

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,
MELBOURNE.

OFFICIAL
YEAR BOOK
OF THE
COMMONWEALTH OF AUSTRALIA,
CONTAINING AUTHORITATIVE STATISTICS FOR THE PERIOD
1901-1915

AND CORRECTED STATISTICS FOR THE PERIOD 1788 TO 1900.

No. 9.—1916.

Prepared under Instructions from
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Minister of State for Home Affairs,

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COMMONWEALTH STATISTICIAN.



BY AUTHORITY.

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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 ninth authoritative Year Book issued under the Federal Constitution.

This Year Book furnishes corrected statistics for the whole period of Australian settlement, viz., from 1788 to 1915. Wherever space has permitted, detailed statistics have been furnished for each year since Federation, viz., from 1901 to 1915. In the few instances where this has proved impracticable, reference will be necessary to Year Books Nos. 1 to 8. The inclusion, as stated, 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 publication, which has been widely commended, corresponds with that of previous issues, and is shewn in the synopsis on pp. xiii. to xxix. 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 usually a brief condensation is given in subsequent issues. Though many articles in Year Books Nos. 1 to 8 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 what should prove an interesting and useful account of Australian "Grasses and Saltbushes," while the section on "Mining" embraces a special article dealing with the distribution, qualities, etc., of the Building Stones of Australia.

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 17 to 37.

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. Special mention may be made of the map of Australia inset on the back cover, and which has been reduced from the large scale map published under the authority of the Minister for Home Affairs from data supplied by the several States.

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 seems 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, or 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. 1139.

The present Year Book is somewhat later in appearance than preceding issues. This is due to a combination of circumstances: (a) the change in the trade year from the calendar to the financial year; (b) the adoption by New South Wales of the financial year in place of the calendar year in the manufacturing returns; (c) lateness in receipt of various returns occasioned by special circumstances arising out of the war or otherwise unavoidable.

It is hoped eventually to secure "Production" returns from all the States for the financial year, and the enhanced value of the figures for comparative purposes would more than counterbalance the slightly later issue of the Year Book.

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.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,

Melbourne, 30th September, 1916.

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.

NOTE.—The Roman figures indicate the number of the Year Book to which reference is made.

	Year Book No.	Page
Aborigines of Australia	III.	158
Bureaux, Statistical, of the several States	I.	2
Coastal Configuration of the Commonwealth	I.	59
Commonwealth Seat of Government (Special Article)	IV. 1134 ; V.	1139
Comparisons of School Children in Australia and other Countries	V.	1132
Early Knowledge of Australia	I.	44
Education, Primary, Early History of	I. 719 ; II.	880
Exploration of Australia	II.	20
Fauna of Australia	I. 103 ; II.	111
Flora of Australia	I. 109 ; II.	117
Geographical History of Australia with special reference to Changes of Climate	VII.	56
Geology of Australia	I. 70 ; II.	78
Hydrology	I. 69 ; II.	67
Inquiry into the Cost of Living in Australia	V.	1167
Islands off the Coast of the Commonwealth	V.	51
Lakes of Australia	IV.	59
Land Tenure, Early History of	I. 219 ; II. 263 ; III. 245 ; IV.	235
Lighthouses and Lights	II.	668
Mineral Springs in the Commonwealth	VI.	55
Mountains of Australia	I. 68 ; III.	59
Orography of Australia	I. 68 ; III.	59
Ports of the Commonwealth	III.	669
Preferential Voting	V. 1210 ; VI.	1182
Premiers' Conference, 1914	VII.	1055
Premiers' Conference, 1915	VIII.	1081
Rivers of Australia	I. 69 ; II.	67
Seismology in Australia	IV.	82
Some Native Australian Fodder Plants	VI.	1190
Statistical Conferences, and Census and Statistics Act	I. 6, 8, 12	
Statistical Effort, Co-ordination of, and Uniformity of Statistics	I.	5, 8
Suicide in Australia	V.	240
Trade of the Individual States of the Commonwealth	I. 524 ; II. 645 ; III. 647 ; IV.	664
Treasurers' Conference, 1914	VII.	1061
Universities	I. 739 ; II.	898

CONTENTS.

SECTION	SUBJECT.	PAGE
	STATISTICAL SUMMARY, 1861-1915	- xxxi
	CHRONOLOGICAL TABLE OF CHIEF EVENTS	xxxiii
I.	STATISTICAL ORGANISATION AND SOURCES OF INFORMATION	1
II.	DISCOVERY, COLONISATION, AND FEDERATION OF AUSTRALIA	15
III.	PHYSIOGRAPHY	47
IV.	POPULATION	91
V.	VITAL STATISTICS	150
VI.	LAND TENURE AND SETTLEMENT	225
VII.	PASTORAL PRODUCTION	280
VIII.	AGRICULTURAL PRODUCTION	309
IX.	FARMYARD AND DAIRY PRODUCTION	369
X.	FORESTS, FORESTRY, AND FORESTAL PRODUCTS	382
XI.	FISHERIES AND PISCICULTURE	391
XII.	MINES AND MINING	399
XIII.	MANUFACTURING INDUSTRIES	467
XIV.	WATER CONSERVATION AND IRRIGATION	517
XV.	COMMERCE	538
XVI.	SHIPPING	596
XVII.	ROADS AND RAILWAYS	615
XVIII.	POSTS, TELEGRAPHS, AND TELEPHONES	686
XIX.	COMMONWEALTH FINANCE	719
XX.	STATE FINANCE	745
XXI.	PRIVATE FINANCE	768
XXII.	PUBLIC INSTRUCTION	799
XXIII.	PUBLIC JUSTICE	831
XXIV.	PUBLIC BENEVOLENCE	851
XXV.	GENERAL GOVERNMENT	866
XXVI.	LOCAL GOVERNMENT	895
XXVII.	INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION	937
XXVIII.	DEFENCE	974
XXIX.	PAPUA (BRITISH NEW GUINEA)	1005
XXX.	PUBLIC HYGIENE	1014
XXXI.	THE COMMONWEALTH SEAT OF GOVERNMENT	1033
XXXII.	THE NORTHERN TERRITORY	1036
XXXIII.	LABOUR AND INDUSTRIAL STATISTICS	1045
XXXIV.	MISCELLANEOUS	1107
	APPENDIX	1139
	INDEX	1151

INDEX TO MAPS, GRAPHS, AND DIAGRAMS.

1. MAPS.

	PAGE
Map of the Commonwealth - - - - -	Inset on back cover
Orography of Australia - - - - -	49
Geology of Australia - - - - -	50
Wettest Months in Australia - - - - -	71
Mean Monthly Rainfall Distribution - - - - -	73
Rainfall Distribution - - - - -	74
Distribution of Population at Census of 3rd April, 1911 - - - - -	146
Australian Artesian Basins - - - - -	529
Railway Systems - - - - -	645
Cost of Living in 100 Towns, 1901 to 1915 - - - - -	1099

2. GRAPHS AND DIAGRAMS.

Fluctuations of Temperature - - - - -	67
Rainfall and Evaporation - - - - -	68
Barometric Pressures - - - - -	69
Longest Heat Waves and Maximum Temperature - - - - -	70
Mean Monthly Temperature of Principal Australian Cities, 1901 to 1909 - - - - -	72
Average Annual Temperatures, 1871 to 1909 - - - - -	72
Total Population (Commonwealth and States) - - - - -	139
Male and Female Population (Commonwealth) - - - - -	140
" " " (States) - - - - -	141
Net Increase of Population (Commonwealth, New South Wales and Victoria) - - - - -	142
" " " (Queensland, South Aust., West. Aust., and Tasmania) - - - - -	143
Natural Increase of Population (Commonwealth and States) - - - - -	144
Masculinity of Population (Commonwealth and States) - - - - -	145
Total Births (Commonwealth and States) - - - - -	211
" Marriages " " - - - - -	212
" Deaths " " - - - - -	213
Annual Birth, Death, Marriage and Natural Increase Rates (Commonwealth) - - - - -	214
Birth and Death Rates (States) - - - - -	215
General Death Rates, Monthly Variation - - - - -	216
Infantile Death Rates, Monthly Variation - - - - -	217

Condition of Public Estate - - - - -	279
Pastoral Production - - - - -	299
Dairy Production - - - - -	300
Area under Principal Crops - - - - -	349
Production of Principal Crops - - - - -	350
Value of Principal Minerals Produced - - - - -	431-2
Total Value of Trade of Commonwealth - - - - -	547
Value of Trade of Commonwealth per Inhabitant - - - - -	548
Financial Position of State Government Railway Systems - - - - -	646
State Government Railways—	
Percentage of Working Expenses to Gross Revenue - - - - -	647
,, ,, Net Revenue to Capital Cost - - - - -	648
Nominal Wage Index-Numbers in Each State and Commonwealth, 1906 to 1915 -	1065
Effective Wage Index-Numbers in Each State and Commonwealth, 1906 to 1915	1066
Melbourne Wholesale Price Index-Numbers, 1861 to 1915 - - - - -	1100

SYNOPSIS.

SECTION I.—STATISTICAL ORGANISATION AND SOURCES OF INFORMATION.

§ 1. Introduction	PAGE	§ 2. Statistical Publications of Australia	PAGE
1. Development of Australian Statistics	1	1. Introductory	2
2. Sources of Information	2	2. Commonwealth Publications	2
3. Maintenance of Secrecy	2	3. State Publications	2
4. Accuracy Essential	2	§ 3. Bibliography of Recent Works on Australia	13

SECTION II.—DISCOVERY, COLONISATION, AND FEDERATION OF AUSTRALIA.

§ 1. Early Knowledge of Australia	15	§ 8. The Creation of the Commonwealth	
§ 2. The Taking Possession of Australia	15	1. The Act	17
§ 3. The Creation of the Several Colonies		Chapter I.—The Parliament	19
1. Introduction	15	Part I.—General	19
2. No further Creation of Colonies	15	Part II.—The Senate	19
3. Australasia, 1863 to 1900	16	Part III.—The House of Rep'snt'vs	21
4. British New Guinea or Papua	16	Part IV.—Both Houses of the Parl't	23
5. Transfer of the Northern Territory to the Commonwealth	16	Part V.—Powers of the Parliament	25
6. Norfolk Island	17	Chapter II.—The Executive Government	28
§ 4. The Transfer of the Federal Capital Territory to the Commonwealth	17	Chapter III.—The Judicature	29
§ 5. The Exploration of Australia	17	Chapter IV.—Finance and Trade	30
§ 6. The Constitutions of the States	17	Chapter V.—The States	34
§ 7. The Federal Movement in Australia	17	Chapter VI.—New States	35
		Chapter VII.—Miscellaneous	35
		Chapter VIII.—Alteration of the Constitution	36
		2. The Royal Proclamation	37
		§ 9. Commonwealth Legislation	
		1. The Commonwealth Parliaments	37
		2. The Several Administrations	38
		3. The Course of Legislation	41

SECTION III.—PHYSIOGRAPHY.

	PAGE		PAGE
§ 1. General Description of Australia		4. Meteorological Divisions	57
1. Geographical Position...	47	5. Temperatures	58
2. Area of Australia compared with that of other Countries	47	6. Relative Humidity	59
3. Relative Size of Political Sub-divisions	54	7. Evaporation	59
4. Coastal Configuration	54	8. Rainfall	60
5. Geographical Features of Australia	55	9. Remarkable Falls of Rain	63
§ 2. The Fauna of Australia	55	10. Snowfall	66
§ 3. The Flora of Australia	55	11. Hail	66
§ 4. Seismology in Australia	56	12. Barometric Pressures	66
§ 5. The Geology of Australia		13. Wind	75
1. General	56	14. Cyclones and Storms	75
2. Geological Map of Australia	56	15. Influences affecting Australian Climate	75
§ 6. Climate and Meteorology of Australia		16. Comparison of Rainfalls and Temperatures	76
1. Introductory	56	17. Climatological Tables	77
2. Meteorological Publications	56	§ 7. The Grasses and Saltbushes of Australia	
3. General Description of Australia	57	1. Grasses	84
		2. Saltbushes	89

SECTION IV.—POPULATION.

§ 1. Commonwealth Population—Its Distribution and Fluctuation		§ 8. Enumerations and Estimates	
1. Present Population	91	1. Musters	119
2. Growth of Population	91	2. Census-taking	119
§ 2. Influences affecting Growth and Distribution of Population		3. The Census of 1901	119
1. Mineral Discoveries	94	4. The Census of 1911	119
2. Pastoral Development	94	5. Estimates of Population	120
3. Agricultural Expansion	94	§ 9. Census of 3rd April, 1911	
4. Progress of Manufacturing Industries	94	1. Numbers Enumerated	123
5. Influence of Droughts	94	2. Growth during last Three Decennia	124
6. Other Influences	95	§ 10. Principal Results of Census of 1911	
§ 3. Special Characteristics of Commonwealth Population		1. Census Results	125
1. Sex Distribution	95	2. Ages	125
2. Age Distribution	98	3. Birthplaces	125
3. Race and Nationality	99	4. Occupations	126
4. Differences among the States and Territories	102	5. Religions	128
§ 4. Elements of Growth of Population		6. Conjugal Condition	129
1. Natural Increase	104	7. Education	132
2. Comparison with other Countries	106	8. School Attendances	133
3. Net Immigration	106	9. Blind Persons and Deaf Mutes	135
4. Net Increase	108	§ 11. Naturalisation	
5. Total Increase	109	1. The Commonwealth Act	135
6. Density of Population	110	2. Statistics of Naturalisation	136
§ 5. Seasonal Variations of Population		3. Census Particulars	137
1. Natural Increase	113	§ 12. Graphical Representation of Growth of Population	
2. Net Immigration	113	1. General	138
§ 6. Urban Population		2. Graphs of Total Population	138
1. The Metropolitan Towns	114	3. Graphs for Commonwealth of Male and Female Population	147
2. Urban Population Generally	114	4. Graphs for each State of Male and Female Population	147
3. Municipal Population	116	5. Graphs of Natural Increase of Population, Commonwealth and States	147
§ 7. Assisted Immigration	118	6. Graphs shewing Net Increase of Population	148
		7. Graphs shewing Masculinity of Population, Commonwealth and States	148

SECTION V.—VITAL STATISTICS.

§ 1. Births	PAGE		PAGE
1. Male and Female Births, 1904 to 1914	150	11. Length of Residence in the Commonwealth of Persons who Died in 1914	181
2. Total Births, 1904 to 1914	150	12. Birthplaces of Persons who Died in 1914	182
3. Birth Rates, 1904 to 1914	151	13. Occupations of Male Persons who Died in 1914	183
4. Birth Rates of various Countries	152	14. Index of Mortality	184
5. Masculinity at Birth	152	15. Monthly Variations in Death Rates	186
6. Ex-nuptiality of Births	153	16. Causes of Death	187
7. Multiple Births	155	17. Certification of Deaths	192
8. Ages of Parents	155	18. Deaths from Special Causes	192
9. Birthplaces of Parents	158	19. Causes of Death in Classes	207
10. Occupations of Fathers	159	20. Deaths of Children under 1 year	207
11. Mothers' Age, Duration of Marriage, and Issue	161	21. Age at Death of Married Males and Females, and Issue	209
12. Interval between Marriage and First Birth	163	22. Age at Marriage of Males and Females, and Issue	210
13. Interval between Birth and Registration of Birth	164	23. Duration of Life after Marriage of Males and Females	210
		24. Birthplaces of Married Males and Females, and Issue	210
		25. Occupations of Married Males, and Issue	219
§ 2. Marriages			
1. Marriages, 1904 to 1914	165	§ 4. Graphical Representation of Vital Statistics	
2. Marriage Rates, 1904 to 1914	165	1. General	220
3. Marriage Rates in various Countries	166	2. Graphs of Annual Births, Commonwealth and States	221
4. Age at Marriage	166	3. Graphs of Annual Marriages, Commonwealth and States	222
5. Previous Conjugal Condition	168	4. Graphs of Annual Deaths, Commonwealth and States	223
6. Birthplaces of Persons Married	169	5. Graphs of Annual Birth, Death, and Marriage Rates and Rate of Natural Increase—Commonwealth	222
7. Occupations and Ages of Bridegrooms	169	6. Graphs of Annual Birth Rates—States	223
8. Fertility of Marriages	170	7. Graphs of Annual Death Rates—States	224
9. Registration of Marriages	171	8. Graphs shewing Variations in Annual Death Rates from Month to Month	224
10. Mark Signatures	171		
§ 3. Deaths			
1. Male and Female Deaths, 1904 to 1914	172		
2. Male and Female Death Rates, 1914	173		
3. Death Rates of various Countries	173		
4. Total Deaths, 1904 to 1914	173		
5. Crude Death Rates, 1904 to 1914	174		
6. Male and Female Death Rates, 1904 to 1914	174		
7. Infantile Death Rate	174		
8. Deaths in Age Groups, 1904 to 1914	177		
9. Deaths at Single Ages and in Age Groups, 1914	177		
10. Deaths of Centenarians, 1914	181		

SECTION VI.—LAND TENURE AND SETTLEMENT.

§ 1. Introduction and Early History		§ 5. Sales by Auction and Special Sales	
1. Introduction	225	1. Introduction	233
§ 2. Land Legislation in Individual States		2. New South Wales	233
1. New South Wales	225	3. Victoria	234
2. Victoria	225	4. Queensland	234
3. Queensland	226	5. South Australia	235
4. South Australia	226	6. Western Australia	236
5. Western Australia	226	7. Tasmania	236
6. Tasmania	226		
7. Northern Territory	226	§ 6. Conditional Purchases	
8. Administration and Classification of Crown Lands	226	1. Introduction	237
§ 3. Tenures under which Crown Lands may be Alienated or Occupied		2. New South Wales	237
1. Introduction	227	3. Victoria	238
2. Classification of Tenures	227	4. Queensland	238
3. Limitations of Tenures in N.S.W.	230	5. South Australia	239
4. Tenure of Lands by Aliens	230	6. Western Australia	240
		7. Tasmania	240
§ 4. Free Grants, Reservations & Dedications		§ 7. Leases and Licenses	
1. Introduction	231	1. Introduction	241
2. New South Wales	231	2. New South Wales	241
3. Victoria	233	3. Victoria	242
4. Queensland	233	4. Queensland	243
5. South Australia	233	5. South Australia	245
6. Western Australia	233	6. Western Australia	245
7. Tasmania	233	7. Tasmania	246
		8. Northern Territory	246

§ 8. Closer Settlement	PAGE	§ 11. Alienation and Occupation of Crown Lands in the several States	PAGE
1. Introduction	248	1. Introduction	267
2. Government Loans to Settlers	248	2. New South Wales	268
3. New South Wales	248	3. Victoria	269
4. Victoria	251	4. Queensland	269
5. Queensland	253	5. South Australia	270
6. South Australia	254	6. Western Australia	271
7. Western Australia	256	7. Tasmania	272
8. Tasmania	257	8. Northern Territory	273
§ 9. Occupation of Crown Lands under Leases and Licenses issued by Mines Departments		§ 12. Classification of Holdings according to Size	
1. Introduction	258	1. General	273
2. New South Wales	259	2. New South Wales	274
3. Victoria	260	3. Victoria	275
4. Queensland	261	4. South Australia	275
5. South Australia	262	5. Western Australia	275
6. Western Australia	263	6. Tasmania	276
7. Tasmania	264	§ 13. The Progress of Land Settlement, 1901 to 1914	
8. Northern Territory	265	1. Recent Progress	276
§ 10. Resumption by Crown of Alienated Lands		2. Diagram shewing Condition of Public Estate	278
1. General	266	3. Federal Territory	279
2. Areas Resumed	267		

SECTION VII.—PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry		2. Distribution throughout C'wealth... ..	292
1. Early Statistics	280	3. Proportion in the several States	292
2. Subsequent Statistics	280	4. Oversea Imports & Exports of Sheep	293
3. Increase in Numbers	280	5. Sheep Slaughtered	293
4. Fluctuations	281	6. Exports of Mutton and Lamb preserved by Cold Process	293
5. Live Stock in Relation to Population	281	7. Comparison with other Countries	294
6. Live Stock in Relation to Area	281	8. Relation to Population... ..	295
7. Minor Classes of Live Stock	282	§ 5. Wool	
8. Net Exports of Principal Pastoral Products	282	1. Importance of Wool Production	295
§ 2. Horses		2. Greasy and Scoured Wool	295
1. Suitability of Australia for Horse-breeding	283	3. Total Production... ..	296
2. Distribution throughout C'wealth... ..	283	4. Wool Locally Used	296
3. Proportion in the several States	284	5. Bounties on Combed Wool or Tops Exported	297
4. Oversea Export Trade in Horses	284	6. Exports of Wool	297
5. Comparison with other Countries	286	7. Care needed in Comparing Clips	298
6. Relation to Population	287	8. Wool-producing Countries in Southern Hemisphere	298
§ 3. Cattle		9. United Kingdom Importation of Wool	298
1. Purposes for which Raised	287	10. The Wool Market	301
2. Distribution throughout C'wealth... ..	287	§ 6. Hides and Sheepskins	
3. Proportion in each State	288	1. Extent of Trade	305
4. Imports and Exports of Cattle	288	2. Sheepskins with Wool	305
5. Cattle Slaughtered	289	3. Sheepskins without Wool	306
6. Export of Beef preserved by Cold Process	289	4. Hides... ..	307
7. Comparison with other Countries... ..	290	§ 7. Graphical Representation of Pastoral Production	
8. Relation to Population	291	1. General	308
§ 4. Sheep		2. Horses	308
1. The Founding of the Commonwealth Pastoral Industry	291	3. Cattle	308
		4. Sheep	308
		5. Pigs	308

SECTION VIII.—AGRICULTURAL PRODUCTION.

§ 1. Introductory		4. Relation to Total Area... ..	311
1. Early Attempts at Agriculture	309	5. Artificially-sown Grasses	311
2. The First Sowing	309	§ 3. Relative Importance of Crops	
3. Discovery of Suitable Agricul. Land	309	1. Various Crops	312
§ 2. Progress of Agriculture		2. Relative Areas of Crops in States and Territories	312
1. Early Records	309	3. Relative Positions of States and Territories in regard to Crops	313
2. Progress of Cultivation since 1860	310	4. Acreage of Principal Crops, Cwilt.	314
3. Relation to Population	310		

	PAGE		PAGE
§ 4. Wheat		§ 13. Sugar Cane	
1. Progress of Wheat-growing ...	314	1. Area ...	342
2. Australian & Foreign Wheat Yields ...	316	2. Productive and Unproductive Cane ...	343
3. Wheat Crops of the World ...	316	3. Yield of Cane ...	343
4. Prices of Wheat ...	317	4. Relation to Population ...	344
5. Imports, Exports of Wheat & Flour ...	318	5. Quality of Cane ...	344
6. Value of the Wheat Crop ...	321	6. Sugar Bounties ...	344
7. The Australian Wheat Marketing Scheme ...	321	7. Beet Sugar ...	345
8. Lucerne Pool ...	323	8. Acreage and Yield of Sugar Beet ...	345
		9. Cost of Bounties ...	345
		10. Collection of Sugar Excise ...	345
§ 5. Oats		11. Production by White and Coloured Labour ...	345
1. Progress of Cultivation ...	323	12. Employment of White and Coloured Labour ...	346
2. Total Yield ...	324	13. Imports and Exports of Sugar ...	346
3. Average Yield ...	324		
4. Relation to Population ...	325	§ 14. Vineyards	
5. Value of Oat Crop ...	325	1. Nature and Extent ...	347
6. Imports and Exports ...	325	2. Wine Production ...	348
7. Oatmeal, etc. ...	326	3. Relation to Population ...	348
8. Comparisons with other Countries ...	326	4. Imports and Exports ...	348
9. Comparison of Yields ...	326	5. Other Viticultural Products... ..	351
10. Price of Oats ...	327		
		§ 15. Orchards and Fruit Gardens	
§ 6. Maize		1. Nature and Extent ...	352
1. States Growing Maize ...	327	2. Relation to Population ...	354
2. Area under Maize ...	327	3. Commonwealth Imports & Exports ...	354
3. Total Yield ...	328	4. Jams and Jellies ...	355
4. Average Yield ...	328	5. Preserved Fruit ...	355
5. Value of Maize Crop ...	328		
6. Relation to Population ...	329	§ 16. Minor Crops	
7. Australian and Foreign Maize Production ...	329	1. Nature and Extent ...	356
8. Comparison of Yields ...	329	2. Market Gardens ...	356
9. Oversea Imports and Exports ...	330	3. Grass Seed ...	356
10. Prepared Maize ...	330	4. Tobacco ...	356
11. Price of Maize ...	330	5. Pumpkins and Melons ...	357
		6. Hops ...	357
§ 7. Barley		7. Millet ...	357
1. Area under Barley ...	330	8. Nurseries ...	357
2. Malting and other Barley ...	331	9. Cotton ...	357
3. Total Yield... ..	331	10. Coffee ...	358
4. Value of Barley Crop ...	332	11. Other Crops ...	358
5. Relation to Population ...	332		
6. Commonwealth Imports & Exports ...	332	§ 17. Bounties on Agricultural Products	
7. C'wealth Imports & Exports of Malt ...	333	1. General ...	358
8. Comparison with other Countries... ..	333		
9. Average Yield ...	334	§ 18. Fertilisers	
10. Price of Barley ...	334	1. General ...	359
		2. Fertilisers Acts ...	359
§ 8. Other Grain and Pulse Crops ...	334	3. Imports ...	359
		4. Exports ...	360
§ 9. Potatoes		5. Statistics of Use of Fertilisers ...	361
1. Area ...	335	6. Local Production of Fertilisers ...	362
2. Total Yield... ..	335	7. Benefits Derived from the Use of Fertilisers ...	362
3. Average Yield per Acre ...	335		
4. Value of Potato Crop ...	336	§ 19. Ensilage	
5. Relation to Population ...	336	1. Value to Stockowners ...	363
6. Commonwealth Imports & Exports ...	336	2. Government Assistance in the Production of Ensilage ...	363
7. Comparison with other Countries... ..	337	3. Quantity made ...	363
§ 10. Other Root and Tuber Crops		§ 20. Agricultural Colleges and Experimental Farms	
1. Nature and Extent ...	337	1. Introduction ...	364
2. Commonwealth Imports & Exports ...	338	2. Particulars of Agricultural Colleges and Experimental Farms ...	364
		3. New South Wales ...	365
§ 11. Hay		4. Victoria ...	366
1. Nature and Extent ...	338	5. Queensland ...	366
2. Kinds of Hay ...	338	6. South Australia ...	366
3. Total Yield ...	339	7. Western Australia ...	367
4. Value of Hay Crop ...	340	8. Tasmania ...	367
5. Average Yield per Acre ...	340		
6. Relation to Population ...	341	§ 21. Government Loans to Farmers	
7. Oversea Imports and Exports ...	341	1. Introduction ...	367
8. Hay Production in other Countries ...	341	2. Aggregate of Transactions in each State, 1911 to 1915 ...	368
		3. Legislation in each State ...	368
§ 12. Green Forage		4. Particulars respecting Agricultural and Stock Departments ...	368
1. Nature and Extent ...	341		
2. Value of Green Forage Crops ...	342	§ 22. Graphical Representation of Crops	
3. Relation to Population ...	342	1. Areas of Principal Crops ...	368
		2. Production ...	368

SECTION IX.—FARMYARD AND DAIRY PRODUCTION.

§ 1. Introductory	PAGE	§ 5. Bee Farming	PAGE
1. General	369	1. The Bee Farming Industry	377
2. Official Supervision of Industry ...	369	2. Production of Honey and Beeswax ...	377
3. Mixed Farming	369	3. Oversea Trade in Bee Products ...	379
4. Factory System	369		
5. Butter and Cheese Factories ...	370		
§ 2. Milk, Butter, and Cheese		§ 6. Summary of Australian Farmyard and Dairy Products	379
1. Dairy Herds	370		
2. Milk	370		
3. Butter and Cheese	371	§ 7. Summary of Australian Farmyard and Dairy Products Exported, 1910 to 1914-15	380
4. Concentrated Milk	372		
5. Oversea Trade in Milk, Butter, and Cheese	372		
6. Local Consumption of Butter and Cheese	373		
§ 3. Pigs, Bacon, etc.		§ 8. British Imports of Dairy Products	
1. Pigs	373	1. Value of Britain's Imports of Dairy Products	380
2. Bacon and Ham	374	2. Butter	381
3. Oversea Trade in Pig Products ...	374	3. Cheese	381
4. Local Consumption of Bacon and Ham	375	4. Bacon and Ham	381
5. Total Dairy Production	375	5. Pork	381
		6. Other Products	381
§ 4. Poultry Farming			
1. Development of the Industry ...	376	§ 9. Graphical Representation of Dairy Production	381
2. Production of Poultry	376		
3. Oversea Trade in Poultry Products	377		

SECTION X.—FORESTS, FORESTRY, AND FORESTAL PRODUCTS.

§ 1. The Forests of Australia		§ 3. Commercial Uses of Principal Australian Timbers	385
1. Extent of Forests	382		
2. Distribution of Timber	383		
§ 2. Forestry		§ 4. Forestal Industries and Production	
1. Objects	383	1. Timber	385
2. Forestry Departments	383	2. Other Forest Produce	386
3. Sylvicultural Nurseries and Plantations	384		
4. Revenue and Expenditure	384		
5. Instruction in Scientific Forestry ...	385	§ 5. Oversea Trade	
6. Forest Congresses	385	1. Imports	386
		2. Exports	387

SECTION XI.—FISHERIES AND PISCICULTURE.

§ 1. Commercial Fisheries		§ 5. The Commonwealth Department of Fisheries	
1. Fish Stocks	391	1. The Federal Council of Australasia ...	396
2. Economic Fisheries	391	2. Commonwealth Investigations ...	396
3. Distribution of Supplies	391	3. Scope of the Inquiry	396
4. Oyster Fisheries	391	4. The F.I.S. "Endeavour"	397
5. Pearl-shelling	391	5. Consumption of Fish	397
§ 2. Fisheries Statistics		§ 6. The State Trawling Industry.—New South Wales	397
1. Estimates for the Commonwealth ...	392		
§ 3. Oversea Trade in Fish	394	§ 7. Fish Preserving	398
§ 4. Development of the Fishing Industry			
1. Transport and Marketing	396		
2. Experiment and Culture	396		

SECTION XII.—MINES AND MINING.

§ 1. The Mineral Wealth of Australia	PAGE	(B) NON-METALLIC MINERALS	PAGE
1. Place of Mining in Australian Development	399	§ 10. Coal	
2. Extent of Mineral Wealth	399	1. Production in each State	425
3. Value of Production during 1914	399	2. Distribution and Quantity of Coal in each State	426
4. Total Production to end of 1914	400	3. Production of Coal various Countries	430
§ 2. Gold		4. Export of Coal	430
(A) METALS		5. Consumption of Coal in Australia	433
1. Discovery of Gold in various States	400	6. Price of Coal	434
2. Production of Gold at various Periods	400	7. Price of Coal in other Countries	435
3. Changes in Relative Positions of States as Gold Producers	403	8. Employment and Accidents in Coal Mining	436
4. Methods of Gold Mining adopted in each State	403	§ 11. Coke	
5. Remarkable Masses of Gold	407	1. Production of Coke	436
6. Modes of Occurrence of Gold in Aust.	407	§ 12. Oil Shale and Mineral Oils	
7. Place of Commonwealth in the World's Gold Production	407	1. Production of Shale	437
8. Employment in Gold Mining	408	2. Export of Shale	438
§ 3. Platinum and the Platinoid Metals		3. Shale Oils Bounties	438
1. Platinum	409	§ 13. Other Non-metallic Minerals	
2. Osmium, Iridium, etc.	409	1. Alunite	438
§ 4. Silver		2. Asbestos	439
1. Occurrence in each State	409	3. Barytes	439
2. Development of Silver Mining	409	4. Clays and Pigments	439
3. Chief Centres of Silver Production	411	5. Coorongite	439
4. World's Production of Silver	412	6. Fuller's Earth	439
5. Prices of Silver	412	7. Graphite	440
6. Employment in Silver Mining	412	8. Gypsum	440
§ 5. Copper		9. Magnesite	440
1. Production of Copper	413	10. Tripolite or Diatomaceous Earth	440
2. Sources of Production	413	11. Salt	440
3. Price of Copper	415	12. Natural Manures	441
4. Relationship to World's Production	415	§ 14. Gems and Gemstones	
5. Employment in Copper Mining	415	1. Diamonds	441
§ 6. Tin		2. Sapphires	441
1. Production of Tin	416	3. Precious Opal	442
2. Sources of Production	416	4. Other Gems	442
3. World's Production of Tin	417	(C) GENERAL.	
4. Prices of Tin	417	§ 15. Numbers Engaged, Wages Paid, and Accidents in Mining	
5. Employment in Tin Mining	418	1. Total Employment in Mining	443
§ 7. Zinc		2. Wages Paid in Mining	443
1. Production of Zinc	418	3. Accidents in Mining, 1914	444
§ 8. Iron		§ 16. State Aid to Mining	
1. General	419	1. Introduction	444
2. Production of Iron	420	2. New South Wales	444
§ 9. Other Metals		3. Victoria	444
1. Antimony	422	4. Queensland	445
2. Arsenic	422	5. South Australia	445
3. Barium	422	6. Western Australia	445
4. Bismuth	422	7. Tasmania	445
5. Chromium	423	8. Northern Territory	445
6. Carnotite	423	§ 17. The Building Stones of the Commonwealth	
7. Cobalt	423	1. New South Wales	446
8. Lead	423	2. Victoria	454
9. Mercury	423	3. Queensland	458
10. Manganese	424	4. South Australia	458
11. Molybdenum	424	5. Western Australia	462
12. Radium	424	6. Tasmania	464
13. Tungsten	424		
14. Tantalum	425		
15. Uranium	425		

SECTION XIII.—MANUFACTURING INDUSTRIES.

§ 1. General		2. Classification of Numbers Employed in Factories in Commonwealth	473
1. Industrial Progress	467	3. Classification of Numbers Employed in each State, according to Class of Industry	474
2. Defects in Industrial Statistics	468	4. Classification of Numbers Employed according to Nature of Employment	474
3. Classification of Manufacturing Industries	468	5. Classification of Factories according to Number of Hands Employed	475
§ 2. Number of Manufactories		6. Outworkers	476
1. General	469		
2. Use of Mechanical Power	471		
§ 3. Number Employed in Aust. Factories			
1. Total Number Employed	472		

§ 4. Sex Distribution in Factories	PAGE
1. Employment of Females in Factories	477
2. Distribution of Employees according to Sex	477
3. Rate of Increase for each Sex	479
4. Ratio of Female Employment in Factories	479
5. Employment of Females in Particular Industries	480
§ 5. Child Labour in Factories	
1. Conditions of Child Labour	481
2. Average Number of Children Employed in Factories	481
3. Percentage of Children to Total Persons Employed	482
4. Industries Employing Child Labour	482
5. Apprenticeship	483
§ 6. Amount of Wages Paid and Value of Production	
1. Introduction	483
2. Amounts of Salaries and Wages Paid	483
3. Value of Fuel and Light used in Factories	487
4. Value of Raw Material used in Factories	488
5. Total Value of Output of Manufacturing Industries	489
6. Value of Production of Manufacturing Industries	491
§ 7. Land, Buildings, Plant and Machinery	
1. General	492
2. Value of Land and Buildings	493
3. Value of Plant and Machinery	495

SECTION XIV.—WATER CONSERVATION AND IRRIGATION.

§ 1. Artesian Water	
1. General	517
2. New South Wales	518
3. Victoria	521
4. Queensland	522
5. South Australia	522
6. Western Australia	524
7. Northern Territory	525

§ 8. Individual Industries	PAGE
1. General	496
2. Tanning Industry	496
3. Fellmongering and Wool-scouring	497
4. Soap and Candle Factories	498
5. Saw Mills, etc.	499
6. Agricultural Implement Factories	500
7. Engineering, Ironworks, and Foundries	501
8. Railway Carriages & Rolling Stock, Railway & Tramway Workshops	502
9. Smelting Works	503
10. Bacon-curing Factories	503
11. Butter, Cheese, and Condensed Milk Factories	504
12. Meat and Fish Preserving, Ice and Refrigerating Works	505
13. Biscuit Manufactories	506
14. Jam and Fruit Preserving, Pickles, Sauces, and Vinegar Manufactories	506
15. Confectionery	507
16. Flour Mills	507
17. Sugar Mills	508
18. Sugar Refineries	509
19. Breweries	509
20. Distilleries	510
21. Tobacco, Cigars, and Cigarettes	510
22. Woollen, Cotton, and Tweed Mills	511
23. Boots and Shoes	512
24. Clothing (Tailoring and Slop) Factories	514
25. Dressmaking and Millinery	514
26. Coach and Wagon Building Works	515
27. Furniture and Cabinet Making and Billiard Table Making	515
28. Electric Light and Power Works	516
29. Gas and Coke Works	516

§ 2. Irrigation Plants	
1. General	525
2. New South Wales	525
3. Victoria	533
4. Queensland	535
5. South Australia	535
6. Western Australia	536
7. Murray Waters	537

SECTION XV.—COMMERCE.

§ 1. Introductory	
1. Constitutional Powers of Commonwealth in regard to Commerce	538
§ 2. Commonwealth Commercial Legislation	
1. Customs Act 1901	538
2. Customs Tariff Act 1902	538
3. Sea Carriage of Goods Act	538
4. Secret Commission Act 1905	538
5. Commerce (Trade Descriptions) Act 1905	539
6. Aust. Industries Preservation Act 1906	539
7. Customs Tariff 1906	539
8. Customs Tariff (South African Preference) 1906	539
9. Australian Industries Preservation Act 1907	539
10. Customs Tariff 1908	539
11. Customs Tariff Amendment Act 1908	539
12. Australian Industries Preservation Act 1909	539
13. Customs (Interstate Accounts) Act 1910	540
14. Australian Industries Preservation Act 1910	540
15. Customs Act 1910	540
16. Customs Tariff 1910	540
17. Customs Tariff 1911	540
18. Interstate Commission Act 1912	540
19. Trading with the Enemy Act 1914	540
20. Customs Act 1914	540
21. Income Tax Assessment Act 1915, and Amendment thereto	540
§ 3. Regulation of Trade during the War	
1. Authority for	541

§ 4. Method of Recording Imports and Exports	
1. Value of Imports	541
2. Value of Exports	541
3. Records of Past Years	541
4. Vessels (Ships) Imported & Exported	541
5. Ships' Stores	542
§ 5. Oversea Trade	
1. Total Oversea Trade	542
2. Alteration of Trade Year	544
3. Decline in Exports, 1914-15	544
4. Ratio between Exports and Imports	545
§ 6. Direction of Trade	
1. Country of Shipment and Country of Origin	546
2. Direct Imports according to Country of Shipment	550
3. Imports from the United Kingdom	551
4. Imports Shipped from Brit. Poss.	552
5. Principal Imports, the Produce of British Possessions	552
6. Imports from Foreign Countries	553
7. Principal Imports, the Produce of Foreign Countries	553
8. Direction of Exports	555
9. Exports to the United Kingdom	558
10. Principal Exports to British Possessions	558
11. Exports to Foreign Countries	559
12. Principal Exports to Foreign Countries	559

	PAGE		PAGE
§ 7. Development of Export Trade to Eastern Countries		§ 11. External Trade of Australia and other Countries	
1. Trade with Eastern Countries	560	1. Essentials of Comparisons	574
§ 8. Trade of Commonwealth since Federation		2. "Special Trade" of various Countries	574
1. Classified Summary of Australian Trade	566	3. External Trade as a Measure of Prosperity	575
§ 9. Movements of Specie and Bullion		§ 12. Trade of the United Kingdom with Australia	
1. Specie and Bullion	569	1. Proportion of Trade from U.K.	576
2. Imports of Bullion and Specie	571	2. Preferential Tariff	581
3. Exports of Bullion and Specie	571	§ 13. Customs Tariff, 1914	582
§ 10. Effects of Prices on the Values of Exports		§ 14. Rates of Duty in other Countries Compared	595
1. Significance of Price in Totals	571		
2. Effect of Prices	571		
3. Influence of Quantity and Price on Total Increased Value of Exports	572		

SECTION XVI.—SHIPPING.

§ 1. General		§ 4. Vessels Built and Registered	
1. Record of Shipping before Federation	596	1. Vessels Registered	608
2. Shipping since Federation	596	2. Vessels Built	608
3. Difficulties of Comparisons of Total Shipping	596	§ 5. Interstate Shipping	
4. Present System of Record	596	1. Total Vessels and Tonnage	609
§ 2. Oversea Shipping		2. Total Interstate Movement of Shipping	611
1. Total Oversea Shipping	597	3. Vessels engaged solely in Interstate Trade	612
2. Comparison with other Countries	598	4. Interstate and Coastal Services	612
3. Shipping Communication with various Countries	598	5. Lighthouses and Lights on the Coast of the Commonwealth	613
4. General Trend of Shipping	601	6. Ports of the Commonwealth	613
5. Nationality of Oversea Shipping	603	§ 6. Shipwrecks	613
6. Tonnage in Ballast	606		
§ 3. Shipping of Ports			
1. Shipping of Ports	607		

SECTION XVII.—ROADS AND RAILWAYS.

§ 1. Roads and Bridges		(B) FEDERAL RAILWAYS—	
1. Introduction	615	1. General	630
2. Expenditure on Roads and Bridges	615	2. Darwin to Pine Creek Railway	630
3. New South Wales	616	3. Port Augusta-Oodnadatta Line	630
4. Victoria	617	4. Port Augusta-Kalgoorlie Line	630
5. Queensland	619	5. Queanbeyan-Canberra Railway	631
6. South Australia	619	6. Summary of Federal Railways	631
7. Western Australia	620	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	631
8. Tasmania	622	8. Number and Description of Rolling Stock	632
§ 2. Railways		9. Number of Railway Employees	633
(A) GENERAL—		10. Accidents. Number of Killed and Injured	633
1. Introduction	623	(C) STATE RAILWAYS—	
2. Railway Statistics	623	1. Mileage Open, 1901 to 1915	634
3. Railway Communication in the Commonwealth	623	2. Average Mileage Worked, Train-miles Run, Number of Passenger Journeys, and Tonnage of Goods and Live Stock carried on State Government Railways	635
4. Non-conformity of Gauge	624	3. Length and Gauge of Railway Systems in each State	635
5. Interstate Communication	624	4. Administration and Control of State Railways	638
6. Unification of Gauge	625		
7. Loading Gauges	626		
8. Mileage open for Traffic	627		
9. Comparative Mileage of Government and Private Lines	627		
10. Comparative Railway Facilities in Different States	628		
11. Classification of Lines according to Gauge	628		

	PAGE		PAGE
5. Lines under Construction & Authorised and Proposed Lines, 1915	638	2. Capital Cost and Mileage Open	666
6. Cost of Construction and Equipment of State Railways	640	3. Cost per Mile Open	667
7. Gross Revenue, Total per Average Mile Worked, & per Train-mile Run	643	4. Gross Revenue	667
8. Coaching, Goods, and Miscellaneous Receipts	644	5. Working Expenses and Net Revenue	667
9. Coaching Traffic Receipts per Average Mile Worked, per Passenger Train-mile, and per Passenger Journey	649	6. Percentage of Working Expenses to Gross Revenue	667
10. Goods and Live-stock Traffic Receipts per Mile Worked, per Goods Train-mile and per Ton carried	650	7. Percentage of Net Revenue on Capital Cost	667
11. Working Expenses	651	8. General Indications of Graphs	667
12. Distribution of Work'g Expenditure	653		
13. Net Revenue, Total and per Cent. of Capital Cost	653	(E) PRIVATE RAILWAYS—	
14. Traffic Conditions	655	1. Total Mileage Open, 1914	668
15. Passenger-mileage and Ton-mileage	657	2. Classification of Private Railways	668
16. Interest Returned on Capital Expenditure	660	3. New South Wales	672
17. Passenger Fares and Goods Rates	661	4. Victoria	672
18. Numbers and Description of Rolling-stock	664	5. Queensland	672
19. Number of Railway Employees	665	6. South Australia	673
20. Accidents— Number of Killed and Injured	666	7. Western Australia	673
		8. Tasmania	673
		9. Operations of Private Railways, 1914	674
(D) GRAPHICAL REPRESENTATION OF RAILWAY DEVELOPMENT—			
1. General	666	§ 3. Tramways	
		1. General	675
		2. New South Wales	675
		3. Victoria	679
		4. Queensland	682
		5. South Australia	682
		6. Western Australia	683
		7. Tasmania	685
		8. Electrical Traction in Commonwealth, 1914-15	685

SECTION XVIII.—POSTS, TELEGRAPHS AND TELEPHONES.

§ 1. Posts

1. The Commonwealth Postal Dept.	686
2. Development of Postal Services	686
3. State, Interstate & Oversea Postages for whole Commonwealth	687
4. State, Interstate & Oversea Postages for each State	688
5. Postal Facilities, 1914	688
6. Rates of Postage	689
7. Registered Letters	690
8. Ocean Mail Services	691
9. Amount of Mail Subsidies paid	697
10. Average and Fastest Time of Mails to and from London	697
11. Money Orders and Postal Notes	697
12. Number and Value of Money Orders and Postal Notes Issued and Paid	699
13. Classification of Money Orders Issued and Paid	699
14. Classification of Postal Notes Paid	701
15. The Value Payable Post	701
16. Agricultural Parcels Post	702
17. Transactions of the Dead Letter Off.	702
18. Post Offices and Receiving Offices and Employees	703
19. Postal Routes	704
20. Gross Revenue of Postal Department	705
21. Expenditure in respect of Postal Departments	705
22. Balance Sheet of the Postmaster-General's Department	706
23. Royal Commission on Postal Services	707

§ 2. Telegraphs

1. First Lines Constructed	707
2. Development of Services	708
3. Number of Telegraph Offices and Length of Lines and Wire open	708
4. Revenue and Expenditure	709
5. Number of Telegrams Despatched	709
6. Rates for Transmission of Telegrams	709
7. Letter-telegrams	710
8. Wireless Telegraphy	710

§ 3. Submarine Cables

1. First Cable Communication with the Old World	711
2. The Tasmania-Victoria Cable	711
3. The Eastern Extension Company's Cables	712
4. The Pacific Cable	712
5. New Zealand Cables	713
6. The New Caledonian Cable	713
7. Number of Cablegrams Received and Despatched	713
8. Lengths of Cable Routes	714
9. Cable Rates	714
10. Subsidised Press Cable Service	716
11. Cable Subsidies Paid by each State	716

§ 4. Telephones

1. Development of Telephone Services	717
2. Telephone Rates	717
3. Particulars of Telephone Services	718

SECTION XIX.—COMMONWEALTH FINANCE.

§ 1. General	PAGE		PAGE
1. Financial Provisions of Constitution	719	9. External Affairs	732
2. Departments Transferred or Transferable under Constitution	719	10. Northern Territory	732
3. Departments Transferable by Means of Commonwealth Legislation	719	11. Papua	733
4. Commonwealth Departments	720	12. Attorney-General's Department	734
5. Financial Relations between Commonwealth and States	720	13. Home Affairs Department	734
6. Special Assistance	721	14. Treasurer's Department	734
		15. Trade and Customs	735
		16. Defence	736
		17. Postal	736
		18. Miscellaneous	736
§ 2. Consolidated Revenue Fund		(D) SUBSIDY PAID TO STATES—	
(A) NATURE OF FUND	721	1. Net Revenue	736
(B) REVENUE—		2. Payments to the Several States	737
1. Total Collections	721	3. Commonwealth Subsidy per head of Population	737
2. Collections per Head	722	4. Proportion Actually Paid	738
3. Sources of Revenue	722		
4. Customs Revenue for Past Five Years	723	§ 3. Trust Fund	
5. Excise Collections	723	1. Trust Accounts	738
6. Commonwealth Direct Taxation	724	2. Distribution	738
7. Commonwealth Land Tax	725	3. Australian Notes Account	738
8. Details of Postal Revenue	728	4. Advances by Commonwealth Government to States	739
9. Revenue from Patents	728		
10. Revenue from Trade Marks, etc.	728	§ 4. Commonwealth Public Debt	
11. Defence Revenue	728	1. Loans taken over from S. Australia	740
12. Coinage	728	2. Loan Fund	740
(C) EXPENDITURE—		3. Properties transferred from States	741
1. Nature of C'wealth Expenditure	729	4. War Loan from the Imperial Govt.	741
2. Total Expenditure	729	5. Flotation of War Loans in Australia	742
3. Expenditure per Head	729	6. Australian Notes	743
4. New Works, etc.	729	7. Total Commonwealth Public Debt	743
5. Cost of Departments, etc.	730	8. Place of Flotation	743
6. Governor-General	730	9. Rates of Interest	744
7. Parliament	731		
8. Prime Minister's Department	731		

SECTION XX.—STATE FINANCE.

§ 1. General		(b) Stamp Duties—	
1. Functions of State Governments	745	1. Revenue	755
2. Accounts of State Governments	745	2. Bank Notes	755
3. Inter-relation of Commonwealth and State Finance	745	(c) Land Tax—	
		1. General	756
§ 2. State Consolidated Revenue Funds		(d) Income Tax—	
(A) RECEIPTS—		1. General	756
1. Sources of Revenue	746		
2. Amount Collected	746	§ 3. Trust Funds	
3. Revenue per Head	746	1. Nature	757
4. Details for 1914-15	747	2. Extent of Funds	757
5. Revenue per Head, 1914-15	747		
6. Relative Importance of Sources of Revenue	748	§ 4. Loan Funds	
7. State Taxation	748	1. Nature	757
8. Commonwealth and State Taxation	749	2. Loan Expenditure 1914-15	758
9. Public Works and Services	750	3. Aggregate Loan Expenditure	758
10. Land Revenue	750	4. Relative Importance of Loan Items	759
11. Commonwealth Subsidy	751	5. Loan Expenditure in Successive Yrs.	759
12. Miscellaneous Items of Revenue	751	6. Loan Expenditure per Head	760
(B) DISBURSEMENTS—			
1. Heads of Expenditure	751	§ 5. Public Debt	
2. Total Expenditure	752	1. The Initiation of Public Borrowing	760
3. Expenditure per Head	752	2. Nature of Securities	760
4. Details of Expenditure, 1914-15	752	3. Increase in Indebtedness of the Several States	761
5. Expenditure per Head, 1914-15	753	4. Indebtedness per Head	762
6. Relative Importance	753	5. Flotation of Loans	762
(C) BALANCES—		6. Rates of Interest	763
1. Position on 30th June, 1915	754	7. Interest Payable per Head	765
(D) PRINCIPAL STATE TAXES—		8. Dates of Maturity	765
(a) Probate and Succession Duties—		9. Sinking Funds	766
1. General	754		

SECTION XXI.—PRIVATE FINANCE.

§ 1. Currency	PAGE	§ 5. Life Assurance	PAGE
1. The Three Australian Mints... ..	768	1. General	787
2. Receipts and Issues in 1914	768	2. Companies Transacting Business in the Commonwealth	788
3. Total Receipts and Issues	769	3. Ordinary and Industrial Business	788
4. Standard Weight and Fineness of Coinage	770	4. Ordinary Business	789
5. Prices of Silver, and Aust. Coinage	770	5. Industrial Business	789
§ 2. Banking		6. Receipts and Expenditure of Insurance Societies, 1914	789
1. Banking Facilities	772	7. Liabilities and Assets of Assurance Societies, 1914	790
2. Banking Legislation	773	§ 6. Fire Insurance	
3. Capital Resources of Banks	775	1. General	792
4. Liabilities and Assets of Banks	776	2. Sydney	792
5. Percentage of Coin and Bullion to Liabilities at Call	777	3. Melbourne	792
6. Deposits and Advances	778	4. Country Districts of Victoria	793
7. Clearing Houses	780	5. Brisbane	793
§ 3. Companies		6. Adelaide	793
1. General	780	7. Perth	793
2. Trustees, Executors & Agency Co.'s	780	8. Australian Fire Insurance Business	793
3. Registered Building and Investment Societies	781	§ 7. Marine Insurance	794
4. Registered Co-operative Societies	782	§ 8. Friendly Societies	
§ 4. Savings Banks		1. General	795
1. General	783	2. Number of Societies, Lodges, and Members	795
2. Depositors	783	3. Sickness and Death	795
3. Deposits	784	4. Revenue and Expenditure	796
4. Annual Business	785	5. Funds	797
5. Commonwealth Savings Bank	785	§ 9. Probates	
		1. Number of Probates and Letters of Administration & Value of Estates	797

SECTION XXII.—PUBLIC INSTRUCTION.

§ 1. Evolution of Educational Systems in Australia		§ 6. Technical Education	
1. Educational Systems of the States	799	1. General	818
2. Recent Developments in State Educational Systems... ..	799	2. New South Wales	818
§ 2. State Schools		3. Victoria	819
1. Introductory	802	4. Queensland	820
2. Enrolment and Attendance	802	5. South Australia	820
3. Schools in the Federal Capital Area	802	6. Western Australia	821
4. Centralisation of Schools	803	7. Tasmania	821
5. Education in Sparsely-settled Dists.	803	8. Attendance at Commonwealth Technical Schools	822
6. Evening Schools	803	9. Expend. on Technical Education	822
7. Higher State Schools	803	§ 7. Business Colleges and Shorthand Schools	822
8. Agricultural Training in State Schls.	806	§ 8. Diffusion of Education	
9. Teachers in State Schools	807	1. General Education	823
10. Training Colleges	808	2. Education of Children	824
11. School Savings Banks	810	3. Education as shown by Marriage Registers	825
12. Expenditure on State Schools	810	§ 9. Miscellaneous	
§ 3. Private Schools		1. Scientific Societies	826
1. School Teachers, etc., in 1914	811	2. Libraries	826
2. Growth of Private Schools	812	3. Museums	828
3. Registration of Private Schools	812	4. Art Galleries	829
§ 4. Free Kindergartens	813	5. State Expenditure on all Forms of Educational Effort	830
§ 5. Universities			
1. Origin and Development	813		
2. Teachers & Students at Universities	815		
3. University Revenues	816		
4. University Extension	817		
5. Workmen's Tutorial Classes	817		

SECTION XXIII.—PUBLIC JUSTICE.

§ 1. Police	PAGE	§ 3. Superior Courts	PAGE
1. Introductory	831	1. Convictions at Superior Courts ...	841
2. Strength of Police Force	831	2. Offences for which Convictions	
3. Duties of the Police	832	were Recorded at Superior Courts	841
4. Cost of Police Forces	832	3. Capital Punishment	842
§ 2. Lower (Magistrates') Courts		§ 4. Prisons	
1. Introductory	833	1. Prison Accommodation & Prisoners	
2. Powers of the Magistrates	833	in Gaol	842
3. Persons Charged at Magistrates'		2. Improvem't in Penological Methods	843
Courts	834	§ 5. Civil Courts	
4. Convictions for Serious Crime ...	835	1. Lower Courts	845
5. Decrease in Crime	836	2. Superior Courts	846
6. Need of Statistics of Distinct Persons	836	3. Divorces and Judicial Separations	846
7. Causes of Decrease in Crime ...	836	4. Probates	847
8. Drunkenness	837	5. Bankruptcies	847
9. Treatment of Drunkenness as Crime	839	6. High Court of Australia	848
10. Remedial Treatment of Inebriates	839	7. Commonwealth Court of Concilia-	
11. Treatment of Habitual Offenders...	839	tion and Arbitration	849
12. Treatment of First Offenders ...	840	§ 6. Cost of Administration of Justice	849
13. Children's Courts	840		
14. Committals to Superior Courts ...	840		

SECTION XXIV.—PUBLIC BENEVOLENCE.

