59 6	63 0	60 0
Planing	66 0	68 0	71 0	62 6	75 6	63 0
Sandpapering	62 6	65 0	70 0	64 0	60 0 & 63 6	63 0
Shaping	75 0	74 0	90 0	67 0	78 6	72 0
Tenoning	69 0	68 0	71 0	64 0	63 6	63 0
Ordermen	64 6	66 0	72 0	64 0	66 6	61 6

† Sydney rates from 7th January, 1919.

‡ 44 and 48 hours per week.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP I.—WOOD, FURNITURE, SAWMILL AND TIMBER YARD.—<i>continued.</i>						
Saw Milling and Timber Yards. <i>—continued.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Pullers or Tailors Out	60 6	61 0	69 0	58 0	60 6	57 0
		& 62 0	to 72 0	& 61 0		& 58 6
Saw Doctors	84 0	80 0	86 0	79 0	80 0	75 0
					to 90 0*	
„ Sharpeners	72 0	68 0	77 0	70 0	72 0*	63 0
Sawyers, Band or Jig	74 0	66 0	79 0	64 0	66 6	64 6
		to 71 0				
„ Circular	60 6	65 0	75 0	64 0	63 6	60 0
	to 72 0	& 68 0		& 70 0	& 69 6	to 66 0
„ Gang Frame	62 6	66 0	72 0	73 0	66 6	61 6
		& 68 0				
„ Recut Band	60 6	66 0	76 0	73 0	66 6	64 6
	to 72 0	to 72 0				
Stackers	67 0*	66 0	78 10	80 8	60 6	55 6
Talleymen	64 6	66 0	75 0	64 0	60 6	60 0
Wood Turners	75 6	70 0	79 0	69 0	72 0	63 0
Undertaking.						
Coachmen	2 462 6	1 962 0	75 0†	1 755 0	2 860 0	50 0*
Coffin Makers or Trimmers	72 0	66 0	75 0†	64 0	60 0†	..
		& 70 0			& 70 0	
Venetian Blind Making.						
Journeyman	63 0	60 0*	69 8	60 0*	..	65 0
	& 65 0					

GROUP II.—ENGINEERING, METAL WORKS, ETC.

Agricultural Implements.						
Assemblers	60 6	61 0	1 165 0	57 0	62 0	..
Blacksmiths	68 0	72 0	..	66 0	78 0	..
Bulldozermen	59 0	67 0	..	63 0	69 6	..
Carpenters	67 6	71 0	..	66 0	..	..
Drillers	59 0	61 0	..	56 0	63 6	..
					& 69 6	
Engine Drivers	67 0	57 0	..	60 0	..	..
	& 71 6	to 69 0				
Fitters	62 0	60 0	..	66 0	75 6	..
	& 68 0	& 66 0				
Grinders	59 0	64 0	..	56 0	..	..
Labourers (unskilled)	57 0	58 0	..	54 0	57 6	..
Machinists, Iron	59 0	64 0	..	57 0	..	..
	to 68 0			& 60 0		
„ Wood	59 0	67 0	..	57 0	..	..
	to 68 0			& 60 0		
Painters (Brush)	60 6	61 0	..	56 0	..	..
„ (Scroll)	67 6	71 0	..	66 0	..	..
Patternmakers	76 0	78 0	..	72 0	84 6	..
Sheet Iron Workers	59 0	65 0	..	60 0	..	..
Storemen	58 6	58 0	1 165 0	54 0	..	..
Strikers	60 6	61 0	..	57 0	60 6	..
Turners	68 0	71 0	..	66 0	75 6	..
Wheelwrights	67 6	71 0	..	66 0	..	..

† 44 and 48 hours per week.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP II.—ENGINEERING, METAL WORKS, ETC.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Bedstead Making (Metallic).						
Blacksmiths	57 0 to 69 0	62 0	60 6	62 0	..	..
Chillfitters (Modellers) ..	65 0	77 0	74 3	77 0	..	..
„ (Other)	65 0	65 0	57 9 to 66 0	65 0	..	..
Chippers	61 0	59 0	56 3	59 0	..	..
Cutters, etc.	61 0	60 0	56 3	60 0	..	..
Electroplaters	65 0	73 0	71 6	73 0	..	..
Fitters Up	62 0	62 0	57 9	62 0	..	..
Foundry Hands	61 0	60 0 & 65 0	54 0	63 0	..	..
Frame Setters	64 0	63 0	& 56 3 63 3	63 0	..	..
Furnacemen	65 0	60 0	58 6	60 0	..	..
Japanners	60 6	62 0	55 0	56 0 & 62 0	..	..
Lacquerers	64 0	60 0	55 0	60 0	..	..
Mounters	60 6	62 0	55 0	60 0 & 62 0	..	..
Polishers	61 0	60 0	49 6	60 0	..	..
Boiler Making.						
Journeymen	85 6	77 0	78 10	84 0	72 0	80 0
Railway Men	78 0 to 86 0	75 0 to 81 0	81 0	75 0 to 81 0*	78 6	69 0 to 72 0*
Brass Working.						
Coremakers	68 0 & 72 0	63 0	78 10	63 0	72 0	..
Dressers	59 0	57 0	55 0	57 0	72 0	..
Finishers	70 0	69 0	78 10	69 0	72 0	80 0
Furnacemen	63 0	59 6	62 4	60 0	66 0	63 0
Moulders	68 0 & 72 0	69 0	78 10	69 0	72 0	72 0 & 80 0
Polishers	60 0	62 0	78 10	62 0	..	..
Cycles and Motors.						
Assemblers	63 6	61 0 & 63 6	78 10	55 0 to 70 0*	75 6	52 0
Cleaners	60 0	61 0	60 6	50 0*	..	52 0
Filers	61 0	61 0	60 6	50 0*	75 6	52 0
Fitters	65 6	63 6	78 10	60 0 to 75 0*	75 6	65 0
Frame Builders	63 6 & 65 6	61 0 & 66 0	78 10	60 0 to 65 0*	..	55 0
Repairers	63 6 & 65 6	61 0 & 63 6	78 10	60 0 to 70 0*	..	50 0 & 52 0
Turners (Cycle)	65 6	..	..	84 0	75 6	65 0
„ (Motor)	74 6	73 6	..	84 0	..	65 0
Wheel Builders	61 0	61 0	60 6	..	..	55 0

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelalde.	Perth.	Hobart.
GROUP II.—ENGINEERING, METAL WORKS, ETC.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Electrical Installation.†						
Armature Winders ..	82 0	79 0	89 0	81 0	75 6	80 0
Cable Jointers ..	82 0	86 0	86 0	81 0	..	73 6
Fitters ..	82 0	79 0	89 0	81 0	75 6	80 0
Linesmen ..	74 0	79 0	77 0	73 0	66 6	66 0
						& 72 0
Mechanics ..	74 0	79 0	86 0	79 0	75 6	80 0
Patrolmen ..	..	66 0	..	79 0	..	73 6
Wiremen ..	74 0	79 0	77 0	74 0	69 6	67 6
„ Assistant ..	..	66 0	65 0	..	..	60 0
Other Adults ..	..	66 0	65 0	63 0	57 6	60 0
Electrical Supply.						
Armature Winders ..	82 0	72 0	89 0	81 0	75 6	80 0
Cable Jointers ..	82 0	75 0	86 0	81 0	..	73 6
Carboner (Arc Lamp Attend.)	62 0	65 0	71 0	69 0	..	66 0
Instrument Makers ..	70 0	72 0	89 0	79 0	75 6	80 0
Linesmen ..	74 0	72 0	77 0	73 0	66 6	66 0
						& 72 0
Meter Fixers ..	74 0	65 0	..	69 0	..	63 0
„ Testers ..	72 0	72 0	89 0	75 0	..	65 0
Patrolmen (Night)	57 0*	75 0	..	79 0	..	73 6
Shift Electricians ..	82 0	75 0	79 0	..	..	87 0
			to 93 0			
Sub-Station Attendants ..	..	69 0	..	..	..	70 0
Switchboard Attendants	60 0	63 0	65 0	67 0	..	60 0
Switchmen ..	..	61 6	..	73 0	..	..
Other Adults ..	..	60 0	65 0	63 0	..	60 0
Electrical Trades.						
Fitters ..	82 0	79 0	89 0	81 0	75 6	80 0
Mechanics ..	74 0	79 0	86 0	79 0	75 6	80 0
Wiremen ..	74 0	79 0	77 0	74 0	69 6	67 6
Electroplating.						
Makers Up ..	64 0	59 0	..	63 0*	..	..
Platers ..	70 0	76 0	71 6	66 0	66 0	60 0
Polishers ..	64 0	67 0	63 3	60 0*	..	..
	& 66 0		& 71 6			
Engineering.†						
Blacksmiths ..	87 6	83 0	82 6	72 0	81 6	80 0
Bolt and Nut Machinists	66 6	68 0	..	60 0*	63 6*	..
		& 71 0				
Borers and Slotters ..	75 6	83 0	73 4	75 0	69 6	80 0
	& 83 6			& 78 0		
Brassfinishers ..	85 6	69 0	78 10	75 0	75 6	80 0
Coppersmiths ..	87 6	83 0	82 6	86 0	81 6	80 0
Drillers (Radial) ..	83 6	68 0	66 0	67 0	63 6*	80 0
„ (Other) ..	66 6	68 0	66 0	67 0	63 6	80 0
Drophammer Smiths	81 6	83 0	78 10	..	81 6	..
Fitters ..	85 6	83 0	78 10	84 0	75 6	80 0
Lappers and Grinders	66 6	71 0	78 10	80 0	..	..

† In Melbourne the current Wages Board Determination provides for special rates for night shifts.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP II.—ENGINEERING, METAL WORKS, ETC.—<i>continued.</i>						
Engineering†—<i>continued.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Millers (Universal) ..	83 6	83 0	..	84 0	75 6	80 0
„ (Other) ..	75 6	71 0	£78 10	80 0	69 6	80 0
	& 83 6					
Oliversmiths ..	81 6	83 0	£78 10	..	81 6	..
Patternmakers ..	89 6	89 0	£84 4	87 0	84 6	80 0
Planers (Rail & Plate Edge)	75 6	71 0	£66 0	68 0	69 6	..
	& 83 6					
„ (Other) ..	75 6	83 0	£73 4	75 0	69 6	80 0
	& 83 6					
Shapers ..	75 6	71 0	£73 4	75 0	69 6	80 0
	& 83 6	& 83 0				
Springsmiths ..	79 6	83 0	..	75 0*	81 6	..
Turners ..	85 6	83 0	£78 10	84 0	75 6	80 0
Farriery.‡						
Firemen ..	80 0	77 0	1 ² 67 6	69 0	66 0*	50 0*
Floormen ..	75 0	71 0	1 ² 67 6	63 0	60 0*	44 0*
Shoemsmiths ..	80 0	77 0	1 ² 67 6	69 0	66 0*	50 0*
Ironworking (Assistants).						
Boilermakers' Helpers ..	66 0	60 0	£55 0	69 0	57 0	63 0
					to 60 0	
„ Labourers ..	63 0	57 0	£55 0	69 0	54 0	60 0
Engineers' Labourers ..	63 0	63 0	£55 0	69 0	57 0	60 0
Furnacemen's Assistants ..	68 0	66 0	£55 0	63 0	60 6*	..
General Labourers ..	63 0	57 0	£55 0	69 0	54 0	60 0
		to 63 0			to 60 0	
Moulders' Labourers ..	63 0	63 0	£55 0	60 0	54 0	60 0
		& 64 6				
Strikers ..	68 0	66 0	£55 0	69 0	57 0	63 0
Moulding (Iron).§						
Coremakers (Machine) ..	72 0	71 0	£78 10	78 0	66 0	80 0
„ (Other) ..	72 0	77 0	£78 10	78 0	66 0	80 0
		& 83 0				
Dressers and Fettleers ..	68 0	66 0	£55 0	63 0	60 6*	60 0
Furnacemen ..	72 0	69 0	£62 4	70 0	69 6*	63 0
	& 74 0					
Moulders (Machine) ..	68 0	71 0	£75 2	69 0	66 0	80 0
			& 78 10			
„ (Other) ..	72 0	77 0	£78 10	78 0	66 0	80 0
		& 83 0				
Moulding (Piano Frames).						
Moulders ..	67 0	77 0	..	..	..	..
	& 71 0					
Moulding (Pipes, Bank).§						
Casters and Finishers ..	68 0	68 0	..	72 0*	66 0	..
					to 84 0	
Coremakers ..	68 0	77 0	£78 10	72 0*	60 0	..
		& 83 0				
Footmen (4-in. and under)	74 0	71 0	£78 10	69 0*	66 0	..
„ (5 and 6-ins.) ..	76 0	74 0	£78 10	69 0*	72 0	80 0
Headmen (4-in. and under)	80 0	77 0	£78 10	78 0*	72 0	..
„ (5 and 6-ins.) ..	82 0	83 0	£78 10	78 0*	78 0	80 0

† In Melbourne the current Wages Board Determination provides for special rates of wage for night shifts.
 § Melbourne rates from 14th January, 1919. § Hobart rates from 1st January, 1919.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP II.—ENGINEERING, METAL WORKS, ETC.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Moulding (Pipes, Machine).						
Coremakers (Faucet) ..	68 0	77 0	..	..	..	..
& 83 0						
" (Spigot) ..	68 0	71 0	..	..	..	..
& 74 0						
Finishers and Casters ..	68 0	77 0	657 9	..	..	..
& 83 0						
Moulding (Pipes, Vertical).†						
Casters	68 0	68 0	657 9	..	69 6	80 0
Coremakers	68 0	68 0	678 10	78 0*	69 6	80 0
Corers	68 0	68 0	657 9	..	63 6	..
Rammers	68 0	68 0	652 3	78 0*	69 6	80 0
Moulding (Steel).						
Coremakers	72 0	71 0	..	78 0	75 6*	..
to 83 0						
Moulders	72 0	71 0	678 10	69 0	75 6*	..
to 83 0				& 78 0		
Moulding (Stove).						
Moulders	67 0	77 0	669 8	60 0	72 0*	..
& 71 0						
Ovenmaking.						
Blacksmiths	65 0	61 0	..	52 0	66 0	..
to 72 0						
Grinders and Polishers ..	64 0	63 0	655 0	54 0	70 0*	..
& 65 0						
Ovenmakers	67 0	65 0	669 8	52 0	60 0	..
& 71 0					to 72 0*	
Sheet Metal Working.						
Canister Makers	60 0	56 0	64 0	63 0	57 6	..
& 63 0						
Japanners (Coating or Brushwork) .. ..	..	56 0	66 0	56 0	..	..
Japanners (Grainers, Liners, etc.) .. ..	..	60 0	66 0	60 0	..	..
Japanners (Ornamental) ..	..	66 0	66 0	66 0	..	..
Machinists	60 0	62 0	66 0	56 0	57 6	..
& 65 0				& 62 0		
Solderers	60 0	59 0	66 0	55 0	57 6	51 0
& 63 0		& 63 0				
Tinsmiths	73 0	66 0	66 0	66 0	68 0	63 0
Wireworking (Barbed Wire).						
Toolsharpenor or Machinist	66 0	57 0	..	57 0	..	..
& 63 0						
Galvanising.						
Galvanisers	63 0	66 0	80 0	60 0*	..	..
Picklers	63 0	61 0	66 0	60 0*	..	..
" (Assistant)	63 0	56 0	..	..	..	..

† Hobart rates from 1st January, 1919.

See also explanatory notes *re* hours, etc. on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP II.—ENGINEERING, METAL WORKS, ETC.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Nailmaking.						
Case Wires	59 0	51 0	..	57 0	..	..
Labourers	57 0	51 0	..	57 0	..	..
Setters Up	66 0	60 0	..	60 0	..	..
				to 72 0		
Storemen	57 0	56 0	..	60 0	..	..
Toolmakers	78 0	63 0	..	60 0	..	..
Wire Netting Working.						
Hand-loom Weavers ..	64 0	57 0	..	50 0	..	..
Power-loom Weavers ..	55 6	57 0	..	50 0	..	..
Strikers	57 0	51 0	..	..	..	..
Wire Working.						
Journeymen	64 0	63 0	..	60 0	60 0 to 70 0*	65 0*

GROUP III.—FOOD, DRINK, TOBACCO, ETC.

Aerated Waters and Cordials.						
Bottlers	62 6	54 0	62 6	54 0	62 0	45 0
Bottlewashers	60 6	50 0	60 0	54 0	58 6	45 0*
Drivers (Motor)	65 0	66 0	65 0	65 0	..	66 0
	& 68 0		& 69 0	& 70 0		
„ (One Horse)	60 6	1761 0	1961 0	4361 0	63 0	61 0
„ (Two Horses)	63 6	1766 0	1966 0	4364 0	63 0	66 0
Grooms or Stablemen ..	60 6	1860 0	2860 0	4360 0	2858 6	1860 0
Loaders	60 6	50 0	60 0	54 0	58 6	45 0
Packers	60 6	50 0	60 0	54 0	62 0	45 0
Wires	60 6	50 0	..	54 0	58 6	45 0
					& 62 0	
Baking (Bread).						
Board Hands	70 0	84 0	867 6 & 70 0	71 0	67 6	60 0
Carters (One Horse) ..	2560 0	2560 9	1761 0	2560 0	2560 0	1761 0
„ (Two Horses)	2560 0	2560 9	1766 0	2560 0	2560 0	1766 0
Doughmen	72 6	84 0	872 6	71 0	67 6	60 0
	& 75 0					
Forehands	75 0	92 0	875 0	71 0	68 0	70 0
	& 80 0		& 80 0			
Ovenmen	75 0	84 0	870 0	71 0	68 0	60 0
			& 75 0			
Singlehands	75 0	92 0	875 0	71 0	68 0	65 0

See also explanatory notes *re* hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP III.—FOOD, DRINK, TOBACCO, ETC.— <i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Baking (Biscuits and Cakes).†						
Adult Males	56 0	60 0	63 0	60 0*	60 0*	..
Bakers	67 6	66 0	72 6	60 0	60 0	57 6
				to 70 0*	to 75 0*	
Brakesmen	60 0	62 0	65 0	55 0	50 0	52 0
				to 60 0*	to 60 0*	
Mixers	60 0	66 0	72 6	65 0	60 0	60 0
				to 70 0*	to 70 0*	
Oven Firemen	56 0	62 0	65 0	63 0	60 0	57 6
				to 66 0*	to 75 0*	
Storemen	60 0	60 0	68 6	60 0*	60 0	..
					to 70 0*	
Brewing.						
Adult Males	63 0	63 0	63 0	63 0	63 0	60 0
Bottle Packers	63 0	63 0	63 0	63 0	63 0	60 0
Bottlers and Washers	63 0	63 0	63 0	63 0	63 0	60 0
Cellarmen	66 0	66 0	66 0	66 0	63 0	63 0
Drivers (One Horse)	1 ⁹ 60 0	1 ⁷ 60 1 ⁹ 0	1 ⁹ 61 0	1 ⁷ 60 0	63 0	1 ⁷ 61 0
„ (Two Horses)	1 ⁹ 63 0	1 ⁷ 60 1 ⁹ 0	1 ⁹ 66 0	1 ⁷ 63 0	63 0	1 ⁷ 66 0
		& 61 0				
		& 66 0				
„ (Motor, under 3 tons)	1 ⁹ 63 0	63 0	65 0	1 ⁷ 63 0	..	66 0
		to 70 0 ||	to 70 0			& 70 0
„ („ 3 tons & over)	1 ⁹ 66 0	66 0	73 0	1 ⁷ 66 0	70 6	74 0
		& 74 0 ||	& 75 0		& 73 0	
Engine Drivers	75 0	75 0	71 0	81 0	75 0*	72 0*
			to 91 0			
Firemen	72 0	69 0	71 0	75 0	66 0	66 0*
Greasers and Trimmers	63 0	63 0	69 0	69 0	66 0*	..
Malt Hands	66 0	66 0	63 0	66 0	63 0	60 0
Stablen and Grooms	1 ⁹ 60 0	1 ⁸ 60 1 ⁹ 0	2 ⁸ 60 0	1 ⁷ 60 0	2 ⁸ 63 0	1 ⁸ 60 0
Towermen	65 0	63 0	66 0	66 0	63 0	60 0
		& 66 0				
Butchering (Carcase).						
Carters (One Horse)	2 ⁵ 62 6	..	65 0	1 ⁷ 61 0	3 ³ 70 0	1 ⁷ 61 0
„ (Two Horses)	2 ⁵ 70 0	1 ⁹ 60 0	65 0	1 ⁷ 64 0	3 ³ 70 0	1 ⁷ 66 0
Chilling Room Hands	60 0	66 0	72 6	..	60 0	..
	& 72 0					
Labourers (Beef)	72 0	1 ² 60 0	62 6	1 ² 60 0	6 ⁷ 0 0	52 6
„ (Mutton)	60 0	1 ² 60 0	62 6	1 ² 60 0	6 ⁶ 0 0	52 6
Scalders	60 0	70 0	72 6	7 ² 6 6	6 ⁷ 0 0	52 6
	& 72 0					
Slaughtermen (Beef)†	100 0	1 ² 80 0	82 6	7 ⁸ 7 6	6 ⁸ 0 0	52 6
						& 65 0
„ (Mutton)	§	1 ² 80 0	82 6	7 ⁸ 5 0	6 ⁸ 0 0	52 6
						& 65 0
Butchering (Retail).						
Carters (Cash Cutting)	77 6	1 ⁹ 70 0	72 6	..	67 6	2 ⁵ 57 6
„ (One Horse)	60 0	1 ⁹ 60 0	62 6	1 ⁹ 60 0	60 0	1 ⁷ 61 0
„ (Two Horses)	60 0	1 ⁹ 60 0	65 0	1 ⁹ 60 0	60 0	1 ⁷ 66 0
General Hands	65 0	70 0	72 6	70 0	67 6	2 ⁵ 57 6
Salters	77 6	70 0	72 6	70 0	67 6	2 ⁵ 57 6
Shopmen	70 0	70 0	72 6	70 0	67 6	2 ⁵ 57 6
	& 77 6				& 78 9	to 65 0
Smallgoodsmen	77 6	70 0	72 6	70 0	78 9	2 ⁵ 65 0
„ (Assistant)	70 0	70 0	62 6	70 0	67 6	2 ⁵ 57 6

† Melbourne rates from 17th January, 1919. ‡ Sydney rates from 3rd January, 1919.

§ Piece-work rates. || 48 and 52 hours per week.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP III.—FOOD, DRINK, TOBACCO, ETC.—<i>continued.</i>						
Butter Making.	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Buttermakers	73 0	63 0	75 0	} 75 0*	..	..
Cream Graders	65 0	70 0	70 0		..	..
Cream or Milk Testers	60 0	66 0	70 0		..	..
Machinists (Milk Drying, etc.) .. ..	..	60 0	..	..	..	..
„ (Pasteurizer)	60 0	58 0	..	..	..	..
„ (Separator, Weighing, etc.)	60 0	58 0	..	..	..	..
Other Adults	60 0	57 0	60 0	61 0	..	..
Storemen or Packers	60 0	58 0	..	to 63 0* 65 0	..	..
Cheesemaking.						
Journeymen .. ..	..	² 567 6	75 0	75 0*	..	..
Other Adults .. ..	..	² 557 0	60 0	..	..	..
Cold Storage and Ice.†						
Carters (Motor)	⁴ 561 0 & 63 0	50 0	65 0	65 0 & 70 0	66 0	66 0 & 70 0
„ (One Horse)	⁴ 560 0	⁴ 563 0 & 65 0	¹ 961 0	¹ 761 0	¹ 761 0	¹ 761 0
„ (Two Horses)	⁴ 561 0 & 60 0	⁴ 568 0 & 70 0	¹ 966 0	¹ 764 0	¹ 766 0	¹ 766 0
Chamber Hands	68 6 & 71 6	78 0	72 0	60 0 & 65 0*	66 0*	64 0*
Pullers and Stackers	62 6	72 0	64 0	60 0 & 65 0*	66 0*	64 0*
Rabbit Packers	60 0	68 0	..	..	..	..
Confectionery.						
Journeymen	75 0	72 0	70 0	67 6	60 0	65 0*
Labourers	57 0	54 0	62 6	55 0	50 0	..
Storemen (Head)	60 0	68 0	70 0	65 0	60 0	..
„ (Other)	to 70 0* 57 0	60 0	to 95 0 68 6	57 6	50 0	..
Ham and Bacon Curing.						
Casing Cleaners (Foreman)	66 0	75 0	⁹ 92 0	68 0	..	60 0
Curers (First Hand)	85 0	79 6	⁹ 92 0	72 6	..	57 6
„ (Assistant)	70 0	69 6	⁹ 75 0	62 6	..	..
Cutters Up (First Hand)	72 6	79 6	⁹ 86 0	72 6	..	52 6
„ (Assistant)	65 0	72 0	⁹ 77 0	65 0	..	52 6
Ham Baggers .. ..	..	63 0	⁹ 80 0	56 0	..	..
Lardmen	60 0	63 0 & 74 6	⁹ 80 0	56 0 & 67 6	..	52 6
Rollers and Trimmers	65 0	72 0	⁹ 71 0	65 0	..	52 6
Scalders	60 0	72 0	⁹ 82 6	65 0	70 0	52 6
Shavers	60 0	72 0	⁹ 71 0	65 0	..	52 6
Slaughtermen	100 0	79 6	⁹ 96 0	72 6	80 0	55 0
„ (Assistant) .. ..	..	72 0	⁹ 72 0	65 0	60 0	52 6
Smallgoodsmen (First Hand)	72 6	79 6	⁹ 92 0	72 6	..	57 6
„ (Assistant)	60 0	67 0	⁹ 71 0	60 0	..	52 6
Smokers (First Hand)	65 0	74 6	⁹ 86 0	67 6	..	52 6
„ (Assistant)	60 0	63 0	⁹ 71 0	56 0	..	..
Washers (First Hand)	65 0	..	⁹ 73 9	56 0	..	52 6
„ (Assistant)	60 0	63 0	⁹ 71 0	..	..	..

† Sydney rates from 3rd January, 1919.

See also explanatory notes *re* hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP III.—FOOD, DRINK, TOBACCO, ETC.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Jam Making and Preserving.						
Adult Males	61 0	61 0	60 0	54 0	70 0*	48 0
Solderers	63 0	61 0	66 0	55 0	67 6*	51 0
Malting.						
Maltsters	65 0	66 0	63 0	66 0	60 0	56 0
Meat Packing.†						
Cappers	70 0	65 0	678 0	..	..	..
Fillers and Podgers	60 6	65 0	671 0 & 73 9	..	..	..
Guillotine Hands	60 6	65 0	678 0	..	..	..
Jokermen	70 0	65 0	682 0	..	..	..
Lacquerers	70 0	65 0	671 0	..	..	..
Margarine Makers	60 0	78 0	..	..	..	..
	& 65 0					
Packers	60 6	65 0	671 0	..	..	..
Seamers	70 0	65 0	686 0	..	..	..
Milk Delivery.						
Carters (One Horse)	1 ^s 62 0	1 ^s 61 0	2 ^s 57 6	1 ^s 761 0	3 ^s 60 0	1 ^s 861 0
„ (Two Horses)	1 ^s 62 0	1 ^s 66 0	..	1 ^s 764 0	..	1 ^s 866 0
Milling (Condiments).						
Grinders	71 6	66 0	1 ^s 060 0	66 0	..	..
Mixers or Blenders	64 6	66 0	1 ^s 060 0	66 0	..	..
Other Adults	64 6	57 6	1 ^s 060 0	57 6	..	..
Stone Dressers	72 0	63 0	1 ^s 060 0	63 0	..	..
Milling (Flour).						
Engine Drivers	69 0	69 0	72 0	69 0	69 0	69 0
	& 72 0	& 72 0	to 88 0	& 72 0	to 75 0	..
Firemen	63 0	63 0	70 0	63 0	63 0	..
	to 67 0					
Millers (Head)	83 6	79 0	83 6	79 0	79 0	77 6
„ (Shift)	74 6	69 0	74 6	69 0	69 0	67 6
	to 82 6	to 78 0	to 82 6	to 78 0	to 78 0	..
Millwrights	77 6	75 0	..	75 0	75 0	72 0
Packermen	62 0	62 0	63 0	62 0	62 0	60 0
Purifiers	62 6	61 0	63 0	61 0	61 0	60 0
Silksmen	62 6	61 0	63 0	61 0	61 0	60 0
Smuttermen	62 0	62 0	65 0	62 0	62 0	..
Storemen (Head)	65 0	65 0	68 0	65 0	65 0	65 0
	& 66 6					
Topmen	62 6	61 0	63 0	61 0	61 0	60 0
Truckers and Others	61 0	60 0	..	60 0	60 0	60 0
Wheat Carriers	84 0†	84 0†	84 0†	72 0†	72 0†	84 0†
Milling (Oatmeal).						
Kilnmen	67 0	60 0	1 ^s 060 0	60 0	..	60 0
Millers (Head)	77 6	66 0	1 ^s 064 0 to 79 0	66 0	..	77 6

† Computed on the hourly rate for 48 hours. ‡ Rates quoted for Brisbane are those paid in ham and bacon curing and packing establishments. Higher rates prevail in the meat export industry.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
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GROUP III.—FOOD, DRINK, TOBACCO, ETC.—*continued.*

	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Milling (Rice).						
Dryingroom Hands	70 6	57 6	1 ⁰ 60 0	57 6
Millers (Head)	77 6	66 0	1 ⁰ 64 0	66 0	..	..
Other Adults	64 6	57 6	1 ⁰ 60 0	57 6	..	..
Stonedressers	72 0	63 0	1 ⁰ 60 0	63 0	..	..
Pastrycooking.						
Carters	2 ⁵ 57 6	1 ⁷ 61 0	1 ⁰ 61 0	1 ⁷ 61 0	..	1 ⁷ 61 0
Packers	57 6	48 0	..	..	..	..
Pastrycooks	66 0	69 0	75 0	67 6	61 6	60 0
„ (Assistant)	1 ⁸ 55 6	63 0	67 6	..	& 69 0	50 0
Poulterers.						
Bench Hands (1st Rate) ..	65 0	57 6	..	..	..	..
„ (2nd Rate)	60 0	50 0	..	..	..	..
Foremen	72 6	65 0	..	..	..	..
Tea Packing.						
Foremen	66 6	67 6	1 ⁰ 64 0	..	..	..
Headmen	to 91 0*	61 6	to 79 0	78 0	..	..
Other Adults .. ..	..	56 0	1 ⁰ 60 0	65 0	..	..

GROUP IV.—CLOTHING, HATS, BOOTS, ETC.

Bootmaking.						
Bootmakers	72 0	72 0	72 0	72 0	72 0	72 0
Dyeing and Cleaning.						
Clothes Cleaners	60 0	58 0	..	60 0*	55 0	60 0*
Dyers (Black)	to 65 0*	75 0	..	65 0*	& 63 6**	..
„ (Colour)	80 0*	75 0	..	65 0*	80 0	..
Dye-house Labourers ..	50 0*	57 0	..	..	& 85 0**	..
Hatmaking (Straw).						
Bleachers .. ..	..	58 6	..	..	..	..
Blockers	1 ⁰ 55 7	64 6	12a55 0*	1 ⁰ 60 0	..	..
Foremen	1 ⁰ 60 0	71 6	12a60 0*	to 65 0*	..	..
Stiffeners	1 ⁰ 55 7	64 6	12a55 0*	1 ⁰ 70 0*	..	..
				to 65 0*	..	..

† 44 and 48 hours per week.

See also explanatory notes *re* hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP IV.—CLOTHING, HATS, BOOTS, ETC.— <i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Tailoring (Order).						
Cutters	82 6	75 0	80 0	75 0	70 0	70 0
Pressers	64 0	60 0	65 0	60 0	60 0	& 75 0*
Tailors	65 0	65 0	65 0	65 0	70 0	60 0
						65 0
Trimmers	72 6	57 6	65 0	57 6	..	& 70 0
						60 0
Tailoring (Ready-made).						
Brushers	54 0	52 0	1 ² 60 0	55 0	..	50 0
Cutters	72 6	65 0	1 ² 65 0	65 0	65 0	65 0
Folders	54 0	52 0	1 ² 60 0	55 0	..	50 0
Machinists .. .. .	..	60 0	1 ² 60 0	60 0	..	60 0
Pressers (Coat Hands) ..	64 0	60 0	1 ² 65 0	57 6	60 0	55 0
				& 60 0		& 57 6
„ (Trousers and Vest Hands) ..	64 0	60 0	1 ² 65 0	57 6	60 0	55 0
				& 60 0		& 57 6
Tailors	67 6	65 0	1 ² 65 0	62 6	70 0	65 0
Trimmers	72 6	57 6	1 ² 65 0	56 0	60 0	57 0
Under Pressers (Coat Hands)	54 0	52 0	1 ² 60 0	55 0	58 6	55 0
„ (Trousers and Vest Hands)	54 0	50 0	1 ² 60 0	55 0	58 6	55 0
Textile Working (Woollen Mills).†						
Carders	60 0	63 0	60 0	55 0	..	37 6
				to 60 0*		
Dyehousemen	60 0	63 0	60 0	54 0*	..	47 6
Labourers (General) ..	60 0	63 0	60 0	54 0*	..	42 6
„ (Willyhouse)	60 0	63 0	60 0	54 0*	..	42 6
Milling Hands	60 0	63 0	60 0	54 0	..	..
				to 65 0*		
Other Adults	60 0	63 0	60 0	54 0*	..	42 6
Pattern Weavers	60 0	63 0	..	54 0	..	..
				& 58 0*		
Scourers	60 0	66 0	63 0	54 0	..	42 0
				to 65 0*		
Spinners	60 0	69 0	70 0	57 0	..	45 0
				to 65 0*		
Tuners	60 0	65 0	60 0	55 0	..	55 0
	to 71 0	to 73 0	& 65 0	to 65 0*		
Twisters in	60 0	63 0	..	54 0*	..	45 0
Warpers	60 0	64 0	..	55 0*	..	52 6
Hatmaking.						
Cutters (Lining) .. .. .	..	40 0	..	..	..	..
„ (Silk)	60 0*	47 6	..	..	..	..
Waterproof Clothing.						
Cutters (Rubber Material)	75 0	65 0	..	..	..	..
	& 77 6*					
„ (Other) .. .. .	..	60 0	..	..	..	..
Garment Makers .. .. .	..	60 0	..	..	..	..

† Melbourne rates from 6th January, 1919.

See also explanatory notes *re* hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP V.—BOOKS, PRINTING, BINDING, ETC.						
Bookbinding.	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Feeders .. ..	.. ..	57 6	60 0	54 0	.. ..	50 0
Finishers	70 0	76 0	72 0	68 0	70 0	70 0
Journeyman Bookbinders ..	70 0	76 0	72 0	68 0	70 0	70 0
Marblers	70 0	76 0	72 0	68 0	70 0	70 0
Paper Rulers	70 0	76 0	72 0	68 0	70 0	70 0
	to 82 6					
Engraving (Process).†						
Engravers	£73 6	£65 0	.. ..	.. ..	.. ..	.. ..
Etchers (Half-tone)	£78 6	£70 0	.. ..	£75 0*	.. ..	.. ..
„ (Line)	£73 6	£65 0	5a65 0	£65 0*	.. ..	.. ..
			to 70 0*			
Mounters	£66 0	£50 0	5a65 0*	.. ..	.. ..	.. ..
Operators	£78 6	£65 0	5a70 0*	.. ..	.. ..	.. ..
Printers	£73 6	£55 0	5a60 0*	£62 6*	.. ..	.. ..
Routers	£66 0	£60 0	.. ..	.. ..	.. ..	.. ..
Lithographing.						
Printers	70 0	78 0	77 0	68 0	.. ..	70 0
Rotary Machinists	75 0	80 0	77 0	68 0	80 0*	80 0
		& 82 0				
Stone Polishers	70 0	61 0	60 0	54 0	.. ..	70 0
Printing (Daily Newspapers).						
Compositors (Day Work) ..	£90 0	£98 0	£84 4	84 0	£80 0	70 0
„ (Night Work)	£100 0	108 0	£91 8	88 0	£90 0	£75 3
Linotype Attendants—						
Day Work	70 0	1060 4	£65 0	63 0	£60 0*	66 0
						& 70 0
Night Work	80 0	£64 2	£70 0	78 0	£65 0*	£66 0
						& 70 0
Linotype Operators—						
Day Work	†	†	£95 4	†	£90 0	†
Night Work	†	†	£102 8	†	£100 0	†
Machinists (First Hand)—						
Day Work	£90 0	1084 4	£95 0	80 0	65 0	.. ..
Night Work	£100 0	£91 8	£100 0	86 0	£65 0	£70 0
Publishers	£570 0	£65 2	£60 0	63 0	1260 0	£70 0
	& 75 0	to 73 4	to 75 0		& 65 0	
Readers—						
Day Work	£95 0	92 6	£67 6	83 0	£80 0	70 0
			& 82 6			
Night Work	£110 0	97 6	£72 6	87 0	£90 0	£75 3
			& 87 6			
Readers' Assistants—						
Day Work	£65 0	60 0	£60 0	54 0	£60 0	.. ..
Night Work	£75 0	67 6	£65 0	58 0	£65 0	£60 0
Stereotypers (1st Class)—						
Day Work	£82 6	1078 7	£72 6	66 0	1270 0	.. ..
			& 82 6			
Night Work	£87 6	£86 2	£77 6	70 6	£75 0	£70 0
			& 87 6			
Stereotypers' Assistants—						
Day Work	£75 0	1067 1	£62 6	54 0	1260 0	.. ..
Night Work	£80 0	£75 2	£67 6	58 0	£63 0	£55 0

† Other than in newspaper offices. ‡ Piece-work rates.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
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GROUP V.—BOOKS, PRINTING, BINDING, ETC.—*continued.*

	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Printing (Jobbing Offices).						
Compositors	73 6	78 0	72 0	68 0	70 0	70 0
Electrotypers	74 0	78 0	64 0	72 0*	..	70 0
General Hands .. .. .	..	57 6	60 0	54 0	860 0*	50 0
Linotype Operators	873 4	855 9	77 0	875 0	890 0*	81 0
			& 85 4			
Machinists	56 0	78 0	60 0	68 0	70 0	70 0
	to 70 0		& 72 0			
Monoline Operators	873 4	855 9	77 0	875 0	890 0*	81 0
			& 85 4			
Monotype Operators	873 4	855 9	72 0	875 0	890 0*	†
			& 78 0			
„ Casting Machinists .. .. .	..	57 6	60 0	58 0	..	..
Readers	65 0	82 0	72 0	68 0	880 0*	70 0
Stereotypers	67 6	78 0	60 0	68 0	70 0	70 0
			& 72 0			
Typograph Operators	873 4	855 9	77 0	875 0	65 0*	..
			& 85 4			

GROUP VI.—OTHER MANUFACTURES.