§ 1. Introductory		3. Benevolent and Destitute Asylums	856
1. General	851	4. Orphanages, Industrial Schools, etc.	857
2. Charity Reforms... ..	852	5. Lepers	859
3. Tabulation of Charities Statistics...	852	6. Hospitals for the Insane	860
§ 2. The Larger Charities of Australia		7. Treatment of Inebriates	864
1. Hospitals	852	8. Protection of Aborigines	864
2. Hospitals for General and Special		9. Other Charitable Institutions ...	864
Cases	855	10. State Expenditure on Charities ...	864
		11. Total Charitable Expenditure ...	865

SECTION XXV.—GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government		2. The Federal Parliament	874
1. General	866	3. Commonwealth Referenda, 26th	
2. Number Members of the Legislatures	866	April, 1911... ..	876
3. The Cabinet and Executive Govmnt.	867	4. Commonwealth Referenda, 31st	
4. The Appointment of Ministers and		May, 1913	876
of Executive Councillors	870	5. The Parliament of New South Wales	877
5. Enactments of the Parliament ...	870	6. " " Victoria	878
6. Powers and Functions of the Gover-		7. " " Queensland	879
nor-General and of the Governors	871	8. " " South Australia	880
7. Cost of Parliamentary Government	873	9. " " West. Australia	881
§ 2. Parliaments and Elections		10. " " Tasmania	881
1. Qualifications for Membership and		§ 3. Administrative Government ...	884
for Franchise	874		

SECTION XXVI.—LOCAL GOVERNMENT.

§ 1. Introduction		4. Fremantle Harbour Trust	930
1. Early History of Local Government	895	5. Hobart Marine Board	930
§ 2. Local Government Systems		6. Launceston Marine Board	930
1. New South Wales	895	7. Geelong Harbour Trust	931
2. Victoria	899	8. Rockhampton Harbour Board ...	931
3. Queensland... ..	902	9. Bundaberg Harbour Board	931
4. South Australia	904	10. Cairns Harbour Board	931
5. Western Australia	905	11. Bunbury Harbour Board	931
6. Tasmania	908	12. Burnie and Table Cape Marine Bd.	931
§ 3. Water Supply, Sewerage and Drainage		§ 5. Fire Brigades	
1. New South Wales	910	1. New South Wales	932
2. Victoria	914	2. Victoria	932
3. Queensland	919	3. Queensland	933
4. South Australia	921	4. South Australia	934
5. Western Australia	922	5. Western Australia	934
6. Tasmania	925	6. Tasmania	934
§ 4. Harbour Trusts		§ 6. Local Government Finance	
1. Introductory	926	1. Introduction	935
2. Sydney Harbour Trust... ..	927	2. Number, Revenue, Expenditure,	
3. Melbourne Harbour Trust	927	and Valuation of Local Authorities	935
		3. Local Government Loans, 1914 ...	936

SECTION XXVII.—INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

§ 1. Development of Trade Unions in Australia	PAGE	7. Comparative Statement of Factories Law in Australia	PAGE
1. Historical Development of Trade Unionism in Australia	937	8. Mining Acts	952
2. Registration under Trade Union Acts	942	9. Employers' Liability and Workmen's Compensation Acts	953
3. Registration under Industrial Arbitration Acts	942	10. Other Acts	958
4. Types of Trade Unions in Australia	943	11. General Results of Industrial Legislation	958
5. Total Number of Unions, 1915	943	§ 3. Legislative Regulation of Wages and Terms of Contract	
6. Number of Unions and Membership in Industrial Groups, 1915	944	1. General	959
7. Development of Trade Unions in Australia, 1891 to 1915	945	2. Wages Boards	960
8. Interstate or Federated Unions	946	3. The Arbitration Court System	963
9. Central Labour Organisations	946	4. Comparative Statement of Tribunals for Regulating Wages in Australia	966
§ 2. Laws relating to Conditions of Labour		5. Movement towards Uniformity	966
1. Tabular Statement of Statutes affecting Labour	947	6. Constitution Alteration Proposals	966
2. Benefits sought to be conferred by the Acts	949	7. The "New Protection"	967
3. Limitation of Hours	949	§ 4. Operations of the Wages Board and Industrial Arbitration Acts	
4. Other General Conditions of Labour	951	1. General	970
5. Administration of Factories and Shops Acts	951	2. Boards Authorised, and Awards, Determinations, and Agreements in Force	971
6. Registered Factories	952		

SECTION XXVIII.—DEFENCE.

§ 1. Military Defence		3. Special War Expenditure, 1915-16	992
1. Development of State Military Systems	974	4. Expenditure in various Countries	992
2. Development of Commonwealth System from 1901 to 1915	974	§ 4. Industrial Establishments and Remount Depot	
3. The Present Military System	975	1. Commonwealth Factories	992
4. Strength of Military Forces	982	2. Expenditure	993
§ 2. Naval Defence		3. Remount Depot	993
1. Naval Defence under the States	985	§ 5. Australian Contingents	
2. Development of Commonwealth System from 1901 to 1915	986	1. New Zealand and Sudan Campaigns	993
3. The Present System	985	2. South African War	993
4. Vessels and Personnel of the Australian Navy	990	3. The China War	994
§ 3. Expenditure on Defence		4. The European War, 1914	994
1. Expenditure, 1910-11 to 1915-16	991	§ 6. Special Defence Legislation	
2. Appropriation for Defence Purposes, 1901-2 to 1915-16	991	1. War Precautions Act 1914	999
		2. War Precautions Acts 1914-16, and War Precautions Regulations 1915	999

SECTION XXIX.—PAPUA (British New Guinea).

§ 1. New Guinea		§ 5. Production	
1. Geographical Situation of New Guinea	1005	1. Papuan Products	1008
2. Discovery	1005	2. Agriculture	1008
3. Colonisation	1005	3. Live Stock	1009
4. Partition	1005	4. Forest Products	1009
§ 2. The Australian Dependency of Papua		5. Fisheries	1009
1. Australian Dependency of Papua	1006	6. Mining	1009
2. Annexation by Commonwealth	1006	§ 6. Statistical Summary	
3. Physical Characteristics	1006	1. Revenue and Expenditure	1010
§ 3. Population	1007	2. Imports and Exports	1011
§ 4. Native Labour	1007	3. Postal and Shipping	1011
		§ 7. Land Tenure	
		1. Method of Obtaining Land	1012
		2. Land Tenures	1012
		§ 8. Progress of the Territory	
		1. Statistical View of Seven Years' Progress	1013

SECTION XXX.—PUBLIC HYGIENE.

	PAGE		PAGE
§ 1. Introduction		6. South Australia	1020
1. General	1014	7. Western Australia	1020
2. State Legislation	1014	8. Tasmania... ..	1020
3. Commonwealth Legislation	1014		
4. Scope of Enquiry	1014	§ 5. Prevention of Infectious and Contagious Diseases	
§ 2. The Public Health Acts		1. General	1020
1. General	1014	2. Quarantine	1020
2. New South Wales	1015	3. Notifiable Diseases	1022
3. Victoria	1015	4. Vaccination	1023
4. Queensland	1015		
5. South Australia	1016	§ 6. Tropical Diseases	
6. Western Australia	1016	1. Introduction	1025
7. Tasmania... ..	1017	2. Queensland	1025
§ 3. Inspection and Sale of Food and Drugs		3. Northern Territory	1026
1. Introduction	1017	4. Other States	1026
2. Commonwealth Jurisdiction	1017		
3. State Jurisdiction	1017	§ 7. Supervision of Infant Life	1026
4. Food and Drug Standardisation	1018		
§ 4. Milk Supply and Dairy Supervision		§ 8. Medical Inspection of State School Children	
1. Introduction	1018	1. Introduction	1027
2. Number of Dairy Premises Registered	1019	2. Co-ordination of Effort	1028
3. New South Wales	1019	3. New South Wales	1028
4. Victoria	1019	4. Victoria	1029
5. Queensland	1020	5. Queensland	1030
		6. South Australia	1030
		7. Western Australia	1031
		8. Tasmania... ..	1031

SECTION XXXI.—THE COMMONWEALTH SEAT OF GOVERNMENT.

§ 1. The Federal Capital Territory.		6. Population and Live Stock	1034
1. Introductory	1033	7. Educational Facilities	1034
2. Progress of Work	1033	8. Revenue and Expenditure	1034
3. Lands in the Territory	1033	9. Military College	1035
4. Lands at Jervis Bay	1034	10. Naval College at Jervis Bay... ..	1035
5. Railways	1034		

SECTION XXXII.—THE NORTHERN TERRITORY.

§ 1. Area and Population		§ 6. Commerce and Shipping	
1. Introductory	1036	1. Trade	1041
2. Area and Boundaries	1036	2. Shipping	1041
3. Population	1036		
§ 2. Legislation and Administration		§ 7. Internal Communication	
1. Transfer to Commonwealth	1037	1. Railways	1042
§ 3. Physiography		2. Posts	1042
1. Tropical Nature of the Country	1039	3. Telegraphs	1042
2. Contour & Physical Characteristics	1039		
§ 4. Climate		§ 8. Finance	
1. The Seasons	1039	1. Revenue and Expenditure	1043
2. Fauna	1039	2. Loans	1043
3. Flora	1039		
§ 5. Production		§ 9. Land Tenure	
1. Stock	1039	1. Present Land Policy	1044
2. Mining	1040	2. Number of Holdings.	1044
3. Pearl Shell	1041		

SECTION XXXIII.—LABOUR AND INDUSTRIAL STATISTICS.

	PAGE		PAGE
§ 1. Introductory		6. Relative Hours of Labour and Hourly Rates of Wages	1060
1. General	1045	7. Rates of Wages of Adult Males and Females	1062
§ 2. Fluctuations in Employment and Unemployment		§ 6. Industrial Disputes	
1. General	1045	1. General	1090
2. Number Unemployed in various Industries	1045	2. Comparative Summary of Disputes	1092
3. Unemployment in different Industries	1047	3. Number and Magnitude of Industrial Disputes in Industrial Groups	1093
4. Unemployment in each State	1047	4. Industrial Disputes, Classified as to Causes and Results	1094
§ 3. Variations in Nominal and Effective Wages		§ 7. Retail Prices, House Rents and Cost of Living	
1. Variations in Wage Index-Numbers in Various Industries	1048	1. Introduction	1095
2. Variations in Wage Index-Numbers in Different States	1049	2. Scope of Investigation	1095
3. Variations in Effective Wages	1050	3. Commodities and Requirements included	1096
4. Variations in Effective Wages and Standard of Comfort	1051	4. Variations in Purchasing-Power of Money in each Metropolis	1096
§ 4. Changes in Rates of Wages		5. Relative Cost of Food, Groceries, and House Rent in different Towns	1098
1. General	1052	6. Variation in Purchasing-Power of Money	1101
2. Comparative Summary of Changes in Rates of Wages	1053	7. Monthly Fluctuations in Retail Prices of Food and Groceries	1103
3. Number and Magnitude of Changes in Rates of Wages, Classified according to Industrial Groups	1054	§ 8. Investigations into Cost of Living in 100 Towns in Commonwealth	
4. Changes in Rates of Wages in Female Occupations	1055	1. Introduction	1105
5. Methods by which Changes were Effected	1057	2. Map, showing Relative Purchasing-Power of Money	1105
§ 5. Current Rates of Wages in different States		§ 9. Wholesale Prices	
1. Comparative Table of Time Rates of Wages	1058	1. General	1105
2. Weighted Average Rates of Wages Payable to Male Workers in each State	1058	2. Index-Numbers and Graphs	1105
3. Weighted Average Rates of Wages Payable to Male Workers in Industrial Groups	1059	3. Seasonal Fluctuations and Tables of Prices	1106
4. Weighted Average Rates of Wages payable to Female Workers in each State	1059	4. Fluctuations in Wholesale Prices	1106
5. Weighted Average Rates of Wages payable to Female Workers in Industrial Groups	1060	§ 10. Control of Trade and Prices during War	
		1. General	1107
		2. Federal Control of Prices	1107

SECTION XXXIV.—MISCELLANEOUS.

§ 1. Immigration		5. Applications for Trade Marks, and Designs	1117
(A) The Encouragement of Immigration into Australia		6. Enemy Patents and Trade Marks	1118
1. Introduction	1108	7. Publication of Inventions during present State of War	1119
2. State Immigration	1108	§ 3. Copyright	
3. O'wealth Scheme of Immigration	1108	1. Copyright Legislation	1119
4. The High Commissioner for Australia and the Agents-General	1108	2. The Copyright Act of 1913	1120
(B) The Regulation of Immigration into Australia		3. Applications for Copyright	1121
1. Pre-Federal Restrictions	1109	§ 4. Old Age and Invalid Pensions	
2. Powers and Legislation of the Commonwealth	1109	1. General	1121
3. Prohibited Immigrants	1110	2. Number of Commonwealth Claims and Old-age Pensions	1121
4. Liability of Shipmasters and others	1111	3. Sexes of Old-age Pensioners	1122
5. Agreements with other Countries	1111	4. Ages and Conjugal Condition of Old-age Pensioners Admitted during 1914-15	1122
6. Statistics	1111	5. Commonwealth Claims for Invalid Pensions	1123
§ 2. Patents, Trade Marks, and Designs		6. Sexes of Invalid Pensioners	1123
1. Devolution of Jurisdiction upon the Commonwealth	1113	7. Ages and Conjugal Condition of Invalid Pensioners admitted during 1914-15	1124
2. Patents	1113	8. Cost of Administration	1124
3. Trade Marks	1116	9. Liability undertaken in Granting Old-age Pensions	1124
4. Designs	1117		

	PAGE
§ 5. Maternity Allowance	1125
§ 6. Local Option	
1. General	1126
2. New South Wales	1126
3. Victoria	1127
4. Queensland	1128
5. South Australia... ..	1129
6. Western Australia	1130
7. Tasmania... ..	1131
§ 7. Preferential Voting	1131
§ 8. Valuation of Commonwealth Pro- duction	1131
§ 9. Norfolk Island	
1. Area, Location, etc.	1132
2. Settlement	1132
3. Population and Live Stock	1133
4. Production, Trade, etc.	1133
5. Social Conditions	1133

	PAGE
§ 10. Lord Howe Island	
1. Area, Location, etc.	1133
2. Settlement	1133
3. Population	1133
4. Production, Trade, etc.	1133
§ 11. Interstate Conferences	
1. Interstate Conferences, 1914	1134
§ 12. Interstate Commission	1134
§ 13. The Commonwealth Advisory Council of Science and Industry	
1. General	1135
2. Immediate Arrangements	1136
3. Appointment of Advisory Council	1137
4. Nature of Work Performed	1137

APPENDIX.

Section IV.—Population

§ 4. Elements of Growth of Population	
3. Net Immigration	1139
5. Total Increase	1139
§ 8. Enumerations and Estimates	
5. Estimates of Population	1140

Section V.—Vital Statistics

§ 1. Births	
1. Male and Female Births	1140
§ 2. Marriages	
1. Marriages... ..	1140
§ 3. Deaths	
1. Male and Female Deaths	1141

Section VII.—Pastoral Production

§ 1. Initiation and Growth of Pastoral In- dustry	
3. Increase in Numbers	1141

Section VIII.—Agricultural Production

§ 4. Wheat	
1. Progress of Wheat Growing	1141

Section XII.—Mines and Mining

§ 2. Gold	
3. Value of Production in 1915	1142
§ 17. Commonwealth Control of Industrial Metals	
1. General	1142
2. Lead	1143
3. Zinc	1143
4. Copper	1143
5. Molybdenite, Wolfram and Scheelite	1143
6. Formation of Metal Exchange	1143

Section XV.—Commerce

§ 3. Regulation of Trade during the War	1144
§ 5. Oversea Trade	
1. Total Oversea Trade	1146

Section XVI.—Shipping

§ 2. Oversea Shipping	
1. Total Oversea Shipping	1146
§ 4. Vessels Built and Registered Commonwealth Government Line of Steamers	1146

Section XVII.—Roads and Railways

§ 3. Tramways	1147
----------------------	------

Section XVIII.—Posts, Telegraphs and
Telephones

§ 1. Posts	
8. Ocean Mail Services	1147

Section XIX.—Commonwealth Finance

§ 4. Commonwealth Public Debt	1147
§ 5. Treasurer's Financial Statement, 1916	1148

Section XXV.—General Government

§ 1. Scheme of Parliamentary Government	
1. The Western Australian Ministry	1149
2. The Tasmanian Ministry	1149

Section XXVIII.—Defence

§ 6. Special Defence Legislation	
2. War Precautions Regulations	1149
3. Military Service Referendum Act	1150

CORRIGENDA.

Page 93.—Line 10, for “4,872,059” read “4,940,952.”

Page 148.—Top line after “was obtained” insert “followed by a fresh record of 17.54 in the year 1914.”

Page 173.—Line 4, for “male and lowest female death rate” read “female and Tasmania the lowest male death rate.”

Page 278.—Percentage for Commonwealth area in process of alienation for year 1913 in second last line of table should read “2.76” instead of “7.76.”

Page 580.—Foodstuffs of Animal Origin, for Germany 1913 read “1.27” instead of “12.74.”

The following footnote should be read in conjunction with the table dealing with rates of interest on the State Public Debts, page 764. The amounts at 3% include some portions at 3½% as follows:—1911, £74,718; 1912, £49,718; 1913, £24,718; and 1914, £24,718.

STATISTICAL SUMMARY.

STATISTICAL SUMMARY FOR THE COMMONWEALTH, 1871-1914-15.

(Figures for 1915, where available, will also be found in the Appendix, and, in some instances, have been incorporated in the succeeding sections.)

Heading.		Years.						
		1871.	1881.	1891.	1901.	1911.	1914.	1914-15.
Population	Males	928,918	1,247,059	1,736,617	2,004,836	2,377,920	2,551,431	2,496,140
	Females	771,970	1,059,677	1,504,368	1,820,077	2,190,787	2,389,521	2,435,848
	Total	1,700,888	2,306,736	3,240,985	3,824,913	4,568,707	4,940,952	4,931,988
Births ...	No.	63,625	80,004	110,187	102,945	122,193	137,963	134,871
	Rate	38.00	35.26	34.47	27.16	27.21	28.05	27.25
Deaths ...	No.	22,175	33,327	47,430	46,330	47,869	51,720	52,782
	Rate	13.24	14.69	14.84	12.22	10.66	10.51	10.66
Marriages	No.	11,623	17,244	23,862	27,753	39,482	43,311	45,224
	Rate	6.94	7.60	7.47	7.32	8.79	8.80	9.14
Agriculture—								
Wheat ...	Area, acs.	1,279,778	3,002,064	3,335,528	5,115,965	7,427,834	9,651,081	12,530,233
	Yld., bshl	11,917,741	21,443,862	25,675,265	38,561,619	71,636,347	24,892,402	179,622,220
	Av. ..	9.31	7.14	7.70	7.54	9.64	2.68	14.34
Oats ...	Area, acs.	225,492	194,816	246,129	461,430	616,857	774,734	724,576
	Yld., bshl	4,251,630	4,795,897	5,726,256	9,789,854	9,561,771	4,341,104	16,602,846
	Av. ..	18.85	24.62	23.27	21.22	15.50	5.60	22.91
Barley ...	Area, acs.	48,164	75,864	68,068	74,511	116,466	153,656	...
	Yld., bshl	726,158	1,353,380	1,178,560	1,519,819	2,056,836	1,322,910	...
	Av. ..	15.08	17.84	17.31	20.40	17.68	8.65	...
Maize ...	Area, acs.	142,078	165,777	284,428	294,849	340,065	339,781	...
	Yld., bshl	4,576,635	5,726,266	9,261,922	7,034,786	8,939,855	8,455,561	8,519,459
	Av. ..	32.21	34.54	32.56	23.86	26.29	24.89	...
Hay ...	Area, acs.	303,274	768,388	942,166	1,688,402	2,518,288	2,628,613	3,530,111
	Yld., tons	375,871	767,194	1,067,255	2,024,608	2,867,973	1,733,944	5,620,143
	Av. ..	1.24	1.00	1.13	1.20	1.14	0.66	1.56
Potatoes ¹	Area, acs.	67,911	76,265	112,884	109,685	130,463	151,845	...
	Yld., tons	212,896	243,216	380,477	322,524	301,489	372,889	...
	Av. ..	3.13	3.19	3.37	2.94	2.31	2.46	...
Sugar ⁴	Area, acs.	11,576	19,708	45,444	86,950	101,010	172,616	...
	Yld., tons	176,632	349,627	737,573	1,367,802	1,682,250	2,104,239	1,310,965
	Av. ..	15.25	17.74	16.23	15.73	16.65	18.45	...
Vineyards	Area, acs.	16,253	14,570	48,882	63,677	60,602	60,985	...
	Wine, gal	2,104,000	1,488,000	3,535,000	5,816,087	4,975,147	2,875,326	...
Total value all agricultural production		£ 8,941,000	15,519,000	16,480,000	23,835,000	38,774,000	36,052,396	...
Pastoral, dairying, etc.								
Live Stock	Sheep, No.	40,072,955	65,092,719	106,421,068	72,040,211	93,003,521	78,600,334	69,705,748
	Cattle ..	4,277,228	8,010,991	11,112,112	8,491,428	11,828,954	11,051,573	9,924,340
	Horses ..	701,530	1,088,029	1,584,737	1,620,420	2,279,027	2,521,272	2,394,594
Wool prod., lb. greasy	Pigs	586,017	703,188	845,888	931,309	1,110,721	862,447	759,702
	Butter product, n. lbs.	179,000,000	332,759,000	631,587,000	543,131,661	726,408,625	641,786,519	...
Cheese	Cheese ..	...	...	47,433,564	101,671,066	211,573,745	193,970,412	...
	Bacon and ham ..	...	...	19,146,929	11,575,692	15,886,712	21,240,411	...
	Total estimated value of pastoral and dairying production	£ 20,736,000	29,538,000	39,256,000	36,890,000	69,832,000	78,207,000	...
Mineral production—								
Gold...	Gold ...	£ 7,239,106	5,194,390	5,281,861	14,005,732	10,551,624	8,729,947	7,826,409
	Silver and lead ...	£ 29,488	31,139	3,717,825	2,367,687	3,021,284	3,818,076	7,503,186
	Copper ...	£ 824,111	673,786	362,745	2,238,590	2,564,278	2,349,881	7,304,670
Zinc...	Tin ...	£ 18,597	1,145,603	560,750	432,576	1,209,973	758,431	7,798,941
	Zinc ...	£ ...	...	2,622	4,057	1,415,169	1,021,090	7,111,662
	Coal ...	£ 325,747	636,746	1,908,028	2,602,770	3,929,672	4,619,689	7,427,019
Total value all mineral production		£ 8,484,728	7,813,523	12,093,837	22,043,104	23,460,211	22,264,589	22,382,652
Forestry production—								
Quantity of local timber	Quantity of local timber	...	...	...	...	...	...	...
	sup. ft.	...	...	...	452,131,252	591,645,786	673,366,710	...
Manufactories— ²								
No. of factories	No. of factories	...	...	...	...	14,455	15,427	...
	Hands employed	...	...	...	...	311,760	331,579	...
	Wages paid	£ ...	...	...	...	27,528,371	34,090,428	...
Total value of output	Total value of output	...	...	...	...	133,022,090	166,405,923	...
	Value added in process of manufac.	£ ...	...	...	...	54,017,714	66,627,039	...

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. ⁶ Subject to alteration. ⁷ For year ended 31st December, 1915.

STATISTICAL SUMMARY FOR THE COMMONWEALTH—(continued).

Heading.	Years.						
	1871.	1881.	1891.	1901.	1911.	1914.	1914-15.
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	3,926 10,380,586	3,211 8,599,258
Commerce—							
Imports oversea £	17,017,000	29,067,000	37,711,000	42,434,000	66,967,488	73,945,664	64,481,837
" per head £	10/3/3	12/16/3	11/16/0	11/3/11	14/18/3	15/0/8	13/0/9
Exports oversea £	21,725,000	27,528,000	36,043,000	49,696,000	79,482,258	67,360,588	60,592,576
" per head £	12/19/6	12/2/8	11/5/6	13/2/2	17/14/1	13/13/10	12/5/4
Total oversea trade £	38,742,000	56,595,000	73,754,000	92,130,000	146,449,746	141,306,252	125,024,413
" per head £	23/2/9	24/18/10	23/1/6	24/6/1	32/2/4	28/14/6	25/6/1
Customs and excise duties ... £	...	4,809,325	7,440,869	8,656,530	13,515,005	15,072,689	14,839,275
" per head, £	...	2/2/5	2/6/7	2/5/8	3/0/2	3/1/4	3/0/1
Principal Oversea Exports—							
Wool { lbs. (greasy) £	176,635,820	328,369,169	619,259,753	518,018,134	720,364,903	470,933,213	443,953,830
" bushels £	9,459,629	13,173,026	19,940,029	15,237,454	26,071,193	18,375,303	17,476,637
Wheat { £	799,924	5,364,653	9,794,791	20,260,058	55,147,840	52,878,122	4,210,593
" £	193,732	1,189,762	1,938,864	2,774,643	9,641,808	9,996,514	859,027
Flour { tons £	12,938	49,549	33,363	96,814	175,891	174,217	53,514
" £	170,415	519,635	328,423	589,604	1,391,529	1,495,557	509,389
Butter { lbs. £	1,812,688	1,298,758	4,239,494	34,607,397	101,722,136	56,162,547	54,021,523
" £	45,813	39,383	206,868	1,451,168	4,637,362	2,655,374	2,659,030
Skins and hides... £	100,123	316,878	873,695	1,250,938	3,227,236	4,146,003	3,522,415
Tallow ... £	914,278	644,149	571,069	677,745	1,935,836	1,897,466	1,569,036
Meats ... £	566,780	362,965	460,894	2,611,244	4,303,159	9,088,617	11,547,428
Timber (undressed) £	42,586	118,117	38,448	731,301	1,023,360	...	777,392
Gold ... £	7,164,833	6,445,365	5,703,532	14,315,741	12,045,766	2,185,010	2,677,436
Silver and lead ... £	37,891	57,894	1,932,278	2,250,253	3,212,584	...	2,972,483
Copper ... £	598,538	676,515	417,687	1,619,145	2,345,951	...	2,302,821
Coal... £	134,355	361,081	645,972	986,957	900,622	1,061,127	720,632
Govt. Railways—							
Lgh. of line open, mls	970	3,832	9,541	12,577	16,079	18,327	20,062
Capital cost ... £	19,269,786	42,741,350	99,764,030	123,587,000	152,194,603	179,968,432	193,227,301
Gross revenue ... £	1,102,650	3,910,122	8,654,065	11,038,000	17,847,843	21,982,480	20,966,095
Working expenses ... £	608,332	2,141,735	5,630,182	7,149,000	11,054,383	15,060,789	15,409,121
Per cent. of work'g expenses on earnings%	55.17	54.77	65.06	64.76	61.94	68.51	73.50
Postal—							
Letters and postcards dealt with ... No.	24,382,000	67,640,000	157,297,000	220,853,000	453,585,410	524,482,965	3 ...
" per head ..	14.54	29.61	49.07	58.26	101.08	106.62	3 ...
Newspapers dealt with ... No.	13,336,000	38,063,000	85,280,000	102,727,000	139,603,510	136,669,530	3 ...
" per head ..	7.95	16.66	26.61	27.10	31.09	27.78	3 ...
Cheque-paying Banks—							
Note circulation £	2,456,487	3,978,711	4,417,269	3,406,175	2,876,428	2,287,308	2,275,589
Coin & bullion held £	6,168,869	9,108,243	16,712,923	19,737,572	30,024,225	35,137,225	34,903,123
Advances ... £	25,039,573	57,732,324	123,741,563	83,167,499	116,769,133	121,292,671	117,312,478
Deposits ... £	21,856,959	53,849,455	98,345,338	90,965,530	147,105,061	162,586,484	174,979,336
Savings Banks—							
Number of depositors	100,713	250,070	614,741	964,553	1,600,112	2,199,108	2,273,740
Total deposits ... £	3,193,285	7,854,480	15,536,592	30,882,645	59,393,682	86,670,737	91,577,667
Aver. per depositor £	31/14/2	31/8/2	25/5/6	32/0/4	37/2/4	39/8/3	40/5/7
" head of population ... £	1/18/9	3/10/5	4/18/7	8/3/0	13/8/5	17/11/3	18/10/0
State Schools—							
Number of schools	2,503	4,494	6,231	7,012	8,060	8,732	3 ...
Teachers ... No.	4,641	9,028	12,564	14,500	16,971	20,728	3 ...
Enrolment ... "	236,710	432,320	561,153	638,478	638,850	713,322	3 ...
Aver. attendance ..	137,767	255,143	350,773	450,246	463,799	544,230	3 ...

¹ Australian produce, except gold, which includes re-exports.² Decrease due to issue of Australian notes.³ Information not available.

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, 1024. Branch settlement established at Norfolk Island. French navigator La Pérouse visits 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.—1st 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, 4203.
 - 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, 5995.
 - 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, and 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.
 - 1814 N.S.W.—Australia, previously known as "New Holland," received present name on recommendation of Flinders. Creation of Civil Courts. Appointment of Mr. Kendall as Resident Magistrate in New Zealand.

- 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 Captain 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. Oxley discovers Liverpool Plains, and the Peel, Hastings, and Manning Rivers. Port Essington discovered by Captain King.
- 1819 N.S.W.—Opening of first Australian Savings Bank at Sydney.
- 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.—Oxley discovers Brisbane River.
- 1824 N.S.W.—Becomes 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. Hume and Hovell's overland expedition to the south. Vic.—Hume and Hovell, journeying overland from Sydney, arrive 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 becomes 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 discovers a route from Brisbane to the Darling Downs, and explores 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, arrives 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 at 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 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.
- 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 *dépôt* at Fort Bourke on the Darling River, by Mitchell. Vic.—John Batman's arrival at Port Phillip; makes treaty with the natives for 600,000 acres of land; claim afterwards disallowed by Imperial Government. John Pascoe Fawkner founds Melbourne on site previously selected by Batman.
- 1836 N.S.W.—Fall of snow in Sydney. Mitchell's overland journey from Sydney to Cape Northumberland, Vic., and discovery of "Australia Felix." "Squatting" formally recognised. Vic.—Proclamation of Port Phillip district as open for settlement. Captain Lonsdale first Resident Magistrate. S.A.—Founding of settlement at Adelaide under Governor Hindmarsh.
- 1837 N.S.W.—Appointment in London of Select Committee on Transportation. Heavy snowfall near Sydney. 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 at Adelaide. First sale of Crown lands in Adelaide.
- 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. W.A.—Glenelg River discovered by Captain Grey.
- 1839 N.S.W.—Finding of gold at Vale of Clwydd by Count Strzelecki. Vic.—Appointment of Mr. C. J. LaTrobe as Superintendent Port Phillip district. S.A.—Lake Torrens discovered by Eyre. Port Darwin, Northern Territory, 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 from New South Wales. Qld.—Breaking up of penal settlements and throwing open of Moreton Bay district to free settlers. S.A.—Incorporation of Adelaide. Eyre begins his overland journey from Adelaide to King George's Sound. Tas.—Visit of the *Erebus* and *Terror* to Hobart. Dr. Hooker investigates 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, Northern Territory. Arrived following year.
- 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. Opening of iron smelting works near Berrima. Overland mail established between Sydney and Adelaide. Vic.—Melbourne created a City by Royal Letters Patent. 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. Vic.—Earl Grey returned as Melbourne member of the Legislative Council. 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.
- 1849 N.S.W.—Indignation of colonists at arrival of convict ship *Hashemy*. Exodus of population to goldfields of California. Vic.—Outburst of indignation at arrival of *Randolph* with 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. 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," Feb. 6th, 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 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, Dec. 3rd.
- 1855 N.S.W.—Opening of railway—Sydney to Parramatta. Introduction of responsible Government. Vic.—Proclamation of Constitution. Qld.—Gregory's expedition in search of Leichhardt. Tas.—Responsible government.
- 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. 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. S.A.—First Parliament under responsible government. Exploration by Babbage and Warburton. Passage of Torrens' 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—cars drawn by horses. Robertson's Land Acts. Messrs. Parkes and Dalley proceed to London as emigration lecturers. Regulation of Chinese immigration. Vic.—Conference of Statisticians, Melbourne. Burke and Wills perish 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 crosses 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.—Inter-colonial conference at Melbourne. S.A.—Taking over of the Northern Territory. W.A.—Initiation of settlement in the North-west district. Establishment of Post Office (now Government) Savings Bank.
- 1864 N.S.W.—Frequent outrages by bushrangers. Qld.—First railway begun. First sugar made from Queensland cane. Opening of first railway. 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. Vic.—Political deadlock. 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.—Opening of first telegraph line, from Perth to Fremantle. Tas.—Opening of second cable.
- 1870 N.S.W.—Opening of Intercolonial Exhibition at Sydney in celebration of centenary of Cook's landing in Australia. Withdrawal of Imperial troops. Vic.—Inter-colonial 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. Qld.—Foundation of Queensland National Bank. 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. 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 crosses 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 E. Giles. John and Alexander Forrest arrived at Overland Telegraph from Murchison. Fiji Islands ceded to Great Britain.
- 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 communication 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. Women admitted as students at University. Vic.—Reduction of property qualification for members and electors of Legislative Council, number of members increased to 42. W.A.—Cyclone near Roebourne wrecks number of pearling vessels. On the Ashburton, 1000 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.
- 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. Similar measure rejected in New South Wales. British protectorate declared over New Guinea.
- 1885 N.S.W.—Military contingent sent to the Soudan. 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*, *Coringamite*, and *Helen Nicol*. S.A.—Celebration of jubilee of foundation of colony. 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 Yilgarn and 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. Imposition of poll-tax of £100. Strike of coal-miners at Newcastle. 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.
- 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.—Granting of responsible government. Tas.—Opening of University.
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. Death of Sir John Robertson. 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. Opening of Women's College, Sydney University. 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." Direct communication, Sydney to Vancouver, established. Financial crisis, chiefly affecting the eastern States.
- 1894 N.S.W.—Shearers' strike. S.A.—Adult Suffrage Bill assented to. Industrial depression.

- 1895 N.S.W.—Crown Lands Act of 1895. Death of Governor Sir R. Duff. Free-trade tariff. Land and income taxes.
Conference of Premiers at Hobart *re* Federation.
- 1896 N.S.W.—Death of Sir Henry Parkes. Re-organisation of Public Service. 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.
- 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 N.S.W.—First contingent of Australian troops to assist the British army in South Africa.
Conference of Premiers in Melbourne to consider amendments in 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. Strike of railway engine drivers and firemen.
Contingents of naval troops from N.S.W., Vic. and S.A. to assist in China.
Commonwealth Constitution Act receives Royal Assent, 9th July. Mr. (afterwards Sir) Edmund Barton forms first Federal Ministry.
- 1901 Proclamation of the Commonwealth at Sydney, and swearing-in of Ministry. Opening of first Federal Parliament at Melbourne by the Duke of Cornwall and York, who visited each State of the Commonwealth. Simultaneous Australasian Census—population of the Commonwealth, 3,773,801.
- 1902 N.S.W.—Disastrous explosion at Mount Kembla Colliery—95 lives lost. Women's franchise. 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 (Enginemen). W.A.—Opening of Coolgardie and Kalgoorlie water supply.
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. Consummation of Commonwealth interstate Free-trade by cessation of special Western Australian tariff. Conference of Statisticians of Australian States and New Zealand, under the presidency of the Commonwealth Statistician. Papua taken over by Commonwealth.
- 1907 N.S.W.—Strike of coal-miners in Newcastle district. Vic.—Opening of first Australian Exhibition of Women's Work in Melbourne. Bakers' strike, Melbourne. Opening of telephone, Sydney to Melbourne.
Imperial Conference in London—Australia represented by the Hon. A. Deakin, Prime Minister. Introduction of new tariff in Federal Parliament. Preference to United Kingdom. Allowance to Federal members of Parliament increased from £400 to £600.
- 1908 N.S.W.—Tramway employees' strike, Sydney. Fire at Newcastle—damage to property £150,000. 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. Arrest of strike leaders at Newcastle. Qld.—Opening of Queensland University. S.A.—Foundering of *Clan Ranald* in St. Vincent's Gulf—40 drowned. W.A.—Cyclone at Broome.
Imperial Defence Conference in London—Commonwealth sends three representatives. Death at Parliament House of Sir Frederick Holder, Speaker of the House of Representatives. Commonwealth orders 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. S.A.—Strike of transport workers at Adelaide. W.A.—Cyclone at Broome—several pearling vessels wrecked, 3 whites and many coloured fishermen drowned. Strike of tramway employees at Perth. Wreck of the *Pericles* off Cape Leeuwin.

Rt. Hon. Sir G. H. Reid takes up duty as High Commissioner for the Commonwealth of Australia 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 visits Australia. Arrival of the *Yarra* and *Parramatta*, first vessels of Australian navy. Australian Notes Act empowers Federal Treasurer to issue notes of various denominations. Admiral Sir R. Henderson visits Australia to advise on naval defence. First issue of Commonwealth notes.

- 1911 First Federal Census—population of the Commonwealth, 4,455,005. Transfer of Northern Territory to Commonwealth by South Australia. 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.

- 1912 Opening of Commonwealth Bank. First payments of Maternity Bonus. Turning of first sod at Port Augusta of Trans-Australian Railway (Port Augusta and Kalgoorlie). Resignation of leadership of Liberal party by Mr. Alfred Deakin, and appointment of Mr. Joseph Cook in his stead. Appointment of Administrators to Northern Territory and Federal Territory. Opening of Western Australian University. Gift of £1,000,000 to charities by Mrs. Walter Hall, Sydney, N.S.W. Numerous industrial disturbances: Brisbane tramway employees' and general strike; strike of miners at the Wonthaggi State coal mines.

- 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. S.A.—Increase of numbers of members of both Houses of Parliament.

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. W. M. Hughes, Prime Minister in place of Mr. A. Fisher. Mr. Fisher appointed High Commissioner for the Commonwealth in London in place of Sir G. H. Reid, whose term of appointment had expired. Taking of Referendum, for purpose of giving increased powers to the Commonwealth, was abandoned after a conference with the State Premiers. New Department created to control the Navy, with Mr. J. A. Jensen as Minister of the Navy. Formation of Australian Wheat Board to control the marketing of the 1915-16 wheat harvest.

Australian troops landed at Dardanelles on April 25th. Maj.-Gen. Bridges died from wounds. 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. Subscriptions to Commonwealth War Loan, £13,000,000. Australian troops withdrawn from Gallipoli on December 19th. At end of year about 250,000 troops had been despatched from Australia or were in training.

- 1916 Visit to England of Prime Minister, Hon. W. M. Hughes, P.C. Record wheat harvest (180,000,000 bushels). Special recruiting campaign instituted. Australian troops transferred to France. Up to June, 262,000 troops had left Australia or were in training. Acquisition of a line of steamships by the Commonwealth. Bill for Military Service Referendum Act. (Compulsory powers in regard to military service, for the term of the war, outside the Commonwealth.)

OFFICIAL YEAR BOOK
OF THE
COMMONWEALTH OF AUSTRALIA, 1915,
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 Nos. 5, 6, 7, 8, and in the present issue, 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 State 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 resumé 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.

HENRY SPONDLY (Zurich University). Vital Statistics and cognate matters.

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, etc.

FREDERICK WILLIAM BARFORD, M.A. (Oxford), A.I.A. Financial 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 circumstance 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 a large number of publications issued regularly, which, though not wholly statistical, necessarily contain a considerable amount of statistical information. These are included in the lists given hereunder, which are revised to 31st December, 1915.

2. Commonwealth Publications.—Commonwealth publications may be grouped under two heads, viz.:—(i.) Publications issued by the Commonwealth Statistician, and (ii.) 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 and up to 31st December, 1915. The annual Demography, Finance, Production, and Transport and Communication Bulletins cover statistics from 1901. The Year Book contains figures from earlier years.

Australian Life Table, 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, etc.; 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; *in press*]. 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 1914.

Inquiry into the Cost of Living in Australia, 1910-11.—Prices, Price-Indexes and Cost of Living in Australia.

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. No. 4—Expenditure on Living in the Commonwealth, November, 1913. No. 5—Prices, Cost of Living, Wages, Trade Unions, Unemployment, and General Industrial Conditions, 1913-14.

Labour Bulletins—Quarterly, March 1913 to September 1915.

Manufacturing Industries in the Commonwealth, 1912.

Monthly Summary of Australian Statistics—Bulletins, since January, 1912

Official Year Book of the Commonwealth—Annually, 1907 to 1914.

Pocket Compendium of Commonwealth Statistics, 1914.

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) 1911, 1912, 1913 and 1914. Vital Statistics, quarterly, 1907 to June 1911.* The Nomenclature of Diseases and of Causes of Death, 1907. New Edition, 1910.

Production—Bulletins, annually, 1906 to 1913.

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 $y = Ax^m e^{nx^p}$; 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, etc.; No. 16—Secular Progress of Pulmonary Tuberculosis and Cancer, etc.; No. 17—The Improvement in Infantile Mortality, etc.; No. 18—Secular and Annual Fluctuations of Deaths from Several Diseases, etc.; 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||.

* The publication of quarterly Vital Statistics has been discontinued.

† 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.

Railway Statistics—Report on the Desirability of Improved Statistics of Government Railways in Australia, February, 1909.

Shipping—Shipping and Oversea Migration, annually, 1906 to 1913.

Social Insurance—Report to the Hon. the Minister of Trade and Customs.

Social Statistics—Bulletins, annually, 1907 to 1913.

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 1913.

Trade, Shipping, and Oversea Migration—Monthly, January 1907 to December 1911 (now discontinued; issued as part of Monthly Summary of Australian Statistics).

Transport and Communication—Bulletins, annually, 1906 to 1914.

(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 :—

Arbitration Court: Returns of Awards, Conferences, Agreements, etc.

Australia for Farmers, 1910.

Australia: The Dairy Country.

Australia: The Wheat Country.

Australian Imperial Force: Tables shewing Establishments.

Australian Institute of Tropical Medicine: Reports to date.

Australian Notes: Correspondence relating to the Gold Reserve in respect of the issue of.

Bounties: Return relating to payments under Bounties Acts.

Budget, annual, 1901-02 to 1914-15.

Business Management of various Departments—Reports by Mr. Robert McC. Anderson.

Chief of the General Staff: Memo. *re* Defence.

Commonwealth Bank: Balance Sheets and Reports of Auditor-General.

Commonwealth Factories: Reports on Clothing, Cordite, Small Arms, and Harness and Leather Factories.

Commonwealth Meteorologist: Bulletins of Climate and Meteorology of Australia; Rainfall Maps of Australia; Professional Papers and Charts (various); Monthly Meteorological Reports, commencing January, 1910.

Commonwealth Military Journal, issued quarterly, since April 1911

Contract Immigrants Act and Immigration Restriction Act: Returns annually, 1902 to date.

Defence: Inspector-General of Military Forces: Reports, 1905 to 1907. Extracts from Report, annual, 1910 to date.

Defence: Memorandum on Australian Military Defence and its progress since Federation.

Defence: Memorandum on the Defence of Australia, by Field-Marshal Lord Kitchener.

Defence: Military Board—Reports, 1905 and 1906.

Defence: Naval Defence of Australia—Memorandum by Admiral Sir Reginald Henderson.

Defence: Records of Australian Contingents to the War in South Africa, 1899-1902.

Defence: Report on an Inspection of the Military Forces of the Commonwealth by Sir Ian Hamilton.

- Defence: Report by Sir Maurice Fitzmaurice on Naval Bases, etc.
- Defence: Reports on Camps, Dockyards, Canteens at Camps, Courts of Enquiry, Small Arms Factory, Royal Military College, Rifle Clubs, Musketry, Universal Training, Cadets, Physical Training, Army Medical Corps, Organisation and Distribution, Troopships, etc.
- Defence: Tables of War and Peace Organization and Establishments.
- Defence: Extracts from Report to Admiralty on H.M. Australian Fleet.
- Defence: Synopsis of Report on the Business Branches of the Department by Mr. Robert McC. Anderson.
- Director of Naval Forces: Report for 1906.
- Electoral—Report of Royal Commission on the Commonwealth Electoral Law and Administration.
- Electoral Act: Commissioners' Special Reports.
- Electoral Rolls: Statement by Commonwealth Statistician *re* Inflation.
- Electoral Statistical Returns *re* Referenda of 1911 and 1913.
- Electoral Statistics of Commonwealth Elections: 1903, 1906, 1910, 1913 and 1914.
- Estimates: 1901-2 to 1914-15. Also Supplementary Estimates.
- Federal Capital City Designs; also Papers.
- Fisheries: Reports of the Director on Fishing Experiments carried out by the F.I.S. "Endeavour."
- Fisheries: Reports on Pearling Industry.
- Fisheries: Zoological and Biological Results of Fishing Experiments.
- Fisheries: Life and Work of H. C. Dannevig.
- Fleet Unit: Memorandum *re* arrangement for providing and training personnel.
- Fruit Industry: Report of Royal Commission.
- Handbooks of the Territory of Papua.
- 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.-V.
- Home Affairs: Schedule of the Department, compiled from the Minister's Digests. Nos. 1 to 23.
- Interstate Commission: Report.
- Invalid and Old-Age Pensions: Statements and Reports.
- Land Tax Assessment Act: Annual Reports of Commissioner, 1910-11, 1911-12, 1912-13, and 1913-14.
- Lands and Surveys: Report of Conference of Commonwealth Director and States Surveyors-General.
- Lighthouses: Reports of Inspections, etc.
- Manufactures Encouragement Act: Returns of Bounties Paid; annual.
- Meat Export Trade: Report of Royal Commission.
- Military and Naval Forces Lists. Cadet Forces Lists. Staff and Gradation Lists of Officers of Australian Imperial Force.
- Military and Naval Orders; Orders for Australian Imperial Force.
- Naturalisation Act 1903: Returns.
- Naval Defence: Memo. by the Minister of Defence.
- Navies: Relative Strength in the Pacific.
- New Guinea (late German): Statistics of.
- Northern Territory: Bulletins Nos. 1 to 8.
- Northern Territory: Report of the Government Resident for 1910 (previous reports to Government of South Australia).
- Northern Territory: Report of the Acting Administrator for 1911. Administrator's Report, 1912, 1913, and 1914-15.
- Northern Territory: Reports, various.
- Papua: Reports, annual, 1904-5 to 1913-14, and returns to accompany same.
- Papua: Reports, various.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions Conferences, etc.
 Patents Statistics, 1904 to date.
 Postal Services Royal Commission.
 Postmaster-General's Department: Annual Reports, 1910, 1911-12, 1912-13 and 1913-14.
 Postmaster-General's Department: Statement of Business transacted and details of Receipts and Expenditure, 1907, 1908 and 1909.
 Postmaster-General's Department: Report on the Business Management of the Department, by Mr. Robert McC. Anderson.
 Press Cable Subsidy: Amount paid, etc.
 Privy Council Judgments: Reports of.
 Public Service Commissioner: Report, 1901-4, and Annual Reports, 1905 to 1914, and Public Service Lists, 1903 to 1914-15.
 Quarantine: Reports.
 Railways: Reports, various, *re* Gauges of Australian Railways, Unification of Gauges, *Strategic Railways*, etc. Staff Lists.
 Railways: Reports of Engineer-in-Chief.
 Representation Act 1905: Returns.
 Royal Commission on Tasmanian Customs Leakage.
 Secret Remedies: Based on British Medical Association's Analyses.
 Social Insurance: Report by the Hon. Sir John Cockburn on the Hague Conference of 1910.
 Sugar: Statistics, 1901-2 to 1910-11 *re* White and Black Labour, Production, Duties, Excise, Bounties, etc.
 Sugar Industry: Report of Royal Commission.
 Tariff Guide: 1903 to 1913. Also Customs and Tariff Schedules.
 Tariff Investigation: Reports.
 Trade and Customs Returns, 1903 to 1905; compiled by the New South Wales Government Statistician for the Minister for Customs.
 Trade Marks Statistics, 1904 to date.
 Treasurer's Statements and Reports of Auditor-General, annual, 1901-2 to 1913-14.
 Treasury Notes: Amounts issued to the respective Banks of the Commonwealth.
 Treasury Statements of Receipts and Expenditure, issued quarterly in the *Commonwealth Gazette*.
 Tropical Diseases: Report by Dr. Breinl.
 Typothetæ: Report of Interstate Commission.

3. State Publications.—The chief statistical publications of each State issued since Federation may be most conveniently grouped under the following heads, viz.:—(a) Publications issued by the Government Statist, (b) parliamentary and departmental reports and papers, and (c) reports and statements of local and public bodies. These are set out hereunder for each State:—

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

The Wealth and Progress of New South Wales, 1900-1.
 The Seven Colonies of Australasia, 1901-2.
 A Statistical Account of Australia and New Zealand, 1902-3, 1903-4.
 The Official Year Book of New South Wales, 1904-5 to 1914 and 1915 (parts).
 Six States of Australia and New Zealand (annual statistics), 1901 to 1905.
 Monthly Statistical Bulletin, since 1905.
 Statistical Registers, 1901 to 1913 and 1914-15 (parts).
 Census of New South Wales, 1901.
 Vital Statistics (annual), 1901 to 1914; and monthly issues to August, 1915.
 Agricultural and Live-stock Statistics, 1901 to 1914.

Statistical View of the Progress of New South Wales during 50 years, 1856 to 1906.
 Friendly Societies' Experience, New South Wales, 1900-1908.
 Comparative Legislation relating to the Industrial Classes.
 Population of New South Wales and movements of population between New South Wales and other Countries, quarterly, December 1911 to September 1915.
 Annual and other Reports on Agricultural, Dairying, and Pastoral Industries, on Manufactories and Works, and on Value of Production.
 Statesman's Year Book, 1913.

(b) *Departmental Papers*:—

Annual Reports of—

Aborigines	Industrial Schools
Australian Museum	Inspector-General of Insane
Board of Public Health	Labour Commissioners
Chief Commissioner of Railways	Leprosy (Board of Health)
Chief Medical Officer	Miners' Accident Relief Fund
Comptroller-General of Prisons	Minister of Public Instruction
Department of Agriculture	National Art Gallery
Department of Crown Lands	National Park Trust
Department of Mines	Pharmacy Board
Department of Police	Public Disaster Relief Fund
Department of Public Works	Public Library
Director of Botanical Gardens and Domain	Public Service Board
Director of Labour	Registrar of Friendly Societies, Building Societies, and Trade Unions
Factories and Shops Act; Minimum Wage Act; Early Closing Acts; Shearers' Accommodation Act, etc.	Registrar-General
Fisheries Board	Savings Bank
Forestry Department	State Brickworks
Government Bureau of Microbiology	State Children's Relief Board
Government Railways, Superannuation Account	State Debt Commissioners
Government Savings Bank	Superintendent of Carpenterian Reformat'ry
Immigration and Tourist Bureau	Technological Museums
	University of Sydney
	Western Land Board.

Public Service Lists.
 The Estimates of Revenue and Expenditure.
 Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.
 Trade Reports, various.
 Observatory Reports and Bulletins.
 Public Accounts and Report of the Auditor-General.
 Treasurer's Financial Statement, and Papers to accompany.
 General Election 1910. Double Voting. Synopsis of the Voting.
 The New South Wales Industrial Gazette (monthly).
 State Contracts for the Public Service.
 Agricultural Gazette (monthly).
 Records of the Geological Survey.
 Statement of Assets and Liabilities of Public Companies (quarterly).
 Statement of Assets and Liabilities of Banks (quarterly).
 Quarterly Return of Gold Yields.
 Trade Reports.

(c) Reports and Statements of Local Bodies:—

Annual Statements of Municipalities	Metropolitan Board of Water Supply and Sewerage
Fire Commissioners (formerly Fire Brigades Board)	Official Handbook of the Port of Sydney
Hospitals	Sydney Harbour Trust Commissioners
Hunter District Water Supply and Sewerage Board	Town Clerk of the City of Sydney.

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

Statistical Registers, 1901 to 1913, and 1914 (parts).
 The Victorian Year Books, 1902 to 1914-15.
 Quarterly Statistical Abstracts, since 1904.
 Quarterly Returns of Vital Statistics, since 1901.
 Vital Statistics, 1911, 1912, and 1914.
 Monthly Returns of Oversea Imports and Exports, since 1901.
 Statistics of Manufactories, Works, etc., 1901 to 1914.
 Australasian Statistics, 1901-2, with Summaries for Previous Years.
 The First Fifty Years of Responsible Government in Victoria, 1856 to 1906.
 Census of Victoria, 1901.
 Annual Reports on Agricultural, Viticultural, Dairying, and Pastoral Industries, and on Value of Production.
 Annual Report on Friendly Societies.
 Annual Report on Trade Unions.

(b) Departmental Papers:—

Annual Reports of—

Board for the Protection of Aborigines	Inspector of Inebriates' Institutions
Board of Public Health	Inspector of Neglected Children and Reformatory Schools
Board of Visitors, Observatory	Inspector-General of Penal Establishments, Gaols, and Reformatory Prisons
Chief Engineer for Railway Construction	Inspector-General of Savings Banks
Chief Inspector of Explosives	Lands Purchase and Management Board
Chief Inspector of Factories, Workrooms and Shops	Licenses Reduction Board
Coal Miners' Accidents Relief Fund	Marine Board of Victoria
Committee of Public Accounts	Minister of Public Instruction
Conservator of Forests	Parliamentary Standing Committee on Railways
Council of Judges	Public Service Commissioner
Council of Public Education	Registrar of Friendly Societies
Country Roads Board	Railways Commissioners
Department of Agriculture	Secretary for Mines
Department of Crown Lands and Survey	State Rivers and Water Supply Commission
Government Astronomer	Trustees of the Public Library, Museums, and National Gallery
General Manager of State Coal Mines	Vice-Chancellor of Melbourne University.
Indeterminate Sentences Board	
Inspector of Charitable Institutions	
Inspector-General of the Insane	

Public Service List.

Accounts of the Trustees of Agricultural Colleges and the Council of Agricultural Education.

The Budget.

Returns under the Banks and Currency Act 1890, the Companies Act 1890, and the Electric Light and Power Act 1896.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

Statement of Expenditure under the Constitution Statute.
 The Estimates of Revenue and Expenditure.
 Treasurer's Statement and Report of the Auditor-General.
 Determinations of Wages Boards.
 The Law relating to Factories and Shops in Victoria.
 Agricultural Journal (monthly).
 Register of Teachers and Register of Schools.
 Quarterly Returns of Yield of Goldfields.
 Memoirs and Bulletins of the Geological Survey.
 Vaccination Progress Report.
 Bank Liabilities and Assets.

(c) *Reports of Local Bodies:—*

Annual Reports of the Melbourne Harbour Trust Commission	Hospitals
Annual Reports of the Fire Brigades Board	Report and Statement of Tramways Trust
Annual Statements of Municipal and Shire Councils	Statement of Accounts of the Melbourne and Metropolitan Board of Works, and Report.
Geelong Municipal Waterworks Trust	

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

The Queensland Official Year Book, 1901.
 The Census of 1901.
 A.B.C. of Queensland Statistics, 1905 to 1915.
 Vital Statistics (annual), 1901 to 1913; and monthly issues to July, 1915.
 Statistical Registers, 1901 to 1914.
 Annual Reports on Agricultural, Dairying, and Pastoral Statistics.

(b) *Departmental Papers:—*

Annual Reports of the—

Agent-General	Government Central Sugar Mills
Bureau of Sugar Experiment Stations	Govt. Life Insurance and Annuity Business
Chief Protector of Aborigines	Government Resident at Thursday Island
Chief Inspector of Machinery & Scaffolding	Government Savings Bank
Commissioner of Public Health	Hydraulic Engineer on Water Supply
Commissioner of Income Tax	Immigration Agent
Commissioner of Police	Inspector of Hospitals for the Insane
Commissioner for Railways	Inspector of Orphanages
Comptroller-General of Prisons	Institute of Tropical Medicine
Curator of Intestate Estates	Manager of the Government Savings Bank
Department of Agriculture and Stock	Marine Department
Department of Public Lands	Medical Inspector of Schools
Department of Public Works	Officer in Charge, Government Relief
Director of Forests	Official Trustee in Insolvency
Director of Labour and Chief Inspector of Factories and Shops	Public Service Board
Engineer for Harbours and Rivers	Public Service Superannuation Board
Government Analyst	Registrar of Friendly Societies, Building Societies, and Trade Unions
Secretary for Public Instruction	Trustees of the Public Library
State Children's Department	Under-Secretary for Mines
Trustees of the Agricultural Bank	University of Queensland
Trustees of the National Art Gallery	Workers' Dwellings Board.
Blue Book.	
Public Service Lists.	
The Estimates of Revenue and Expenditure.	
Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.	

Public Accounts and Report of the Auditor-General.
 Treasurer's Financial Statement and Tables relating thereto.
 Determinations of Wages Boards.
 Agricultural Journal (monthly).
 Mining Journal (Annual).
 The Queensland Sugar Industry, 1913.
 Reports of the Geological Survey.
 Monthly Reports on Mining, Crown Lands, etc.

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

Brisbane Board of Waterworks.
 Bundaberg Harbour Board.
 Engineer for Harbours and Rivers.
 Hospitals, Sanatoria, Asylums, etc.
 Annual Statements of Municipalities.
 Metropolitan Water and Sewerage Board.

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

Statistical Registers, 1901 to 1913, and 1914 (parts).
 Monthly Returns of Births and Deaths, 1901 to August, 1915.
 Official Year Book of South Australia, 1912 and 1913.
 The Census of 1901.
 Blue Book.
 Statistical Summary of South Australia from its foundation, 1836 to 1910.
 Annual Reports on Manufactories and Works, Live Stock, Wheat Harvest,
 Agricultural and Viticultural Statistics.

(b) *Departmental Papers* :—

Annual Reports of the—

Actuary on Friendly Societies 1900-1904, and 1905-1909.	Government Resident of Northern Territory to 1909 (subsequent reports to Commonwealth Government)
Agent-General	Governors of the Public Library, Museum, and Art Gallery
Audit-Commissioner	Hospital for the Insane
Chief Inspector of Factories	Marine Board
Chief Inspector of Fisheries	Minister for Agriculture
Chief Inspector of Oyster Fisheries	Minister for Education
Chief Inspector of Stock	Public Service Superannuation Board
Commissioner of Police	Registrar-General of Births, Deaths, and Marriages
Commissioner of Railways	Registrar of Trade Unions
Commissioners of the National Park	State Children's Council
Department of Public Works	Surveyor-General
Department of Woods and Forests	Trustees of the Savings Bank.
Destitute Board	
Gaols and Prisons	
Government Astronomer	
Government Geologist	

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

The Estimates of Revenue and Expenditure.
 Financial Statement of the Treasurer and appendices relating thereto.
 Determinations of Wages Boards.
 Mining Operations: Half-Yearly Reviews, 1904 to 1913.
 Records and Reports of Geological Survey.
 Journal of the Department of Agriculture (monthly).
 Reports of Railway Commissioners (quarterly).
 Bulletins of Department of Agriculture.

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

Hospitals.
Schools of Mines and Industries.
Fire Brigades Boards.
Municipal Tramways Trust.
City of Adelaide Year Book.
Municipalities.
East Torrens County Board of Health.

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

The Census of 1901.
Statistical Registers, 1901 to 1913.
Monthly Statistical Abstracts, 1901 to July, 1915.
Year Books of Western Australia, 1900-03, 1902-4, 1905 (part).
Quarterly and Annual Reports on Population and Vital Statistics.
Monthly Return of Vital Statistics.
Crop and Live Stock Returns.
Blue Book.
Statistical View of 85 years' progress in Western Australia, 1829 to 1913.
Comparative Statistics, 1890 to 1912.
Annual Reports on Agricultural, etc., Statistics.
Report on Interstate Trade Returns for the Two Years 1911 and 1912.

(b) *Departmental Papers :—*

Annual Reports of the—

Aborigines Department
Agent-General
Agricultural Bank
Art Galleries
Chief Inspector of Explosives
Chief Inspector of Fisheries
Commissioner of Police
Commissioner of Railways
Commissioner of Taxation
Comptroller-General of Prisons
Department of Agriculture
Department of Lands and Surveys
Department of Mines
Department of Public Works
Department of Woods and Forests
Education Department
Geological Survey
Government Analyst
Government Astronomer
Government Labour Bureau

Government Savings Bank
Harbour and Light Department
Inspector-General of Insane
Lands Titles Department
Museum and Art Gallery
Public Library
Principal Medical Officer on Medical,
Health, Factories, Early Closing, Vac-
cination and Quarantine
Public Service Commissioner
Registrar of Friendly Societies
Registrar of Friendly Societies in connec-
tion with Industrial Conciliation and
Arbitration, and Trade Unions
Stock Department
Superintendent of Charities and Inspector
of Industrial and Reformatory Schools
Surveyor-General
Water Supply, Sewerage and Drainage
Department

Parliamentary Papers (miscellaneous) ; Reports of Committees, Commissions,
Conferences, etc.

The Estimates of Revenue and Expenditure.
Public Accounts and Report of the Auditor-General.
Agricultural Journal (monthly).
Gold and Mineral Exports (monthly).
Reports of proceedings before Boards of Conciliation and Court of Arbitration.
Bulletins of the Department of State Medicine and Public Health.
Reports and Bulletins of the Geological Survey.
Government Savings Bank, Comparative Return (Monthly).
Western Australia, 1912.
Report on Principal Electoral Systems of Western Australia.

(c) Reports and Statements of Local Bodies :—

Cemetery Boards	Metropolitan Waterworks Board
Fire Brigades	Municipalities, Road Boards, and Boards of Health
Fremantle Harbour Trust Commissioners	Public Hospitals
Fremantle Municipal Tramways and Electric Lighting Board	Waterworks Boards (country).

(vi.) Tasmania. (a) Publications by Government Statistician :—

The Census of 1901.

Statistical Registers, 1901 to 1913-14.

Reports on Vital Statistics and Migration (annual), 1901 to 1913 ; and monthly issues to August, 1915.

Reports on Agricultural and Live Stock Statistics, 1901 to 1913-14.

Statistical Summaries, 1901 to 1913-14.

Gold Yield for 1908 and previous 10 years.

Annual Reports on Agriculture, Live Stock, Production, etc., Statistics.

Geographical Illustration of the Extent of Australia's Production, &c.

Statesman's Pocket Book of Tasmania, 1915.

(b) Departmental Papers :—

Annual Reports of the—

Agent-General	General Manager of Government Railways
Agricultural Bank of Tasmania	Hobart and Launceston Gaols
Charitable Grants Department	Inspector of Machinery
Chief Inspector of Factories	Lands and Survey Department
Chief Inspector of Stock	Museum and Botanical Gardens
Commissioner of Taxes	Police Department
Department of Agriculture	Public Library
Department of Education	Public Service Board
Department of Mines	Recorder of Titles
Department of Neglected Children	Registrar of Friendly Societies and Trade Unions
Department of Public Health	Savings Bank
Engineer-in-Chief of Public Works	University of Tasmania
Explosives Department	

Public Service List.

The Budget.

The Estimates of Revenue and Expenditure.

Parliamentary Papers (miscellaneous) ; Reports of Committees, Commissions, Conferences, etc.

Public Debts Sinking Fund.

Report of the Auditor-General.

Financial Statement of the Treasurer.

Wages Boards Determinations.

Geological Survey Bulletins.

Progress of the Mineral Industry (quarterly).

Agricultural Gazette (monthly).

(c) Reports and Statements of Local Bodies :—

Country Libraries	Industrial Schools
Fire Brigade Board	Life Assurance Societies
Harbour Trusts	Marine Boards
Hobart Drainage Board	Municipalities.
Hospitals	

§ 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.

- ACKERMANN, J. *Australia*. London, 1913.
 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.
 D'AUNET, B. *L'Aurore Australe*. Melbourne, 1905; Paris, 1907.
 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.
 GILLIES, WM. *Stories in English History for Young Australians*. Melbourne, 1905.
 GREGORY, J. W. *The Dead Heart of Australia*. London, 1906. *Australia and New Zealand* (in Stanford's Compendium of Geography and Travel). London, 1907.
 GREGORY, J. W. *Australasia*. Stanford's Geography. London.
 GREY, J. G. *Australasia, Old and New*. London. 1901.
 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.
 JENKS, E. *History of the Australian Colonies*. 3rd Edition, London, 1912.
 JOHNS, FRED. *Fred. Johns's Annual* (first publ. 1912). Empire Edition. London, 1914.
 JOHNS, FRED. *Notable Australians*. 1906. 2nd Edition, Adelaide and London, 1908.
 JOSE, A. W. *History of Australasia*. Sydney, 1909 and 1911.
 KREMAN, 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-ökonomens durch Australasien*. Berlin, E. S. Mittler and Sohn.
 METIN, A. *Le Socialisme sans doctrines : la question ouvrière et la question agraire en Australie et Nouvelle Zélande*. Paris, 1901.
 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.
 NELSON, W. *Foster Fraser's Fallacies*. Sydney, 1910.
 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.
 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, 1910. *La Pérouse*. Sydney, 1912. *Life of Matthew Flinders, R.N.*, Sydney, 1914.
 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.
- SEARCY, 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, 1914.
- ST. LEDGER, A. Australian Socialism. London, 1909.
- TAYLOR, T. G. Australia. Physiographic and Economic. Oxford, 1911.
- 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. Sydney, 1913. Beginnings of Government in Australia, vol. 1. Sydney, 1913.
- WILKINSON, H. L. The History of the Trust Movement in Australia. Melbourne, 1914.
- 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.
- CLARE, 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.
- 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.
- HAWKESWORTH, A. Australasian Sheep and Wool. 3rd Edition. Sydney, 1911.
- HUNT, H. A., TAYLOR, T. G., AND QUAYLE, E. T. Text Book on the Climate and Weather of Australia. Melbourne, 1914.
- INGLIS, GORDON. Sport and Pastime in Australia. London, 1912.
- 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.
- MCALPINE, D. The Rusts of Australia: their Structure, Nature and Classification. Melbourne, 1910.
- POWER, F. DANVERS. Coalfields and Collieries of Australia. Melbourne, 1912.
- SMITH, H. B. The Sheep and Wool Industry of Australasia. London, 1914.
- STEAD, D. G. Fishes of Australia. Sydney, 1906.
- SUTHERLAND, A. The Australasian Live Stock Manual. 2nd Edition. Melbourne and Sydney, 1903.
- "WANDANDIAN." Travels in Australasia. Birmingham, 1912.
- WATERHOUSE, G. A., AND LYEELL, 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 1.

§ 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 For- mation into Separate Colony.	Present Area in Square Miles.	Colony.	Year of For- mation into Separate Colony.	Present Area in Square Miles.
New South Wales	1786	309,460 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	1834	380,070	Northern Territory ...	1863	523,620
(proper)			Fed. Capital Ter't'y	1911	912 ²
Commonwealth			2,974,581 square miles.		
Australasia			3,079,332 square miles.		

1. Exclusive of Federal Capital Territory.

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 July 1st, 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.

§ 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 Constitutions 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. 27-32.

§ 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 into 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 :—

Part I.—General.

Part II.—The Senate.

Part III.—The House of Representatives.

Part IV.—Both Houses of Parliament.

Part V.—Powers of the Parliament.

Chapter II.—The Executive Government.

Chapter III.—The Judicature.

Chapter IV.—Finance and Trade.

Chapter V.—The States.

Chapter VI.—New States.

Chapter VII.—Miscellaneous.

Chapter VIII.—Alteration of the Constitution.

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 persons 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 the 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.

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

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.

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 provisions, 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

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.

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

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 the 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 seat¹.

49. The powers, privileges, and immunities of the Senate and of the House of Representatives, and of the members and the committees 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.

1. By the Parliamentary Allowances Act 1907, assented to on the 28th August, the amount of the allowance was increased to £500 a year.

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.

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 :^{1 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 :

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. (i.) 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. xx.) "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) (d) 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.

- (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 :
- (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 :

1. See footnotes 1 and 2 on previous page.

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.

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 law 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 or 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.

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.

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:—¹

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.

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 are applicable to appeals from them to the High Court.

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

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 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.

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:

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.

(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.

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.²

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 connexion 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.

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.

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

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],¹ 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 States 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.

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.

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

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 law 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.

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.*)

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.

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 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 1915.

			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	...	27th June, 1914.*
Sixth	„	...	8th October, 1914	...	

* 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 LXXIV. of the Parliamentary Debates, as follows —

First Parliament,	1st Session	Vols.	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.	" 1 " 141
" "	2nd "	"	XXXVI. "	XLVI., " 1 " 12,203
" "	3rd "	"	XLVII. "	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. "	LXXXII., " 1 " 4,798
" "	2nd "	"	LXXXIII. "	LXXXIV., " 1 " 2,658

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, left Melbourne 2nd July, 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 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 September, 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).
	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (from 7/8/'03).
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Trade and Customs	{ Rt. Hon. CHARLES CAMERON KINGSTON, P.C., K.C. (resigned 24/7/'03)
	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (from 7/8/'03).
Defence	{ The Hon. SIR JAMES ROBERT DICKSON, K.C.M.G. (died 10/1/'01).
	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (17/1/'01 to 7/8/'03)
	{ Hon. JAMES GEORGE DRAKE (from 7/8/'03).
Postmaster-General	{ 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).
Vice-President Executive Council	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (from 7/8/'03).
Without Portfolio	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).

* K.C.M.G., 1902.

(c) 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.
Treasury	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 C'ncl	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 C'ncl	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.
Treasury	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 C'ncl	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 (from 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 C'ncl	{ 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).

(g) 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 C'ncl	Hon. GREGOR MCGREGOR.
Honorary Minister	Hon. JAMES HUTCHISON

* P.C., 1911.

† K.C.M.G., 1903.

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

DEPARTMENTS.	MINISTERS.
Prime Minister (without P'tfolio)	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 BEST, 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 C'ncl	Hon. EDWARD DAVIS MILLEN.
Honorary Minister	Colonel The Hon. JUSTIN FOX GREENLAW FOXTON, C.M.G.

(i) SECOND FISHER ADMINISTRATION, 29th April, 1910, to 20th June, 1913.

DEPARTMENTS.	MINISTERS.
Treasurer	Rt. Hon. ANDREW FISHER, P.C.
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 C'ncl	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, 20th 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 C'ncl	Hon. JAMES HERS M'COLL.
Honorary Ministers	{ Hon. JOHN SINGLETON CLEMONS. Hon. WILLIAM HENRY KELLY.

(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 C'ncl	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) HUGHES ADMINISTRATION from 27th October, 1915.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General	Hon. WILLIAM MORRIS HUGHES.
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
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 C'ncl	Hon. ALBERT GARDINER.
Assistant Minister	Hon. EDWARD JOHN RUSSELL.

* P.C., 1914.

† K.C.M.G., 1914.

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 1911 session is indicated in alphabetical order in "Vol. 10 of the Acts of the Parliament of the Commonwealth of Australia, passed in the session of 1911, with Tables, Appendices and Indexes." A "Chronological Table of Acts passed from 1901 to 1911, 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 October, 1915, 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 OCTOBER, 1915, IN RELATION TO THE SEVERAL PROVISIONS
OF THE CONSTITUTION.¹**

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—
	Commonwealth Franchise Act 1902.
9—34	ELECTIONS—
	Commonwealth Electoral Act 1902-1911.
	Senate Elections Act 1903.
24	DETERMINATION OF NUMBER OF MEMBERS OF HOUSE OF REPRESENTATIVES—
	Representation Act 1905.
47	DISPUTED ELECTIONS AND QUALIFICATIONS—
	Commonwealth Electoral Act 1902-1911, Part XVI.
	Disputed Elections and Qualifications Act 1907.
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 1906-1915.
	<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 Acts 1914.

¹ This Table has been prepared by the Secretary of the Attorney-General's Department, Robert Randolph Garran, Esquire, M.A., C.M.G., Barrister-at-Law, etc.

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

Section of Constitution.	Short Title of Commonwealth Act.*
51 cont.— (ii.)	<p>TAXATION— <i>Machinery Acts—</i> Customs Act 1901-1914. Beer Excise Act 1901-1912. Distillation Act 1901. Excise Act 1901. Spirits Act 1906-1915. Excise Procedure Act 1907. Australian Notes Act 1910-1914 (s. 12). Land Tax Assessment Act 1910-1914. Estate Duty Assessment Act 1914. Income Tax Assessment Act 1915. Customs Tariff 1902. <i>Customs Tariff 1906 [Agricultural Machinery].*</i> Customs Tariff (South African Preference) 1906; <i>amended by Customs Tariff 1908 (s. 9).</i> Customs Tariff 1908; <i>amended by Customs Tariff Amendment 1908, and Customs Tariff 1910, and Customs Tariff 1911.</i> Excise Tariff 1902; <i>amended by Sugar Rebate Abolition Act 1903, Excise Tariff 1905,* Excise Tariff (Amendment) 1906,* Excise 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 Excise Tariff (Starch) 1908.</i> 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 Act 1915.</p>
(iii.)	<p>BOUNTIES ON PRODUCTION OR EXPORT— <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. <i>Sugar Bounty Act 1913.*</i> Iron Bounty Act 1914.</p>
(iv.)	<p>BORROWING MONEY ON THE PUBLIC CREDIT OF THE COMMONWEALTH— Commonwealth Inscribed Stock Act 1911-1915. Loan Act 1911-1914, 1912-1914, 1913-1914, 1914, 1915. <i>Naval Loan Act 1909*</i> Naval Loan Repeal Act 1910. Treasury Bills Act 1914-1915. War Loan Act 1914. War Loan Act (No. 1) 1915. War Loan Act (No. 2) 1915. Sugar Purchase Act 1915. Freight Arrangements Act 1915.</p>
(v.)	<p>POSTAL, TELEGRAPHIC, AND TELEPHONIC SERVICES— Post and Telegraph Act 1901-1913. Post and Telegraph Rates Act 1902-1913. 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.</p>

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

Section of Constitution.	Short Title of Commonwealth Act.*
51 cont.— (vi.)	NAVAL AND MILITARY DEFENCE— Naval Agreement Act 1903-1912. <i>Naval Loan Act 1909.*</i> Naval Loan Repeal Act 1910. Defence Act 1903-1915. Telegraph Act 1909. Naval Defence Act 1910-1912. Defence Lands Purchase Act 1913. Trading with the Enemy Acts 1914. War Precautions Act 1914-1915.
(vii.)	LIGHTHOUSES, LIGHTSHIPS, BEACONS AND BUOYS— Lighthouses Act 1911-1915.
(viii.)	ASTRONOMICAL AND METEOROLOGICAL OBSERVATIONS— Meteorology Act 1906.
(ix.)	QUARANTINE— Quarantine Act 1908-1912.
(xi.)	CENSUS AND STATISTICS— Census and Statistics Act 1905. War Census Acts 1915.
(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.
(xviii.)	COPYRIGHT, PATENTS, DESIGNS, AND TRADE MARKS— Customs Act 1901-1914 (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.
(xix.)	NATURALIZATION AND ALIENS— Naturalization Act 1903.
(xxiii.)	INVALID AND OLD-AGE PENSIONS— Invalid and Old-age Pensions Act 1908-1912.
(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 1901-1912.
(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. Commonwealth Franchise Act 1902 (s. 4). Naturalization Act 1903 (s. 5).
(xxvii.)	IMMIGRATION AND EMIGRATION— Immigration Act 1901-1912. Pacific Island Labourers Act 1901-1906. Contract Immigrants Act 1905. Emigration Act 1910.
(xxviii.)	INFLUX OF CRIMINALS— Immigration Act 1901-1912 (s. 3 (ga), (gb)).
(xxix.)	EXTERNAL AFFAIRS— Extradition Act 1903. High Commissioner Act 1909.

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

Section of Constitution.	Short Title of Commonwealth Act.*
51 cont.—	
(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. 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.
(xxxii.)	CONTROL OF RAILWAYS FOR DEFENCE PURPOSES— Defence Act 1903-1915 (ss. 64-66, 80, 124). War Precautions Act 1914-1915 (s. 4 (1) (c)). Kalgoorlie to Port Augusta Railway Survey Act 1907.
(xxxiv.)	RAILWAY CONSTRUCTION AND EXTENSION IN ANY STATE WITH THE CONSENT OF THAT STATE— Kalgoorlie to Port Augusta Railway Act 1911-1912.
(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 1904-1915.
(xxxix.)	MATTERS INCIDENTAL TO THE EXECUTION OF POWERS— Acts Interpretation Act 1901. <i>Punishment of Offences Act 1901.*</i> Acts Interpretation Act 1904. Amendments Incorporation Act 1905. Rules Publication Act 1903. Commonwealth Public Service Act 1902-1915. 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 1911-1915. Maternity Allowance Act 1912. Commonwealth Workmen's Compensation Act 1912. Officers' Compensation Act 1912. Committee of Public Accounts Act 1913. Commonwealth Public Works Committee Act 1913. Meat Export Trade Commission Act 1914.
	EXECUTIVE GOVERNMENT.
67	APPOINTMENT AND REMOVAL OF OFFICERS— Commonwealth Public Service Act 1902-1915. Papua Act 1905 (s. 19). Defence Act 1903-1915 (s. 63). High Commissioner Act 1909 (ss. 8, 9). Northern Territory Acceptance Act 1910 (ss. 11, 12). Norfolk Island Act 1913 (ss. 7, 9).
	THE JUDICATURE.
71—80	CONSTITUTION AND PROCEDURE OF THE HIGH COURT— Judiciary Act 1903-1915. High Court Procedure Act 1903-1915.

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

Section of Constitution.	Short Title of Commonwealth Act.*
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 1910-1914 (s. 46). Norfolk Island Act 1913 (s. 11).
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 1901-1914 (ss. 221, 227, 245). • Excise Act 1901 (ss. 109, 115, 134). Post and Telegraph Act 1901-1913 (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 1903-15. Defence Act 1903-1915 (s. 91). Patents Act 1903-1909 (ss. 47, 58, 67, 75-77, 84-87A, 111). Commonwealth Conciliation and Arbitration Act 1904-1915 (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 (ss. 10, 11, 24, 36-39, 45, 46, 50, 54, 56, 59). Disputed Elections and Qualifications Act 1907 (ss. 2, 6). Navigation Act 1912 (ss. 383, 385).
(iii.)	(3) <i>In matters of Admiralty and Maritime Jurisdiction—</i> Judiciary Act 1903-1905 (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 1901-1914 (ss. 221, 227, 245). Excise Act 1901 (ss. 109, 115, 134). Post and Telegraph Act 1901-1913 (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 1903-1915 (s. 91). Judiciary Act 1903-1915 (ss. 17, 39, 68). Patents Act 1903-1909 (ss. 30, 47, 58, 67, 75-77, 84-87A, 111). 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 1910-1914 (s. 44). Navigation Act 1912 (ss. 91, 92, 318-20, 380-3, 385, 395). Estate Duty Assessment Act 1914 (s. 24). Income Tax Assessment Act 1915 (s. 37).
78	RIGHT TO PROCEED AGAINST COMMONWEALTH OR STATE— Judiciary Act 1903-1915 (ss. 56-67).
	FINANCE.
81	APPROPRIATION OF MONEYS— Appropriation and Supply Acts 1901-1914. Audit Act 1901-1912 (ss. 36-37, 62a).
83	PAYMENT OF MONEYS— Audit Act 1901-1912 (ss. 31-37, 62a).

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

Section of Constitution.	Short Title of Commonwealth Act.*
93	CREDITING OF REVENUE AND DEBITING OF EXPENDITURE— Surplus Revenue Acts 1908, 1909.
94	DISTRIBUTION OF SURPLUS REVENUE— Surplus Revenue Acts 1908, 1909, 1910.
96	ASSISTANCE TO STATES— Tasmania Grant Act 1912. Tasmania Grant Act 1913.
97	AUDIT OF PUBLIC ACCOUNTS— Audit Act 1901-1912.
98	NAVIGATION AND SHIPPING— Sea-Carriage of Goods Act 1904. Navigation Act 1912.
101-104	INTER-STATE COMMISSION— Inter-State Commission Act 1912.
	THE STATES.
118	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
119	PROTECTION OF STATES FROM INVASION AND VIOLENCE— Defence Act 1903-1915 (s. 51).
	TERRITORIES.
122	GOVERNMENT OF TERRITORIES— Papua Act 1905. Wireless Telegraphy Act 1905. Seat of Government Acceptance Act 1909. Patents Act 1903-1909 (s. 4a). Northern Territory Acceptance Act 1910. Seat of Government (Administration) Act 1910. Northern Territory (Administration) Act 1910. Pine Creek to Katherine River Railway Survey Act 1912. Pine Creek to Katherine River Railway Act 1913. Norfolk Island Act 1913. Jervis Bay Territory Acceptance Act 1915.
	MISCELLANEOUS.
125	SEAT OF GOVERNMENT— <i>Seat of Government Act 1904.*</i> Seat of Government Act 1908. Seat of Government Acceptance Act 1909. Seat of Government (Administration) Act 1910.
128	ALTERATION OF CONSTITUTION— Referendum (Constitution Alteration) Act 1906-1912. Constitution Alteration (Senate Elections) Act 1906. Constitution Alteration (State Debts) Act 1909.

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

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 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 3.

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.

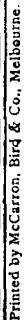
1. The extreme points are "Steep Point" on the west, "Cape Byron" on the east, "Cape York" on the north, "Wilson's Promontory" on the south, or, if Tasmania be included, "South East Cape." The limits, according to the 1903-4 edition of "A Statistical Account of Australia and New Zealand," p. 2, and, 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° 11½' S., but these figures are obviously defective. A similar inaccuracy appears in the XI. edition of the Encyclopædia.

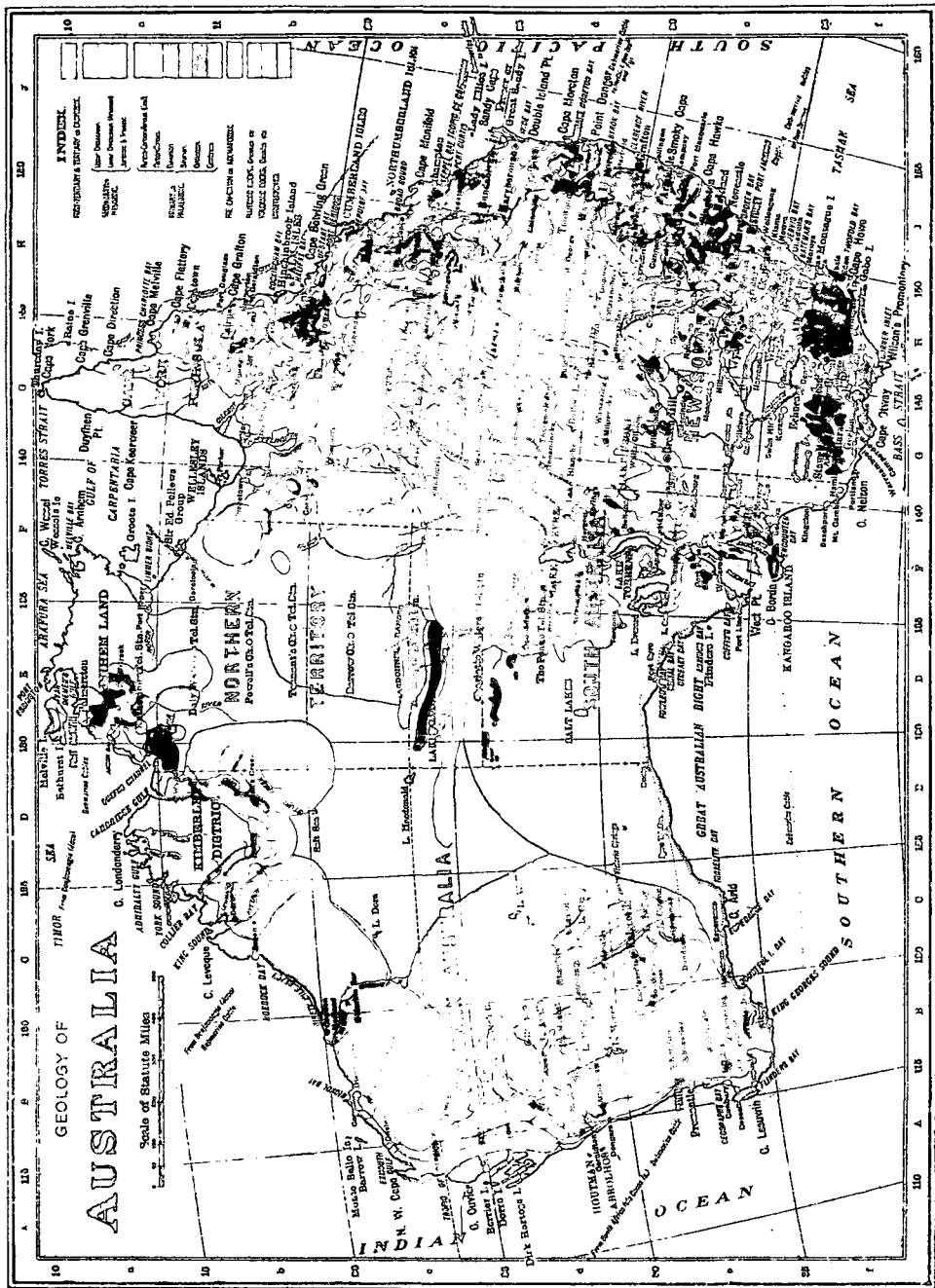
2. Its correct value for 1916 is 23° 27' 0".96, and it decreases about 0".47 per annum.

The relative magnitudes may be appreciated by a reference to the following table, which shews 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 (1.29549) as large as Australia, or that Australia is about three-quarters (more accurately 0.77) of the area of Europe.

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.
Continents—					Sq. miles.		
Europe	...	...	...	...	3,853,547	0.77	1.29549
Asia	...	...	...	...	16,820,644	0.18	5.65479
Africa	...	...	...	...	12,115,568	0.25	4.70303
North and Central America and West Indies	...	...	...	...	8,560,254	0.35	2.87780
South America	...	...	...	...	7,448,953	0.40	2.50420
Australasia and Polynesia	...	...	...	...	3,462,554	0.86	1.16505
Total, exclusive of Arctic and Antarctic Conts.				...	52,261,520	0.06	17.56937
Europe—							
Russia (inclusive of Poland, Ciscaucasia & Finland)	...	...	...	...	2,122,998	1.40	0.71371
Austria-Hungary (incl. of Bosnia & Herzegovina)	...	...	...	...	261,259	11.39	0.03763
Germany	...	...	...	...	208,780	14.25	0.07018
France	...	...	...	...	207,054	14.37	0.06969
Spain	...	...	...	...	194,778	15.27	0.06543
Sweden	...	...	...	...	172,963	17.20	0.05814
Norway	...	...	...	...	124,643	23.86	0.04190
United Kingdom	...	...	...	...	121,633	24.45	0.04089
Italy	...	...	...	...	110,632	26.89	0.03719
Denmark (inclusive of Iceland)	...	...	...	...	55,338	53.73	0.01861
Rumania	...	...	...	...	53,489	55.61	0.01798
Greece	...	...	...	...	41,933	70.94	0.01409
Bulgaria	...	...	...	...	39,529	68.65	0.01329
Portugal	...	...	...	...	35,490	83.82	0.01193
Servia	...	...	...	...	33,891	87.76	0.01139
Switzerland	...	...	...	...	15,976	186.22	0.00537
Netherlands	...	...	...	...	12,582	236.42	0.00423
Belgium	...	...	...	...	11,373	261.78	0.00382
Albania	...	...	...	...	11,317	262.84	0.00380
Turkey	...	...	...	...	10,882	273.34	0.00366
Montenegro	...	...	...	...	5,603	530.88	0.00188
Luxemburg	...	...	...	...	998	2941.18	0.00034
Andorra	...	...	...	...	175	16997.61	0.00006
Malta	...	...	...	...	118	25423.76	0.00004
Liechtenstein	...	...	...	...	65	45793.55	0.00002
San Marino	...	...	...	...	38	78278.45	0.00001
Monaco	...	...	...	...	8	371822.63	...
Gibraltar	...	...	...	...	2	1487290.50	...
Total, Europe				...	3,853,547	0.77	1.29549
Asia—							
Russia (inclus. 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	...	...	...	...	966,700	3.08	0.32499
Feudatory Indian States...	...	...	...	...	709,555	4.19	0.23854
Turkey (including Samos)	...	...	...	...	699,522	4.25	0.23516
Persia	...	...	...	...	628,000	4.74	0.21112
Dutch East Indies	...	...	...	...	584,611	5.09	0.19654
Japan (and Dependencies)	...	...	...	...	263,084	11.31	0.08844





Country.	Area.	Australian Commonwealth in comparison with—	In com- parison with Australian C'wealth.
	Sq. Miles.		
ASIA (continued)—			
Afghanistan	250,000	11.90	0.08405
Siam	195,000	15.25	0.06555
Philippine Islands (inclusive of Sulu Archipelago)	120,000	23.60	0.04236
Laos	111,940	26.57	0.03763
Bokhara	83,000	35.83	0.02790
Omán	82,000	36.27	0.02757
British Borneo and Sarawak	73,106	40.68	0.02457
Cambodia	67,724	43.92	0.02277
Annam	61,718	48.20	0.02075
Nepál	54,000	55.10	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
Malay Protectorate	24,600	120.91	0.00827
Khiva	24,000	123.94	0.00807
Cochin China... ..	21,988	135.28	0.00739
Bhután	20,000	148.73	0.00672
Aden and Dependencies	9,005	330.32	0.00303
Timor, etc. (Portuguese Indian Archipelago)	7,330	406.50	0.00246
Brunei	4,000	743.64	0.00134
Cyprus	3,584	833.33	0.00120
Kiauchau (Neutral Zone)	2,500	1189.83	0.00084
Goa, Damaõ, and Diu	1,638	1818.18	0.00055
Straits Settlements	1,600	1851.85	0.00054
Sokotra and Kuria Muria Islands	1,382	2152.22	0.00046
Hong Kong and Dependencies	405	7344.64	0.00013
Kwang Chan Wan	386	7706.17	0.00013
Wei-hai-wei	285	10623.50	0.00009
Bahrein Islands	250	11898.32	0.00008
Kiauchau (German)	200	14872.90	0.00007
French India (Pondicherry, etc.)	198	15023.14	0.00007
Labuan	29	102571.76	0.00001
Italian Concession, Tientsin	18	165254.50	0.00001
Macao, etc.	4	743643.25	...
Total, Asia	16,820,644	0.18	5.65479
Africa—			
French Sahara	1,544,000	1.93	0.51907
French Equatorial Africa	1,003,600	2.96	0.33739
Soudan	984,520	3.02	0.33098
Belgian Congo	909,654	3.27	0.30582
French Military District of the Niger	534,124	5.57	0.17956
Angola	484,800	6.14	0.16298
Union of South Africa	473,100	6.28	0.15905
Rhodesia	438,575	6.78	0.14744
Tripoli and Benghezi	406,000	7.33	0.13649
German East Africa	384,180	7.74	0.12915
Abyssinia	350,000	8.50	0.11766
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	322,450	9.23	0.10840
Senegambia and Niger	302,136	9.84	0.10157
Portuguese East Africa	293,400	10.14	0.09864
Bechuanaland Protectorate	275,000	10.82	0.09245
British East Africa Protectorate	246,822	12.05	0.08298
Madagascar	226,016	13.16	0.07598
Morocco	219,000	13.58	0.07362
Kamerun	191,130	15.56	0.06425

Country.	Area.	Australian Commonw'lth in comparison with—	In com- parison with Australian C'wealth.
AFRICA (continued)—	Sq. miles.		
Italian Somaliland	139,430	21.34	0.04687
Ivory Coast	125,538	23.69	0.04220
Uganda Protectorate	121,437	24.49	0.04082
French Guinea	92,249	32.25	0.03101
Gold Coast Protectorate (with North. Territories)	80,000	37.18	0.02689
Senegal	73,973	40.21	0.02487
Rio de Oro, etc.	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	64.21	0.01557
Eritrea	45,800	64.95	0.01540
Liberia	40,000	74.36	0.01345
Nyassaland Protectorate... ..	39,315	75.66	0.01322
Dahomey	37,527	79.26	0.01261
Togoland	33,700	88.26	0.01133
Sierra Leone and Protectorate	31,000	95.95	0.01042
Portuguese Guinea	13,940	213.22	0.00469
Spanish Guinea (Rio Muni, etc.)	12,000	247.88	0.00403
Basutoland	11,716	253.89	0.00393
Swaziland	6,536	455.10	0.00219
Gambia and Protectorate	4,504	660.43	0.00151
Cape Verde Islands	1,480	2000.00	0.00050
Zanzibar	1,020	2941.18	0.00034
Réunion	965	3082.47	0.00032
Fernando Po, etc.	814	3654.28	0.00027
Mauritius and Dependencies	809	3676.86	0.00027
Comoro Islands	694	4286.14	0.00023
St. Thomas and Prince Islands	360	8262.73	0.00012
Seychelles	156	19067.82	0.00005
Mayotte, etc.... ..	143	20801.27	0.00005
Spanish North and West Africa	87	34190.59	0.00003
St. Helena	47	63288.95	0.00002
Ascension	34	87487.65	0.00001
Total, Africa	12,115,568	0.25	4.07303
North and Central America and West Indies—			
Canada	3,729,665	0.80	1.25385
United States (exclusive of Alaska, etc.)	2,973,890	1.00	0.99976
Mexico	785,881	3.78	0.26420
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	61.61	0.01623
* Greenland	46,740	63.65	0.01571
Honduras	44,275	67.18	0.01488
Cuba	44,164	67.35	0.01484
Costa Rica	23,000	129.32	0.00773
San Domingo	18,045	164.74	0.00607
Haiti	10,204	291.55	0.00343
British Honduras	8,598	345.96	0.00289
Salvador	7,225	411.52	0.00243
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	687	4329.81	0.00023
Windward Islands	517	5753.54	0.00017

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

Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C'wealth.
N. & C. AMERICA & W. INDIES (continued)—	Sq. miles.		
Curaçao and Dependencies ...	403	7381.09	0.00014
Martinique ...	381	7807.30	0.00013
Turks and Caicos Islands ...	166	17925.18	0.00005
Barbados ...	166	17925.18	0.00005
Danish West Indies ...	138	21554.94	0.00005
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 ...	8,560,254	0.35	2.87780
South America—			
Brazil (inclusive of Acre)...	3,364,564	0.88	1.13110
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 ...	292,580	10.17	0.09836
Paraguay ...	165,000	18.03	0.05546
Ecuador ...	116,000	25.64	0.03900
British Guiana ...	89,480	33.24	0.03008
Uruguay ...	72,153	41.22	0.02426
Dutch Guiana ...	46,060	64.60	0.01548
French Guiana ...	34,061	87.33	0.01145
Panamá ...	32,380	91.86	0.01088
Falkland Islands ...	6,500	456.62	0.00219
South Georgia ...	1,000	2974.58	0.00034
Total, South America ...	7,448,953	0.40	2.50420
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	28.39	0.03522
Papua ...	90,540	32.85	0.03044
Kaiser Wilhelm Land ...	70,000	42.50	0.02353
Bismarck Archipelago ...	20,000	148.73	0.00672
British Solomon Islands ...	14,800	204.36	0.00497
New Caledonia and Dependencies ...	8,548	347.99	0.00287
Fiji ...	7,435	400.08	0.00250
Hawaii ...	6,449	460.83	0.00217
German Solomon Islands, etc. ...	5,160	576.46	0.00173
New Hebrides ...	5,100	583.25	0.00171
French Establishments in Oceania ...	1,520	1960.78	0.00051
German Samoa ...	1,000	2974.58	0.00034
Tonga ...	390	7627.13	0.00013
Guam ...	213	13965.17	0.00007
Gilbert Islands ...	166	17919.16	0.00006
Samoa (U.S.A. part) ...	102	29162.56	0.00003
Norfolk Island ...	10	297458.10	...
Total, Australasia and Polynesia ...	3,462,554	0.86	1.16505
British Empire...	12,857,334	0.23	4.32240

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 :—

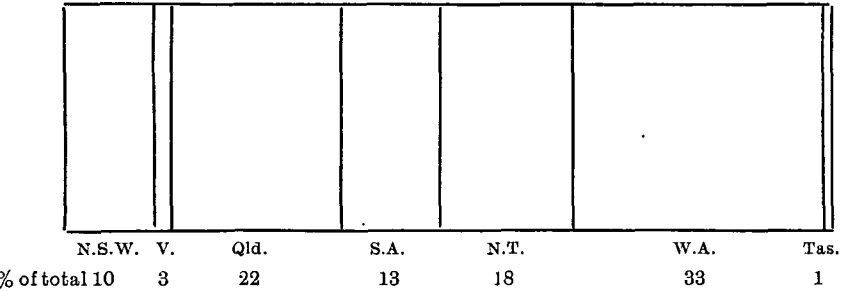
RELATIVE SIZE OF STATES AND COMMONWEALTH.

State.	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'wlth.
	Sq. miles.								
New South Wales	309,460	1.000	3.522	0.462	0.814	0.317	11.806	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	2.166	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	3.153	11.105	1.455	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	1.691	5.958	0.781	1.378	0.537	19.974	1.000	0.176
Federal Territory	912	0.003	0.010	0.001	0.003	0.001	0.034	0.002	0.000 ¹
Commonwealth	2,974,581	9.610	33.847	4.436	7.827	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 (3.522) and less than one-half the size of Queensland (0.462); 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 (9.610), 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.



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 each State and of the whole continent, are shewn in the following table :—

SQUARE MILES OF TERRITORY PER MILE OF COAST LINE.

STATES 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 figures, 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 Lincolshire 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 each preceding issue 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. This practically completes the description of the ordinary physical features. An orographical or vertical relief map of Australia will be found on p. 49.

§ 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. In § 7 will be found a special article on the grasses and saltbushes of Australia, contributed by E. Breakwell, B.A., B.Sc., Agrostologist at the Botanic Gardens, Sydney.

§ 4. Seismology in Australia.

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

Barisal Guns. Reference may be made here to an interesting pamphlet published by Dr. J. Burton Cleland, in which the author sums up the available information regarding the peculiar explosive or booming noises heard at times in Australia as well as in other parts of the world. As far as inland Australia, at all events, is concerned, it seems clear that the explosions are of earth origin, and are probably due to the sudden sundering of immense rock masses, either as a result of climatic influences, or through folding movements in the earth's crust.

§ 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*.

2. **Geological Map of Australia.**—The map of the Geology of Australia on page 50, shews the geographical distribution of the more important geological systems and formations.

§ 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 resumé 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

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

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 proposed 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 Australia, with 28 text illustrations. No. 9.—The climate of Australia, with charts and diagrams, prepared for the Federal Handbook of Australia.

Commencing with January 1910, the "Australian Monthly Weather Report," containing statistical records from representative selected stations, with rain maps and diagrams, etc., 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 47, 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 7300 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

1. In the article "Australia" in the Encyclopedia 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."

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.

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.	S.	E.
Perth ...	197	deg.	min.	deg.	min.	Darwin ...	97	12	28	130	51
Adelaide ...	140	31	57	115	50	Daly Waters ...	631	16	16	133	23
Brisbane ...	137	27	28	153	2	Alice Springs ...	1926	23	38	133	37
Sydney ...	146	33	52	151	12	Dubbo ...	870	32	18	148	35
Melbourne ...	115	37	49	144	58	Laverton ...	1530	28	40	122	23
Hobart ...	177	42	53	147	20	Coolgardie ...	1402	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 shewing that, on the whole, Australia has a more temperate climate when compared latitude for latitude with places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included in the comparison, 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 8.6°, 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, yet 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 has the first place, while Melbourne, Hobart, Brisbane, 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 68 and 76 to 81, which shew that the yearly amount varies from about $33\frac{1}{2}$ inches at Hobart to 97 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 are the amounts for the several months in different localities. The evaporation for characteristic places is shewn on diagram shewing also rainfalls (see page 68).

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

(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 preceding Year Books (see No. 6, pp. 72, 73, 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 150 and 166 inches. The maximum and minimum falls there are:—Goondi, 241.53 in 1894 and 76.24 inches in 1902, or a range of 165.29 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 29 years.

Harvey's Creek in the shorter period of 18 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 73, 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.	Queens-land.	South Aust.	Northe'n Territ'y.	Western Aust.	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 3030 square miles no records 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 48.51 inches occupies the chief place, Brisbane, Perth, Melbourne, Hobart and Adelaide following in that order, Adelaide with 20.88 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 74.) 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 of 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-fourth of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 inches, the remaining three-fourths receiving generally from about 10 to 15 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, etc.

(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 1914.

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	...	...	58.52	150	...	22.57	...	...	...	...	...
1	...	...	...	17.96	93	...	49.31	...	...	76.31	142	...	30.18	...	...	13.95	...	...
2	...	...	...	20.32	122	...	28.81	...	...	48.32	138	...	31.16	...	...	23.60	...	...
3	...	...	...	17.19	104	...	51.67	...	...	62.78	163	...	21.54	...	...	13.43	...	...
4	...	...	...	16.88	136	...	63.20	...	...	70.66	156	...	30.74	...	...	26.25	...	...
5	...	...	...	18.83	125	...	39.99	...	...	62.01	133	...	23.93	...	...	16.68	...	...
6	...	...	...	26.89	114	...	31.41	...	41.83	43.83	139	...	30.53	...	...	21.96	...	...
7	...	...	...	27.61	109	...	...	...	(7 yr.)	42.81	142	...	30.18	...	...	14.46	...	...
8	...	...	...	19.74	114	21.07	42.59	...	...	59.17	155	...	33.15	...	23.22	23.62	...	19.24
9	...	...	...	25.44	110	(9 yr.)	...	...	...	21.49	140	58.27	44.25	...	(9 yr.)	33.52	...	(8 yr.)
1850	...	...	...	19.56	84	...	...	...	...	44.88	157	...	26.98	...	...	14.51	...	...
1	...	...	...	30.86	128	...	...	...	...	35.14	142	...	...	...	...	17.98	...	...
2	...	...	...	27.44	118	...	...	...	...	43.79	143	...	...	...	...	23.62	...	...
3	...	...	...	27.08	128	...	...	...	...	46.12	130	...	...	...	...	14.52	...	...
4	...	...	...	15.35	105	...	...	...	...	29.29	136	...	...	...	...	30.54	...	...
5	...	...	...	23.15	121	...	...	...	...	52.86	138	...	28.21	...	...	18.25	...	...
6	...	...	...	24.93	118	...	...	...	...	43.31	116	...	...	...	...	22.73	151	...
7	...	...	...	22.15	105	...	...	...	...	50.95	135	...	28.90	138	...	17.14	113	...
8	...	...	...	21.55	107	23.75	43.00	...	...	39.60	129	40.75	26.01	158	...	33.07	129	22.59
9	...	...	...	14.85	95	...	35.00	...	...	42.01	137	...	21.52	156	...	23.31	...	...
1860	...	...	...	19.67	119	...	54.63	144	...	82.76	180	...	25.38	133	...	21.05	...	...
1	...	...	...	24.04	147	...	69.45	155	...	59.36	157	...	29.16	159	...	28.19	...	...
2	...	...	...	21.85	119	...	28.27	98	...	23.99	108	...	22.08	139	...	21.72	...	...
3	...	...	...	19.68	145	...	68.83	146	...	47.08	152	...	36.42	165	...	40.67	...	...
4	...	...	...	23.75	121	...	47.00	114	...	69.12	185	...	27.40	144	...	28.11	...	...
5	...	...	...	15.51	108	...	24.11	52	...	36.15	140	...	15.94	119	...	23.07	...	...
6	...	...	...	20.11	116	...	51.18	142	...	36.91	156	...	22.41	107	...	23.55	...	...
7	...	...	...	19.05	112	...	61.04	112	...	59.56	140	...	25.79	133	...	22.27	...	...
8	...	...	...	19.93	113	19.85	35.98	110	47.55	42.98	161	49.99	18.27	120	24.47	18.08	...	25.00
9	...	...	...	14.74	117	...	54.39	114	...	48.00	150	...	24.58	129	...	23.67	...	...
1870	...	...	...	23.84	119	...	79.06	154	...	64.47	179	...	33.77	129	...	27.53	...	...
1	...	...	...	23.25	137	...	45.45	119	...	52.27	141	...	30.17	125	...	19.25	131	...
2	...	...	...	22.66	146	...	49.22	131	...	37.12	161	...	32.52	136	...	31.76	160	...
3	...	...	...	21.00	139	...	62.02	138	...	73.40	176	...	25.61	134	...	23.43	...	...
4	...	...	...	17.23	127	...	38.71	135	...	63.60	173	...	28.10	194	...	24.09	138	...
5	...	...	...	29.21	157	...	67.03	162	...	46.25	153	...	32.57	158	...	29.25	181	...
6	28.73	100	...	13.43	110	...	53.42	130	...	45.69	156	...	24.04	134	...	23.63	...	...
7	20.48	103	...	24.95	135	...	30.28	119	...	59.66	147	...	24.14	124	...	20.22	...	...
8	39.72	143	29.64	22.08	112	21.24	56.33	134	53.59	49.77	129	54.03	25.36	116	28.11	29.76	...	25.24
9	41.34	106	(3 yr.)	20.69	130	...	67.30	157	...	63.19	167	...	19.28	127	...	21.07	...	...
1880	...	...	...	31.79	116	...	49.12	134	...	29.51	142	...	28.48	147	...	...	...	...
1	24.78	101	...	18.02	135	...	29.39	117	...	40.99	163	...	24.08	134	...	...	...	...
2	35.63	109	...	15.70	134	...	43.62	121	...	42.28	112	...	22.40	131	...	30.69	...	...
3	35.63	122	...	26.76	161	...	32.22	114	...	46.92	157	...	23.71	130	...	24.05	160	...
4	31.06	92	...	18.74	138	...	43.49	136	...	44.04	159	...	25.85	128	...	21.55	171	...
5	33.44	110	...	15.89	133	...	36.85	112	...	39.91	145	...	26.94	129	...	23.29	176	...
6	28.90	89	...	14.42	141	...	56.56	152	...	39.43	152	...	24.00	128	...	21.39	189	...
7	37.52	106	...	25.70	164	...	81.54	242	...	60.16	190	...	32.39	153	...	24.21	174	...
8	27.83	117	33.29	14.55	131	19.30	33.08	143	45.93	23.01	132	42.94	27.14	125	24.66	18.45	151	23.71
9	39.96	123	...	30.87	143	...	49.36	155	...	57.16	186	...	27.14	125	...	30.80	180	(8 yr.)
1890	46.73	126	...	25.78	139	...	73.02	162	...	81.42	184	...	24.24	140	...	27.51	173	...
1	30.33	93	...	14.01	113	...	41.68	143	...	35.30	200	...	26.73	126	...	23.25	160	...
2	31.23	122	...	21.53	137	...	64.98	146	...	69.26	189	...	24.96	124	...	18.62	...	...
3	40.12	145	...	21.49	129	...	88.26	147	...	49.90	209	...	26.80	140	...	27.46	146	...
4	23.72	103	...	20.78	134	...	44.02	143	...	38.32	138	...	22.60	138	...	27.39	151	...
5	33.01	123	...	21.28	130	...	59.11	105	...	31.36	170	...	17.04	131	...	25.40	119	...
6	31.50	103	...	15.17	121	...	44.97	121	...	42.40	157	...	25.16	124	...	21.61	136	...
7	27.17	106	...	15.42	119	...	42.53	115	...	42.52	136	...	25.85	117	...	20.45	153	...
8	31.76	118	33.55	20.75	116	20.71	60.06	131	56.80	43.17	143	51.12	15.61	102	23.61	20.40	164	24.29
9	32.40	107	...	18.84	119	...	38.85	141	...	55.90	174	...	28.87	116	...	20.68	170	...
1900	36.61	124	...	21.68	133	...	34.41	110	...	66.54	170	...	28.09	139	...	19.14	135	...
1	36.75	122	...	18.01	124	...	38.48	110	...	40.10	149	...	27.45	113	...	25.11	147	...
2	27.06	93	...	16.02	123	...	16.17	87	...	43.07	180	...	23.03	102	...	21.85	151	...
3	35.69	140	...	25.47	134	...	49.27	136	...	38.62	173	...	28.43	130	...	25.86	139	...
4	34.35	125	...	20.31	117	...	33.23	124	...	45.93	158	...	29.72	128	...	22.41	139	...
5	34.61	116	...	22.28	131	...	36.76	108	...	35.03	145	...	25.64	129	...	32.09	168	...
6	32.37	121	...	26.51	127	...	42.85	125	...	31.89	160	...	22.29	114	...	23.31	155	...
7	40.12	132	...	17.78	125	...	31.46	119	...	31.32	132	...	22.26	102	...	25.92	167	...
8	30.52	106	34.05	24.56	125	21.15	44.01	125	36.55	45.65	167	43.41	17.72	130	25.36	16.50	149	23.29
9	39.11	107	...	27.69	138	...	34.06	111	...	32.45	177	...	25.86	171	...	27.29	170	...
1910	37.02	135	...	24.62	116	...	49.00	133	...	46.91	160	...	24.61	167	...	25.22	205	...
1	32.38	108	...	15.99	127	...	35.15	128	...	50.24	155	...	36.61	168	...	26.78	193	...
2	27.85	123	...	19.57	116	...	41.32	114	...	47.51	172	...	20.37	157	...	23.14	181	...
3	38.28	141	...	18.16	102	...	40.79	115	...	57.70	141	...	21.17	157	...	19.36	165	...
4	20.21	128	...	11.39	91	...	33.99	141	...	56.42	149	...	18.57	129	...	15.42	154	...
Aver. No. of Yrs.	...	...	32.91	...	...	20.88	...	...	46.41	...	...	48.51	...	...	26.02	...	...	23.39
			(39)			(75)			(65)			(75)			(71)			(72)

NOTE.—The above average Rainfall figures for Brisbane, Sydney, and Melbourne differ slightly from the mean annual falls given in the Climatological Tables on pp. 77-79, which are for a less number of years.