Asphalting.						
Layers (Cold Work)	66 0	60 6	..	63 0	..	848 0
				to 67 6*		to 66 0*
„ (Hot Work)	66 0	66 0	..	..	..	848 0
						to 66 0*
Mastic Boilers .. .. .	..	380 0	..	..	..	848 0
Potmen	66 0	55 0	..	..	..	to 66 0*
Rubbers Down .. .. .	..	60 6	..	..	..	848 0
Yardmen and Labourers	64 0	55 0	..	63 0*	..	to 66 0*
Boatbuilding.						
Boatbuilders	80 0	70 0	1270 6	84 0*	90 0	80 0*
	& 84 0	to 80 0*	to 76 4			
Brickmaking. †						
Burners	72 0	382 6	65 0	382 6	2874 8	55 6
	& 73 6		to 71 0			
Carters (One Horse)	2760 0	1761 0	1961 0	1761 0	54 0	1761 0
„ (Two Horses)	2765 0	1766 0	1966 0	1764 0	60 0	1766 0
Clayholemen	72 6	65 0	67 0	68 0	64 0	49 6
Drawers	74 0	72 0	67 0	74 0	†	55 6
Labourers	68 6	61 0	65 0	63 0	60 0	49 6
Loaders Out	68 6	..	65 0	..	..	55 6
Loftsmen	65 6	61 0	65 0	63 0	56 0	54 0
Machinememen	70 6	1866 11½	67 0	66 0	62 0	54 0
				& 69 0	& 66 0	
Panmen	68 6	1866 11½	65 0	1870 11½	62 0	54 0
				& 73 3¼		
Pit Foremen	79 0	80 0*	71 0	73 0	70 0	..
„ Men	72 6	66 0	67 0	68 0	64 0	54 0
„ Shooters	75 6	70 0	71 0	73 0	70 0	57 0

† Piece-work rates. ‡ Adelaide rates from 2nd January, 1919.

See also explanatory notes *re* hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP VI.—OTHER MANUFACTURES.—<i>continued.</i>						
Brickmaking†—<i>continued.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Setters	74 0	70 0	65 0	74 0	66 0	54 0
			& 67 0		& 68 0	& 60 0
Truckers	68 6	61 0	65 0	63 0	60 0	54 0
Wheelers	68 6	61 0	65 0	63 0	64 0	54 0
			& 67 0			
Yardmen	68 6	61 0	65 0	63 0	60 0	55 6
Broom-making (Millet).						
Sorters (Head)	66 9	80 0	67 6	..	..	70 0*
„ (Other)	57 9	68 6	67 6	..	..	50 0*
	& 61 0					
Varnishers, Ringers, and Sizers .. (per 1,000)	2 10	3 0	..	..	..	..
Brushmaking.‡						
Bass Broom Drawers	66 0	63 0	} 65 0	52 6	..	..
Finishers	66 0	60 0		60 0	..	..
Machinists (Boring)	66 0	60 0		60 0	..	..
„ (Boults Carver)	75 0	74 0		64 0	..	..
Paint Brush Makers	70 0	77 6		67 6	..	..
Pan Workers (Hair & Bass)	66 0	72 0		55 0	..	..
			& 60 0			
Candle Making.						
Acidifiers	62 0	63 0	67 0	63 0	..	..
General Hands	60 0	57 6	63 0	57 6	60 0*	..
Glycerine Distillers	64 6	63 0	63 0	63 0	..	..
Moulders	60 0	61 6	67 0	61 6	60 0	61 0*
					to 65 0*	
Press-room Gangers	62 0	60 6	64 0	63 6	..	..
Stillmen	65 0	63 0	67 0	63 0	..	..
Cardboard Box Makers.§						
Guillotine and other Cutters	67 6	71 0	62 6	68 0	..	..
	& 70 0		to 66 0*			
Other Adults	60 0	57 6	62 6	..	..	..
			to 66 0*			
Coachmaking (Road).||						
Bodymakers	67 6	72 0	673 4	66 0	69 0	60 0
Labourers	55 6	58 0	58 8	54 0	..	..
Painters	67 6	72 0	673 4	66 0	69 0	60 0
„ Labourers	56 6	58 0	66 0	54 0	59 6*	..
Smiths	67 6	72 0	673 4	66 0	69 0	60 0
„ Strikers	55 6	58 0	58 8	57 0	57 0	..
Trimmers	67 6	72 0	673 4	66 0	69 0	60 0
Vycemen	58 6	63 0	..	54 0	60 0*	45 0
Wheelmaking Machinists	67 6	72 0	673 4	66 0	69 0	65 0*
Wheelwrights	67 6	72 0	673 4	66 0	69 0	60 0
Coachmaking (Axlemaking).||						
Centre Turners	67 6	58 0	..	66 0	..	..
Faceplate Workers	67 6	66 0	..	66 0	..	..

† Adelaide rates from 2nd January, 1919. ‡ Melbourne rates from 1st January, 1919. § Sydney rates from 3rd January, 1919. || Melbourne rates from 11th January, 1919.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP VI.—OTHER MANUFACTURES.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Coachmaking (Springmaking).†						
Fitters	67 6	72 0	..	66 0	..	..
Spring Makers	67 6	70 0	..	66 0	..	..
Fellmongering.						
Bate Hands	68 0	63 0	68 6	57 0*	..	..
				& 65 0		
Green Hands	66 0	63 0	65 6	65 0	..	..
Labourers	62 0	63 0	64 0	57 0*	..	..
				& 65 0		
Limepit Men	68 0	63 0	68 6	65 0	..	..
			& 71 6			
Machinists (Burring) ..	68 0	68 0	74 6	65 0	..	..
„ (Fleshing) ..	68 0	68 0	71 6	60 0*	..	..
				& 65 0		
„ (Scouring) ..	66 0	68 0	65 6	65 0	..	..
				& 65 0*		
„ (Setting Out) ..	68 0	68 0	71 6	57 0*	..	..
				& 65 0		
Soakholemen	68 0	63 0	71 6	57 0*	..	..
				& 65 0		
Sweathouse Men	68 0	63 0	71 6	65 0	..	..
Wool Sorters	70 0	70 0	71 6	65 0	..	..
Fibrous-Plaster Working.						
Fixers' Assistants	66 0	54 1	..	..	..	..
Other Adults	66 0	54 0	..	..	..	..
Shop Hands	84 0	66 0	..	..	..	..
Gas Making and Supply.						
Blacksmiths	87 6	78 0	82 6	76 6	82 0*	76 6
Coke Trimmers	67 6	66 0	58 8	64 6	65 0	64 6
Engine Drivers	68 6	75 0	72 0	78 7	72 0*	73 6
	to 76 6		to 88 0			
Gas Fitters	72 0	81 0	75 2	79 6	78 0	79 6
Labourers	61 6	63 0	58 8	61 6	60 0	61 6
		& 66 0		& 64 6		& 64 6
Mainlayers	76 6	75 0	63 3	73 6	72 0	73 6
	& 84 0		& 67 10			
Metermakers	75 0	72 0	71 6	79 6	72 0	79 6
		& 81 0				
Meter Testers	63 0	69 0	..	..	..	..
	& 69 0					
Service Layers	67 6	75 0	63 3	73 6	69 0	73 6
„ (Labourers)	61 6	66 0	58 8	64 6	60 0	64 6
Stokers	73 6	75 0	87 6	78 7	69 0	73 6
		& 76 6		to 81 10	& 76 6	& 75 0
Yardmen	61 6	63 0	58 8	61 6	57 0	61 6

† Melbourne rate from 11th January, 1919.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP VI.—OTHER MANUFACTURES.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Glassfoundry.						
Bottlestoppers	63 0	63 0	63 0*	63 0	..	..
Furnacemen	2 ^s 87 0	2 ^s 87 0	2 ^s 87 0*	2 ^s 87 0	2 ^s 75 0	..
„ (Assistants)	2 ^s 76 0	2 ^s 76 0	2 ^s 76 0*	2 ^s 76 0	..	..
Labourers	63 0	63 0	63 0*	63 0	60 0*	..
Lehrman	1 ^{2a} 63 0	1 ^{2a} 63 0	1 ^{2a} 63 0*	1 ^{2a} 63 0	..	..
Packers	63 0	63 0	63 0*	63 0	60 0*	..
Sorters	63 0	63 0	63 0*	63 0	60 0*	..
Glassworking and Glazing.†						
Bevellers	80 6 & 81 6	70 0	70 0*	68 0 & 70 0*	..	60 0
Cementers	60 0	55 0	..	55 0*	..	..
Cutters & Glaziers (Other)	79 6	60 0	71 6	65 0*	..	..
„ „ (Plate)	79 6	70 0	71 6	70 0*	..	..
Lead Light Glaziers	80 6	60 0	..	70 0*	..	..
Packers	60 0*	60 0	..	65 0*	..	..
Silverers (using Own Recipe)	83 6	..	..	73 0*	..	..
„ (Others)	83 6	70 0	70 0*	60 0 & 68 0*	..	..
Horsehair Working.						
Curlers	63 0*	69 0	..	..	..	..
Drafting Hands	63 0*	69 0	..	..	..	..
Wet Hacklers and Others	58 0 & 60 0*	61 6 to 69 0	..	..	..	..
Jewellery, Clock and Watch Making.						
Chainmakers	73 6 & 76 0	63 0	75 0	63 0 & 67 6§	70 0*	50 0 to 70 0*
Engravers	76 0	1 ¹⁷ 5 0	75 0 & 77 6	70 0§	70 0*	50 0 to 70 0*
Mounters	73 6	70 0	75 0	75 0§	70 0*	50 0 to 70 0*
Setters	76 0	70 0	77 6	75 0§	70 0*	50 0 to 70 0*
Watch and Clock Makers ..	1 ¹⁷ 5 0	1 ¹⁷ 5 0	80 0	72 6§	70 0*	..
„ „ Repairers	1 ¹⁷ 5 0	1 ¹⁷ 5 0	80 0	72 6§	70 0*	70 0 to 80 0*
Leather (Small Goods).						
General Hands	66 0	66 0	78 0	66 0	66 0	66 0
Manures (Animal).‡						
Fertiliser Hands	66 6	54 0	56 6	..	..	..
Manures (Artificial).						
Acid Retortmen	61 0	63 0	..	63 0	63 0	..
Bagging Men	58 0	60 0	..	60 0	60 0	..
Bin Workers	64 0	60 0	..	60 0	60 0	..
Bone Mill Feeders .. ..	..	60 0	..	60 0	60 0	..
Chamber Burners	66 0	63 0	..	63 0	63 0	..
Crushers and Mixers	60 0	63 0	..	63 0	63 0	..
Labourers	to 66 0 60 0	60 0	..	60 0	60 0	..

† Sydney rates from 7th January, 1919. ‡ Sydney rates from 3rd January, 1919. § Hours of labour per week—48 (daylight), 45 (artificial light).

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP VI.—OTHER MANUFACTURES.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Masonry (Marble and Stone).						
Carvers	£110 0	£99 0	£80 8	84 0	78 0*	..
Machinists (Carborundum)	70 0	68 0	£80 8	64 0	70 0*	..
„ (Other) .. .. .	..	74 0	£80 8	64 0	70 0*	..
Masons	£77 11 to 81 7	£71 6	£80 8	68 0	78 0*	72 0
Polishers (Machine-Granite)	70 0	68 0	£80 8	54 0	78 0*	..
„ („ Marble)	70 0	66 0	£80 8	54 0	78 0*	..
„ (Other-Granite) ..	70 0	£62 4	£80 8	54 0	78 0*	..
„ („ Marble) ..	70 0	£60 6	£80 8	54 0	78 0*	..
Masonry, Monumental Workers						
Carvers	£88 11	£84 4	£79 9	84 0	78 0*	72 0
Fixers	81 0	64 0	£79 9	64 0	72 0*	72 0
Labourers	60 0	64 0	£64 2	54 0	66 0*	60 0
Letter Cutters	£78 10	£77 0	£79 9	74 0	78 0*	72 0
Masons	£77 0	£66 0 & 77 0	£79 9	68 0	78 0*	72 0
Opticians.						
Journeymen	1173 0	1172 0	1075 0	67 6 to 80 0	..	..
Paper Bag Making.						
Guillotine Cutters	70 0	57 6	68 0	68 0	..	..
Machinists .. .. .	..	57 6 & 68 6	68 0	70 0*	..	..
Paper Making.						
Beatermen	76 0	78 0	..	..	..	..
„ (Assistant)	58 0	57 0	..	..	..	..
Breakermen	57 6	63 0	..	..	..	..
Cutters	58 0	60 0 & 63 0	..	..	..	..
Guillotine Men	58 0	60 0	..	..	..	..
Machinists	76 0	81 0	..	..	..	..
„ (Assistant)	55 0	57 0	..	..	..	..
Packers	57 6	57 0	..	..	..	..
Ragboilermen	60 0	60 0	..	..	..	..
Rippers	57 6	60 0	..	..	..	..
Other Adults	55 0	57 0	..	..	..	..
Polish Making.						
Foremen .. .. .	..	60 0	..	..	..	..
Grinders .. .. .	..	60 0	..	60 0	..	..
Millhands .. .. .	..	60 0	..	..	..	..
Mixers .. .. .	..	60 0	..	60 0	..	..
Other Adults .. .. .	..	57 6	..	57 6	..	..
Portmanteau Making.						
Journeymen	66 0	66 0	66 0	66 0	66 0	66 0

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP VI.—OTHER MANUFACTURES.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Potteries (General).						
Burners (Head) ..	70 0	³ 80 0	60 0	60 0*	..	52 6
„ (Assistant) ..	65 0	³ 76 3	60 0	55 0*	..	49 6
Hollow-ware Pressers ..	79 0	61 0	60 0	..	..	55 6
Labourers ..	65 0	60 0	60 0	51 0	..	49 6
Sagger Makers ..	67 6	60 0	..	51 0	..	..
Sanitary Pressers ..	80 0	64 0	60 0	& 55 0*	..	55 6
Throwers (1st Class) ..	80 0	70 0	76 0	68 0*	..	58 6
„ (2nd Class) ..	..	60 0	68 0	..	..	49 6
Turners ..	72 0	61 0	..	..	..	..
Potteries (Pipemaking).						
Burners (Head) ..	69 0	³ 80 0	66 0	66 0*	66 0*	58 6
„ (Assistant) ..	..	³ 76 3	60 0	..	60 0*	49 6
Drawers ..	64 0	60 0	60 0	66 0*	66 0*	..
Junction Stickers ..	66 0	62 0	60 0	..	66 0*	52 6
Moulders ..	70 0	63 6	60 0	..	75 0*	54 0
Mould Makers ..	64 0	70 0	62 0	66 0*	75 0*	..
Setters ..	68 0	63 0	60 0	..	66 0*	52 6
Potteries—Tile Making (other than Roofing).						
Labourers ..	65 0	60 0	60 0	..	..	49 6
Moulders or Pressers ..	66 0	63 6	60 0	..	..	..
Setters (Head) ..	71 0	63 6	60 0	..	..	..
„ (Other) ..	66 0	63 6	60 0	..	..	..
Quarrying.†						
Borers (Hand or Machine) ..	†73 4	72 0	72 0	75 0	66 0	66 0
„ (Assistant) ..	67 6	63 0	65 6	66 0	..	60 0
Dressers ..	†84 4	80 0	65 6	..	..	63 0
Facemen ..	78 6	72 0	72 0	..	..	57 0
Gutterers ..	†89 10	..	76 0	..	..	63 0
Hammermen ..	74 6	80 0	72 0	67 6	60 0	63 0
Labourers or Strippers ..	67 6	63 0	65 6	66 0	54 0	57 0
Loaders, Pluggers, or Truckers ..	67 6	63 0	65 6	66 0	54 0	57 0
Machine Feeders ..	78 6	63 0	71 6	64 6	60 0	60 0
Quarrymen ..	†84 4	..	76 0	66 0	60 0	†66 0
Spallers ..	71 6	72 0	70 0	67 6	60 0	63 0
Rope Making.						
Clothes Line Lappers ..	60 0	54 0	42 0	..	..	..
Feeders for First Spreader ..	63 0	57 0	42 0	63 0	..	..
Foremen (Head) ..	72 0	62 6	60 0	73 0	..	..
„ (Jenny) ..	& 75 0	to 67 6	48 0	& 78 0	..	..
	72 0	62 6	48 0	68 0	..	..

† Sydney rates from 7th January, 1919.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
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GROUP VI.—OTHER MANUFACTURES.—*continued.*

	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Rope Making—<i>continued.</i>						
Knockers Out and Dampers						
Down	60 0	54 0	42 0	60 0	..	..
Oilers	60 0	57 0	..	57 0	..	..
Packers	63 0	54 0	42 0	57 0	..	..
Reelers (Hand)	60 0	55 0	42 0	60 0	..	..
„ (Steam)	60 0	58 0	..	& 63 0 70 0	..	..
	& 63 0					
Rubber Working.						
Calender Hands	75 0	71 6	..	..	..	..
Compound Weighers	63 0	62 6	..	..	..	..
Cycle Tyre Makers	60 0	62 6	..	..	..	..
Dough Mixers	63 0	62 6	..	..	..	..
Forcing Machinists	63 0	60 0	..	..	..	..
Heaters	63 0	61 6	..	..	..	..
Hosemakers	63 0	62 6	..	..	..	..
Mechanical Lathe Hands	63 0	62 6	..	..	..	..
Mill Hands	66 0	65 6	..	..	..	..
Moulders (Other)	63 0	61 6	..	..	..	..
Other Adults	60 0	57 6	..	..	..	..
Press Hands	63 0	61 6	..	..	..	..
Spreaders	63 0	62 6	..	..	..	..
Surgical, Packing, and other						
Makers	63 0	62 6	..	..	..	..
Textile Cutters	60 0	60 0	..	..	..	..
Tube Repairers	63 0	62 6	..	55 0 to 62 6*	..	..
„ Joiners	60 0	59 0	..	55 0 to 62 6*	..	..
Tyre Moulders	66 0	71 6	..	..	..	..
Vulcanisers	63 0	57 6	..	55 0 to 62 6*	..	..
Wrappers	60 0	59 0	..	55 0 to 62 6*	..	..
Saddlery and Harnessmaking.						
Collarmakers	66 0	66 0	78 0	66 0	65 0	66 0
Harnessmakers	66 0	66 0	78 0	66 0	60 0	66 0
Machinists	66 0	66 0	78 0	66 0	60 0	66 0
Saddlers	66 0	66 0	78 0	66 0	60 0	66 0
Sail Making.						
Sailmakers	78 0	66 0	63 0	66 0	¹ 260 0 to 70 0*	..
Ship Workers.						
Carpenters and Joiners	80 0	73 4	66 0	84 0*	..	80 0*
Dockers	73 4	73 4	73 4	..	..	..
Painters	73 4	73 4	73 4	..	..	..
	& 79 9					
Shipwrights (New Work)	80 0	82 6	82 6	84 0	90 0	80 0*
„ (Old Work)	84 0	82 6	82 6	84 0	90 0	80 0*

See also explanatory notes *re* hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
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GROUP VI.—OTHER MANUFACTURES.—*continued.*

	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Soap Making.						
Foremen	67 0	64 6	68 0	64 6
General Hands	60 0	57 6	63 0	57 6	60 0*	62 6*
Mixers	60 0	62 6	63 0	62 6	60 0*	..
Soap Makers	72 0	67 0	63 0	67 0	60 0*	..
„ (Assistant)	62 0	66 6	63 0	66 6	..	..
Tallow Making.†						
Tallowmen	71 6	60 0	60 0	66 0*	70 0	2752 6
Tanning and Currying.						
Beamsmen	70 6	70 6	70 6	70 6	70 6	70 6
Curriers	75 6	75 6	75 6	75 6	75 6	75 6
Fancy Leather Finishers	65 6	65 6	65 6	65 6	65 6	65 6
Japanners or Enamellers	65 6	65 6	65 6	65 6	65 6	65 6
Jiggers and Grainers (Book-binding Leather)	68 6	68 6	68 6	68 6	68 6	68 6
Labourers	61 6	61 6	61 6	61 6	61 6	61 6
Limen and Yardmen	62 6	62 6	62 6	62 6	62 6	62 6
Machinists (Fleshing)	70 6	70 6	70 6	70 6	70 6	70 6
„ (Scouring)	63 6	63 6	63 6	63 6	63 6	63 6
„ (Scudding)	65 6	65 6	65 6	65 6	65 6	65 6
„ (Shaving)	68 6	68 6	68 6	68 6	68 6	68 6
„ (Splitting)	75 6	75 6	75 6	75 6	75 6	75 6
„ (Unhairing)	65 6	65 6	65 6	65 6	65 6	65 6
„ (Whitening)	68 6	68 6	68 6	68 6	68 6	68 6
„ (Other)	63 6	63 6	63 6	63 6	63 6	63 6
Rollers and Strikers	67 6	67 6	67 6	67 6	67 6	67 6
Tablemen	65 6	65 6	65 6	65 6	65 6	65 6
Tent and Tarpaulin Making.						
Cutters (1st Hand)	60 0	72 0	67 6	66 0	1260 0*	12a70 0*
„ (2nd Hand)	50 0	54 0	67 6	..	1260 0*	12a55 0*
Dressers	54 0	54 0	..	..	..	..
Machinists	52 6	54 0	63 0	66 0	..	..
Sewers (Hand)	60 0	66 0	63 0	66 0	1260 0*	..
Tent Makers	60 0	66 0	63 0	66 0	1260 0*	..
Wickerworking.						
Bamboo or Wickerworkers	66 0	67 6	69 8	60 0	67 0	60 0
Basket Makers & Repairers	69 0	65 0	69 8	60 0	..	..
„ & 72 0						
Upholsterers	79 0	67 6	69 8	60 0	..	..

GROUP VII.—BUILDING.

Bricklaying.						
Bricklayers (Surface)	84 0	82 6	85 3	77 0	90 0*	76 0
„ (Sewer and Tunnel)	90 0	88 0	85 3	77 0	90 0*	84 0
Carpentering.						
Carpenters	80 0	80 8	82 6	71 6	76 6	72 0

† Sydney rates from 3rd January, 1919.

See also explanatory notes *re* hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP VII.—BUILDING.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Joinery.						
Machinists (1st Class) ..	74 0	73 0	°82 6	71 6	..	72 0
„ (2nd Class) ..	69 0	71 0	°73 4	64 0	..	63 0
„ (3rd Class) ..	62 6	64 0	°73 4	62 6	..	60 0
Labouring (Builders).†						
Bricklayers' Labourers ..	72 0	°66 0	°64 2	°66 0	72 0*	°66 0
Carpenters' Labourers ..	68 0	°66 0	°64 2	°66 0	66 0*	°66 0
Concrete Workers ..	68 0	°66 0	°64 2	°66 0	66 0*	°66 0
Earth Excavators ..	68 0	°66 0	°64 2	°66 0	°66 0*	°66 0
Gear Workers ..	68 0	°66 0	°64 2	°66 0	72 0*	°66 0
Masons' Labourers ..	68 0	°66 0	°64 2	°66 0	72 0*	°66 0
Plasterers' Labourers ..	68 0	°66 0	°64 2	°66 0	72 0*	°66 0
Scaffold Hands ..	68 0	°66 0	°64 2	°66 0	78 0*	°66 0
Lathing and Ceiling.						
Lathers ..	78 0*	°75 2*	°79 9*	°73 4*	84 0*	68 0*
Metal Ceilings ..	68 0	°74 0*	°79 9*	..	..	50 0*
Masonry.						
Masons ..	°77 11 to 81 7	°71 6*	°80 8	°77 0	84 0*	°72 0
Painting (House) and Glazing.						
Glaziers ..	79 6	°73 4	°74 3	°66 0	72 0	66 0
Painters ..	79 6	°73 4	°74 3	°66 0	72 0	66 0
Paperhangers ..	79 6	°73 4	°74 3	°66 0	72 0	66 0
Signwriters ..	87 6	°73 4	°74 3	°66 0	72 0	66 0
Plastering.						
Fibrous Plaster Fixers ..	84 0	°66 0	°79 9	..	..	..
Plasterers (Surface) ..	84 0	°80 8 to 84 4	°79 9	°73 4	78 0	76 0
„ (Sewer or Tunnel) ..	88 0	°89 10	°88 11 to 93 6	°85 4	..	..
Plumbing and Gasfitting.						
Galvanized Iron Workers ..	80 0	°80 8	°75 2	76 0	78 0	63 0 to 78 0
Gasfitters ..	80 0	°80 8	°75 2	°69 8	78 0	78 0
Plumbers ..	80 0	°80 8	°75 2	°73 4	78 0	69 0 to 80 0
Roofing.						
Shinglers ..	84 0	°93 6	°79 9*	..	..	..
Slaters ..	84 0	°93 6	°79 9*	72 0*	72 0*	66 0*
Tilers ..	84 0	°93 6	°79 9*	72 0*	72 0*	66 0*
Tile Laying.						
Tile Layers ..	78 0	°77 0	°79 9	°84 0*	..	77 0*
Tuckpointing.						
Tuckpointers ..	72 0	°71 6	°85 3	°84 0*	72 0*	°71 6*

† The rates of wage quoted for Builders' Labourers for Sydney are those payable under State Award. The rates quoted for Perth are the ruling or predominant rates, while those for Melbourne, Brisbane, Adelaide, and Hobart are the rates fixed by the Award of the Commonwealth Arbitration Court.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
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GROUP VII.—BUILDING.—*continued.*

	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Water Supply and Sewerage.						
Carpenters	80 0	80 8	..	78 0*	72 0	66 0 & 78 0*
Concrete workers	69 0	72 0	71 6	57 0	63 6	63 0*
Labourers	63 0	57 0*	66 0	54 0	57 6	60 0 & 63 0*
Miners (Sewer)	4 ^s 77 11 & 85 6	68 0 & 72 0	88 0	..	66 6	69 0*
Pipejoints and Setters ..	66 0 & 70 6	68 0	66 0	60 0	66 6	69 0*
Timbermen	70 6 & 75 6	..	88 0	57 0	66 6	66 0*
Toolsharpeners	66 0	68 0	78 0	57 0 & 63 0*	66 6	66 0*

GROUP VIII.—MINING.

Industry and Occupation.	N.S.W.	Victoria.	Q land.	S. Aust.	W. Aust.	Tasmania.
Coal Mining.†	s. d.	s. d.	s. d.		s. d.	s. d.
Blacksmiths	70 0 to 84 0	77 4 to 80 6	88 0 & 91 0		..	65 0 to 79 6
Bracemen	72 0 to 73 9	64 9 to 77 5	71 3 & 86 10½		..	..
Carpenters	72 0 to 88 0	77 4 to 82 9	82 0 & 83 0		..	65 0
Deputies	84 0 to 99 0	92 10 to 104 6	91 0 & 94 4½		..	83 0 & 84 0
Engine Drivers (Winding and Loco.)	76 0 to 88 0	75 5 to 84 0	84 0		1281 0 & 84 0	..
Engine Drivers (Other) ..	69 0 to 80 0	69 0	75 10	Not Mined.	..	69 0 to 87 0
Labourers (Surface)	65 5 to 69 0	62 0 to 64 9	65 4½ & 71 9		73 0	60 0 to 65 0
„ (Underground)	65 6 to 72 0	64 9	67 6 & 75 7½		..	..
Miners (Machine)	†	†	†		†	..
„ (Manual) Dry Work ..	†	†	†		†	†
„ „ Wet Work	†	†	†		..	†
Platmen or Banksmen	72 0 to 75 6	79 0 to 85 1	65 4½ to 79 4½		84 0	60 0
Shaftsinkers (Dry Work) ..	†	†	91 0 & 96 4½		†	†
„ (Wet Work)	†	†	99 0 & 104 3		†	†
Shiftmen (Dry Work)	65 6 to 93 0	79 0 to 85 1	83 0 & 90 9		96 0	77 6
„ (Wet Work)	65 6 to 93 0	86 5	91 0 & 98 3		..	..

† Piece-work rates. ‡ The rates of wage quoted are those awarded by the special tribunal appointed under the War Precautions Act. The rates came into force on the 1st January, 1917. The hours of labour for coal miners in the Commonwealth were fixed by the tribunal as follows:—Eight hours bank to bank inclusive of one half hour for meal time, on Monday, Tuesday, Wednesday, Thursday, and Friday, and six hours bank to bank, inclusive of one half hour for meal time, on Saturday, Sunday, and holidays. The customary number of shifts per fortnight is eleven, the collieries not working on pay Saturday.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.
GROUP VIII.—MINING.—<i>continued.</i>						
Coal Mining†—<i>continued.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Shotfirers	78 0 to96 6	..	83 0	..	96 0	..
Shovellers	65 6 to69 0	64 9	..	..	85 0	..
Skip Repairers	65 6 to73 0	61 6 to64 9	..	..	..	65 0
Strikers	60 0 to68 6	61 6 to64 9	..	..	..	..
Timbermen	78 8 to85 6	79 2 to90 0	83 0	..	84 0	..
Weighmen	73 2 to80 0	69 7 to86 4	..	..	84 0	72 0
Wheelers	63 0 to75 6	72 0 to75 6	72 0 & 77 4½	..	84 0 to91 0	61 6
Gold and Other Mining (Except Coal).§||						
Battery Feeders	54 0 to72 0	54 0 & 58 0	61 5 to84 4	..	69 0 to79 6	48 0 to60 0
Bracemen	57 0 to76 6	59 0 & 60 6	63 3 to89 10	69 0 & 78 0*	72 0 to82 6	54 0 to69 0
Engine Drivers (Stationary)	66 0 to81 0	60 0 to75 0	67 4 to110 0	79 6 & 82 6*	79 6 to93 0	60 0 to78 0
Engine Drivers (Winding and Loco.)	78 0 to90 0	72 0 to78 0	78 1 to121 0	91 6	85 6 to96 0	69 0 to84 0
Firemen	60 0 to78 0	57 0 to72 0	67 4 to95 4	70 6 & 75 0*	69 0 to84 0	60 0 to66 0
Labourers	54 0 to72 0	54 0 to59 0	54 1 to84 4	60 0 & 63 0*	67 6 to78 0	48 0 to69 0
Miners (Dry Work)	60 0 to81 0	68 0 to72 0	73 4 to89 10	..	73 6 to87 0	54 0 to78 0
„ (Wet Work)	66 0 to87 0	69 0 to78 0	80 8 to98 1	..	79 6 to93 0	60 0 to84 0
„ (Machine).. ..	60 0 to94 6	60 0 to74 0	73 4 to98 1	..	76 6 to91 6	63 0 to78 0
Platmen	57 0 to76 6	59 0 & 60 6	63 3 to89 10	69 0 & 78 0*	72 0 to82 6	54 0 to69 0
Shaft Sinkers (Dry Work)	63 0 to81 0	66 0 to74 0	73 4 to98 1	..	76 6 to91 6	60 0 to78 0
„ „ (Wet Work)..	69 0 to87 0	72 0 to80 0	80 8 to98 1	..	82 6 to97 6	66 0 to84 0
Shift Bosses	63 0 to88 6	64 0 to70 0	90 0 to109 1	84 0 & 87 0*	90 0 to120 0	66 0 to90 0
Timbermen	63 0 to90 0	64 6 to72 6	73 4 to98 1	78 0 & 93 0*	78 0 to93 0	64 6 to81 0

† The rates of wage quoted are those awarded by the special tribunal appointed under the War Precautions Act. The rates came into force on the 1st January, 1917. The hours of labour for coal miners in the Commonwealth were fixed by the tribunal as follows:—Eight hours bank to bank, inclusive of one half hour for meal time, on Monday, Tuesday, Wednesday, Thursday, and Friday, and six hours bank to bank, inclusive of one half-hour for meal time, on Saturday, Sunday, and holidays. The customary number of shifts per fortnight is eleven the collieries not working on pay Saturdays.

‡ Contract work. § South Australian rates from 1st January, 1919. ¶ The number of hours constituting a full week's work in the mining industry is as follows:—N.S.W., Victoria and W. Australia—Miners and others underground, 44 hours; engine-drivers and workers aboveground, 48 hours. Queensland—Central Division—Miners and others underground work three shifts of 48, 44 and 40 hours each week, payment to be made as though 48 hours had been worked each week; engine-drivers and others above ground, 48 hours. Mt. Perry—Miners, etc., 46 hours; engine-drivers, etc., 44 and 48 hours. Other Districts—Miners, etc., 44 hours; engine-drivers, etc., 44 and 48 hours. South Australia—Miners and others underground, 44½ hours day shift, 40 hours night shift; engine-drivers and others above ground, 48 hours. Tasmania—Miners, etc., 44 and 48 hours; engine-drivers, etc., 48 hours.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP IX.—RAILWAY AND TRAMWAY TRANSPORT.						
Railways.†	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Engine Drivers (Loco.)—‡						
(1st Class)	96 0	96 0	98 0	96 0	96 0	79 6
.. (2nd ..)	90 0	84 0	to 108 0 92 0	90 0	90 0	73 6
.. (3rd ..)	84 0	to 90 0 75 0	to 102 0 86 0	84 0	84 0	to 76 6 70 6
.. (4th ..)	79 0	to 84 0 75 0	to 96 0 80 0	78 0	78 0	& 73 6 67 6
.. (5th ..)	74 6	to 84 0 ..	to 90 0 80 0	75 0	72 0	64 6
Firemen (1st Class)‡	.. 70 0	69 0	70 0	72 0	72 0	57 0
.. (2nd ..)	.. 65 6	66 0	to 80 0 70 0	67 6	66 0	54 0
.. (3rd ..)	.. 60 6	60 0	to 80 0 66 0	63 0	60 0	51 0
Guards (1st Class)	.. 75 0	& 63 0 78 0	to 76 0 88 0	75 0	} 66 0 }	69 0
.. (2nd ..)	.. 62 6	66 0	to 100 0 80 0	63 0		& 72 0
.. (3rd ..)	.. 60 0	to 72 0 60 0	to 94 0 76 0	to 72 0 60 0		63 0
Porters .. ..	.. 60 0	to 66 0 60 0	to 86 0 64 0	60 0		& 66 0
Shunters (1st Class)	.. 75 0	to 66 0 78 0	to 76 0 90 0	69 0		57 0
.. (2nd ..)	.. 63 0	to 84 0 72 0	to 100 0 82 0	66 0	66 6	54 0
.. (3rd ..)	.. 60 0	to 69 0 66 0	to 92 0 78 0	63 0	..	51 0
.. (Ordinary)	.. 60 0	& 63 0 60 0	to 88 0 72 0	60 0	60 6	..
Signalmen (Special)	.. ..	78 0	to 82 0 86 0	..	84 6	..
.. (1st Class)	.. 75 0	to 89 0 72 0	to 89 0 84 0	78 0	75 6	57 0
.. (2nd ..)	.. 72 0	& 78 0 69 0	to 94 0 79 0	66 0	69 6	& 60 0 51 0
.. (3rd ..)	.. 69 0	66 0	to 89 0 73 0	to 72 0 60 0	63 6	& 54 0 ..
.. (4th ..)	.. 65 0	60 0	to 83 0 68 0	60 0	60 6	..
		& 63 0	to 78 0			

† The hours of labour for railway employees are 48 per week (in N.S.W. 96 per fortnight), except in the following cases:—Victoria—Porters, 54 hours. S. Australia—Porters and signalmen, 48 to 57 hours; and Tasmania—Guards, porters, shunters and signalmen, 54 hours. Owing to the difference in the classification of grades of railway employees in the various States, only minimum and maximum rates are quoted, excluding those for foremen. ‡ In N.S.W. the rates of wage for 1st class locomotive drivers correspond to those fixed for drivers driving express passenger or mail trains; 2nd to 5th class correspond to the rates of wage fixed for different lengths of service. The classification of locomotive drivers and firemen employed in the Victorian Railway Service fixes different rates of wage for the following grades of service:—(1) Country Passenger Service; (2) First-grade Suburban or Mixed Train Service; (3) Second grade Suburban or Mixed Train Service; and (4) Goods or Switching Service. The rates of wage for these services have been taken as corresponding to the 1st, 2nd, 3rd, and 4th Class Classification in the other States, with the exception that firemen for only three classes of service are graded.

See also explanatory notes *re* hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP IX.—RAILWAY AND TRAMWAY TRANSPORT.—<i>continued.</i>						
Tramways (Electric and Cable).†	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Car Washers or Cleaners ..	60 0	60 0	64 0	60 0	57 6	57 0
Conductors (1st Year) ..	60 0	to 66 0 & 63 0	60 0	60 0	& 63 6 63 6	57 0
" (2nd ") ..	61 0	63 0 & 66 0	63 0	63 0	63 6	57 0
" (3rd ") ..	62 6	66 0 & 69 0	72 6	66 0	63 6	57 0
Firemen (Four Fires) ..	67 0	72 0	70 0	66 0	67 6*	..
" (Less than 4 Fires)	62 6	69 0	70 0	..	64 6*	..
Horse Drivers ..	to 67 0 60 0	63 0 & 66 0	63 0	64 0	2 ^s 63 6	57 0
Labourers ..	60 0	to 66 0 66 0	66 0	60 0	57 6	57 0
Lamp Trimmers ..	60 0	66 0	..	..	..	..
Maintenance Men ..	60 0	to 66 0 60 0	66 0	63 0	57 6	60 0
Motormen or Gripmen						
1st Year ..	62 6	60 0 & 63 0	60 0	60 0	57 6 & 63 6	57 0
2nd " ..	65 0	63 0 & 66 0	63 0	63 0	63 6	60 0
3rd " ..	67 6	66 0 & 69 0	72 6	66 0	63 6	63 0
Night Watchmen ..	60 0	60 0 & 72 0	3 ⁷ 69 3	60 0	67 6‡	57 0
Overhead Wiremen—						
(Leading) ..	83 0	69 0	80 0	73 0	69 6	63 0
(Other) ..	& 89 0 74 0	66 0	68 3	63 0	57 6	60 0
Pitmen ..	& 80 0 68 0	69 0	71 6 & 83 0	69 0	60 6	63 0
Signalmen ..	66 0	72 0	63 3	66 0	..	..
Tower Wagon Drivers—						
(Horse) ..	to 72 0 2 ^s 61 6	63 0 & 66 0	63 0	64 0	2 ^s 63 6	61 0
(Motor) ..	2 ^s 67 0	..	..	69 0	..	..
Track Cleaners ..	60 0	60 0	60 6	60 0	57 6	57 0
Trimmers or Fuelmen ..	60 0	to 66 0 ..	64 0	60 0	60 0*	..