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

HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1914, 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...	12 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
Bulli Mountain	13 Feb., 1898	17.14	Prospect ...	28 May, 1889	12.37
Camden Haven	22 Jan., 1895	12.23	Richmond ...	28 " "	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	Tomago ...	9 Mar., 1893	13.76
" ...	13 Jan., 1911	14.52	Tongarra Farm ...	14 Feb., 1898	15.12
Dapto West ...	14 Feb., 1898	12.05	Towamba ...	5 Mar., 1893	20.00
Dunheved ...	28 May, 1889	12.40	The Hill(Shell Harb.)	24 Mar., 1914	12.00
Holy Flat ...	12 Mar., 1887	12.00	Sherwood ...	17 June, 1914	10.00
" ...	28 Feb., 1892	12.24	Stockyard Mt. ...	24 Mar., 1914	10.72
Jamberoo ...	23 Mar., 1914	10.22	South Head		
" ...	24 " "	11.28	(near 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	11.68
Leconfield ...	9 Mar., 1893	14.53	Wollongong ...	24 " "	12.50
Madden's Creek	13 Jan., 1911	18.63			

HEAVY RAINFALLS, QUEENSLAND, UP TO 1914, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Allomba (Cairns) ...	30 Jan., 1913	13.50	Cairns ...	11 Feb., 1911	15.17
Anglesey ...	26 Dec., 1909	18.20	" ...	2 Apr., "	20.16
Atherton (Cairns) ...	31 Jan., 1913	16.69	" ...	31 Jan., 1913	13.94
Ayr ...	20 Sep., 1890	14.58	Cape Grafton ...	5 Mar., 1896	13.37
Babinda (Cairns) ...	31 Jan., 1913	12.79	Cardwell ...	30 Dec., 1889	12.00
" ...	1 Feb., 1913	20.51	" ...	23 Mar., 1890	12.00
Banyan (Cardwell) ...	31 Jan., 1913	13.79	" ...	18 " 1904	18.24
Barrine (Cairns) ...	31 " 1913	13.34	" ...	3 Apr., 1911	12.84
Bloomsbury ...	14 Feb., 1893	17.40	Clare ...	26 Jan., 1896	15.30
" ...	10 Jan., 1901	16.62	Coen ...	17 Feb., 1914	12.03
Bowen ...	13 Feb., 1893	14.65	Collaroy ...	30 Jan., 1896	14.25
Brisbane ...	21 Jan., 1887	18.31	Cooktown ...	22 " 1903	12.49
Bromby Park (Bowen)	14 Feb., 1893	13.28	" ...	23 " 1914	13.98
Brookfield ...	14 Mar., 1908	14.95	Cooran ...	1 Feb., 1893	13.62
Buderim Mountain ...	11 Jan., 1898	26.20	" ...	26 Dec., 1908	14.08
Bundaberg ...	16 " 1913	16.94	Cooroy ...	9 June, 1893	13.60
Burketown ...	15 " 1891	13.58	" ...	10 Jan., 1898	13.50
" ...	12 Mar., 1903	14.52	Crohamhurst		
Burnett Head			(Blackall Range)	2 Feb., 1893	35.71
(Bundaberg) ...	16 Jan., 1913	15.22	" ...	9 June, "	13.31
Bustard Head ...	17 " 1913	14.93	" ...	9 Jan., 1898	19.55
Cairns ...	11 Feb., 1889	14.74	" ...	6 Mar. "	16.01
" ...	21 Apr., "	12.40	" ...	26 Dec., 1909	13.85
" ...	5 " 1891	14.08			

HEAVY RAINFALLS, QUEENSLAND—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Crow's Nest ...	2 Aug., 1908	11.17	Harvey Creek ...	11 Jan., 1905	16.96
Croydon ...	29 Jan., 1908	15.00	" "	28 " 1906	12.29
Cryna (Beaudesert) ...	21 " 1887	14.00	" "	14 " 1909	14.40
Dungeness ...	16 Mar., 1893	22.17	" "	3 " 1911	27.75
" "	17 Apr., 1894	14.00	" "	11 Feb., "	12.88
Dunira ...	9 Jan., 1898	18.45	" "	1 Apr., "	13.61
" "	6 Mar., "	15.95	" "	2 " "	16.46
Eddington (Cloncurry) ...	23 Jan., 1891	10.33	" "	31 Jan., 1913	24.72
Emu Park ...	18 " 1913	12.75	Haughton Valley ...	26 Jan., 1896	18.10
Enoggera Railway ...	14 Mar., 1908	12.14	Herberton ...	31 Jan., 1913	14.00
Ernest Junction ...	" "	13.00	Hillcrest (Mooloolah) ...	26 Dec., 1909	13.35
Fairymead Plantation (Bundaberg) ...	16 Jan., 1913	15.32	Holmwood (Woodf'd) ...	2 Feb., 1893	16.19
Flat Top Island ...	22 Dec., 1909	12.96	" "	10 Jan., 1898	12.40
Floraville ...	6 Jan., 1897	10.79	Homebush ...	3 Feb., "	12.04
" "	11 Mar., 1903	12.86	Howard ...	15 Jan., 1905	19.55
Flying Fish Point ...	7 Apr., 1912	16.06	Ingham ...	18 " 1894	12.60
" "	31 Jan., 1913	16.10	" "	6 " 1901	13.59
Gatcombe Head (Gladstone) ...	18 Jan., 1913	12.88	" "	25 Dec., 1903	12.30
Gin Gin ...	16 " 1905	13.61	Inkerman ...	21 Sep., 1890	12.93
" "	16 " 1913	12.27	Inneshowen (Johnstone River) ...	30 Dec., 1889	14.01
Gladstone ...	18 Feb., 1888	12.37	Innisfail (formerly Geraldton) ...	11 Feb., 1889	17.13
" "	31 Jan., 1893	14.62	" "	31 Dec., "	12.45
" "	4 Feb., 1911	18.83	" "	6 Apr., 1894	16.02
Glen Boughton ...	5 Apr., 1894	18.50	" "	18 " 1899	13.20
" "	31 Jan., 1913	14.92	" "	24 Jan., 1900	15.22
Glen Prairie ...	18 Apr., 1904	12.18	" "	29 Dec., 1903	21.22
Gold Creek Reservoir ...	14 Mar., 1908	12.50	" "	11 Feb., 1911	14.48
Goldsborough (Cairns) ...	31 Jan., 1913	19.92	" "	1 Apr., 1911	12.35
" "	1 Feb., 1913	12.22	" "	2 " "	15.00
Goodwood (Bund'berg) ...	16 Jan., 1913	13.07	" "	7 " 1912	20.50
Goondi Mill (Innisfail) ...	6 Apr., 1894	15.69	" "	8 " "	12.15
" "	18 Apr., 1899	14.78	" "	31 Jan., 1913	20.91
" "	24 Jan., 1900	13.30	Invicta (Kolan R.) ...	16 Jan., 1913	14.58
" "	29 Dec., 1903	17.83	Isis Junction ...	6 Mar., 1898	13.60
" "	10 Feb., 1911	17.68	Kamerunga (Cairns) ...	20 Jan., 1892	13.61
" "	31 Mar., "	12.38	" "	6 Apr., 1894	14.04
" "	1 Apr., "	13.60	" "	5 " 1895	12.31
" "	6 Apr., 1912	15.55	" "	11 Feb., 1911	13.07
Goondi ...	30 Jan., 1913	24.10	" "	1 Apr., "	14.20
Granada (formerly Donaldson) ...	27 Jan., 1891	11.29	" "	2 " "	21.00
" "	8 " 1911	13.50	" "	31 Jan., 1913	16.00
" "	9 " "	14.30	Kulara (Cairns) ...	31 " "	12.69
Halifax ...	5 Feb., 1899	15.37	Kuranda (Cairns) ...	6 Mar., 1899	14.12
" "	6 Jan., 1901	15.68	" "	20 Apr., 1903	14.16
" "	8 Apr., 1912	12.75	" "	14 Jan., 1909	12.37
Hambledon Mill ...	13 Jan., 1909	13.80	" "	11 Feb., 1911	16.30
" "	2 " 1911	18.61	" "	17 Mar., "	15.10
" "	10 Feb., "	13.97	" "	31 " "	18.60
" "	30 Mar., "	13.04	" "	1 Apr., "	24.30
" "	31 " "	14.95	" "	2 " "	28.80
" "	1 Apr., "	19.62	" "	31 Jan., 1913	16.34
" "	30 Jan., 1913	17.32	Lake Nash ...	10 Jan., 1895	10.25
Harvey Creek ...	8 Mar., 1899	17.72	" "	20 Mar., 1901	10.02
" "	25 Jan., 1900	12.53	Landsborough ...	2 Feb., 1893	15.15
" "	25 May, 1901	14.00	" "	9 June, "	12.80
" "	14 Mar., 1903	12.10			

HEAVY RAINFALLS, QUEENSLAND—Continued.

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

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 1914, INCLUSIVE.

Alice Downs ...	20 Jan., 1914	ins. 8.12	Cossack ...	3 Apr., 1898	ins. 12.82
" ...	21 " "	5.33	" ...	16 " 1900	13.23
" ...	22 " "	4.04	Croydon ...	3 Mar., 1903	12.00
Balla Balla ...	21 Mar., 1899	14.40	Cocos Island ...	29 Nov., "	14.38
Boodarie ...	21 " "	14.53	Derby ...	29 Dec., 1898	13.09

HEAVY RAINFALLS, WESTERN AUSTRALIA--Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Derby ...	30 Dec., 1898	7.14	Whim Creek ...	20 Mar., 1899	8.89
Fortescue ...	3 May, 1890	23.36	" ...	21 " "	18.17
Kerdiadary ...	7 Feb., 1901	12.00	Woodstock ...	21 " 1912	13.00
Meda ...	9 Jan., 1914	2.87	Wyndham ...	27 Jan., 1890	11.60
" ...	10 " "	8.72	" ...	11 " 1903	9.98
Obagama ...	28 Feb., 1910	12.00	" ...	12 " "	6.64
Point Torment ...	17 Dec., 1906	11.86	" ...	13 " "	4.20
Thangoo ...	17-19 Feb. '96	24.18	Yeeda ...	28 Dec., 1898	8.42
Whim Creek ...	2 Apr., 1898	7.08	" ...	29 " "	6.88
" ...	3 " "	29.41	" ...	30 " "	6.12

HEAVY RAINFALLS, NORTHERN TERRITORY, UP TO 1914, INCLUSIVE.

		ins.			ins.
Borroloola ...	14 Mar., 1899	14.00	Lake Nash ...	21 Mar., 1901	10.25
Brock's Creek ...	4 Jan., 1914	10.68	Pine Creek ...	8 Jan., 1897	10.35
Burrundie... ..	4 " "	11.61	Darwin ...	7 Jan., 1897	11.67

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.

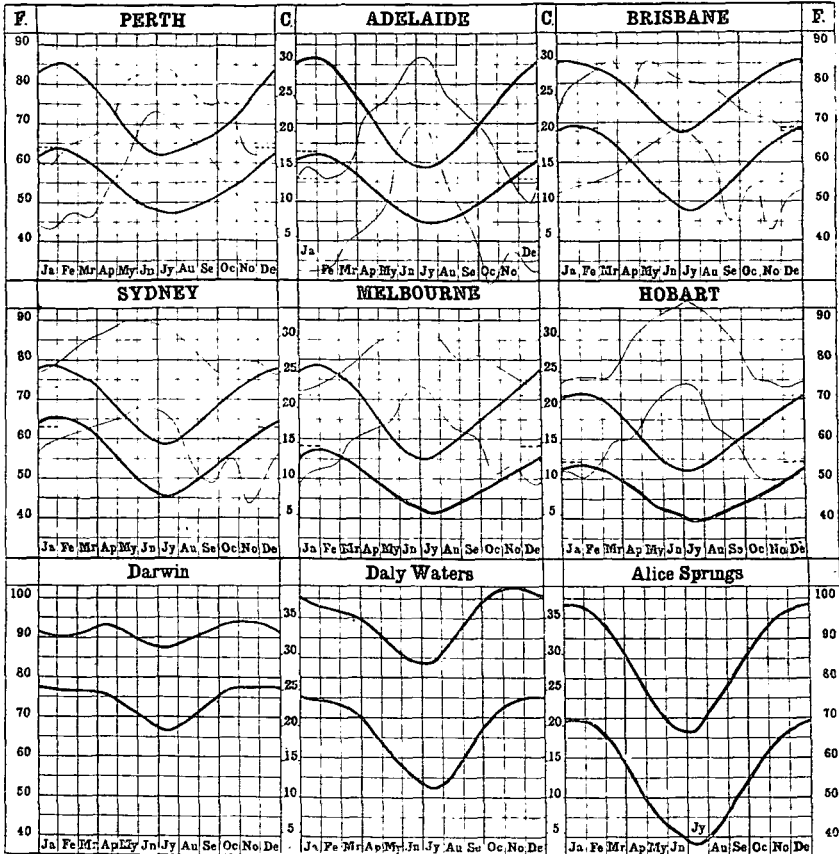
The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

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.

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 shewn throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shewn 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.

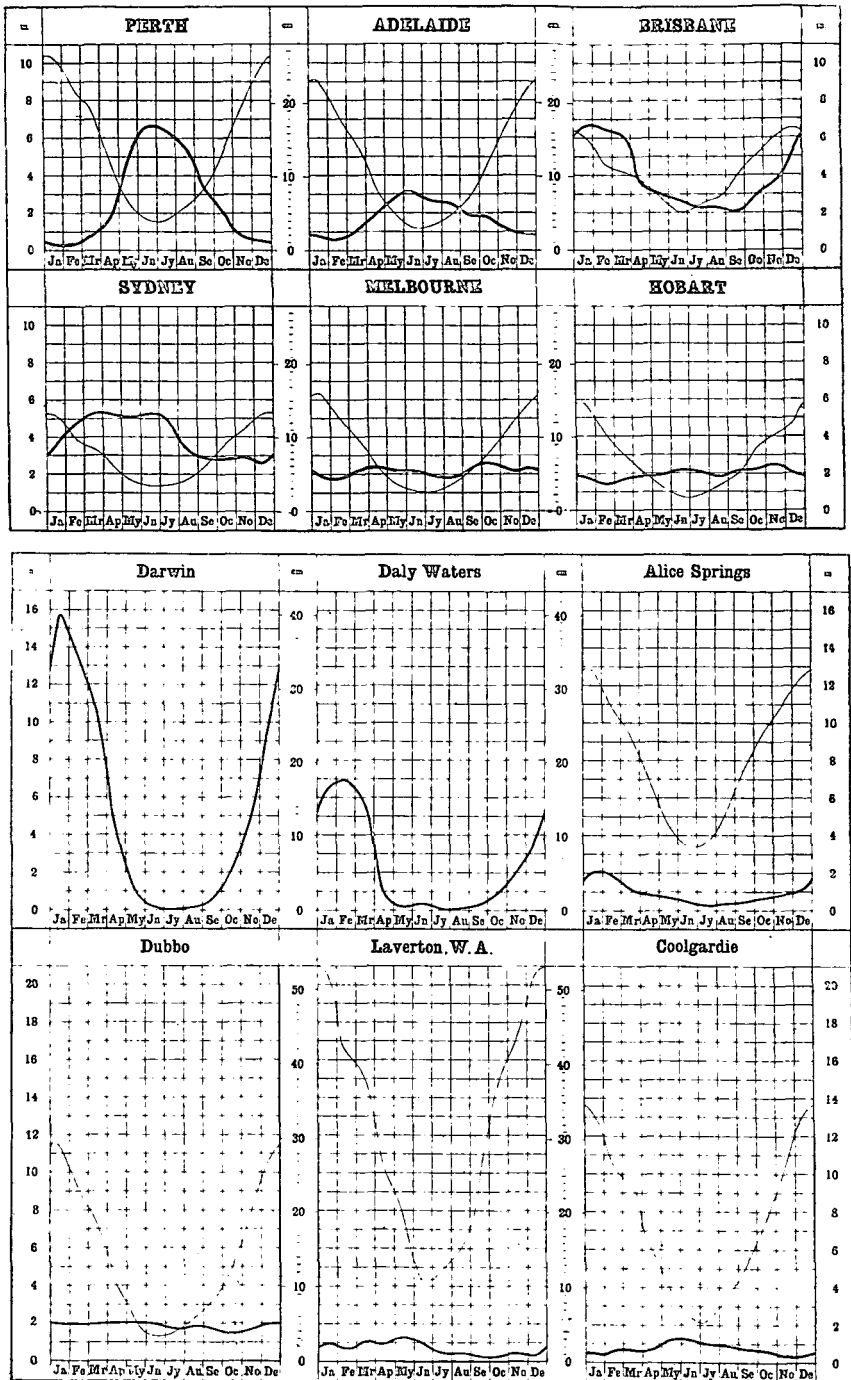
For the thin lines the degree numbers represent relative humidities, or the percentages of actual saturation on the total for the respective temperatures.

The upper temperature line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also shew the progression of the range between maximum and minimum temperatures throughout the year. The humidity curves shew 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 47%; in other words, at Perth, the degree of saturation of the atmosphere by aqueous vapour for the month of March ranges between 66% and 47%.

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



(For Explanation see next page.)

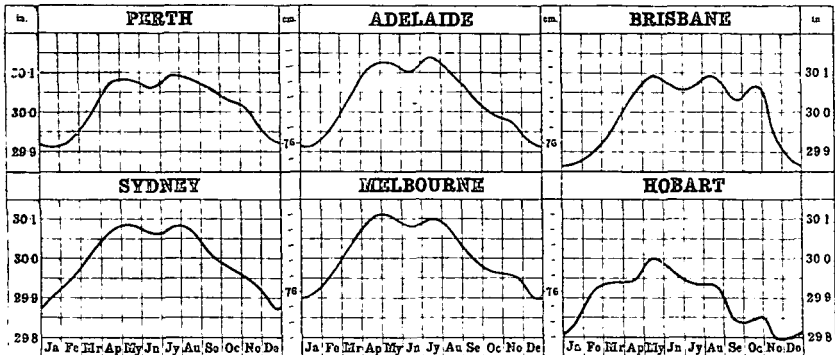
EXPLANATION OF THE GRAPHS OF RAINFALL AND EVAPORATION.—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter, are shewn in inches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

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 OF THE PLACES SHEWN ON PRECEDING PAGE, AND REPRESENTED BY THE GRAPHS.

	Rainfall.	Evapora- tion.		Rainfall.	Evapora- tion.
Perth ...	32.91	66.33	Darwin... ..	61.23	—
Adelaide ...	20.88	54.26	Daly Waters ...	26.55	—
Brisbane ...	46.65	50.17	Alice Springs...	10.86	96 10
Sydney ...	48.51	37.14	Dubbo ...	23.79	—
Melbourne ...	25.32	38.59	Laverton, W.A.	9.30	145.19
Hobart ...	23.39	33.29	Coolgardie ...	9.21	57.03

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 shewn in inches on about $2\frac{1}{2}$ times the natural scale, and the corresponding pressures in centimetres are also shewn 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 29.87 inches, and there are maxima in the middle of May and August of about 30.09 inches, and in October of about 30.07 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.

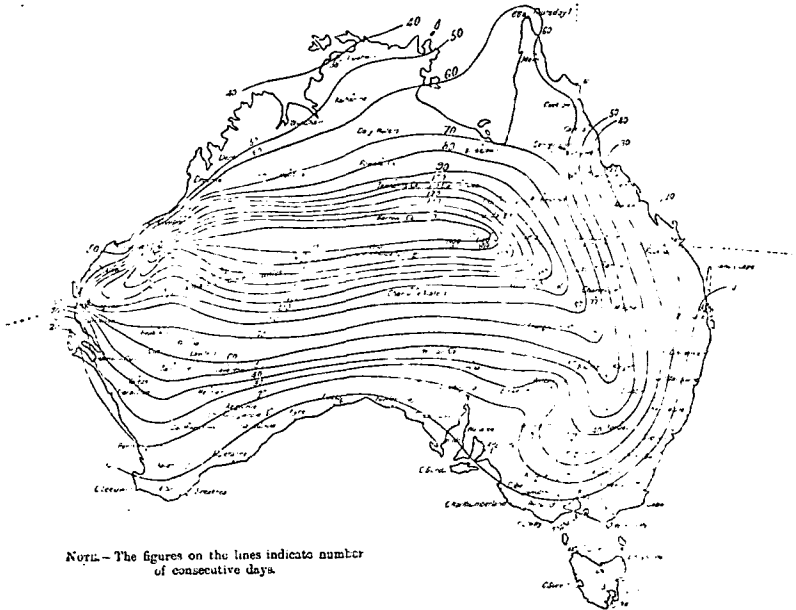
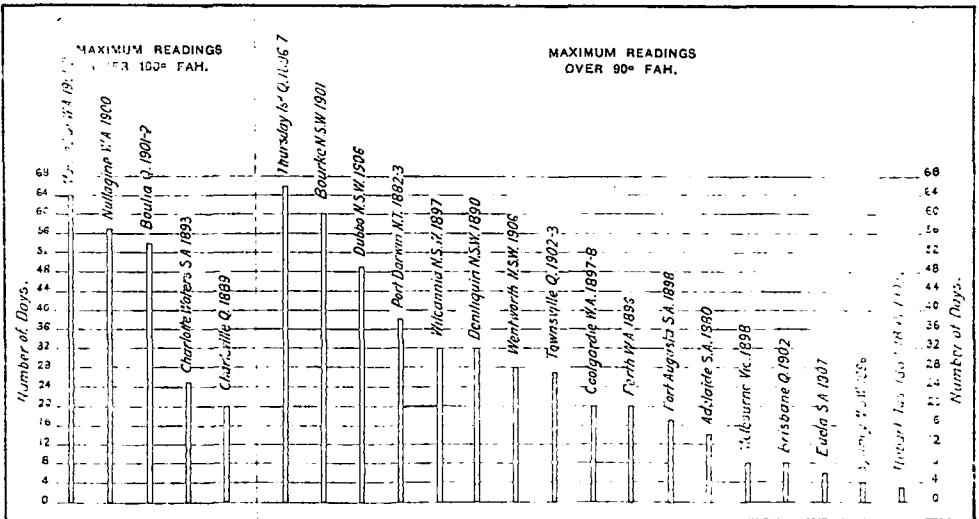
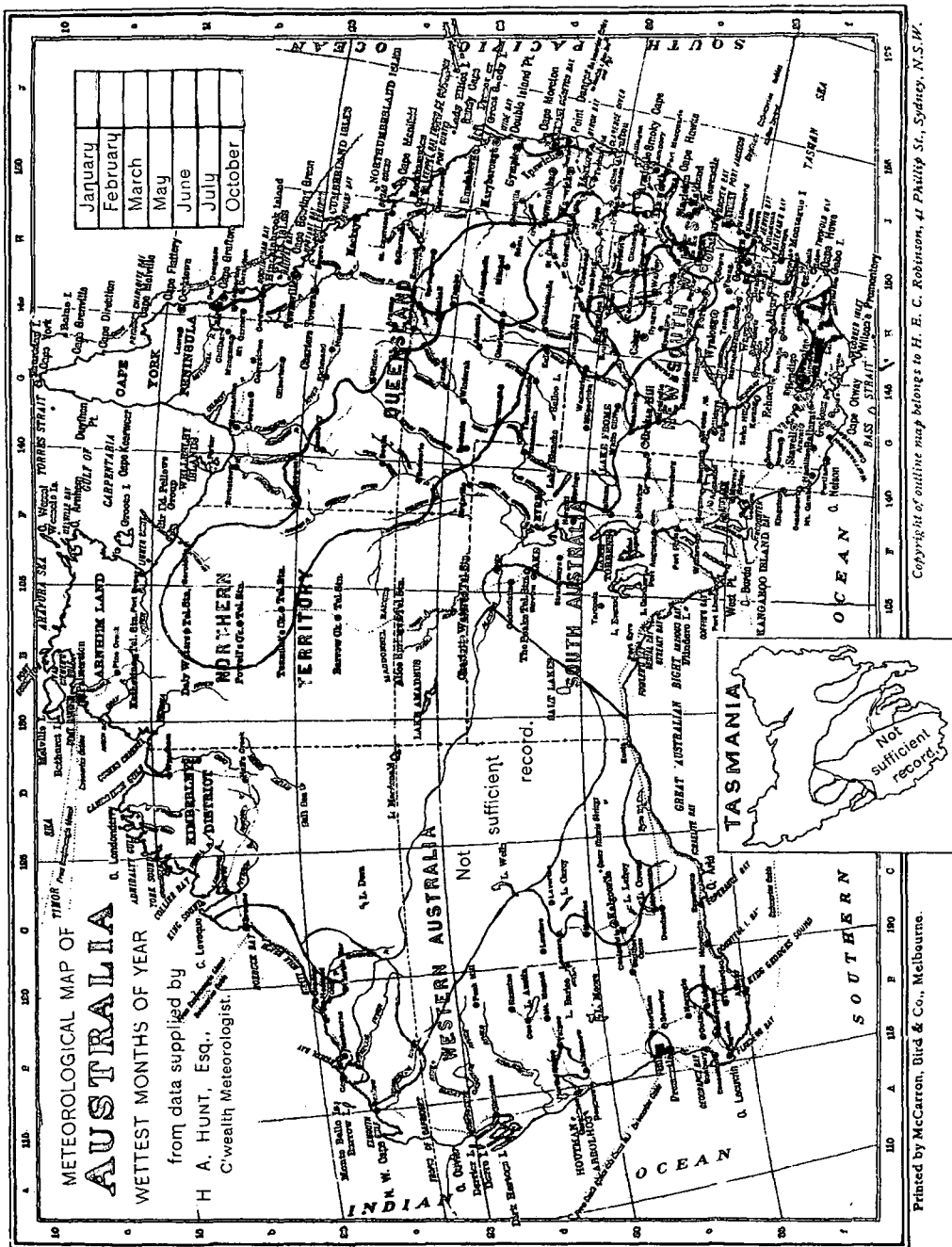


Diagram showing the greatest number of consecutive days on which the Temperature in the shade was over 100° and also over 90° at the places indicated.

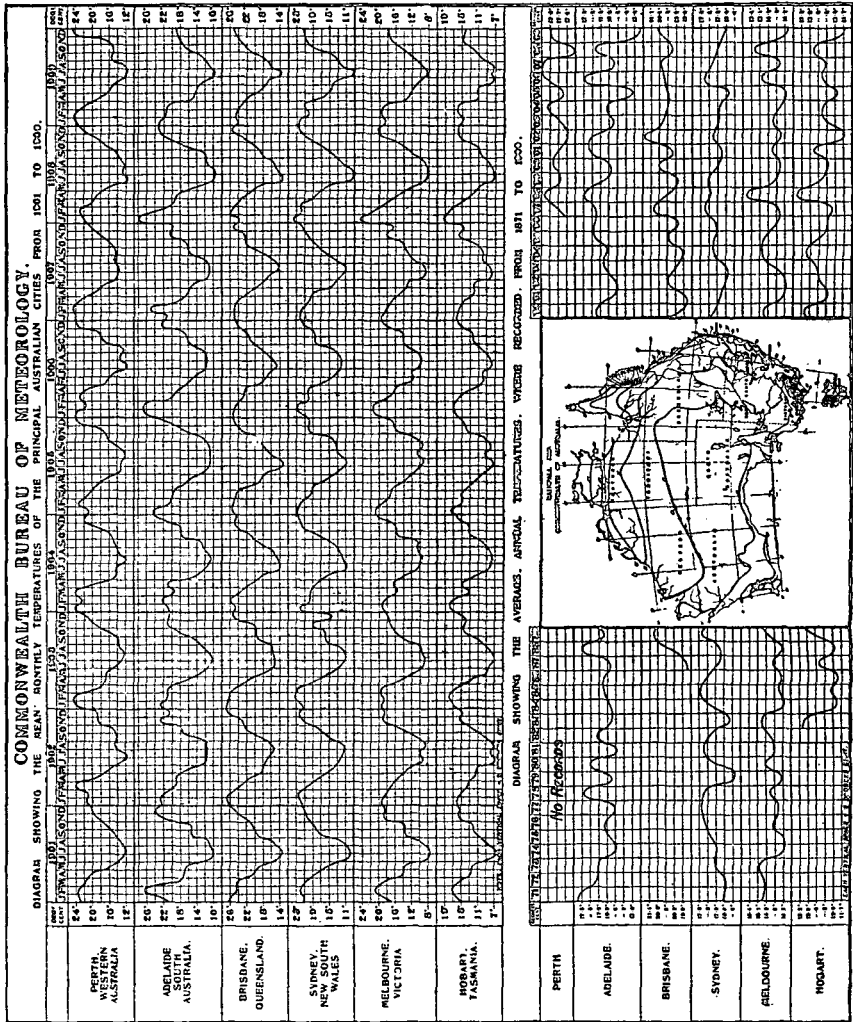




METEOROLOGICAL SUB-DIVISIONS.

- | | | | | | | | | |
|--------------------|---------------------|------------------------|-------------------------|-------------------------|-----|------------------------|-----|--------------------|
| WEST AUSTRALIA. | No. | 11. Upper North. | No. | 22. Central Coast. | No. | 32. Central Tableland. | No. | 43. North Central. |
| 1. East Kimberley. | 12. North-East. | 23. South-East Coast. | 33a. Metropolitan. | 44. Northern Country. | | | | |
| 2. West Kimberley. | 13. Lower North. | 24. Darling Downs. | 34. Cent. Westn. Slope. | 45. Mallee. | | | | |
| 3. North-West. | 14. Central. | 25. Maranoa. | 35. Cent. Westn. Plain. | 46. Wimmera. | | | | |
| 4. Gascoyne. | 15. Murray Valley. | 26. South-West. | 36. Riverina. | 47. Western. | | | | |
| 5. South-West. | 16. South-East. | | 37. South-West Slope. | | | | | |
| 6. Eucla. | | | 38. Southern Tableland | | | | | |
| 7. Eastern. | | | 39. South Coast. | | | | | |
| | QUEENSLAND. | NEW SOUTH WALES. | | TASMANIA. | | | | |
| | 17. Peninsular. | 27. Western. | | 48. Northern. | | | | |
| | 18. Gulf. | 28. North-West Plain. | | 49. W. Coast Mt. Region | | | | |
| | 19. Far West. | 29. North-West Slope. | | 50. Central Plateau. | | | | |
| | 20. Central. | 30. Northern Tableland | | 51. Midland. | | | | |
| | 21. Nth-East Coast. | 31. North Coast. | | 52. East Coast. | | | | |
| | | 32. Hunter & Manning. | | 53. Derwent. | | | | |
| | | | | 54. South-Eastern. | | | | |

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

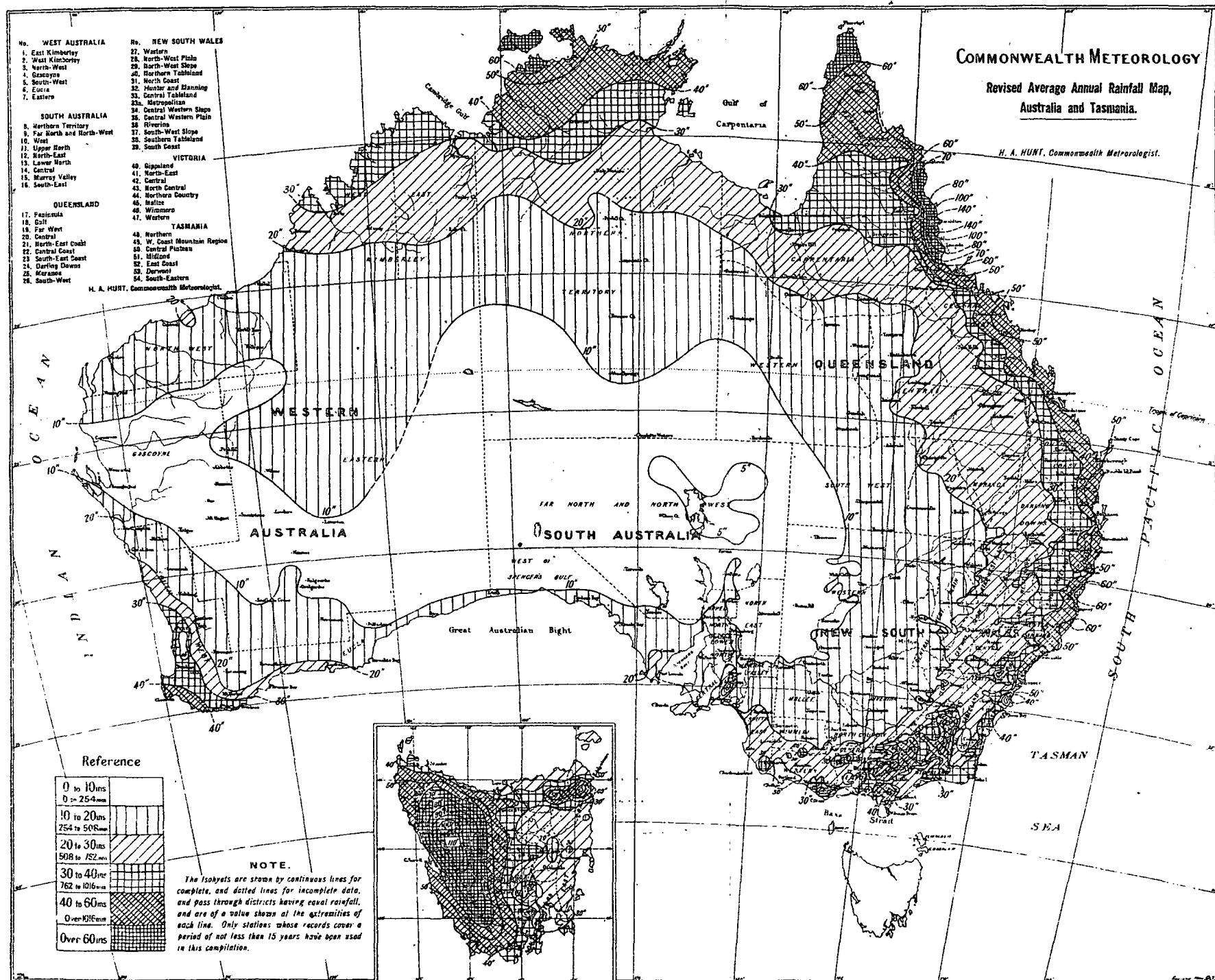


EXPLANATION OF GRAPH.

The six continuous curves on the upper part of the diagram shew the fluctuations of mean monthly temperatures of the Australian capitals from 1901 to 1909. The base of each small square denotes one month, and the vertical side 2° Centigrade or 3.6° Fahrenheit.

The six curves in lower portion of the diagram similarly shew the fluctuations of the mean annual temperatures, from 1871 in the case of Adelaide, Sydney and Melbourne, from 1883, 1887 and 1897 in the case respectively of Hobart, Brisbane and Perth. The base of each rectangle represents one year, and the vertical side 0.3° Centigrade or 0.54° Fahrenheit.

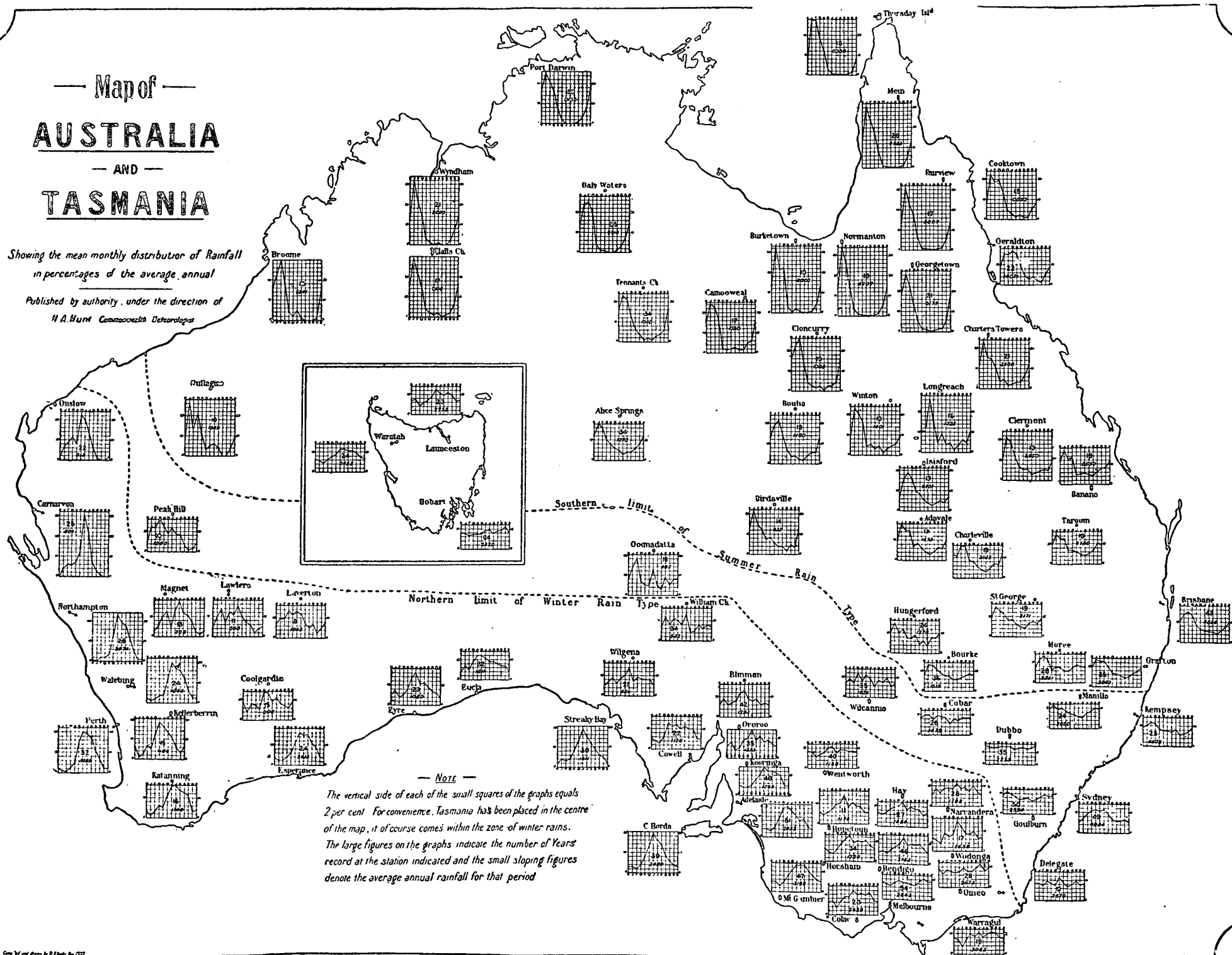
The map shows the areas affected by given amounts of annual rainfall, and is elsewhere given.



— 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



In January the mean pressure ranges from 29.70 inches in the northern and central areas to 29.91 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, have, under anticyclonic conditions in the interior of the continent, ranged from 30.81 inches to as low as 28.44 inches. This lowest record was registered at Townsville during a hurricane on the 9th March, 1903. 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 three 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 recurving 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 December to March 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 shews 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 Forest 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:—

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	28.01	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	94.9	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	95	25.45	35.30	13.54	61.1	43.4	95.7	21.3	61.6	42.4
Christiania	82	29.52	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	29.33	28.78	13.94	60.7	32.1	90.5	-13.0	62.2	31.4
Copenhagen	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	33.3
Geneva	1,328	33.48	46.89	21.14	64.4	33.7	95.7	16.7	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	69.2	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
Lyon	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	45.0	99.1	3.9	75.4	46.8
New York	314	42.47	59.68	28.78	73.1	31.7	100.0	-33.0	69.7	32.0
Ottawa	294	33.40	44.44	26.36	67.2	14.1	98.5	-14.1	65.3	36.1
Paris	165	21.92	32.56	16.44	63.5	37.1	101.1	-5.0	79.2	23.6
Pekin	143	24.40	36.00	18.00	77.7	26.6	114.0	-34.3	66.3	10.1
Quebec	286	40.46	47.57	32.12	63.5	12.4	95.5	-17.2	76.1	44.6
Rome	166	32.57	57.89	12.72	74.3	46.0	104.2	29.0	69.0	50.0
San Francisco	155	22.83	38.82	9.31	59.0	51.0	101.0	10.2	79.7	37.4
Shanghai	14	44.13	62.52	27.91	77.4	39.4	102.9	63.4	81.5	78.3
Singapore	8	91.99	158.68	32.71	81.2	76.6	94.2	-22.0	62.1	25.7
Stockholm	146	18.31	25.46	11.78	59.7	27.0	91.8	-38.2	63.7	15.2
Petrograd	16	21.30	29.52	13.76	61.1	17.4	97.0	15.4	77.7	37.1
Tokio	70	59.17	77.10	45.72	73.9	38.9	97.9	14.0	76.3	39.9
Trieste	35	42.94	63.14	26.57	73.9	41.3	99.5	-8.0	67.1	28.0
Vienna	663	24.50	33.90	16.50	65.7	30.4	97.7	-21.8	69.4	6.1
Vladivostok	55	19.54	33.60	9.39	63.9	11.0	95.7	-15.0	76.8	32.9
Washington	75	43.80	61.33	18.79	74.7	34.5	104.0	30.0	62.4	47.5
Wellington (N.Z.)	110	49.70	67.68	30.02	61.7	48.4	98.0	-0.8	65.1	29.5
Zurich	1,542	45.15	78.27	29.02	63.3	31.3	94.1			

FEDERAL CAPITAL SITE.

Canberra (Dist.)	{ 2,000 to 2,900 }	22.20	41.29	10.45	68.3	43.9	101.0	20.0	70.0	42.9
Queanbeyan	{ 2,900 }									

THE STATE CAPITALS.

Perth	197	32.91	46.73	20.21	72.9	55.8	107.9	34.3	74.1	54.9
Adelaide	140	20.88	30.87	11.39	73.1	52.9	116.3	32.0	74.1	51.5
Brisbane	137	46.41	88.26	16.17	76.8	59.6	108.9	36.1	77.2	58.2
Sydney	146	48.51	92.76	21.49	70.9	53.9	108.5	35.9	71.6	52.4
Melbourne	115	26.02	44.25	15.61	66.5	50.0	111.2	27.0	67.4	48.5
Hobart	160	23.39	40.67	13.43	61.7	46.7	105.2	27.0	62.4	45.3

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

17. Climatological Tables.—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals. These are given in the following tables:—

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. at Sea Level and Standard Gravity from 9 a.m. & 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds. 9 a.m. & 3 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	30	17	17	17	17	16	17	18	18
January ...	29.912	797 27/98	0.70	11,396	S	10.42	1.3	2.7	13.9
February ...	29.928	650 6/08	0.66	10,089	SSE	8.71	1.1	2.9	11.6
March ...	29.988	651 6/13	0.57	10,257	SSE	7.75	0.9	3.3	11.6
April ...	30.074	955 25/00	0.43	8,654	SE	4.79	0.8	4.5	7.1
May ...	30.088	768 5/12	0.35	8,068	ENE	2.77	1.8	5.4	5.2
June ...	30.070	861 27/10	0.38	8,050	NNE	1.74	1.7	6.0	3.3
July ...	30.098	949 11/99	0.40	8,528	NNE	1.66	2.3	5.6	5.2
August ...	30.088	966 15/03	0.42	8,818	W	2.37	1.3	5.4	5.1
September ...	30.063	864 11/05	0.48	9,095	SW	3.37	1.5	5.2	5.5
October ...	30.034	686 15/98	0.54	9,991	SSW	5.30	1.1	5.2	5.3
November ...	29.994	777 18/97	0.60	10,256	S	7.70	0.9	4.0	7.5
December ...	29.932	672 31/98	0.66	11,018	S	9.75	1.5	3.2	10.9
Year { Totals ...	—	—	—	—	—	66.33	16.2	—	92.2
Averages ...	30.022	—	0.51	9,519	S	—	—	4.4	—
Extremes ...	—	966 15/8/03	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water 3 ft. below surface
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	18	18	18	18	18	18	17	16	—
January ...	84.3	63.0	73.6	107.0	16/97	56.4	177.3 23/14	42.4 25/02	—
February ...	84.9	63.3	74.1	106.8	6/98	47.7 1/02	59.1 169.0 4/99	39.8 1/13	—
March ...	81.5	60.7	71.1	106.1	6/14	45.8 8/03	60.3 164.0 6/14	36.7 8/03	—
April ...	75.7	56.7	66.2	99.7	9/10	39.3 20/14	60.4 156.8 2/13	31.0 20/14	—
May ...	68.7	52.2	60.4	90.4	2/07	34.3 11/14	56.1 139.1 7/14	25.3 11/14	—
June ...	63.8	49.0	56.4	81.7	3/14	36.3 29/14	45.4 135.5 9/14	29.9 21/14	—
July ...	62.4	47.4	54.9	73.8	24/99	36.4 19/06	37.4 132.9 25/13	27.6 21/11	—
August ...	64.0	48.1	56.0	81.0	12/14	35.3 31/08	45.7 139.1 31/13	27.9 10/11	—
September ...	66.2	50.1	58.2	86.7	30/13	38.9 17/13	47.8 149.5 30/14	30.2 25/13	—
October ...	69.4	52.8	61.1	93.4	17/06	41.2 10/03	52.2 154.0 29/14	33.4 1/10	—
November ...	74.8	56.1	65.4	104.6	24/13	42.0 1/04	62.6 164.5 24/13	35.5 1/1	—
December ...	80.6	60.5	70.6	107.9	20/04	48.0 2/10	59.9 168.3 20/04	39.1 2/10	—
Year { Averages ...	73.0	55.0	64.0	—	—	—	—	—	—
Extremes ...	—	—	—	107.9 20/12/04	34.3 11/5/14	73.6	177.3 22/1/14	25.3 11/5/14	—

† 6/1910 and 14/1913.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean Daily.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days of 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	18	18	18	39	39	39	39	39	— 18
January ...	51	59	43	0.32	3	2.17 1879	nil	1.74 38/79	— 9.8
February ...	54	64	47	0.32	2	2.30 1883	nil	0.90 10/83	— 2.7
March ...	57	66	46	0.69	4	4.50 1896	nil	1.53 17/76	— 4.8
April ...	64	70	53	1.63	7	4.97 1882	0.05	2.62 30/04	— 8.9
May ...	73	81	61	4.71	13	12.13 1879	0.92 1903	2.80 20/79	— 12.7
June ...	78	83	72	6.54	16	12.11 1880	2.16 1877	3.65 16/00	— 12.3
July ...	78	84	72	6.41	17	10.90 1902	2.42 1876	3.00 4/91	— 12.7
August ...	74	79	67	5.58	18	10.33 1882	0.46 1902	2.79 7/03	— 11.2
September ...	68	75	62	3.29	14	7.72 1903	0.62 1914	1.73 23/09	— 9.2
October ...	63	75	54	2.07	11	7.87 1890	0.49 1892	1.38 15/10	— 6.0
November ...	56	63	50	0.78	6	2.13 1880	nil 1891	1.11 30/03	— 4.7
December ...	52	62	45	0.57	4	3.05 1888	nil 1886	1.72 1/88	— 3.4
Year { Totals ...	—	—	—	32.91	115	—	—	—	— 91.4
Averages ...	62	—	—	—	—	—	—	—	—
Extremes ...	—	83	45	—	—	12.13 5/79	nil	3.00 4/7/81	—

* 1883, 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. M.S. Sea- Level and Stan- dard Gravity from 9 a.m. & 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m.: 3 & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pres- sure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	58	37	37	37	37	45	43	47	33
January ...	29.916	758 19/99	0.35	8,072	S x W	8.94	2.3	3.5	7.8
February ...	29.953	691 22/96	0.31	6,832	S	7.25	2.0	3.4	7.0
March ...	30.036	628 9/12	0.25	6,836	S x W	5.74	2.3	4.0	6.5
April ...	30.117	773 10/96	0.23	6,262	S W x S	3.37	1.7	5.0	3.8
May ...	30.128	760 9/80	0.21	6,190	N N E	1.99	1.7	5.7	1.7
June ...	30.105	750 13/78	0.25	6,592	N x E	1.23	2.1	6.1	1.3
July ...	30.134	674 25/82	0.25	6,808	N x W	1.29	1.6	5.3	1.5
August ...	30.102	773 31/97	0.28	7,231	N N W	1.87	2.2	5.6	2.1
September ...	30.043	720 2/87	0.31	7,368	W S W	2.83	2.4	5.2	2.8
October ...	30.000	768 28/98	0.35	7,998	S W	4.78	3.5	4.8	4.0
November ...	29.975	677 2/04	0.34	7,676	S S W	6.53	3.9	4.5	5.2
December ...	29.919	675 12/91	0.35	8,080	S S W	8.41	2.8	3.8	6.8
Year { Totals ...	—	—	—	—	—	54.26	28.5	—	50.5
Averages ...	30.036	—	0.29	7,162	S W x S	—	—	4.5	—
Extremes ...	—	773*	—	—	—	—	—	—	—

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

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		* Sea water 3 ft. be- low surface.				
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.					
No. of yrs. over which observation extends	58	58	58	58	58	58	37	54	38				
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	70.8
February ...	86.1	62.0	74.0	113.6	12/99	46.4	13/05	67.2	170.5	10/00	36.7	24/78	70.9
March ...	80.9	59.0	69.9	108.0	10/61	44.8	—/57	63.2	174.0	17/83	33.8	27/80	68.2
April ...	73.3	54.6	64.0	98.0	12/66	39.6	15/59	58.4	155.0	1/83	30.3	27/08	64.0
May ...	65.4	50.0	57.7	88.3	5/66	36.9	†	51.4	148.2	12/79	25.9	10/91	59.1
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	54.7
July ...	58.7	44.4	51.5	74.0	11/06	32.0	24/08	42.0	134.5	26/90	23.3	25/11	52.2
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	53.3
September ...	66.2	47.8	57.0	90.7	23/82	32.7	4/58	53.0	160.5	23/82	26.2	15/08	56.5
October ...	72.6	51.4	62.0	103.2	24/14	36.0	—/57	66.2	158.8	19/82	28.5	7/96	60.7
November ...	78.8	55.4	67.1	113.5	21/65	40.8	2/09	72.7	166.9	20/78	31.5	20/09	65.2
December ...	83.4	58.9	71.2	114.2	14/76	43.0	†	71.2	175.7	7/99	32.5	4/84	68.6
Year { Averages ...	72.9	53.1	63.0	—	—	—	—	—	—	—	—	—	62.0
Extremes ...	—	—	—	116.3	26/1/58	32.0	24/7/08	84.3	180.0	18/1/82	22.9	12/6/13	—

* Taken at Lighthouse at entrance to Port River. (Discontinued in 1912.) † 26/1895, and 24/1904.
‡ 16/61, and 4/06.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.					Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days of Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	47	47	47	76	76	76	76	76	—	43
January ...	38	59	33	0.73	4	4.00 1850	nil *	2.30 2/89	—	4
February ...	41	56	33	0.62	4	2.67 1858	nil †	2.24 14/13	—	5
March ...	47	58	40	1.06	6	4.60 1878	nil ‡	3.50 5/78	—	11
April ...	56	72	44	1.86	9	6.73 1853	0.06 1910	3.15 5/60	—	14
May ...	68	76	49	2.70	14	7.75 1875	0.20 1891	2.75 1/53	—	16
June ...	78	84	69	3.03	15	7.80 1847	0.42 1886	1.45 2/491	—	16
July ...	76	87	69	2.62	17	5.38 1865	0.36 1889	1.75 10/65	—	17
August ...	69	77	54	2.47	16	6.24 1852	0.35 1914	2.23 19/51	—	16
September ...	63	72	44	1.94	14	4.64 1840	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 ...	44	57	37	1.16	8	3.55 1851	0.04 1885	1.88 28/58	—	6
December ...	39	50	33	0.96	5	3.98 1861	nil 1904	2.42 23/13	—	4
Year { Totals ...	—	—	—	20.88	123	—	—	—	—	137
Averages ...	53	—	—	—	—	—	—	—	—	—
Extremes ...	—	87	29	—	—	7.80	6/47	nil §	3.50	5/3/78

* 1848, 1849, 1878, and 1906. † 1848, 1860, etc. ‡ 1859, etc. § January, February, March and December, various years. || and 25/84.

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.	No. of yrs. over which observation extends	Bar. corrected to 32° F. M. Sea Level and Standard Gravity from 9 a.m. & 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. & 3 p.m.	No. of Clear Days.
			Greatest Number of Miles in one day.	Total Miles.	Mean Hourly Pressure. (lbs.)	Prevailing Direction.				
	28	4	3	3	28	6	28	28	6	
January ...	29.869	315 24/14	3,312	0.06	E	6.110	4.7	6.2	2.6	
February ...	29.897	268 26/14	2,663	0.04	S E	4.601	4.8	6.3	1.8	
March ...	29.951	197 12/14	2,387	0.03	S	4.196	3.2	6.0	3.2	
April ...	30.042	209 10/13	2,249	0.03	S	3.751	2.9	5.1	9.2	
May ...	30.093	149 15/13	2,161	0.02	S	2.840	2.6	4.9	8.4	
June ...	30.066	170 20/11	2,198	0.03	S	2.052	1.8	4.9	6.8	
July ...	30.064	165 1/13	2,016	0.02	S & W	2.350	2.2	3.9	13.5	
August ...	30.093	212 27/14	2,034	0.02	S & S W	2.757	3.5	4.0	10.4	
September ...	30.028	158 16/11	1,982	0.02	S & E	3.884	5.4	3.8	11.8	
October ...	30.064	268 19/11	3,284*	0.06*	N E	4.984	6.5	4.4	9.0	
November ...	29.960	199 19/13	2,877	0.05	N E & E	5.913	7.8	5.2	6.4	
December ...	29.884	295 21/13	3,192	0.06	N E & E	6.492	8.5	5.6	4.2	
Year { Totals ...	—	—	—	—	—	49.930	53.9	—	87.3	
Averages ...	30.001	—	2,530	0.04	S'y to E'y	—	—	5.0	—	
Extremes ...	—	315 24/11/14	—	—	—	—	—	—	—	

* Mean for 4 years.