GROUP X.—OTHER LAND TRANSPORT.

Carrying (Merchandise).						
Carriers (One Horse) ..	4 ^s 60 6	1 ⁷ 61 0	2 ² 61 0	1 ⁷ 61 0	61 0	1 ⁷ 61 0
" (Two Horses) ..	4 ^s 65 6	1 ⁷ 66 0	2 ² 66 0	1 ⁷ 64 0	66 0	1 ⁷ 66 0
" (Three Horses) ..	4 ^s 69 6	1 ⁷ 68 0	2 ² 69 0	1 ⁷ 65 0	68 0	1 ⁷ 68 0
Corporation Carters—						
One Horse ..	57 0	1 ⁷ 61 0	60 0	61 0	61 0	65 0
Two Horses ..	..	1 ⁷ 66 0	60 0	64 0	66 0	70 0
Jinkers (One Horse) ..	4 ^s 60 6	1 ⁷ 69 0	2 ² 69 0	61 0	69 0	1 ⁷ 69 0
" (Two Horses) ..	4 ^s 65 6	1 ⁷ 74 0	2 ² 74 0	64 0	74 0	1 ⁷ 74 0
Sanitary Carters ..	65 0	1 ⁷ 65 0	1 ⁷ 65 0	..	65 0	65 0
		to 75 0			to 75 0	to 75 0

† For Sydney and Perth the wages quoted are those determined by State Awards. For Melbourne, Adelaide, and Hobart the rates are those specified in agreements registered under the Commonwealth Conciliation and Arbitration Act. For Brisbane the rates quoted are those specified in an unregistered agreement. ‡ Number of hours per week not regulated.

See also explanatory notes *re* hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP X.—OTHER LAND TRANSPORT.—<i>continued.</i>						
Carrying (Merchandise)—<i>continued.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Stable Hands	2 ⁹ 60 6 & 65 6	1 ⁸ 60 0	2 ⁵ 60 0	1 ⁷ 60 0	60 0	1 ⁸ 60 0
Tip Dray Drivers	2 ⁹ 60 0 & 65 0	1 ⁷ 61 0	2 ² 61 0	..	61 0	61 0 & 66 0
Motor Lorries and Waggon under 3 tons carry capacity	1 ⁸ a65 0 to 74 0	66 0 & 70 0	65 0 to 70 0	65 0 & 70 0	66 0 & 70 0	66 0 & 70 0
3 tons & over carry capacity	1 ⁸ a79 0	74 0	73 0 & 75 0	65 0 & 70 0	74 0	74 0
Carrying (Passenger).						
Bus or Coach Drivers (Horse) .. ..	..	2 ⁵ 57 0	..	54 0	..	3 ⁸ c42 0
Chauffeurs .. ..	..	3 ³ 55 0	2 ⁸ 60 0	..	..	..
Lift Attendants.						
Goods	60 0	56 0	65 0	54 0*	61 0*	3 ³ 45 0*
Passenger	60 0	56 0	63 0 & 65 0	54 0*	61 0*	3 ³ 45 0*

GROUP XI.—SHIPPING, WHARF LABOUR, ETC.

Shipping (Ferryboats).						
Deck Hands	55 6 & 58 0	..	..	..	..	1 ⁴ 44 11
Engineers	72 0 to 97 6	..	2 ⁵ 80 0 & 85 0	..	..	1 ⁸ 72 3
Firemen	58 0 & 61 7	..	2 ⁵ 70 0	..	..	1 ⁹ 52 0
Masters	72 0 to 97 0	..	2 ⁵ 80 0 & 85 0	..	12-25 ⁷ 0 0 to 80 0	68 0
Shipkeepers	8-3 ⁷ 57 6 to 62 6	..	..	..	..	..
Towing (Tug Boats).						
Engineers	2 ⁵ 85 0	90 0	2 ⁵ 80 0	2 ⁵ 64 6 to 80 0	..	..
Firemen	220 0||†	69 3 & 71 6	2 ⁵ 60 0	2 ⁴ 69 0	..	..
Masters	2 ⁵ 90 0	78 6 to 87 8	2 ⁵ 80 0	2 ⁵ 64 6 to 80 0	1 ⁹ 75 0	..
Waterside Working.						
Coal Lumpers (per hour) ..	2 0	1 9	2 1	1 10	1 9	1 9
Lightermen	66 0	63 0*	2 ⁵ 64 0	9 ⁶ 6 0	1 ² 60 0	..
Wharf Labourers (per hour)†	1 9	1 9.	1 9	1 9	1 9	1 9
Passenger Vessels (Intra- State).†						
Cooks (Chief) per month ..	3 ⁴ 205 0 to 315 0	300 0§	300 0§	300 0§	300 0§	160 0 & 300 0§
„ (Second) „ ..	3 ⁴ 175 0 to 215 0	190 0§	190 0§	190 0§	190 0§	130 0 & 190 0§
„ (Third) „ ..	3 ⁴ 175 0	150 0§	150 0§	150 0§	150 0§	..
„ (Ships) „ ..	3 ⁴ 215 0	..	..	..	..	..
Pantrymen	3 ⁶ 190 0	3 ⁶ 190 0	3 ⁶ 190 0	3 ⁶ 190 0	3 ⁶ 190 0	..
„ Assistant „ ..	3 ⁶ 150 0	3 ⁶ 160 0	3 ⁶ 160 0	3 ⁶ 160 0	3 ⁶ 160 0	..
Stewards	3 ⁶ 160 0 to 195 0	3 ⁶ 160 0	3 ⁶ 160 0 & 170 0	3 ⁶ 160 0 & 170 0	3 ⁶ 160 0 & 170 0	3 ⁶ 110 0 to 210 0

† Rates of wage quoted are in addition to victualling and accommodation. ‡ Rate of wage quoted is for other than special cargo. § Not more than 10 hours per day. || Per month.

See also explanatory notes *re* hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.
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GROUP XI.—SHIPPING, WHARF LABOUR, ETC.—*continued.*

Passenger Vessels (Inter-State).†	per month	Wages on Vessels of 4,000 tons Register and under.	s. d.		Wages on Vessels of over 4,000 tons Gross Register.	s. d.	
Bakers ..		**260	0		**280	0	
Barmen ..		3 ⁶ 170	0		3 ⁶ 170	0	
Butchers ..		**210	0		**230	0	
Cooks (Chief) ..		**330	0		*1360	0	
" (Second) ..		**250	0		**250	0	
" (Third) ..		**190	0		**190	0	
" (Ship's) ..		**220	0		**220	0	
Pantrymen ..		3 ⁶ 190	0		3 ⁶ 190	0	
Scullerymen ..		3 ⁶ 170	0		3 ⁶ 170	0	
Chief Saloon Steward ..		3 ⁶ 180	0		3 ⁶ 180	0	
Second ..		3 ⁶ 210	0		3 ⁶ 210	0	
Second Saloon ..		3 ⁶ 210	0		3 ⁶ 210	0	
Fore Cabin ..		3 ⁶ 190	0		3 ⁶ 190	0	
Bedroom and other Stewards ..		3 ⁶ 170	0		3 ⁶ 170	0	
All Vessels (Inter-State).† ‡				s. d.			
A.B. Seamen ..	per month			245		0	
Boatswains ..	"			265		0	
Donkeymen ..	"			305		0	
Firemen ..	"			285		0	
Greasers ..	"			285		0	
Lamp Trimmers ..	"			265		0	
Fuel Trimmers ..	"			245		0	
Marine Engineers.† ‡ ††		VESSELS.		VESSELS.			
		Under 100 N.H.P.		100 or more N.H.P.			
		s. d.		s. d.			
Chief ..	per month	460 0 to 510 0		530 0 to 840 0			
Second ..	"	420 0		420 0 to 560 0			
Third ..	"	380 0		380 0 to 480 0			
Fourth ..	"	..		330 0 to 420 0			
Fifth, Sixth, Seventh, and Eighth ..	"	..		310 0			
Merchant Service.† § ††		INTERSTATE PASSENGER VESSELS.		INTERSTATE CARGO VESSELS.			
		Lowest Class, 125 tons & under.		Highest Class, over 10,000 tons.		Lowest Class, 60 tons & under.	
		s. d.		s. d.		s. d.	
Masters ..	per month	460 0		1,360 0		380 0	
Officers (Chief) ..	"	360 0		520 0		300 0	
" (Second) ..	"	300 0		460 0		260 0	
" (Third) ..	"	..		400 0		..	
" (Fourth and Fifth) ..	"	..		260 0		..	

† Rates of wage quoted are in addition to victualling and accommodation. ‡ Minimum rates under the Commonwealth Award are classified according to nominal horse-power of vessels. § Minimum rates under the Commonwealth Award are classified for Interstate vessels, and for vessels within a State according to tonnage; the lowest and highest classes for Interstate passenger and cargo vessels are here given. †† Marine Engineers—Not more than 8 hours per day in the case where three or more engineers are employed, or not more than 12 hours per day where two engineers are employed, to be worked without payment for overtime. Masters and Officers—Ordinary length of duty in a day at sea or in port or partly at sea and partly at port shall be 8 hours. Five intervals of 24 consecutive hours leave to be allowed each master, officer or engineer each calendar month. ††† Not more than 8 hours per day. ** Not more than ten hours per day.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	N.S.W.	Victoria.	Q'land	S. Aust.	W. Aust.	Tasmania.
GROUP XII.—AGRICULTURAL, PASTORAL, ETC.						
Farming.†	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
General Hands*§	20 0	20 0	25 0	25 0	35 0	20 0
	to 35 0	to 30 0	to 35 0	to 40 0	to 40 0	to 25 0
Harvesters*§	40 0	40 0	48 0	45 0	45 0	30 0
	to 50 0	to 50 0	to 55 0	to 55 0	to 55 0	to 40 0
Milkers*§	25 0	25 0	25 0	25 0	35 0	20 0
	to 35 0	to 35 0	to 30 0	to 40 0	to 40 0	to 25 0
Ploughmen*§	30 0	30 0	25 0	25 0	35 0	20 0
	to 40 0	to 40 0	to 35 0	to 40 0	to 45 0	to 30 0
Chaffcutters (Portable)	..	66 0	..	..	..	3 060 0
„ (Stationary)	..	63 0	..	56 0	..	3 056 0
	..	..	..	to 65 10½	..	..
Threshers (Feeders)	..	..	..	..	..	3 065 0
„ (Machinists)	..	..	..	..	..	3 056 0
Gardening.‡						
Gardeners	72 0	61 0	74 6	60 0*	60 0	60 0*
	& 80 0					
„ (Labourers)	62 0	58 0	64 0	60 0*	60 0	48 0
						to 54 0*
Nurserymen	72 0	60 0	70 0*	63 0*	60 0	60 0*
	& 80 0					
„ (Labourers)	62 0	54 0	55 0*	60 0*	57 0*	48 0
						to 54 0*
Pastoral Workers.						
Cooks§	72 0	72 0	72 0	72 0	80 0	60 0
Shearers	30 0	30 0	30 0	30 0	27 6	28 0
per 100						
Shed Hands§	60 0	60 0	60 0	60 0	65 0	50 0
Wool Pressers§	80 0	80 0	80 0	80 0	100 0	60 0
Rural Workers.						
Fruit Harvesters	per hour	1 4½	..	1 2½	..	..
		to 1 7½		to 1 6½		

† Hours in the farming industry vary considerably, and no reliable particulars can be published.
 ‡ Melbourne rates from 4th January, 1919. § Rates of wage quoted are in addition to Board and Lodging provided. || 51 hours during harvest months, and 48 hours during other than harvest months.

GROUP XIII.—DOMESTIC, HOTELS, ETC.

NOTE.—The rates of wage specified for employees in Clubs, Hotels and Restaurants represent the weekly cash payment where Board and Lodging are not provided. If Board and Lodging are provided the following amounts, fixed by Industrial Tribunals, may be deducted from the undermentioned rates of wage:—*Sydney*, 11s. to 19s. (according to class of establishment); *Melbourne*, 14s.; *Brisbane*, 15s.; *Adelaide*, 14s. (Restaurants); and 15s. (Hotels and Clubs); *Perth*, 22s.; and *Hobart*, 15s. per week.

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
Clubs (Residential).†						
Barmen	2 560 0	2 560 0	2 560 0	2 560 0	2 565 0*	3 145 0
						& 50 0
Billiard Markers	3 060 0	3 145 0	2 563 0	2 554 0	2 847 0*	3 145 0
		& 50 0				
Lift Attendants	3 060 0	2 551 4	63 0	2 554 0	..	..
			& 65 0			
Porters (Day Work)	3 060 0	3 144 0	2 563 0	2 554 0	2 847 0*	3 135 0
„ (Night Work)	3 060 0	3 146 6	2 563 0	2 554 0	2 854 0*	3 137 6

† Sydney rates from 3rd January, 1919.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—continued.

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP XIII.—DOMESTIC, HOTELS, ETC.—continued.						
Cooks (Hotels, Clubs, etc.)||	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Chefs	69 9†	3159 0	81 6§	75 0††	2883 0	3150 0
	to114 0	to79 0	& 86 6	to110 0	& 92 0	to95 0
Cooks (Second)	61 0†	3157 0	69 0§	64 0††	2867 0	3140 0
	to84 0	to62 0		to85 0	& 72 0	to75 0
„ (Third)	60 0†	3154 0	69 0§	60 0††	2862 0	3140 0
	to74 0	to57 0		to70 0		to60 0
Kitchenmen	60 0†	3144 0	63 0§	54 0††	2854 0	3135 0
Hairdressing.						
Full Hands	1966 9	1970 0				
Hairdressers	1963 0	1960 0	66 0	1962 6	2260 0	2855 0*
Hotels.||						
Barmen	2560 0	2560 0	2560 0	2560 0	2565 0	3145 0
						& 50 0
Billiard Markers	3160 0	3145 0	2563 0	2854 0	2847 0	3137 6
		& 50 0				
Handymen	3160 0	3139 0	2563 0	2854 0	2847 0	3130 0
						& 35 0
Lift Attendants	3160 0	2851 4	63 0	2854 0		
			& 65 0			
Porters (Day Work)	3160 0	3144 0	2563 0	2854 0	2847 0	3135 0
„ (Night Work)	3160 0	3146 6	2563 0	2854 0	2854 0	3137 6
Waiters (Head)	2865 6	3156 0	2568 0	2865 0		3140 0
						to55 0
„ (Others)	2860 0	3148 0	2563 0	2854 0	2859 6	3135 0
						to45 0
Restaurants.||						
Pantrymen	60 0†	3144 0	63 0	54 0	2854 0	3140 0
Waiters	60 0†	3148 0	63 0	54 0	2859 6	3135 0
				& 56 6		to45 0

GROUP XIV.—MISCELLANEOUS AND GENERAL LABOUR.

Bill Posting.						
Billposters	60 0	57 6	57 6	555 0	60 0	60 0*
			to65 0*	to60 0*	to65 0*	
Factory Engine Driving.						
Engine Drivers (Stationary)						
1st Class	73 6	66 0	88 0	69 0	75 0	72 0*
	& 75 0	to75 0		to75 0		to75 0
2nd Class	71 6	60 0	80 0	66 0	72 0	66 0*
	& 72 0	to72 0		to72 0		to72 0
3rd Class	67 0	57 0	72 0	60 0	69 0	63 0*
	& 69 0	to69 0		to69 0		to69 0
Firemen (1st Class)	66 0	60 0	70 0	66 0	66 0	60 0*
	& 67 0	to66 0				to64 6
„ (2nd Class)	62 6	57 0		58 0	64 6	57 0*
	to64 6	to64 6		to64 6		to63 0
Greasers	62 6	54 0	70 0	54 0	63 0	54 0*
	& 63 0	to63 0		to63 0		to63 0
Trimmers	62 6	54 0	64 0	54 0	60 0	54 0*
		to60 0		to60 0		to60 0

† The hours of cooks, etc., in Sydney are 48, 55, 57, and 58 per week, according to class of establishment.
 ‡ 48 and 58 hours per week, according to class of establishment. § 48 and 54 hours per week, according to class of establishment. || Sydney rates from 3rd January, 1919. †† 48 and 56 hours per week, according to class of establishment.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP XIV.—MISCELLANEOUS AND GENERAL LABOUR.— <i>continued.</i>						
Fuel Distribution (Coal and Coke).	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Baggers and Loaders ..	62 0	70 0	..	48 0	..	59 0*
Carters (One Horse) ..	62 0	1 ⁸ 61 0 & 62 0	1 ⁹ 61 0	48 0	61 0	1 ⁷ 61 0
„ (Two Horses) ..	67 0	1 ⁸ 66 0 & 67 0	1 ⁹ 66 0	50 0	66 0	1 ⁷ 66 0
Trimmers ..	62 0	84 0	..	48 0	..	62 0*
Fuel Distribution (Firewood).†						
Carters (One Horse) ..	62 0	1 ⁸ 60 0	1 ⁹ 61 0	48 0	61 0	1 ⁷ 61 0
„ (Two Horses) ..	67 0	1 ⁸ 65 0	1 ⁹ 66 0	50 0	66 0	1 ⁷ 66 0
Other Adults ..	62 0	1 ⁷ 60 0	..	49 0	..	..
Sawyers ..	62 0	65 0	60 0 & 65 0*	57 6	..	60 0*
Yardmen ..	62 0	1 ⁷ 60 0	..	48 0	..	54 0*
Lamp Lighting.						
Lamp Lighters ..	2 ⁹ 63 0	63 0	60 0	61 6	55 0	59 0‡
Marine Stores.						
Bottle Washers ..	57 6	60 0	60 0	60 0	63 0	..
Foremen ..	65 0*	63 0	63 0	63 0	..	..
General Hands ..	57 6	57 0	60 0	60 0	63 0	..
Municipal.						
Labourers ..	62 0 & 64 0	61 0 to 67 6*	64 0	63 0	60 0	60 0*
Street Sweepers ..	57 0	61 0 to 67 0*	64 0	63 0	60 0	60 0*
Musicians.						
Orchestral ..	1.1 ^a 60 0 to 80 0	1.1 ^a 60 0 & 75 0	1.1 ^a 60 0 & 75 0	1.1 ^a 60 0 & 75 0	1.1 ^a 60 0 & 75 0	1.1 ^a 60 0 & 75 0
Shop and other Assistants.						
Boot Salesmen§||	60 0 to 66 6	48 0 to 67 6	47 6 to 68 0	1 ^a 64 0	62 6	1 ^a 40 0 to 70 0*
Chemists' Assistants ..	70 0	1 ⁸ 50 0 to 90 0	63 0 to 90 0	2 ² 55 0 to 80 0	..	..
Clerks ..	55 6 to 63 0	62 0	1 ⁷ .1 ⁹ 40 0 to 60 0	..	..	..
Confectionery Salesmen ..	2 ⁵ 52 6	..	47 6 to 68 0¶	..	62 6	..
Drapery Salesmen§	60 0 to 66 6	60 0 to 72 0	47 6 to 68 0	1 ^a 64 0	62 6	1 ^a 40 0 to 75 0*
Fruit Salesmen ..	2 ⁵ 52 6	..	47 6 to 68 0¶	..	..	..
Furniture Salesmen§	60 0 to 66 6	72 6	47 6 to 68 0	1 ⁷ 65 0*	65 0	1 ^a 40 0 to 75 0*
Grocery Salesmen ..	60 0 to 65 0	55 0 to 65 0	47 6 to 68 0	1 ⁷ 55 0 & 61 0	62 6	60 0
Newsagents' Assistants ..	55 6 to 61 0	..	47 6 to 68 0¶	1 ^a 64 0	62 6	..
Railway Bookstall Assistants	55 6 to 61 0	..	47 6 to 68 0¶	..	62 6	..
Tobacconists' Salesmen** ..	60 0 & 61 0	..	47 6 to 68 0	..	62 6	..

† Melbourne rates from 25th January, 1919. ‡ Number of hours per week not regulated.
 § Sydney rates from 7th January, 1919. || Melbourne rates from 6th January, 1919. ¶ Daily limitation of hours not regulated. ** Sydney rates from 3rd January, 1919.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP XIV.—MISCELLANEOUS AND GENERAL LABOUR.—<i>continued.</i>						
Shop and other Assistants—<i>continued.</i>						
Clothing (Men's).						
Collectors, Doormen, and Travellers†	60 0 to 66 6	75 0	..	..	67 6	..
Departmental Managers ..	70 0 & 75 0	80 0	..	..	..	..
Parcels Officemen .. ..	..	62 6	..	..	61 0	..
Salesmen†	60 0 to 66 6	50 0 to 75 0	47 6 to 68 0	1 64 0	62 6	1 240 0 to 75 0*
Hardware.						
Managers (Branch)	70 0 & 75 0	80 0	..	1 100 0	..	..
„ (Departmental)	70 0 & 75 0	85 0 to 100 0	..	1 785 0 & 90 0	90 0 to 100 0*	1 590 0
Salesmen (Junior)	29 0 to 44 0	50 0 to 68 0	..	1 742 6 to 57 6	..	1 540 0 to 55 0
„ (Outside) .. ..	..	80 0	..	1 750 0 to 72 6	..	..
„ (Senior)	60 0 to 66 6	74 0	47 6 to 68 0	1 760 0 & 63 0	65 0	1 560 0
Storemen—Packing, Cleaning, etc.						
Night Watchmen	40 60 0	3 760 0	3 766 0	2 860 6 & 68 0	56 0	3 747 6 to 70 0*
Office Cleaners	60 0	56 0	63 0	..	61 0*	..
Packers (General)‡	§ 63 0 to 65 6	66 0	1 065 0 & 67 6	|| 58 0 & 65 0	62 6	57 6
Storemen (General)†	§ 61 6 to 64 0	66 0	1 065 0 & 67 6	|| 58 0 & 65 0	61 0	57 6
Wholesale Grocery.**						
Packers (Head)	1 366 6 to 91 0	60 0 to 75 0	1 069 0 to 94 0	71 0	63 0*	66 6
„ (Others)	1 363 0	58 0	1 065 0	58 0	62 6	59 0
Storemen (Head)	1 366 6 to 91 0	65 0 to 85 0	1 069 0 to 94 0	71 0	73 0*	66 6
„ (Others)	1 361 6	65 0	1 065 0	58 0	61 0	59 0
Wholesale Hardware.**						
Packers	1 363 0	65 0	1 065 0	1 758 0	62 6	1 545 0 to 55 0
Storemen	1 361 6	65 0	1 065 0	1 758 0	61 0	1 545 0 to 55 0
Surveying.						
Surveyors' Cooks (for 7 days) ..	60 0	2 870 0*	70 0	2 570 0*	63 0 to 70 0	..
„ Foremen	63 0	66 0*	..	..	72 0	..
„ Labourers	57 6	60 0*	60 0	60 0*	60 0	..

† Sydney rates from 7th January, 1919. ‡ Sydney rates from 3rd January, 1919. § 48 hours and 47½ hours per week. || 50 hours per week in shops and 48 and 50½ hours per week other than in shops. ** Sydney rates from 17th January, 1919. ¶ Number of hours per week not regulated.

See also explanatory notes re hours, etc., on page 1107.

MINIMUM RATES OF WAGE FOR ADULT FEMALE WORKERS IN THE MAIN OCCUPATIONS IN THE CAPITAL TOWN OF EACH STATE FOR A FULL WEEK'S WORK, AT 31st DECEMBER, 1918.

(See Explanatory Note at top of page 1107.)

Industry and Occupation.	Sydney.†	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP III.—FOOD, DRINK, TOBACCO, ETC.						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Biscuit Making. ‡						
Adult Females	25 0	31 0	32 6	27 6*	20 0 to 32 6*	..
Butter Making.						
Adult Females .. ..	..	33 0	..	30 0*	..	..
Cheese Making.						
Adult Females .. ..	..	33 0	..	25 0*	..	..
Confectionery.						
Chocolate Dippers	27 0	30 0	32 0	25 0	20 0 to 22 6	..
Other Adults	24 0 to 27 0	28 0	32 0	25 0	20 0 to 22 6	20 0 to 25 0*
Jam Making and Preserving.						
Fillers	28 0 & 37 0	33 6	30 0	25 0	20 0 to 30 0*	27 0 to 22 6
Other Adults	26 0	28 0	30 0	25 0	..	..
Pastry Cooks.						
Adult Females	25 6 to 45 0	27 0	30 0	..	..	..
Tea Packing.						
Head Women	¹ 23 5 0	35 0	¹ 032 6 to 43 0	..	..	40 0
Other Adults	¹ 22 7 0	29 0	¹ 030 0	30 0*	..	27 6
Tobacco Working (Cigars).						
Ringers	27 6	24 0	..	25 0*	..	..
Wrapper Leaf Strippers	27 6	35 0	..	30 0*	..	..

GROUP IV.—CLOTHING, HATS, BOOTS, ETC.

Bootmaking.						
Machinists (Wax Thread)	42 0	42 0	34 0	41 0	..	42 0
Other Adults	34 0	34 0	34 0	33 0	34 0	34 0
Dressmaking.						
Adult Females	¹⁰ a27 6 to 35 0	28 0	¹⁰ a32 6	29 0	30 0 to 45 6 to 34 0	¹ 225 0 to 35 0*
Dyers and Cleaners.						
Adult Females	30 0 to 40 0*	28 6 to 40 0	⁶ 24 6 to 35 0*	25 0 to 35 0*	30 0 to 35 0*	..
Hat Making (Straw).						
Finishers	¹ 025 0	30 0*	¹² a20 0 to 22 6*	..	..	..
Machinists	¹ 030 0	35 0*	¹² a37 6*	..	..	..

† The rates of wage quoted in this column are those prescribed by Awards and Industrial agreements. It is pointed out, however, that the Board of Trade issued a declaration, gazetted 20th December, 1918, fixing the minimum wage to be paid to adult females in the Metropolitan Area at 7½d. per hour, 5s. per day, or 30s. per week.

‡ Melbourne rates from 17th January, 1919.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.†	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP IV.—CLOTHING, HATS, BOOTS, ETC.—<i>continued.</i>						
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Millinery.						
Adult Females	^{10a} 35 0	30 0	25 0 to30 0*	25 0	30 0	25 0*
Shirt Making.						
Adult Females	^{10a} 32 6 ^{11a}	27 6	¹ 27 6	29 0 to42 6	30 0	25 0*
Tailoring (Order).‡						
Machinists (Coat Hands) ..	35 0	30 6	36 0	30 0	40 0	25 0 to47 6
Machinists (Trousers, Vest Hands)	31 0	30 6	32 6 & 36 0	30 0	40 0	25 0 to47 6
Tailoresses (Coat Hands)	38 0	32 6	36 0	32 6	45 0	32 6 to39 6
Tailoresses (Trousers, Vest Hands)	34 0	30 6	32 6	30 6	35 0	30 6
Tailoring (Ready-made).						
Machinists (Coat Hands) ..	25 0	29 6	¹ 29 6	28 0	35 0	^{5b} 25 0
Machinists (Trousers, Vest Hands)	23 0	29 6	¹ 28 0	28 0	32 6	^{5b} 25 0
Tailoresses (Coat Hands) ..	29 6	29 6	¹ 29 6	27 6	32 6 & 40 0	^{5b} 25 0
Tailoresses (Trousers, Vest Hands)	28 0	28 0	¹ 28 0	25 0	30 0 & 35 0	^{5b} 23 6
Textile Working (Woollen Mills).§						
Comb Minders	31 0	33 0	30 0	27 6*	..	22 6
Drawers and Menders	35 0 & 40 0	33 0	30 0	27 6*	..	22 6
Gillbox Minders	31 0	33 0	30 0	27 6*	..	22 6
Other Adults	31 0	33 0	30 0	26 0	..	22 6
Warpers	35 0 & 40 0	36 6	38 0	to27 6* 35 0*	..	22 6
Weavers (Loom)	40 0	39 0	38 0	30 0 to35 0*	..	22 6
Tie Making.						
Machinists	30 0 to35 0*	20 0 & 22 6	..	..	..	..
Needlewomen	20 0 to30 0*	22 6 & 25 0	..	..	..	..
Pressers, Boxers, and others	20 0 to30 0*	20 0	..	..	..	..
Underclothing.						
Adult Females	^{10a} 22 6 to32 6	28 0 to33 0	25 0*	26 0	30 0*	25 0*
Waterproof Clothing.						
Garment Makers	} 32 6*	{ 31 0	..	..	..	..
Needlewomen			{ 31 0

† See footnote † on preceding page.

‡ The higher rates quoted in Tasmania are for treadle

machinists. § Melbourne rates from 6th January, 1919.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.†	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUPS I., II., V., AND VI.—PRINTING AND OTHER MANUFACTURES.						
Bedding and Furniture.	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Bedding Machinists ..	°33 0	33 0	°33 0	28 6	..	32 0
Mattress (Wire) Workers ..	..	43 0	..	25 6	..	32 0
Picture Frame Workers ..	°30 0	°30 0	..	..	..	..
Bookbinding.						
Folders ..	730 0	32 0	28 0	26 0	{ 25 0 to 30 0* }	} °27 6 °28 0
Sewers ..	732 0 & 37 0	34 6	28 0	26 0		
Brassworking.						
Coremakers ..	37 0	30 0	..	..	..	..
Other Adults ..	20 0	..	..	..	..	..
Brush Making.†						
Bass Broom Drawers ..	32 0	..	} 45 0	{ 21 0 21 0 21 0	..	..
Bench Drawers ..	32 0	30 0			..	..
Machinists (Treadle Knot)..	32 0	30 0			..	..
Candle Making.						
Forewomen ..	38 6	32 6	..	32 6	..	..
Cardboard Box Making.||						
Box Makers ..	32 6	32 0	1130 0	26 0*	20 0	..
		& 37 6	to 35 0*		to 30 0*	
Other Adults ..	32 6	30 0	1122 0	22 0*	20 0	..
			to 27 6*		to 30 0*	
Jewellers.						
Chainmakers ..	39 6	38 6	50 0	60 0§	..	..
	& 44 6					
Enamel Fillers ..	21 0	..	40 0	60 0§	..	..
	to 31 6					
Gilders ..	39 6	40 0	40 0	40 0§	..	..
		& 50 0				
Polishers ..	39 6	40 0	40 0	40 0§	..	..
		& 50 0				
Scratch Brushers ..	39 6	35 0	40 0	40 0§	..	..
Workers N.E.I. ..	44 6	58 0	40 0	60 0§	..	..
Leather Small Goods.						
Hand Stitchers ..	30 0	30 0	36 0	30 0	..	30 0
Other Adults ..	30 0	30 0	36 0	30 0	..	30 0
Paper Making.						
Adult Females ..	22 6	27 0	..	..	..	..
Paper Bag Making.						
Adult Females ..	28 0	25 0	20 0	25 0	..	..
		& 28 0	to 28 0*	& 27 6*		
Polish Making.						
Adult Females ..	20 0	32 6	..	32 6	..	..
	to 30 0*					
Portmanteau Making.						
Adult Females ..	30 0	30 0	36 0	30 0	30 0	30 0
Potteries.						
Adult Females ..	28 6	32 0	32 6	..	..	..

† See footnote † on page 1140. ‡ Melbourne rates from 11th January, 1919. § Hours of labour per week—48 (daylight), 45 (artificial light). || Sydney rates from 3rd January, 1919.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.†	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUPS I., II., V., AND VI.—PRINTING AND OTHER MANUFACTURES.— <i>continued.</i>						
Printing.	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Jobbing Office Assistants ..	728 0	32 0	28 0	26 0	20 0	27 6
Lithographing Feeders ..	730 0	32 0	28 0	26 0	to30 0*	27 6
Rubber Working.						
Adult Females	28 0	31 0	..	..	..	..
Saddlery and Harness Makers.						
Adult Females	30 0	30 0	36 0	30 0	30 0	30 0
Sail Making.						
Adult Females	30 0	30 0	22 6	32 0	25 0	..
			to37 6*		to40 0*	
Soap Making.						
Adult Females	27 6	32 6	..	32 6	..	..
Tent and Tarpaulin Makers.						
Machinists	27 6	30 0	27 6	32 0	25 0	..
	to32 6		to32 6		to40 0*	
Wickerworking.						
Adult Females	35 0	..	..	40 0	..	..

GROUP XIII.—DOMESTIC, HOTELS, ETC.

NOTE.—The rates of wage mentioned herein for employees in Hotels and Restaurants represent the weekly cash payment where Board and Lodging are not provided. If Board and Lodging are provided the following amounts, fixed by Industrial Tribunals, may be deducted from the undermentioned rates of wage: *Sydney*, 11s. to 19s. (according to class of establishment); *Melbourne*, 14s.; *Brisbane*, 15s.; *Adelaide* 14s. (Restaurants); and 15s. (Hotels); *Perth*, 22s.; and *Hobart*, 15s. per week.

Industry and Occupation.	Sydney.†	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
Hotels.‡	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Barmaids	1743 0	1744 0	1743 0	1760 0	65 0	135 0
Housemaids	2837 0	2832 0	2536 0	2835 0	1942 0	127 0
Laundresses	42 6	2840 0	41 0	40 0	1942 0	..
Waitresses (Head) ..	2838 0	2835 0	2541 0	2840 0	..	135 0
„ (Other)	2838 0	2832 0	2536 0	2835 0	1944 6	130 0
						& 35 0
Laundries.						
General Hands	21 0	25 0	30 0	20 0	36 0	24 0§
		to30 0*				
Machinists (Shirt and Collar)	25 0	28 0	30 0	20 0	42 0	24 0§
Sorters	25 0	26 0	30 0	22 0	36 0	24 0§
		to30 0*				
Starchers	25 0	24 0*	30 0	20 0	36 0	24 0§
Washers	25 0	24 0	30 0	20 0	36 0	24 0§
		to30 0*				
Office Cleaners.						
Adult Females	28 6	27 6	44 0	21 0*	..	15 0
	& 31 6		to48 0			to20 0*||

† See footnote † on page 1140.

‡ Sydney rates from 3rd January, 1919.

§ By Act of

Parliament, November, 1917.

|| No fixed hours.

See also explanatory notes re hours, etc., on page 1107.

WEEKLY RATES OF WAGE, ETC.—*continued.*

Industry and Occupation.	Sydney.†	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP XIII.—DOMESTIC, HOTELS, ETC.—<i>continued.</i>						
Restaurants.†	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Pantry Maids	34 3 to 37 9§	2 ² 31 0	35 0	31 6	1 ² 42 0	3 ¹ 30 0
Waitresses	33 6 to 41 3§	2 ² 32 0	35 0	34 0 & 39 0	1 ² 44 6	3 ¹ 30 0 & 35 0

GROUP XIV.—SHOP ASSISTANTS, CLERKS, ETC.

Clerks, etc.						
Cashiers	27 6 to 38 6	34 6	40 0 to 50 0	30 0*	37 6	20 0 to 30 0*
Clerical Assistants	27 6 to 38 6	39 0	40 0 to 50 0	25 0*	..	20 0 to 30 0*
Saleswomen.						
Boot¶	27 6 to 38 6	28 6 to 37 6	25 0 to 40 0	1 ² 25 0 to 31 6	37 6 & 40 0	20 0 to 30 0*
Drapery	27 6 to 38 6	28 6 to 37 6	25 0 to 40 0	1 ² 25 0 to 31 6	37 6 & 40 0	20 0 to 35 0*
Fruit and Confectionery	2 ² 20 0	..	25 0 to 40 0||	..	37 6	20 0 to 25 0*
News Agent and Bookstall	27 6 to 35 0	..	25 0 to 40 0||	1 ² 25 0 to 31 6	37 6	..
Tobacconists	30 0 to 42 6	..	25 0 to 40 0||	..	37 6	25 0 to 35 0*

† See footnote † on page 1140. ‡ Sydney rates from 3rd January, 1919. § Hours vary. 48 are worked in some establishments and 56 in others. ¶ Daily limitation of hours not regulated. ¶ Melbourne rates from 6th January, 1919.

See also explanatory notes *re* hours, etc., on page 1107.

§ 6. Industrial Disputes.

1. **General.**—Information with regard to the collection of particulars and methods of tabulation of industrial disputes involving stoppage of work has appeared in previous issues of the Year Book, and is also given in the Annual Reports of the Labour and Industrial Branch of this Bureau.

In the following tabulations particulars are included only with respect to the industrial disputes which commenced during any calendar year.** This course requires the elimination of such data as relate to disputes which commenced during an earlier period, but which remained unsettled during some portion of the succeeding year. On the other hand it necessitates the inclusion of the number of working days and wages lost during the following year in connection with disputes commenced during the calendar year to which the statistics relate.

2. **Comparative Summary of Disputes (involving Stoppage of Work), 1913 to 1918.**—The systematic collection of information as to industrial disputes (causing a stoppage of work) throughout the Commonwealth was first undertaken as from the 1st January, 1913, and particulars concerning disputes occurring during the year 1913 were published in Labour Report No. 5. The following table gives particulars of the number of industrial disputes which began in the years 1913, 1914, 1915, 1916, 1917, and 1918 respectively,

** Any tabulations as to causes, duration, etc., based on disputes which were in existence in any given year, and not on those which commenced in that year, would inevitably result in confusion, seeing that particulars relating to the same dispute would probably occur in two successive years.

together with the number of workpeople involved, the number of working days lost, and the total estimated loss in wages in each State and Territory comprising the Commonwealth :—

INDUSTRIAL DISPUTES IN EACH STATE AND TERRITORY.—COMPARATIVE PARTICULARS FOR 1913 TO 1918.

State or Territory.	Year.	No. of Disputes.	Establishments Involved in Disputes.	No. of Workpeople Involved.			No. of Working Days Lost.	Total Estimated Loss in Wages.
				Directly.	Indirectly.	Total.		
New South Wales	1913	134	466	25,647	14,364	40,011	468,957	£ 216,368
	1914	235	908	33,955	22,326	56,281	836,948	419,656
	1915	272	694	47,006	22,608	69,614	464,343	240,322
	1916	336	717	91,762	31,638	123,400	1,145,222	674,064
	1917	296	918	118,515	15,508	134,023	3,308,869	1,929,405
	1918	138	182	24,417	8,624	33,041	181,639	112,894
Victoria	1913	29	63	4,151	2,026	6,177	85,212	35,744
	1914	44	164	5,699	1,352	7,051	84,106	39,619
	1915	38	154	5,434	809	6,243	64,878	28,476
	1916	55	449	13,576	2,092	15,668	228,289	114,683
	1917	52	636	15,976	2,114	18,090	760,410	378,946
	1918	33	190	4,235	1,513	5,748	165,020	99,346
Queensland	1913	17	20	1,781	225	2,006	55,288	28,374
	1914	18	42	1,280	406	1,686	25,703	11,747
	1915	17	39	1,477	589	2,066	19,934	9,505
	1916	64	252	17,367	2,951	20,318	170,690	96,976
	1917	39	202	12,074	971	13,045	317,699	178,125
	1918	84	696	8,803	1,875	10,678	183,883	131,142
South Australia	1913	9	13	272	16	288	2,412	1,029
	1914	13	45	616	575	1,191	15,275	7,677
	1915	15	25	1,314	169	1,483	19,877	14,442
	1916	21	45	1,037	606	1,643	10,583	6,004
	1917	24	44	3,958	146	4,104	57,446	30,306
	1918	17	25	1,576	429	2,005	18,276	10,515
Western Australia	1913	9	324	967	..	967	6,772	3,515
	1914	18	19	1,117	3,292	4,409	124,175	70,552
	1915	6	20	578	68	646	4,068	2,294
	1916	24	35	4,318	4,782	9,100	102,357	64,325
	1917	23	128	2,401	547	2,948	102,078	53,004
	1918	22	56	3,368	1,435	4,803	31,145	17,792
Tasmania	1913	8	30	444	20	464	987	434
	1914	6	22	288	25	313	3,286	1,459
	1915	2	2	922	..	922	4,808	2,174
	1916	6	36	366	68	434	21,389	11,207
	1917	8	11	1,062	623	1,685	52,541	24,502
	1918	1	1	42	..	42	462	250
Fed. Cap. Territory	1913	1	1	100	100	200	1,400	600
	1914	1	1	50	..	50	350	170
	1915	1	1	20	..	20	80	55
	1916	..	..	..	..	..	..	..
	1917	..	..	..	..	..	..	..
	1918	..	..	..	..	..	..	..
Northern Territory	1913	1	4	131	39	170	2,500	1,675
	1914	2	2	68	..	68	552	348
	1915	7	7	254	44	298	5,237	2,365
	1916	2	2	120	..	120	420	345
	1917	2	2	75	..	75	615	520
	1918	3	4	112	10	122	423	395
Commonwealth	1913	208	921	33,493	16,790	50,283	623,528	287,739
	1914	337	1,203	43,073	27,976	71,049	1,090,395	551,228
	1915	358	942	57,005	24,287	81,292	583,225	299,633
	1916	508	†1,536	128,546	42,137	170,683	1,678,930	967,604
	1917	444	1,941	154,061	19,909	173,970	4,599,658	2,594,808
	1918	298	1,154	42,553	13,886	56,439	580,853	372,334

† These figures do not include establishments affected by the anti-conscription stop-work meetings, as definite particulars as to the number of establishments were not ascertainable.

It may be seen from the foregoing table that industrial disputes throughout the Commonwealth were most frequent during the year 1916. The number of workpeople involved in disputes during 1916 and 1917 increased to an enormous extent, while the

losses in working days and wages were considerably in excess of such losses during any previous yearly period. It must be mentioned, however, that the figures for 1914 and 1916 include particulars of abnormal disputes which occurred in the coal mining industry during those years, while particulars relating to the "card system" dispute at the Government Railway Workshops in New South Wales are included in the figures for the year 1917. In view of the magnitude of these disputes, it is of interest to mention the main features of the troubles, and also the losses in working days and wages caused by the dislocations.

In 1914, a protracted dispute occurred in the coal mining industry in New South Wales over the refusal of the miners to work the afternoon shift. The number of working days lost owing to this dislocation was 523,000, and the estimated loss in wages was approximately £259,000.

In the year 1916, another dispute of considerable magnitude was recorded, when coal mining employees in New South Wales, Victoria, Queensland, and Tasmania ceased work over the question of "eight hours bank to bank." The total losses caused by these stoppages were 409,000 working days and £240,850 in wages.

The dislocation of work during the year 1917, following on the "card system" dispute at the New South Wales Government Railway Workshops, is the most extensive which has been recorded by the Bureau since the systematic collection of particulars was undertaken at the beginning of the year 1913. After careful consideration of the data it was ascertained that 79 disputes throughout the various States were directly associated with the action of the employees at the Government Railway Workshops. The originating dispute, which commenced on the 2nd August, 1917, when the employees at the workshops ceased work, such action, according to statements of their representatives, being a protest against the introduction of a time-card system, rapidly extended to other industries throughout the Commonwealth. Railway employees in other branches of the service, coal and metalliferous miners, seamen, waterside workers, and others left work, most of them stating that they did so in sympathy with the railway men, while other bodies of workpeople, including carters, storemen, and artificial manure makers, stated that they refused to handle "black" goods and coal, and acted accordingly. Of the 79 disputes, which were the outcome of the original stoppage, 52 occurred in New South Wales; 18 in Victoria; 3 in South Australia; and 2 in each of the remaining States. The total number of workpeople involved in these dislocations was 97,507, the loss in working days was 3,982,250, with a consequent estimated loss in wages of £2,233,000. In addition a large number of employees in various industries, who were not directly connected with the dispute, were involuntarily thrown out of work, owing to the restrictions placed upon the use of coal, gas and electricity. It will be seen, therefore, that the losses occasioned by the "card system" dispute greatly exceed any previously recorded.

In regard to extensive dislocations of industry which occurred prior to the institution of systematic inquiries by the Bureau, efforts have been made to obtain statistical data relating to the shearers' disputes in 1890, 1891 and 1894, and also concerning the number of workpeople involved and the losses caused by the maritime dispute in the early part of 1891, but precise information which could be utilised for statistical purposes regarding such particulars was not obtainable.

The predominance of industrial disputes in New South Wales, as compared with the other States, continued during the year 1918. The proportion of disputes in each State is best expressed in a percentage of the aggregate number recorded for all States and Territories. Thus the disputes in New South Wales represented 64 per cent. in 1913, 70 per cent. in 1914, 76 per cent. in 1915, 66 per cent. in 1916, and nearly 67 per cent. in 1917. The disputes in Victoria equalled 14, 13, 11, 11, and 12 per cent. of the total industrial disputes in the respective years, while Queensland disputes represented approximately 8, 5, 5, 13 and 9 per cent. of the total disputes during the same periods. In the other States and Territories the number of disputes recorded during these years forms but a small proportion of the aggregate number.

In 1918, the percentages, which in previous years had been fairly uniform, showed a considerable variation, the number of disputes in New South Wales being 46 per cent. of the total number, as compared with 67 per cent. in the year 1917. The number of disputes in Victoria during 1918 represented 11 per cent. of the total, while in Queensland

the 84 dislocations during the same period equalled 28 per cent. of the total, a considerable increase compared with previous years. For Tasmania only one dispute was recorded during the year 1918.

A noticeable decrease in the number of stoppages of work took place during the year 1918. In all the States, with the exception of Queensland, the numbers of disputes were less than those recorded during 1916 and 1917. The total number of dislocations (298) throughout the Commonwealth during the year 1918 is the second lowest recorded during the six years that have elapsed since the end of 1912, when the systematic collection of particulars relating to industrial disputes was instituted. The increase in the number of disputes in Queensland, as compared with previous years, is considerable, but it will be noticed that, although the number of dislocations is higher, the number of workpeople involved, and the losses incurred in working days and wages are less than those for the year 1917.

The position which New South Wales occupies in comparison with the other States is practically wholly due to the prevalence of disputes in connection with coal mining. Apart from these stoppages the number of disputes in all other industries, whilst still in excess of that for each of the other States, does not compare unfavourably when the number of workpeople in each State is taken into consideration.

The number of disputes (138) in New South Wales during 1918 was greatly in excess of those for any other State, but for the first time since the institution of the systematic collection of particulars, the losses in working days and wages in that State were lower than in Queensland. In all previous years the losses in New South Wales have greatly exceeded those in any other individual State.

It is, of course, obvious that the mere number of disputes cannot by itself be accepted as a proper basis of comparison, nor does the number of workpeople afford a satisfactory basis. A better idea as to the significance and effect of industrial disputes may be obtained from the number of working days lost and the estimated loss in wages.

The number of working days lost on account of disputes which commenced during the year 1918 totalled 580,853, as compared with 4,599,658 during 1917, 1,678,930 during 1916, 583,225 during 1915, 1,090,395 during 1914, and 623,528 during 1913. It has already been mentioned that the figures for the years 1914, 1916, and 1917 include the heavy losses in working days and wages caused by exceptionally serious disputes which occurred during those years.

3. Number and Magnitude of Industrial Disputes in the Commonwealth, Classified according to Industrial Groups.—Comparative Particulars for 1917 and 1918.—The following table gives particulars of disputes in the Commonwealth during the years 1917 and 1918, classified according to industrial groups. The system of classification selected is similar to that adopted in connection with labour organisations, unemployment, rates of wage, etc. (see Report No. 9, Labour and Industrial Branch, page 9).

INDUSTRIAL DISPUTES IN THE COMMONWEALTH, CLASSIFIED ACCORDING TO INDUSTRIAL GROUPS, 1917 AND 1918.

Industrial Group.	No. of Disputes.		No. of Work-people involved in Disputes.		No. of Working Days Lost.		Total Estimated Loss in Wages.	
	1917.	1918.	1917.	1918.	1917.	1918.	1917.	1918.
I. Wood, Furniture, Timber, etc.	8	4	5,763	272	182,166	2,232	£ 95,307	£ 1,215
II. Engineering, Metal Works, etc.	21	10	5,444	3,477	163,316	168,167	99,384	97,225
III. Food, Drink, etc.	30	36	6,930	5,276	92,970	54,014	50,844	40,750
IV. Clothing, Hats, Boots, etc.	..	..	..	355	..	3,047	..	1,566
VI. Other Manufacturing	45	20	13,921	1,092	326,317	10,833	179,131	6,436
VII. Building	6	11	403	685	8,084	3,602	4,592	2,235
VIII. Mines, Quarries, etc.	200	135	69,519	35,149	1,317,016	219,293	937,326	149,406
IX. Rail and Tramway Services	30	16	29,985	2,345	834,703	27,310	411,339	15,615
X. Other Land Transport	3	1	6,068	60	261,918	180	124,009	88
XI. Shipping, Wharf Labour	44	14	24,922	4,102	1,274,874	26,504	622,743	13,395
XII. Pastoral, Agricultural, etc.	27	24	3,020	1,935	91,912	49,539	48,472	33,870
XIII. Domestic, Hotel, etc.	2	3	140	62	648	486	144	142
XIV. Miscellaneous	28	17	7,855	1,579	42,734	15,646	21,517	10,382
Commonwealth, All Groups	444	298	173,970	56,439	4,599,658	580,853	2,594,808	372,334

Comparison as to the frequency of industrial disputes in classified industries can only be reasonably made after omitting those which are recorded for mining, quarrying, etc. (Group VIII.). For the year 1913 the proportion of disputes in those industries represented practically 50 per cent. of the total number recorded. During the year 1914 this proportion rose to 55 per cent., and during 1915 to 57 per cent. In 1916, 1917 and 1918, however, the proportion of disputes in Group VIII. showed a decrease, the figures representing 47, 45 and 45 per cent. of the total number of disputes during the respective years. Attention has frequently been drawn to the preponderating influence contributed in this direction by the coal-mining industry in New South Wales. In making any comparison as to the number of disputes in this industrial class in each State, it should be observed that the number of workers engaged in the mining industry is very much larger in New South Wales than in any of the other States. The number of disputes recorded is, however, in excess of a similar proportion.

4. **Duration of Industrial Disputes in the Commonwealth, 1913-18.**—In the following table comparative particulars are given with respect to the number of disputes, workpeople directly and indirectly involved, working days lost, and estimated amount of loss in wages respectively, consequent on the cessations of work which were recorded for the Commonwealth during the years 1913, 1914, 1915, 1916, 1917 and 1918, classified under the adopted limits of duration :—

DURATION OF INDUSTRIAL DISPUTES IN THE COMMONWEALTH, 1913 TO 1918.

Limits of Duration.	Year.	No. of Disputes.	No. of Workpeople Involved.			Number of Working Days Lost.	Total Estimated Loss in Wages.
			Directly.	Indirectly.	Total.		
1 day and less ..	1913	66	9,698	5,075	14,773	14,773	£ 8,168
	1914	118	15,295	10,192	25,487	25,438	13,744
	1915	147	21,846	11,326	33,172	31,559	19,452
	1916	155	55,680	10,711	66,391	65,757	35,293
	1917	158	28,705	6,758	35,463	35,065	26,733
	1918	74	11,062	4,534	15,596	15,264	12,364
2 days and more than 1 day ..	1913	22	2,631	1,945	4,576	9,022	4,449
	1914	53	6,309	3,352	9,661	18,382	8,986
	1915	44	6,671	2,246	8,917	17,794	9,464
	1916	57	11,607	5,923	17,530	31,775	17,672
	1917	47	7,093	2,383	9,476	18,917	12,253
	1918	40	9,720	1,714	11,434	20,746	14,274
3 days and more than 2 days ..	1913	17	1,294	610	1,904	5,707	2,946
	1914	29	2,983	1,987	4,970	14,910	7,500
	1915	30	3,526	1,513	5,039	14,944	7,672
	1916	45	8,050	5,220	13,270	39,419	23,612
	1917	29	4,363	433	4,796	14,340	9,442
	1918	33	5,012	2,530	7,542	22,042	13,618
Over 3 days and less than one week (6 days) ..	1913	25	3,785	1,004	4,789	19,057	8,940
	1914	38	2,252	2,117	4,369	19,728	9,449
	1915	31	5,032	3,153	8,185	36,469	21,176
	1916	81	13,460	5,918	19,378	86,817	50,484
	1917	39	4,749	1,578	6,327	27,132	16,868
	1918	31	2,404	98	2,502	11,100	7,697
1 week and less than 2 weeks ..	1913	34	7,551	1,972	9,523	72,156	32,700
	1914	38	5,222	1,206	6,428	53,108	27,868
	1915	48	11,372	4,184	15,556	127,477	41,875
	1916	64	8,081	5,493	13,574	108,978	60,933
	1917	58	9,003	1,669	10,672	79,857	47,336
	1918	45	5,896	1,634	7,530	60,967	42,514

Note.—For continuation of table see next page.

DURATION OF INDUSTRIAL DISPUTES IN THE COMMONWEALTH,
1913 TO 1918—*continued.*

Limits of Duration.	Year.	No. of Disputes.	No. of Workpeople Involved.			Number of Working Days Lost.	Total Estimated Loss in Wages.
			Directly.	Indirectly.	Total.		
2 weeks and less than 4 weeks ..	1913	21	1,439	4,671	6,110	76,260	£ 41,040
	1914	30	6,382	4,491	10,873	181,896	91,419
	1915	21	4,101	624	4,725	64,959	47,404
	1916	41	8,565	3,960	12,525	202,657	117,211
	1917	38	10,190	2,654	12,844	210,184	118,362
	1918	35	2,966	1,251	4,217	62,654	43,700
4 weeks and less than 8 weeks ..	1913	11	6,206	1,177	7,383	273,342	121,864
	1914	17	823	719	1,542	52,674	26,717
	1915	22	2,723	681	3,404	95,836	51,761
	1916	32	19,348	3,207	22,555	644,960	402,471
	1917	49	45,338	1,823	47,161	1,615,954	821,402
	1918	23	3,365	1,272	4,637	169,911	107,157
8 weeks and over	1913	12	889	336	1,225	153,211	67,632
	1914	14	3,807	3,912	7,719	724,259	365,545
	1915	15	1,734	560	2,294	194,187	100,829
	1916	33	3,755	1,705	5,460	498,567	259,928
	1917	26	44,620	2,611	47,231	2,598,209	1,542,412
	1918	17	2,128	853	2,981	218,169	131,010
Total ..	1913	208	33,493	16,790	50,283	623,528	287,739
	1914	337	43,073	27,976	71,049	1,090,395	551,228
	1915	358	57,005	24,287	81,292	583,225	299,633
	1916	508	128,546	42,137	170,683	1,678,930	967,604
	1917	444	154,061	19,909	173,970	4,599,658	2,594,808
	1918	298	42,553	13,886	56,439	580,853	372,334

It will be seen from the above table that for the past six years disputes lasting for one day or less were the most frequent. In 1913, the first year for which particulars were collected, stoppages of one day or less represented 32 per cent. of the total number, while they equalled in 1914, 35 per cent.; in 1915, 41 per cent.; in 1916, 31 per cent.; in 1917, 36 per cent.; and in 1918, 25 per cent. Disputes which terminated in less than one week represented 62 per cent. of the total number in 1913; 71 per cent. in 1914; 70 per cent. in 1915; 67 per cent. in 1916; 61 per cent. in 1917; and 60 per cent. in 1918. The disputes which continued for four weeks or over were responsible for the greater part of the losses in working days and wages in each of the years for which particulars have been recorded.

Disputes lasting over four weeks in 1917 represented 17 per cent. of the total number recorded, were responsible for 92 per cent. of the total number of working days lost, and were the cause of 91 per cent. of the estimated loss in wages during that year. The corresponding percentages for the year 1918 are 13 per cent. of the total number of disputes, 67 per cent. of the total loss in working days, and 64 per cent. of the loss in wages. During the year 1918 seventeen disputes continued for a period of eight weeks or over, causing a loss of 218,169 working days, and an estimated loss in wages of £131,010. These figures shew a marked decrease as compared with those for the two preceding years, when the figures were exceptionally large owing to the two abnormal disputes previously mentioned as having occurred during 1916 and 1917.

5. Industrial Disputes, Classified as to Causes, Commonwealth, 1913-1918.—The following table shews the number of disputes, number of workpeople involved, and the total number of working days lost in disputes which commenced in a State or Territory

of the Commonwealth during the six years 1913 to 1918, classified according to principal cause:—

CAUSES OF INDUSTRIAL DISPUTES IN THE COMMONWEALTH, 1913 TO 1918.

Causes of Disputes.	1913.	1914.	1915.	1916.	1917.	1918.
NUMBER OF DISPUTES.						
1. Wages—						
(a) For increase	42	50	73	125	53	54
(b) Against decrease .. .	4	3	10	7	1	4
(c) Other wage questions ..	31	67	46	96	69	69
2. Hours of Labour—						
(a) For reduction	3	1	3	16	2	1
(b) Other disputes re hours ..	7	13	6	5	8	11
3. Trades Unionism—						
(a) Against employment of non-unionists	8	13	19	14	26	7
(b) Other union questions ..	5	11	16	8	32	19
4. Employment of particular Classes or Persons	44	83	76	83	90	92
5. Working Conditions	51	72	78	99	81	34
6. Sympathetic	5	3	6	20	57	1
7. Other Causes	8	21	27	44	25	6
Total	208	337	358	508	444	298

NUMBER OF WORKPEOPLE INVOLVED.

1. Wages—						
(a) For increase	8,633	7,362	18,783	30,193	7,135	7,095
(b) Against decrease .. .	563	534	1,113	1,051	21	57
(c) Other wage questions ..	7,160	15,243	11,990	23,507	18,894	12,737
2. Hours of Labour—						
(a) For reduction	460	220	896	24,481	1,004	26
(b) Other disputes re hours ..	1,819	3,237	2,643	579	2,576	4,214
3. Trades Unionism—						
(a) Against employment of non-unionists	5,370	5,807	3,873	1,178	6,182	710
(b) Other union questions ..	1,418	1,593	3,739	1,167	17,320	6,673
4. Employment of particular Classes or Persons	11,370	14,863	13,844	15,910	15,445	14,576
5. Working Conditions	10,785	17,053	16,114	20,516	19,021	7,757
6. Sympathetic	947	675	950	4,191	76,076	200
7. Other Causes	1,758	4,462	7,347	47,910	10,296	2,394
Total	50,283	71,049	81,292	170,683	173,970	56,439

NUMBER OF WORKING DAYS LOST.

1. Wages—						
(a) For increase	100,069	99,451	190,645	592,625	56,083	198,323
(b) Against decrease .. .	9,438	32,965	12,555	6,192	42	316
(c) Other wage questions ..	78,183	169,847	133,606	143,248	225,080	97,561
2. Hours of Labour—						
(a) For reduction	2,774	9,240	836	583,052	78,016	312
(b) Other disputes re hours ..	15,111	16,855	23,374	1,598	62,560	20,551
3. Trades Unionism—						
(a) Against employment of non-unionists	91,002	92,720	31,145	48,881	87,600	21,894
(b) Other union questions ..	32,388	6,968	7,434	10,276	572,949	24,341
4. Employment of particular Classes or Persons	191,723	64,367	77,862	70,452	47,297	113,466
5. Working Conditions	73,562	584,289	82,322	81,511	211,971	93,468
6. Sympathetic	24,066	2,125	6,004	75,447	3,239,798	7,200
7. Other Causes	5,212	11,568	17,442	65,648	18,262	3,421
Total	623,528	1,090,395	583,225	1,678,930	4,599,658	580,853

It will be observed from the above table that the main causes of industrial disputes are "Wage" questions, "Working Conditions," and "Employment of Particular Classes or Persons." In each of the six years, 1913-1918, the number of dislocations concerning wages exceeded those caused by any other question. In 1913 the number of stoppages over wage questions represented 37 per cent. of the total number during that year, as compared with 36 per cent. in 1914; 36 per cent. in 1915; 45 per cent. in 1916; 28 per cent. in 1917; and 43 per cent. in 1918. The majority of the disputes classified under the heading, "Employment of Particular Classes or Persons," are stoppages of work for the purpose of protesting against the dismissal of certain employees, whom their fellow-workers consider have been unfairly treated or victimised. This class of dispute occurs

very frequently in the coal mining industry. The number of disputes over "Trade Union" questions and "Hours of Labour" has represented a fairly uniform proportion of the total number of disputes during the years under review. "Sympathetic" disputes were numerous during the years 1916 and 1917. The figures for the latter year were abnormal in comparison with the other periods. It may be mentioned, however, that the disputes which arose during that year in connection with the "time-card system" dispute were responsible for the increase in the number.

6. Results of Industrial Disputes, Commonwealth, 1913-18.—The following table shows the number of disputes, number of workpeople involved, and the number of working days lost in disputes throughout the Commonwealth during the six years 1913-18, classified according to results :—

**INDUSTRIAL DISPUTES CLASSIFIED ACCORDING TO RESULTS,
COMMONWEALTH, 1913 TO 1918.**

Year.	No. of Disputes.				Number of Workpeople Involved in Disputes.				Total Number of Working Days Lost by Disputes.			
	In Favour of Workpeople.	In Favour of Employer.	Compromise.	Indefinite.	In Favour of Workpeople.	In favour of Employer.	Compromise.	Indefinite.	In Favour of Workpeople.	In Favour of Employer.	Compromise.	Indefinite.
1913	67	64	66	11	10,914	12,211	24,826	2,332	59,823	104,654	433,014	26,037
1914	118	98	110	11	21,224	18,242	30,396	1,187	129,995	119,819	829,265	11,316
1915	190	78	65	22	44,140	15,327	14,860	6,965	245,625	155,659	151,544	30,397
1916	223	178	84	23	70,588	36,670	23,298	40,129	886,010	253,084	476,302	63,534
1917	147	183	100	9	24,331	119,589	22,310	7,740	103,267	4,201,981	285,103	9,307
1918	92	100	93	13	13,780	15,998	23,739	2,922	101,207	177,223	280,045	22,378

It will be seen from the above table that, during the years 1913, 1914, 1915, and 1916 the disputes resulting in favour of workpeople exceeded those resulting in favour of employers. During 1917 and in 1918, however, the position was reversed. A considerable number of disputes in each year resulted in a compromise, while certain disputes resulted in such a manner that they could not be definitely classed under any heading other than "Indefinite." The majority of these disputes were of short duration.

7. Methods of Settlement of Industrial Disputes, Commonwealth, 1913-18.—The following tables show the number of disputes, number of workpeople involved, and number of working days lost in industrial disputes during the six years 1913-18, classified for the Commonwealth according to the adopted schedule of methods of settlement :—

**METHODS OF SETTLEMENT OF INDUSTRIAL DISPUTES,
COMMONWEALTH, 1913 TO 1918.**

Methods of Settlement.	1913.	1914.	1915.	1916.	1917.	1918.
NUMBER OF DISPUTES.						
<i>Negotiations—</i>						
Direct between employers and employees or their representatives	119	247	254	319	234	171
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act	17	11	29	34	38	21
<i>Under State Industrial Act—</i>						
By intervention, assistance, or compulsory conference	19	7	3	9	12	20
By reference to Board or Court	22	17	5	10	13	14
<i>Under Commonwealth Conciliation and Arbitration Act—</i>						
By intervention, assistance, or compulsory conference	4	5	2	6	3	8
By Filling Places of Workpeople on Strike or Locked Out	13	16	9	18	36	26
By Closing-down Establishment Permanently	1	4	1	6	4	8
By other Methods	13	30	55	106	104	30
Total	208	337	358	508	444	298

METHODS OF SETTLEMENT OF INDUSTRIAL DISPUTES,
COMMONWEALTH, 1913 TO 1918—*continued.*

Methods of Settlement.	1913.	1914.	1915.	1916.	1917.	1918.
NUMBER OF WORKPEOPLE INVOLVED.						
Negotiations—						
Direct between employers and employees or their representatives	23,357	48,204	54,242	68,841	49,512	34,680
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act	3,172	8,054	6,170	32,043	23,338	4,155
Under State Industrial Act—						
By intervention, assistance, or compulsory conference	6,505	770	1,515	2,117	6,295	2,958
By reference to Board or Court	12,774	7,308	815	2,291	2,779	3,392
Under Commonwealth Conciliation and Arbitration Act—						
By intervention, assistance, or compulsory conference	659	205	2,919	1,110	1,490	3,042
By Filling Places of Workpeople on Strike or Locked Out	658	629	205	413	17,780	1,933
By Closing-down Establishment Permanently	170	86	200	150	434	538
By other Methods	2,988	5,793	15,226	63,718	72,342	5,741
Total	50,283	71,049	81,292	170,683	173,970	56,439

NUMBER OF WORKING DAYS LOST.

Negotiations—						
Direct between employers and employees or their representatives	94,400	803,799	384,425	563,823	551,484	222,846
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act	26,335	128,231	56,126	812,763	863,896	37,444
Under State Industrial Act—						
By intervention, assistance, or compulsory conference	187,871	4,256	20,537	31,696	159,799	57,559
By reference to Board or Court	221,769	120,685	15,418	43,022	48,352	151,472
Under Commonwealth Conciliation and Arbitration Act—						
By intervention, assistance, or compulsory conference	2,105	1,421	26,883	20,697	33,396	23,289
By Filling Places of Workpeople on Strike or Locked Out	14,139	4,402	1,533	9,060	908,596	35,298
By Closing-down Establishment Permanently	20,400	3,646	19,600	2,776	11,392	4,270
By other Methods	56,509	23,955	58,703	190,088	2,022,743	48,675
Total	623,528	1,090,395	583,225	1,678,930	4,599,658	580,853

In the above tables the methods of settlement of all disputes recorded during the past six years are set out in comparative form. In all years it will be observed that direct negotiations between the employers and employees settled the majority of the disputes. During the year 1913, 57 per cent. of the total number of dislocations was settled by direct negotiations as compared with 73 per cent. during 1914; 71 per cent. during 1915; 63 per cent. during 1916; 53 per cent. during 1917; and 57 per cent. during 1918. The numbers of dislocations which have been settled by compulsory conferences or the intervention and assistance of officials under State or Commonwealth Arbitration Acts have not varied greatly during the period under review. In connection with the comparatively large numbers of disputes which are classified as having been settled "By other methods," it must be mentioned that a large number of stoppages of work occur each year, principally at the collieries, without any cause for such stoppages being brought officially under the notice of the employers or their representatives. Such stoppages usually last for one day, and work is resumed on the following morning without any negotiations for a settlement of the trouble which caused the stoppage.

§ 7. Retail Prices, House Rents, and Cost of Living.

1. **Introduction.**—In Labour Report No. 1, issued in December, 1912, the results of certain investigations into the subjects of Prices, Price-Indexes and Cost of Living in past years were published, and some account was given of the methods employed for the collection of the data and of the technique adopted in the computation of the results. An important discussion of the theory upon which the calculation of the index-numbers is based was given, but being necessarily too technical for the ordinary reader, was relegated to Appendixes. In Reports Nos. 2, 5, 6, 7, 8 and 9, results of further investigations were given, and in those Reports, and in Labour Bulletins Nos. 1 to 18, information was given as to variations in retail and wholesale prices, house-rent, and purchasing-power of money up to the end of 1918.

It must here suffice to state that the method adopted for the computation of the index-numbers is what may very properly be called the "aggregate expenditure" method. The first process is, of course, to work out the average price of each commodity included, and numbers (called "mass-units") representing the *relative* extent to which each commodity was on the average used or consumed are then computed. The price in any year of each commodity multiplied by its corresponding "mass-unit" represents, therefore, the relative total expenditure on that commodity in that year *on the basis of the adopted regimen*. It follows, therefore, that by taking for any year the sum of the price of each commodity multiplied by its corresponding "mass-unit," a figure is obtained which represents the relative aggregate or total expenditure of the community in that year on all the commodities, etc., included. By computing these aggregate expenditures for a series of years and taking the expenditure in any desired year as "base," that is, making the expenditure in that year equal to 1,000 units, the relative expenditure in any other year, that is to say, the "index-numbers," are readily ascertained. A numerical example of the technique and methods adopted for the computation of index-numbers was given in Report No. 2 (pp. 44 and 45).

2. **Scope of Investigation.**—It was pointed out in Report No. 1 that, in any investigation into the question of change in cost of living of a community, a careful distinction must be drawn between two things, viz. :—

- (a) Variations in the *purchasing-power* of money, and
- (b) Variations in the *standard of living*.

In Report No. 2, attention was drawn to the fact that the second element (b) can be limited, at any rate to some extent, by the exercise of self denial and thrift, and that such limitation is at the disposal of each individual; the former (a) is not subject to this possibility. Thus, from this aspect, social economics are concerned *primarily* with an accurate estimation of variations in the purchasing-power of money and only secondarily with the question of the general standard of living which has been reached. The first desideratum demands the selection of a suitable list of commodities, the quantities of each being taken in due proportion to their relative average consumption. The quantities in this list being kept constant, the cost of the whole group must then be ascertained. In this way a comparison may be made of the cost in different areas or districts at the same time, as well as the variation in any one place from time to time. This is the "aggregate expenditure" method explained above.

As explained in Report No. 1, special steps were taken to conduct the investigation back as far as 1901 for the capital towns only. The collection of current monthly returns as to prices and of quarterly returns of house rents commenced in 30 of the more important towns of the Commonwealth in January, 1912.

3. **Commodities and Requirements Included.**—The 47 items of expenditure included are divided into four groups, viz. :—(i) groceries and bread, (ii) dairy produce, (iii) meat, and (iv) house rent. These items cover about 60 per cent. of the total expenditure of a normal family. There are very cogent reasons for the restriction of the enquiries to the items mentioned. If the comparisons made are to be satisfactory, no confusion must arise between changes in the standard of living and changes arising from a variation of the purchasing-power of money. In order to avoid such confusion the items selected are such as are sensibly identical and identifiable in the various localities. The most important group of expenditure which is not included is clothing, the cost of which amounts to

about 13 per cent. of the total expenditure. Owing to influences of individual taste, fashion, and the enormous variety of production, articles included in this group are practically not comparable and identifiable. As regards fuel and light, the cost of which amounts to about 4 per cent. of the total expenditure, while these commodities are comparable and identifiable, the usage or relative consumption in the towns included in the inquiries varies to such an extent that their inclusion on an assumed constant regimen would tend to produce a fictitious result in so far as variations in the purchasing-power of money are concerned.

In Report No. 9 (page 25), a tabular statement was given furnishing particulars of the commodities and items included, the units of measurement for which prices are collected, and the mass-units shewing the relative extent to which each item is used or consumed.

4. **Variations in the Purchasing-Power of Money in each Metropolitan Town, 1901 to 1918.**—In Reports Nos. 1, 2, 5, 6, 7, 8 and 9, Labour Bulletins Nos. 1 to 18, index-numbers were given for each of the four groups, and for all groups combined, for each capital town since 1901, the expenditure in 1911 being taken in each case as base (=1,000). In this section only summarised results are given. Firstly, for food and groceries; secondly, for house rent; and thirdly, for all groups combined—the weighted average expenditure for all capital towns in 1911 being taken in each case as base (=1,000). The index-numbers in each table are fully comparable with each other, that is to say, they shew not only the variations from year to year in each capital town, but also the relative cost as between the towns.

(i) *Food and Groceries.* The index-numbers thus computed for the three groups comprising groceries and food are shewn in the following table:—

RETAIL PRICES IN METROPOLITAN TOWNS, INDEX-NUMBERS FOR GROCERIES AND FOOD (GROUPS I., II., AND III.), 1901 TO 1918.

Town.	1901.	1907.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
Sydney ..	917	936	1,012	1,000	989	1,124	1,131	1,156	1,396	1,520	1,540	1,549
Melbourne ..	965	925	949	960	935	1,082	1,024	1,091	1,411	1,462	1,412	1,466
Brisbane ..	965	947	983	1,000	1,018	1,102	1,042	1,078	1,373	1,426	1,406	1,495
Adelaide ..	1,028	951	1,025	1,001	1,020	1,154	1,119	1,215	1,487	1,532	1,445	1,554
Perth ..	1,184	1,197	1,212	1,251	1,346	1,345	1,287	1,302	1,483	1,542	1,505	1,486
Hobart ..	1,011	1,010	1,093	1,073	1,058	1,190	1,164	1,212	1,445	1,523	1,544	1,635
Weighted Average*	972	955	1,006	1,005	1,000	1,129	1,095	1,144	1,416	1,495	1,472	1,514

* For all capital towns.

The above figures are directly comparable in every respect; thus it will be seen that the same quantity of food and groceries, which cost £1,000 in the capital towns considered as a whole in 1911, would have cost £917 in Sydney in 1901, £1,346 in Perth in 1911, or £1,466 in Melbourne in 1918.

(ii) *House Rent.* In the following table, index-numbers are given computed for the weighted average house rent in each of the capital towns from 1901 to 1917, taking the average rent for the six capital towns in 1911 as the base (=1000). The average rent has been obtained for each town separately by multiplying the average predominant rent for each class of house (*i.e.*, houses having less than 4 rooms, 4 rooms, 5 rooms, 6 rooms, 7 rooms, and over 7 rooms) by a number ("weight") representing the relative number of houses of that class in the particular town. The sum of the products thus obtained, divided by the sum of the weights, gives the weighted average for all houses. The number of houses in each class for each town was obtained from the results of the 1911 census. It should be observed, therefore, that these index-numbers are based on the weighted average rents for all houses, and that they do not refer to any particular class of houses. The actual predominant rents for each class were given in appendixes to Reports Nos. 1, 2, 5, 6, 7, 8 and 9, and an examination of these figures shews that for some

classes of houses the increase has been greater, and in some less, than the general increase indicated in the following table:—

HOUSE RENTS IN METROPOLITAN TOWNS.—INDEX-NUMBERS SHEWING WEIGHTED AVERAGE RENTS (GROUP IV.), 1901 TO 1918.

Town.	1901.	1907.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
Sydney ..	858	911	955	988	1,090	1,183	1,246	1,279	1,220	1,212	1,215	1,252
Melbourne ..	733	804	842	918	970	1,016	1,089	1,128	1,085	1,089	1,124	1,180
Brisbane ..	488	575	662	700	767	804	863	882	859	847	859	905
Adelaide ..	629	812	940	1,018	1,112	1,160	1,125	1,040	932	930	959	1,022
Perth ..	801	684	667	696	810	880	928	914	848	869	874	885
Hobart ..	667	708	749	776	805	829	887	914	928	928	951	956
Weighted Average*	751	816	867	919	1,000	1,063	1,118	1,135	1,081	1,081	1,098	1,143

* For all capital towns.

Note.—The above figures are directly comparable in every respect.

It may be seen that there was a uniform increase in each metropolitan town from 1901 to 1914. The increase was greater in Adelaide and Brisbane than in the other towns. It should be observed, however, that at the commencement of the period rents were exceptionally low in Brisbane, and were comparatively low in Adelaide (see Appendix IV. to Report No. 1). /The index-numbers for Perth present features entirely different from those for the other towns./ During 1915, there was a decrease in house rents in all the capital towns except Hobart, and in 1916 rents increased slightly in Melbourne and Perth, and decreased slightly in Sydney, Brisbane, and Adelaide. The index-number for Hobart was the same in 1916 as in 1915. The index-numbers for 1917 and 1918 shew that there were increases in all capital cities during those years.

(iii) *Food, Groceries, and House Rent combined.* The weighted averages for all four groups are of importance, as indicating the general results of this investigation so far as the purchasing-power of money is concerned. The following table shews the index-numbers for groceries, food, and house rent for each metropolitan town, the weighted average cost for the six capital towns in 1911 being taken as base (=1000) :—

PURCHASING-POWER OF MONEY IN METROPOLITAN TOWNS.—INDEX-NUMBERS SHEWING WEIGHTED AVERAGE RESULTS FOR ALL GROUPS (GROCERIES, DAIRY PRODUCE, MEAT, AND HOUSE RENT), 1901 TO 1918.