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends.	28	28	28	28	28	28	28	28	—
January ...	85.5	68.9	77.2	108.9	14/02	58.8 4/93	50.1 164.4	2/13	49.9 4/93
February ...	84.5	68.5	76.5	101.9	11/04	58.7 *	43.2 165.2	6/02	49.3 9/89
March ...	82.3	66.5	74.4	96.8	16/88	52.4 29/13	44.4 160.0	1/87	45.4 29/13
April ...	79.2	61.7	70.5	95.2	—	48.6 17/00	46.6 150.1	†	37.0 17/00
May ...	73.5	55.4	64.5	88.8	18/97	41.3 24/99	47.5 147.0	1/05	29.8 8/97
June ...	69.2	50.8	60.0	81.5	6/06	36.3 29/08	45.2 133.9	6/06	25.4 23/88
July ...	68.2	48.1	58.2	83.4	28/98	36.1 †	47.3 134.4	29/89	23.9 11/90
August ...	71.3	49.8	60.6	87.5	28/07	37.4 6/87	50.1 140.7	30/88	27.1 9/99
September ...	75.8	54.6	65.2	95.2	16/12	40.7 1/96	54.5 155.5	26/03	30.4 1/89
October ...	79.8	59.8	69.8	101.4	18/93	43.3 3/99	58.1 156.5	31/89	34.9 8/89
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
December ...	85.6	67.5	76.6	105.9	26/93	56.4 13/12	49.5 159.5	23/89	49.1 3/94
Year { Averages ...	78.2	59.6	68.9	—	—	—	—	—	—
Extremes ...	—	—	—	108.9	36.1	72.8	165.2	23.9	—
				14/1/02	—	—	6/2/10	11/7/90	—

* 10-11/04. † 9/96 and 5/03. ‡ 12/94 and 2/96. § 12/7/94 and 2/7/96. ¶ 1/08 and 6/13.

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	28	28	28	63	55	63	63	—	—	28
January ...	65	79	53	6.59	14	27.72 1895	0.61 1882	18.31 21/87	—	2.9
February ...	69	82	55	6.55	14	40.39 1893	0.77 1904	8.36 16/93	—	3.0
March ...	72	85	56	6.18	16	34.04 1870	0.58 1868	11.18 14/08	—	5.4
April ...	72	79	60	3.64	12	15.28 1867	0.05 1897	3.93 20/92	—	9.3
May ...	74	85	64	2.98	10	13.85 1876	0.00 1846	5.62 9/79	—	10.0
June ...	75	82	67	2.68	8	14.03 1873	0.02 1895	6.01 9/93	—	7.5
July ...	74	80	67	2.32	8	8.46 1889	0.00 1841	3.54 †	—	8.5
August ...	71	80	62	2.28	7	14.67 1879	0.00 *	4.88 12/87	—	6.9
September ...	65	76	47	2.04	9	5.43 1885	0.10 1907	2.46 2/94	—	6.5
October ...	61	72	52	2.75	10	9.99 1882	0.14 1900	1.95 20/89	—	4.9
November ...	59	71	45	3.57	10	10.43 1846	0.00 1842	4.46 16/86	—	1.7
December ...	61	67	52	5.07	12	13.99 1910	0.35 1865	6.60 28/71	—	1.7
Year { Totals ...	—	—	—	46.65	130	—	—	—	—	68.3
Averages ...	68	—	—	—	—	—	—	—	—	—
Extremes ...	—	85	47	—	—	40.39	0.00	18.31	—	—
						2/1893	†	21/1/87		

— signifies no record kept. * 1862, 1869, 1880. † 5/1846, 7/1841, 8/1862, 1869, 1880, 11/1842. ‡ 15/76, 16/89.

CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

LAT. 33° 52' S., LONG. 151° 13' E. HEIGHT ABOVE M.S.L. 146 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.	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	55	48	48	48	56	35	55	53	51
January ...	29.902	721 1/71	0.37	8,292	N E	5.15	4.7	5.8	1.8
February ...	29.945	871 12/69	0.34	7,156	N E	3.99	4.9	6.1	1.1
March ...	30.013	943 20/70	0.25	6,871	N E	2.37	4.3	5.6	1.6
April ...	30.069	803 6/82	0.23	6,300	N E	3.45	3.9	5.1	2.5
May ...	30.083	758 6/98	0.23	6,443	W	1.63	3.5	4.9	2.9
June ...	30.065	712 7/00	0.29	7,145	W	1.36	2.9	4.8	3.2
July ...	30.078	930 17/79	0.29	7,300	W	1.43	2.5	4.4	3.9
August ...	30.070	756 22/72	0.27	7,014	W	1.75	3.3	4.1	4.3
September ...	30.006	964 6/74	0.31	7,264	W	2.57	4.1	4.4	3.6
October ...	29.972	926 4/72	0.34	7,887	N E	3.69	4.9	5.0	2.2
November ...	29.940	720 13/68	0.35	7,757	N E	4.46	5.5	5.6	1.4
December ...	29.881	938 3/84	0.36	8,174	N E	5.30	5.6	5.6	1.8
Year { Totals ...	—	—	—	—	—	37.14	48.7	—	30.3
Averages ...	30.002	—	0.30	7,300	N E	—	—	5.1	—
Extremes ...	—	964 6/9/74	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		* Sea water 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	56	56	56	56	56	56	55	55	54
January ...	78.4	64.9	71.6	108.5	13/96	57.3	160.9	13/96	71.5
February ...	77.3	64.9	71.1	101.0	19/66	51.7	162.1	16/98	73.0
March ...	75.4	63.0	69.3	103.6	3/69	49.3	173.3	4/89	71.1
April ...	71.1	58.2	64.7	89.0	4/09	44.4	144.1	10/77	68.4
May ...	65.0	52.1	58.5	83.5	1/59	43.3	129.7	1/96	64.2
June ...	60.5	48.2	54.3	74.7	24/72	36.6	123.0	14/78	59.9
July ...	58.9	45.7	52.4	74.9	17/71	39.0	144.3	15/93	57.3
August ...	62.3	47.6	54.9	82.0	31/84	45.2	149.0	30/78	57.7
September ...	66.4	51.4	59.0	91.1	24/07	50.3	142.2	12/78	60.3
October ...	71.2	55.9	63.5	99.7	19/98	43.3	151.9	37/14	63.4
November ...	74.4	59.7	67.1	102.7	21/78	56.9	158.5	28/99	67.1
December ...	77.3	62.8	70.1	107.5	31/04	49.3	171.5	4/88	69.7
Year { Averages ...	69.9	56.2	63.0	—	—	—	—	—	65.2
Extremes ...	—	—	—	108.5	35.9	72.6	172.3	24.0	—
				13/1/96	12/7/90		4/3/89	4/7/93	

* Taken at Fort Denison.

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	56	56	56	56	56	56	56	56	55	55
January ...	70	78	58	3.52	14.2	15.26	1911	0.42	1888	7.08
February ...	72	81	60	4.62	14.2	18.56	1873	0.34	1902	8.90
March ...	75	85	63	5.31	15.2	19.70	1870	0.42	1876	6.52
April ...	77	87	63	5.25	13.2	24.49	1861	0.06	1868	7.62
May ...	77	90	66	5.06	15.5	20.87	1889	0.21	1885	8.36
June ...	79	89	68	5.24	13.0	16.30	1885	0.19	1902	5.17
July ...	77	88	66	4.91	12.6	13.21	1900	0.12	1862	5.72
August ...	74	84	56	3.19	11.4	14.89	1899	0.04	1885	5.33
September ...	69	79	49	2.86	12.2	14.05	1879	0.08	1882	5.69
October ...	68	77	55	2.84	12.7	10.81	1902	0.21	1867	6.37
November ...	67	79	44	2.87	12.5	9.88	1865	0.19	1910	4.23
December ...	67	77	52	2.63	12.8	8.47	1910	0.23	1913	4.75
Year { Totals ...	—	—	—	48.30	159.5	—	—	—	—	0.123
Averages ...	73	—	—	—	—	—	—	—	—	45.9
Extremes ...	—	90	44	—	—	24.49	0.04	8.90	—	—
						4/1861	8/1885	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. at Sea Level and Stan- dard 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.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pres- sure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	57	48	48	48	48	42	7	57	7
January ...	29.914	583 10/97	0.29	7,301	S W, S E	6.39	1.7	5.1	9.0
February ...	29.963	566 8/68	0.27	6,347	S W, S E	5.04	2.3	5.0	8.4
March ...	30.034	577 9/81	0.22	6,313	S W, S E	3.90	2.2	5.5	5.3
April ...	30.100	597 7/68	0.19	5,697	S W, N W	2.35	1.0	5.9	4.1
May ...	30.108	693 12/65	0.19	5,594	N W, N E	1.46	0.9	6.5	2.7
June ...	30.085	761 13/76	0.24	6,387	N W, N E	1.09	1.0	6.7	2.0
July ...	30.099	755 8/74	0.22	6,250	N W, N E	1.05	1.2	6.3	3.7
August ...	30.069	637 14/75	0.25	6,813	N W, N E	1.48	1.0	5.3	1.9
September ...	30.000	617 11/72	0.28	6,993	N W, S W	2.26	1.7	6.1	3.0
October ...	29.970	899 5/66	0.29	7,277	S W, N W	3.32	2.5	5.9	5.4
November ...	29.953	734 13/66	0.28	7,000	S W, S E	4.52	2.8	5.9	4.0
December ...	29.897	655 1/75	0.30	7,439	S W, S E	5.73	3.1	5.5	4.2
Year { Totals ...	—	—	—	—	—	38.59	19.7	—	53.7
Averages ...	—	—	0.25	6,651	S W, N W	—	—	5.9	—
Extremes ...	30.016	899 5/10/66	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water 3 ft. be- low surface
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	59	59	59	59	59	59	55	53	—
January ...	78.2	56.6	67.4	111.2 14/62	42.0 28/85	69.2	178.5 14/62	30.2 28/85	—
February ...	77.9	56.8	67.4	109.5 7/01	40.3 9/65	69.2	167.5 15/70	30.9 6/91	—
March ...	74.5	54.7	64.6	105.5 2/93	37.1 17/84	68.4	164.5 1/68	28.9 *	—
April ...	68.5	50.7	59.6	94.0 6/65	34.8 24/88	59.2	152.0 8/61	25.0 23/97	—
May ...	61.4	46.7	54.0	83.7 7/05	31.3 26/95	52.4	142.6 2/59	23.2 21/97	—
June ...	56.6	43.9	50.4	73.2 1/07	28.0 11/66	44.2	129.0 11/61	20.4 17/95	—
July ...	55.4	41.5	48.5	68.4 24/78	27.0 21/69	41.4	125.8 27/80	20.5 12/03	—
August ...	58.8	43.3	51.0	77.0 20/85	28.3 11/63	48.7	137.4 29/69	21.3 14/02	—
September ...	62.5	45.4	53.9	83.3 30/07	31.1 16/08	51.2	142.1 20/67	24.7 13/07	—
October ...	67.1	48.1	57.6	98.4 24/14	32.1 3/71	66.3	154.3 23/68	25.9 3/71	—
November ...	71.5	51.1	61.3	105.7 27/04	36.5 2/96	69.2	159.6 29/65	24.6 2/96	—
December ...	75.3	54.0	64.6	110.7 15/76	40.0 4/70	70.7	170.3 20/69	33.2 10/04	—
Year { Averages ...	67.3	49.4	58.4	—	—	—	—	—	—
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.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean Daily.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	57	57	57	59	59	59	59	56	7
January ...	64	73	52	1.83	7	5.68 1904	0.04 1878	2.97 9/97	1.8
February ...	64	75	52	1.70	7	6.24 1904	0.03 1870	2.14 7/04	2.3
March ...	67	78	59	2.22	9	7.50 1911	0.18 1859	3.05 15/78	5.7
April ...	73	83	62	2.30	11	6.71 1901	0.33 1908	2.28 22/01	8.0
May ...	78	86	64	2.17	13	4.31 1862	0.45 1901	1.85 7/91	7.2
June ...	80	88	72	2.09	13	4.51 1859	0.73 1877	1.74 21/04	9.2
July ...	79	88	72	1.84	13	7.02 1891	0.57 1902	2.71 12/91	10.8
August ...	74	81	63	1.79	14	3.59 1909	0.48 1903	1.87 17/81	8.0
September ...	71	81	61	2.31	14	5.87 1870	0.52 1907	2.62 12/80	7.3
October ...	70	79	52	2.58	13	7.61 1869	0.29 1914	3.00 17/69	7.8
November ...	66	75	53	2.19	10	5.05 1881	0.25 1895	2.57 16/76	1.9
December ...	64	75	49	2.31	9	7.18 1863	0.11 1904	2.62 28/07	1.5
Year { Totals ...	—	—	—	25.32	133	—	—	—	71.5
Averages ...	71	—	—	—	—	7.61	—	—	—
Extremes ...	—	88	49	—	—	10/69	0.03 2/70	3.05 15/3/78	—

— signifies no record kept.

CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

LAT. 42° 53' S., LONG. 147° 20' E. HEIGHT ABOVE M.S.L. 160 FT.

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

Month.	Bar. corrected to 32° F. M. Sea- level and Stan- dard Gravity from 9 a.m. & 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pres- sure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	30	4	4	4	10	5	7	52	8
January ...	29.826	420 8/14	0.19	5,918	NW & SE	5.78	0.4	5.8	4.0
February ...	29.920	393 19/13	0.11	4,127	SE & N	4.17	1.0	5.9	3.1
March ...	29.941	315 28/11	0.10	4,308	N & SE	3.03	1.1	5.8	2.2
April ...	29.944	413 9/11	0.13	4,764	N to NW	2.06	0.7	6.0	2.0
May ...	29.968	346 31/14	0.10	4,263	N to NW	1.29	0.4	6.0	2.2
June ...	29.967	415 17/12	0.10	4,199	N to NW	0.74	1.1	6.0	2.1
July ...	29.934	396 17/11	0.09	4,158	N to NW	0.81	0.4	5.7	3.3
August ...	29.932	459 30/11	0.15	5,201	N to NW	1.32	1.1	5.9	2.5
September ...	29.846	435 4/13	0.18	5,510	N to NW	1.94	0.7	6.1	2.0
October ...	29.844	461 8/12	0.17	5,657	N	3.39	0.9	6.3	2.1
November ...	29.800	418 16/11	0.18	5,567	N & SE	4.16	0.7	6.3	2.0
December ...	29.804	359 9/12	0.17	5,634	NW & SE	4.77	1.7	6.1	1.2
Year (Totals ...	—	—	—	59,236	—	33.46	10.2	—	28.6
Averages ...	29.896	—	0.14	—	N	—	—	6.0	—
Extremes ...	—	461 8/10/12	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water 1 mn. 3 ft. be- low surface
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	44	44	44	68	68	68	27	48	—
January ...	71.7	53.0	62.4	105.0	1/00	40.3 *	64.7	160.0 †	30.6 19/97
February ...	71.6	53.1	62.4	104.4	12/99	39.0 20/87	65.4	165.0 24/98	28.3 -/87
March ...	68.1	50.7	59.4	98.8	5/46	36.0 31/05	62.8	150.0 3/05	27.5 30/02
April ...	62.8	47.6	55.2	90.0	2/56	30.0 25/56	60.0	142.0 18/93	25.0 -/86
May ...	57.3	43.5	50.4	77.5	1/41	29.2 20/02	48.3	128.0 ‡	20.0 19/02
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
July ...	51.7	39.0	45.3	72.0	22/77	27.0 18/66	45.0	118.7 19/96	18.7 16/86
August ...	54.9	40.9	47.9	77.0	3/76	30.0 10/72	47.0	129.0 1887	20.1 7/09
September ...	58.6	42.9	50.8	80.0	9/72	30.0 12/41	50.0	138.0 23/93	22.7 -/86
October ...	62.8	45.4	54.1	92.0	24/14	32.0 12/89	60.0	156.0 9/93	23.8 †
November ...	66.4	48.3	57.3	98.0	20/88	35.2 5/13	62.8	154.0 19/92	26.0 1/06
December ...	69.6	51.1	60.3	105.2	30/97	38.0 3/06	67.2	156.0 18/05	27.2 -/86
Year (Averages ...	62.4	46.4	54.4	—	—	—	—	—	—
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.

‡ 1883 and 1892.

§ 1/86, 1899.

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. Days
No. of yrs. over which observation extends	35	35	35	72	71	72	72	48	5
January ...	62	75	51	1.77	9	5.91 1893	0.03 1841	2.59 30/05	1.4
February ...	64	78	51	1.42	8	9.15 1854	0.07 1847	4.50* 25/54	3.2
March ...	68	76	59	1.65	10	7.60 1854	0.02 1843	2.06 14/11	1.2
April ...	75	85	60	1.83	11	6.50 1809	0.07 1904	5.02 20/09	8.8
May ...	80	90	68	1.87	12	6.37 1905	0.10 1843	3.22 14/58	12.6
June ...	83	94	73	2.10	13	8.15 1889	0.22 1852	4.11 14/82	5.4
July ...	83	97	74	2.10	14	5.98 1849	0.30 1850	2.00 27/78	7.6
August ...	80	92	64	1.51	13	10.16 1858	0.23 1854	4.35 12/58	5.4
September ...	73	87	60	2.12	14	7.14 1844	0.39 1847	3.50 29/44	2.8
October ...	67	75	51	2.21	15	6.67 1906	0.26 1850	2.58 4/06	2.6
November ...	63	74	50	2.50	14	8.92 1849	0.16 1868	3.97 6/49	1.4
December ...	60	73	51	1.93	11	9.00 1875	0.11 1842	2.27 27/07	1.6
Year (Totals ...	—	—	—	23.39	144	—	—	—	54.0
Averages ...	71	—	—	—	—	—	—	—	—
Extremes ...	—	97	50	—	—	10.16 8/1858	0/02 3/1843	5.02 20/4/09	—

* 4.18, 26/54 also.

§ 7. The Grasses and Saltbushes of Australia.¹

1. Grasses.

1. Value of Native Grasses to the Pastoral Industry.—The native grasses of Australia are famous throughout the world, not only for their fattening and wool-producing qualities, but also for their remarkable ability to withstand the effects of drought. It is upon the excellence of the native grass pasture, coupled with the indigenous saltbushes and other edible fodder plants that the success of the great pastoral industries of the Commonwealth primarily depends. Moreover, while it is true that in the progress of the development of most countries, the pastoral industry tends to become overshadowed in importance by other industries, and while it is also true that dry-farming methods can extend the area of cultivation far beyond what was thought possible a few years ago, nevertheless the excellence of Australian pastoral products, particularly as regards wool and mutton, renders it probable that the pastoral industry will for long retain its position as one of the chief sources of Australia's wealth.

In this connection, also, the fact must not be lost sight of that no cultivated plants have as yet been, or are likely to be, found which can replace, with their drought-resisting qualities, the native grasses, saltbushes, and edible fodder plants.

2. Dairying and Introduced Grasses.—Besides the wealth produced from wool-growing and sheep and cattle-raising, there must be also considered that derived from dairying. This industry is confined chiefly to the coastal belt and highlands of Australia. In New South Wales, Victoria, South Australia, Western Australia and Tasmania, well-known introduced grasses like Cocksfoot, Perennial Rye, Timothy, *Phalaris bulbosa* and many others, find on the coasts and tablelands a climate pre-eminently adapted to their requirements. Under a fair rainfall and not too hot conditions they may be said in such localities to be superior to the native grasses which they have replaced. A new introduced plant is occasionally found which proves a boon to certain districts when laid down to cultivation. Particularly is this the case with *Paspalum* on the northern rivers of New South Wales, Rhodes grass for light and hot soils, Strawberry Clover for Gippsland, Victoria, and Egyptian Clover for South Australia. The history of *Paspalum* reads almost like a romance. Introduced from the hot moist climate of South America it found most congenial surroundings in the coastal districts of New South Wales, and what were once villages on the northern rivers are now thriving townships.

In most of the dairying districts of Queensland, however, native grasses still hold pride of place. A hot summer and at times precarious rainfall prove too much for introduced grasses, and although such exotic dry country grasses as Rhodes are making headway, it is doubtful if the results produced can come up to those from the native grasses.

3. Distribution of the Native Grasses.—The distribution of the native grasses of Australia may be said, generally speaking, to be more dependent on climatic conditions than on soil considerations. Australia possesses three distinct rain zones, viz., a summer rain zone extending from the Northern Territory and embracing the north-western portion of Western Australia, Queensland, and the northern and north-western portion of New South Wales, a neutral rain zone, extending over the middle portions of the continent, and a winter rain zone, which embraces the Riverina portion of New South Wales, practically the whole of Victoria and Tasmania, and the southern portions of South Australia and Western Australia. In considering the grasses in these places, we find that the dominant species are those best adapted to the climatic conditions. For example, out of 54 different species of the genus *Panicum*, 27 are found in the Northern Territory, 30 in Queensland, 20 in New South Wales, and only 5, 8 and 6 in Victoria, South Australia and Western Australia respectively. The *Panics* are summer

1. Contributed by E. Breakwell, Esq., B.A., B.Sc., Agrostologist, Botanic Gardens, Sydney.

grasses and are best adapted to hot summer conditions. On the other hand, the *Agrostis* species are typical winter grasses, and we accordingly find them most common in Tasmania (11 species), South Australia (6 species), Western Australia (6 species), Victoria (12 species), southern portion of New South Wales (8 species), while they are practically absent in the Northern Territory (0 species), and in Queensland (2 species).

Some very cosmopolitan grasses are the *Danthonias*, *Eragrostis*, *Themeda* and *Stipa*s. The rareness of the lastnamed genus in the Northern Territory is probably due to the fact that the more vigorous growing grasses crowd them out. As a rule the grasses growing in the summer rain zone lend themselves to greater variety and bulk of feed than those of the winter rain belt. For example, Queensland, the Northern Territory and the northern parts of New South Wales may be considered typical cattle country, owing to the variety and vigorous nature of the grasses, although typical sheep grasses are of course abundant in the way of smaller grasses growing amongst the larger ones. Such strong growing grasses as *Panicums*, *Astrebias*, *Andropogons*, *Erianthus* and *Aristidas*, of which there are many species and which freely intermingle with each other, often dominate the situation.

4. **Dominant Genera.**—Of a total of 433 species in Australia, 210 are confined to New South Wales.* Using Bentham's figures, out of a total of 346 native species in Australia† 144 are confined to the Northern Territory, 164 to Queensland, 149 to New South Wales, 93 to Victoria, 68 to South Australia, 89 to Western Australia, and 62 to Tasmania. Although, as seen by the figures brought up to date in New South Wales, the numbers are now greater in each State, they are conclusive enough to show that the bulk of the grass flora is found in the States of New South Wales, Queensland and the Northern Territory.

The dominant genera, i.e., grasses which provide the bulk of herbage in each State are as follows:—

NORTHERN AUSTRALIA.—*Panicum*, *Xerochloa*, *Rotboelia*, *Ischæmum*, *Ectrosia*, *Chloris*, *Eragrostis*, *Erianthus*, *Diplachne*, *Andropogon*, *Aristida*, *Themeda*, *Triodia* and *Eriachne*.

QUEENSLAND.—*Panicum*, *Astrebla*, *Ischæmum*, *Aristida*, *Erianthus*, *Andropogon*, *Themeda*, *Chloris*, *Eragrostis*, *Sporobolus* and *Eriachne*.

NEW SOUTH WALES.—*Panicum*, *Cynodon*, *Chloris*, *Danthonia*, *Eragrostis*, *Sporobolus*, *Aristida*, *Stipa*, *Andropogon*, *Themeda*, *Astrebla*, *Pappophorum* and *Sorghum*.

VICTORIA.—*Danthonia*, *Eragrostis*, *Poa*, *Glyceria*, *Sporobolus*, *Stipa*, *Agropyron*, *Themeda*, *Agrostis* and *Panicum*.

SOUTH AUSTRALIA.—*Danthonia*, *Themeda*, *Eragrostis*, *Poa*, *Chloris*, *Agrostis*, *Cynodon*, *Glyceria*, *Stipa*, *Andropogon* and *Pappophorum*.

WESTERN AUSTRALIA.—*Panicum*, *Neurachne*, *Stipa*, *Andropogon*, *Themeda*, *Danthonia*, *Agrostis*, *Poa*, *Dichelachne* and *Agrostis*.

TASMANIA.—*Agrostis*, *Danthonia*, *Poa*, *Stipa*, *Amphipogon*, *Hierochloa*, *Microlæna* and *Tetrarrhena*.

5. **The Most Important Native Grasses.**—(i.) The *Mitchell* grasses (*Astrebla* species) may be said to hold perhaps the highest reputation of all the native grasses. They are very common on the black and red soils in the interior of New South Wales, Queensland, and the Northern Territory. The leaf is abundant and relished by stock of all kinds, while the seed is also nutritious. They provide feed in warm situations practically throughout the year. At present the *Mitchell* grasses are considered so valuable that the seed is a marketable commodity.

* Unpublished Census of New South Wales plants (Maiden and Bêche).

† Bentham's Australian Flora.

(ii.) The *Andropogons*, including *Andropogon sericeus* (Queensland Blue grass), *A. intermedius* (Rare Blue grass), *A. bombyctnus* (Silky heads), *A. refractus* and *A. pertusus* (Pitted Blue grass) are very common in New South Wales and Queensland, and less common in the Northern Territory. Queensland Blue is highly spoken of by all pastoralists for its succulence and perennial qualities. Rare Blue appears to like moist situations better, and in such localities usually provides a greater bulk of feed than does Queensland Blue. The common Queensland Blue grass also grows in the Northern Territory, but the *Andropogons* in that locality, e.g., *A. procerus*, *A. annulatus*, and *A. exaltatus* are more of the vigorous tall-growing kind, although probably as palatable as our own. The seed of Queensland Blue is also a marketable commodity; it is of such fluffy nature, however, that hand-sowing must be resorted to if required to bring it under cultivation.

(iii.) The *Panic* grasses are extremely common and variable. They are mostly quick-growing summer grasses, succulent, palatable, and free seeders. If given a free chance to seed they become a valuable asset to grazing country. Some of the more important are:—

Panicum decompositum (Australian or Native Millet). This is a very wide-leaved succulent grass, and extremely drought-resisting. It is common to most of the States and appears to be very dominant in moist black or red soils.

Panicum queenslandicum, Domin (Coolah grass). This grass is very common in the pastures of the Northern Territory, Queensland, and New South Wales, and is characterised by its extreme powers of drought-resistance. This grass closely resembles *P. trachyrachis* another drought-resistant species, but much less common.

Panicum flavidum, Retz, and *P. globoideum*, Domin, growing in warm, moist situations, are also valuable pasture grasses in the Northern Territory, Queensland, and New South Wales. They are extremely free seeders.

Valuable *Panic* grasses confined to the Northern Territory are *P. piligerum*, *P. argenteum*, and *P. prostratum*. Some cosmopolitan good *Panic* grasses are *P. leucophæum* (Cotton Panic), *P. sanguinale* (Summer grass), *P. effusum*, and *P. prolutum*.

(iv.) The *Eragrostis* grasses are very cosmopolitan and may be found right throughout the Commonwealth. Some, like *E. Brownii*, *E. leptostachya* and *E. leptocarpa*, grow in favourable situations on the coast and tablelands, and provide a fair amount of feed. Others, like *E. laniflora*, *E. speciosa*, and *E. lacunaria*, are adapted to hot, sandy situations, and are small and wiry. The root system of some of these shews their adaptation to hot conditions, for even in the mature root, a sheathing case of sand and hairs is present as a protection against burning and evaporation.

(v.) The *Danthonias* provide a great quantity of winter feed in the cooler parts of the continent. They are commonly known as White Top or Wallaby grasses. Able to stand a good deal of stocking and very palatable, some of the finest sheep in the State of New South Wales are grown on *Danthonia* pastures in Yass district. The *Danthonias* are particularly valuable for shallow or poor soils, and in these situations have been turned to such good account that the seed is now a marketable commodity.

(vi.) The *Couch* grass (*Cynodon dactylon*) association in New South Wales is well-known to all dairymen. Many poor clay soils would be in a bad way as regards pasturage were it not for this fine little fighting grass. In sandstone country on the coast a common grass association is *Couch*, *Eragrostis leptostachya*, and *Sporobolus*.

(vii.) The *Themeda* grasses, better known as Kangaroo grasses, will be found growing in nearly every conceivable situation throughout the Commonwealth. The commonest is *Themeda Forskalii*, previously known as *Anthistiria ciliata*, and there is no doubt that this grass provides excellent feed in the interior. Owing to its shy seeding habits, however, and its sensitiveness to stocking, it is rapidly dying out in many situations, and is becoming more common on protected areas, such as railway enclosures, than elsewhere. Its one time congener, *Iseilema membranacea*, previously called *Anthistiria membranacea*

is well known to the pastoralist of Queensland, northern New South Wales, and the Northern Territory, as Landsborough grass. Although smaller than the ordinary Kangaroo grass it will stand heavier stocking, and is considered more palatable.

(viii.) The *Erianthus* grasses, and particularly *E. fulvus*, commonly known as Sugar grass or Brown Top, are also considered very valuable grasses in the interior of New South Wales, Queensland, and the Northern Territory. Indeed, from the point of view of drought-resistance and permanence, it would be difficult on the black soils to replace the Sugar grass with a better.

There are many other genera, of which there may be only one or two species, widely distributed over the continent and providing a large quantity of feed. Some of the more valuable are:—*Lappago racemosa* (Burr grass), *Neurachne michelliana* (Mulga grass), *Dactyloctenium aegyptiacum* (Crowfoot grass), *Eriochloa polystachya* (Early Spring grass), and *Diplachne fusca* (Swamp grass).

(ix.) *Sheep Grasses*. The *Chloris*, Windmill, or Star grasses are amongst the most valuable sheep grasses. *Chloris acicularis*, *C. truncata*, *C. ventricosa*, and *C. barbata* are the commonest and best. The last named is considered so valuable, resembling the introduced *Rhodes* grass very much, that the seed is a marketable commodity.

(x.) *The Stipas*. These are commonly called Spear grasses. They are very common in Western Australia, South Australia, Victoria, and the Riverina district in New South Wales. In many situations, such as rocky slopes, these grasses are valuable, providing feed for sheep for the greater part of the year, but it is to be regretted that during a good season these Spear grasses, particularly *S. setacea*, *S. scabra* and *S. semibarbata*, become very troublesome. The growth becomes too rapid for the sheep and the grasses develop seed. These seeds are extremely sharp pointed and provided with a twisted awn which is sensitive to hygroscopic conditions. The result is that they are able to work their way into the organs of the sheep, and particularly affect the eyes. "Spear-grass" country is not looked on favourably by pastoralists. Fortunately, in good country it is possible, by judicious management, for the good grasses to overcome the *Stipas*.

(xi.) The *Aristidas*, commonly known as Wire grasses, are also widely distributed, and possess an inferior value only. *A. leptopoda* and *A. Behriana* are the only ones providing an average amount of feed in the interior.

In the colder mountainous districts the *Poa* and *Agrostis* species provide the bulk of the feed. The grasses found on the southern mountain heights of New South Wales remind one very much of similar grasses in Europe.

6. The Future of Native Grasses.—The future of our pastoral wealth depends on the maintenance of our native grasses. At present the three principal enemies of our pastures are rabbits, droughts, and over-stocking. The rabbit evil on level country, thanks to wire-netting, and a vigorous offensive on the burrows, is being checked. The effects of drought will be probably minimised in the future by anticipatory measures, such as the conservation of fodder, the construction of large dams, and cross-country railways to allow of speedy agistment. At present, the actual deleterious effect of droughts on the native grasses lies in the eating and killing-out of the better varieties, an evil aggravated, of course, during drought periods by slowness of growth and non-seeding habits.

7. Over-stocking.—Over-stocking during drought periods should be avoided, but over-stocking in normal periods is to be deplored. Evidence exists on every hand that many of our large holdings are being over-stocked, i.e., that the stock are being carried on the paddocks in such numbers, and to such an extent that the good grasses are not allowed to seed, but become depastured and replaced by introduced or noxious herbage. Miles of country in the interior (that once had a profitable carrying capacity) are now covered with thistles and other useless herbage. The spread of Barley grass (*Hordeum murinum*), Barren Fescue (*Festuca bromoides*), the useless Bromes (*Bromus maximus*,

B. mollis, etc.), and other valueless or even noxious agricultural grasses in New South Wales, has also been remarkable. Less than twenty years ago they were varieties in many places, now they have taken almost complete possession of the pastures, but, as the law of the survival of the fittest indicates that present conditions in many localities are more favourable for these than for the native grasses, it follows that, unless the latter are nursed and encouraged, the useless introduced grasses and weeds will predominate where at one time the natural herbage thrived. It is natural that a grazier should desire to produce from his land the largest amount of wealth he can, by stocking to the fullest capacity, but satisfactory financial results cannot be maintained by doing so. The deterioration which a pasture undergoes by continued overstocking must result in a considerably lessened carrying capacity, and, although exact data are not available, the loss thus incurred to the Commonwealth must be considerable,

8. Conservation of Pastures.—The problem of conserving and restoring native pastures, has, in many localities, been met by thoughtful graziers gathering the seed of the good grasses, and scattering it on the loose soil of their runs during the rainy season. Although the vitality of native grass seed is fairly low, it is particularly characterised by the length of time it can stay in the ground and then germinate under satisfactory conditions. The black soils are particularly adapted for this method of treatment.

9. Division and Resting of Pastures.—It is clear, however, that the main success in checking deterioration will be ensured by dividing pastures and resting them from time to time. Many beneficial results have been secured by resting pastures, and if the process is continued at periodic intervals a good stand of grass is secured over a large area, and the carrying capacity increased enormously.

Most graziers divide their areas into paddocks, but in many cases these are far too large. The larger the paddocks the greater the trampling, and the more the best grasses are picked out, eaten down, and prevented from seeding. In an area of 12,000 acres, say, eight paddocks would not be too many. Once a good stand of grass is obtained in paddocks of limited area, judicious handling of such paddocks will produce a maintenance of the pastures for an indefinite period.

10. Native v. Introduced Grasses.—The introduction of ex-Australian grasses can only be advocated for those districts where the climatic conditions are similar to those of the countries whence introduced. Such country is mostly confined to the coast and tablelands of Australia and to Tasmania. Owing to the high vitality of the seed and the improvement which has taken place under many years of cultivation these grasses have replaced the native in many parts. Such grasses as *Paspalum*, Rhodes, Perennial Rye, Cocksfoot, Timothy, and Tall Fescue are largely grown, while the newer but valuable grasses like *Phalaris bulbosa*, *Bromus inermis*, and Prairie are slowly growing in popularity.

11. Cultivation of Native Grasses.—Up to the present the placing of native grasses under cultivation has not been carried out commercially. The difficulties which have to be contended with are as follow:—(a) The uncertain vitality of wild seed, (b) the scarcity and high price of native grass seed on the market, (c) the large area of native pastures, giving sufficient feed for practical requirements. When the cultivation of native grasses becomes an accomplished fact, it will be on the inland slopes and those areas where closer settlement prevails.

12. Improvement of Native Grasses under Cultivation.—That a great improvement takes place in the native grasses when cultivated is well seen by experiments carried out at State Experiment Farms. Succulence and bulk are considerably increased, even in a very short time. Particularly has this been noticed in such grasses as Mitchell grass, Queensland Blue grass, the Panic grasses, and Brown Top or Sugar

grass (*Erianthus fulvus*). When we consider that it is only after many years of cultivation that the present improvement in our introduced grasses has resulted, the striking improvement of the native grasses under cultivation in such a short time is distinctly encouraging. It is probable that good seeding habits, bulk, etc., will be improved by selection. The value of such experimental work cannot be over-estimated since, as before pointed out, it will be extremely difficult, if not impossible, to replace our native grasses of the interior with better plants. The pastoral industry of Australia is such a valuable asset that every means should be taken not only to conserve the native pastures as much as possible, but to work and aim at increasing their present carrying capacity.

2. Saltbushes.

1. **General.**—The saltbushes belong to the botanical order *Chenopodiaceae*. They are all plants adapted to alkaline soils, and grow thickly in the interior. Their adaptability to the hot and dry situations of Australia is shewn in the succulent nature of the leaves, in the more or less hairy investiture, and in the deep-rooting system. The edible saltbushes practically belong to the four genera, viz., *Atriplex*, of which the Old Man saltbush is representative; *Kochia*, or cottony saltbushes; *Rhagodia*, red-berried saltbush; and *Enchylaena*, Barrier or Spiny saltbushes.

2. **Value of Saltbushes.**—The value of saltbushes lies particularly in their drought-resistance, which stands out prominently when other grasses and herbage fail. They also grow in arid districts where the rainfall is extremely small, and where grasses are few in number and sparsely scattered. Although saltbushes are not appreciated to any extent when grasses and other herbage are plentiful, during drought periods they are readily and even greedily eaten by stock.

The free-seeding and rapid growing habits of the saltbushes are particularly advantageous in allowing them to quickly revive after heavy stocking during drought periods, all the more so, as in normal seasons, when the grasses and herbage are plentiful, they are not eaten to any great extent.

3. **Fodder Value of Saltbushes.**—In this connection some useful experiments were carried out at the State of New South Wales Experiment Farm, at Coolabah, in 1906 and 1907. The result of these experiments gives a definite idea of the value of saltbush as a fodder, and its effect on the texture of the wool. The report of a prominent pastoralist on these experiments is as follows:—"I had the sheep in the yard and had a good look at them. They have altered very much since they were taken to the farm, and have also altered since last year; the wool has grown smaller in the fibre, and shews a shorter and weaker staple without any increase in quality to make up for the loss in weight. They have not grown the frame they would, running on natural pastures. I cannot understand why they have produced such a black yolk tip, quite as good a tip as you see on sheep reared in a cooler climate. I can give no reason why sheep fed on natural grasses and herbage shew a white tip inclined to be fuzzy, while these sheep, fed only on saltbush, shew a good tip. Although they have not grown a really profitable fleece, nor produced the carcase of more highly-fed sheep, the experiment proves that sheep can be kept alive on saltbush only, for a considerable time, possibly for long enough to tide over a severe period of dry weather, and probably at less cost than by expensive means of artificial feeding. The experiment has also shewn that saltbush can be grown at little cost—at a less cost than any other fodder—in a very dry time, and is practically drought-resisting." It might be remarked that these experiments were carried over a period of twenty-one months, during which time the sheep were entirely fed on saltbush.

4. **Distribution of Saltbushes.**—The principal saltbush genera are distributed as follows:—

(i.) *Atriplex*. Northern Territory, 4 species; Queensland, 8 species; New South Wales, 14 species; Victoria, 10 species; South Australia, 18 species; Western Australia, 12 species; and Tasmania, 4 species.

(ii.) *Kochia*. Northern Territory, 1 species; Queensland, 3 species; New South Wales, 11 species; Victoria, 6 species; South Australia, 10 species; and Western Australia, 6 species.

(iii.) *Rhagodia*. Queensland, 5 species; New South Wales, 7 species; Victoria, 5 species; South Australia, 6 species; and Western Australia, 5 species.

It is to be noted that the more arid districts, like the west of New South Wales, and South Australia, are better provided with saltbushes than the Northern Territory with its heavy rainfall; this is as it should be.

5. **Some of the More Important Saltbushes.**—*Atriplex nummularia*, Lindl (Old-Man saltbush). This is very common in Queensland, Victoria, New South Wales, and South Australia. It grows to a height of 10 feet, and is thus better protected from the ravages of drought and over-stocking than most saltbushes. It grows very rapidly and is considered palatable.

Atriplex leptocarpa, F.v.M. (Creeping saltbush). This is very common on the red and black soils. It is a rapid grower and a free seeder.

Atriplex semibaccata, R. Br. (Half-buried saltbush.) Has a very spreading and prostrate habit, and it thus protects both the soil and itself. A free seeder. This is one of the saltbushes successfully introduced into California, America, and is highly spoken of. Two cuttings of 20 tons each were obtained each season from an acre.

A. vesicaria, Hew, and *A. halimoides*, Lindl, although less common than the afore-said, are considered more palatable. Unfortunately, their palatability and their annual habits tend to cause them to diminish under heavy stocking.

Other valuable saltbushes very common in South Australia and Western Anstralia are *A. stipitata*, Benth., *A. rhagodioides*, F. v. M., *A. muelleri*, Benth., and *A. spongiosa*.

The *Kochias* are much smaller than the *Atriplex* genus, with a finer leaf, and also, as a rule, hairier, while some are spiny. All are valuable as stand-bys in times of drought, and the commonest are *K. ciliata*, F. v. M., *K. villosa*, Lindl., *K. eriantha*, F. v. M. (South Australia), and *K. appressa*, Benth. (Western Australia).

The *Rhagodias* are less common in the interior than the *Atriplexes*. They will also grow in situations, as the coast and tablelands, where the others will not thrive. One of the best adapted to interior conditions is *Rhagodia hastata*, R. Br., so called from its hastate or sword-shaped leaves. This saltbush has been proved to grow readily from cuttings, endures adverse conditions, and attains a great size in a year. It can be recommended as a hedge plant. Other good *Rhagodias*, and also found in the interior, are *R. nutans*, R. Br., and *R. linifolia* R. Br. Some other particularly drought-resistant saltbushes which provide feed under adverse conditions are *Enchylaena tomentosa*, R. Br. (the Barrier saltbush), and the *Scleroloenas*, including *Scleroloena diacantha*, Benth., and *S. paradoxa*, R. Br.

6. **Cultivation of Saltbushes.**—The cultivation of saltbushes, like that of native grasses, is not yet carried on commercially. Experiments shew, however, that they will grow readily from seed, cuttings, or roots. On a big area where turning over for cultivation is impracticable, much might be done in ploughing a few furrows here and there, and planting three or four seeds in a hole during suitable seasons. By protecting the the young seedlings from stock for twelve months they should then be ready for grazing. The bulk of feed produced in normal seasons can be used as hay, which is an excellent stand-by during drought periods. Chemical analysis shews that the nutritive content of saltbushes is particularly high, and it seems an anomaly that, if it pays California to import seed and grow it profitably, there should be as little as there is under cultivation in Australia.

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 1910-14 is shewn in the following table. These estimates, in so far as they relate to points of time between the Censuses of 1901 and 1911, have been amended on the basis of the results disclosed by the last mentioned Census as described on pp. 112-118 of Year Book No. 6.

POPULATION OF COMMONWEALTH, ON 31st DECEMBER 1901 and 1910-14.

Year.	States.						Territories.		Common-wealth.
	New South Wales.	Victoria.	Queens-land.	South Australia.	Western Australia.	Tas-mania.	North-ern.	Federal. (a)	
MALES.									
1901	720,840	608,436	282,291	180,440	117,885	90,945	3,999	...	2,004,836
1910	858,181	646,482	325,513	206,557	157,971	98,866	2,738	...	2,296,308
1911	888,138	668,759	337,955	212,650	168,094	98,594	2,662	1,068a	2,377,920
1912	934,846	689,825	344,139	218,613	174,056	101,561	2,854	1,074	2,466,968
1913	962,053	706,948	356,613	221,605	180,747	104,476	2,995	1,093	2,536,530
1914	966,675	712,594	364,526	220,550	179,188	103,590	3,252	1,056	2,551,431
FEMALES.									
1901	654,615	601,464	224,430	178,890	75,716	84,288	674	...	1,820,077
1910	785,674	654,926	273,503	200,311	118,861	94,937	563	...	2,128,775
1911	808,337	670,343	284,174	205,522	126,087	94,885	586	853a	2,190,787
1912	842,688	690,736	292,286	211,477	132,073	95,644	621	866	2,266,391
1913	869,663	705,171	303,545	218,442	139,937	97,199	677	895	2,335,529
1914	894,847	718,073	312,181	221,140	143,830	97,826	721	903	2,389,521
TOTAL.									
1901	1,375,455	1,209,900	506,721	359,330	193,601	175,233	4,673	...	3,824,913
1910	1,643,855	1,301,408	599,016	406,868	276,832	193,803	3,301	...	4,425,083
1911	1,696,475	1,339,102	622,129	418,172	294,181	193,479	3,248	1,921a	4,568,707
1912	1,777,534	1,380,561	636,425	430,090	306,129	197,205	3,475	1,940	4,733,359
1913	1,831,716	1,412,119	660,158	440,047	320,684	201,675	3,672	1,988	4,872,059
1914	1,861,522	1,430,667	676,707	441,690	323,018	201,416	3,973	1,959	4,940,952

(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.

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	5,989	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 1024 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

(iii.) 1859 to 1914. 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 fourteen years that have elapsed since the federation of the States was effected the population of the Commonwealth has increased by 1,175,613, from 3,765,339 on 31st December, 1900, to 4,872,059 on 31st December, 1914. See table hereunder:—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1859 to 1914.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1859	644,376	452,929	1,097,305	1887	1,559,118	1,322,244	2,881,362
1860	668,560	477,025	1,145,585	1888	1,610,548	1,371,129	2,981,677
1861	669,373	498,776	1,168,149	1889	1,649,094	1,413,383	3,062,477
1862	683,650	523,268	1,206,918	1890	1,692,831	1,458,524	3,151,355
1863	704,259	555,033	1,259,292	1891	1,736,617	1,504,368	3,240,985
1864	740,433	584,750	1,325,183	1892	1,766,772	1,538,981	3,305,753
1865	773,278	616,765	1,390,043	1893	1,791,815	1,570,080	3,361,895
1866	800,648	643,307	1,443,955	1894	1,824,217	1,602,543	3,426,760
1867	819,127	664,721	1,483,848	1895	1,855,539	1,636,082	3,491,621
1868	849,272	690,280	1,539,552	1896	1,887,174	1,665,924	3,553,098
1869	875,139	717,018	1,592,157	1897	1,917,460	1,700,323	3,617,783
1870	902,494	745,262	1,647,756	1898	1,937,629	1,727,086	3,664,715
1871	928,918	771,970	1,700,888	1899	1,959,074	1,756,914	3,715,988
1872	947,422	795,425	1,742,847	1900	1,976,992	1,788,347	3,765,339
1873	972,907	821,613	1,794,520	1901	2,004,836	1,820,077	3,824,913
1874	1,001,096	848,296	1,849,392	1902	2,023,008	1,847,310	3,875,318
1875	1,028,489	869,734	1,898,223	1903	2,045,144	1,871,448	3,916,592
1876	1,061,477	897,202	1,958,679	1904	2,072,783	1,901,367	3,974,150
1877	1,102,340	928,790	2,031,130	1905	2,100,118	1,932,859	4,032,977
1878	1,132,573	959,591	2,092,164	1906	2,126,730	1,964,755	4,091,485
1879	1,168,781	993,562	2,162,343	1907	2,160,213	2,001,509	4,161,722
1880	1,204,514	1,027,017	2,231,531	1908	2,193,981	2,038,297	4,232,278
1881	1,247,059	1,059,677	2,306,736	1909	2,242,215	2,081,745	4,323,960
1882	1,289,892	1,098,190	2,388,082	1910	2,296,308	2,128,775	4,425,083
1883	1,357,423	1,148,313	2,505,736	1911	2,377,920	2,190,787	4,568,707
1884	1,411,996	1,193,729	2,605,725	1912	2,466,968	2,266,391	4,733,359
1885	1,460,394	1,234,124	2,694,518	1913	2,536,530	2,335,529	4,872,059
1886	1,510,954	1,277,096	2,788,050	1914	2,551,431	2,389,521	4,940,952

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; and its fourth million sixteen years later, in 1905. The fifth million was expected to be reached in 1915, but owing to the war and the consequent dispatch of men out of Australia this result will not be obtained for some little time to come.

The growth of the total population of the Commonwealth generally, and of each State therein, is graphically shewn 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 5958, the gain of 22,564 being due to the births exceeding the deaths by 28,522.

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 29 years by no less than 287,059, totalling 323,018 on 31st December, 1914. 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 15½ 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 just over 3 acres, a fairly high amount when allowance is made for the recency of Australian settlement. Over 78 per cent. of the area under crop is devoted to the production of wheat and hay, which require for the profitable production in Australia 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 were fairly populous, have

in times of drought, temporarily 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 2064.

(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 no less than 10,546, and a similar result will probably be shown in connexion with the European war, which, at the time of writing, is still in progress.

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 1035, 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 4100, 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, etc., 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 8.84 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 shewing 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. The following table gives similar particulars for every fifth year from 1800 to 1910 and for the years 1911, 1912, 1913, and 1914 :—

MASCULINITY OF COMMONWEALTH POPULATION, 1800 to 1914.

(NUMBER OF MALES TO EACH 100 FEMALES.)

Year.	States.						Territories.		C'wealth.
	N.S.W.(a)	Victoria.	Q'land.	S. A. (b)	W. Aust.	Tasmania	North'n (c)	Federal. (d)	
1800	263.05	...	...	...	...	...	...	...	263.05
1805	233.35	...	...	...	...	...	...	...	233.35
1810	190.53	...	...	...	...	...	...	...	190.53
1815	188.84	...	...	...	...	...	...	...	188.84
1820	243.71	...	...	...	...	...	...	...	243.71
1825	325.51	...	...	...	...	341.71	...	...	329.77
1830	317.18	...	...	...	297.29	293.44	...	...	308.30
1835	268.40	...	...	...	190.26	251.68	...	...	260.71
1840	204.16	...	...	180.10	163.51	229.53	...	...	201.75
1845	153.33	...	...	132.75	150.22	215.62	...	...	163.37
1850	138.47	...	...	129.15	154.81	179.49	...	...	143.20
1855	125.08	187.40	...	100.62	193.55	123.65	...	...	145.48
1860	131.29	158.85	149.63	105.06	166.93	123.61	...	...	140.15
1865	120.08	129.60	158.47	109.11	173.90	116.42	...	...	125.38
1870	120.48	121.59	150.31	105.85	161.17	112.98	...	...	121.10
1875	119.09	114.46	152.61	107.24	148.61	111.45	...	...	118.25
1880	120.45	110.42	142.50	114.33	135.06	111.70	...	...	117.28
1885	121.95	110.61	143.95	110.58	135.47	110.73	...	...	118.33
1890	118.05	110.65	132.21	108.60	146.85	111.88	...	...	116.06
1895	113.78	105.23	123.15	105.05	126.54	108.16	...	...	113.41
1900	111.14	101.23	125.33	104.04	157.54	107.97	753.60	...	110.55
1905	111.05	97.69	121.75	100.17	141.35	106.09	496.76	...	108.65
1910	109.23	98.71	119.02	103.12	132.90	104.14	486.32	...	107.87
1911	109.87	99.78	118.93	103.47	133.32	103.91	454.27	125.21	108.54
1912	110.94	99.87	117.74	103.37	131.79	106.19	459.58	124.02	108.85
1913	110.62	100.25	117.48	101.45	129.16	107.49	442.39	122.12	108.61
1914	108.03	99.24	116.77	99.73	124.58	105.89	451.04	116.91	106.78

(a) Including Federal Territory prior to 1911.

(e) Included in South Australia prior to 1900.

(b) Including Northern Territory prior to 1900.

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

The ratios shewn in the preceding table are those which are frequently given as the "masculinity" of the population. 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 1910 and onwards for the Commonwealth and each of its component States and Territories:—

MASCULINITY OF THE POPULATION, 1800 to 1914.

(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	8.68	1.54	14.13	2.03	65.89	...	3.79
1911	4.70	—0.11	8.65	1.71	14.28	1.92	63.92	11.19	4.10
1912	5.19	—0.07	8.15	1.66	13.72	3.00	64.26	10.72	4.24
1913	5.04	0.12	8.04	0.72	12.72	3.61	63.13	9.96	4.13
1914	3.86	—0.38	7.74	—0.13	10.95	2.86	63.71	7.81	3.28

The influence of the war will be observed in the decline of the figures for each of the States and the Commonwealth.

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	Hungary ...	1910	—0.94
New Zealand ...	1914	3.54	Russia (European) ...	1913	—1.06
Australia ...	1914	3.28	Prussia ...	1910	—1.17
Servia ...	1910	3.27	German Empire ...	1910	—1.30
United States of America	1910	2.93	France ...	1906	—1.66
India (Feudatory States)	1911	2.88	Switzerland ...	1910	—1.66
British India ...	1911	2.24	Italy ...	1911	—1.81
Bulgaria ...	1910	1.75	Austria ...	1912	—1.85
Japan ...	1914	1.09	Sweden ...	1913	—2.21
Rumania ...	1913	1.05	Spain ...	1900	—2.36
Greece ...	1907	0.68	Denmark ...	1911	—2.95
Poland (Russian)	1913	0.49	Scotland ...	1911	—3.01
Ireland ...	1911	—0.14	England and Wales ...	1911	—3.27
Belgium ...	1912	—0.76	Norway ...	1910	—3.36
Netherlands ...	1913	—0.81	Portugal ...	1911	—5.08

NOTE.— — denotes excess of females.

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 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 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.

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, previously referred to, is 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 1.5 in each 100 of population, while in that aged 21 and upwards the excess of males over females was about 5.7 in each 100 of population. In the absence of a large immigration of males in excess of females, therefore, the disparity between the sexes in Australia would soon be eliminated.

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) *The Aborigines.* 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 aborigines who were employed by whites or were living in proximity to settlements of whites was stated to be only 19,939. In some of the States, however, more particularly in Queensland, South Australia, 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 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 May 31, 1913, the Queensland Chief Protector of Aborigines estimates the total at 80,866, distributed as follows:—New

South Wales, 4761; Victoria, 269; Queensland, 20,000; South Australia (including the Northern Territory), 29,836; Western Australia, 26,000. 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 not more 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.

Persons, etc.	N.S.W.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Federal Territory	C'with.
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	66.67	21.50	50.00	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 aborigines, 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, 3410 (0.08 per cent.); British India, 6644 (0.15 per cent.); United States of America, 6642 (0.15 per cent.); and Italy, 6719 (0.15 per cent.). The total population of Asiatic birth was 36,442 (0.82 per cent.), of whom 3474 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

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.

extend further than a request that in all cases in which the person enumerated 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 recent 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.	Aust- ralian	Asiatic.		African.		American.		Polynesian.		Indefinite.		Total.	
	Half- caste Abori- ginals	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 Races.					
		Full-blood.		Half-caste.		Total.	
		Number.	Number per 1000 of Total Populat'n.	Number.	Number per 1000 of Total Populat'n.	Number.	Number per 1000 of Total Populat'n.
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 year 1914. In Western Australia and Queensland, on the other hand, the position of affairs is somewhat abnormal, excess of males over females in each 100 of population being respectively 10.95 and 7.74.

In the Northern Territory, owing to lack of settlement, the masculinity has always been largely predominant, the figures for 1914 giving an excess of males over females in each 100 of population of no less than 64.

The variation in the masculinity of the estimated population of the several States and Territories and of the Commonwealth as a whole for the year 1901 and for the past five years will be seen from the following table:—

MASCULINITY (a) OF THE POPULATION, 31st DECEMBER, 1901 and 1910-14.
(COMMONWEALTH.)

Year.	Masculinity of the Population on 31st December. (a.)								
	States.						Territories.		Cwlth.
	N.S.W.	Vict.	Qld.	S. Aust.	W. Aust.	Tas.	North- ern.	Federal (b)	
1901	4.82	0.58	11.42	0.43	21.78	3.80	71.15	...	4.83
1910	4.41	—0.65	8.68	1.54	14.13	2.03	65.89	...	3.79
1911	4.70	—0.11	8.65	1.71	14.28	1.92	63.92	11.19	4.10
1912	5.19	—0.07	8.15	1.66	13.71	3.00	64.26	10.72	4.24
1913	5.04	0.13	8.04	0.72	12.73	3.61	63.13	9.96	4.13
1914	3.86	—0.38	7.74	—0.13	10.95	2.86	63.71	7.81	3.28

(a) Excess of males over females in each 100 of population, prior to 1911.