Town.	1901.	1907.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
Sydney ..	893	926	989	995	1,031	1,148	1,178	1,206	1,323	1,394	1,406	1,427
Melbourne ..	870	875	905	942	950	1,055	1,051	1,105	1,277	1,309	1,294	1,349
Brisbane ..	769	794	851	877	915	979	969	997	1,162	1,188	1,181	1,252
Adelaide ..	864	894	990	1,008	1,058	1,157	1,121	1,143	1,259	1,285	1,245	1,335
Perth ..	1,027	986	958	1,023	1,126	1,154	1,128	1,143	1,222	1,266	1,246	1,239
Hobart ..	869	886	952	951	954	1,042	1,050	1,090	1,233	1,278	1,301	1,356
Weighted Average*	880	897	948	970	1,000	1,101	1,104	1,140	1,278	1,324	1,318	1,362

* For all capital towns.

Note.—The above figures are directly comparable in every respect.

The index-number for 1914 was 3.3 per cent. higher than for 1913. There was a further increase in 1915 in each of the towns, the weighted average index-number shewing an increase of 12.1 per cent. compared with 1914. There was a further increase in each of the towns in 1916, the weighted average index-number for 1916 shewing an increase of 3.6 per cent. compared with the year 1915. The index-number for 1917 shews a decrease of 0.5 per cent. compared with the immediately preceding year, while the index-number for 1918 shews an increase of 3.3 per cent. on that of 1917. Index-numbers for the years 1901 to 1906 inclusive, and for the year 1908, omitted from the three preceding tables, are given in Labour Report No. 5, page 23.

5. Relative Cost of Food, Groceries, and House Rent in Different Towns, 1918.—The index-numbers given in the preceding paragraphs shew changes in the cost of food, groceries, and house rent separately for each capital town during the years 1901 to 1918.

The figures given in the table below shew the relative cost of food, groceries, and house rent in 1918 in the thirty towns for which particulars are now being collected. The weighted aggregate expenditure for the six capital towns for the year 1911 has been taken as base and made equal to 1,000, hence the columns are comparable both horizontally and vertically.

INDEX-NUMBERS, SHEWING RELATIVE COST IN EACH OF THIRTY TOWNS, OF FOOD AND GROCERIES AND HOUSE RENT COMPARED WITH WEIGHTED AVERAGE EXPENDITURE ON GROCERIES, FOOD, AND RENT IN THE SIX CAPITAL TOWNS IN 1911 AS BASE (=1,000), YEAR 1918.

Town.	Groceries and Food.	HOUSE RENT.				GROCERIES, FOOD AND RENT, INCLUDING HOUSES HAVING—			
		Four-roomed Houses only.	Five-roomed Houses only.	Six-roomed Houses only.	All Houses Weight'd Average.	Four Rooms.	Five Rooms.	Six Rooms.	All Houses Weight'd Average.
NEW SOUTH WALES—									
Sydney ..	912	403	487	572	515	1,315	1,399	1,484	1,427
Newcastle ..	922	271	357	438	347	1,193	1,279	1,360	1,269
Broken Hill*	1,032	265	345	413	289	1,297	1,377	1,445	1,321
Goulburn ..	899	307	405	548	463	1,206	1,304	1,447	1,362
Bathurst ..	886	217	291	380	324	1,103	1,177	1,266	1,210
Weighted Average ..	918	382	467	552	488	1,300	1,385	1,470	1,406
VICTORIA—									
Melbourne ..	864	348	442	537	485	1,212	1,306	1,401	1,349
Ballarat ..	849	143	216	290	258	992	1,065	1,139	1,107
Bendigo ..	850	189	267	350	289	1,039	1,117	1,200	1,139
Geelong ..	851	233	332	428	382	1,084	1,183	1,279	1,233
Warrnambool ..	879	239	310	369	324	1,118	1,189	1,248	1,203
Weighted Average ..	862	317	408	501	449	1,179	1,270	1,363	1,311
QUEENSLAND—									
Brisbane ..	881	236	306	410	371	1,117	1,187	1,291	1,252
Toowoomba ..	881	192	259	313	327	1,073	1,140	1,194	1,208
Rockhampton ..	897	208	262	348	327	1,105	1,159	1,245	1,224
Charters Towers ..	1,002	217	290	338	275	1,219	1,292	1,340	1,277
Warwick ..	921	152	245	376	319	1,073	1,166	1,297	1,240
Weighted Average ..	894	225	294	387	353	1,119	1,188	1,281	1,247
SOUTH AUSTRALIA—									
Adelaide ..	915	313	411	526	420	1,228	1,326	1,441	1,335
Moonta, etc. ..	924	229	295	388	307	1,153	1,219	1,312	1,231
Port Pirie*	959	325	384	415	361	1,284	1,343	1,374	1,320
Mt. Gambier ..	876	218	272	365	300	1,094	1,148	1,241	1,176
Peterborough ..	937	240	323	375	316	1,177	1,260	1,312	1,253
Weighted Average ..	917	305	398	506	406	1,222	1,315	1,423	1,323
WESTERN AUSTRALIA—									
Perth, etc. ..	876	306	381	468	363	1,182	1,257	1,344	1,239
Kalgoorlie, etc. ..	1,051	357	434	520	342	1,408	1,485	1,571	1,393
Mid. Junction, etc. ..	871	230	307	365	290	1,101	1,178	1,236	1,161
Bunbury ..	938	211	262	299	206	1,149	1,200	1,237	1,144
Geraldton ..	942	358	451	537	381	1,300	1,393	1,479	1,323
Weighted Average ..	915	312	387	471	352	1,227	1,302	1,386	1,267
TASMANIA—									
Hobart ..	963	308	377	437	393	1,271	1,340	1,400	1,356
Launceston ..	928	270	364	439	382	1,198	1,292	1,367	1,310
Zeehan ..	1,020	134	170	207	125	1,154	1,190	1,227	1,145
Beaconsfield ..	958	62	90	108	82	1,020	1,048	1,066	1,040
Queenstown ..	1,019	273	327	375	253	1,292	1,346	1,394	1,272
Weighted Average ..	958	276	348	410	355	1,234	1,306	1,368	1,313
Commonwealth									
Weighted Average	897	328	413	503	439	1,225	1,310	1,400	1,336

* See remarks on page 45 of Labour Report No. 9, with reference to house rents.

6. Variation in Purchasing-Power of Money, 1901 to 1918.—The tables in paragraph 4 give the relative cost of food, groceries, and house rent in the six capital towns from 1901 to 1918 in the form of index-numbers. In the following tables similar information

is given as regards variations in cost of food, groceries, and house rent, the base being taken as 20s. for the weighted average in the six capital towns in 1911. The figures therefore shew the sums which would have to be paid in each town and in each year in order to purchase such relative quantities (indicated by the mass-units) of the several commodities, and to pay such sums for house rent as would in the aggregate cost £1, according to the weighted average prices and rents in the six capital towns in 1911.

PURCHASING-POWER OF MONEY (FOOD, GROCERIES, AND HOUSE RENT).—AMOUNT NECESSARY ON THE AVERAGE IN EACH YEAR FROM 1901 TO 1918 TO PURCHASE IN EACH CAPITAL TOWN WHAT WOULD HAVE COST ON THE AVERAGE £1 IN 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	
1901	17 10	17 5	15 5	17 3	20 6	17 5	17 7
1902	19 7	18 1	16 0	17 3	21 7	17 10	18 7
1903	19 2	17 7	15 9	16 9	21 8	17 11	18 2
1904	17 5	17 1	14 8	16 3	20 10	17 1	17 2
1905	18 9	17 7	15 5	17 6	20 11	17 9	18 0
1906	18 8	17 7	15 7	17 10	20 5	18 0	18 0
1907	18 6	17 6	15 11	17 11	19 9	17 9	17 11
1908	19 9	18 6	17 1	19 1	20 0	18 5	19 0
1909	19 9	18 1	17 0	19 10	19 9	19 0	19 0
1910	19 11	18 10	17 6	20 2	20 6	19 0	19 5
1911	20 7	19 0	18 4	21 2	22 6	19 1	20 0*
1912	22 11	21 1	19 7	23 2	23 1	20 10	22 0
1913	23 7	21 0	19 5	22 5	22 6	21 1	22 1
1914	24 1	22 1	19 11	22 10	22 10	21 10	22 10
1915	26 6	25 6	23 3	25 2	24 5	24 8	25 7
1916	27 10	26 2	23 9	25 8	25 4	25 7	26 6
1917	28 1	25 11	23 7	24 11	24 11	26 0	26 4
1918	28 6	27 0	25 1	26 8	24 9	27 1	27 3
1918 { 1st Quarter ..	28 6	26 6	24 4	25 11	24 8	27 3	26 11
1918 { 2nd " ..	28 7	26 11	24 9	27 3	25 4	27 1	27 4
1918 { 3rd " ..	28 1	26 9	25 1	26 8	24 7	26 9	27 0
1918 { 4th " ..	29 0	27 8	26 0	27 0	24 6	27 4	27 9

* Basis of Table.

(i) *Groceries and Food only.* The following table has been computed in the same manner as that indicated above, but relates to *groceries and food (46 items) only.* The average expenditure for the six capital towns in 1911 has again been taken as the basis of the table (=20 shillings) and the figures are, of course, comparable throughout.

PURCHASING-POWER OF MONEY.—GROCERIES AND FOOD ONLY.—AMOUNT NECESSARY ON THE AVERAGE IN EACH YEAR FROM 1901 TO 1918 TO PURCHASE IN EACH CAPITAL TOWN WHAT WOULD HAVE COST ON THE AVERAGE £1 IN 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	
1901	18 4	19 4	19 4	20 7	23 8	20 3	19 4
1902	21 4	20 4	20 4	20 6	25 6	21 0	21 1
1903	20 7	19 6	19 9	19 8	25 8	21 1	20 4
1904	17 6	18 4	17 10	18 10	24 3	19 8	18 5
1905	19 5	19 1	18 11	19 10	25 2	20 7	19 8
1906	19 3	18 11	19 2	19 8	24 9	20 11	19 7

PURCHASING-POWER OF MONEY.—GROCERIES, FOOD, ETC.—*continued.*

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	
1907	18 9	18 6	18 11	19 0	23 11	20 2	19 1
1908	20 7	19 11	20 6	20 2	24 6	21 1	20 7
1909	20 3	19 0	19 8	20 6	24 3	21 10	20 1
1910	20 0	19 2	20 0	20 0	25 0	21 6	20 1
1911	19 9	18 8	20 4	20 5	26 11	21 2	20 0*
1912	22 6	21 8	22 0	23 1	26 11	23 10	22 1
1913	22 8	20 6	20 10	22 5	25 4	23 3	21 11
1914	23 1	21 10	21 7	24 4	26 0	24 3	22 11
1915	27 11	28 3	27 6	29 9	29 8	28 11	28 4
1916	30 5	29 3	28 6	30 8	30 10	30 5	29 11
1917	30 10	28 3	28 2	28 11	30 1	30 11	29 5
1918	31 0	29 4	29 11	31 1	29 9	32 8	30 3
1918 { 1st Quarter..	31 1	28 11	28 11	30 3	29 7	33 2	30 0
1918 { 2nd ,, ..	31 0	29 7	29 8	32 2	30 8	32 11	30 6
1918 { 3rd ,, ..	30 3	29 0	29 9	30 9	29 5	31 11	29 10
1918 { 4th ,, ..	31 7	29 10	31 3	31 1	29 2	32 10	30 9

* Basis of Table.

(ii) *House Rent only.* The following table gives similar particulars for *house rent only*, the average for the six capital towns in 1911 being again taken as the basis of the table (=20 shillings).

PURCHASING-POWER OF MONEY.—HOUSE RENT.—AMOUNT PAYABLE ON THE AVERAGE IN EACH YEAR FROM 1901 TO 1918 FOR HOUSE RENT IN EACH CAPITAL TOWN, COMPARED WITH A RENT OF £1 IN 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	
1901	17 3	14 8	9 9	12 7	16 0	13 4	15 1
1902	17 3	14 11	9 10	12 7	15 11	13 5	15 2
1903	17 4	14 11	10 1	12 7	16 0	13 6	15 3
1904	17 5	15 3	10 2	12 7	16 0	13 6	15 4
1905	17 10	15 5	10 5	14 0	14 9	13 7	15 8
1906	17 11	15 8	10 6	15 3	14 4	13 9	15 11
1907	18 4	16 1	11 6	16 3	13 8	14 2	16 4
1908	18 7	16 7	12 4	17 5	13 7	14 7	16 10
1909	19 2	16 10	13 3	18 10	13 4	15 0	17 5
1910	19 10	18 4	14 0	20 4	13 11	15 6	18 5
1911	21 10	19 5	15 4	22 3	16 3	16 1	20 0*
1912	23 8	20 4	16 1	23 2	17 7	16 7	21 3
1913	24 11	21 10	17 3	22 6	18 7	17 10	22 4
1914	25 7	22 6	17 8	20 10	18 3	18 3	22 8
1915	24 5	21 8	17 2	18 8	17 0	18 7	21 7
1916	24 3	21 9	17 0	18 7	17 4	18 7	21 7
1917	24 3	22 6	17 5	19 2	17 5	19 0	22 0
1918	25 0	23 7	18 1	20 5	17 8	19 1	22 10
1918 { 1st Quarter..	24 9	23 1	17 8	19 8	17 8	18 10	22 5
1918 { 2nd ,, ..	25 1	23 2	17 9	20 4	17 8	18 10	22 8
1918 { 3rd ,, ..	25 0	23 8	18 5	20 9	17 8	19 4	22 11
1918 { 4th ,, ..	25 3	24 7	18 6	21 1	17 9	19 5	23 5

* Basis of Table.

7. *Monthly Fluctuations in Retail Prices of Food and Groceries, July, 1914, to June, 1919.*—The following table has been prepared in order to show the variations in retail prices of food and groceries since July, 1914, the last month prior to the outbreak

of war. Particulars for each town are given in the form of index-numbers for food and groceries in each of the months specified. In the last column the percentage increase is shown for each town in June, 1919, compared with July, 1914.

The aggregate result for the thirty towns covered by the investigations shows that prices were 46.6 per cent. higher in June, 1919, than in July, 1914.

RETAIL PRICES INDEX-NUMBERS (FOOD AND GROCERIES) FOR EACH OF THIRTY TOWNS FOR THE MONTHS SPECIFIED, WITH WEIGHTED AVERAGE FOR SIX CAPITAL TOWNS IN 1911 AS BASE (=1,000).†

Particulars.	1914.		1916.		1917.		1918.		1919.		Per cent. increase from July, 1914, to June, 1919.
	July.	June.	May.	June.	May.	June.	May.	June.	May.	June.	
NEW SOUTH WALES—											
Sydney	1,153	1,527	1,512	1,499	1,507	1,546	1,548	1,768	1,777	1,786	54.1
Newcastle	1,147	1,507	1,489	1,527	1,529	1,576	1,581	1,770	1,786	1,786	55.7
Broken Hill	1,468	1,817	1,844	1,814	1,807	1,848	1,850	1,827	1,887	1,887	28.5
Goulburn	1,183	1,550	1,542	1,476	1,458	1,523	1,537	1,746	1,746	1,746	47.5
Bathurst	1,097	1,479	1,483	1,473	1,480	1,521	1,529	1,663	1,652	1,652	50.6
*Weighted Average	1,165	1,537	1,524	1,514	1,520	1,560	1,562	1,770	1,780	1,780	52.8
VICTORIA—											
Melbourne	1,106	1,485	1,479	1,409	1,418	1,486	1,486	1,564	1,573	1,573	42.2
Ballarat	1,103	1,506	1,501	1,406	1,403	1,459	1,456	1,530	1,534	1,534	39.1
Bendigo	1,107	1,482	1,480	1,432	1,440	1,487	1,482	1,522	1,522	1,522	38.0
Geelong	1,089	1,514	1,506	1,432	1,434	1,481	1,473	1,541	1,549	1,549	42.2
Warrnambool	1,087	1,493	1,484	1,436	1,438	1,514	1,514	1,567	1,559	1,559	43.4
*Weighted Average	1,105	1,488	1,482	1,412	1,419	1,484	1,484	1,558	1,566	1,566	41.7
QUEENSLAND—											
Brisbane	1,057	1,491	1,391	1,375	1,380	1,480	1,494	1,704	1,704	1,704	61.2
Toowoomba	1,041	1,457	1,397	1,360	1,372	1,440	1,470	1,755	1,756	1,756	68.7
Rockhampton	1,156	1,613	1,485	1,404	1,424	1,501	1,502	1,797	1,755	1,755	51.8
Charters Towers	1,246	1,644	1,640	1,582	1,555	1,684	1,675	1,911	1,966	1,966	57.8
Warwick	1,083	1,462	1,392	1,369	1,406	1,520	1,556	1,770	1,770	1,770	63.4
*Weighted Average	1,082	1,512	1,422	1,394	1,399	1,496	1,509	1,738	1,738	1,738	60.6
SOUTH AUSTRALIA—											
Adelaide	1,250	1,584	1,590	1,480	1,441	1,620	1,614	1,703	1,727	1,727	38.2
Kadina, Moonta, Wallaroo	1,230	1,612	1,627	1,573	1,571	1,595	1,590	1,661	1,683	1,683	36.8
Port Pirie	1,291	1,643	1,645	1,603	1,613	1,657	1,654	1,726	1,724	1,724	33.5
Mt. Gambier	1,064	1,504	1,500	1,445	1,441	1,523	1,538	1,543	1,554	1,554	46.1
Peterborough	1,340	1,622	1,647	1,584	1,602	1,611	1,602	1,699	1,719	1,719	28.3
*Weighted Average	1,247	1,586	1,593	1,491	1,458	1,618	1,612	1,697	1,719	1,719	37.9
WESTERN AUSTRALIA—											
Perth, etc.	1,340	1,550	1,630	1,586	1,543	1,524	1,552	1,891	1,925	1,925	43.7
Kalgoorlie and Boulder	1,664	1,814	1,867	1,799	1,802	1,791	1,788	2,188	2,126	2,126	27.8
Mid. Junction and Guildford	1,354	1,534	1,608	1,598	1,566	1,524	1,539	1,837	1,841	1,841	36.0
Bunbury	1,418	1,608	1,723	1,753	1,745	1,656	1,682	1,895	1,905	1,905	34.3
Geraldton	1,445	1,675	1,691	1,630	1,642	1,633	1,630	1,745	1,779	1,779	23.1
*Weighted Average	1,412	1,608	1,682	1,636	1,605	1,585	1,606	1,946	1,958	1,958	38.7
TASMANIA—											
Hobart	1,211	1,551	1,525	1,471	1,497	1,643	1,645	1,678	1,675	1,675	38.3
Launceston	1,144	1,538	1,514	1,478	1,497	1,588	1,580	1,645	1,681	1,681	46.9
Zeehan	1,292	1,683	1,690	1,610	1,625	1,758	1,769	1,804	1,831	1,831	41.7
Beaconsfield	1,230	1,647	1,634	1,587	1,615	1,617	1,625	1,678	1,697	1,697	38.0
Queenstown	1,315	1,697	1,729	1,625	1,643	1,722	1,733	1,842	1,863	1,863	41.7
*Weighted Average	1,201	1,566	1,547	1,494	1,517	1,638	1,636	1,684	1,697	1,697	41.3
†Weighted Average for Commonwealth	1,164	1,524	1,519	1,473	1,473	1,539	1,541	1,696	1,706	1,706	46.6

* Average for the five towns. † Average for thirty towns.

‡ See remarks on page 31 of Labour Report No. 6, with reference to change of base period.

Note.—Corresponding index-numbers for the intervening months are given in Labour Reports Nos. 6, 7, 8 and 9; in Labour Bulletins Nos. 17 and 18; and in the Quarterly Summary of Statistics Nos. 70 to 75.

§ 8. Investigation into Purchasing-Power of Money in 150 Towns in Commonwealth.

1. **Introduction.**—In order to supplement the information as to variations in the purchasing-power of money, which is collected each month for the thirty towns specified in the preceding section, a special investigation was initiated in November, 1913, as to the purchasing-power of money in seventy additional towns in the Commonwealth. This investigation was repeated in November, 1914, November, 1915, November, 1916, November, 1917, and November, 1918. At the four latter periods the number of additional towns from which returns are collected annually was increased to 120. It is intended to carry it out in that month each year, thus making information available annually for 150 towns.

2. **Map shewing relative Purchasing-Power of Money.**—On the map on page 1161 each town is shewn by means of a number, the reference list at the side of the map indicating the town corresponding to each number and its relative index-numbers for the years 1913, 1914, 1915, 1916, 1917 and 1918. The figures in black type relate to the cost of food, groceries, and rent of 5-roomed houses, while those in light type refer to food and groceries only. A glance at the map shews that the distribution of the 150 towns selected is in close approximation to the density of population (indicated by hatching). The weighted average cost for 100 towns in 1913 is taken as base, and the index-numbers are comparable in all respects.

§ 9. Wholesale Prices.

1. **General.**—The results of an investigation into wholesale prices in Melbourne were given in some detail in Report No. 1, from 1871 to the end of September, 1912. In Report No. 2 summarised results were included for the whole of the latter year; in Report No. 5 those for the year 1913; in Report No. 6 those for the years 1914 and 1915, in Report No. 7 those for the year 1916; in Report No. 8 those for the year 1917; and in Report No. 9 those for the year 1918.

The index-numbers up to the year 1911 are based on the prices of eighty commodities, but since that year the number has been increased to ninety-two.* The methods followed for the computation of the wholesale price index-numbers are the same as those adopted in regard to retail prices. The commodities included, the units of measurement for which the prices are taken, and the mass-units, indicating the relative extent to which each commodity, in the units of measurement specified, is used or consumed, are shewn in a tabular statement in Report No. 9 (page 73).

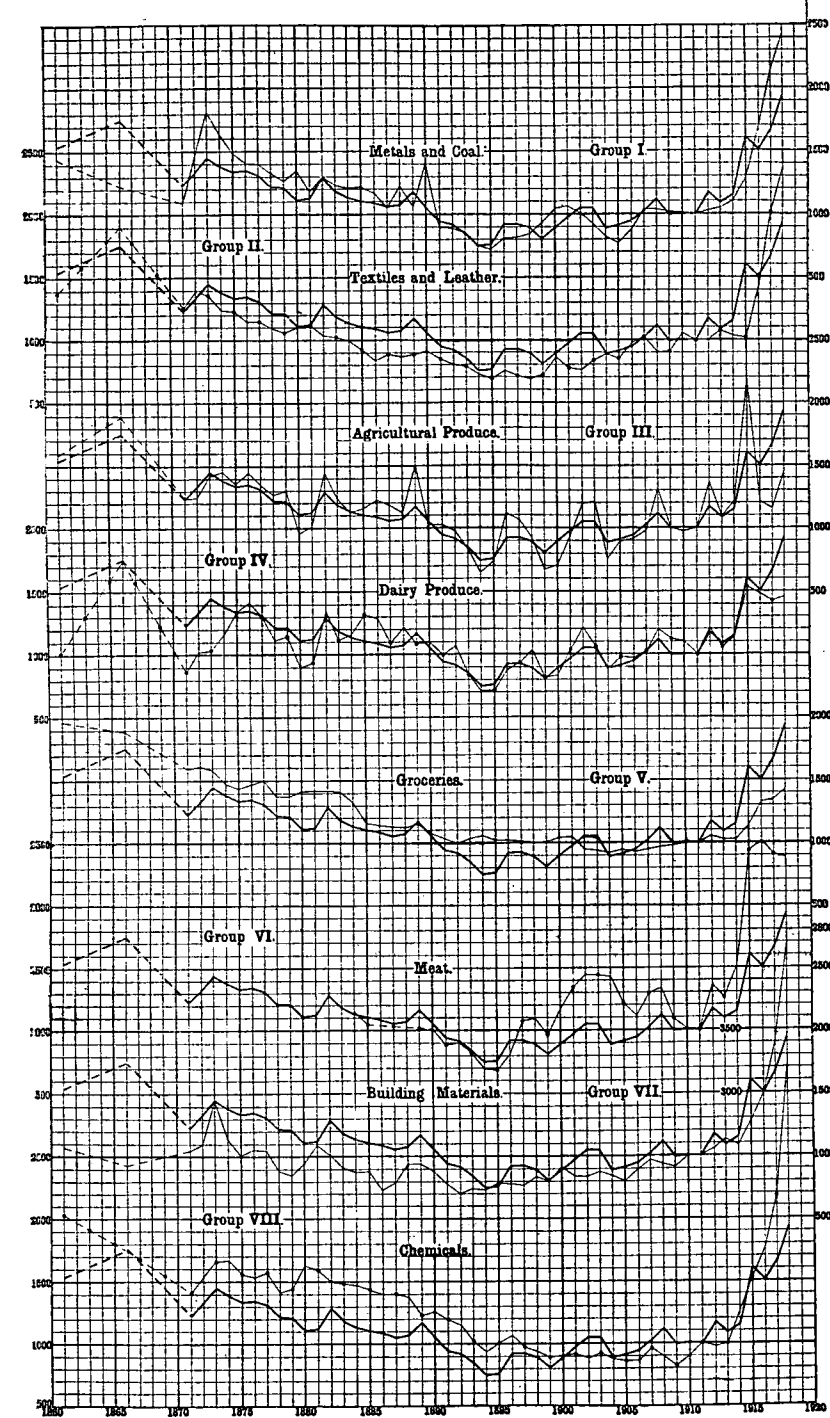
2. **Index-Numbers and Graphs.**—Index-numbers have been computed for each group of commodities, as well as for all groups together. The index-numbers for the several groups, and for all groups together, are shewn in the following table.

(i) *Table of Index-numbers.* The index-numbers have in each case been computed with the prices in the year 1911 as base; that is to say, *they shew the amount which would have had to be expended in each of the years specified in order to purchase what would have cost £1,000 in 1911, distributed in purchasing the relative quantities (indicated by the mass-units) of the several commodities included in each group, and in all groups respectively.* Thus, in the last column it may be seen that the cost of the relative quantities of the various commodities was 1,229 in 1871, and 974 in 1901, as compared with 1,000 in 1911, 1,170 in 1912, 1,088 in 1913, 1,149 in 1914, 1,604 in 1915, and 1,934 in 1918. In other words, prices were lower in 1911 than in either 1871, 1914, 1915, or 1918, and the purchasing-power of money in 1911 was, accordingly, greater. Again, prices were lower in 1901 than in 1911, and the purchasing-power of money in the former year was, therefore, greater.

* In the computation of the index-numbers for years prior to 1911, the aggregate expenditure on 80 commodities in 1911 is taken as base (= 1,000), while for later years the aggregate expenditure on 92 commodities is taken.

REFERENCE TO NUMBERS ON MAP.

	1913.		1914.		1915.		1916.		1917.		1918.		1915.		1916.		1917.		1918.	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
1 SYDNEY ..	1,109	634	1,124	651	1,321	801	1,305	851	1,352	895	1,372	896	1,110	922	1,016	837	996	855	1,046	874
2 Newcastle ..	960	637	973	648	1,228	847	1,173	856	1,229	868	1,279	907	1,174	968	1,169	847	1,225	874	1,223	858
3 Broken Hill ..	1,116	768	849	773	1,162	1,013	1,341	1,042	1,319	1,002	1,287	903	1,137	873	1,100	864	1,133	892	1,150	879
4 Goulburn ..	874	629	1,035	677	1,271	854	1,247	864	1,297	864	1,287	903	1,145	920	1,198	914	1,232	931	1,171	956
5 Bathurst ..	892	633	909	608	1,102	825	1,109	825	1,111	858	1,112	858	1,135	841	1,153	859	1,252	869	1,247	909
6 Armidale ..	875	601	948	618	1,148	863	1,150	834	1,237	866	1,263	899	1,185	884	1,103	822	1,192	930	1,171	929
7 Cobarr ..	857	681	881	742	996	907	1,159	909	1,187	923	1,189	923	1,202	883	1,233	944	1,224	937	1,339	988
8 Cooma ..	861	638	975	662	1,221	902	1,131	884	1,154	881	1,195	898	1,078	854	1,118	901	1,139	915	1,135	905
9 Cootamundra ..	977	632	990	653	1,290	892	1,228	864	1,227	876	1,263	894	1,217	854	1,228	872	1,234	870	1,280	917
10 Deniliquin ..	836	606	943	675	1,199	924	1,148	870	1,173	894	1,190	904	1,190	887	1,188	853	1,223	872	1,278	898
11 Grafton ..	919	632	922	654	1,181	913	1,164	834	1,255	936	1,254	935	1,131	886	1,093	834	1,136	871	1,215	908
12 Hay ..	918	688	989	740	1,277	1,006	1,235	948	1,227	938	1,200	889	1,101	859	1,114	827	1,184	878	1,246	895
13 Lismore ..	931	695	1,042	723	1,213	880	1,183	842	1,299	949	1,263	938	1,201	902	1,131	910	1,258	871	1,310	927
14 Lithgow ..	915	628	938	625	1,227	894	1,212	884	1,229	906	1,263	912	1,252	870	1,244	868	1,258	875	1,271	888
15 Moree ..	981	681	1,041	696	1,256	937	1,225	906	1,376	928	1,406	960	1,201	841	1,233	857	1,271	909	1,312	955
16 Mudgee ..	824	599	895	640	1,131	863	1,182	878	1,165	878	1,175	888	1,235	865	1,256	900	1,251	873	1,279	902
17 Queanbeyan ..	1,052	590	899	635	1,233	906	1,139	873	1,204	923	1,194	914	1,177	850	1,245	907	1,271	928	1,368	928
18 Tamworth ..	902	599	1,038	649	1,221	874	1,206	874	1,285	901	1,247	911	1,120	862	1,099	860	1,149	892	1,195	908
19 Wagga Wagga ..	967	684	949	670	1,178	834	1,207	818	1,262	841	1,315	875	1,100	867	1,148	830	1,178	868	1,182	870
20 Yass ..	943	637	1,040	676	1,251	948	1,201	899	1,244	927	1,239	911	1,258	869	1,232	872	1,260	885	1,251	901
21 West Wyalong ..	988	631	952	669	1,130	890	1,177	906	1,229	910	1,278	935	1,190	877	1,221	870	1,297	927	1,313	926
22 MELBOURNE ..	964	568	1,019	628	1,240	852	1,207	807	1,229	814	1,304	861	1,230	834	1,155	846	1,202	850	1,219	888
23 Ballarat ..	787	566	845	636	1,084	874	1,012	815	1,016	806	1,051	842	1,163	879	1,125	921	1,236	940	1,238	941
24 Bendigo ..	815	573	873	641	1,068	843	1,030	811	1,047	797	1,090	826	1,262	911	1,210	868	1,247	906	1,272	924
25 Geelong ..	875	579	943	639	1,145	849	1,125	809	1,113	813	1,222	821	1,197	859	1,193	902	1,244	887	1,233	920
26 Warrnambool ..	865	581	914	620	1,152	868	1,190	804	1,117	816	1,172	863	1,227	900	1,184	881	1,226	904	1,227	902
27 Ararat ..	833	577	915	641	1,179	895	1,119	852	1,126	849	1,176	878	1,180	865	1,198	865	1,258	900	1,251	902
28 Bairnsdale ..	796	579	838	615	1,155	903	1,053	811	1,079	833	1,136	865	1,182	865	1,198	865	1,258	900	1,251	902
29 Camperdown ..	868	572	816	625	1,051	818	1,079	800	1,093	803	1,148	864	1,182	865	1,198	865	1,258	900	1,251	902
30 Castlemaine ..	868	547	911	638	1,137	867	1,089	831	1,079	822	1,138	864	1,182	865	1,198	865	1,258	900	1,251	902
31 Creswick ..	730	577	808	636	1,056	883	1,039	860	998	838	1,055	858	1,045	853	977	811	985	842	994	847
32 Daylesford ..	779	590	817	638	1,073	885	1,000	821	991	806	1,060	853	1,071	857	1,068	845	1,025	818	1,039	815
33 Echuca ..	811	607	857	672	1,061	876	1,009	827	1,084	852	1,069	862	1,162	890	1,167	864	1,190	871	1,201	892
34 Hamilton ..	871	594	928	636	1,275	924	1,102	847	1,163	825	1,160	860	1,161	856	1,117	843	1,131	847	1,213	879
35 Horsham ..	849	534	988	670	1,202	921	1,179	860	1,134	847	1,189	890	1,045	853	977	811	985	842	994	847
36 Koroombura ..	839	596	892	625	1,182	907	1,088	798	1,082	827	1,103	835	1,071	857	1,068	845	1,025	818	1,039	815
37 Kyneton ..	766	582	790	611	1,114	887	1,049	824	1,080	825	1,098	849	1,071	857	1,068	845	1,025	818	1,039	815
38 Maryborough ..	745	573	808	626	1,029	844	1,037	836	1,022	832	1,040	855	1,152	890	1,167	864	1,190	871	1,201	892
39 Mildura ..	972	608	1,053	696	1,272	939	1,330	907	1,348	921	1,356	896	1,162	890	1,167	864	1,190	871	1,201	892
40 Null ..	867	593	905	656	1,121	887	1,142	867	1,142	861	1,170	872	1,149	859	1,151	823	1,146	831	1,171	871
41 Portland ..	796	592	804	624	1,220	923	1,121	869	1,079	834	1,170	872	1,182	865	1,198	865	1,258	900	1,251	902
42 Sale ..	784	521	874	624	1,070	824	1,022	797	1,056	836	1,088	858	1,182	865	1,198	865	1,258	900	1,251	902
43 Swan Hill ..	975	613	1,004	639	1,079	874	1,204	867	1,257	859	1,288	858	1,081	954	1,055	870	977	870	1,041	939
44 Wallalla ..	790	687	808	693	1,025	897	954	852	966	873	982	880	1,236	917	1,344	897	1,289	873	1,235	912
45 Wangaratta ..	825	589	965	662	1,173	876	1,108	824	1,141	844	1,185	843	1,038	873	983	830	962	809	1,074	854
46 Warracknabeal ..	810	555	877	647	1,082	814	1,048	783	1,085	788	1,083	804	1,236	917	1,344	897	1,289	873	1,235	912
47 BRISBANE ..	878	583	919	627	1,166	878	1,050	763	1,129	838	1,205	901	1,447	1,032	1,367	980	1,615	1,088	1,646	1,178
48 Toowoomba ..	840	603	898	646	1,119	894	992	760	1,094	867	1,205	931	1,279	896	1,222	775	1,234	847	1,460	949
49 Rockhampton ..	868	617	920	668	1,184	945	1,063	817	1,090	838	1,178	924	1,227	895	1,255	848	1,330	905	1,334	971
50 Charters Towers ..	907	658	997	752	1,188	942	1,130	884	1,197	926	1,301	925	1,227	895	1,255	848	1,330	905	1,334	971
51 Warwick ..	822	591	863	635	1,077	863	987	773	1,080	861	1,175	922	1,227	895	1,255	848	1,330	905	1,334	971
52 Bundaberg ..	851	620	893	650	1,128	873	1,041	829	1,120	884	1,245	965	1,182	865	1,198	865	1,258	900	1,251	902
53 Cairns ..	1,087	704	1,140	809	1,248	913	1,299	929	1,120	884	1,245	965	1,182	865	1,198	865	1,258	900	1,251	902
54 Charleville ..	1,089	704	1,041	722	1,396	1,001	1,338	936	1,381	989	1,428	1,031	1,182	865	1,198	865	1,258	900	1,251	902
55 Chillagoe ..	1,153	834	1,058	892	1,319	1,000	1,112	920	1,093	981	1,228	1,031	1,182	865	1,198	865	1,258	900	1,251	902
56 Cooktown ..	937	745	1,003	799	1,125	959	1,072	931	1,110	979	1,150	1,018	1,182	865	1,198					



EXPLANATORY NOTE.—The scale for each of the graphs for groups 1, 3, 5, and 7 is shown by the figures on the right of the diagram, that of the graphs for groups 2, 4, and 6 on the left of the diagram, and that for group 8 on the left of the diagram with a continuation upwards on the vertical lines representing the years 1913 and 1914, the line marked 1000 showing the base line (for the year 1911) in each case. The heavy line in each graph represents the index-numbers for all groups combined, the light line (dotted thus . in the case of the even groups) indicating in each instance the index-numbers for the separate group. (See page 1160.)

MELBOURNE WHOLESALE PRICES, INDEX-NUMBERS, 1861 TO 1918,
COMPUTED TO YEAR 1911 AS BASE.

Year.	I. Metals and Coal.	II. Jute, Leather, etc.	III. Agri- cultural Produce, etc.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Mate- rials.	VIII. Chem- icals.	All com- modities together.
1861	1,438	1,881	1,583	1,008	1,963	..	1,070	2,030	1,538
1871	1,096	1,257	1,236	864	1,586	..	1,044	1,409	1,229
1881	1,178	1,115	1,012	935	1,421	..	1,091	1,587	1,121
1891	895	847	1,024	995	1,032	888	780	1,104	45
1901	1,061	774	928	1,029	1,048	1,345	841	917	974
1902	1,007	756	1,193	1,215	945	1,447	837	881	1,051
1903	923	834	1,209	1,059	930	1,443	875	921	1,049
1904	821	885	754	876	916	1,427	845	875	890
1905	772	850	894	980	942	1,209	801	859	910
1906	882	978	916	972	923	1,110	896	864	948
1907	1,037	1,017	973	1,020	948	1,294	968	961	1,021
1908	1,033	901	1,312	1,198	968	1,335	935	891	1,115
1909	1,014	907	1,000	1,119	978	1,088	911	815	993
1910	1,004	1,052	969	1,100	999	1,008	996	898	1,003
1911	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1912	1,021	991	1,370	1,206	1,052	1,357	1,057	978	1,170
1913	1,046	1,070	1,097	1,054	1,024	1,252	1,123	995	1,088
1914	1,099	1,032	1,207	1,137	1,021	1,507	1,081	1,253	1,149
1915	1,284	1,017	2,162	1,530	1,133	2,435	1,275	1,523	1,604
1916	1,695	1,423	1,208	1,485	1,322	2,515	1,491	1,760	1,504
1917	2,129	2,008	1,157	1,423	1,343	2,403	1,884	2,171	1,662
1918	2,416	2,360	1,444	1,454	1,422	2,385	2,686	3,225	1,934

Note.—The figures given in this table are comparable in the vertical columns, but are not directly comparable horizontally. The index-numbers are reversible.

(ii) *Graphs.* The index-numbers are shown for each group and for all groups combined in the graphs on page 1162. The heavy line, repeated on each graph, represents the index-numbers for the weighted average for all groups, and is shown so that comparison may be made between the price levels for all commodities and those for the commodities comprised in each group separately. The index-numbers for the individual groups are represented by the light lines. The broken lines at the commencement of each graph show the index-numbers for the separate years 1861 and 1866, the continuous records commencing with the year 1871. The actual index-numbers for the whole period were given in Report No. 1.

3. *Seasonal Fluctuations and Tables of Prices.*—Information as to seasonal fluctuations in wholesale prices was given in Report No. 2 (page 64), and tables of prices of each commodity were given in Appendixes to Reports Nos. 1, 2, 5, 6, 7, 8 and 9.

4. *Fluctuations in Wholesale Prices, July, 1914, to March, 1919.*—Since the outbreak of war, prices of many commodities have increased considerably. This is shown in the following table in which the index-numbers are given for each group for the month of March, 1919, taking July, 1914, the last month before the outbreak of war, as base (=1,000) for each group:—

MELBOURNE WHOLESALE PRICES.—VARIATIONS BETWEEN JULY, 1914,
AND MARCH, 1919.

Particulars.	I. Metals and Coal.	II. Jute, Leather, etc.	III. Agri- cultural Produce, etc.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Mate- rials.	VIII. Chem- icals.	All Groups.
July, 1914	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
March, 1919	2,000	1,850	1,611	1,355	1,381	1,465	2,606	3,089	1,683

It may be seen that there has been an aggregate increase in prices during the period specified of no less than 68.3 per cent. The greatest increase, 208.9 per cent., is recorded in Group VIII. (Chemicals), and the least, 35.5 per cent., in Group IV. (Dairy Produce).

§ 10. Control of Trade and Prices during War.

1. **General.**—Shortly after the outbreak of war, a conference of Federal and State Ministers met to discuss the financial position and other matters, and it was decided that for the purpose of controlling the prices of foodstuffs, each State should introduce *uniform* legislation, since it was obvious that this was necessary in view of all the circumstances. Particulars of the various Acts passed by the State Governments were given in Labour Bulletin No. 6, September, 1914, pages 132–147. The same publication shews that there was great diversity in regard to the operations of the various authorities created in the different States.

As a further outcome of this conference, in addition to the various State Boards and Commissions, a Federal Royal Commission, consisting of the Hon. Alfred Deakin (chairman), the Hon. Dugald Thomson, formerly Minister for Home Affairs, and Mr. G. H. Knibbs, C.M.G., Commonwealth Statistician, was appointed to collect information and report upon such matters as the supply of foodstuffs and other necessities required by and available for Australia during the war and cognate matters. This Commission ceased to exercise its functions after the 30th October, 1914.

2. **Federal Control of Prices.**—In March, 1916, the Federal Government created a Prices Adjustment Board with authority to fix the prices of flour, bread, bran, and pollard. The Board made investigations, and fixed the prices of flour, bran, and pollard in every milling centre in Australia. Prices of bread were fixed in upwards of 1,000 separate towns, after investigations had been made as to the cost of manufacture, distribution, etc. An important judgment of the High Court, as to the powers of Government to fix prices, was obtained as the result of the conviction of a Melbourne suburban baker, by the local magistrate, for selling bread at a higher rate than that fixed by the Prices Adjustment Board. This conviction was appealed against, but the High Court, by a majority decision, affirmed that in matters affecting the safety of Australia the Government, under the War Precautions Act, had plenary powers, and that the decision as to what is necessary rests with the Executive and not with the judicial authority. After this judgment, the scope of the investigations and activities of the Prices Adjustment Board were considerably enlarged, and an exhaustive list of commodities declared to be “necessary commodities.” Later, a Commissioner was appointed in each State to make investigations, and to make recommendations to the Minister as to the necessity for fixing maximum selling prices of various commodities.

Shortly after the appointment of these Commissioners, the members of the Prices Adjustment Board resigned in a body, and since then the control of prices has been in the hands of the Minister acting upon the recommendations of the State Commissioners. The Commissioner for Victoria acts also as Chief Prices Commissioner. Prices have been fixed, by regulations under the War Precautions Act, for a large number of commodities. In May, 1919, the Commonwealth Government released from the control of the Prices Commissioners many articles, trade in which had been regulated during the war. At the end of the month the branch offices in all the States were closed. A small staff is still retained (August, 1919) at the Central Office of the Prices Commission in Melbourne to deal with the control of a few articles, trade in which regulation is continued. These include butter, cheese, and flour. Since the release of commodities from price-fixing regulations by the Commonwealth Government, some of the States have put into operation the provisions of price-fixing legislation already on the Statute Books, while others propose to pass such legislation. The whole question will be reviewed in the next issue of the Year Book.

SECTION XXXIV.

MISCELLANEOUS.

§ 1. Immigration.

(A) The Encouragement of Immigration into Australia.

1. **Introduction.**—Various measures have from time to time been adopted by the Commonwealth and State Governments, as well as by private societies and individuals, with a view to promoting the immigration of suitable classes of settlers into Australia. Since the outbreak of war, however, this work has remained in abeyance. The activities of the Commonwealth Government (which is vested with constitutional powers in regard to immigration under Sec. 51, xxvii., of the Constitution Act 1900) with respect to the encouragement of immigration, have hitherto practically been confined to advertising the resources and attractions of Australia in handbooks, newspapers, and periodicals.

2. **State Immigration.**—The advertising in the United Kingdom of the resources of the individual States has been carried out by their Agents-General in London. During 1910 and the three subsequent years, a great advance was made in Australian immigration generally, the State Governments having adopted more active and direct means than had hitherto existed for making the advantages and opportunities of their respective States better known to the people of the United Kingdom, Europe, and America. During the war, no State action was taken in the matter of immigration. In previous issues of the Year Book will be found in detail the various methods under which intending immigrants could obtain information and assistance (see Year Book No. 8, p. 1053).

Particulars of the net immigration to the Commonwealth are given on page 110, and of assisted immigration on page 122 hereinbefore.

3. **Commonwealth Scheme of Immigration.**—It is the function of the Commonwealth Department of Home and Territories to advertise the attractions of Australia for settlers, farm workers, and tourists. The Commonwealth carries on the general advertising of Australia by means of paragraphs and illustrated articles in British, European, and American publications, while the several States advertise for the class of immigrants they specially require. Bioscope films are utilised for the illustration of lectures. Exhibitions are held throughout the chief rural districts and at the important agricultural shows in Great Britain, and handbooks for settlers and tourists, as well as folders and other publications, have been issued. Pictorial posters are also utilised. The outbreak of war, however, interrupted the vigorous campaign that had been initiated, and the matter of advertising and recruiting for immigrants came practically to a standstill. Plans have, however, been made for reviving this work as conditions become more normal.

4. **The High Commissioner for Australia and the Agents-General.**—Intending settlers or immigrants may, on application, obtain information from the High Commissioner for Australia—

THE RIGHT HON. A. FISHER, P.C.,
AUSTRALIA HOUSE,
STRAND,
LONDON, W.C.

Information regarding individual States may be obtained from the officials specified below :—

AUSTRALIAN AGENTS-GENERAL.

<i>New South Wales</i> ..	Hon. C. G. WADE, K.C. . .	Strand, London, W.C.
<i>Victoria</i> ..	Sir PETER MCBRIDE, K.B.	Australia House, Strand, London
<i>Queensland</i> ..	Col. the Hon. Sir T. R. ROBINSON ..	Marble Hall, 409-10, Strand, London
<i>South Australia</i> ..	Hon. EDWARD LUCAS ..	85 Gracechurch St., London, E.C.
<i>Western Australia</i>	Hon. J. D. CONNOLLY ..	Savoy House, Strand, London
<i>Tasmania</i> ..	(<i>Vacant</i>)	

(B) The Regulation of Immigration into Australia.

1. **Pre-Federal Restrictions.**—(i) *Alien Races.* The several States of Australia had regarded it as desirable, long prior to Federation, to impose certain restrictions upon the admission of persons wishing to become inhabitants of those States. The influx of Chinese, for example, was limited by stringent statutes, and later, general Acts were passed in some of the States which had the effect of restricting the immigration of other—principally Asiatic—races.

(ii) *Undesirable Immigrants.* Further restrictions were placed upon the admission of persons who were undesirable as inhabitants, either for medical or moral reasons, or who were likely to be an economic burden upon the community.

2. **Powers and Legislation of the Commonwealth.**—(i) *Constitutional Powers.* By Chap. I., Pt. V., Sec. 51, xxvii. and xxviii. of the Commonwealth Constitution Act the Parliament of the Commonwealth is empowered to make laws with respect to immigration and emigration and the influx of criminals. (See page 22 herein.)

(ii) *Legislation.* The powers above specified have now been exercised by the Commonwealth Government, and the laws passed in pursuance thereof supersede the previously existing State laws.

The first Act passed, dealing with this matter, was the Immigration Restriction Act 1901, which contained provisions restricting the immigration of the classes of persons previously mentioned, and also persons under contract to perform manual labour. The provisions regarding contract labour were repealed and amended by the Contract Immigrants Act 1905, and the principal Act was also amended by the Immigration Restriction Amendment Act 1905, and subsequently by the Immigration Restriction Acts of 1908 and 1910, and the Immigration Act of 1912. The immigration of alien races and undesirable persons is now regulated by the Immigration Act 1901-12. Admission of immigrants under contract to perform manual labour is, however, still controlled by the provisions of the Contract Immigrants Act 1905, and will be permitted if the contract is in writing, is made by or on behalf of some person named, who must be resident in Australia, and approved by the Minister. Such approval, which must be obtained before the immigrant lands in Australia, will not be given if the contract is made with the view to affecting an industrial dispute, or if the remuneration and other terms are not as advantageous to the contract immigrant as those current for workers of the same class at the place where the contract is to be carried out.

There is an additional provision where the proposed immigrant is not a British subject born in the United Kingdom or descendant of such a person. In such case it has to be proved that it is difficult for the employer to obtain in the Commonwealth a worker of at least equal skill and ability.

In case of infraction of the law it is provided that the contract is absolutely void, and the immigrant and employer are both liable to penalties; the employer is also liable to compensate the immigrant until he obtains employment, or, at the option of the immigrant, to provide expenses for his return to the country whence he came.

3. Prohibited Immigrants.—(i) *Provisions of the Act.* Persons comprised in the following classes are prohibited from entering the Commonwealth:—(a) Any person who fails to pass the dictation test; that is to say, who fails to write out not less than fifty words of a language prescribed by regulation when dictated to him by an officer administering the Act. (b) Any person not possessed of the prescribed certificate of health. (c) Any idiot, imbecile, feeble-minded person, or epileptic. (d) Any person suffering from a serious transmissible disease or defect. (e) Any person suffering from pulmonary tuberculosis, trachoma, or from any loathsome or dangerous communicable disease, either general or local. (f) Any person suffering from any other disease or mental or physical defect, which from its nature is, in the opinion of an officer, liable to render the person concerned a charge upon the public or upon any public or charitable institution. (g) Any person suffering from any other disease, disability, or disqualification which is prescribed. (h) Any person who has been convicted of a crime and sentenced to imprisonment for one year or more, unless five years have elapsed since the termination of the imprisonment. (i) Any person who has been convicted of any crime involving moral turpitude, but whose sentence has been suspended or shortened conditionally on his emigration, unless five years have elapsed since the expiration of the term for which he was sentenced. (j) Any prostitute, procurer, or person living on the prostitution of others.

Regarding (a) it may be stated that the Act of 1901 provided for the dictation of not less than fifty words of a European language. The Act of 1905 provided for the retention of this test until regulations be passed prescribing the languages to be employed. No such regulations have yet been made, and the provision of the Act of 1901 is therefore *de facto* still in force. It may be stated that in general practice the dictation test is not imposed upon persons of European race.

Regarding (b), the Amending Act of 1912 provides for the establishment of Commonwealth Medical Bureaux at places outside the Commonwealth, and the appointment of medical referees to examine intending immigrants and issue certificates of health in the prescribed form, on payment of a prescribed fee. A chief medical officer has already been appointed to take charge of the Bureaux attached to the High Commissioner's Office in London. This officer arranges for the selection of suitable medical referees for appointment to act at various centres throughout the United Kingdom.

Provision is also made for the medical examination of, and the issue of certificates of health to, intending immigrants who embark at a port where there is no medical referee or who arrive in the Commonwealth without a certificate in the prescribed form.

Pending the proper organisation in the United Kingdom of the Medical Bureaux and the appointment of medical referees, the requirement that immigrants must produce a certificate of health on arrival in Australia will not be enforced.

(ii) *Exemptions.* From these restrictions the following persons are exempted:—(a) Any person holding an exemption certificate. (b) Members of the King's regular land and sea forces. (c) The master and crew of any public vessel of any Government. (d) The master and crew of any other vessel landing during the stay of the vessel in a Commonwealth port. The exemption of members of a crew during the vessel's stay in port is subject to the production of identification cards to an officer on demand. This provision will not be enforced in respect of white members of a crew, but there is a further provision which empowers an officer to refuse any member of a crew permission to land unless he is satisfied that such person is free from a communicable disease. Before the ship can obtain her outward clearance the crew must, at the demand of an officer administering the Act, be mustered, and if any member of the crew be missing.

who would otherwise, in the opinion of the officer, have been a prohibited immigrant, then such person is deemed to be a prohibited immigrant, and until the contrary be proved, to have entered the Commonwealth contrary to the Act. (e) Any Commissioner of, or other person accredited from, the Imperial or any other Government.

(iii) *General Provisions.* An immigrant may be required to pass the dictation test at any time within two years after he has entered the Commonwealth. This applies particularly to coloured persons, but any immigrant found within three years of entering the Commonwealth to be suffering from a prohibitory disease or defect may be deemed to be a prohibited immigrant unless it is proved to the Minister's satisfaction that he was free from the disease or disability at the time of his arrival in Australia.

A prohibited immigrant within the meaning of (a) above may, at the discretion of an officer, be allowed to enter the Commonwealth, or to remain within it, upon depositing £100 and within thirty days either obtaining an exemption certificate or departing from the Commonwealth; in either case the deposit is returned.

The punishment for breach of the Act by a prohibited immigrant is imprisonment for six months and deportation in addition to or in substitution for such imprisonment, if so ordered.

4. Liabilities of Shipmasters and Others.—The master, owners, agents, and charterers of a vessel from which a prohibited immigrant enters the Commonwealth are jointly and severally liable to a penalty of £100 for each entrant. The vessel may be detained as security, but may be released upon the giving of a bond with two sureties for the payment of any penalties; it may also be seized and sold in default of payment of penalties. The master, owners, agents, and charterers may be required to provide a return passage for the prohibited immigrant and to pay for his maintenance during his detention prior to deportation. Masters of vessels are authorised to prevent such a person from landing, and to obtain any necessary assistance.

Under the Immigration Restriction Act 1908, any person on board a vessel at the time of her arrival from any place outside Australia at any port in Australia who is not (a) a bona fide passenger of the vessel, or (b) a member of the crew of the vessel whose name is on the articles, is deemed to be a stowaway, unless the master gives notice that the person is on board the vessel, and does not permit him to land until an officer has had an opportunity of satisfying himself that the person is not a prohibited immigrant. The master, owners, agents, and charterers of a vessel are jointly and severally liable to a penalty of £100 for each stowaway brought into any port in Australia. The Immigration Act 1912 provides for a penalty of £200 for each stowaway in cases where the master has been convicted of a similar offence within the preceding twelve months. Power is given to search vessels for stowaways. The Immigration Restriction Act 1910 provides penalties for being concerned in bringing immigrants secretly to the Commonwealth.

5. Agreements with other Countries.—Arrangements may be made with the Government of any country regulating the admission into Australia of the subjects or citizens of such country, such subjects not being, during the subsistence of the arrangement, required to pass the dictation test.

Persons who have resided either continuously or from time to time in the Commonwealth for a period of five years in the whole, and who are about to depart from it, being persons who, if they return, would be prohibited immigrants, may obtain a certificate of exemption entitling them to return.

Certificates of exemption are granted by the Minister for Home and Territories, whose department administers the Act, and by the Collector of Customs in each State.

6. Statistics.—The following tables shew the number of persons who desired but were not permitted to land, those who were allowed to land, and the nationality of the persons admitted.

PERSONS ADMITTED OR REFUSED ADMISSION TO COMMONWEALTH UNDER PROVISIONS OF IMMIGRATION RESTRICTION ACT, 1909 TO 1918.

Year.	Persons Admitted who Passed Education Test.	Persons Admitted without Passing Education Test.	Persons Refused Admission.
1909	1	83,324	108
1910	Nil	94,543	42
1911	Nil	139,020	83
1912	Nil	163,990	187
1913	Nil	140,251	109
1914	Nil	110,701	54
1915	Nil	70,436	56
1916	Nil	59,140	233
1917	Nil	53,036	13
1918	Nil	77,169	16

NATIONALITY OF PERSONS ADMITTED WITHOUT TEST, 1909 TO 1918.

Nationality.	1909. ^a	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
EUROPEANS—										
Austrians ..	895	816	1,184	855	794	676	(f)27	(f)10	..	(f)3
Belgians ..	35	50	84	95	63	63	105	69	35	35
British ..	71,201	81,457	124,061	146,602	122,443	93,136	60,505	50,489	45,988	971,765
Danes ..	272	269	393	371	444	478	305	173	137	110
Dutch ..	187	175	307	435	288	287	182	156	194	163
French ..	1,347	1,160	1,166	1,238	1,491	1,187	595	516	676	571
Germans ..	2,109	2,449	2,517	3,501	3,155	3,395	(f)890	(f)452	(f)58	(f)36
Greeks ..	327	380	583	736	480	772	361	160	265	288
Italians ..	1,078	883	1,365	1,632	1,963	1,642	645	179	93	24
Maltese ..	..	..	41	122	193	464	57	173	212	14
Poles ..	24	11	34	17	7	12	2	..	1	3
Portuguese ..	10	3	6	9	25	12	1	..	7	8
Rumanians ..	11	3	13	24	9	34	6	8	13	9
Russians ..	466	735	994	1,159	1,334	1,446	716	497	311	199
Scandinavians ..	891	1,210	1,384	1,303	1,285	1,489	1,202	786	552	493
Spaniards ..	56	49	128	118	116	169	206	51	37	23
Swiss ..	131	109	130	209	202	220	64	40	21	39
Turks ..	14	10	10	6	5	19	1	1	..	..
Other Europeans ^b	16	22	27	(e)57	5	(d)165	13	7	1	..
AMERICANS—										
North Americans	692	746	914	1,386	1,713	1,529	1,066	1,050	870	749
South Americans	14	13	17	37	14	31	5	16	24	12
American Indians	..	..	31	9	..	1	1	..	..	..
Negroes ..	6	14	13	47	7	23	9	8	9	2
West Indians ..	6	13	11	8	1	3	2	9	1	3
ASIATICS—										
Afghans ..	3	2	14	17	7	2	3	..	..	..
Arabs ..	1	1	1	18	14	19	2	6	..	..
Burmese ..	1	..	..	..	1	1	1	..	..	..
Chinese ..	1,729	1,817	2,009	2,250	2,286	1,975	2,287	2,289	2,016	1,723
Cingalese ..	10	14	4	17	8	9	6	18	11	2
Eurasians ..	6	14	7	13	2	..	..	..	..	..
Filipinos ..	37	60	17	13	12	4	15	15	15	10
Hindoos ..	130	156	188	157	187	305	144	133	111	102
Japanese ..	509	610	459	698	822	387	423	1,089	888	431
Javanese ..	52	4	12	6	3	20	3	4	20	21
Malays ..	309	304	479	326	303	291	285	254	190	65
Syrians ..	73	95	104	75	31	19	5	14	13	1
OTHER RACES—										
Maoris ..	108	62	31	32	41	21	16	6	2	1
Mauritians ..	3	4	9	2	7	1	..	..	..	..
Pacific Islanders	94	54	69	92	105	101	37	59	40	43
Papuans ..	439	622	139	196	171	189	185	178	132	133
St. Helena Blacks	1	..	..	..	..	..	..	..	..	..
Unspecified ..	31	141	(e)65	(e)102	(e)214	(e)104	(e)58	(e)225	63	(e)88
Total ..	83,324	94,543	139,020	163,990	140,251	110,701	70,436	59,140	53,036	77,169

(a) One person was admitted, after passing the test, in each of the years 1908 and 1909. (b) Not specified. (c) Bulgarians. (d) Including 162 Bulgarians. (e) A large percentage of these immigrants was Timorese. (f) Principally prisoners of war and their families. (g) Including 44,151 returned troops and nurses.

The following table has been prepared, shewing to what extent immigration has taken place into the several States of the Commonwealth from 1909 to 1918 :—

**IMMIGRATION INTO THE SEVERAL STATES OF THE COMMONWEALTH,
1909 TO 1918.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	C'wealth.
1909 ..	51,170	13,602	6,720	3,169	6,343	2,172	148	83,324
1910 ..	53,029	14,942	10,353	3,988	9,881	2,168	182	94,543
1911 ..	69,640	21,488	17,778	7,039	18,386	4,563	126	139,020
1912 ..	86,239	34,568	11,820	10,035	16,624	4,480	224	163,990
1913 ..	73,946	29,121	10,496	8,220	15,985	2,350	133	140,251
1914 ..	67,221	20,727	8,594	4,820	6,954	2,249	143	110,708
1915 ..	44,899	13,028	3,963	1,847	4,358	1,925	416	70,436
1916 ..	36,782	12,970	2,426	924	4,054	1,735	249	59,140
1917 ..	32,825	10,701	1,814	1,540	4,761	1,133	262	53,036
1918 ..	37,375	31,114	1,474	1,958	5,043	..	205	77,169

§ 2. Patents, Trade Marks, and Designs.

1. **Devolution of Jurisdiction upon the Commonwealth.**—Prior to the establishment of Federation, and for a few years thereafter, each Australian State possessed independent jurisdiction in respect of patents, copyrights, trade marks, and designs, and had, with the exception of Tasmania in regard to copyrights, enacted its own laws. Any person, therefore, who desired to obtain the grant of a patent, or the registration of any copyright, trade mark, or design had necessarily, with the exception aforesaid, to incur the trouble and expense of making separate applications in each State. The Commonwealth Constitution Act conferred upon the Federal Parliament power to legislate respecting these matters. (See page 22 hereinbefore.) The Patents Act of 1909 applied the laws relating to patents for inventions to the Territory of Papua.

The State Acts, though in general based upon the Imperial Statutes dealing with these subjects, were not wholly governed by them. The Commonwealth Acts, both in regard to principle and practice, have the same general foundation as the Imperial Statutes, but in some respects have been modified and brought into line in accordance with Australian experience.

2. **Patents.**—The first Commonwealth Patents Act was passed in 1903, and was amended in 1906, 1909, 1910, 1915 and 1916. (See page 41 *ante*.) Under these Acts, which are administered by a "Commissioner of Patents," the powers and functions vested under the States Acts became vested in the Commonwealth. A single Commonwealth patent now gives throughout the Commonwealth and the Territory of Papua that protection which formerly could only be obtained by procuring a patent in each State and the said Territory. The rights of State patentees or the patentees in the Territory of Papua are in all cases reserved to them. The holder of a State patent in force may obtain, for a period not exceeding the unexpired time thereof, a Commonwealth patent for the invention comprised in the State patent; provided, however, that any State other than the State in which the patent under the States Patent Act was granted may be excepted from the patent if the Commissioner of Patents is satisfied that the invention either (a) is not novel, (b) has been made the subject of a pending application, or (c) has been published in such State. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout the Commonwealth and the Territory of Papua, and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent, or within such extended time, not exceeding one year, and upon payment of further fees as may be allowed.

(i) *Applications for Patents.* Any of the following persons may make application for a patent :—(a) The actual inventor. (b) His assignee, agent, attorney, or nominee. (c) The actual inventor or his nominee jointly with the assignee of a part interest in the invention. (d) The legal representative of a deceased actual inventor or of his assignee. (e) Any person resident in the Commonwealth to whom the invention has been communicated by the actual inventor, his legal representative, or assignee (if the actual inventor, his legal representative, or assignee is not resident in the Commonwealth). An application for a patent must be for one invention only, and must be made in the form prescribed, and lodged by being left at or sent by post to the Patent Office at Melbourne. It must be accompanied either by a provisional or a complete specification. The application must contain a declaration in the prescribed form setting out the facts relied on to support the application, and must be signed by the applicant before a witness.

(ii) *Term for which Granted.* The term for the duration of every patent is limited to fourteen years from the date of application. A patent ceases if the patentee fails to pay the renewal fee within the prescribed time.

(iii) *Opposition to Grant of Patent.* Within three months of the advertisement of the acceptance of a complete specification, or within such further time, not exceeding one month, as the Commissioner on application made within the three months allows, any person may give notice at the Patent Office of opposition to the grant on any of the following grounds :—(a) That the applicant has obtained the invention from the opponent or from a person of whom he is the legal representative or assignee or nominee. (b) That the invention has not been communicated to the applicant by the actual inventor, his legal representative or assignee (if the actual inventor, his legal representative or assignee is not resident in the Commonwealth). (c) That the invention has been patented in the Commonwealth on an application of prior date or has been patented in a State. (d) That the complete specification describes or claims an invention other than that described in the provisional specification, and that the opponent has applied for a patent for such other invention in the interval between the leaving of the provisional and complete specifications. (e) Want of novelty. (f) Prior publication.

The case is heard and decided by the Commissioner, from whose decision an appeal lies to the High Court or to the Supreme Court of the State in which the Patent Office is situated.

(iv) *Single Patent for Cognate Inventions, etc.* The provisions of the Act relative to single patents for cognate inventions, patents of addition and revocation of patents, will be found in detail in previous issues of the Year Book. (See No. 6, p. 1163.)

(v) *Compulsory Working and Licenses.* At any time not less than four years after the date of a patent, and not less than two years after the 13th December, 1911, any person may apply to the High Court or the Supreme Court of the State in which the Patent Office is situated for an order declaring that the patent article or process is not manufactured or carried on to an adequate extent in the Commonwealth. From and after the time when any such order may take effect, the patent is not deemed to be infringed by the manufacture or carrying on in the Commonwealth of the patented article or process, or by the vending within the Commonwealth of the patented article made within the Commonwealth. By Act No. 13 of 1916, section 87 (a), which provides for compulsory working, has been suspended during the continuance of the present war and for a period of six months thereafter, and in reckoning the said period of four years, the period during which section 87 (a) is suspended shall not be taken into account. Any person interested may, after the expiration of two years from the granting of the patent, present a petition to the Commissioner alleging that the reasonable requirements of the public with respect to a patented invention have not been satisfied and praying for the grant of a compulsory license or, in the alternative, for the revocation of a patent. If the parties do not come to an arrangement between themselves, the Commissioner,

on being satisfied that a *prima facie* case has been made out, must refer the petition to the High Court or the Supreme Court of the State in which the Patent Office is situated. If the Commissioner is not satisfied that a *prima facie* case has been made out he may dismiss the petition.

(vi) *Restoration and Surrender of Patents, and Contracts and Proceedings.* The provisions of the Act with reference to restoration and surrender of patents, contracts, etc., are given in detail in previous issues of the Year Book. (See No. 6, p. 1164.)

(vii) *International Protection of Patents.* The Patents Act contains provisions under which the international arrangements for the protection of patents contained in the Imperial Acts can be made applicable to the Commonwealth by order of the King-in-Council. Applicants for patents, subject to the country in which first application is made being a party to the arrangement, are now, if they apply in Australia within twelve months of their first foreign application, entitled to make application for patents for their inventions in priority to other applicants, and such patents have the same date as the date of the first application abroad. Corresponding arrangements have also been made by the Commonwealth with New Zealand and the Union of South Africa.

(viii) *Patent Attorneys.* Any person on passing the prescribed examination, and on paying a fee of £5, may be registered by the Commissioner as a patent attorney. A solicitor may practise as a patent attorney without passing the prescribed examination and without being registered as a patent attorney. No person may describe himself as a patent attorney, or as a patent agent, or as an agent for obtaining patents unless he is registered or entitled to practise as a patent attorney.

(ix) *Patent Office Publications.* Complete specifications are printed shortly after they become open to public inspection by advertisement of acceptance, or under section 121 of the Act, provided the complete specification is not accepted and advertised. Each specification is open to public inspection. A number of publications, of which a list may be found in the *Australian Official Journal of Patents*, is on sale at the Government Printing Office, Melbourne.

The *Australian Official Journal of Patents* is issued weekly, and contains lists of applications and proceedings, with illustrated notes of accepted complete specifications. A supplementary annual volume contains statistics, indexes to names of persons concerned, classified indexes to subject matter of applications lodged, and a numerical index to proceedings on Commonwealth applications which have been advertised during the year; there are also names and number indexes to proceedings on State applications.

(x) *Applications Filed, Provisional Specifications Accepted, and Letters Patent Sealed.* The numbers of individual inventions in respect of which applications were filed in the States or Commonwealth during each year from 1910 to 1918 inclusive are shewn in the following table. The number of applications accompanied by provisional specifications and the number of patents sealed in respect of applications made in each year are also shewn.

PATENTS.—APPLICATIONS FILED AND LETTERS PATENT SEALED IN THE COMMONWEALTH, 1910 TO 1918.

Year	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
No. of applications	3,605	3,497	4,071	4,163	3,436	3,117	2,906	3,244	3,543
No. of applications accompanied by provisional specifications	2,294	2,290	2,273	2,626	2,232	2,133	1,980	2,186	2,405
Letters patent sealed during each year	1,552	2,027	1,502	1,495	2,098	1,279	1,162	1,218	1,130

(xi) *Revenue of Patent Office.* The revenue of the Commonwealth Patent Office for each year from 1910 to the end of the year 1918 is shewn in the subjoined table:—

REVENUE OF COMMONWEALTH PATENT OFFICE, 1910 TO 1918.

Particulars.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
	£	£	£	£	£	£	£	£	£
Fees collected under—									
States Patents Acts ..	1,940	768	118	50	16	19	15	11	15
Patents Acts 1903-10 ..	17,042	19,640	18,542	18,800	21,575	15,463	14,055	15,629	16,223
Receipts from publications	208	237	305	283	274	298	294	281	317
Petty receipts	33	48	50	49	81	6	4	..	..
Total: ..	19,223	20,693	19,015	19,182	21,946	15,788	14,368	15,921	16,555

3. *Trade Marks.*—The remarks made concerning the unification of the patent system of the Commonwealth apply equally to trade marks. Under the Trade Marks Act 1905, which came into force on the 2nd July, 1906, the Commissioner of Patents is appointed to act also as “Registrar of Trade Marks.” The Trade Marks Act of 1905 was amended by the Patents, Trade Marks, and Designs Act 1910, assented to on the 14th November, 1910, and by the Trade Marks Act 1912, and is now cited as The Trade Marks Act 1905-1912. The principal objects of the amending Act were to enlarge the scope of marks capable of registration, and repeal the provisions of the Act of 1905 relating to the “Workers Trade Mark,” the provisions regarding which were held to be unconstitutional. Special provisions for the registration of a “Commonwealth Trade Mark” are contained in the Act of 1905 and are applicable to all goods included in or specified by a resolution passed by both Houses of Parliament that in their opinion the conditions as to remuneration of labour in connection with their manufacture are fair and reasonable.

(i) *Essential Particulars of Trade Marks.*—

Section 15. “A registrable trade mark shall consist of essential particulars with or without additional matter.”

Section 16. (1) “A registrable trade mark must contain or consist of at least one of the following essential particulars:—(a) The name of the company, individual, or firm represented in a special or particular manner; (b) the signature of the applicant for registration or some predecessor in his business; (c) an invented word or invented words; (d) a word or words having no direct reference to the character or quality of the goods, and not being according to its signification a geographical name or a surname; (e) any other distinctive mark, but a name, signature, or word or words, other than such as fall within the descriptions in the above paragraphs (a), (b), (c) and (d) shall not, except by order of the Registrar, Law Officer, or Court, be deemed a distinctive mark.”

(2) “For the purposes of this section ‘distinctive’ means adapted to distinguish goods of the proprietor of the trade mark from those of other persons.”

(3) “In determining whether a trade mark is so adapted, the Registrar, Law Officer, or Court may, in the case of a trade mark in actual use, take into consideration the extent to which such user has rendered such trade mark in fact distinctive for the goods with respect to which it is registered or proposed to be registered.”

(ii) *State Registrations.* State registrations cease to be in force at the expiration of fourteen years from the date of the Commonwealth Act, or at the time when, under the State Trade Marks Act, the trade mark would, if after the commencement of the Commonwealth Act no fee for the continuance of its registration were paid, first become

liable to removal from the register, whichever first happens. It is also provided that no fee shall be receivable nor shall any act be done after the commencement of the Commonwealth Act for the continuance of the registration of a trade mark under a State Act. Commonwealth registration of a State registered mark may be effected, and the fact of its registration in a State prior to the coming into force of the Commonwealth Act may entitle the registered proprietor in the State to Commonwealth registration, notwithstanding the existence of defects which might be grounds for refusal of an application for the registration of a new trade mark.

(iii) *Duration of Registration and General Provisions.* The registration of a trade mark is for a period of fourteen years, but may be renewed from time to time. International and intercolonial arrangements for the mutual protection of trade marks may be made in a manner similar to that provided for the protection of patents. In this regard Australia has become a party to the International Convention for the protection of industrial property. Registration may be opposed by any person lodging a notice of opposition at the Trade Marks Office within three months after the advertisement of the application, or such further time, not exceeding three months, as may, on application made within the first three months, be allowed.

(iv) *Publications.* The *Australian Official Journal of Trade Marks* is issued weekly, and contains lists of applications and proceedings, with representations of marks (when accepted) sought to be registered. Lists of registered owners of designs and the subject matter of applications are also published weekly in this Journal. Indexes to names of applicants and subject matter of applications are compiled and are on sale.

4. *Designs.*—The Designs Act of 1906 came into operation on the 1st January, 1907, being subsequently amended by the Patents, Designs and Trade Marks Act 1910, and the Designs Act 1912, and is now cited as the Designs Act 1906–12. Under this Act a Commonwealth Designs Office has been established and the Commissioner of Patents appointed “Registrar of Designs.”

(i) *Registration.* Any new and original design which has not been published in Australia before the lodging of an application for its registration may be registered in respect of all or any of the articles enumerated in the classification contained in the regulations, which comprises jewellery, paperhangings, carpets, floor-cloths, lace, hosiery, millinery, wearing apparel, textile fabrics, bookbinding, and articles composed wholly or chiefly of a variety of solid substances. A separate application must be made in respect of each class in which the owner of the design desires it to be registered. After an application for the registration of a design has been lodged, the design may be published and used without prejudice to the validity of the registration.

(ii) *Duration of Copyright in Designs.* The registration takes effect as from the date of the lodging of the application, and, subject to the provisions of the Act, remains in force for a period of five years from that date. Provision is made by the amending Act of 1912 for an extension of the period of registration to fifteen years, subject to applications for extensions being made and the prescribed fees paid before the expiration of five and ten years respectively. The owner of a registered design must within two years after registration substantially use the design, or cause it to be used in Australia, and if he fails to do so the copyright ceases. If, however, such design is used in any manufacture abroad, the above period is limited to six months.

(iii) *General.* The Act also contains provisions regarding the remedies for infringement of designs and the rectification of the register. Arrangements for the international and intercolonial protection of copyright in designs were made by the same proclamation referred to above with regard to patents and trade marks. The owner of a registered design must cause each article to which the design is applied to be marked before delivery for sale with the prescribed mark to denote that the design is registered.

5. Applications for Trade Marks and Designs.—The following table gives particulars of applications for trade marks and designs received and registered under the Commonwealth Acts from 1909 to 1918 inclusive :—

APPLICATIONS FOR TRADE MARKS AND DESIGNS RECEIVED AND REGISTERED UNDER COMMONWEALTH ACTS, 1909 TO 1918.

Applications.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
RECEIVED.										
Trade Marks ..	1,688	1,729	1,977	1,803	1,957	1,619	1,526	1,636	1,532	1,739
Designs ..	187	186	203	235	301	267	326	298	266	262
REGISTERED.										
Trade Marks ..	1,455	1,190	1,323	1,389	1,468	1,272	1,015	1,126	1,033	1,095
Designs ..	166	160	180	211	281	220	266	253	236	223

The following table shows the revenue of the Trade Marks and Designs Office during the years 1914 to 1918 :—

REVENUE OF TRADE MARKS AND DESIGNS OFFICE, 1914 TO 1918.

Particulars.	1914.			1915.			1916.			1917.			1918.		
	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
Fees collected under State Acts ..	42	..	..	32	..	..	21	..	..	28	..	..	14	..	..
Fees collected under Commonwealth Acts	4,610	266	102	4,024	329	95	4,280	354	89	3,978	312	94	4,330	318	114
Total ..	4,652	266	102	4,056	329	95	4,301	354	89	4,006	312	94	4,344	318	114

6. Enemy Patents and Trade Marks.—On the outbreak of the European war the Commonwealth Government deemed it advisable to extend the powers of the Governor-General of the Commonwealth during the continuance of hostilities with reference to patents, trade marks, and designs, the property of alien enemies.

Acts Nos. 15 and 16 of 1914 were accordingly passed by the Commonwealth Parliament in November, 1914, giving the Governor-General power to make regulations as follows :—

- (a) for avoiding or suspending in whole or in part any patent or license the person entitled to the benefit of which is the subject of any State at war with the King ;
- (b) for avoiding or suspending the registration, and all or any rights conferred by the registration, of any trade mark or design the proprietor whereof is a subject as aforesaid ;
- (c) for avoiding or suspending any application made by any such person under any of the Acts referred to in this section ;
- (d) for enabling the Minister to grant, in favour of persons other than such persons as aforesaid, on such terms and conditions, and either for the whole term of the patent or registration or for such less period, as the Minister thinks fit, licenses to make, use, exercise or vend patented inventions and registered designs so liable to avoidance or suspension as aforesaid ; and
- (e) for extending the time within which any act or thing may or is required to be done under any of the Acts referred to in this section.