(b) Part of New South Wales

(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. The number of persons in each State at the Census of 3rd April, 1911, at what are commonly known as the "dependent," "supporting," and "old" ages, and the proportion of same to total of each State and 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 ...	526,525	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 a larger proportion of its population was of supporting age than in any other State, whilst in Tasmania the proportion was the lowest. 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 of those of 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 theseveral States and Territories according to birthplace:—

**BIRTHPLACES OF POPULATION AT CENSUS OF 3rd APRIL, 1911.
(COMMONWEALTH.)**

Birthplace.	Total 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 Z'land	13,968	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	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'with.
	New South Wales.	Victoria.	Queensland.	South Australia	Western Aust.	Tasmania.	Northe'n	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 European 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 population 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 numerously 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 1914.
MALES.

Period.	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust. (b)	W. Aus.	Tas.	North- ern. (c)	Fed- eral. (d)	
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	8,283	7,955	—223	...	130,303
1906 to 1910 ...	64,127	38,948	21,415	14,500	10,762	8,703	—264	...	158,191
1911 to 1914 ...	61,424	37,200	21,748	15,184	10,039	7,478	—145	70	152,998
1861 to 1914 ...	491,679	399,273	146,745	147,822	39,931	62,498	—632	70	1,287,886

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 1914 ...	69,374	40,032	26,608	15,703	12,923	7,632	42	56	172,425
1861 to 1914 ...	565,678	463,677	197,994	155,508	57,773	70,272	103	56	1,511,061

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 1914 ...	130,798	77,232	48,356	30,887	22,967	15,160	—103	126	325,423
1861 to 1914 ...	1,057,357	862,950	344,739	303,330	97,704	132,770	—529	126	2,798,447

(a) Excess of Births over Deaths. (b) Including Northern Territory prior to 1901. (c) Included in South Australia prior to 1901. (d) Part of New South Wales prior to 1911.

NOTE.—Minus sign (—) denotes excess of Deaths over Births.

With one exception, viz., Tasmania for the period 1906 to 1910, 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 1906-10 with a total for the Commonwealth of 334,828. For the individual States the quinquennia of maximum natural increase were as follows:—New South Wales, Queensland, Western Australia and Tasmania, 1906-10; Victoria, 1891-5, and South Australia, 1881-5.

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 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 1000 OF MEAN POPULATION (VARIOUS COUNTRIES).

Country.	Increase.	Country.	Increase.	Country.	Increase.
Australasia(1910-14)		Europe— <i>continued.</i>		Europe— <i>continued.</i>	
Tasmania ...	19.25	Servia ...	(b)14.12	Belgium ...	(b) 7.83
Western Australia...	18.58	Prussia ...	(b)13.93	Ireland ...	6.31
Queensland ...	18.57	Denmark ...	13.91	France ...	0.76
New South Wales	18.41	Finland ...	(b)13.17		
South Australia...	17.57	German Empire	(b)13.09	Asia (1909-13)—	
Commonwealth	17.08	Norway ...	12.43	Japan...	(c)12.36
New Zealand ...	16.80	Italy ...	(b)11.96	Ceylon ...	6.49
Victoria ...	13.86	Hungary ...	(b)11.77		
		Scotland ...	10.73	America(1909-13)—	
Europe (1909-13)—		England & Wales	10.65	Jamaica ...	15.14
Bulgaria ...	(a)18.30	Austria ...	(b)10.64	Canada (Province	
Rumania ...	16.38	Switzerland ...	(b) 9.64	of Ontario) ...	10.38
Netherlands ...	15.09	Spain ...	9.26	Chile ...	8.05

(a) 1906-10. (b) 1908-12. (c) 1907-11.

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 1914 INCLUSIVE.

States.							Territories.		Cwlth.
Period.	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North'n. (b)	Fed. (c)	
MALES.									
1861 to 1865	2,984	—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 1914	48,039	28,912	17,265	—1,191	11,178	—2,754	659	17	102,125
1861 to 1914	278,114	—16,981	200,964	12,676	129,660	—8,561	—404	17	595,485

Throughout 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.

NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES
(STATES, TERRITORIES AND COMMONWEALTH), FROM 1861
TO 1914 INCLUSIVE—Continued.

Period.	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North'n (b)	Fed- eral. (c)	
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	2,358	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 1914	40,475	23,115	12,070	5,126	12,041	4,793	116	171	88,321
1861 to 1914	179,150	46,464	102,948	4,959	80,308	12,614	49	171	401,435
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 1914	88,514	52,027	29,335	3,935	23,219	7,547	775	188	190,446
1861 to 1914	457,264	29,483	303,912	17,635	209,968	21,175	355	188	996,920

Throughout, 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 1861-1914, viz., 54 years, the gain to the Commonwealth population by excess of arrivals over departures was 996,920 persons, while the gain by excess of births over deaths for the same period was 2,798,447. That is, 26.27 per cent. of the increase for the Commonwealth during the past 54 years has been due to "net immigration" and 73.73 per cent. to "natural increase." In regard to the contribution by individual States to the total net immigration of 996,920, all shewed a gain with the exception of Tasmania, which in the period under review had an excess of departures over arrivals of 21,175. In the case of Victoria and South Australia, the gain was small, viz., 29,483 and 17,635 respectively. In New South Wales, Queensland, and Western Australia, on the other hand, the additions due to net immigration during the 54 years were respectively 457,264; 303,912, and 209,968.

The quinquennial period in which the greatest net immigration to the Commonwealth occurred was that of 1831-5 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 1831-5, Victoria 1836-90, 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 1836-90, Western Australia 1871-5 and Tasmania 1906-10. For the first four years (1911, 1912, 1913, and 1914) of the current quinquennium the gain by immigration has been heavy, the net immigration for the four years being 190,446, which is not far short of the migration gain for the whole of the quinquennium 1881-5 before referred to.

4. **Net Increase.**—The net 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 net increase in each quinquennium from 1861 onwards, and for the quadrennium 1911-14:—

NET INCREASE OF THE POPULATION OF THE STATES, TERRITORIES AND COMMONWEALTH FROM 1861 to 1914.

MALES.

Period.	States.						Territories.		Commonwealth.
	N.S.W.	Vict.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North'n (b)	Fed'l. (c)	
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	...	...	255,890
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 1914	109,463	66,112	39,013	13,993	21,217	4,724	514	87	255,123
1861 to 1914	769,793	382,292	347,709	160,498	169,591	53,937	— 1,036	87	1,882,871

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 1914	109,849	63,147	38,678	20,829	24,969	2,889	158	227	260,746
1861 to 1914	744,828	510,141	300,942	160,467	138,081	57,658	152	227	1,912,496

(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900.

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

Note.—The minus sign (—) denotes decrease.

NET INCREASE OF THE POPULATION OF THE STATES, TERRITORIES
AND COMMONWEALTH FROM 1861 TO 1914.—Continued.

PERSONS.

Period.	States.						Territories.		Commonwealth.
	N.S.W.	Vic.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North- ern. (b)	Federal. (c)	
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	90,987	67,534	44,247	26,694	7,418	— 745	...	392,106
1911 to 1914	219,312	129,259	77,691	34,822	46,186	7,613	672	314	515,869
1861 to 1914	1,514,621	892,433	648,651	320,965	307,672	111,595	— 884	314	3,795,367

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

Note.—The minus sign (—) denotes decrease.

As regards the Commonwealth as a whole, the greatest increase in any quinquennium was that for the period 1881-5, viz., 462,987. These figures were, however, closely approached in the succeeding quinquennium, viz., 456,837. The rate of increase fell off in subsequent quinquennia, the increase for the years 1901-5 being 267,638. Since then an improvement has set in, and the increases for the years 1911 and 1912, viz., 143,624 in the former year and 164,652 in the latter, are the best yet experienced by the Commonwealth. In 1913 the increase though good fell off somewhat, the total being 138,700. In 1914 a further falling-off was recorded, the total for that year being 68,893 only, but this may be taken as having been partly caused by the war, there having been an excess of oversea departures over arrivals of 17,370, as against an excess of arrivals over departures of 54,775 in the previous year. The previous best for any single year, viz., 117,654, was experienced in the year 1883.

As regards the individual States the maximum increases in any quinquennium are as follows:—New South Wales, 202,725, in 1881-5; 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 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, 5371, in 1901-5; Western Australia, 1867, in 1871-5; Tasmania, 2853, in 1871-5.

For the years 1911, 1912, and 1913, all the States show a satisfactory rate of increase. In 1914, for the reason above mentioned, the increases have fallen off, Tasmania shewing a loss of 259. As regards the Northern Territory, the figures show a gain of population for that period, being the first time since federation.

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. Total 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 1914 (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 1914.
	%	%	%	%	%	%	%
AUSTRALASIA—							
Commonwealth ...	3.86	3.06	1.86	1.49	1.38	2.03	3.09
New South Wales(a) ...	4.83	3.23	1.99	1.57	1.99	2.03	3.69
Victoria ...	2.60	3.12	0.37	0.52	0.18	2.17	2.54
Queensland ...	8.42	3.80	2.49	2.25	1.35	2.76	3.18
South Australia (b) ...	1.41	1.15	1.63	0.77	0.27	2.46	2.30
Western Australia ...	6.13	5.54	20.81	7.25	6.22	2.43	4.09
Tasmania ...	2.18	2.87	1.06	1.83	1.33	0.65	1.40
New Zealand ...	3.31	1.47	2.41	1.98	2.86	2.56	2.42
EUROPE—							
England and Wales ...	1.11	1.11	1.15	1.15	1.04	1.04	(c) 0.73
Scotland ...	0.75	0.75	1.06	1.06	0.55	0.56	(c) -0.16
Ireland ...	-0.95	-0.94	-0.60	-0.43	-0.22	-0.06	-0.05
Austria ...	0.73	0.83	0.79	1.05	0.87	0.86	(d) 0.80
Belgium ...	1.13	0.75	1.15	0.92	1.26	0.69	0.87
Denmark ...	1.05	0.87	0.99	1.32	1.12	1.26	1.06
Finland ...	1.42	1.51	1.20	1.41	1.36	1.43	0.81
France ...	0.34	0.06	0.09	0.24	0.15	0.16	0.13
German Empire ...	0.74	1.09	1.17	1.51	1.46	1.36	(c) 1.24
Hungary ...	1.09	1.01	0.92	1.03	0.77	0.84	(d) 0.84
Italy ...	0.66	0.71	0.68	0.61	0.52	0.80	1.07
Netherlands ...	1.32	1.03	1.28	1.30	1.53	1.22	1.49
Norway ...	0.36	0.54	0.96	1.31	0.52	0.66	0.97
Prussia ...	0.79	1.15	1.29	1.59	1.57	1.48	(d) 1.42
Rumania ...	1.77	1.34	1.15	1.41	1.46	1.48	1.86
Servia ...	2.30	2.08	1.37	1.57	1.52	1.55	(d) 1.72
Spain ...	0.54	0.48	0.45	0.45	0.52	0.87	0.89
Sweden ...	0.57	0.40	0.61	0.86	0.61	0.84	0.71
Switzerland ...	0.38	0.40	1.22	1.10	1.28	1.17	(d) 1.32
ASIA—							
Ceylon ...	0.54	1.35	1.41	2.03	1.62	1.20	1.20
Japan ...	0.96	1.12	0.96	1.25	1.29	1.08	2.15
AMERICA—							
Canada ...	1.10	1.08	0.97	1.19	2.99	2.99	(c) 3.87
Chile ...	2.97	0.72	2.66	0.90	1.53	1.56	0.99
Jamaica ...	0.77	1.37	1.66	1.72	1.63	0.28	1.43
United States ...	2.27	2.15	1.93	2.02	2.00	1.82	1.71

(a) Including Federal Territory.

(b) Including Northern Territory.

— Decrease.

(c) 1911 to 1914.

(d) 1911 to 1912.

(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 per cent. In the quinquennium in progress this improvement is being continued at an increasing rate. As regards the separate States of the Commonwealth, the rates of increase in all cases except that of South Australia were lower, and in most instances considerably lower, for the period 1906-11 than for 1881-6.

(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 Servia 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, 1914, of 5,040,952 including aborigines, has a density of only 1.69 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, 121; Asia, 51; Africa, 11; North and Central America, 16; and South America, 7. The population of the Commonwealth has thus about $10\frac{1}{2}$ per cent. of the density of that of North and Central America, about 23 per cent. of South America, about $15\frac{1}{2}$ per cent. of that of Africa, about $3\frac{1}{2}$ per cent. of that of Asia, and about $1\frac{1}{2}$ 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 1915 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:—

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD.

Country.	Population.		Country.	Population.	
	Number.	Density (a)		Number.	Density (a)
Continents—			Asia—		
Europe	467,837,271	121.40	China & Dependencies ...	320,650,000	81.93
Asia	864,842,431	51.42	British India	244,267,542	293.47
Africa	131,561,019	10.86	Japan & Dep. (incl. Korea) ...	73,439,746	279.15
North & Central America and the West Indies ...	136,771,998	15.98	Feudatory Indian States ...	70,888,854	99.91
South America	54,665,021	7.34	Dutch East Indies	37,800,000	64.66
Australasia & Polynesia ...	8,223,183	2.37	Russia in Asia	27,787,800	4.18
			Turkey in Asia	19,451,849	27.81
			Persia	9,500,000	15.13
			Philippine Islands	8,937,597	74.48
			Siam	8,149,487	41.79
Total	1,663,900,923	31.84	Tonking	6,119,720	132.40
			Afghanistan	6,000,000	24.00
Europe—			Nepal	5,639,092	104.43
Russia (including Poland and Ciscaucasia & Finland) ...	146,311,000	68.92	Annam	4,702,446	76.19
German Empire	67,812,000	324.80	Ceylon	4,262,097	168.25
Austria - Hungary (incl. Bosnia & Herzegovina) ...	52,093,117	199.39	Cochin China	3,050,785	138.75
United Kingdom	46,064,738	378.72	Arabia (Independent)	2,000,000	2.07
France	39,700,000	191.74	Cambodia	1,634,252	24.13
Italy	35,597,784	321.77	Bokhara	1,250,000	15.06
Spain (incl. Canary and Balearic Islands) ...	20,332,079	104.39	Kiauchau, Neutral Zone ...	1,200,000	480.00
Belgium	7,571,787	665.77	Federated Malay States ...	1,036,999	37.70
Rumania	7,508,009	140.37	Malay Protectorate	900,417	36.60
Netherlands	6,214,701	493.78	Straits Settlements	754,815	471.76
Portugal	5,960,056	167.94	Borneo and Sarawak	708,183	9.69
Sweden	5,638,533	32.60	Khiva	646,000	26.92
Greece (including Crete) ...	4,821,300	114.98	Laos	640,877	5.73
Bulgaria & E. Roumelia ...	4,752,997	120.24	Oman	500,000	6.10
Serbia	4,547,992	134.19	Hong Kong & Territory ...	489,114	1,207.69
Switzerland	3,831,220	239.81	Goa	475,513	323.70
Denmark (incl. Iceland) ...	2,860,264	51.69	Timor, etc.	300,000	40.93
Norway	2,416,800	19.39	Cyprus	286,922	80.06
Turkey	1,891,000	173.77	French India	273,000	1,378.79
Albania	850,000	75.11	Bhutan	250,000	12.50
Montenegro	516,000	92.09	Kiauchau (German)	192,000	960.00
Luxemburg	259,891	260.41	Kwang Chau Wan	168,000	453.23
Malta	219,311	1,858.57	Wei-hai-wei	147,177	516.41
Monaco	22,956	2,869.50	Bahrein Islands	110,000	440.00
Gibraltar	15,448	9,224.00	Macao, etc.	63,991	15,997.75
San Marino	11,291	237.13	Damao and Diu	56,285	333.05
Liechtenstein	10,716	164.86	Aden & Dependencies	46,165	5.13
Andorra	5,231	29.89	Brunei	30,000	7.50
			Tientsin	17,000	944.44
			Socotra & Kuria Muria Is. ...	12,000	8.68
			Labuan	6,706	231.24
Total	467,837,271	121.40	Total	864,842,431	51.42

(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)
Africa—					
Northern and Southern			Porto Rico ...	1,184,489	328.48
Nigeria Prot. ...	17,000,000	50.60	Jamaica ...	864,864	205.58
Belgian Congo ...	15,000,000	16.49	San Domingo ...	708,000	39.24
Egypt ...	12,154,000	34.73	Nicaragua ...	600,000	12.20
Abyssinia ...	8,000,000	23.86	Honduras ...	562,000	12.69
German East Africa ...	7,645,770	19.90	Costa Rica ...	410,981	17.87
Union of South Africa ...	5,973,394	12.63	Trinidad and Tobago ...	352,145	188.51
Upper Senegal and Niger	5,598,973	18.53	Newfoundl'd & Labrador	247,574	1.52
Algeria ...	5,563,828	16.20	Guadeloupe and Depend.	212,430	309.21
Morocco ...	5,000,000	22.83	Martinique ...	194,000	509.19
Angola ...	4,119,000	8.50	Barbados ...	173,359	1,044.33
French Equat. Africa ...	4,104,076	4.09	Windward Islands	165,721	320.98
British East Africa Prot.	4,038,000	16.36	Leeward Islands	127,700	178.60
Madagascar & adjacent			Alaska ...	66,356	0.11
Islands ...	3,253,581	14.40	Bahamas ...	57,241	13.00
Portuguese East Africa ...	3,120,000	10.63	Curaçao ...	55,183	136.93
Sudan ...	3,000,000	3.05	British Honduras ...	41,170	4.79
Uganda Protectorate ...	2,909,122	23.96	Danish West Indies	27,086	196.28
Kamerun ...	2,648,720	13.86	Bermudas ...	19,935	1,049.21
French Guinea ...	1,812,579	19.65	Greenland ...	13,517	0.29
Liberia ...	1,800,000	45.00	Cayman Islands	5,847	65.70
Tunis ...	1,780,527	35.61	Turks & Caicos Islands...	5,615	33.83
Rhodesia ...	1,622,945	3.70	St. Pierre & Miquelon ...	4,652	50.02
Gold Coast and Protect.	1,503,386	18.79			
Ivory Coast ...	1,417,089	11.29	Total ...	136,771,998	15.98
Sierra Leone and Protect.	1,403,132	45.26			
Senegal ...	1,247,979	16.87	South America—		
Nyassaland Protectorate	1,061,207	26.99	Brazil (incl. Acre) ...	24,378,219	7.25
Togoland ...	1,031,978	30.62	Argentine Republic ...	7,467,878	6.48
Dahomey ...	911,849	24.30	Colombia (excl. Panama)	5,071,101	11.50
Military Territory of the			Peru ...	4,500,000	6.23
Niger (French) ...	850,094	1.59	Chile ...	3,551,703	12.14
Portuguese Guinea ...	820,000	58.82	Venezuela ...	2,755,685	6.91
French Sahara ...	800,000	0.52	Bolivia ...	2,520,540	4.90
Tripoli and Benghazi	528,676	1.30	Ecuador ...	1,500,000	12.93
Eritrea ...	450,000	9.83	Uruguay ...	1,279,359	17.73
Basutoland ...	405,903	34.65	Paraguay ...	800,000	4.85
Italian Somaliland ...	400,000	2.87	Panama ...	398,021	12.29
Mauritius and Depend. ...	385,199	476.14	British Guiana ...	304,149	8.40
British Somaliland ...	310,000	4.56	Dutch Guiana ...	86,134	1.87
Mauretania ...	222,061	0.64	French Guiana ...	49,009	1.44
French Somali Coast, etc.	208,000	4.49	Falkland Islands and		
Rio Muni & C. San Juan...	200,000	16.67	South Georgia ...	3,223	0.43
Zanzibar ...	197,199	193.33			
Réunion ...	174,000	180.31	Total ...	54,665,021	7.34
Gambia & Protectorate	146,100	33.44			
Cape Verde Islands	143,929	97.25	Australasia & Polynesia—		
Bechuanaland Protect. ...	125,350	0.46	C'wealth of Australia ...	(b) 5,040,952	1.69
Swaziland ...	107,117	16.39	New Zealand ...	(c) 1,159,720	11.07
German S. W. Africa ...	94,386	0.29	Kaiser Wilhelm Land &		
Comoro Islands ...	84,117	121.21	Bismarck Archipelago	720,354	8.00
Spanish N. & W. Africa	68,536	787.77	Papua ...	251,579	2.78
Prince's & St. Thomas Is.	42,103	116.95	Hawaii ...	208,063	32.26
Fernando Po, etc. ...	23,844	29.29	Dutch New Guinea ...	200,000	1.32
Seychelles ...	23,777	152.42	Fiji ...	153,704	20.67
Mayotte ...	13,753	96.38	Solomon Islands (British)	150,660	10.18
Rio de Oro and Adrar ...	12,000	0.16	New Hebrides ...	70,000	13.73
St. Helena ...	3,514	74.77	New Caledonia & Depend.	57,208	6.69
Ascension ...	196	5.76	German Solomon Is., etc.	55,264	11.03
			Samoa (German) ...	35,000	35.00
Total ...	131,561,019	10.86	French Estab. in Oceania	31,477	20.71
			Gilbert Islands ...	26,863	161.83
North & Central America			Tonga ...	23,737	60.86
& West Indies—			Marshall Islands ...	15,179	101.19
United States ...	98,781,324	33.22	Guam ...	13,380	62.82
Mexico ...	15,501,684	19.73	Samoa (American) ...	9,048	88.71
Canada ...	8,075,000	2.17	Norfolk Island ...	985	98.50
Haiti ...	2,500,000	245.00			
Cuba ...	2,469,125	55.91	Total ...	8,223,183	2.37
Guatemala ...	2,119,165	43.88			
Salvador ...	1,225,835	169.67			

(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 March. 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 1905 to 1914, 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 and Queensland, that ended 30th September for New South Wales, South Australia, and Western Australia, and that ended 31st December for Tasmania. The rate of natural increase was lowest in the quarter ended 31st March in all the States except Western Australia, in which the lowest rate occurred in the quarter ended 31st December.

AVERAGE QUARTERLY NATURAL INCREASE, STATES AND COMMONWEALTH, 1905 to 1914.

State.	(a) Average Natural Increase for Quarter ended on last day of—								Average Natural In- crease per annum, 1905-14.	
	March.		June.		September.		December.			
	Persons	‰	Persons	‰	Persons	‰	Persons	‰	Persons	‰
New S. Wales (b)	7,031	4.35	7,090	4.35	7,555	4.61	7,411	4.49	29,087	17.98
Victoria ...	4,070	3.17	4,518	3.51	4,434	3.44	4,402	3.39	17,424	13.58
Queensland ...	2,443	4.22	2,674	4.58	2,686	4.54	2,591	4.35	10,394	17.94
S. Australia (c)	1,469	3.70	1,715	4.31	1,745	4.37	1,558	3.88	6,487	16.33
W. Australia ...	1,207	4.43	1,295	4.71	1,478	5.32	1,216	4.34	5,196	19.08
Tasmania ...	841	4.38	850	4.47	883	4.69	1,006	5.32	3,580	18.67
Commonwealth	17,061	3.93	18,142	4.16	18,781	4.28	18,184	4.12	72,168	16.62

(a) The symbol ‰ denotes "per thousand." (b) Including Federal Territory.
(c) Including Northern Territory.

2. **Net Immigration.**—For the Commonwealth as a whole the excess of arrivals over departures for the years 1905 to 1914 was greatest in the September quarter. In New South Wales the March quarter gave the greatest excess of arrivals over departures. In Western Australia the largest excess was in the June quarter. In Tasmania the arrivals largely exceeded the departures in the December quarter, but in all the other quarters the departures were in excess. In Queensland, the December quarter shewed an excess of departures over arrivals. In Victoria the arrivals were greatest in the December quarter, and the departures exceeded the arrivals in the June quarter. In South Australia the arrivals exceeded the departures in the December quarter, but the departures exceeded the arrivals in the first two quarters. Particulars concerning the average net immigration of the several States are as follows:—

AVERAGE QUARTERLY NET IMMIGRATION, STATES AND COMMONWEALTH, 1905 to 1914.

State.	Quarter ended on last day of—								Average Net Immigration per annum, 1905-14.	
	March.		June.		September.		December..			
	Persons	‰	Persons	‰	Persons	‰	Persons	‰	Persons	‰
N.S.W. <i>a</i>	4,154	2.57	2,511	1.54	3,623	2.21	1,427	0.86	11,715	7.24
Victoria	468	0.36	—1,487	—1.15	2,094	1.62	4,007	3.09	5,082	3.96
Q'land	1,724	2.98	5,746	9.85	1,242	2.10	—3,929	—6.59	4,783	8.26
S. Aust. <i>b</i>	883	—2.22	—550	—1.38	559	1.40	2,596	6.47	1,722	4.33
W. Aust.	1,275	4.68	1,917	6.98	990	3.56	—1,017	—3.63	3,165	11.63
Tas. ...	—2,469	—12.88	—2,500	—13.15	—448	—2.38	3,462	18.33	—1,955	—10.19
C'wealth	4,269	0.98	5,637	1.29	8,060	1.84	6,546	1.48	24,512	5.65

Throughout, 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 47 per cent. of the entire population of the State. The estimated populations of the several capitals on 31st December, 1914, 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., 1914.	752,500	40.38
Victoria ...	Melbourne ...		674,000	47.11
Queensland ...	Brisbane ...		154,011	22.76
South Australia ...	Adelaide ...		205,443	46.10
Western Australia ...	Perth ...		122,400	37.89
Tasmania ...	Hobart ...		40,000	19.85
Commonwealth ...	(6 Cities) ...	1915	1,948,354	39.43
New Zealand ...	Wellington ...		74,811	6.45
Denmark ...	Copenhagen ...	1911	559,398	20.29
England ...	London (a) ...	1911	4,521,685	12.54
Saxony ...	Dresden ...	1910	548,308	11.41
Norway ...	Christiania ...	1910	241,834	10.11
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 ...	1913	382,085	6.78
Scotland ...	Edinburgh ...	1911	320,318	6.73
Greece ...	Athens ...	1907	167,479	6.36
Prussia ...	Berlin ...	1910	2,071,257	5.16
Netherlands ...	The Hague ...	1913	301,851	4.86
Hungary ...	Budapest ...	1910	880,371	4.22
Spain ...	Madrid ...	1910	599,807	2.95
Switzerland ...	Berne ...	1913	94,700	2.48
Russia (European) ...	Petrograd ...	1913	2,073,800	1.65
Italy ...	Rome ...	1914	576,435	1.62

(a) Population of Greater London in 1911 was 7,251,358.

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 3000. 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—			10,000 and under 20,000—cont.		
Sydney	N.S.W.	107,133	Toowoomba	Qld.	16,160
20,000 and under 100,000—			Townsville	"	13,678
Adelaide	S.A.	32,981	Waverley	N.S.W.	18,961
Ballarat	Vic.	38,686	Williamstown	Vic.	12,114
Balmain	N.S.W.	31,961	Woolahra	N.S.W.	12,836
Brisbane South	Qld.	21,332	5000 and under 10,000—		
Broken Hill	N.S.W.	30,953	Abbotsford	Vic.	9,308
Brunswick	Vic.	32,201	Adelaide North	S.A.	9,300
Carlton	"	27,476	Albury	N.S.W.	5,862
Collingwood	"	20,254	Alexandria	"	9,491
Fitzroy	"	34,141	Ararat	Vic.	5,402
Footscray	"	21,933	Armidale	N.S.W.	6,530
Geelong	"	21,630	Arnccliffe	"	5,034
Glebe	N.S.W.	21,444	Ascot Vale	Vic.	5,655
Hawthorn	Vic.	24,353	Auburn	N.S.W.	5,602
Hobart	Tas.	27,605	Bathurst	"	9,319
Launceston	"	20,937	Bexley	"	6,241
Leichhardt	N.S.W.	24,139	Bundaberg	Qld.	8,727
Marrickville	"	25,993	Burwood	N.S.W.	8,281
Melbourne	Vic.	38,293	Cairns	Qld.	5,193
Melbourne South	"	46,016	Camberwell	Vic.	8,547
Newtown	N.S.W.	26,427	Castlemaine	"	5,219
Paddington	"	24,150	Caulfield	"	7,669
Perth	W.A.	31,300	Chatswood	N.S.W.	5,483
Petersham	N.S.W.	20,407	Claremont	W.A.	6,252
Prahran	Vic.	25,489	Coburg	Vic.	9,454
Redfern	N.S.W.	24,275	Cottesloe	W.A.	5,142
Richmond	Vic.	38,559	Drummoynne	N.S.W.	5,947
St. Kilda	"	25,449	Dubbo	"	5,368
Sydney North	N.S.W.	32,764	Eaglehawk	Vic.	6,998
10,000 and under 20,000—			Elsternwick	"	6,790
Annandale	N.S.W.	11,250	Erskineville	N.S.W.	7,234
Ashfield	"	12,096	Flemington	Vic.	6,109
Bendigo	Vic.	17,883	Fortitude Valley	Qld.	7,090
Botany	N.S.W.	10,228	Fremantle	W.A.	6,406
Boulder	W.A.	12,833	Fremantle South	"	6,253
Brighton	Vic.	11,096	Glenelg	S.A.	5,003
Brisbane	Qld.	17,715	Grafton and Grafton South	N.S.W.	6,123
Charters Towers	"	15,037	Granville	"	6,938
Essendon	Vic.	10,087	Hamilton	"	6,944
Goulburn	N.S.W.	10,187	Hurstville	Vic.	5,551
Gympie	Qld.	11,718	Inverell	N.S.W.	5,112
Ipswich	"	10,445	Kensington	Vic.	5,131
Kalgoorlie	W.A.	13,488	Kogarah	N.S.W.	6,300
Kew	Vic.	11,143	Leederville	W.A.	5,499
Malvern	"	15,319	Lismore	N.S.W.	7,609
Manly	N.S.W.	10,687	Lithgow	"	6,991
Melbourne North	Vic.	17,750	Mackay	Qld.	6,135
Mosman	N.S.W.	13,189	Maitland West	N.S.W.	7,395
Newcastle	"	12,816	Maryborough	Qld.	9,410
Northcote	Vic.	17,491	"	Vic.	5,804
Parramatta	N.S.W.	12,520	Moonee Ponds	"	8,065
Port Melbourne	Vic.	13,471	Mount Morgan	Qld.	9,773
Randwick	N.S.W.	15,793	New Farm	"	5,394
Rockhampton	Qld.	15,451	Newtown	Vic.	5,863
South Yarra	Vic.	10,060	Norwood	S.A.	9,454

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.
5000 and under 10,000— <i>cont.</i>			3000 and under 5000— <i>cont.</i>		
Orange ...	N.S.W.	5,263	Gunnedah ...	N.S.W.	4,100
Paddington ...	Qld.	5,273	Hamilton ...	Qld.	3,229
Parkside ...	S.A.	7,774	Hindmarsh ...	S.A.	3,556
Port Pirie ...	...	7,968	Horsham ...	Vic.	3,554
Preston ...	Vic.	5,025	Ithaca ...	Qld.	3,378
Rockdale ...	N.S.W.	7,453	Junee ...	N.S.W.	3,606
Rookwood ...	"	5,374	Kangaroo Point ...	Qld.	4,417
St. Peters ...	...	7,037	Katoomba ...	N.S.W.	3,950
Subiaco ...	W.A.	8,701	Kensington ...	S.A.	4,175
Tamworth ...	N.S.W.	7,607	Kurri-Kurri ...	N.S.W.	4,154
Toowong ...	Qld.	5,645	Kyneton ...	Vic.	3,174
Wagga Wagga ...	N.S.W.	7,446	Liverpool ...	N.S.W.	3,081
Walleroo ...	S.A.	5,282	Maldon ...	Vic.	3,077
Warrnambool ...	Vic.	7,543	Merewether ...	N.S.W.	4,135
Warwick ...	Qld.	5,562	Midland Junction ...	W.A.	3,881
Waterloo ...	N.S.W.	9,471	Mildura ...	Vic.	4,608
Woolloongabba ...	Qld.	8,326	Moonta ...	S.A.	3,772
3000 and under 5000—			Moree ...	N.S.W.	3,161
Albany ...	W.A.	3,699	Mount Gambier ...	S.A.	4,531
Armada ...	Vic.	4,298	Mudgee ...	N.S.W.	3,621
Bairnsdale ...	"	3,412	Narrabri ...	"	4,686
Beechworth ...	"	3,409	Newtown ...	Tas.	3,382
Benalla ...	"	3,172	Northam ...	W.A.	4,205
Bunbury ...	W.A.	3,920	Oakleigh ...	Vic.	3,341
Camperdown ...	N.S.W.	4,768	Parkes ...	N.S.W.	3,411
"	Vic.	3,473	Perth North ...	W.A.	4,895
Campsie ...	N.S.W.	3,957	Perth West ...	"	3,291
Canterbury ...	"	4,190	Port Adelaide ...	S.A.	3,386
Casino ...	"	3,635	Prospect ...	"	3,298
Cessnock ...	"	3,957	Queenstown ...	Tas.	3,659
Clifton Hill ...	Vic.	4,023	Roma ...	Qld.	3,157
Cobar ...	N.S.W.	4,619	Ryde ...	N.S.W.	3,247
Colac ...	Vic.	3,992	St. Arnaud ...	Vic.	4,096
Concord ...	N.S.W.	3,799	Sale ...	"	3,491
Coonamble ...	"	3,280	Semaphore ...	S.A.	3,495
Cootamundra ...	"	3,352	Shepparton ...	Vic.	4,049
Cowra ...	"	3,981	Singleton ...	N.S.W.	3,655
Darlington ...	"	3,815	Stawell ...	Vic.	4,843
Daylesford ...	Vic.	3,928	Strathfield ...	N.S.W.	3,093
Devonport ...	Tas.	3,620	Summer Hill ...	"	3,854
Dulwich Hill ...	N.S.W.	3,578	Temora ...	"	3,561
Echuca ...	Vic.	4,137	Toorak ...	Vic.	3,630
Enfield ...	N.S.W.	3,475	Unley ...	S.A.	4,397
Forbes ...	"	4,654	Wangaratta ...	Vic.	4,136
Fremantle East ...	W.A.	3,856	Waratah ...	N.S.W.	3,597
" North ...	"	3,315	Wellington ...	"	4,409
Gawler ...	S.A.	4,037	Willoughby ...	"	4,693
Geraldton ...	W.A.	3,494	Windsor ...	Vic.	3,953
Glen Innes ...	N.S.W.	4,030	Wollongong ...	N.S.W.	4,725
Goodwood ...	S.A.	3,443	Wonthaggi ...	Vic.	3,223
Grenfell ...	N.S.W.	3,007	Wyalong ...	N.S.W.	3,301
Guildford ...	W.A.	3,224	Young ...	"	3,619
			Zeehan ...	Tas.	3,951

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 5000 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—			5000 and under 10,000—		
Sydney	N.S.W.	112,921	Alberton	Vic.	5,479
Melbourne	Vic.	103,593	Albury	N.S.W.	6,309
20,000 and under 100,000—			Ararat (Shire)	Vic.	6,395
Adelaide	S.A.	42,294	Auburn	N.S.W.	5,569
Ashfield	N.S.W.	20,431	Bairnsdale	Vic.	8,190
Ballarat (City)	Vic.	22,017	Bathurst	N.S.W.	8,575
Balmain	N.S.W.	32,038	Beechworth	Vic.	5,978
Bendigo	Vic.	28,539	Bellingen	N.S.W.	9,124
Brisbane	Qld.	39,917	Benalla	Vic.	7,688
Brisbane, South	"	30,051	Berwick	"	6,632
Broken Hill	N.S.W.	30,972	Bexley	N.S.W.	6,517
Brunswick	Vic.	32,215	Bland	"	5,522
Cessnock	N.S.W.	21,018	Blaxland	"	9,661
Collingwood	Vic.	34,190	Blue Mountains	"	6,902
Essendon	"	23,749	Boree	"	5,111
Fitzroy	"	34,253	Borung	Vic.	5,412
Footscray	"	23,643	Botany, North	N.S.W.	5,836
Glebe	N.S.W.	21,943	Bright	Vic.	5,943
Hawthorn	Vic.	24,450	Bundaberg	Qld.	5,516
Hobart	Tas.	27,526	Buninyong (Shire)	Vic.	5,594
Launceston	"	20,754	Burnside	S.A.	9,416
Leichhardt	N.S.W.	24,254	Burwood	N.S.W.	9,380
Marrickville	"	30,653	Byron	"	6,553
Melbourne, South	Vic.	46,190	Caboollure	Qld.	5,759
Newtown	N.S.W.	26,498	Cairns (Town)	"	5,164
Paddington	"	24,317	Canobias	N.S.W.	5,140
Perth (Municipality)	W.A.	35,767	Castlemaine	Vic.	5,228
Petersham	N.S.W.	21,712	Clifton	Qld.	7,059
Port Adelaide	S.A.	24,015	Coburg	Vic.	9,505
Prahran	Vic.	45,367	Coolamon	N.S.W.	5,600
Redfern	N.S.W.	24,427	Crookwell	"	6,223
Richmond	Vic.	40,442	Dandenong	Vic.	5,134
St. Kilda	"	25,334	Deloraine	Tas.	5,779
Sydney, North	N.S.W.	34,646	Dimboola	Vic.	5,795
Unley	S.A.	23,773	Dorriga	N.S.W.	7,584
10,000 and under 20,000—			Drummoyne	"	8,679
Alexandria	N.S.W.	10,123	Eaglehawk	Vic.	7,588
Annandale	"	11,240	Erina	N.S.W.	9,176
Ballarat, East	Vic.	15,962	Erskineville	"	7,299
Boulder	W.A.	10,824	Esk	Qld.	5,575
Brighton	Vic.	12,083	Euroa	Vic.	6,130
Bull	N.S.W.	10,123	Glengallan	Qld.	5,982
Camberwell	Vic.	12,551	Gobag	N.S.W.	5,326
Canterbury	N.S.W.	11,335	Goolman	Qld.	5,289
Caufield	Vic.	15,919	Granville	N.S.W.	7,231
Colac	"	14,212	Guyra	"	6,534
Fremantle (Municipality)	W.A.	14,499	Gympie	Qld.	8,923
Geelong	Vic.	13,618	Hamilton	N.S.W.	7,908
Goulburn	N.S.W.	10,023	Hampton	Vic.	9,829
Hindmarsh	S.A.	11,335	Hastings	N.S.W.	5,746
Ithaca	Qld.	15,756	Heidelberg	Vic.	8,610
Kalgoorlie (Road District)	W.A.	12,061	Highfields	Qld.	5,656
Kensington and Norwood	S.A.	13,892	Hornsby	N.S.W.	8,901
Kew	Vic.	11,152	Hunter's Hill	"	5,013
Lake Macquarie	N.S.W.	14,610	Hurstville	"	6,533
Malvern	Vic.	15,989	Illawarra, Central	"	5,000
Manly	N.S.W.	10,465	Illawarra, North	"	5,157
Manning	"	11,137	Imlay	"	5,564
Moorabbin	Vic.	12,757	Ipswich	Qld.	9,528
Mosman	N.S.W.	13,243	Jondaryan	"	7,469
Newcastle	"	11,610	Kadina (District Council)	S.A.	8,096
Northcote	Vic.	17,519	Kalgoorlie (Municipality)	W.A.	8,781
Parramatta	N.S.W.	12,465	Karkaroc	Vic.	5,743
Port Melbourne	Vic.	13,515	Kentish	Tas.	5,571
Queenton	Qld.	14,277	Kerang	Vic.	8,969
Randwick	N.S.W.	19,463	Kogarah	N.S.W.	6,953
Rockdale	"	14,095	Korong	Vic.	5,517
Rockhampton	Qld.	15,456	Ku-ring-gai	N.S.W.	9,458
Toowoomba	"	13,119	Kyneton	Vic.	6,904
Townsville	"	10,636	Leederville	W.A.	5,457
Waterloo	N.S.W.	10,073	Leven	Tas.	5,450
Waverley	"	19,831	Lilydale	Vic.	6,329
Williamstown	Vic.	15,275	Lismore	N.S.W.	7,381
Willoughby	N.S.W.	13,036	Lithgow	"	8,196
Woollahra	"	16,989	Liverpool Plains	"	5,651

**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.
5000 and under 10,000—cont.			5000 and under 10,000—cont.		
Livingstone ...	Qld.	5,656	St. Peters ...	N.S.W.	8,410
Lyndhurst ...	N.S.W.	6,740	" ...	S.A.	9,073
Mackay ...	Qld.	5,141	Severn ...	N.S.W.	6,885
Macleay ...	N.S.W.	6,679	Shepparton ...	Vic.	6,099
Maitland, West ...	"	8,210	Stephens ...	Qld.	5,415
Marong ...	Vic.	6,646	Stroud ...	N.S.W.	5,117
Maroochy ...	Qld.	5,288	Subiaco ...	W.A.	8,926
Maryborough ...	Vic.	5,675	Swan Hill ...	Vic.	6,795
Mildura ...	Qld.	9,673	Tamworth ...	N.S.W.	7,145
Mitcham ...	Vic.	6,119	Tarampa ...	Qld.	6,699
Mount Morgan ...	S.A.	5,035	Tarro ...	N.S.W.	6,492
Mulwara ...	Qld.	8,504	Tenterfield (Shire) ...	"	5,153
Namoi ...	N.S.W.	7,009	Terania ...	"	5,621
Nanango ...	"	8,092	Thebarton ...	S.A.	8,720
Narracan ...	Qld.	6,433	Thuringowa ...	Qld.	5,065
New Norfolk ...	Vic.	5,408	Tintenbar ...	N.S.W.	5,865
Newtown and Chilwell ...	Tas.	6,124	Toombul ...	Qld.	6,791
Numurkah ...	Vic.	5,831	Toowoong ...	"	6,286
Numawading ...	"	6,844	Towong ...	Vic.	6,418
Patrick's Plains ...	"	7,120	Tungamah ...	"	5,376
Perth (Road District) ...	N.S.W.	6,894	Tweed ...	N.S.W.	7,308
Phillip Island & Woolamai ...	W.A.	5,066	Wagga Wagga ...	"	6,419
Pioneer ...	Vic.	7,067	Wallerobba ...	"	5,619
Poowong and Jeetho ...	Qld.	9,752	Wambo ...	Qld.	6,749
Port Germein ...	Vic.	7,449	Waranga ...	Vic.	5,291
Portland (Shire) ...	S.A.	5,210	Warrnambool (Shire) ...	"	8,653
Port Pirie ...	Vic.	5,291	Warrnambool (Town) ...	"	7,010
Preston ...	S.A.	9,385	Warwick ...	Qld.	5,248
Prospect ...	Vic.	5,049	Waugoola ...	N.S.W.	5,262
Rodney ...	S.A.	6,813	Wickham ...	"	8,434
Rookwood ...	Vic.	6,718	Windsor ...	Qld.	8,970
Rosalie ...	N.S.W.	5,418	Woodville ...	S.A.	7,787
Ryde ...	Qld.	7,982	Zeehan ...	Tas.	5,726
	N.S.W.	5,261			

§ 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 1912, 1913 and 1914, and the total from the earliest times up to the end of 1914, are given in following table:—

ASSISTED IMMIGRANTS DURING 1912, 1913 AND 1914, AND UP TO THE END OF 1914. STATES AND COMMONWEALTH.

State ...	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	C'with.
No. Assisted during 1912	14,956	15,112	6,462	3,212	6,970	(a)	46,712
" " " 1913	9,860	12,146	4,757	2,759	7,708	215	37,445
" " " 1914	6,655	7,496	4,096	644	1,729	185	20,805
Total to end of 1914 ...	269,152	184,457	212,057	102,628	41,031	22,099	831,424

(a) Figures not available.

§ 8. Enumerations and Estimates.

1. **Musters.**—Actual enumerations of Australia's population, of varying accuracy, have been made from the earliest times onward. Originally known as "Musters," these were first undertaken with a view to estimating the food and other requirements of the settlements. These musters, the results of which are said to have been very unreliable, appear 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 as shewn in the table on the next page.

3. **The Census of 1901.**—A conference of the Government Statisticians of Australia and New Zealand, held in Sydney in February and March, 1900, aimed at 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 Infirmary, 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" was to be asked in all cases, and that nationality was to be ascertained in addition to birthplace. As already stated in § 1 of this section, 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 shewn 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.) 17,866	...	...	...
1846	(2nd March) 189,609	...	...	(26th Feb.) 22,890	...	...	...
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 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 indicating a uniform tendency to over-estimation, and 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 shown by graphs on pages 139 to 141:—

COMMONWEALTH POPULATION FROM EARLIEST DATE.

MALES.

Year.	Estimated Population at end of Year.							
	States.						Territories.	
	New S. Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	North-ern.	Federal
1788	...	...	...	...	...	...	...	...
1790	...	...	...	...	...	...	...	...
1795	...	...	...	...	...	...	...	...
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	...	...	...	...	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	113,789	...	...	12,810	2,689	43,921	...	173,159
1850	154,976	...	...	35,902	3,576	44,229	...	238,683
1855	147,822	226,462†	...	48,843	8,311	38,680	...	470,118
1860	197,851	330,302	16,817†	64,340	9,597	49,653	...	668,560
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	60,568	...	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	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
1914	966,675	712,594	364,526	220,550	179,188	103,590	3,252	2,551,431

* Details not available. † Previously included with New South Wales. ‡ Previously included with South Australia.

COMMONWEALTH POPULATION FROM EARLIEST DATE.—Continued.

FEMALES.

Year.	Estimated Population at end of Year.								
	STATES.						TERRITORIES.		C'wealth.
	N.S.W.	Victoria.	Q'nsland.	S Aust.	W. Aust.	Tas.	North- ern.	Fed- eral.	
1788	...	...	...	...	...	...	...	...	*
1790	...	...	...	...	...	...	...	...	*
1795	...	...	...	...	...	...	...	...	*
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	...	...	...	...	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	120,843†	...	48,544	4,294	31,282	...	...	323,142
1860	150,695	207,932	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	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
1914	894,847	718,073	312,181	221,140	143,830	97,826	721	903‡	2,389,521

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	...	...	...	...	14,192†	...	...	52,505
1830	44,588	...	...	...	1,172	24,279	...	...	70,039
1835	71,304	...	...	...	1,878	40,172	...	...	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	347,305†	...	97,387	12,605	69,962	...	...	793,260
1860	348,546	538,234	28,056†	125,582	15,346	89,821	...	...	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	593,367	794,934	169,105	210,076	27,002	103,739	...	...	1,898,223
1880	741,142	858,605	211,040	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	4,857‡	...	3,765,339
1905	1,487,894	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
1914	1,861,522	1,430,667	676,707	441,690	323,018	201,416	3,973	1,959‡	4,940,952

* Details not available.

† Previously included with New South Wales.

‡ Previously included with South Australia.

The tables on the two preceding pages, 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 ...	*	*	2,056	%	%	%
1800 ...	*	*	3,161	...	...	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	340,423	659,744	16.15	19.04	17.52

* 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 ABORIGINES).

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 decennia have been as follow :—

DECENNIAL INCREASES IN THE TOTAL POPULATION.

State.	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 decennium 1901-11 was greater by 81,795 than that for the decennium 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 shewing 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'with.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North'n.	Federal.	
MALES.									
Under 5 years	102,003	73,061	37,724	24,109	17,709	12,636	84	85	267,411
5 & under 15	164,273	129,201	63,522	40,059	26,596	21,393	158	188	445,390
15 21	100,551	81,223	39,532	25,861	14,533	11,744	107	119	273,670
21 45	316,463	229,179	121,711	75,059	72,569	32,779	1,002	358	849,120
45 65	133,550	106,201	51,716	32,067	25,090	14,659	1,221	181	364,685
65 .. upwards	36,368	33,467	13,319	9,285	3,916	3,848	102	53	100,358
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.									
Under 5 years	98,863	70,417	35,980	23,421	17,215	12,144	87	95	258,223
5 & under 15	161,118	126,427	62,413	39,262	26,014	20,455	148	180	436,017
15 21	97,950	81,564	37,160	25,605	12,974	11,751	83	106	267,193
21 45	292,364	242,746	97,277	73,022	47,268	32,018	201	213	785,109
45 65	104,804	100,670	33,039	29,206	13,638	12,729	47	88	294,221
65 .. upwards	30,134	34,356	9,254	9,730	2,720	3,993	6	32	90,225
Unspecified ...	3,903	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
PERSONS.									
Under 5 years	200,866	143,478	73,704	47,530	34,924	24,780	171	180	525,633
5 & under 15	325,391	255,628	125,935	79,321	52,610	41,848	306	368	881,407
15 21	198,501	152,787	76,692	51,466	27,507	23,495	190	225	504,863
21 45	608,827	471,925	218,988	148,081	119,837	64,797	1,203	571	1,634,229
45 65	238,354	206,871	84,755	61,273	38,728	27,358	1,268	269	658,906
65 .. upwards	66,502	67,823	22,573	19,015	6,636	7,841	108	85	190,583
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	4,455,035

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'with
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	North- ern.	Fede- ral.	
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	8,378	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	6,096	5,225	1,877	1,091	1,341	801	27	20	16,418
Total	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035
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	626	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	99,620	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	50,552	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	11,273
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 transport 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.		Cwealth
	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	North- ern.	Fede- ral.	

MALES.									
Class									
I. Professional ...	36,763	26,607	11,403	6,644	6,746	3,350	73	53	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	24,043	14,710	208	210	453,743
VI. Primary Producers	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	33,690	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									
I. Professional ...	19,377	17,212	6,250	4,529	3,453	2,131	13	8	52,973
II. Domestic ...	54,493	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	947	326	331	...	6	4,837
V. Industrial ...	36,093	46,456	11,313	8,181	3,985	2,568	4	4	108,594
VI. Primary Producers	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									
I. Professional ...	56,140	43,819	17,653	11,173	10,199	5,481	86	60	144,611
II. Domestic ...	73,331	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 Producers	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	112,501	709	884	2,449,986
Unspecified ...	11,703	17,361	4,890	5,046	1,951	2,441	18	14	43,424
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 numerously 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 17,297.

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'with.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	North- ern.	Fede- ral.	
MALES.									
Christian	830,484	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	14,969	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	2,089,359
Non-Christian	3,808	3,224	563	442	937	71	106	...	9,151
Indefinite	1,143	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	4,923	98	22	83,093
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

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.

MALES.

Age Group.	States.						Territories.		C'wealth.
	N.S.W.	Vic	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Federal.	
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.		C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed- eral.	
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	632	506	376	305	1	4	5,775
Total	276,216	216,465	98,914	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

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—Continued.
FEMALES—Continued.

Age Group.	States.						Territories.		C'wealth.
	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed- eral.	
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

NOT STATED.									
Under 15 ...	...	...	...	...	...	...	...	...	...
15 & under 21	96	62	20	24	10	9	2	...	223
21 " 45	186	113	42	29	32	59	2	...	463
45 " 65	48	41	16	6	2	46	...	...	159
65 & upwards	26	39	6	6	1	18	...	...	96
Unspecified...	100	202	25	24	29	2	...	...	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.		C'with.
	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 ...	23,887	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	5,086	19	37	128,068
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	119,933	2,406	1,134	2,783,543
Married ...	551,644	423,215	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.

**EDUCATION OF THE POPULATION OF THE STATES AND TERRITORIES OF
THE COMMONWEALTH OF AUSTRALIA**

AT THE CENSUS OF 3RD OF APRIL, 1911 (EXCLUSIVE OF FULL-BLOODED
ABORIGINALS).

MALES.

States and Territories.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read only.	Read and Write.	Read Only.			
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	22,203	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... ..	1,888	14	2	...	272	38	1,714
Total Commonwealth ...	3,650,030	15,009	26,210	2,647	665,382	95,727	4,455,005

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).**

MALES.

Age.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read only.	Read and Write.	Read only.			
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	23,334
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	6,081	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	962	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 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	35	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.

Prior to the passing of this 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 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.

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 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 therein.
 - (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:—

- (i.) His own statutory declaration stating—
 - (a) Name; (b) Date of birth; (c) Birthplace; (d) Occupation; (e) Residence; (f) Length of residence in Australia; (g) Intention to settle in the Commonwealth.
- (ii.) A certificate signed by a Justice of the Peace, a postmaster, a teacher of a State school, or an officer of police, that the applicant is known to him and is of good repute.

In connection with any application for naturalisation, the Governor-General in Council is authorised to grant or withhold a certificate as he thinks most conducive to the public good, but the issue of a certificate to any person who is not already naturalised in the United Kingdom is not admissible until the applicant has taken an oath or affirmation of allegiance. 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 an infant who is not a natural-born British subject, but who has resided at any time in Australia with a father or mother who is a naturalised British subject. In each instance the person concerned is deemed to be naturalised under the Commonwealth Act.

The administration of the Act is carried out by the Department of External Affairs, 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 1910 to 1914, and to the countries from which such recipients had come, are shewn in the following table:—

COMMONWEALTH NATURALISATION CERTIFICATES GRANTED, 1910 to 1914.

Nationalities of Recipients.	No. of Certificates Granted.					Countries from which Recipients of Commonwealth Certificates had come.	No. of Certificates Granted.				
	1910.	1911.	1912.	1913.	1914.		1910.	1911.	1912.	1913.	1914.
German ...	694	813	757	789	1,836	Germany ...	567	676	614	661	1,391
Swedish ...	181	210	204	227	375	Great Britain ...	346	367	352	382	782
Italian ...	174	210	174	223	335	Italy ...	161	200	160	220	341
Russian ...	135	159	182	246	452	America (North)...	107	140	108	133	239
Danish ...	132	156	123	163	248	Denmark ...	76	100	67	86	131
Norwegian ...	107	103	86	122	208	Sweden ...	71	82	73	95	149
Greek ...	77	87	89	79	112	Norway ...	50	54	43	71	113
Austrian ...	56	76	95	131	205	South Africa ...	57	53	33	53	99
French ...	91	69	59	66	104	New Zealand ...	32	42	33	39	75
American (Nth.)	55	61	43	47	83	Greece ...	28	38	45	36	55
Swiss ...	51	42	39	47	84	Russia ...	40	37	36	53	98
Dutch ...	18	27	36	65	115	France ...	55	36	36	39	70
Spanish ...	24	26	25	26	34	Austria ...	28	29	40	56	71
Belgian ...	14	8	6	14	16	Switzerland ...	43	27	28	36	56
Portuguese ...	13	8	4	9	6	Egypt ...	22	26	55	49	75
Rumanian ...	3	7	4	7	21	Spain ...	18	25	24	25	26
Turkish ...	13	6	10	8	2	America (South)	...	24	19	28	82
Brazilian ...	...	2	1	...	...	Belgium ...	18	18	21	33	65
Bulgarian ...	3	2	3	7	16	India ...	...	13	9	6	24
Montenegrin ...	...	1	1	1	3	Pacific Islands ...	...	13	...	...	...
Chilian ...	2	1	1	1	...	Turkey ...	7	11	6	4	4
Mexican ...	...	1	...	1	1	New Caledonia ...	...	10	7	11	9
South Sea Islds	...	1	...	...	...	Hong Kong ...	...	7	...	...	...
Syrian ...	...	1	...	...	...	Holland ...	...	6	20	41	77
Chinese ...	1	...	1*	3	7*	China ...	10	...	10	34	43
Serbian ...	...	...	1	4	2	Mauritius ...	...	...	7	...	...
American (Stb.)	3	...	1	5	3	Other Countries ...	113	43	99	100	197
Peruvian ...	...	1	...	...	2						
Uruguayan ...	...	...	...	...	...	
Icelandic ...	1	...	...	...	...		
Japanese ...	...	...	...	...	2*						
Total ...	1,849	2,077	1,945	2,291	4,272	Total ...	1,849	2,077	1,945	2,291	4,272

* By marriage.