The regulations prescribed by the Governor-General for giving effect to the provisions of these Acts may be found in the official journals issued by the Commonwealth Commissioner of Patents (see *Australian Official Journal of Patents*, vol. 20, No. 47 *et seq.*).

To the end of December, 1918, 21 applications had been made under these Acts to avoid or suspend patents, of which 6 were granted and 3 refused, the others being withdrawn. Thirty-five applications were also made to avoid or suspend trade marks, of which 8 were granted and subsequently revoked, 22 refused, 3 withdrawn, and 2 are still pending. Five hundred and fifty-eight Commonwealth and 319 State registrations of trade marks, and all rights conferred by such registrations, also have been suspended in favour of the Minister of State for Trade and Customs. Two Commonwealth trade marks—"Lysol" and "Aspirin"—were avoided from the 23rd July, 1917, ten patents were suspended in favour of the Minister of State for the Navy, and in addition, four patents were suspended in favour of the Engineer-in-Chief for the Commonwealth Railways and such person or persons as may be licensed by the Minister.

§ 3. Copyright.

1. **Copyright Legislation.**—Prior to the 1st January, 1907, the date on which the Commonwealth Copyright Act of 1905 came into operation, the subject of copyright was regulated by the laws of the separate States. In general, the State laws were under the like provisions of the Imperial Copyright law, including the law of 1842 and the earlier unrepealed or subsequent Acts, the most important of which were the Colonial Copyright Act 1847 and the International Copyright Act of 1886. They were also generally included under the British international relations embracing the Berne-Paris provisions of the International Copyright Union and the reciprocal relations with the United States of America, with the exception that in the Austria-Hungary Treaty, New South Wales and Tasmania were not parties, because they did not exercise the right of ratification especially reserved to individual colonies.

Though the Commonwealth Copyright Act of 1905 took the place of the State Copyright Acts formerly in force, it left unaffected existing rights under the State laws, but transferred the administration thereof to the Commonwealth. Provision was also made under the law of 1905 for the registration of International and State copyrights. The principal features of the Act of 1905 are given in previous issues of the Year Book (see No. 9, p. 1119). This Act was repealed by the Copyright Act of 1912, which was assented to and became operative on the 20th November, 1912. Subject to modifications relating to procedure and remedies, the Commonwealth law of 1912 adopted the British Copyright Act of 1911, and declared the latter law to be in force within the Commonwealth as from the 1st July, 1912. The British Act extends throughout the whole of His Majesty's dominions, but it is not to be in force in a self-governing dominion unless enacted by the legislature thereof either in full or with modifications relating exclusively to procedure and remedies necessary to adapt the Act to the circumstances of the dominion.

Under the Commonwealth Law of 1912, copyright subsists in "every original literary, dramatic, musical, and artistic work," first published within parts of His Majesty's dominions to which the British Copyright Act of 1911 extends, and in the case of an unpublished work, the author of which was "at the date of the making of the work," a British subject or a resident domiciled within the aforesaid parts of His Majesty's dominions (or under protection through international copyright provisions). The old Common Law right is abrogated by the Act of 1912, and all copyright property is now the creature of statute from the date when it takes shape, either written in words or in some other material form.

Copyright is defined to mean the sole right to produce or reproduce the work or any substantial part thereof in any material form whatever, or any translation thereof, to publish, perform, or deliver the work in public, to dramatise or novelise it, and in the case of a literary, dramatic or musical work, to make any record, cinematograph film or other contrivance by means of which it may be mechanically performed or delivered, or to authorise any of such acts. Architectural works of art are included as to design, but not as to process or methods of construction.

By an Order-in-Council made by the Government of the Commonwealth of Australia, simultaneously with the issue of a Proclamation by the President of the United States of America on the 15th March, 1918, reciprocal protection was extended to citizens of the respective countries in regard to unpublished literary, dramatic, musical and artistic works in which copyright existed on the date mentioned, or may thereafter subsist under the laws of these countries. The enjoyment of the rights conferred by the Order-in-Council is subject to the accomplishment of the conditions and formalities prescribed by law of the United States of America, or, in other words, registration at the Library of Congress, Washington, D.C., U.S.A., is made a condition precedent to the protection of Australian copyright property in the United States of America.

Further details relative to the provisions of the Act of 1912 will be found in previous issues of the Year Book (see No. 8, p. 1066).

2. **Applications for Copyright.**—The following table gives particulars of copyright applications received and registered under the Commonwealth Acts from 1914 to 1918 inclusive :—

**APPLICATIONS FOR COPYRIGHT RECEIVED AND REGISTERED UNDER
COMMONWEALTH ACTS, 1914 TO 1918.**

Year.	Copyrights.			
	Literary.	Artistic.	International and State.	Total.
APPLICATIONS RECEIVED.				
1914	743	219	5	967
1915	740	237	4	981
1916	845	180	..	1,025
1917	835	141	..	976
1918	816	261	4	1,081
APPLICATIONS REGISTERED.				
1914	693	184	5	882
1915	742	222	3	967
1916	797	168	..	965
1917	793	140	..	933
1918	750	232	3	985

The revenue from copyright for the years 1914, 1915, 1916, 1917, and 1918, was £239, £252, £268, £256, and £309 respectively.

§ 4. Old-age and Invalid Pensions.

1. **General.**—In previous issues an account has been given of the introduction of the old-age pension system into Australasia. Then followed a detailed description of the Commonwealth Invalid and Old-age Pensions Act of 1908, which became operative on 1st July, 1909. It is not intended to repeat these matters in the present publication; enquirers into the subject are referred to previous issues (3-8) of the Official Year Book. In view, however, of the interest attaching to the working of the system, the series of statistical tables which have hitherto been published will be continued.

Details for the several States as at 30th June, 1918, are as follows:—

COMMONWEALTH OLD-AGE PENSIONS, YEAR ENDED 30th JUNE, 1918.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Claims examined during year ending 30th June, 1918 ..	4,709	3,402	1,422	1,053	574	608	11,768
Claims rejected	794	255	271	72	80	66	1,538
Claims granted	3,915	3,147	1,151	981	494	542	10,230
Transfers from other States ..	375	330	141	163	94	75	1,178
Existing 30th June, 1917 ..	33,941	29,064	12,313	9,435	4,353	4,566	93,672
	38,231	32,541	13,605	10,579	4,941	5,183	105,080
To be deducted—							
Deaths	2,451	2,699	924	658	353	329	7,414
Cancellations and transfers to other States ..	702	683	321	262	187	124	2,279
	3,153	3,382	1,245	920	540	453	9,693
Old-age Pensions existing on 30th June, 1918 ..	35,078	29,159	12,360	9,659	4,401	4,730	95,387

2. **Sexes of Old-age Pensioners.**—Of the 95,387 persons in receipt of pensions at 30th June, 1918, 38,274 (or 40 per cent.) were males, and 57,113 (or 60 per cent.) were females. Details for the several States are as follows:—

SEXES OF OLD-AGE PENSIONERS, 30th JUNE, 1918.

State.	Males.	Females.	Total.	(a) Masculinity.
New South Wales	14,795	20,283	35,078	72.95
Victoria	10,975	18,184	29,159	60.36
Queensland	5,421	6,939	12,360	78.12
South Australia	3,565	6,094	9,659	58.51
Western Australia	1,889	2,512	4,401	75.12
Tasmania	1,629	3,101	4,730	58.51
Total	38,274	57,113	95,387	67.01

(a) Number of males to each 100 females.

3. Ages and Conjugal Condition of Old-age Pensioners Granted Pensions during 1917-18.—The recorded ages of the 10,230 persons to whom pensions were granted during the year 1917-18 varied considerably, ranging from 2,061 at age 60 to one at age 101. Particulars for quinquennial age-groups are as follows :—

AGES AND CONJUGAL CONDITION OF PERSONS GRANTED OLD-AGE PENSIONS DURING 1917-18.

Age at Admission.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed.	Total.	Single.	Married.	Widowed.	Total.	
60-64 ..	59	171	54	284	377	1,879	1,738	3,994	4,278
65-69 ..	620	1,601	552	2,773	84	458	445	987	3,760
70-74 ..	152	440	204	796	46	222	287	555	1,351
75-79 ..	57	148	89	294	15	61	169	245	539
80-84 ..	9	34	53	96	12	22	87	121	217
85-89 ..	9	9	16	34	3	3	27	33	67
Above 90 ..	3	..	2	5	1	1	11	13	18
Total ..	909	2,403	970	4,282	538	2,616	2,764	5,948	10,230

4. Commonwealth Claims for Invalid Pensions.—The situation as at 30th June, 1918, was as follows :—

COMMONWEALTH INVALID PENSIONS.—YEAR ENDED 30th JUNE, 1918.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total C'wealth.
Claims examined during year ending 30th June, 1918 ..	2,597	2,394	923	442	404	423	7,183
Claims rejected ..	682	503	217	62	136	101	1,701
Claims granted ..	1,915	1,891	706	380	268	322	5,482
Transfers from: other States ..	82	80	38	32	4	21	257
Existing 30th June, 1917 ..	10,803	7,921	3,349	1,853	1,200	1,655	26,781
	12,800	9,892	4,093	2,265	1,472	1,998	32,520
Deduct—							
Deaths ..	469	783	267	131	125	102	1,877
Cancellations and Transfers to other States ..	162	208	147	90	34	90	731
	631	991	414	221	159	192	2,608
Invalid Pensions existing 30th June, 1918 ..	12,169	8,901	3,679	2,044	1,313	1,806	29,912

5. **Sexes of Invalid Pensioners.**—Of the 29,912 persons in receipt of an invalid pension on 30th June, 1918, 14,276, or 48 per cent., were males, and 15,636, or 52 per cent., were females. Details for the several States are as follows :—

SEXES OF INVALID PENSIONERS, 30th JUNE, 1918.

State.	Males.	Females.	Total.	(a) Masculinity.
New South Wales	5,669	6,500	12,169	87.21
Victoria	4,288	4,613	8,901	92.95
Queensland	1,954	1,725	3,679	113.28
South Australia	808	1,236	2,044	65.37
Western Australia	730	583	1,313	125.21
Tasmania	827	979	1,806	84.47
Commonwealth	14,276	15,636	29,912	91.30

(a) Number of males per 100 females.

6. **Ages and Conjugal Condition of Persons Granted Invalid Pensions during 1917-18.**—The recorded ages of the 5,482 persons who received invalid pensions in the period under review varied from 16 to 87. The following table gives particulars for those up to age 20 and in decennial age-groups after age 20 :—

AGES AND CONJUGAL CONDITION OF PERSONS GRANTED INVALID PENSIONS IN 1917-18.

Age at Admission.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed.	Total.	Single.	Married.	Widowed.	Total.	
16-19 ..	172	..	..	172	193	..	..	193	365
20-29 ..	182	54	..	236	318	19	11	348	584
30-39 ..	126	200	10	336	190	56	59	305	641
40-49 ..	148	325	18	491	179	123	141	443	934
50-59 ..	227	616	105	948	228	359	469	1,056	2,004
60-69 ..	168	439	117	724	38	50	64	152	876
70-79 ..	11	11	14	36	3	9	23	35	71
80 and over ..	..	..	3	3	1	..	3	4	7
Total ..	1,034	1,645	267	2,946	1,150	616	770	2,536	5,482

7. **Cost of Administration.**—Under the State régime the cost of administration differed considerably in the several States, and for 1908-9 represented in New South Wales 4.17 per cent. of the amount actually paid in pensions. In Victoria for the same year the corresponding percentage was 0.70. During the year 1917-18 the total cost to the Commonwealth of administering the Old-age and Invalid Pensions Department was £54,355, or about 1.5 per cent. of the amount actually paid in pensions. Details concerning the cost of administration for 1917-18 are as follows :—

Salaries	£	13,571
Temporary assistance	1,805	
Services of magistrates, registrars, clerks of courts, and police ..	2,334	
Commission to Postmaster-General's Department, at 12s. 6d. per £100 paid	23,670	
Postage and telegrams	3,428	
Other expenses	9,547	
Total	£54,355	

The actual sum disbursed in Old-age and Invalid Pensions in the financial year 1917-18, apart from the cost of administration, was £3,753,977.

8. Liability Undertaken in Granting Old-age Pensions.—As an indication of the extent of the responsibility which an old-age pension scheme involves, it may be mentioned that in connection with the evidence tendered to the Commonwealth Commission on Old-age Pensions a computation was made of the total liability in respect of accrued pensions which the Commonwealth would have incurred if, at 31st March, 1901, the date of the Census, 39 per cent. of the persons aged sixty-five and upwards were entitled to pensions of ten shillings per week. The present value at that date of the liability so computed was £10,415,820. (See Minutes of Evidence of Royal Commission on Old-age Pensions, p. 80.)

The following table gives detailed statistical information concerning the working of the Act since 1st July, 1909 :—

INVALID AND OLD-AGE PENSIONS.—SUMMARY, 1910 TO 1918.

Financial Year ended 30th June—	Number of Pensioners.			Amount Paid in Pensions.	Amount Paid to Asylums for Maintenance of Pensioners.	Total Payment to Pensioners and Asylums.	Cost of Administration.	Cost of Administration per £100 paid to Pensioners and Asylums.	Average Fort-nightly Pension on last day of Financial Year.
	Old-Age.	Invalid.	Total.						
				£	£	£	£	£ s. d.	s. d.
1910	65,492	..	65,492	1,497,330	155	1,497,485	37,146	2 9 7%	19 1
1911	75,502	7,451	82,953	1,868,648	2,592	1,871,240	39,244	2 1 11%	19 1
1912	79,071	10,763	89,834	2,148,034	7,447	2,155,481	41,794	1 18 9%	19 0
1913	82,943	13,739	96,682	2,289,048	13,287	2,302,335	44,523	1 18 8%	19 6
1914	87,780	16,865	104,645	2,577,965	14,236	2,592,201	47,015	1 16 3%	19 5
1915	90,892	20,417	111,309	2,704,309	27,630	2,731,939	48,018	1 15 4%	19 5
1916	91,783	23,439	115,222	2,859,766	31,831	2,891,597	44,401	1 10 9%	19 4
1917	93,672	26,781	120,453	3,518,987	35,148	3,554,135	54,393	1 10 7%	24 3
1918	95,387	29,912	125,299	3,753,977	39,060	3,793,037	54,355	1 8 8%	24 3

9. Pensions Act, 1916.—On 30th September, 1916, an Act was assented to, which amended the original Pensions Act in a very important particular. It had been felt for some time that, owing to the increased cost of living, the grant of ten shillings a week was insufficient. Accordingly amendments were made in the case of the two important sections, 24 and 26.

Section 24 of the Invalid and Old-age Pensions Act 1908-1912 originally enacted that the pension "shall not exceed the rate of twenty-six pounds per annum in any event, nor shall it be at such a rate as will make the pensioner's income, together with pension, exceed fifty-two pounds per annum." It was amended (a) by omitting the words "twenty-six pounds," and inserting in their stead the words "thirty-two pounds ten shillings"; and (b) by omitting the words "fifty-two pounds" and inserting in their stead the words "fifty-eight pounds ten shillings."

Section 26 originally enacted that if an applicant for pension was in receipt of board or lodging, the actual or estimated value or cost of this should be counted as income, to an extent not exceeding five shillings per week. This has now been amended by omitting the words "five shillings" and inserting in their stead the words "seven shillings and sixpence."

The effect of these amendments was to increase the liability under the heading of Invalid and Old-age Pensions by about 25 per cent. This is the cause of the great increase in the amount paid in pensions in 1916-17 and 1917-18. It is also the cause of the fall in the percentage cost of the administration.

§ 5. Maternity Allowance.

The Federal Parliament, during the session of 1912, passed an Act (assented to on 10th October, 1912) providing under certain circumstances for the payment of maternity allowances. The scope and main provisions of the Act will be gathered from the following sections and sub-sections, given in full :—

4. "Subject to this Act, there shall be payable out of the Consolidated Revenue Fund, which is hereby appropriated accordingly, a maternity allowance of Five pounds to every woman who, after the commencement of this Act, gives birth to a child, either in Australia or on board a ship proceeding from one port in the Commonwealth or a Territory of the Commonwealth to another port in the Commonwealth or a Territory of the Commonwealth."
5. (1) "A maternity allowance shall be payable in respect of each occasion on which a birth occurs, and the child is born alive, or is a viable child, but only one allowance shall be payable in cases where more than one child is born at one birth."
6. (1) "The maternity allowance shall be payable only to women who are inhabitants of the Commonwealth or who intend to settle therein."
 (2) "Women who are Asiatics or are aboriginal natives of Australia, Papua, or the islands of the Pacific, shall not be paid a maternity allowance."

The following table gives a statistical summary of the most important points in connection with the working of the Maternity Allowance Act since 10th October, 1912, when the first payments were made :—

COMMONWEALTH MATERNITY ALLOWANCE.—SUMMARY, 1913 TO 1918.

Year ended 30th June—	Claims Paid.	Claims Rejected.	Amount Paid.	Cost of Administration.	Cost per £100 of allowance paid.
			£	£	£ s. d.
1913 (a) ..	82,475	619	412,375	6,547	1 11 9
1914	134,998	709	674,990	10,281	1 10 6
1915	138,855	640	694,275	12,900	1 17 2
1916	131,943	504	659,715	12,165	1 16 11
1917	132,407	459	662,035	13,735	2 1 6
1918	126,885	404	634,425	12,250	1 18 7

(a) From 10th October, 1912.

§ 6. War Pensions.

1. **General.**—An Act for the provision of war pensions was passed in 1914 and amended in 1915 and 1916. Its scope can be determined by the following extract from Section 3. "Upon the death or incapacity of any member of the forces whose death or incapacity results, or has resulted, from his employment in connection with warlike operations in which His Majesty is, or has since the commencement of the present state of war been engaged, the Commonwealth shall, subject to this Act, be liable to pay to the member or his dependents, or both, as the case may be, pensions in accordance with this Act."

A very great latitude is allowed in the interpretation of the word "dependents." It includes the wife or widow of any member of the forces; the widowed mother of an unmarried son; the children (including ex-nuptial children); the parents, if without adequate means of support; and such other members of his family as were wholly or in part dependent upon his earnings at any time within twelve months prior to his enlistment.

2. Rates of Pension.—(1) The rates of pension payable under this Act are as follows :—

(A) In case of the death of a member of the Forces :

- (i) To the widow, or the widowed mother of an unmarried son, the rate specified in column two of the first schedule opposite to the rate of pay of the member, and
- (ii) to each child, the rate of twenty shillings per fortnight for the first child, fifteen shillings per fortnight for the second child, and ten shillings per fortnight for the third and each subsequent child, and
- (iii) to the other dependents such rates as are assessed by the Commissioner or the Deputy-Commissioner, as the case may be, but not exceeding in the aggregate the rate specified in column two of the first schedule opposite to the rate of pay of the member plus two pounds per fortnight :

Provided that the maximum rate of pension payable to any one dependent of a member shall not in any case exceed the amount specified in column two of the first schedule opposite to the rate of pay of the member.

(B) In case of the total incapacity of a member of the Forces :—

- (i) To the member the rate specified in column three of the first schedule, opposite to the rate of pay of the member, and
- (ii) to the wife of a member fifty per centum of that rate, and
- (iii) to each child of the member, the rate of twenty shillings per fortnight for the first child, fifteen shillings per fortnight for the second child, and ten shillings per fortnight for the third and each subsequent child, and
- (iv) to the other dependents such rates as are assessed by the Commissioner, or the Deputy-Commissioner, as the case may be, but not exceeding in the aggregate the rate specified in column two of the first schedule, opposite to the rate of pay of the member, plus two pounds per fortnight. Provided that the maximum rate of pension payable to any one dependent of a member shall not in any case exceed the amount specified in column two of the first schedule, opposite to the rate of pay of the member.

(C) In case of the partial incapacity of a member of the Forces, such less rates than those referred to in paragraph (B) as are assessed by the Commissioner, or the Deputy-Commissioner, as the case may be, having regard to the nature and probable duration of the incapacity.

(2) Notwithstanding anything contained in this section, the maximum rate of pension payable to a child, both of whose parents are dead, shall be :—

- (i) up to ten years of age, one pound per fortnight ;
- (ii) from ten to fourteen, twenty-five shillings per fortnight ; and
- (iii) from fourteen to sixteen years of age, thirty shillings per fortnight.

(3) The amount of pension granted and payable to a member of the Forces shall not be reduced within the period of six months from the date of the commencement of the pension.

- (4) Any member of the Forces who is incapacitated by reason of a disability specified in the second schedule, shall receive the rate of pension shewn opposite to the description of the disability in that schedule.
- (5) If a member of the Forces who is unmarried or whose wife is either dead or a permanent invalid is incapacitated to an extent which necessitates the constant services of an attendant, and the member has not the means to pay for such services, the rate of his pension may be increased by a sum not exceeding one pound per fortnight.

3. Schedules of Pensions.—The schedules to which reference has been made in the preceding section are as follows:—

THE FIRST SCHEDULE.

Scale of pensions payable to widow on death of a member of the Forces, or to a member upon total incapacity:

Rate of Pay of the Member per Day.	Pension Payable to Widow on Death of Member.	Pension Payable to Member upon Total Incapacity.
<i>s. d.</i> 6 0 and under	£ <i>s. d.</i> 2 0 0 per fortnight ..	£ <i>s. d.</i> 3 0 0 per fortnight
7 0	2 3 0	3 2 0
9 0	2 9 0	3 6 0
10 0	2 12 3	3 8 0
10 6	2 13 9	3 9 0
11 6	2 16 0	3 11 0
12 0	2 17 3	3 12 0
13 0	2 19 6	3 14 0
17 6	3 10 0	4 0 0
22 6	3 17 6	4 5 0
30 0	4 9 0	4 15 0
37 6	5 0 9	5 5 0
45 0	5 12 3	5 15 0
50 0 and upwards	6 0 0	6 0 0

THE SECOND SCHEDULE.

Description of Disability.	Rate of Pension Payable.
Loss of leg or foot	The maximum rate for six months, thereafter three-fourths of the maximum rate
Loss of hand or arm	
Loss of one eye	The maximum rate for six months, thereafter three-fourths of the maximum rate
Loss of both legs	
.. .. . arms	Half of the maximum rate
.. .. . feet	
.. .. . hands	
.. .. . eyes	
Loss of arm and leg	The maximum rate
Loss of hand and foot	
Loss of one eye, together with loss of leg, foot, hand, or arm	

4. Number of Pensioners, 1918.—The following statistical tables show the position of affairs as at the 30th June, 1918 :—

TABLE I.—PARTICULARS OF WAR PENSIONERS AT 30th JUNE, 1918.

Classification.	In respect of Deceased Members.	In respect of Incapacitated Members.	Total.
(i) Dependents of members of the Forces—			
(a) Wives or widows	6,822	12,136	18,958
(b) Children under 16 years	11,057	17,753	28,810
(c) Children over 16 years	138	109	247
(d) Widowed mothers of unmarried members	5,068	707	5,775
(e) Other mothers of members	10,548	1,077	11,625
(f) Fathers	2,023	69	2,092
(g) Brothers and sisters	1,161	103	1,264
(h) Others	501	200	701
Total number of dependents of members of the Forces	37,318	32,154	69,472
(ii) Incapacitated members of the Forces .. .. .	..	40,702	40,702
Total number of war pensioners at 30th June, 1918	37,318	72,856	110,174

TABLE II.—NUMBER OF WAR PENSIONERS AT 30th JUNE, 1918.

Where Paid.	Incapacitated Members of the Forces.	Dependents of—		Total.
		Deceased Members.	Incapacitated Members.	
South Africa	12	27	16	55
New Zealand	67	180	61	308
New South Wales	14,024	9,813	9,998	33,835
Victoria	11,965	12,674	9,702	34,341
Queensland	5,227	3,175	3,253	11,655
South Australia	3,580	3,100	3,439	10,119
Western Australia	3,519	3,348	2,969	9,836
Tasmania	1,494	1,656	1,303	4,453
London	814	3,345	1,413	5,572
Total	40,702	37,318	32,154	110,174

TABLE III.—EXPENDITURE IN 1917-18.

£		£	
New South Wales	844,685	Tasmania	109,512
Victoria	884,424	London (a)	141,509
Queensland	294,013		
South Australia	263,532	Total	2,772,077
Western Australia	234,402		

(a) Including South Africa and New Zealand.

The cost of administration was £10,187 in 1915-16, £38,190 in 1916-17, and £61,146 in 1917-18.

§ 7. Local Option.

1. **General.**—The principles of local option as to the sale of fermented and spirituous liquors have been applied in all the States of the Commonwealth. The last State to adopt these principles was Western Australia, where provision was made for a system of local option by the Licensing Act 1911. Since the outbreak of war in 1914, various enactments have been made in several of the States relative to the control of the liquor traffic. While not in any way pertaining to the scheme of local option, these measures are referred to in this section, as possibly, if not probably, affecting future public opinion in regard to this matter.

2. **New South Wales.**—(i) *Local Option.* The Act in force relating to local option in this State is the Liquor Act 1912, which consolidated the laws relating to publicans, brewers, and other persons engaged in the brewing, manufacture or sale of liquor. The local option vote is taken in every electorate on the day fixed for the poll therein at each general election, but special provision was made under the Liquor Amendment Act 1916 to suspend the taking of the local option vote at the general election in 1917. The option with regard to licenses extends to public-houses, wineshops, and clubs, and the persons entitled to vote are those entered on the Parliamentary electoral rolls. The first local option vote under the Liquor (Amendment) Act of 1905 was taken at the general election in 1907, and the second at the election in 1910, while the vote in 1913 was taken under the Liquor Act 1912. In 1907, when the first local option vote was taken, there were 3,023 hotels in existence; of this number 293 were ordered to be closed at varying dates. At the election of 1910 there were 2,869 hotels, and of these, 28 were ordered to be closed. At the 1913 election there were 2,719 hotels, of which 23 were closed before July, 1917. The number of wine licenses at the time of the vote of 1907 was 633, of which 46 were abolished. In 1910, 5 wine shops out of 565 were closed, and in 1913, 7 out of 514 were ordered to be closed. The resolutions to be submitted, and the effects of such resolutions, if carried, are given *in extenso* in previous issues of this book. The following statement shews the number of electorates in which each of the resolutions was carried:—

NEW SOUTH WALES.—EFFECTS OF LOCAL OPTION VOTES, 1907, 1910, and 1913.

Particulars.	General Election, 1907.		General Election, 1910.		General Election, 1913.	
	Electorates.	Votes.	Electorates.	Votes.	Electorates.	Votes.
<i>Results in favour of—</i>						
(a) Continuance ..	25	209,384	76	324,973	75	380,707
(b) Reduction ..	65	75,706	14	38,856	15	44,453
(c) No license ..	Nil	178,580	Nil	212,889	Nil	245,202

(ii) *Liquor Referendum Act 1916.* On 17th February, 1916, a proclamation was issued, in terms of the War Precautions Act, by the Minister for Defence, ordering that licensed premises be closed at 6 p.m. in the County of Cumberland, and within a radius of 5 miles from any military camp; a week later the closing hour was varied from 6 to 8 p.m. Subsequently the Liquor Referendum Act 1916 was passed in the State Parliament to decide by referendum the hour of closing for premises licensed under the Liquor Act 1912. At the referendum the electors were enabled to record votes in order of preference for each hour from 6 to 11 p.m. inclusively. The count of the first preference

votes resulted in a large majority for 6 o'clock, and from 21st July, 1916, all licensed premises and registered clubs in New South Wales have been closed at that hour. This determination prevails during the currency of the war and for a period not exceeding six months thereafter.

3. Victoria.—The Acts dealing with the subject of local option as to the sale of fermented and spirituous liquors, and with the compulsory closing of hotels in this State, are the Licensing Act 1915, No. 2683, and the Licensing Act 1916, No. 2855. Other Acts, now repealed, which dealt with the subject, were the Licensing Acts 1876, 1885, 1888, 1890, 1906, and 1907.

Part XIII. of the Act of 1915 relates to the subject of local option. Under this Part the local option provisions were to come into operation at the first general election subsequent to 1st January, 1917. The 1916 Act provides that the first local option polls are not to be held till the second general election following on the above date. In the meantime, the Licenses Reduction Board, which by the same Act has been constituted the Licensing Court for the whole State, is empowered to continue the work of closing hotels, which it has carried out since 1906.

The provision of a statutory number of hotels for each licensing district disappeared with the old conditions relating to closing, and the Court is now authorised to close hotels in any licensing district, as if resolution B (Reduction), under the local option provisions, had been carried in each district. This allows of a reduction proportionate to the existing number, the maximum closing not to exceed one-fourth. Power has also been given to accept the surrender of any victualler's license irrespective of the number otherwise closed. A greater number must not be closed than can be compensated, and the old limitation, that hotels licensed after 1886 were not entitled to compensation, has been removed.

(i) *The Licenses Reduction Board.* This Board was established by the 1906 Act, with power to reduce the number of licensed victuallers' premises, up to December, 1916, in districts where there were more than the statutory number of licenses. It had also the duty of fixing and awarding compensation to the owners and licensees of the closed hotels. The compensation was provided by an annual percentage fee of 3 per cent. on all liquor purchased by licensed victuallers. The compensation fund obtained in this manner has risen from £48,233 in 1907, to £63,623 in 1916, which was the highest figure reached. In 1916, with the restricted hours of trading, the amount received was £60,396. The licensing fund which was distinct from the compensation fund, was protected by a provision that the remaining hotels, by a *pro rata* assessment, had to make up annually the amount of the license fees lost by the closing of hotels; the license fees for hotels were of varying amounts, based on the annual municipal value of the premises, ranging from £5 to £50, in four classes, viz., £5, £15, £25, £50. By the 1916 Act, this system of fixed fees was abolished, as was also the *pro rata* assessment of lost fees and the 3 per cent. compensation fees. The two funds referred to above were merged into one, and a system of percentage fees was applied to all licenses for the sale of liquor in the State, whether wholesale or retail, and the amount received is paid into one fund.

Under this system, all vendors of liquor pay in proportion to the benefit they derive from the license. The amount charged the wholesale trade is 4 per cent. on the cost of all liquors sold to non-licensed persons, no charge being made on sales to other licensed vendors. The retail trade is charged 6 per cent. on liquor purchases, except the holders of Australian wine licenses, who are charged 4 per cent.

During 1916, prior to the passing of the above Act, a number of owners and licensees, fearing that no provision would exist for the acceptance of surrenders when Part XIII. came into operation, took advantage of the existing provisions. Consequently, the number closed, 143, was in excess of the average, and the 1917 compensation funds had to be drawn upon to the extent of £18,087. The closings of 1917 had to be somewhat curtailed for this reason. The maximum compensation payable is still governed by the trading results and the rents of the years 1903-6, though a concession was made in the Amending Act by which licensees are entitled to be compensated on a

three years' tenure, if they are in possession of a lease of that extent when deprived of their license. Under the 1916 Act 140 hotels have been closed and £77,770 awarded as compensation to 139 hotels. The total number of hotels closed up to the 31st December, 1918, was 1,194, and the compensation paid, £618,621, or an average of £518 per hotel. The following table shows particulars of the operations of the Board and Court up to the 31st December, 1918 :—

VICTORIA.—OPERATIONS OF LICENSES REDUCTION BOARD, 31st DECEMBER, 1918.

Particulars.	Licenses in December, 1906.			Hotels Deprived of Licenses.	Compensation Awarded.		Hotels Surrendered.	Compensation Awarded.	
	Number in Existence.	Statutory Number.	(a) Number in Excess.		Owner.	Licensee.		Owner.	Licensee.
Metropolitan and Suburban ..	1,020	877	401	301	£ 224,292	£ 43,858	13	£ 6,273	£ 1,364
Country ..	2,428	1,622	967	581	221,083	34,822	(b) 299	78,558	8,371
Total ..	3,448	2,499	1,368	882	445,375	78,680	312	84,831	9,735

(a) In some districts the number of hotels was below the statutory number; in these districts the total number of hotels less than the statutory number was 418. (b) Including 3 Roadside licenses.

(ii) *Early Closing of Hotels.* Consequent on the war, an Act (No. 2584) was passed, and came into operation on 6th July, 1915, restricting the hours for the sale of intoxicating liquors, the restriction being limited to the duration of the war. Sale was permitted only between the hours of 9 a.m. and 9.30 p.m. By a subsequent Act (No. 2776), tenants of licensed premises were given the right to apply to the Licenses Reduction Board to adjust the rents of their premises. Four hundred licensees took advantage of this provision. The hours of trading in the evening were further restricted as from 25th October, 1916—six o'clock being fixed as the time of closing.

The provisions of the Rent Adjustment Act were extended so as to enable the Board to deal with applications for reductions of rent arising from fresh restrictions. Between 300 and 400 additional applications were received, the amounts involved being substantial.

Special provision was made in the 1916 Act for the granting of victuallers' licenses in the Mallee. Power was given to proclaim areas containing 500 resident electors, when petitions signed by a majority of the residents were lodged, and where the Licensing Court, after enquiring, recommended this course.

On the proclamation of an area, a poll of the electors is to be taken at which one-third of those enrolled must vote. A majority of those voting decides whether a license is to issue or not. These hotels must be at least twelve miles apart, except at Mildura, where special provision is made for the issue of three licenses. Under these provisions six areas have been proclaimed, in four of which polls were taken and resulted in favour of license.

4. *Queensland.*—The local option clauses of the Liquor Acts of 1912–1914 provide for the following :—

- (i) The conditions under which new licenses may be granted until the completion of the business of the Licensing Court in April, 1916.
- (ii) The continuance of the local option clauses of the Licensing Act of 1885 until the 31st December, 1916.
- (iii) The institution of a new scheme, under which electors from and after the year 1917 will have the opportunity of voting every three years on the question of reduction or increase of licenses.

(i) *New Licenses.* With regard to the granting of "new licenses" from the 1st April, 1913, and until the completion of the business of the Licensing Court in April, 1916, it is provided that no new licensed victualler's or wine seller's or provisional licenses

shall be granted, unless at a local option vote of the electors of the local option area in which the premises or proposed premises are situated a resolution "that new licenses shall be granted in this local option area" has been carried.

If the resolution is carried, the Court may, but need not, grant applications; but if the resolution is not carried, the Court shall not grant any application during the said years in the said local option areas.

The Acts of 1912 and 1914 provided that a local option vote following on an application for a license might be taken in any of the years 1913, 1914, 1915, and 1916 in a local option area, but having been taken once should not be taken again during those years in the same local option area. During 1913 a vote was taken in ten districts on the resolution "that new licenses be granted." In five of these the resolution was carried, the other five districts declaring against any increase in the number of licenses. In 1914, sixteen districts voted on the same resolution, in eleven of which it was carried, while in 1915, sixteen districts also voted, the resolution being carried in ten cases.

(ii) *Continuance of Present System until 1917.* With the exception of the third resolution, viz., "that no new licenses be granted," the local option provisions of the Licensing Act of 1885 remained in full force and effect until the 31st December, 1916, with certain modifications and additions. These will be found fully described in previous issues of the Year Book (see No. 6, p. 1177).

(iii) *General Local Option.* The first vote may be taken in the year 1917, either on the same day as the election of senators takes place, or if no Senate election is held in 1917 before the 30th September, then on a day to be appointed by the Governor-in-Council, and the vote will be by ballot.

The vote will be taken on the request of one-tenth of the number of electors in an area, which is defined in the request, and such area may be:—(a) an electoral district, (b) an electoral division of an electoral district, or (c) a group of two or more divisions of an electoral district, provided that the whole of such local option area is wholly comprised within one and the same electoral district.

There must be a separate request for each resolution on which a vote is required to be taken.

The resolutions on which a vote may be taken are:—(a) reduction by one-fourth of the existing number, (b) further reduction by one-fourth of the existing number, (c) further reduction by one-fourth of the existing number, (d) prohibition, and (e) new licenses.

On the 5th May, 1917, 57 polls were taken, 55 being on the question of reduction (resolution a) and two being on the question of increase (resolution e). Reduction was carried in only four local option areas—Biggenden, Ipswich, Maryborough and Toowong. The number of licenses which will cease to exist as from 1st January, 1920, in these districts are two licensed victuallers' in Biggenden; three licensed victuallers' and one wineseller's in Ipswich; seven licensed victuallers', two wholesale spirit merchants' and one wineseller's in Maryborough; and one licensed victualler's in Toowong. Increase was carried in Atherton and Cloncurry.

In previous issues of the Year Book (see No. 6, p. 1178) will be found fuller reference to the effect of the carrying of any of the resolutions.

5. *South Australia.*—In this State the subject of local option is now regulated by Part VIII. of the Licensing Act 1917.

Under this Act, each electoral district for the House of Assembly is constituted a local option district, and each electoral district may be divided into local option districts by proclamation of the Governor. A quorum consisting of 500 electors, or one-tenth of the total number of electors, whichever be the smaller number, in any district may petition to the Governor for a local option poll. The persons entitled to vote at the poll are those whose names appear on the electoral roll and who reside in the local option district.

The resolutions to be submitted, together with the effects such resolutions would have, are set out in detail in previous issues of the Year Book (see No. 6, p. 1179).

(i) *Local Option Poll.* On the 2nd April, 1910, local option polls were taken under the Act of 1908 in twenty-four districts; the electors in the remaining nine local option districts did not petition for polls. A resolution that the number of licenses be reduced, was carried in only one district, Wallaroo; in the remaining twenty-three districts a resolution that the number of licenses be not increased or reduced, was carried. At the general election of the House of Assembly, held on the 10th February, 1912, no local option polls were held in any local option district. On the 27th March, 1915 (the same day as the Parliamentary elections), a local option poll was taken in the Flinders Southern (Port Lincoln) local option district, when the resolution "that the number of licenses be not increased or reduced" was carried. There have been no further polls in any of the districts up to the end of 1917.

(ii) *Early Closing of Hotels.* On the 27th March, 1915, a referendum was held as to the hour for the closing of bar-rooms in licensed premises. Out of a total of 178,362 votes cast, 100,418 were cast in favour of closing bar-rooms at 6 p.m., those in favour of closing at 11 p.m. being 61,362. Electors had the choice of voting for hours other than the two mentioned, but the votes so cast were comparatively few.

(iii) *Re-proclamation of Districts.* Local option districts were re-proclaimed on the 29th November, 1917, the districts, which number thirty-five, being given in the *Government Gazette* of the same date.

6. **Western Australia.**—The law relating to local option in Western Australia is contained in Part V. (sections 75 to 86) of the Licensing Act 1911, which was assented to on 16th February, 1911, and came into force on the 7th April following. Prior to the passing of this Act there was no provision for any system of local option in Western Australia.

The resolutions to be submitted under the above-mentioned Act and the effect such resolutions would have, are given in detail in previous issues of the Year Book (see No. 6, p. 1180).

The first vote under the Act of 1911 was taken on 26th April, 1911, the main question being confined (as prescribed by the Act when the vote is taken prior to 1920) to a resolution "that the number of licenses be increased," the only other questions submitted being those of State control of new publicans' general licenses and State management throughout all licensing districts.

The following table shows the result of this local option poll:—

WESTERN AUSTRALIA.—RETURN SHEWING THE RESULT OF LOCAL OPTION POLL OF 26th APRIL, 1911.

Result of Local Option Poll.		Do you vote that all new Publicans' General Licenses be held by the State?		Are you in favour of State Management throughout all Licensing Districts?	
Votes given in favour of the number of Licenses in the various districts being increased.	Votes given in favour of the number of Licenses in the various districts not being increased.	Yes.	No.	Yes.	No.
4,554	17,623	27,007	14,387	26,631	14,944

Under the 1911 Act a second poll was due on 26th April, 1914, but an amending Act was passed in December, 1913, continuing the present conditions until April, 1915. Subsequently, by an amending Act of 1915, the present conditions were further continued until 1918, and by an Act assented on the 7th August, 1917, the poll was postponed until 30th September, 1918, with a proviso that on a resolution passed by both Houses of Parliament the present conditions shall continue for a further period as may be expressed in such resolution. In 1918, the poll was further postponed till 1921.

(i) *Regulation of Liquor Traffic during the War.* In 1914, upon the outbreak of war, a special Act was passed in Western Australia which empowered the Government by proclamation to restrict or prohibit the sale or supply of liquor within any licensing district, or any portion of a licensing district, and rendered it an offence for any person.

licensed or unlicensed, to offer for sale or supply liquor contrary to such proclamation, with a penalty of £200, or imprisonment for twelve months.

Provision was also made to limit and fix the hours during which licensed premises in any district, or portion thereof, might be open for the sale of liquor. The Act also contained the necessary powers to enforce the provisions thereof, including power to search without warrant and seize any liquor where there was reason to believe that such liquor existed in a prohibited area.

The Act was passed solely as an emergency measure, and so far there has been no necessity to issue any proclamation thereunder. The Act has been extended up to December, 1919.

In 1915, a further Act was passed *regulating the sale of liquors*. That Act divided the State into four districts—Metropolitan, Goldfields, Agricultural, and North-West, the latter being exempt from the provisions of the Act.

The main feature, as regards the Metropolitan and Agricultural districts, was to reduce the period during which licensed premises could be open for the sale of liquor to the hours between 9 a.m. and 9 p.m., the previous period being between the hours of 6 a.m. and 11 p.m.

As regards the Goldfields district, the Act provided that upon receipt of a requisition signed by not less than 2,000 electors in the district, a referendum should be held.

In submitting the referendum, each elector had one vote, and the voting paper set out the hours of 6 o'clock, 7 o'clock, 8 o'clock, 9 o'clock, 10 o'clock, and 11 o'clock p.m. as alternative hours of closing. Each elector was to indicate his vote by marking an "X" opposite the hour which he desired to have fixed as the hour of closing. If the majority of votes were cast in favour of any particular hour, that hour was to be certified as being the result of the vote and proclaimed as the hour of closing. If there was no majority, then the votes cast for the earliest hour were to be transferred to the next later hour, and so on until a majority was thus obtained, when such majority would have the same effect as if the votes were originally given in favour of the hour to which they had been transferred, and such hour would be proclaimed the hour of closing.

A petition signed by the necessary number of electors was duly received, and a referendum was taken on the 24th May, 1916, the result of the poll being that the majority of all votes cast was in favour of the hour of 11 o'clock p.m. being fixed as the hour of closing.

The hour of 11 o'clock p.m. was the same as the hour originally fixed in the Licensing Act, and the result of the referendum therefore left the hour of closing the same, in so far as the Goldfields district was concerned, as existed prior thereto.

The Act has been extended up to December, 1919.

7. *Tasmania*.—In this State the subject of local option is dealt with in Part VI. (sections 72 to 84) of the Licensing Act 1902, as subsequently amended by section 8 of the Licensing Act 1908, which later Act, however, did not come into full operation until the first of January, 1917. Other Acts which formerly dealt with the subject, but are now repealed, are the Licensing Acts 1889–1890, the Innkeepers Relief Act 1894, and the Licensing Act Amendment Act 1898. Under the Act of 1902, opposition to the grant of a license may be made (i) by any resident ratepayer, (ii) by petition of ratepayers resident in the neighbourhood, or (iii) by local option poll.

The conditions under which applications may be made to the Licensing Bench, opposing the granting of licenses, are set out in detail in previous issues of the Year Book. (See No. 6, p. 1181).

(i) *Local Option Poll*. Any number of ratepayers not less than seven, resident in the neighbourhood of the house in respect of which a provisional certificate or an hotel license has been applied for, may require, by petition lodged with the Clerk of Petty Sessions, that a poll of the ratepayers resident in the neighbourhood be taken upon the question whether such provisional certificate be granted or not. If a majority of the votes taken be against the granting of the certificate the Licensing Bench must refuse to grant it.

An application refused is not to be renewed within three years.

(ii) *Early Closing of Licensed Premises*. A referendum on the question of the closing time for the sale and supply of liquor on licensed premises (6 Geo. V., No. 63) was taken on the 25th March, 1916, when 42,713 votes were cast in favour of closing at

six o'clock p.m., against 26,153 votes in favour of ten o'clock, and 3,951 votes for other hours. The majority in favour of closing at six o'clock over all other hours was 12,609, and the Licensing Act (No. 2) of 1916 gives effect to the wishes of the electors.

§ 8. Preferential Voting.

In previous issues of the Year Book, a description in detail has been given of the systems of preferential voting now in force in the States of Victoria, Queensland, Western Australia, and Tasmania. It is not intended to repeat the description in the present issue. It is interesting to note that the system of preferential voting was introduced into elections for the Federal House of Representatives by Act No. 27 of 1918, which amended the previous electoral law. Section 124, sub-section (a) reads as follows :—

“ Where his (the voter's) ballot-paper is a ballot-paper in accordance with Form F in the Schedule—he shall place the number 1 in the square opposite the name of the candidate for whom he votes as his first preference, and shall give contingent votes for all the remaining candidates by placing the numbers 2, 3, 4 (and so on, as the case requires) in the squares opposite their names so as to indicate the order of his preference for them.”

This regulation will rectify one of the serious anomalies of the old system of voting, though it does not constitute true proportional representation.

§ 9. Valuation of Commonwealth Production.

The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries, poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact, complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in connection with the value of production from the agricultural and pastoral industries, which, it is believed, in the main give fairly accurate results. In the case of manufactories, prior to 1909, five of the States collected statistics of the value of production, while for the sixth State, Tasmania, an estimate has been prepared which it is believed gives a fair approximation. The returns given in the following table are fuller and more approximate than those which have been given previously, and the figures furnished for 1909 and subsequent years may be taken as substantially correct. The table hereunder shews the approximate value of the production from all industries during the years 1909 to 1917— :

ESTIMATED VALUE OF PRODUCTION FROM INDUSTRIES, 1909 TO 1917.

Year.	Agriculture.	Pastoral.	Dairy, Poultry, and Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing.(a)	Total.
1909	£1,000. 41,056	£1,000. 50,864	£1,000. 15,064	£1,000. 4,462	£1,000. 23,039	£1,000. 39,713	£1,000. 174,198
1910	39,752	56,993	17,387	4,789	23,215	45,598	187,734
1911	38,774	50,725	19,107	5,728	23,480	50,767	188,581
1912	45,754	51,615	20,280	6,432	25,629	57,022	206,732
1913	46,162	57,866	20,341	6,338	25,808	61,586	218,101
1914	36,052	60,265	21,562	6,419	22,265	62,922	209,485
1915	73,769	65,607	21,156	5,777	22,397	62,883	251,589
1916	60,207	89,940	26,949	5,505	23,621	64,205	270,427
1917	57,967	93,395	31,326	5,523	25,591	69,807	283,609

(a) These amounts differ from those given in Section XIII., Manufacturing Industries, owing to certain products which are there included having been included in Dairy Farming and Forestry in this table.

The total production from all industries during 1917 was £283,609,000, equal to an average of £57 17s. per inhabitant.

In Year Books Nos. 1 to 5 will be found the value of production in each State at decennial intervals since 1871, and for the year 1909. Details for individual States are not available for subsequent years owing to discontinuance by the Customs Department of the collection of statistics of interstate trade.

§ 10. Norfolk Island.

1. **Area, Location, etc.**—Norfolk Island, discovered by Captain Cook in 1774, is situated in latitude 29° 3' 45" south, longitude 167° 58' 6" east. Its total area is 8,528 acres, the island being about 5 miles long and 3 miles wide. From Sydney it is distant 930 miles, and from New Zealand 400 miles. The coast line is 20 miles, and its form that of an irregular ellipse. Except on the south-west, inaccessible cliffs rise from the water's edge. The climate is equable, the temperature ranging between 56° and 82° with a mean of 68°. The average annual rainfall is 55 inches. It has been said that the salubrious climate coupled with the beauty of its land and sea scapes should combine to render Norfolk Island "the Madeira of the Pacific."

2. **Settlement.**—The first colonisation, in 1788, was by Lieutenant King, who in H.M.S. *Sirius* established a small penal station as a branch settlement of that at Port Jackson. The settlement was abandoned in 1806, and thence for 20 years its chief use was as a whaling station and place of call for British warships.

From 1826 to 1855 it was again made a penal station. In 1844 it was annexed to Van Diemen's Land (Tasmania).

The descendants of the *Bounty* mutineers, having become too numerous to subsist on Pitcairn Island, were removed thence to Norfolk Island in 1856. The new community numbered 193—94 males and 99 females—and were the descendants of British sailors and Tahitian women.

In 1856 the island was severed from Tasmania, and created a distinct and separate settlement under the jurisdiction of New South Wales. In 1897 it was made a dependency under the Governor of that Colony, and was administered by the Chief Secretary's Department through a resident Chief Magistrate, in whom was vested the executive government of the settlement, and the penal supervision of its affairs. In 1913, however, a Bill was passed by the Federal Parliament providing for the taking over of the island as a territory of the Commonwealth. The Act came into force on 1st July, 1914, and the island is now administered by the Department of Home and Territories, Melbourne, through an Administrator and Chief Magistrate.

3. **Population and Live Stock.**—The population on 31st December, 1917, was 337 males, 427 females, a total of 764, exclusive of 114 Melanesians being trained at the mission station. Births in 1917 numbered 23, and deaths 12. The latest returns of live stock shew that there are in the island 1,886 cattle, 645 horses, 680 sheep, and 339 pigs. In addition there were about 6,700 head of poultry.

4. **Production, Trade, etc.**—The soil throughout is rich, and is specially suitable for the cultivation of citrus fruits, bananas, and (in parts) coffee. Various other sub-tropical fruits thrive. During 1917—18 the production of oranges was given as 20,633 bushels; lemons, 226,145 bushels; bananas, 265,000 dozen. About 147,000 bushels of guavas and small quantities of pineapples and passion fruit were also raised, as well as 46,000 lbs. of coffee. Local production of butter was estimated at 16,000 lbs. The island is visited annually by schools of whales, both of the sperm and hump-backed variety, and whaling was at one time an important industry, but in recent years it has been allowed to languish. Preparations are, however, in progress for a revival of the industry. Edible fish in large variety are found in abundance in the ocean waters in the vicinity of the island. In 1917—18 the imports were valued at £12,786. The exports were valued at £6,460, the

chief items being lemon products and fish. Nearly all the export trade was with the Commonwealth, only small amounts going to New Zealand and the South Sea Islands. There is little other production. A two-monthly steam service is maintained with Sydney; other communication is irregular. The "all red" cable from Great Britain *via* Vancouver, Fanning Island and Fiji bifurcates at Norfolk Island, one line connecting with New Zealand, the other with Brisbane.

5. **Social Condition.**—Education is free and compulsory up to the age of fifteen years. The school is under the N.S.W. Department of Public Instruction, with standards corresponding to the State public schools, but the salaries and allowances of the teachers are paid by the Norfolk Island Administration. The number of scholars enrolled on the 30th June, 1918, was 147 (72 boys and 75 girls). A mission station has for many years been in existence for the education and general training of Melanesians, mostly from the Santa Cruz and Solomon Islands.

The magistrate's court has criminal jurisdiction in all crimes except capital offences, civil jurisdiction in all matters, and authority to grant probate and letters of administration.

§ 11. Lord Howe Island.

1. **Area, Location, etc.**—Between Norfolk Island and the Australian coast is Lord Howe Island in latitude 31° 30' south, longitude 159° 5' east. It was discovered in 1788. The total area is 3,220 acres, the island being seven miles in length and from one-half to one and three-quarter miles in width. It is distant 436 miles from Sydney, and in communication therewith by monthly steam service. The flora is varied and the vegetation luxuriant, with shady forests, principally of palms and banyans. The highest point is Mount Gower, 2,840 feet. The climate is mild and the rainfall abundant, but on account of the rocky formation only about a tenth of the surface is suitable for cultivation.

2. **Settlement.**—The first settlement was by a small Maori party in 1853; afterwards a colony was settled from Sydney. Constitutionally, it is a dependency of New South Wales, and is included in the King division of the Sydney electorate. A Board of Control manages the affairs of the island and supervises the palm seed industry referred to hereunder.

3. **Population.**—The population at the Census of 3rd April, 1911, was 56 males, 49 females—total 105.

3. **Production, Trade, etc.**—The principal product is the seed of the native or *Kentia* palm. The lands belong to the Crown. The occupants pay no rent, and are tenants on sufferance.

§ 12. Interstate Conferences.

1. **General.**—Reference to Interstate Conferences held in 1914 and 1915 will be found on page 1081. Official Year Book No. 8. The Conference held in 1916 is dealt with in Official Year Book No. 11, pages 1191–1193. Considerations of space preclude their insertion in the present issue.

2. **Premiers' Conference, Melbourne, 1916-1917.**—On 12th December, 1916, and following days, and again on 5th January, 1917, and following days, a conference of Premiers (with Ministers of Lands) was held at Melbourne. The following is a summary of the more important resolutions agreed to:—

(i) *Marriage Facilities for Absent Soldiers.* The Commonwealth Government to be asked to take into consideration the question of marriage facilities for absent soldiers.

(ii) *Preference to Soldiers.* Other things being equal, preference shall be given by the Governments to returned soldiers for any employment in their services.

(iii) *Financial Provisions for the Settlement of Returned Soldiers on the Land.* The Commonwealth agreed to make available for the calendar year 1917 a sum not exceeding £2,000,000, half the amount to be available up to 30th June, 1917.

Allocation : Queensland, £500,000 ; New South Wales, £500,000 ; Western Australia, £500,000 ; South Australia, £250,000 ; Victoria, £150,000 ; Tasmania, £100,000.

(iv) *The Treatment of Soldiers and Sailors and the Dependents of Soldiers and Sailors.* That it be the business of the central Commonwealth authority to devise a substantially uniform system of dealing with returned soldiers and sailors and the dependents of soldiers and sailors on service, or of soldiers and sailors who have died as a result of service in respect of—

- (a) *Immediate Amelioration, i.e.,* the provision of means for meeting immediate cash necessities. This, either by supplementing the military or naval pay before discharge, or by sustenance after discharge until employment or remunerative occupation can be found.
- (b) *Care of the Totally Incapacitated :* To include housing where necessary.
- (c) *Training of the Partially Disabled for a Useful Vocation :* To include the provision and renewal of artificial limbs and other aids.
- (d) *Employment Generally.*
- (e) *Assistance Towards Permanent Re-establishment by :*
 - (1) Sustenance during the initial period of settlement on the land or establishment in other vocations.
 - (2) Small businesses where such deemed a desirable form of provision.
 - (3) Grants for tools of trade.
 - (4) Assistance towards house establishment—(a) loans for house building or purchase (to include the conversion of existing mortgages where terms onerous) ; (b) grants for furniture to a prescribed amount.
- (f) *Care of Dependents :* (a) of men who die ; (b) of men on service.
- (g) The co-ordination of governmental and private efforts for the expansion of existing, and the promotion of new industries to meet the demand for general and special employment.
- (h) The assembling and administration of funds.

The States to be asked to agree to a uniform scale of advances to soldiers and sailors desiring to build or purchase dwellings in certain areas, or to convert existing mortgages of an onerous character, the Commonwealth authority to advance 25 per cent. of the value, the sum so advanced by the Commonwealth authority not to exceed £75.

The States to be asked to co-operate in the development of large national enterprises calculated to provide employment for men who cannot be otherwise placed.

On all bodies concerned with the repatriation of men under the Commonwealth scheme, the representation of soldiers and sailors who have been on active service is desirable.

3. **Premiers' Conference, Sydney, 1918.**—On 8th May, 1918, and following days, a Conference of Premiers was held at Sydney. The substance of the more important resolutions is given below :—

- (i) *Uniform Company Law.* That it is desirable that an amended company law be introduced in each State as far as possible upon uniform lines.
- (ii) *Adoption of Uniform Food Standards.* That the New South Wales Government be requested to draft a model Pure Food Act and submit it to the other States for their consideration.
- (iii) *Uniform Secret Commissions Act.* That it is desirable that uniform Secret Commissions laws should be passed by the States.

- (iv) *Guarantee to Wheat Growers for 1918-19 and 1919-20.* That, subject to the Governments of the Commonwealth and of the States retaining control of the wheat scheme and of responsibility therefor, this Conference recommends that the wheat-growers of 1918-19 and 1919-20 be guaranteed 4s. 4d. per bushel, less freight from point of delivery, except in the case of New South Wales, where the arrangements already announced should be adopted; that the manner and the amounts of payment for wheat delivered and the allocation of responsibility between Commonwealth and States shall be the subject of early negotiations.
- (v) *Definition of Industrial Matters.* That this Conference affirms the desirability of defining the industrial matters which should with advantage be referred to the exclusive jurisdiction of the Federal Arbitration Court, and those that should be regarded as within the exclusive jurisdiction of the State Industrial Courts.

§ 13. Interstate Commission.

In accordance with the provisions of the Commonwealth Constitution Act (sections 101 to 104, see page 29), an Act providing for the appointment of the Commission was assented to on the 24th December 1912. The *personnel* of the Commission was, however, not decided until the 11th August, 1913, when Messrs. A. B. Piddington, K.C. (Chief Commissioner), Hon. George Swinburne, and N. Lockyer, C.B.E., I.S.O., were appointed. On the 8th September, 1913, a request was received from the Executive Government of the Commonwealth that the Commission should make an investigation in regard to the Tariff. This investigation was made, and in all 70 reports were issued in connection therewith. (*Vide* Official Year Book No. 9, p. 1134, and No. 10, p. 1140.)

In January, 1915, complaints were lodged with the Commission in respect to contravention of the provisions of the Constitution relating to trade and commerce. In this connection, the case of the Commonwealth of Australia *v* The State of New South Wales and another was subsequently heard before the Commission, but on an appeal to the High Court against its decision it was held that under section 101 of the Constitution the Interstate Commission had not been given judicial powers. It has been announced that the Government proposes to introduce legislation to confer judicial powers on the Interstate Commission.

On the 14th September, 1915, the Minister for Trade and Customs requested the Commission to furnish for the information of Parliament a report as to the new industries which, in its opinion, could with advantage be established in the Commonwealth, and in pursuance of this request such report was prepared and presented.

On the 7th March, 1916, the Commission was entrusted with an enquiry into the subject of British and Australian trade in the South Pacific, with the result that a report was furnished which deals with all factors affecting the progress of the island possessions in which Great Britain and Australia are interested.

On the 19th April, 1916, the Commission was invited by the Postmaster-General, on behalf of the Commonwealth and the several States, to act as arbitrator on the question of charges, etc., by the Railway Commissioners of the States for the carriage of mails. Subsequently sittings were held in this matter and decisions and awards made.

On the 9th August, 1917, the Prime Minister, as the result of complaints made to him, requested the Commission to inquire into the causes of increased prices of food, clothing, house rent, etc. This inquiry is now completed. In connection with this investigation a regulation under the War Precautions Act was passed to permit each Commissioner to sit alone, and while so sitting to exercise all the powers of investigation conferred by the Interstate Commission Act of 1912.

There is at present a vacancy on the Commission, the Hon. George Swinburne having resigned his position thereon.

§ 14. Commonwealth Institute of Science and Industry.

1. **General.**—An account of the origin of the Institute and the proceedings which led to its formation was given in Year Book No. 9 (p. 1135). An Advisory Council of Science and Industry was appointed by order of the Governor-General in Council on the 16th March, 1916. Since that date certain additional appointments have been made, so that the Council now consists of members representative of both science and industry, and includes members from all the Australian States. It is a temporary body, designed to prepare the ground for a proposed permanent Institute of Science and Industry, and to exercise in a preliminary way the functions that will in future belong to the Institute. The Bill to establish the permanent Institute has already been introduced in the Federal Parliament. The chief of these functions are—

- “(i) To consider and initiate scientific researches in connection with, or for the promotion of, primary or secondary industries in the Commonwealth”; and “(ii) the collection of industrial scientific information and the formation of a Bureau for its dissemination amongst those engaged in industry.”

The Advisory Council itself has held only three meetings, viz., the inaugural meeting in April, 1916, and meetings in August, 1916, and July, 1917, called to receive reports, and at which certain resolutions referred to below were passed. The work of the Council has been done by means of committees.

(i) *The Executive Committee.* In accordance with instructions given by the then Acting Prime Minister, the Advisory Council at its first meeting elected an Executive committee of six members. Four additional members of the Executive have since been appointed. It was decided that the Prime Minister, or in his absence a Minister representing him, should be chairman of the Executive committee. In addition, it was decided that the chairman of each State committee should be *ex officio* a member of the Executive in order to keep the various committees in touch with one another. Such *ex officio* members were to receive copies of the Executive's minutes, and to keep in touch with it by correspondence, but were not expected to attend its ordinary meetings except when they happened to visit Melbourne. Similarly, the Executive receives copies of the minutes of each State committee. In addition, a monthly summary of the work of the Executive is sent to all the members of each of the State committees.

(ii) *The State Committees.* At the first meeting of the Advisory Council it was decided that all of its members resident in any one State should form a local committee to co-operate with the Central Executive, especially in relation to questions involving local industries. By arrangement with the Commonwealth Government, certain additional members of the Advisory Council were added to the original list, so as to ensure that there should be at least three such members available for the formation of each State committee, and it was decided that the chairman of each of these should be *ex officio* a member of the Executive, as explained above. Further procedure was formulated whereby any State committee could be strengthened by the appointment of associate members, representative of particular branches of science or industry. The associate members of the State committees are not members of the Advisory Council. A State committee has been established in each State.

The chief functions of these State committees are to collect locally such information as may be required by the Executive, and to forward to the Executive such recommendations as local knowledge or local enquiries may suggest. They have no independent executive or financial powers, but they are an extremely important part of the business machinery.

2. **Summary of the Work of the Institute.**—An account of the work carried out by the Institute is given in the report of the Executive committee of the Advisory Council up to the 30th June, 1918, but since that time considerable progress has been made.

The work may be summarised under the following heads:—(i) Preliminary work; (ii) Systematic inquiries and investigations under the control of special and standing committees; (iii) Conferences; (iv) Miscellaneous.

(i) *Preliminary Work*.—This work has been largely completed, and comprises:—

1. A register or census—(a) of Australian industries, their distribution and importance; (b) of problems connected with them; (c) of the equipment and *personnel* of laboratories throughout the Commonwealth available for industrial scientific research; (d) of research work in actual progress in laboratories and at Government experimental farms; (e) of the facilities available for training scientific investigators.
2. The establishment of relations with other authorities, such as State Governments, scientific and technical departments, universities, technical colleges, scientific societies and associations, and committees representing the pastoral, agricultural, manufacturing, and other industries.
3. The encouragement and co-ordination of researches already in progress.

(ii) *Special Committees*. After making full enquiries and collecting all available information from reports and experts on any special question, the Institute has adopted the plan of appointing in each approved case a small special committee either to report further or to carry out actual experimental investigations. In forming these committees, special attention has been paid to securing adequate representation on the industrial as well as the scientific side. Thirty-four special committees have been appointed, and most of them have issued either interim or final reports. An account of the work carried out by these committees up to 30th June, 1918, appears in the last report of the Executive committee. In cases where the investigations have been completed or are sufficiently advanced for publication the results have been made available in the form of Bulletins, of which six have been published. Others are in course of preparation.

The following is a list of the special committees established up to June, 1919:—

- | | |
|---|---|
| 1. Ferro Alloys (Melbourne). | 19. Substitutes for Tin Plate (Melbourne). |
| 2. Mode of Occurrence of Gold in Quartz (Bendigo). | 20. Commercial Utilisation of Kelp (Hobart). |
| 3. Alunite (Melbourne). | 21. Blow-fly Pest (Brisbane). |
| 4. Yeasts and Breadmaking (Sydney). | 22. Cold Storage Problems (Melbourne and Sydney). |
| 5. Damage by Insects to Grain in Store (Sydney). | 23. Tuberculosis in Stock (Sydney, Melbourne, Adelaide, Perth, and Hobart). |
| 6. Purification of Damaged Wheat by Lime (Melbourne). | 24. By-products of Wool-scouring Industry (Geelong). |
| 7. Electrical Sterilisation of Milk (Sydney). | 25. Nitrogen Requirements of Australia (Melbourne). |
| 8. Tanning Methods (Sydney). | 26. Classification of Imports (Melbourne). |
| 9. Utilisation of Mangrove Bark for Tanning (Brisbane). | 27. Nitrogen Requirements of Australia (Melbourne). |
| 10. Utilisation of Redgum for Tanning (Perth). | 28. Castor Bean Cultivation (Sydney, Melbourne, Brisbane, Adelaide, and Perth). |
| 11. Means of Transmission of Worm Nodule Parasite (Sydney). | 29. White Earthenware Investigation (Ballarat). |
| 12. Control of Sparrow Pest (Adelaide). | 30. Cattle Tick Dips (Sydney). |
| 13. Alcohol Fuel and Engines (Melbourne). | 31. White Ant Pest (Sydney). |
| 14. Posidonia Fibre (Sydney). | 32. Road Construction (Melbourne). |
| 15. Grass Tree Resin (Adelaide). | 33. Viticultural Investigations (Mildura and Melbourne). |
| 16. Development of Mechanical Cotton Picker (Brisbane). | 34. Fuel Economy. |
| 17. Utilisation of Phosphatic Rocks (Melbourne, Sydney, and Perth). | |
| 18. Life History of the Cattle Tick (Brisbane). | |

The members of these special committees act in a purely honorary capacity. Grants are made from the funds of the Institute for the purchase of apparatus and equipment, and for the reimbursement of travelling and out-of-pocket expenses of the members of the committees whilst engaged on the work. In a number of cases salaried investigators and assistants are employed to give their whole time to the work under the direction of the several committees.

(iii) *Standing and other Investigational Committees.* In cases where the investigational work is of a permanent or prolonged nature, standing committees have been established. These include the chemicals committee, the committees inquiring into the marine biological economics of tropical Australia, the committee on the metric system and decimal coinage, the committee on native grasses and fodder plants, and the seed improvement committee which has been established to undertake the examination, comparison and classification of different varieties of cereals.

In addition certain investigations are being conducted in co-operation with committees established by other institutions, such as the Society of Chemical Industry of Victoria, the New South Wales Pastoral Committee for the blow-fly pest, and the Electrical Association of Australia.

In the case of the flax industry a committee has been established under the War Precautions Act to control and develop the industry. It is anticipated that the action taken by the Institute in this matter alone will result in an increase in wealth produced which will pay several times over for the total expenditure on the work of the Institute from the day of its inception.

There are a number of other matters of importance under investigation which have not yet reached the stage at which they can be referred for systematic work by committees of experts, or which cannot be dealt with adequately until the permanent Institute is established. These include paper-pulp, the prickly-pear pest, the control and eradication of certain weed-pests, destructive distillation of hardwoods, and other problems affecting forest products, ceramics, enamels and glazes, diseases of stock, the introduction of new plants, and cultivation in arid and semi-arid regions.

(iv) *Conferences.*—An Interstate conference of agricultural scientists was held under the auspices of the Institute towards the end of 1917, and has already been productive of results of much value. A conference was held in Brisbane in January, 1918, to devise a scheme of co-operative action between the Commonwealth and New South Wales and Queensland State Governments for the repression, with a view to the eradication, of the cattle-tick pest. The report of this conference has been published as Commonwealth Parliamentary Paper No. 40, 1917-18. The Institute was represented at the Interstate Forestry Conference held at Perth in 1917, and as a result is taking action for the compilation of data on a uniform basis on the forest products of Australia. This is one of the first steps necessary towards the establishment of a Forest Products Laboratory. Other conferences are projected.

(v) *Miscellaneous.*—A large number of inquiries and investigations of a varied nature have also been made. Some of these have reached finality, others are still receiving attention. They have arisen largely through inquiries made by persons engaged in industries for advice on scientific and technical matters, and by inventors or discoverers of new processes or raw materials. At present they fall into no considered plan, but it is probable that many of those which are still receiving attention will find their place later in some co-ordinated scheme of work under the permanent Institute.

3. *Publications and Supply of Information.*—The Institute has issued three reports dealing with its work, the last covering the period from its appointment up to 30th June, 1918. It has also published a number of Bulletins on the researches carried out under its auspices, those already issued or about to appear being :—

1. The cattle tick in Australia.
2. Worm nodules in cattle.
3. The alunite deposits of Australia and their utilisation.
4. The factors influencing gold deposition in the Bendigo goldfield (Part I.).
5. Wheat storage problems (damaged grain and insect pests).

6. Power alcohol: Proposals for its production and utilisation in Australia.
7. Agricultural research in Australia.
8. The factors influencing gold deposition in the Bendigo goldfield (Part II.).
9. The manufacture and uses of ferro-alloys and alloy steels.
10. Substitutes for tin-plate containers.
11. Paper pulp.
12. Prickly pear in Australia.
13. The cattle-tick pest in Australia.
14. Posidonia fibre.

Other publications issued by the Institute are:—Memorandum on the Organisation of Scientific Research Institutions in the United States of America, by G. Lightfoot; Recent developments in the Organisation of National Industrial Research Institutions, by G. Lightfoot; The Economics of *Trochus niloticus*, by C. Hedley; The Physiography of Australian Rains, by Griffith Taylor; Engineering Standardisation, by G. Lightfoot; and Resolutions passed by the Advisory Council, July, 1917, together with report and recommendations on the organisation and work of the proposed permanent Institute of Science and Industry.

The nucleus of a scientific and technical library has been collected and indexed for the use of the Bureau of Information, which has been established as one of the sections of the proposed future Institute. In connection with this work steps are being taken to prepare a catalogue of the scientific and technical periodicals in all the libraries of Australia.

A considerable amount of information on a great variety of topics has been supplied to applicants from all parts of Australia.

§ 15. Department of Chemistry, South Australia.*

In South Australia, a Department of Chemistry was formed in 1915. The Department is largely engaged in the chemical investigation of local products and industries. A series of Bulletins is in course of publication. Up to July, 1918, nine were issued as indicated below. Publication of Bulletins has been temporarily suspended, on account of pressure of other work.

- No. 1.—*Paper Making*: An investigation into the prospects of establishing a paper-making industry in South Australia. A number of local materials have been investigated, and special attention is directed to straw as the most valuable available material, owing to the very large supply obtainable at a low price and near to the principal sea-ports.
- No. 2.—*Potash*: Its economic sources in South Australia. Many local sources have been investigated, and wool scour is indicated as especially worthy of attention.
Lanoline: A process for obtaining wool fat from locally scoured wool is described.
- No. 3.—*Cream of Tartar*: An examination of local grape products as sources of cream of tartar.
- No. 4.—*Marine Fibre*: The fibrous portion of the leaf sheath of the sea plant *Posidonia Australis* grows abundantly in the shallow waters around the coasts of South Australia, and on other parts of the Australian Coast. This Bulletin has been written to gather together and publish all the available information respecting it. The sum of £220,000 has already been spent in this industry, and a large amount of experimental work has been done in finding methods of collection and purification and market uses.

* Information supplied by the Director, Dr. W. A. Hargreaves D.Sc., M.A., F.I.C.

- No. 5.—*Boiler Waters* : Foaming and priming of boiler waters have been studied with a view to the suggestion of a remedy for these faults.
- No. 6.—*Grass Tree* : An investigation of the economic products of the species *Xanthorrhœa*. The trunk, leaves, and resin were examined. Special attention is drawn to the resin as similar to the high-priced resins, such as dragon's blood, benzoin, etc. It was found that 8 per cent. of para-oxybenzoic acid was readily obtained from the gum.
- No. 7.—*Gypsum and Plaster of Paris* : An investigation of the gypsum deposits in South Australia and their uses, with special reference to the manufacture of plaster of paris.
- No. 8.—*Alcohol as a Source of Power* : This Bulletin discusses the use of alcohol as a motor fuel, details tests carried out under practical conditions, and indicates sources from which alcohol can be obtained.
- No. 9.—*Bonedust* : Its adulteration with Phosphate Rock. The results of this particular form of adulteration are dealt with, and a method of detection described.

§ 16. Anthropometrical Measurements of Military Cadets.

1. **General.**—Under the Defence Act of 1910, the principle of compulsory training was brought into operation in Australia on 1st January, 1911. Advantage was taken of this to secure a record of certain measurements and other particulars in respect of the cadets subjected to inspection, and an analysis of the data so obtained concerning height, weight, and minimum chest measurement, according to age, was given in Official Year Book No. 11, pages 1203-1209, for the year ended 30th June, 1912.

APPENDIX.

Recent information and returns which have come to hand since the various sections of this book were sent to press, are given hereunder.

SECTION IV. POPULATION.

§ 1. Commonwealth Population.—Its Distribution and Fluctuation.

1. Present Population, p. 96.—The following table shews the estimated population of each State and Territory and for the Commonwealth on 30th June, 1919 :—

ESTIMATED POPULATION ON 30th JUNE, 1919.

Particulars.	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	Fed. Terr.	
Males ..	984,839	716,168	366,053	215,593	169,618	108,287	3,805	1,416	2,565,779
Females ..	978,150	751,020	346,773	240,351	153,602	102,594	1,116	1,157	2,574,763
Total ..	1,962,989	1,467,188	712,826	455,944	323,220	210,881	4,921	2,573	5,140,542

The above are preliminary figures subject to alteration.

SECTION VII. PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

3. Increase in Numbers, p. 293.—The following table shews the estimated number of horses, cattle, sheep, and pigs in the Commonwealth at the latest dates available. The totals, with the exception of those relating to pigs, shew a satisfactory upward tendency as compared with the previous year's figures :—

PRELIMINARY FIGURES.—LIVE STOCK.

States and Territories.	Date.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales ..	30/6/18	740,806	3,148,309	38,482,465	395,639
Victoria ..	1/3/19	523,788	1,596,544	15,773,902	267,819
Queensland ..	31/12/18	759,726	5,786,744	18,220,985	140,966
South Australia ..	30/6/18	262,840	313,245	6,229,519	110,353
Western Australia ..	31/12/18	180,094	943,847	7,183,747	85,863
Tasmania ..	1/3/19	41,221	218,234	1,841,924	44,328
Northern Territory ..	31/12/17	26,231	638,431	54,709	124
Federal Territory ..	30/6/18	1,441	13,408	138,731	518
Commonwealth ..	..	2,536,147	12,658,762	87,925,982	1,045,610

SECTION XII. MINES AND MINING.

§ 1. The Mineral Wealth of Australia.

3. Value of Production during 1918, p. 425.—The following table shews the value of the production of the principal minerals for each State and Northern Territory and for the Commonwealth during the year 1918 :—

COMMONWEALTH MINERAL PRODUCTION, 1918.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.*	C'wealth.
	£	£	£	£	£	£	£	£
Gold ..	389,743	674,655	567,371	26,252	3,723,183	44,724	2,229	5,408,157
Silver and Lead ..	5,739,509	1,319	36,645	10,492	189,636	127,176	200	6,104,977
Copper ..	696,560	..	2,087,751	828,556	66,146	776,106	9,648	4,464,787
Tin ..	548,876	24,481	251,755	..	76,952	488,798	41,432	1,432,29*
Coal ..	4,941,807	367,640	572,305	..	204,319	37,676	..	6,123,747
Other ..	1,044,649	34,547	225,098	574,349	5,341	276,094	39,221	2,799,299
Total ..	13,941,164	1,102,642	3,740,925	1,439,649	4,265,577	1,750,574	92,730	26,333,261

* Year ended 30th June.

SECTION XVII. ROADS AND RAILWAYS.

§ 2. Railways.

(c) State Railways.

14. Page 666.—Reference is made on this page to the inauguration of a partial service of electric trains on the suburban lines between Melbourne and Essendon and Melbourne and Sandringham respectively on the 29th May, 1919. On the 14th September following, the train service on both those lines became wholly electric. The service on the St. Kilda line, however, was made a wholly electric one a fortnight earlier, viz., on the 31st August. The economy of time effected by the electrification will be seen from the following table :—

From—	To—	Distance.	Steam Traction.	Electric Traction.	
			Week Days and Sundays.	Week Days.	Sundays.
		Miles.	Minutes.	Minutes.	Minutes.
Melbourne (a) ..	Essendon ..	5 $\frac{3}{4}$	23	18	18
" ..	Sandringham ..	11 $\frac{1}{4}$	41	35	30
" ..	St. Kilda ..	3 $\frac{1}{2}$	12	9	9
St. Kilda ..	Melbourne (a) ..	3 $\frac{1}{2}$	12	9	9
Sandringham ..	" ..	11 $\frac{1}{4}$	40	35	30
Essendon ..	" ..	5 $\frac{3}{4}$	22	17	17

(a) Central Station (Flinders-street).

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An index to special articles, etc., appearing in previous issues, is given at the commencement of this book, page vii.

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