The following table furnishes particulars concerning the States in which the recipients of Commonwealth certificates of naturalisation during the years 1904 to 1914 were resident :—

NATURALISATION CERTIFICATES GRANTED BY COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	Nor. Ter.	C'wlth.
1904 ...	1,379	319	115	25	248	21	...	2,107
1905 ...	544	213	150	34	166	11	...	1,118
1906 ...	475	301	177	45	150	39	...	1,187
1907 ...	458	214	193	27	134	16	...	1,042
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

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 1911.
STATES.**

Particulars.	N. S. W.	Victoria	Qld.	S. Aust.	W. Aus.	Tas.	Territories.		C'wth.
							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.

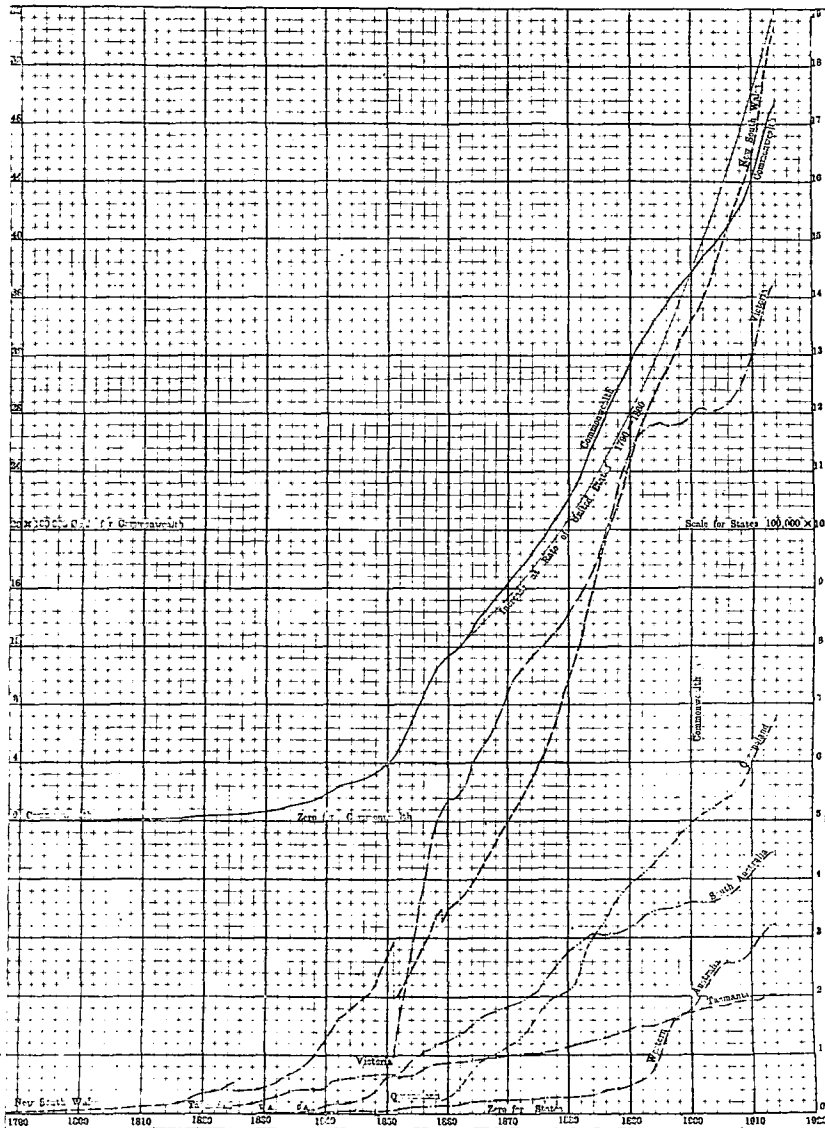
1. **General.**—The nature of the fluctuations of the numbers representing (a) total population, or those representing (b) births and deaths from year to year, or (c) the natural increase, *i.e.*, the difference of births and deaths, or (d) the net immigration, all of which taken together make up the 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 1914, and in others from 1860 to 1914. 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 189).—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. 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. The population of Queensland passed that of Tasmania in 1867, and that of South Australia in 1885. The population density of Queensland is less than 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 foundation of the colony in 1834 until 1894, and that from that point onwards, a diminished rate of increase

GRAPHS OF TOTAL POPULATION OF THE COMMONWEALTH OF AUSTRALIA
AND EACH STATE THEREIN, 1788-1914.



(See Tables pages 91 to 93.)

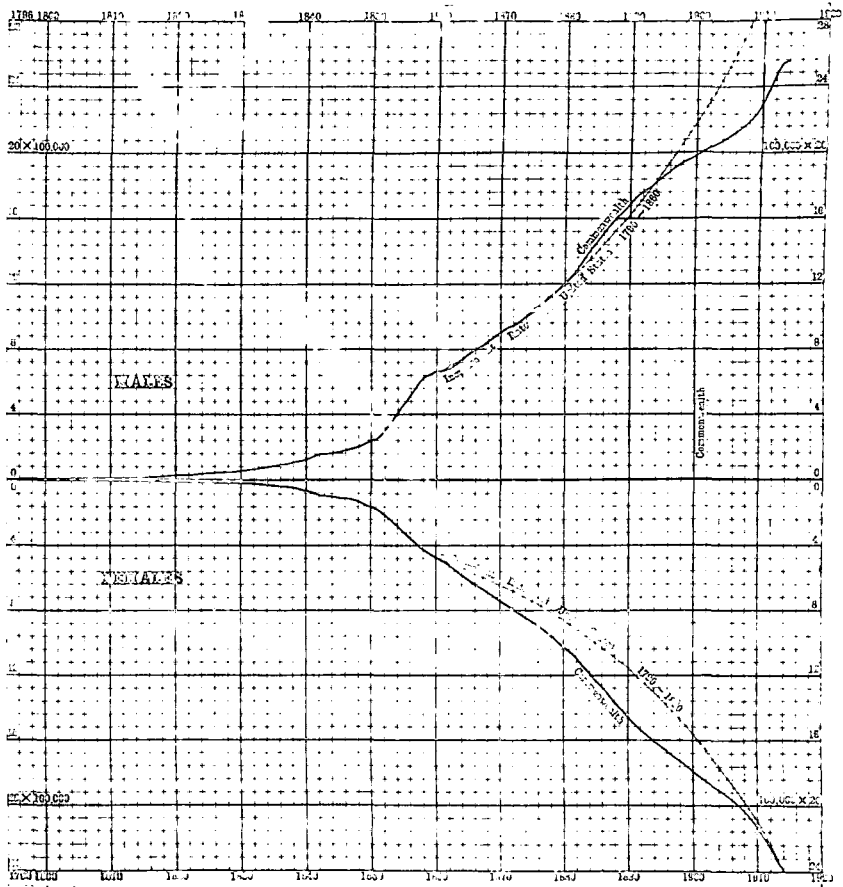
EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval for both States and Commonwealth; and the vertical height 80,000 persons for Commonwealth or 20,000 for States. The zero line for the States is the bottom line; for the Commonwealth it is the line marked "Commonwealth." The scale on the left above the Commonwealth zero line relates to the Commonwealth, and that on the right relates 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.

The manner in which the population of the Commonwealth would have grown from 1860 to 1914 if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860, is shewn for purposes of comparison.

GRAPHS OF MALE AND FEMALE POPULATIONS, COMMONWEALTH OF AUSTRALIA, 1790-1914.

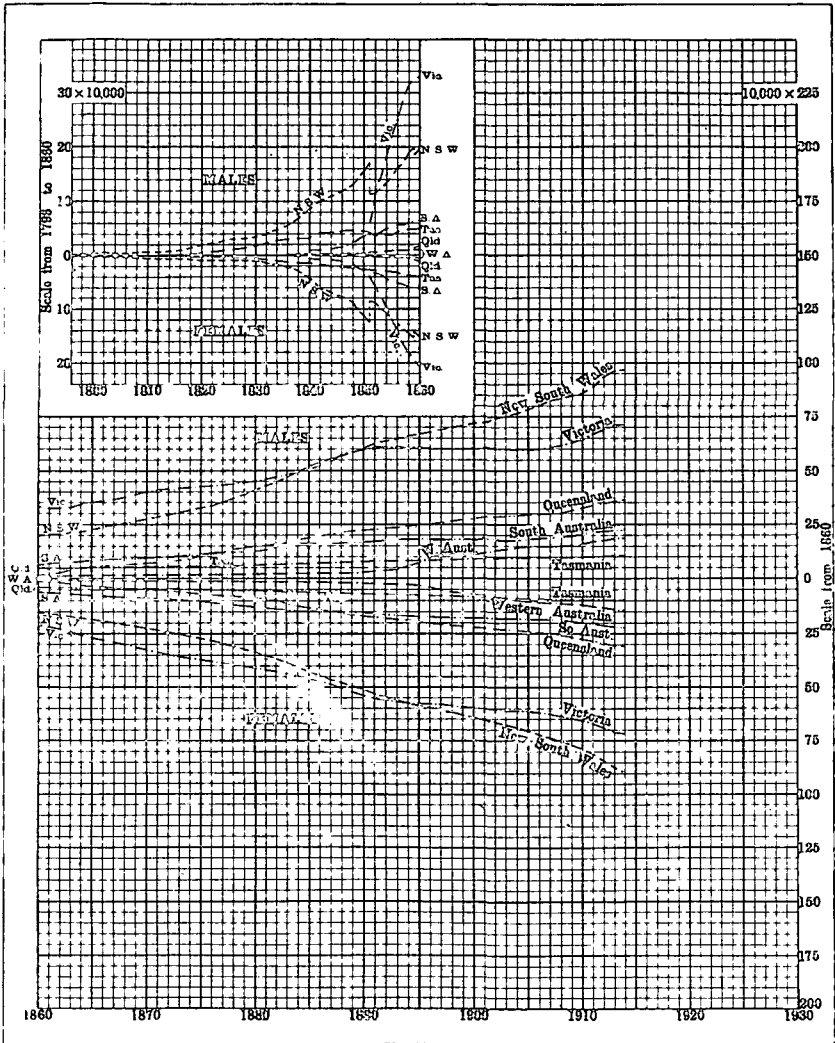


(See Tables pages 91 to 141.)

EXPLANATION OF GRAPHS. The base of each small square represents two years' interval, and the vertical height 5,000 persons. The distances upward from the heavy zero line denote the number of males, and downward the number of females. 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 to 1908 (1914 for females), 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 graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS OF MALE AND FEMALE POPULATION OF THE STATES OF
AUSTRALIA, 1795-1914.



(See Table page 91.)

EXPLANATION OF GRAPHS.

1795-1860.—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.

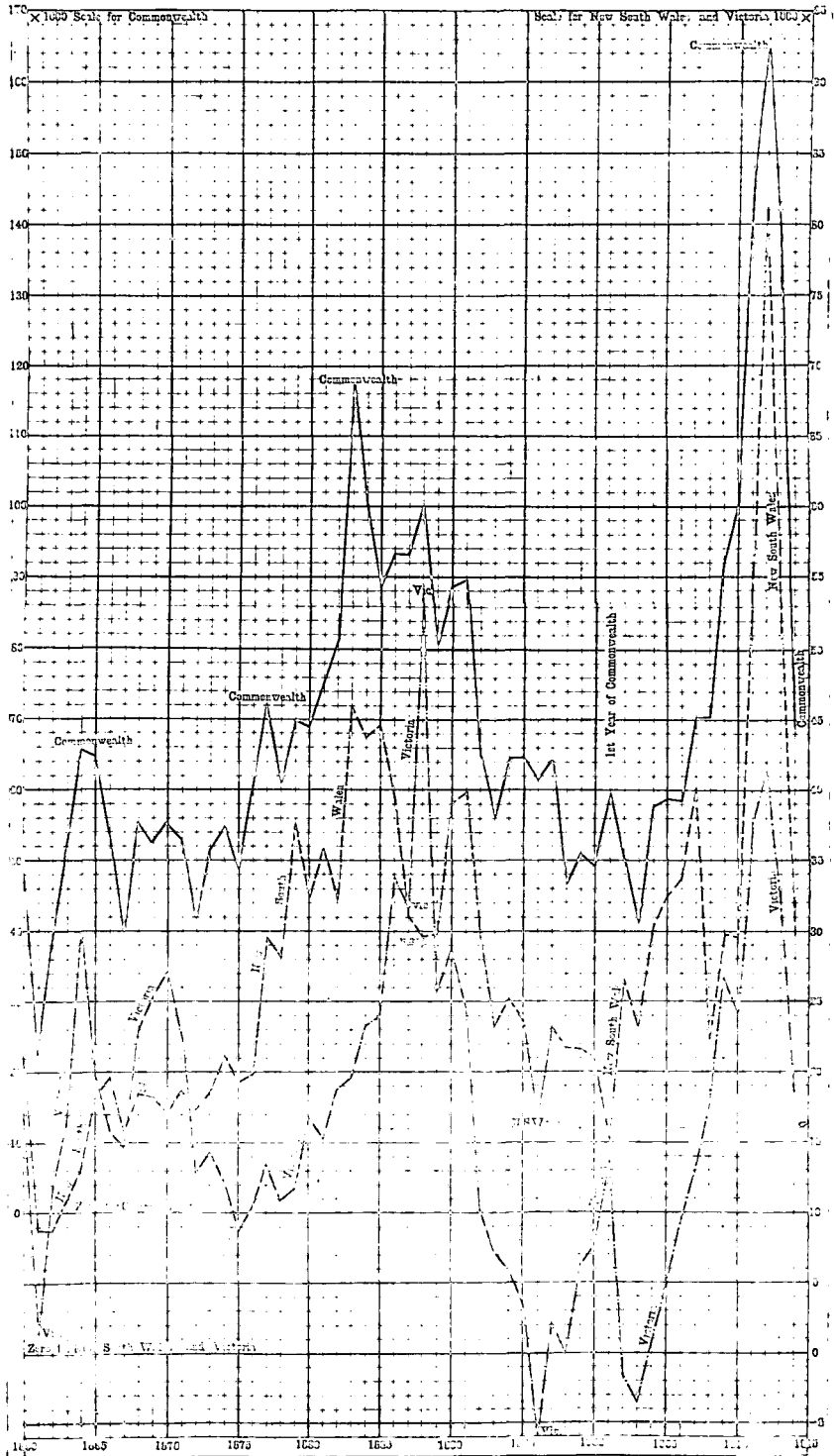
The sudden falls denote the creation of new colonies.

1860-1914.—The base of each small square represents one year's interval, and the vertical height 50,000 persons.

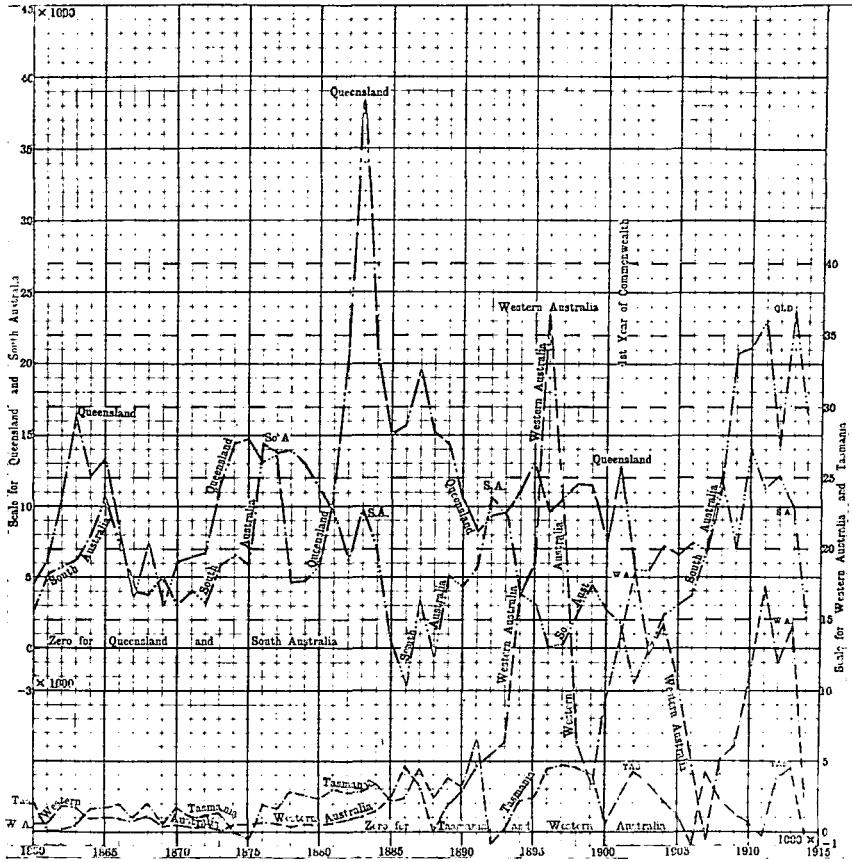
The names on the curves denote the States to which they refer, and the curves are as follows:—New South Wales, — — —; Victoria, — — — —; Queensland, — — — — —; South Australia, — — — — —; Western Australia, — — — — —; Tasmania, — — — — —.

The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND THE STATES OF NEW SOUTH WALES AND VICTORIA, 1860-1914.



GRAPHS SHEWING NET INCREASE OF POPULATION OF THE STATES OF QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1914.



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 1000 for the Commonwealth and 1000 for the States. In the first graph, on page 142, two zero lines were taken for the Commonwealth and 613 for New South Wales and Victoria. The scale on the left relates to the Commonwealth and that on the right relates to New South Wales and Victoria. In the second graph, two zero lines are taken for Queensland and South Australia, and a third for Western Australia. The scale on the left relates to Queensland and South Australia, and that on the right relates to Western Australia and Tasmania.

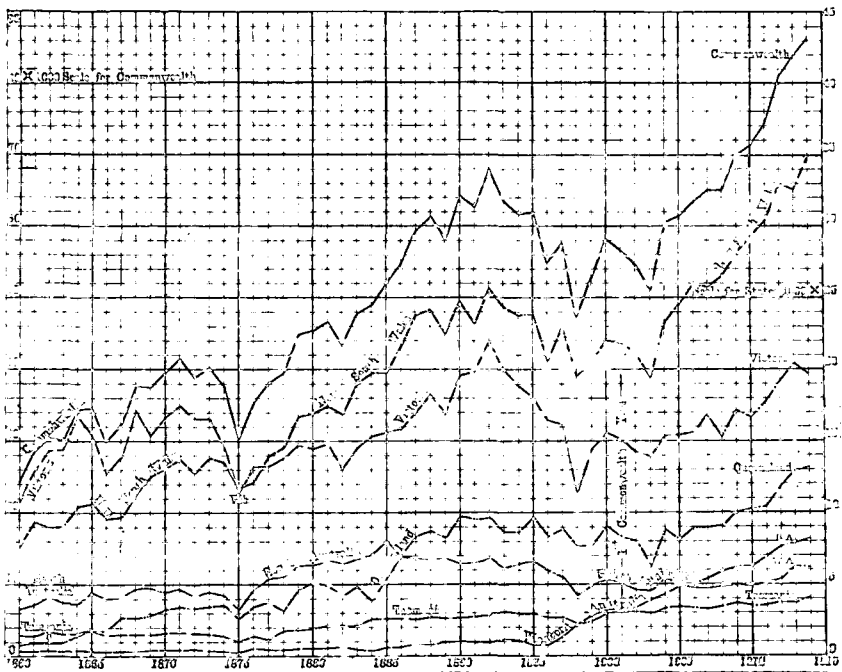
Net increases in population are shown by carrying the graphs in such cases below the zero line, the extent of the graph below the zero line indicating the extent of the increase.

The lines used are as follows: Commonwealth, an unbroken line; New South Wales, ---; Victoria, ---; Queensland, ---; South Australia, ---; Western Australia, ---; Tasmania, ---.

The names on the curves denote the States to which they refer.

See Tables pages 148 and 149.

GRAPHS OF NATURAL INCREASE OF THE POPULATION OF THE COMMONWEALTH
AND STATES OF AUSTRALIA, 1860-1914.

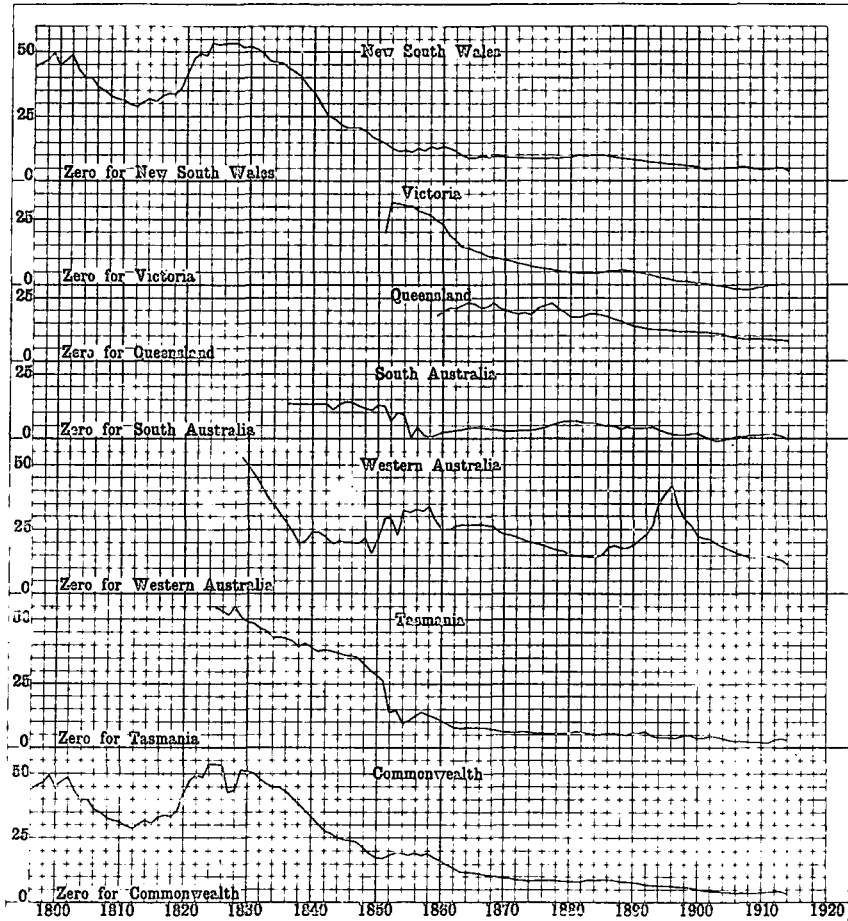


EXPLANATION OF GRAPHS.—The base of each small square represents one year for both States and Commonwealth, and the vertical height 1000 persons for the States and 2000 persons for the Commonwealth.

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 145.)

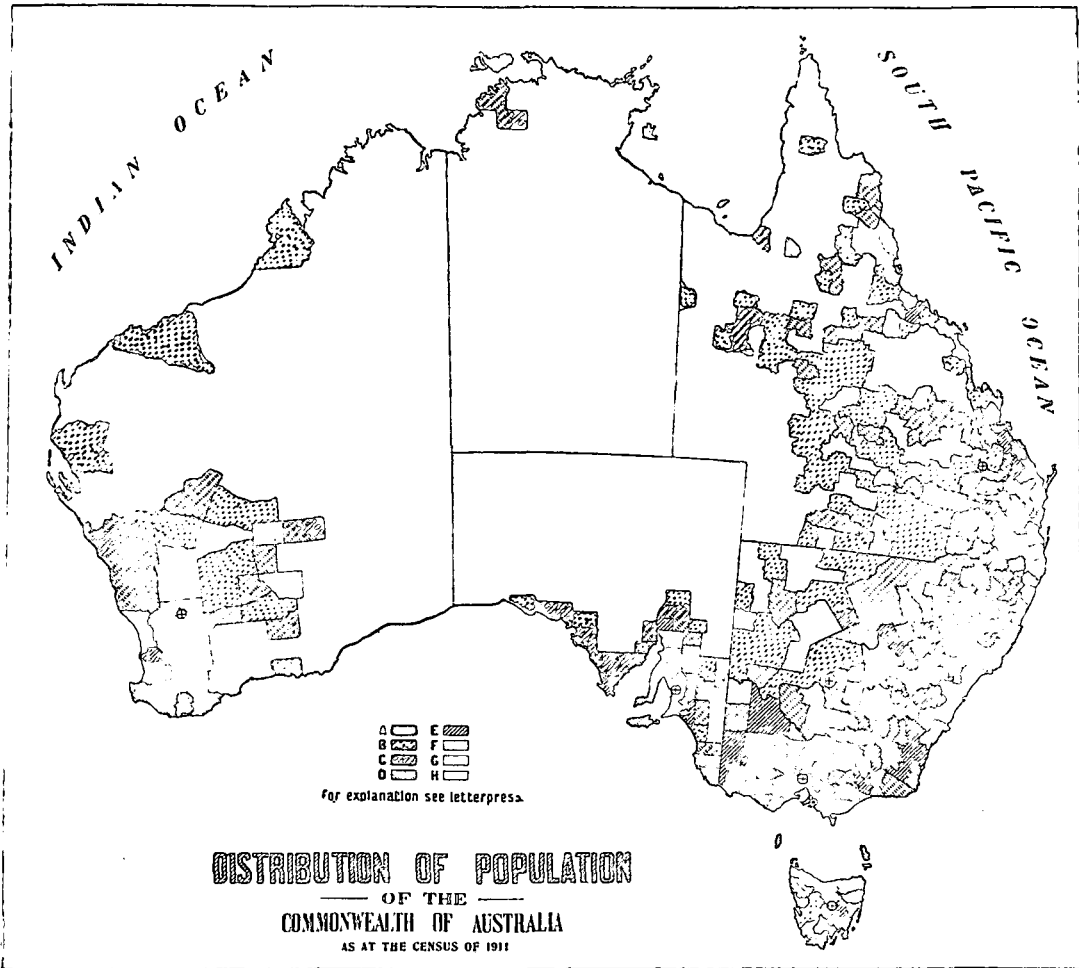
GRAPHS SHEWING MASCULINITY OF THE POPULATION OF THE
COMMONWEALTH AND STATES OF AUSTRALIA, 1796-1914.



(See Tables pages 97 and 102.)

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.

DISTRIBUTION OF POPULATION THROUGHOUT THE COMMONWEALTH OF AUSTRALIA, ACCORDING TO CENSUS OF 1911.



The map above 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 to 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 square mile

was experienced. 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. 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, and it may be added that the rapid lowering of the rate of increase of the male population must be regarded as unsatisfactory from a national standpoint.

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 there is an unsatisfactory 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 shews 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 1000 of mean population. In succeeding years a correspondingly high rate was maintained with minor

fluctuations until 1913, when a record of 17.47 was obtained. In 1912 a record of 17.42 was obtained, but this is, however, an over-statement of the true natural increase, 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, 1909, and 1914, and the years of extraordinarily low rates of natural increase were 1866, 1875, 1882, 1898, 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 Net Increase of Population (pages 142 and 143).—The graphs disclose the fact that the most notable years of large net increases of population of the Commonwealth as a whole were 1864, 1877, 1883, 1888, 1909, 1910, 1911 and 1912. The highest increase was attained in 1912. The net 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 net increases were noticeable were 1861, 1867, 1872, 1878, 1889, 1893, 1898, and 1903.

The graph for New South Wales indicates a high net 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 net 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 the figures fell off somewhat.

Some features of the graph shewing the Victorian net 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.

For Queensland it will be seen that the years of high net increases were 1863, 1875, 1883, 1895, 1901, 1909, 1910, 1911, and 1913, the latter being the highest on record, while the years in which these were at very low level were 1869, 1878, 1891, and 1903.

In South Australia the net 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 Western Australia the net 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 and 1907.

In the case of the Tasmanian graph, indications of a very varied net 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, and 1911.

In the year 1914, the net increases in all the States were smaller than those in the previous year. In the case of the Northern Territory the net increase was the largest experienced since the year 1901.

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 1914, 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 has never fallen below zero. 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 1904 to 1914 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, 1904 to 1914.**—The total number of male and female births registered in the Commonwealth during the years 1904 to 1914 is as shewn in the two tables hereunder:—

TOTAL MALE BIRTHS, COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Territory.	C'wealth.
1904	19,857	15,313	7,134	4,665	3,666	2,702	21	...	53,358
1905	20,206	15,523	6,978	4,491	3,862	2,812	23	...	53,895
1906	21,066	15,716	7,280	4,605	4,043	2,792	12	...	55,514
1907	21,604	15,986	7,451	4,675	3,962	2,797	14	...	56,489
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

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

TOTAL FEMALE BIRTHS, COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Territory.	C'wealth.
1904	18,810	14,450	6,948	4,435	3,510	2,590	12	...	50,755
1905	19,295	14,584	6,648	4,341	3,720	2,445	13	...	51,046
1906	19,882	15,128	6,739	4,316	3,757	2,541	13	...	52,376
1907	20,597	15,379	7,089	4,536	3,750	2,494	13	...	53,858
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

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

2. **Total Births, 1904 to 1914.**—While the total number of births for the Commonwealth was higher in 1914 than in any of the preceding ten years, the following table of particulars discloses also the fact that the excess of births in 1914 over those in 1904 was very unequally distributed between the States:—

TOTAL BIRTHS, COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed'l Terr.	C'wealth.
1904 ...	38,667	29,763	14,082	9,100	7,176	5,292	33	...	104,113
1905 ...	39,501	30,107	13,626	8,832	7,582	5,257	36	...	104,941
1906 ...	40,948	30,844	14,019	8,921	7,800	5,333	25	...	107,890
1907 ...	42,201	31,865	14,540	9,211	7,712	5,291	27	...	110,347
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

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

3. Birth Rates, 1904 to 1914.—(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 dates of registration, so that probably 6000 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 1914 shews a slight decrease due to a falling off in the rates for Victoria, Queensland, and Western Australia. The very high masculinity of the population accounts for the low birth rate experienced in the Northern Territory:—

CRUDE BIRTH RATE (a), COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	North. Terr.	Federal Territory.	Cwth.
1904 ...	26.85	24.74	26.99	25.49	30.67	28.92	7.82	...	26.41
1905 ...	26.85	24.96	25.76	24.54	30.74	28.50	8.72	...	26.23
1906 ...	27.21	25.41	26.15	24.57	30.66	28.94	6.29	...	26.57
1907 ...	27.34	25.59	26.79	25.05	30.18	28.63	7.06	...	26.76
1908 ...	26.99	25.07	26.79	25.81	30.03	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
Density (b) (No. per square mile) ...	6.02	16.28	1.01	1.16	0.33	7.68	0.008	2.15	1.66

(a) Number of births per 1,000 of the mean annual population. (b) On 31st December, 1914.
(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 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 1000 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 1000 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 shews that the Australian States occupy a very 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	Western Australia ...	1914	28.5
Rumania ...	1913	42.1	German Empire ...	1912	28.3
Bulgaria ...	1910	41.7	Commonwealth ...	1914	28.1
Chile ...	1912	38.7	Netherlands... ..	1913	28.1
Ceylon ...	1913	38.6	New Zealand ...	1914	26.0
Serbia ...	1912	38.0	Denmark ...	1913	25.6
Hungary ...	1912	36.3	Victoria ...	1914	25.5
Jamaica ...	1913	35.3	Scotland ...	1913	25.5
Japan ...	1910	33.9	Norway ...	1913	25.2
Italy ...	1912	32.4	Switzerland ...	1912	24.1
Austria ...	1912	31.3	Ontario (Canada) ...	1913	24.0
Spain ...	1913	30.4	United Kingdom ...	1913	24.0
Tasmania ...	1914	30.3	England and Wales ...	1913	23.9
Queensland ...	1914	29.5	Sweden ...	1913	23.1
South Australia ...	1914	29.3	Ireland ...	1913	22.8
Finland ...	1912	29.1	Belgium ...	1912	22.6
New South Wales ...	1914	29.0	France ...	1913	19.0
Prussia ...	1912	28.9			

(a) Number of births per 1000 of the mean population.

5. **Masculinity at Birth.**—The masculinity of births, *i.e.*, the number of males per 100 females, 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 99.82 in Tasmania in 1911 to 115.01 in Tasmania in 1905. The following table, which gives the values for the States and Commonwealth for 1904 to 1914, shews the remarkable fact that for the Commonwealth there was a steady increase of masculinity from 1904 to 1906, with a sharp decrease in 1907, a further increase in 1908, 1909, 1910, a rapid decrease in 1911 and 1912, with slight increases in 1913 and 1914:—

MASCULINITY (a) OF BIRTHS REGISTERED, COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'wealth.
1904 ...	105.57	105.97	102.68	105.19	104.44	104.32	175.00	...	105.13
1905 ...	104.72	106.44	104.96	103.46	103.82	115.01	176.92	...	105.58
1906 ...	105.96	103.89	108.03	106.70	107.61	109.88	92.31	...	105.99
1907 ...	104.89	103.95	105.11	103.06	105.65	112.15	107.69	...	104.89
1908 ...	103.61	106.95	107.33	101.90	106.14	100.75	277.78	...	104.93
1909 ...	105.38	104.19	104.69	107.93	104.46	107.47	68.75	...	105.20
1910 ...	105.85	109.23	104.44	104.86	103.35	107.04	233.33	...	106.38
1911 ...	105.31	105.23	105.10	103.18	103.96	99.82	106.67	(b) 130.77	104.73
1912 ...	104.68	103.73	104.52	104.35	105.90	106.31	230.00	105.26	104.54
1913 ...	104.15	105.12	103.62	106.26	104.48	109.09	108.00	100.00	104.76
1914 ...	104.82	104.91	103.67	106.93	102.69	105.85	114.81	129.17	104.79

(a) Number of males to each 100 females.

(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 108.3 to 103.6, and from 107.9 to 101.6 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 ...	108.3	107.9	German Empire ...	105.2	104.7
Rumania ...	107.7	103.4	Finland ...	105.0	105.2
Portugal ...	107.5	106.4	Hungary ...	105.0	102.9
Austria ...	105.8	105.5	Sweden ...	105.0	104.3
Italy ...	105.8	104.4	Denmark ...	104.8	105.0
Norway ...	105.8	105.9	Serbia ...	104.7	103.5
Ireland ...	105.5	104.8	France ...	104.6	102.9
Netherlands ...	105.5	104.7	Belgium ...	104.5	102.2
Scotland ...	105.5	105.9	Switzerland ...	104.5	101.6
Russia, European ...	105.4	104.5	England ...	103.6	104.4

(a) Number of males to each 100 females.

The masculinity of ex-nuptial births in the Commonwealth was as follows:—

MASCULINITY (a) OF EX-NUPTIAL BIRTHS REGISTERED, COMMONWEALTH. 1904 TO 1914.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Territ'y.	Federal Territ'y.	C'wlth.
1904 ...	100.80	108.68	95.77	83.50	107.28	93.71	200.00	...	100.98
1905 ...	102.50	102.52	105.63	96.94	98.75	102.80	...	...	102.44
1906 ...	103.10	102.23	104.17	116.97	118.13	124.82	100.00	...	105.44
1907 ...	104.91	105.59	100.90	113.56	115.94	100.00	...	...	105.11
1908 ...	108.60	105.38	96.83	96.82	89.33	108.51	150.00	...	104.00
1909 ...	105.46	102.16	103.90	105.37	129.14	129.01	66.67	...	106.25
1910 ...	104.96	103.59	100.39	101.33	89.70	106.94	200.00	...	103.05
1911 ...	101.73	106.61	97.94	106.19	108.05	105.67	28.57	(b) ...	103.10
1912 ...	109.83	95.98	97.30	120.85	124.40	82.69	200.00	...	104.05
1913 ...	101.52	105.79	106.39	110.36	110.36	145.97	133.33	100.00	106.21
1914 ...	109.30	108.16	104.63	110.97	107.49	101.70	133.33	...	107.75

(a) Number of males to each 100 females. (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 Tasmania in 1911), this has not been the case in regard to ex-nuptial births, where in South Australia in 1904 the masculinity was only 83.50. On the other hand it rose as high as 145.97 in Tasmania in 1913. 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 1904 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 another decrease in 1914. (See the table on the following page).

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, 1904 to 1914.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed'l Terr.	C'wealth.
1904 ...	2,755	1,707	971	364	313	308	3	...	6,421
1905 ...	2,912	1,689	950	385	318	290	1	...	6,545
1906 ...	2,882	1,721	1,076	356	373	308	2	...	6,718
1907 ...	2,920	1,764	1,117	378	298	306	...	...	6,783
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

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

(i.) *Rate of Ex-nuptiality, 1904 to 1914.* The rate of ex-nuptiality, i.e., the percentage of ex-nuptial to total births, shewed a slight increase from 1904 to 1905, but has been gradually decreasing during the last nine years, as the subjoined table shews:—

PERCENTAGE OF EX-NUPTIAL ON TOTAL BIRTHS, COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed'l Terr.	C'wealth.
	%	%	%	%	%	%	%		%
1904 ...	7.12	5.74	6.90	4.00	4.36	5.82	9.09	...	6.17
1905 ...	7.37	5.61	6.97	4.36	4.19	5.52	2.78	...	6.24
1906 ...	7.04	5.58	7.68	3.99	4.78	5.78	8.00	...	6.23
1907 ...	6.92	5.62	7.68	4.10	3.86	5.73	...	...	6.15
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	4.18	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

(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 1000 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.

(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, 1904 TO 1914.

Births.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
Ex-nuptial	1.63	1.64	1.65	1.64	1.64	1.60	1.54	1.57	1.58	1.55	1.48
Nuptial ...	24.78	24.59	24.92	25.12	24.95	25.09	25.19	25.64	27.07	26.70	26.57
Total ...	26.41	26.23	26.57	26.76	26.59	26.69	26.73	27.21	28.65	28.25	28.05

(a) Number of births per 1000 of mean population.

(iii.) *Ex-nuptiality—Rates of Various Countries.* The rate for the Commonwealth is higher than that for England and Wales, slightly lower than that for Scotland, and considerably below the rates for many of the countries for which returns are available, as the table hereunder shews. The rates shewn below refer to three triennial periods, 1880-2, 1890-2, and 1900-2, and are given per thousand of the unmarried and widowed female population:—

EX-NUPTIAL BIRTHS PER THOUSAND OF UNMARRIED AND WIDOWED FEMALE POPULATION IN VARIOUS COUNTRIES.

Country.	Rate.			Country.	Rate.		
	1880-2.	1890-2.	1900-2.		1880-2.	1890-2.	1900-2.
	%	%	%		%	%	%
Ireland ...	4.4	3.9	3.8	Belgium ...	20.0	20.6	17.8
Netherlands ...	9.7	9.0	6.8	France ...	17.6	17.7	19.1
England and Wales ...	14.1	10.5	8.5	Italy ...	25.4	...	19.4
New Zealand ...	13.4	9.0	8.9	Russia ...	25.8	25.1	23.7
Switzerland ...	10.8	10.0	9.8	Denmark ...	26.9	24.5	24.2
Commonwealth ...	14.5	15.9	13.3	Sweden ...	22.6	22.9	24.3
Scotland ...	21.4	17.1	13.4	German Empire ...	29.6	28.7	27.4
Spain ...	16.0	17.5	15.5	Austria ...	43.4	42.7	40.1
Norway ...	19.7	16.9	17.2				

It may be added that the general circumstances in Australia with regard to opportunity for marriage are probably relatively easy as compared with those in older established countries.

7. **Multiple Births.**—Among the total number of 137,983 births registered in the Commonwealth in 1914 there were 135,170 single births, 2780 twins, and 33 triplets. The number of cases of twins was 1390, and the number of cases of triplets 11. The total number of mothers was, therefore, 136,571, the proportion of mothers of twins being one in every 98, and of mothers of triplets one in every 12,415 of total mothers. The proportion of multiple births is a fairly constant one. In 1907 they numbered 1043 out of a total of 109,306, or one in 105; in 1908, 1065, or one in 104; in 1909, 1142, or one in 99; in 1910, 1189, or one in 99; in 1911, 1236, or one in 98; in 1912, 1350, or one in 98; in 1913, 1369, or one in 99; and in 1914, 1401, or one in 97. The number of cases of triplets is so small that a slight alteration in the total will completely change the proportion. Thus, there were 14 cases in 1907, or one in 7872 of total mothers, as compared with one in 18,415 in 1908; one in 8066 in 1909, one in 8393 in 1910, one in 8639 in 1911, one in 8233 in 1912, one in 13,793 in 1913, and one in 12,415 in 1914.

8. **Ages of Parents.**—The relative ages of the parents of children registered in 1914 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. 32; Commonwealth Demography, 1914 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 both single and twin births occurred where the ages of both father and mother were between 25 and 29. The largest number of mothers was found at ages 25 to 29.

(a) AGES OF PARENTS IN CASES OF SINGLE BIRTHS, COMMONWEALTH, 1914.

Ages of Fathers.		Total Child- ren.	Ages of Mothers.									Not Stated.
			Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and Upwds.		
Under 20	Males ...	221	2	153	60	5	1	...	...	...	...
	Females ...	230	1	160	63	6	...	...	...	...	...
	Total ...	451	3	313	123	11	1	...	...	...	...
20 to 24	Males ...	7,320	4	1,345	4,738	1,098	111	20	4	...	...
	Females ...	6,934	2	1,260	4,572	954	121	21	2	...	2	
	Total ...	14,254	6	2,605	9,310	2,052	232	41	6	...	2	
25 to 29	Males ...	17,406	...	783	6,954	7,980	1,489	176	20	1	3	
	Females ...	16,644	...	645	6,563	7,797	1,450	163	22	1	3	
	Total ...	34,050	...	1,428	13,517	15,777	2,939	339	42	2	6	
30 to 34	Males ...	16,196	1	191	2,593	6,688	5,667	950	102	1	3	
	Females ...	15,449	...	184	2,537	6,373	5,343	935	68	7	2	
	Total ...	31,645	1	375	5,130	13,061	11,010	1,885	170	8	5	
35 to 39	Males ...	11,498	...	52	768	2,750	4,346	3,225	348	8	1	
	Females ...	10,970	...	47	709	2,592	4,161	3,130	322	6	3	
	Total ...	22,468	...	99	1,477	5,342	8,507	6,355	670	14	4	
40 to 44	Males ...	7,245	...	16	222	926	2,082	2,716	1,240	40	3	
	Females ...	6,953	...	13	238	839	1,995	2,553	1,281	30	4	
	Total ...	14,198	...	29	460	1,765	4,077	5,269	2,521	70	7	
45 to 49	Males ...	3,662	...	6	73	313	739	1,315	1,056	160	...	
	Females ...	3,603	...	5	93	317	707	1,304	1,047	130	...	
	Total ...	7,265	...	11	166	630	1,446	2,619	2,103	290	...	
50 to 54	Males ...	1,375	...	3	35	120	220	433	476	88	...	
	Females ...	1,298	...	5	23	109	230	383	458	90	...	
	Total ...	2,673	...	8	58	229	450	816	934	178	...	
55 to 59	Males ...	372	...	...	6	25	59	135	116	31	...
	Females ...	346	...	...	5	34	58	119	110	20	...
	Total ...	718	...	...	11	59	117	254	226	51	...
60 to 64	Males ...	108	...	...	3	10	24	35	31	5	...
	Females ...	98	...	...	1	11	21	31	30	4	...
	Total ...	206	...	...	4	21	45	66	61	9	...
65 and up- wards	Males ...	53	...	...	3	8	10	15	13	4	...
	Females ...	43	...	...	1	5	9	16	10	2	...
	Total ...	96	...	...	4	13	19	31	23	6	...
Not stated	Males ...	6	...	...	2	...	1	1	...	2	...
	Females ...	10	...	...	2	4	3	1	...	...	...
	Total ...	16	...	...	4	4	4	2	...	2	...
Nuptial child- ren.	Males ...	65,462	7	2,549	15,457	19,923	14,749	9,021	3,406	340	10	
	Females ...	62,578	3	2,319	14,807	19,041	14,098	8,656	3,350	290	14	
	Total ...	128,040	10	4,868	30,264	38,964	28,847	17,677	6,756	630	24	
Ex- nuptial child- ren	Males ...	3,705	15	1,022	1,433	642	326	187	61	6	13	
	Females ...	3,425	8	917	1,356	567	314	180	65	10	8	
	Total ...	7,130	23	1,939	2,789	1,209	640	367	126	16	21	
Total child- ren	Males ...	69,167	22	3,571	16,890	20,565	15,075	9,208	3,467	346	23	
	Females ...	66,003	11	3,236	16,163	19,608	14,412	8,836	3,415	300	22	
	Total ...	135,170	33	6,807	33,053	40,173	29,487	18,044	6,882	646	45	

(b) AGES OF PARENTS OF TWINS, COMMONWEALTH, 1914.

Ages of Fathers.		Total Child- ren.	Ages of Mothers.							Not stat'd
			Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 & up- wards.	
Under 20	(Males ...	6	1	5	...	...	...	...	...	...
	(Females ...	2	1	1	...	...	...	...	...	...
	(Total ...	8	2	6	...	...	...	...	...	...
20 to 24	(Males ...	102	11	67	23	1	...	...	...	...
	(Females ...	110	7	67	31	3	2	...	...	...
	(Total ...	212	18	134	54	4	2	...	...	...
25 to 29	(Males ...	272	2	93	137	34	5	1	...	...
	(Females ...	261	2	73	128	48	7	1	...	2
	(Total ...	533	4	166	265	82	12	2	...	2
30 to 34	(Males ...	336	3	35	118	156	22	2	...	...
	(Females ...	313	7	35	115	126	26	2	2	...
	(Total ...	649	10	70	233	282	48	4	2	...
35 to 39	(Males ...	326	...	10	66	140	103	7	...	...
	(Females ...	277	...	12	40	116	100	9	...	...
	(Total ...	603	...	22	106	256	203	16	...	...
40 to 44	(Males ...	189	...	7	20	41	87	34	...	...
	(Females ...	188	...	3	18	45	88	34	...	...
	(Total ...	377	...	10	38	86	175	68	...	...

BIRTHS.

157

(b) AGES OF PARENTS OF TWINS, COMMONWEALTH, 1914—Continued.

Ages of Fathers.		Total Children.	Ages of Mothers.							Not stated
			Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 & upwards.	
45 to 49	Males	88	...	...	1	18	41	28	2	...
	Females	92	...	4	11	12	33	30	2	...
	Total	180	...	4	12	30	74	58	4	...
50 to 54	Males	31	...	...	3	14	6	8	...	...
	Females	33	...	...	3	10	6	10	4	...
	Total	64	...	...	6	24	12	18	4	...
55 to 59	Males	9	...	...	...	1	4	3	1	...
	Females	8	...	...	...	3	4	...	1	...
	Total	17	...	...	...	4	8	3	2	...
60 to 64	Males	3	...	...	...	2	1	...	...	...
	Females	2	...	...	...	...	1	1	...	...
	Total	5	...	...	...	2	2	1	...	...
65 and upwards	Males	1	...	...	...	1	...	...	...	...
	Females	1	...	...	...	1	...	...	...	...
	Total	2	...	...	...	2	...	...	...	...
Nuptial children	Males	1,363	17	317	368	408	269	81	3	...
	Females	1,287	17	195	346	364	267	87	9	2
	Total	2,650	34	412	714	772	536	168	12	2
Ex-nuptial children	Males	61	10	20	16	8	7	...	...	...
	Females	67	3	25	14	22	3	...	...	...
	Total	128	13	45	30	30	10	...	...	...
Total children	Males	1,424	27	237	384	416	276	81	3	...
	Females	1,354	20	220	360	386	270	87	9	2
	Total	2,778	47	457	744	802	546	168	12	2

(c) AGES OF PARENTS OF TRIPLETS, COMMONWEALTH, 1914.

Ages of Fathers.		Total Children.	Ages of Mothers.			
			20 to 24.	25 to 29.	30 to 34.	35 to 39.
25 to 29	Males	1	...	1	...	...
	Females	2	...	2	...	...
	Total	3	...	3	...	...
30 to 34	Males	5	3	...	1	1
	Females	7	3	...	2	2
	Total	12	6	...	3	3
35 to 39	Males	...	...	...	...	...
	Females	...	...	...	...	...
	Total	...	...	...	...	...
40 to 44	Males	1	...	...	...	1
	Females	5	...	...	3	2
	Total	6	...	...	3	3
45 to 49	Males	3	...	3	...	...
	Females	3	...	...	...	3
	Total	6	...	3	...	3
50 to 54	Males	...	...	...	...	...
	Females	...	...	...	...	...
	Total	...	...	...	...	...
55 to 59	Males	3	...	...	...	3
	Females	...	...	...	...	...
	Total	3	...	...	...	3
Nuptial children	Males	13	3	4	1	5
	Females	17	3	2	5	7
	Total	30	6	6	6	12
Ex-nuptial children	Males	3	...	...	...	3
	Females	...	...	...	...	...
	Total	3	...	...	...	3
Total children	Males	16	3	4	1	8
	Females	17	3	2	5	7
	Total	33	6	6	6	15

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 particulars 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 1914 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, 1914.

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.
AUSTRALASIA—									
Commonwealth of Australia—									
N. South Wales	38,887	358	2	42,294	396	2	2,533	32	1
Victoria	33,611	370	1	32,732	363	2	1,913	14	...
Queensland	11,275	100	...	13,925	129	...	961	8	...
South Australia	12,949	188	2	13,155	149	2	556	1	...
Western Australia	1,538	17	...	2,054	26	1	136	...	...
Tasmania	5,687	47	2	5,928	48	2	402	6	...
North. Territory	11	1	...	20	...	...	2	...	...
New Zealand	1,396	9	...	1,227	12	...	75	...	...
EUROPE—									
England...	13,477	185	1	9,792	121	1	335	2	...
Wales	352	5	...	288	1	...	11	...	...
Scotland...	3,103	31	...	2,337	41	...	68	...	...
Ireland	1,945	22	1	1,312	21	...	57	1	...
Isle of Man	24	...	...	17	...	...	2	...	...
Other European British Possessions...	39	...	...	18	...	...	...	...	...
Austria-Hungary	127	...	...	75	...	...	3	...	...
Belgium...	9	...	...	2	...	...	...	...	...
Denmark	167	4	...	64	1	...	2	...	...
France	64	...	...	39	1	...	3	...	...
Germany	957	4	1	454	3	...	10	...	...
Greece	63	2	...	37	1	...	...	...	...
Italy	343	5	...	233	3	...	3	...	...
Netherlands	54	1	...	27	...	...	1	...	...
Norway	100	1	...	27	...	...	1	...	...
Portugal...	3	...	...	...	...	...	...	...	...
Russia	267	4	...	177	1	...	2	...	...
Spain	35	...	...	19	...	...	1	...	...
Sweden	186	3	...	21	1	...	1	...	...
Switzerland	47	1	...	20	...	...	...	...	...
Other European Countries	51	...	...	18	1	...	1	...	...
ASIA—									
British India	153	4	...	80	...	...	1	...	...
Ceylon	19	1	...	8	...	...	1	...	...
Hong Kong	2	...	...	2	...	...	...	...	...
Straits Settlements	8	1	...	5	...	...	...	...	...
Other Asiatic British Possessions	2	...	...	...	...	...	...	...	...
Afghanistan	6	...	...	...	...	...	...	...	...
Arabia	2	...	...	1	...	...	...	...	...
China	161	1	...	48	...	...	2	...	...
Japan	25	...	...	12	...	...	2	...	...
Java	6	...	...	...	...	...	...	...	...
Philippine Islands	5	...	...	...	...	...	...	...	...
Syria	100	1	...	86	...	...	1	...	...
Other Asiatic Countries	15	...	...	11	1	...	...	...	...

BIRTHPLACES OF PARENTS OF CHILDREN—Continued.

Birthplace.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.
AFRICA—									
Cape of Good Hope	13	...	...	8	...	...	...	...	...
Mauritius	14	...	...	8	1	...	1	...	...
Natal	7	...	...	2	...	...	...	...	...
S. Africa (undefined)	90	3	...	95	...	...	4	...	...
Other African British Possessions	1	...	...	1	...	...	...	...	...
Egypt	7	...	...	5	...	...	...	...	...
Other African Countries	5	...	...	4	...	...	...	...	...
AMERICA—									
Barbados	2	...	...	...	...	...	...	...	...
Canada	87	2	...	29	1	...	2	1	...
Jamaica	2	...	...	...	...	...	...	...	...
Newfoundland	2	...	...	1	...	...	...	...	...
Other American British Pos.	1	1	...	2	...	...	...	...	...
Argentine Republic	4	...	...	2	...	...	...	...	...
Brazil	2	...	...	...	...	...	...	...	...
Chile	5	...	...	1	...	...	1	...	...
Mexico	2	...	...	...	...	...	1	...	...
Peru	1	...	...	...	...	...	...	...	...
United States of America	255	5	...	130	...	...	2	...	...
Other American Countries	47	1	...	24	...	...	...	...	...
POLYNESIA—									
Fiji	31	...	...	24	...	...	2	...	...
Friendly Islands	...	1	...	...	...	...	...	...	...
Papua	...	...	...	2	...	...	...	...	...
Other Polynesian British Pos.	4	...	...	2	1	...	1	...	...
New Caledonia	10	...	...	15	...	...	2	...	...
New Hebrides	3	...	...	1	...	...	...	...	...
Samoa	2	...	...	...	...	...	...	...	...
Other Polynesian Islands	7	...	...	1	...	...	...	...	...
South Sea Islands (so described)	17	...	...	2	...	...	1	...	...
At Sea	125	...	...	77	5	...	2	...	...
Unspecified	23	1	...	39	2	...	25	...	...
Total	128,040	1,330	10	128,040	1,330	10	7,130	65	1

10. Occupations of Fathers.—A summary of the occupations of the fathers of all nuptial children, whose births were registered in 1914, 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, 1914.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
CLASS I.—PROFESSIONAL.			
General Government ...	701	Leather, Raw Materials ...	29
Local Government ...	172	Wool and Tallow ...	92
Defence ...	375	Hay, Corn, etc. ...	185
Law and Order ...	1,188	Other Vegetable Matter, n.e.i. ...	172
Religion ...	407	Wood and Coal ...	185
Charities ...	5	Stone, Clay, and Glass ...	20
Health ...	982	Gold, Silver, and Precious Stones ...	10
Literature ...	179	Ironmongery ...	234
Science ...	98	Merchants, Importers ...	540
Civil Engineering, Architecture, and Surveying ...	386	Shopkeepers and Assistants ...	1,282
Education ...	815	Dealers and Hawkers ...	396
Fine Arts ...	149	Agents and Brokers ...	637
Music ...	170	Clerks, Bookkeepers, etc. ...	3,421
Amusements ...	514	Commercial Travellers, Salesmen ...	1,594
		Others engaged in Commercial Pursuits ...	1,046
Total Professional ...	6,141	Speculators on Chance Events ...	47
		Storage ...	11
CLASS II.—DOMESTIC.		Total Commercial ...	17,332
Hotelkeepers and Assistants ...	883	CLASS IV.—TRANSPORT AND COMMUNICATION.	
Others engaged in providing board and lodging ...	322	Railway Traffic ...	4,917
House Servants ...	206	Tramway Traffic ...	1,271
Coachmen and Grooms ...	258	Road Traffic ...	6,142
Hairdressers ...	678	Sea and River Traffic ...	1,809
Laundrymen ...	69	Postal Service ...	538
Others engaged in domestic occupations ...	302	Telegraph and Telephone Service ...	662
		Messengers, etc. ...	8
Total Domestic ...	2,718	Total Transport & Communication ...	15,347
CLASS III.—COMMERCIAL.		CLASS V.—INDUSTRIAL.	
Banking and Finance ...	461	Books and Publications ...	1,042
Insurance and Valuation ...	501	Musical Instruments ...	63
Landed and House Property ...	151	Prints, Pictures and Art Materials ...	92
Property Rights not elsewhere clsd. ...	4	Ornaments and Small Wares ...	106
Books, Publications, Advertising ...	177	Equipment for Sports and Games ...	4
Musical Instruments ...	17	Medals, Type, and Dies ...	16
Prints, Pictures and Art Materials ...	2	Watches, Clocks, and Scientific Instruments ...	134
Ornaments and Small Wares ...	7	Surgical Instruments ...	7
Sports and Games ...	1	Arms and Ammunition ...	18
Watches, Clocks, Jewellery ...	9	Engines, Machines, Tools, and Implements ...	1,513
Surgical Instruments ...	3	Carriages and Vehicles ...	1,008
Arms and Ammunition ...	...	Harness, Saddlery & Leatherware ...	443
Machinery ...	39	Ships, Boats, etc. ...	176
Carriages and Vehicles ...	43	Furniture ...	690
Harness, Saddlery & Leatherware ...	5	Building Materials ...	722
Ships, Boats, Marine Stores ...	14	Chemicals and By-Products ...	41
Building Materials ...	11	Textile Fabrics ...	74
Furniture ...	67	Dress ...	2,068
Chemicals and By-products ...	16	Fibrous Materials ...	63
Paper and Stationery ...	32	Animal Food ...	462
Textile Fabrics ...	664	Vegetable Food ...	1,761
Dress ...	149	Groceries, Drinks, Narcotics, and Stimulants ...	511
Fibrous Materials ...	11	Animal Matter, not elsewhere clsd. ...	307
Animal Food ...	2,856	Workers in wood, not elsewhere clsd. ...	162
Vegetable Food ...	664	Vegetable Produce for Fodder ...	8
Groceries, Drinks, Narcotics, and Stimulants ...	1,336		
Living Animals ...	190		
Manures and Waste Products ...	1		

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN—Continued.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
Paper	29	CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.	
Stone, Clay, Glass, etc. ...	732		
Jewellery and Precious Stones ...	236		
Metals, other than Gold & Silver ...	3,481		
Gas, Electric Lighting, etc. ...	921		
Building—			
Builders	663		
Stonemasons	339		
Bricklayers	811		
Carpenters	3,707		
Slaters	53	Agricultural	20,218
Plasterers	447	Pastoral	3,857
Painters	1,511	Dairy Farming	777
Plumbers	903	Bees, Fisheries, and Wild Animals ...	402
Signwriters	79	Forestry	1,075
Others	14	Water Conservation and Supply ...	115
Roads, Railways, Earthworks ...	333	Mines and Quarries	6,615
Disposal of the Dead	38	Total Primary Producers	33,059
Disposal of Refuse	126	CLASS VII.—INDEFINITE.	
Other Industrial Workers—			
Manufacturers, etc.	376		
Engineers, Firemen	3,562		
Contractors	1,330	Independent Means, having no specific occupation ...	95
Labourers, undefined	22,996	Occupation not stated	36
Others	471	Total Indefinite	131
Total Industrial	54,648	CLASS VIII.—DEPENDENTS.	
		Dependent Relatives	3
		Dependent on State	1
		Total Dependents	4
		Total all Occupations	129,380

11. *Mothers' 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 1914 was 129,380, viz., 128,040 single births, 1330 cases of twins, and 10 cases of triplets. From this number 245 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 129,135 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. 32; Commonwealth Demography, 1914, and previous years."

DURATION OF MARRIAGE AND ISSUE OF MOTHERS OF ALL AGES,
COMMONWEALTH, 1914.

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 ...	21,554	21,935	1.02	18-19 ...	1,400	10,606	7.58
1-2 ...	10,875	12,659	1.16	19-20 ...	1,099	8,603	7.83
2-3 ...	11,446	20,719	1.81	20-21 ...	949	7,848	8.27
3-4 ...	11,687	24,634	2.11	21-22 ...	771	6,743	8.75
4-5 ...	9,853	24,932	2.53	22-23 ...	618	5,608	9.07
5-6 ...	8,322	24,237	2.91	23-24 ...	498	4,750	9.54
6-7 ...	7,562	24,849	3.29	24-25 ...	386	3,703	9.59
7-8 ...	6,750	24,732	3.66	25-26 ...	255	2,613	10.25
8-9 ...	5,798	23,490	4.05	26-27 ...	133	1,424	10.71
9-10 ...	5,043	22,255	4.41	27-28 ...	81	916	11.31
10-11 ...	4,394	20,817	4.74	28-29 ...	60	648	10.80
11-12 ...	3,687	18,609	5.05	29-30 ...	25	295	11.80
12-13 ...	3,585	19,330	5.39	30-31 ...	10	120	12.00
13-14 ...	3,235	18,462	5.71	31-32 ...	4	41	10.25
14-15 ...	2,954	18,121	6.13	33-34 ...	1	12	12.00
15-16 ...	2,347	15,487	6.60	35-36 ...	1	8	8.00
16-17 ...	2,068	14,111	6.82				
17-18 ...	1,684	11,911	7.07	Total	129,135	415,228	3.22

AGES AND ISSUE OF MOTHERS, COMMONWEALTH, 1914.

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	4,872	5,915	1.21	40-44 years ...	6,831	46,225	6.77
20-24 years ...	30,379	53,447	1.76	45 yrs. and over	644	5,250	8.15
25-29 " ...	39,268	102,404	2.61				
30-34 " ...	29,204	109,321	3.74				
35-39 " ...	17,937	92,666	5.17	All ages ...	129,135	415,228	3.22

PREVIOUS ISSUE OF MOTHERS OF VARIOUS AGES, COMMONWEALTH, 1914.

Previous Issue.	Mothers' Ages.							
	Under 20 Years.	20-24 Years.	25-29 Years.	30-34 Years.	35-39 Years.	40-44 Years.	45 Years and Over.	Total.
0	3,945	15,293	11,013	4,462	1,478	373	24	36,588
1	832	9,410	10,489	5,143	1,692	357	18	27,941
2	91	4,025	8,009	5,162	2,190	467	27	19,971
3	4	1,290	5,272	4,804	2,467	585	42	14,464
4	...	294	2,752	3,740	2,446	724	35	9,991
5	...	54	1,180	2,771	2,213	761	62	7,041
6	...	10	391	1,680	1,999	728	64	4,872
7	...	2	112	888	1,431	745	60	3,238
8	...	1	42	358	954	640	62	2,057
9	...	...	4	136	556	579	81	1,356
10	...	...	3	31	293	389	52	768
11	...	...	...	18	117	250	55	440
12	...	...	1	4	68	119	28	220
13	...	...	...	6	19	60	20	105
14	...	...	...	...	8	29	10	47
15	...	...	...	...	4	12	2	18
16	...	...	...	...	2	7	2	11
17	...	...	...	1	...	4	...	5
18	...	...	...	...	...	2	...	2
Total Mothers	4,872	30,379	39,268	29,204	17,937	6,831	644	129,135

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 3.22, the corresponding figure for 1913 having been 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 297 mothers had twins at their first confinement; 231 at their second; 230 at their third; 170 at their fourth; 140 at their fifth; 91 at their sixth; 62 at their seventh; 41 at their eighth; 40 at their ninth; 17 at their tenth; 12 at their eleventh; 5 at their twelfth; 2 at their thirteenth; and 2 at their fourteenth.

Of the ten cases of triplets 2 occurred at the first confinement; 2 at the third; 2 at the fourth; 3 at the fifth; and 1 at the eighth.

12. **Interval between Marriage and First Birth.**—The following table shews 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, 1914.

Interval.	Number of First Children.	Interval.	Number of First Children.	Interval.	Number of First Children.
Under 1 month	535	1 year	9,247	13 years	30
1 month	637	2 years	2,805	14 "	22
2 months	908	3 "	1,294	15 "	14
3 "	1,108	4 "	599	16 "	11
4 "	1,384	5 "	341	17 "	15
5 "	1,776	6 "	259	18 "	4
6 "	2,329	7 "	158	19 "	6
7 "	1,987	8 "	118	20 "	3
8 "	1,581	9 "	81	21 "	2
9 "	3,813	10 "	56	22 "	3
10 "	3,218	11 "	40	23 "	1
11 "	2,154	12 "	49		
				Total	36,588

Of these 36,588 children 18,735 were males and 17,853 were females; the masculinity of first births was therefore 104.94 as compared with 104.79 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 4 is to 5. 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, 1914.**

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.
Years.						
13 ...	1	1	2	1	2	3
14 ...	23	7	30	1	8	31
15 ...	66	22	88	3	25	91
16 ...	187	151	338	22	173	360
17 ...	382	457	839	93	550	932
18 ...	598	930	1,528	285	1,215	1,813
19 ...	712	1,328	2,040	644	1,972	2,684
20 ...	696	1,323	2,019	990	2,313	3,009
21 ...	650	1,600	2,250	1,488	3,088	3,738
22 ...	539	1,315	1,854	2,065	3,350	3,919
23 ...	491	1,181	1,672	2,164	3,345	3,836
24 ...	437	899	1,336	2,268	3,167	3,604
25 ...	299	662	961	2,066	2,728	3,027
26 ...	286	539	825	2,039	2,578	2,864
27 ...	226	374	600	1,887	2,261	2,487
28 ...	233	330	563	1,600	1,930	2,163

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.
Years.						
29 ...	180	230	410	1,285	1,515	1,695
30 ...	169	197	366	1,226	1,423	1,592
31 ...	126	151	277	823	974	1,100
32 ...	122	126	248	729	855	977
33 ...	125	98	223	577	675	800
34 ...	113	72	185	464	536	649
35 ...	100	58	158	355	413	513
36 ...	88	47	135	329	376	464
37 ...	61	31	92	235	266	327
38 ...	72	35	107	220	255	327
39 ...	52	30	82	138	168	220
40 ...	50	19	69	125	144	194
41 ...	23	15	38	84	99	122
42 ...	18	8	21	67	70	88
43 ...	25	7	32	30	37	62
44 ...	10	4	14	19	23	33
45 ...	7	2	9	11	13	20
46 ...	6	...	6	3	3	9
47 ...	...	1	1	4	5	5
48 ...	...	...	...	1	1	1
49 ...	...	...	...	1	1	1
50 ...	2	...	2	...	...	2
52 ...	...	...	...	1	1	1
53 ...	1	...	1	...	...	1
Not stated	21	...	21	...	...	21
Total ...	7,197	12,245	19,442	24,343	36,588	43,785

13. Interval between Birth and Registration of Birth.—Information was obtained during 1914 as to the period elapsing between birth and registration. It has already been mentioned at the beginning of this section 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 and in 1914 to 40.

INTERVAL BETWEEN BIRTH AND REGISTRATION, COMMONWEALTH, 1914.

Interval.	Nuptial Births.	Ex- Nuptial Births.	Total Births.	Interval.	Nuptial Births.	Ex- Nuptial Births.	Total Births.
Under 1 day ...	1,496	115	1,611	16 days ...	3,167	173	3,340
1 day ...	5,679	484	6,163	17 " ...	2,748	168	2,916
2 days ...	7,534	652	8,186	18 " ...	2,576	139	2,715
3 " ...	8,215	542	8,757	19 " ...	2,324	119	2,443
4 " ...	8,174	402	8,576	20 " ...	2,091	136	2,227
5 " ...	7,714	376	8,090	21 " ...	1,990	96	2,086
6 " ...	7,304	264	7,568	22 " ...	1,733	106	1,839
7 " ...	6,580	264	6,844	23 " ...	1,609	93	1,702
8 " ...	5,833	216	6,049	24 " ...	1,508	84	1,592
9 " ...	5,302	205	5,507	25 " ...	1,351	69	1,420
10 " ...	5,139	223	5,362	26 " ...	1,313	57	1,370
11 " ...	4,890	247	5,137	27 " ...	1,276	54	1,330
12 " ...	4,710	267	4,977	28 " ...	1,178	48	1,226
13 " ...	4,585	267	4,852	29 " ...	939	51	990
14 " ...	4,155	242	4,397	30 " ...	960	53	1,013
15 " ...	3,557	228	3,785	31 " ...	897	39	936

INTERVAL BETWEEN BIRTH AND REGISTRATION, COMMONWEALTH,
1914—Continued.

Interval.	Nuptial Births.	Ex-Nuptial Births.	Total Births.	Interval.	Nuptial Births.	Ex-Nuptial Births.	Total Births.
32 days ...	350	39	889	55 days ...	181	19	200
33 " ...	819	23	847	56 " ...	201	11	212
34 " ...	686	37	723	57 " ...	193	17	210
35 " ...	688	36	724	58 " ...	190	16	206
36 " ...	636	19	655	59 " ...	173	24	202
37 " ...	636	34	670	60 " ...	152	12	164
38 " ...	637	36	673	61 to 69 days	285	31	316
39 " ...	614	29	643	70 " 79 "	107	16	123
40 " ...	594	35	629	80 " 89 "	70	15	85
41 " ...	595	22	617	90 " 99 "	45	6	51
42 " ...	503	30	533	100 " 109 "	23	6	29
43 " ...	424	16	440	110 " 119 "	14	9	23
44 " ...	345	20	365	120 " 129 "	11	4	15
45 " ...	342	19	361	130 " 139 "	9	10	19
46 " ...	316	18	334	140 " 149 "	11	3	14
47 " ...	257	21	278	150 " 159 "	6	4	10
48 " ...	282	22	304	160 " 169 "	11	7	18
49 " ...	236	11	247	170 " 179 "	8	7	15
50 " ...	215	16	231	180 " 365 "	32	12	44
51 " ...	192	16	208	1 to 2 years ...	9	5	14
52 " ...	206	13	219	2 years and over	1	5	6
53 " ...	206	15	221				
54 " ...	177	13	190	Total Births	130,720	7,263	137,983

§ 2. Marriages.

1. **Marriages, 1904 to 1914.**—The number of marriages registered in the Commonwealth in 1914 was 43,311, the highest number ever recorded. There has been a steady increase in the annual number of marriages in each State since 1904, 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. The number of marriages in each State since 1904 is shewn below. The rate for 1912 was the highest ever experienced in the Commonwealth.

TOTAL MARRIAGES, COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	C'wealth.
1904 ...	10,422	8,210	3,078	2,526	2,088	1,350	8	...	27,682
1905 ...	10,970	8,774	3,173	2,594	2,123	1,365	5	...	29,004
1906 ...	11,551	8,930	3,588	2,679	2,261	1,399	2	...	30,410
1907 ...	12,187	9,575	4,105	3,070	2,114	1,410	9	...	32,470
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

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

2. **Marriage Rates, 1904 to 1914.**—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. 1904 to 1914.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	North-Terr.	Federal Territory.	C'wealth.
1904 ...	7.24	6.83	5.90	7.08	8.92	7.38	1.90	...	7.02
1905 ...	7.46	7.28	6.00	7.21	8.61	7.40	1.21	...	7.25
1906 ...	7.68	7.36	6.69	7.38	8.89	7.59	0.50	...	7.49
1907 ...	7.89	7.81	7.56	8.35	8.27	7.63	2.35	...	7.87
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

(a) Number of marriages (not persons married) per 1000 of mean annual population. (b) Part of New South Wales prior to 1911.

As in some international tabulations the marriage rates are calculated per 1000 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 do the rates in the preceding table.

3. Marriage Rates in Various Countries.—A comparison of the Australian marriage rate with that of European countries shews that during the last few years it has only been surpassed by the rate for Ontario, and equalled by the rate of some of the countries of the East of Europe, and that it has been higher than the rate of the countries of Central and Western Europe, and especially than the rate of countries of the North of Europe:—

CRUDE MARRIAGE RATES.—VARIOUS COUNTRIES.

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate
(Ontario) Canada ...	1913	10.0	Netherlands ...	1913	7.8
New South Wales ...	1914	9.4	Italy ...	1912	7.6
Rumania ...	1913	9.2	France ...	1913	7.5
South Australia ...	1914	9.1	United Kingdom ...	1913	7.5
Bulgaria ...	1910	9.1	Austria ...	1912	7.4
Commonwealth ...	1914	8.8	Switzerland ...	1912	7.3
Japan ...	1910	8.8	Denmark ...	1913	7.2
Queensland ...	1914	8.7	Scotland ...	1913	7.1
Hungary ...	1912	8.6	Spain ...	1913	6.8
New Zealand ...	1914	8.5	Ceylon ...	1913	6.3
Victoria ...	1914	8.3	Norway ...	1913	6.3
Western Australia ...	1914	8.2	Chile ...	1912	6.0
Belgium ...	1912	8.0	Finland ...	1912	5.9
Prussia ...	1912	8.0	Sweden ...	1913	5.9
German Empire ...	1912	7.9	Ireland ...	1913	5.1
Russia, European ...	1909	7.9	Serbia ...	1912	4.4
Tasmania ...	1914	7.8	Jamaica ...	1913	3.1
England and Wales ...	1913	7.8			

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 1617 males were married during 1914 who were less than twenty-one years of age. The corresponding number of females was 8574, of whom six were widows, and one was divorced. At the other extreme there were thirty-two men of sixty-five years and upwards, who described themselves bachelors, and thirteen spinsters of corresponding ages.

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1914.
COMMONWEALTH.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
13 years	...	...	...	...	3	...	...	3
14 "	...	...	...	...	14	...	...	14
15 "	...	...	...	...	71	...	...	71
16 "	18	...	...	18	338	...	...	338
17 "	48	...	...	48	941	...	...	941
18 "	190	...	...	190	1,809	1	...	1,810
19 "	451	...	...	451	2,549	2	...	2,551
20 "	910	...	...	910	2,842	3	1	2,846
21 "	2,417	1	...	2,418	4,589	8	4	4,601
22 "	2,984	3	1	2,988	4,007	20	1	4,028
23 "	3,483	9	...	3,492	3,808	21	8	3,837
24 "	3,682	13	3	3,698	3,501	31	3	3,535
25 "	3,630	9	...	3,639	2,988	38	9	3,035
26 "	3,553	27	3	3,583	2,518	57	12	2,587
27 "	3,061	34	5	3,100	2,085	47	15	2,147
28 "	2,800	45	6	2,851	1,748	63	11	1,822
29 "	2,368	46	15	2,429	1,363	58	28	1,449
30 "	1,855	58	12	1,925	1,142	68	19	1,229
31 "	1,416	51	11	1,478	757	62	18	887
32 "	1,222	64	15	1,301	693	61	12	766
33 "	983	70	9	1,062	577	68	26	671
34 "	900	81	14	995	459	67	13	539
35 "	690	82	10	782	399	75	18	492
36 "	583	66	14	663	306	92	7	405
37 "	502	61	14	577	254	68	12	334
38 "	484	81	10	575	234	75	10	319
39 "	377	68	13	458	188	70	16	274
40 "	317	73	5	395	140	73	7	220
41 "	212	66	9	287	84	59	6	149
42 "	217	68	10	295	102	66	8	176
43 "	215	86	9	310	88	57	9	154
44 "	177	69	7	253	67	48	3	118
45 "	153	61	8	222	57	59	9	125
46 "	109	59	12	180	51	62	6	119
47 "	104	51	6	161	48	52	3	103
48 "	81	62	5	148	30	52	4	86
49 "	90	62	7	159	25	55	3	83
50 "	75	80	6	161	19	38	4	61
51 "	46	53	5	104	20	42	...	62
52 "	47	64	2	113	11	34	1	46
53 "	37	47	4	88	9	32	1	42
54 "	35	60	5	100	11	30	2	43
55 "	36	47	1	84	2	21	...	23
56 "	22	52	3	77	7	12	1	20
57 "	18	43	5	66	7	13	2	22
58 "	16	54	2	72	6	17	1	24
59 "	12	34	...	46	2	12	...	14
60 "	18	30	1	49	7	12	...	19
61 "	9	30	...	39	1	3	...	4
62 "	3	21	1	25	2	10	...	12
63 "	3	18	2	23	2	9	1	12
64 "	6	14	...	20	1	9	...	10
65 "	3	16	1	20	1	11	...	12
66 "	4	24	...	28	2	5	...	7
67 "	1	12	...	13	3	4	...	7
68 "	5	15	...	20	1	4	...	5
69 "	2	15	...	17	2	7	...	9
70 "	3	11	...	14	...	3	...	3

**AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1914—Continued.
COMMONWEALTH.**

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
71 years ...	1	10	...	11	1	4	...	5
72 " ...	...	9	...	9	2	3	...	5
73 " ...	1	10	...	11	...	1	...	1
74 " ...	1	10	...	11	...	2	...	2
75 " ...	3	5	...	8	1	...	...	1
76 " ...	...	4	...	4	...	2	...	2
77 " ...	1	1	...	2	...	...	...	...
78 " ...	2	2	...	4	...	...	...	...
79 " ...	...	5	...	5	...	2	...	2
80 " ...	1	1	...	2	...	...	...	...
81 " ...	1	...	...	1	...	1	...	1
82 " ...	...	2	...	2	...	...	...	...
83 " ...	1	...	...	1	...	...	...	...
84 " ...	1	1	...	2	...	...	...	...
86 " ...	1	...	...	1	...	...	...	...
87 " ...	...	1	...	1	...	...	...	...
Not stated ...	13	3	...	16	17	4	...	21
Total ...	40,710	2,330	271	43,311	41,012	1,985	314	43,311

(b) The relative ages of bridegrooms and brides are shewn for single years in "Bulletin of Population and Vital Statistics, No. 32"; a condensation into age-groups of five years is here given :—

RELATIVE AGES OF PERSONS MARRIED, COMMONWEALTH, 1914.

Ages.	Total Bride- grooms.	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 Upwds.	Not Stated.
Under 20 ...	707	4	469	219	13	1	1	...	...	...
20 to 24 ...	13,506	9	3,308	8,167	1,756	201	53	9	2	1
25 to 29 ...	15,602	4	1,422	7,479	5,354	1,062	212	42	26	1
30 to 34 ...	6,761	...	358	2,102	2,449	1,357	387	82	25	1
35 to 39 ...	3,055	...	107	604	932	756	465	130	60	1
40 to 44 ...	1,540	...	31	174	336	387	333	198	80	1
45 to 49 ...	870	...	8	60	118	164	192	141	185	2
50 to 54 ...	566	...	4	25	51	62	106	115	203	...
55 to 59 ...	345	...	4	11	17	32	50	52	178	1
60 to 64 ...	156	...	...	3	12	11	16	24	90	...
65 and upwards ...	187	...	...	1	2	9	9	24	142	...
Not stated ...	16	...	...	2	...	...	...	...	1	13
Total Brides ...	43,311	17	5,711	18,847	11,040	4,042	1,824	817	992	21

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 1914, was shewn. In the following table the relative conjugal condition of the contracting parties is given :—

RELATIVE CONJUGAL CONDITION OF PERSONS MARRIED, COMMONWEALTH, 1914.

Conjugal Condition.		Total Bridegrooms.	Brides.		
			Spinsters.	Widows.	Divorced.
Bridegrooms {	Bachelors ...	40,710	39,147	1,319	244
	Widowers ...	2,330	1,640	637	53
	Divorced ...	271	225	29	17
Total Brides ...		43,311	41,012	1,985	314

6. **Birthplaces of Persons Married.**—Information as to the birthplaces of persons who were married in 1914 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. 32, Commonwealth Demography," the relative birthplaces of bridegrooms and brides will be found tabulated.

BIRTHPLACES OF PERSONS MARRIED, 1914.

COMMONWEALTH (a).

Birthplaces.	Bridegrooms.	Brides.	Birthplaces.	Bridegrooms.	Brides.
AUSTRALASIA—			ASIA—cont.—		
New South Wales ...	12,745	14,403	Philippine Islands ...	1	...
Victoria ...	10,792	11,235	Syria ...	16	9
Queensland...	3,923	4,805	Other Asiatic Countries	2	2
South Australia ...	3,541	3,867	AFRICA—		
Western Australia ...	67	49	Cape of Good Hope...	8	...
Tasmania ...	1,632	1,767	Mauritius ...	6	2
Northern Territory ...	6	10	Natal ...	2	...
New Zealand ...	569	327	S. Africa (Undefined)	39	22
EUROPE—			Other African British Possessions	1	1
England ...	4,362	2,575	Egypt ...	4	...
Wales ...	101	47	Other African Countries	2	...
Scotland ...	1,137	722	AMERICA—		
Ireland ...	552	391	Canada ...	44	10
Isle of Man ...	9	2	Newfoundland ...	1	1
Other European British Possessions	19	7	Other American British Possessions	1	1
Austria-Hungary ...	25	10	Argentine Republic...	2	...
Belgium ...	7	1	Brazil ...	1	...
Denmark ...	50	14	Mexico ...	1	1
France ...	26	25	United States ...	142	47
Germany ...	270	101	Other American Countries	15	7
Greece ...	27	3	POLYNESIA—		
Italy ...	71	42	Fiji ...	14	10
Netherlands ...	25	11	Papua ...	...	1
Norway ...	35	9	Other Polynesian British Possessions	2	...
Portugal ...	1	3	New Caledonia ...	5	2
Russia ...	61	26	New Hebrides ...	1	...
Spain ...	7	3	Samoa ...	2	...
Sweden ...	69	8	Other Polynesian Islands	3	...
Switzerland ...	13	5	South Sea Islands (so described)	21	2
Other European Countries	7	5	At sea ...	34	14
ASIA—			Not stated ...	12	10
British India ...	50	21	Total		
Ceylon ...	4	3	...	40,651	40,651
Hong Kong ...	1	...			
Straits Settlements	1	1			
China ...	51	9			
Japan ...	10	1			
Java ...	3	1			

(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 1907 to 1914. In "Bulletin No. 32" the 1914 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 27.94 in the Transport and Communication and Manufacturing classes to 32.16 years in the Pastoral class. The averages for the five years 1907-1911 and the figures for 1912 and 1913 have been added for the purposes of comparison. The results obtained are shewn in the following table:—

OCCUPATIONS AND AGES OF BRIDEGROOMS, COMMONWEALTH, 1914.

Ages at Marriage.	Professional.	Domestic.	Mercantile.	Transport and Communication.	Industrial.			Primary Producers.				Indefinite.
					Manu- facturing.	Building and Construction.	Indefinite Industrial Workers.	Agricultural.	Pastoral.	Mines and Quarries.	Other Primary Producers.	
16 years ...	1	1	3	4	4	1	4	...	...	...	...	...
17 " ...	...	...	8	8	9	2	15	3	...	...	3	...
18 " ...	7	4	27	28	38	11	46	11	4	12	1	1
19 " ...	6	15	63	57	93	37	125	24	4	16	5	...
20 " ...	26	16	113	142	166	71	240	60	9	62	5	...
21 " ...	97	47	320	319	482	178	614	199	43	97	20	2
22 " ...	145	73	410	369	521	233	768	254	50	134	27	4
23 " ...	178	106	536	478	529	246	838	331	69	148	27	6
24 " ...	215	78	626	479	612	271	781	412	63	122	33	6
25 " ...	239	83	633	483	515	274	776	386	81	129	34	6
26 " ...	258	67	641	427	543	256	711	442	86	125	21	6
27 " ...	246	78	569	346	434	217	591	396	83	112	24	4
28 " ...	243	63	531	318	362	197	551	381	101	77	25	2
29 " ...	199	58	440	267	300	165	486	341	73	74	23	3
30 " ...	163	50	341	199	255	116	373	264	65	73	20	3
31 " ...	123	35	251	154	189	73	312	231	46	49	13	2
32 " ...	107	40	212	117	169	78	266	211	53	34	12	2
33 " ...	89	30	210	102	109	52	219	159	43	35	10	4
34 " ...	85	25	175	86	112	61	209	150	50	33	5	4
35 to 39 years	242	82	534	265	314	130	627	533	142	148	29	9
40 " 44 "	123	60	265	121	152	79	310	260	81	66	16	7
45 " 49 "	62	31	130	58	76	30	177	146	54	35	7	14
50 years and upwards	77	41	189	100	147	82	256	182	68	57	19	36
Not stated	2	...	1	...	3	3	3	2	...	...	1	1
Total ...	2,933	1,083	7,231	4,927	6,140	2,913	9,298	5,378	1,268	1,638	380	122
Average age—years (1914)	30.03	30.07	29.31	27.94	27.94	28.56	28.73	30.35	32.16	28.55	29.92	40.28
" " (1913)	30.54	29.82	29.33	23.07	27.95	28.81	28.45	30.79	32.24	29.08	30.02	42.38
" " (1912)	30.75	30.29	29.45	28.70	27.58	30.33	28.57	30.85	32.09	28.94	29.54	41.90
" " (1907-1911)	31.12	30.32	29.73	28.65	28.27	29.11	28.83	30.99	32.50	29.14	29.43	41.60

The average age at marriage of brides has slowly risen from 25.56 years in 1907 to 25.78 years in 1913 and 1914. The figures for the eight years are:—1907, 25.56 years; 1908, 25.67 years; 1909, 25.74 years; 1910, 25.77 years; 1911, 25.74 years; 1912, 25.74 years; 1913, 25.78 years; and 1914, 25.78 years. For the five years 1907-11 the average age was 25.70 years, compared with 25.74 years in 1912, and 25.78 years in 1913 and 1914. As the average age of all bridegrooms during 1914 was 29.13 years, it follows that brides are on an average not quite three years and a half younger than bridegrooms.

8. Fertility of Marriages.—The quotient obtained by division of the nuptial births registered, say during the five years 1910 to 1914, by the number of marriages registered during the five years 1905 to 1909, *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 3.86, 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 it is, owing chiefly to the fictitious increase in the number of births shewn in 1912, 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, and for the year 1913, 3.85.

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 96.50 per cent. in 1913 and 97.55 per cent. in 1909. The figures for the individual States in 1914 were: New South Wales, 97.77 per cent.; Victoria, 97.36 per cent.; Queensland, 95.71 per cent.; South Australia, 95.54 per cent.; Western Australia, 87.44 per cent.; and Tasmania, 98.12 per cent., the percentage for the Commonwealth being 96.54. The registered ministers in 1914 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 1914 are shewn in the following table:—

MARRIAGES IN EACH DENOMINATION, COMMONWEALTH, 1914.

Denomination.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N. Ter.	Fed. Ter.	Com'-wealth
Church of England ...	7,454	3,255	1,620	957	1,074	576	6	1	14,943
Roman Catholic Church ...	3,073	2,098	1,174	438	455	217	4	...	7,459
Presbyterian Church of Aust. ...	2,338	2,225	891	215	189	179	...	...	6,037
Methodist Church ...	2,667	1,836	1,015	1,193	378	242	2	...	7,333
Congregational Church ...	562	1,039	164	257	96	136	...	...	2,254
Baptist Church ...	373	500	291	256	61	81	...	...	1,562
Church of Christ ...	254	283	19	238	28	22	...	...	844
Lutheran Church ...	24	63	140	203	8	...	...	...	438
Greek Orthodox Church ...	11	4	...	...	2	...	...	...	17
Unitarian Church ...	21	...	...	1	...	...	...	...	22
Salvation Army ...	73	64	44	42	21	11	...	...	255
Seventh-Day Adventists ...	19	16	4	5	6	1	...	...	51
Other Christians ...	50	90	273	23	...	49	...	...	485
Hebrew ...	48	44	5	3	8	...	...	...	108
Registrar's Office ...	387	312	253	179	334	29	5	...	1,499
Unspecified ...	3	...	1	...	...	...	...	...	4
Total ...	17,357	11,829	5,894	4,010	2,660	1,543	17	1	43,311

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, 1904 to 1914.* For a number of years, with the exception of 1905, 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, 1904 to 1914.

Year. ...	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
Male ...	0.95	0.91	0.92	0.81	0.71	0.65	0.56	0.56	0.43	0.36	0.41
Female	0.91	0.93	0.86	0.70	0.73	0.62	0.59	0.54	0.45	0.38	0.38

(ii.) *Mark Signatures in Commonwealth States, 1904 to 1914.* 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, 1904 to 1914.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Terr.	C'wealth.
1904 ...	0.90	0.54	1.72	0.65	0.53	2.85	...	...	0.93
1905 ...	1.12	0.44	1.39	0.83	0.57	2.12	...	...	0.92
1906 ...	0.94	0.43	1.67	0.65	0.66	2.18	25.00	...	0.89
1907 ...	0.87	0.36	1.14	0.55	0.64	2.02	...	...	0.76
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	...	0.53
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

(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, 1904 to 1914.—The total number of deaths registered in the Commonwealth from 1904 to 1914 inclusive, gives an annual average of 27,039 males and 19,912 females, the details being as follow :—

MALE DEATHS, COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	Fed. Terr.	C'wealth.
1904 ...	8,733	7,992	3,259	2,019	1,823	1,061	52	...	24,939
1905 ...	8,709	8,273	3,499	2,003	1,738	1,061	38	...	25,311
1906 ...	8,715	8,342	3,212	2,053	1,878	1,118	56	...	25,374
1907 ...	9,444	7,977	3,482	1,998	1,866	1,083	89	...	25,939
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
Rate, (b) 1914	11.32	12.65	11.32	11.87	10.70	10.35	22.57	4.22	11.67

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

(b) Number of deaths per 1000 of mean population.

FEMALE DEATHS, COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	North. Terr.	Fed. Terr.	C'wealth.
1904 ...	6,627	6,401	1,991	1,700	994	913	7	...	18,633
1905 ...	6,269	6,403	2,004	1,753	981	783	5	...	18,203
1906 ...	6,260	6,895	1,883	1,819	1,206	893	3	...	18,959
1907 ...	6,967	6,562	2,116	1,738	1,065	915	3	...	19,366
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
Rate, (b) 1914	8.77	10.53	8.89	9.54	7.75	8.94	17.29	3.94	9.27

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

(b) Number of deaths per 1000 of mean population.

2. Male and Female Death Rates, 1914.—The crude male and female death rates for 1914 only are given in the last line of the preceding tables. Victoria has the highest rate both for males and for females, while Western Australia has the lowest male and the lowest female death rate. The rates for the two Territories are based on very small numbers, and comparisons with the States are misleading.

Owing to differences in the age constitution of the six States, the crude rates are not, however, strictly comparable, but for the purposes of calculating the "Index of Mortality" (see page 185) 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 180.

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 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.
New Zealand ...	1914	9.3	Scotland ...	1913	15.5
Western Australia ...	1914	9.4	German Empire ...	1912	15.6
Tasmania ...	1914	9.7	Finland ...	1912	16.3
Queensland ...	1914	10.0	Ireland ...	1913	17.1
New South Wales ...	1914	10.1	France ...	1913	17.7
Commonwealth ...	1914	10.5	Italy ...	1912	18.2
South Australia ...	1914	10.7	Austria ...	1912	20.5
Victoria ...	1914	11.6	Japan ...	1910	21.1
Netherlands ...	1913	12.3	Serbia ...	1912	21.1
Denmark ...	1913	12.5	Jamaica ...	1913	21.7
Ontario (Canada) ...	1913	12.7	Spain ...	1913	22.1
Norway ...	1913	13.2	Bulgaria ...	1910	23.2
Sweden ...	1913	13.6	Hungary ...	1912	23.3
England and Wales ...	1913	13.7	Rumania ...	1913	25.9
Switzerland ...	1912	14.1	Ceylon ...	1913	28.4
United Kingdom ...	1913	14.2	Russia, European ...	1909	28.9
Belgium ...	1912	14.8	Chile ...	1912	29.7
Prussia ...	1912	15.5			

(a) Number of deaths per 1000 of mean population.

4. Total Deaths, 1904 to 1914.—The total number of deaths in each of the Commonwealth States during the eleven years 1904 to 1914, is shewn below:—

TOTAL DEATHS, COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	North Terr.	Federal Terr.	C'wealth.
1904 ...	15,360	14,393	5,250	3,719	2,817	1,974	59	...	43,572
1905 ...	14,978	14,676	5,503	3,761	2,709	1,844	43	...	43,514
1906 ...	14,975	15,237	5,095	3,872	3,084	2,011	59	...	44,333
1907 ...	16,411	14,539	5,598	3,736	2,931	1,998	92	...	45,305
1908 ...	16,055	15,766	5,680	3,834	2,879	2,129	83	...	46,426
1909 ...	16,810	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 ...	18,726	16,503	6,731	4,718	3,043	1,918	81	11	51,720

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

5. Crude Death Rates, 1904 to 1914.—The death rate for 1914 shewed an increase on that for 1913 in Victoria and Western Australia, and a decrease in New South Wales, Queensland, South Australia, Tasmania, and the Commonwealth as a whole. The rates for each State, South Australia excepted, are below the average for the period, and in Tasmania the rate was the lowest on record, while in Western Australia 1913 had been slightly more favourable. The Commonwealth rate for 1914 was lower than in any of the other years of the period under review excepting the years 1909 and 1910, and below the average for the period.

CRUDE DEATH RATE (a), COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	C'wealth.
1904 ...	10.67	11.97	10.06	10.42	12.04	10.79	13.98	...	11.05
1905 ...	10.18	12.17	10.40	10.45	10.98	10.00	10.42	...	10.88
1906 ...	9.95	12.55	9.50	10.66	12.12	10.91	14.84	...	10.92
1907 ...	10.63	11.86	10.31	10.16	11.47	10.81	24.07	...	10.99
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

(a) Number of deaths per thousand of mean population for year. (b) Part of New South Wales prior to 1911.

6. Male and Female Death Rates, 1904 to 1914.—The rise in the Commonwealth rate from 1905 to 1907 was due to an increase in the female death rate, while the increase 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 decrease from 1912 to 1913 was more than twice as great for the male rate than for the female rate. The decrease from 1913 to 1914 was fairly equal for the male and female rates.

MALE AND FEMALE DEATH RATES (a), COMMONWEALTH, 1904 to 1914.

Year.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
Male rate	12.12	12.14	12.01	12.11	12.24	11.51	11.54	11.82	12.51	11.93	11.67
F'male „	9.88	9.50	9.73	9.77	9.81	9.06	9.24	9.40	9.84	9.53	9.27
Crude total rate	11.05	10.88	10.92	10.99	11.07	10.33	10.43	10.66	11.23	10.78	10.51

(a) Number of deaths per thousand of mean population.

7. Infantile Death Rate.—(i.) *Deaths and Death Rates of Male and Female Infants, 1904 to 1914.* Improvement continues to take place in the infantile death rate since 1904, in which year it stood at 81.77 per thousand births registered, while in 1914 it had fallen to 71.47 per thousand, a rate lower than that experienced in any previous year, 1911 excepted. In the following table, which shews both the total number of deaths of children under one year and the rate per thousand births since 1904, 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 665,625 male infants born from 1904 to 1914, 55,242 died during their first year of life, while of 633,061 female infants the number who died was only 42,934:—

**NUMBER OF INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY,
COMMONWEALTH, 1904 to 1914.**

Year.	Registered Deaths under one year.			Rate of Infantile Mortality (a).		
	Males.	Females.	Total.	Males.	Females.	Total.
1904 ...	4,713	3,800	8,513	88.33	74.87	81.77
1905 ...	4,884	3,696	8,580	90.62	72.41	81.76
1906 ...	5,002	3,981	8,983	90.10	76.01	83.26
1907 ...	4,993	3,952	8,945	88.39	73.38	81.06
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

(a) Number of deaths under 1 year per 1000 births registered.

(ii.) *Infantile Mortality, 1904 to 1914.* Divided among the States and Territories, the rates of infantile mortality during the last eleven years was as follows:—

RATES (a) OF INFANTILE MORTALITY, COMMONWEALTH, 1904 to 1914.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	Federal Territory.	Com'-wealth.
1904 ...	82.42	77.92	76.13	70.00	113.02	90.70	212.12	...	81.77
1905 ...	80.55	83.30	75.52	72.80	104.19	80.65	111.11	...	81.76
1906 ...	74.53	92.92	74.68	75.66	110.00	90.19	160.00	...	83.26
1907 ...	83.46	72.60	77.65	66.23	97.51	82.97	135.19	...	81.06
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	(b) 33.34	68.49
1912 ...	71.00	74.48	71.73	61.68	82.06	66.80	121.21	76.92	71.74
1913 ...	77.78	70.53	63.35	69.83	70.30	70.68	115.38	22.73	72.21
1914 ...	69.29	78.27	63.93	75.79	68.12	71.46	51.72	...	71.47

(a) Number of deaths under 1 year per 1000 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 1906, 1910, and 1913. The minimum rates in the six States occurred at different periods, viz., Tasmania, in 1909; Queensland, in 1910; Victoria and South Australia, in 1911; New South Wales and Western Australia, in 1914. The regrettable increase in the Victorian rate for 1908 over that of 1907 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. The decrease in New South Wales was, however, large enough to fully counterbalance the increases in the other States, so that the Commonwealth rate for 1914 was the lowest on record.

(iii.) *Infantile Mortality in Various Countries and Cities.* Compared with European 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 ...	1913	59	26.0	Scotland ...	1913	110	25.5
Queensland ...	1914	64	29.5	Ontario (Canada)...	1913	117	24.0
Western Australia ...	1914	68	28.5	Belgium ...	1912	120	22.6
Norway ...	1912	68	25.6	Italy ...	1912	130	32.4
New South Wales ...	1914	69	29.0	Prussia ...	1912	146	28.9
Commonwealth ...	1914	71	28.1	Serbia ...	1911	146	36.2
Tasmania ...	1914	71	30.3	German Empire ...	1912	147	28.3
Sweden ...	1911	72	24.0	Spain ...	1907	158	33.6
South Australia ...	1914	76	29.3	Bulgaria ...	1910	159	41.7
Victoria ...	1914	78	25.5	Japan ...	1910	160	33.9
France ...	1912	78	19.0	Jamaica ...	1913	171	35.3
Netherlands ...	1913	91	28.1	Austria ...	1912	180	31.3
Denmark ...	1913	94	25.6	Hungary ...	1912	186	36.3
Switzerland ...	1912	94	24.1	Ceylon ...	1913	189	38.6
Ireland ...	1913	97	22.8	Rumania ...	1913	202	42.1
England and Wales	1913	108	23.9	Russia, European	1909	248	44.0
United Kingdom ...	1913	108	24.0	Chile ...	1911	332	38.5
Finland ...	1912	109	29.1				

(a) Number of deaths under 1 year per 1000 births registered. (b) Number of births per 1000 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)
Amsterdam ...	1912	64	Belfast ...	1912	129
The Hague... ..	1912	66	Hamburg ...	1912	130
Sydney ...	1914	69	Strassburg ...	1912	131
Brisbane ...	1914	69	Leipzig ...	1912	133
Perth ...	1914	69	Stuttgart ...	1912	133
Rotterdam ...	1912	79	Munich ...	1912	134
Melbourne ...	1914	84	Antwerp ...	1912	140
Adelaide ...	1914	84	Dublin ...	1912	140
Stockholm ...	1912	86	Budapest ...	1912	141
London ...	1912	91	Berlin ...	1912	142
Zurich ...	1910	93	Marseilles ...	1911	144
Buenos Aires ...	1912	96	Vienna ...	1912	149
Copenhagen ...	1912	98	Cologne ...	1912	152
Rome ...	1912	101	Warsaw ...	1912	156
Milan ...	1912	102	Madrid ...	1912	157
Frankfort-on-Maine	1912	102	Breslau ...	1912	163
Hobart ...	1914	102	Brussels ...	1912	166
Paris ...	1912	103	Prague ...	1911	172
Edinburgh ...	1912	105	Rio de Janeiro ...	1912	174
Christiania ...	1912	108	Trieste ...	1912	184
Toronto ...	1911	114	Bucharest ...	1912	185
Dresden ...	1912	116	Moscow (excl. of Found- ling Hospital.)	1911	241
Lyons ...	1911	119	Montreal ...	1911	242
Glasgow ...	1912	124	Petrograd ...	1912	249

(a) Number of deaths under 1 year per 1000 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 $3\frac{1}{4}$ 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 1000 births would be to increase the birth rate from say 30 to 31 per 1000 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, 1904 to 1914.**—A distribution into age-groups has been made of the 516,467 deaths which occurred in the Commonwealth from 1904 to 1914, 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, 1904 to 1914.

Ages.	Males.	Females.	Total.	Percentage of Total Males.	Percentage of Total Females.	Percentage of Total.
Under 1 year ...	55,242	42,934	98,176	18.57	19.60	19.02
1 year and under 5 ...	16,495	14,810	31,305	5.54	6.76	6.07
5 years and under 20 ...	16,344	14,372	30,716	5.50	6.56	5.96
20 years and under 40 ...	39,070	34,883	73,953	13.14	15.93	14.33
40 years and under 60 ...	62,311	36,317	98,628	20.95	16.58	19.11
60 years and under 65 ...	17,286	10,477	27,763	5.81	4.78	5.38
65 years and over ...	90,126	65,127	155,253	30.30	29.74	30.00
Age not stated ...	559	114	673	0.19	0.05	0.13
Total ...	297,433	219,034	516,467	100.00	100.00	100.00

9. **Deaths at Single Ages and in Age-Groups, 1914.**—The 51,720 deaths which were registered in the Commonwealth in the year 1914 will be found tabulated under single years, and in groups of five years for each State and Territory, in "Bulletin No.

32, Commonwealth Demography, 1914." 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, 1914,
COMMONWEALTH.**

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
Under 1 week ...	1,841	1,289	3,130	10 years ...	70	43	113
1 week and under 2 ...	366	254	620	11 " ...	74	55	129
2 weeks " " 3 ...	220	152	372	12 " ...	63	54	117
3 " " " 4 ...	202	131	333	13 " ...	82	50	132
				14 " ...	82	75	157
Total under one month ...	2,629	1,826	4,455	Total 10 years and under 15	371	277	648
1 month and under 2 ...	451	311	762	15 years ...	90	78	168
2 months " " 3 ...	399	291	690	16 " ...	94	76	170
3 " " " 4 ...	327	285	612	17 " ...	113	73	186
4 " " " 5 ...	307	267	574	18 " ...	115	83	198
5 " " " 6 ...	267	243	510	19 " ...	152	112	264
6 " " " 7 ...	265	222	487	Total 15 years and under 20	564	422	986
7 " " " 8 ...	201	204	405	20 years ...	164	126	290
8 " " " 9 ...	221	156	377	21 " ...	168	134	302
9 " " " 10 ...	193	179	372	22 " ...	197	140	337
10 " " " 11 ...	149	175	324	23 " ...	169	176	345
11 " " " 12 ...	173	120	293	24 " ...	188	173	361
Total under 1 year ...	5,582	4,279	9,861	Total 20 years and under 25	886	749	1,635
12 months and under 13 ...	294	229	523	25 years ...	191	182	373
13 " " " 14 ...	83	70	153	26 " ...	213	184	397
14 " " " 15 ...	91	67	158	27 " ...	196	161	357
15 " " " 16 ...	82	87	169	28 " ...	221	194	415
16 " " " 17 ...	63	53	116	29 " ...	213	161	374
17 " " " 18 ...	40	44	84	Total 25 years and under 30	1,034	882	1,916
18 " " " 19 ...	83	49	132	30 years ...	232	163	395
19 " " " 20 ...	50	42	92	31 " ...	121	132	253
20 " " " 21 ...	29	36	65	32 " ...	213	178	391
21 " " " 22 ...	35	37	72	33 " ...	184	168	352
22 " " " 23 ...	30	31	61	34 " ...	210	178	388
23 " " " 24 ...	29	29	58	Total 30 years and under 35	960	819	1,779
Total under 2 years ...	6,491	5,053	11,544	35 years ...	242	155	397
2 years ...	387	298	685	36 " ...	214	177	391
3 " ...	241	212	453	37 " ...	242	149	391
4 " ...	158	183	341	38 " ...	251	186	437
Total under 5 years ...	7,277	5,746	13,023	39 " ...	181	162	343
5 years ...	128	130	267	Total 35 years and under 40	1,130	829	1,959
6 " ...	108	125	233				
7 " ...	100	82	182				
8 " ...	112	96	208				
9 " ...	107	66	173				
Total 5 years and under 10	555	508	1,063				

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1914—Continued.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
40 years	280	154	434	75 years	450	349	799
41 "	193	151	344	76 "	382	333	715
42 "	245	181	426	77 "	386	293	679
43 "	266	167	433	78 "	443	335	778
44 "	253	164	417	79 "	338	327	665
Total 40 years and under 45	1,237	817	2,054	Total 75 years and under 80	1,999	1,637	3,636
45 years	330	179	509	80 years	423	352	775
46 "	314	169	483	81 "	319	238	557
47 "	278	177	455	82 "	347	278	625
48 "	327	207	534	83 "	280	239	519
49 "	350	196	546	84 "	284	257	541
Total 45 years and under 50	1,599	928	2,527	Total 80 years and under 85	1,653	1,364	3,017
50 years	430	207	637	85 years	222	214	436
51 "	285	155	440	86 "	198	150	348
52 "	379	207	586	87 "	152	146	298
53 "	360	201	561	88 "	142	129	271
54 "	390	231	621	89 "	95	80	175
Total 50 years and under 55	1,844	1,001	2,845	Total 85 years and under 90	809	719	1,528
55 years	363	201	564	90 years	80	88	168
56 "	382	228	610	91 "	32	47	79
57 "	403	229	632	92 "	49	38	87
58 "	397	212	609	93 "	30	32	62
59 "	321	194	515	94 "	27	37	64
Total 55 years and under 60	1,866	1,064	2,930	Total 90 years and under 95	218	242	460
60 years	453	219	672	95 years	10	28	38
61 "	257	144	401	96 "	11	11	22
62 "	334	203	537	97 "	7	8	15
63 "	384	244	628	98 "	3	5	8
64 "	373	228	601	99 "	3	8	11
Total 60 years and under 65	1,801	1,038	2,839	Total 95 yrs. and under 100	34	60	94
65 years	471	271	742	100 years	4	4	8
66 "	311	228	539	101 "	1	2	3
67 "	351	234	585	102 "	1	1	2
68 "	325	268	593	103 "	1	1	2
69 "	359	266	625	104 "	1	1	2
Total 65 years and under 70	1,877	1,267	3,144	105 "	1	1	2
70 years	463	313	776	Total 100 years and over...	6	9	15
71 "	326	219	545	Age not stated	39	13	52
72 "	425	308	733	Total all ages	29,835	21,885	51,720
73 "	431	306	737				
74 "	431	348	779				
Total 70 years and under 75	2,076	1,494	3,570				

The following tables shew the death rate per 1000 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 1000 LIVING IN VARIOUS AGE-GROUPS, 1910 to 1912.

MALES.

Age Group.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
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	11.53
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	78.74	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 "	14.88	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	137.97	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

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	103.80	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 1000 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, 1914.**—Particulars as to the fifteen persons who died in 1913, 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. 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, 1914.—COMMONWEALTH.

MALES.

Age	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birth-place.	Length of Residence in Commonwealth.
Yrs						
104	Riddell's Creek ...	Victoria ...	Senility ...	Labourer...	Scotland ...	37 years
102	Latrobe ...	Tasmania ...	" ...	Ex-St Police	India ...	Unspecified
100	Stroud ...	N.S.W. ...	" ...	Farmer ...	England ...	84 years
100	Dunolly ...	Victoria ...	Burns ...	Unspecified	Ireland ...	58 "
100	Willunga ...	South Aust.	Cerebral Hæmorrhage	Builder ...	England ...	66 "
100	New Norfolk ...	Tasmania ...	Senility ...	Labourer...	England ...	70 "

FEMALES.

106	Romsey ...	Victoria ...	Diarrhœa ...	...	Scotland ...	62 years
104	Murray ...	West Aust.	Senility ...	...	Ireland ...	63 "
102	Dungog ...	N.S.W. ...	" ...	...	England ...	80 "
101	Beverley ...	West Aust.	" ...	...	England ...	84 "
101	Auburn ...	N.S.W. ...	" ...	...	Ireland ...	40 "
100	Chatswood ...	" ...	Hypostatic Congestion	...	England ...	70 "
100	Chatswood ...	" ...	Pneumonia ...	...	" ...	96 "
100	Myrning ...	Victoria ...	Senility ...	...	Unspecified	Unspecified
100	Parkside ...	S. Australia	" ...	...	England ...	70 years

11. **Length of Residence in the Commonwealth of Persons who Died in 1914.**—The length of residence in the Commonwealth of all persons whose deaths were registered in the year 1914 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 1914.

Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.	Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.
Born in the C'wealth...	16,964	13,816	30,780	Resident 25 to 29 years	850	431	1,281
Resident under 1 year	232	89	321	" 30 to 34 "	1,178	587	1,765
" 1 year ...	196	102	298	" 35 to 39 "	741	364	1,105
" 2 years ...	200	97	297	" 40 to 44 "	803	407	1,210
" 3 " ...	159	74	233	" 45 to 49 "	644	497	1,141
" 4 " ...	104	48	152	" 50 to 54 "	1,318	1,102	2,420
" 5 " ...	79	34	113	" 55 to 59 "	1,131	1,078	2,209
" 6 " ...	69	33	102	" 60 to 64 "	1,523	1,329	2,852
" 7 " ...	45	12	57	" 65 yrs. & over	617	744	1,361
" 8 " ...	37	16	53	Length of residence not stated...	2,069	621	2,690
" 9 " ...	23	10	33				
" 10 to 14 years...	221	76	297				
" 15 to 19 " ...	217	61	298				
" 20 to 24 " ...	415	237	352	Total ...	29,835	21,885	51,720

12. Birthplaces of Persons who Died in 1914.—In the following table are shewn the birthplaces of persons whose deaths were registered in 1914 :—

BIRTHPLACES OF PERSONS WHO DIED IN 1914.

COMMONWEALTH.

Birthplace.	Males.	Females.	Total.	Birthplace	Males.	Females.	Total.
AUSTRALASIA—				Java	10	...	10
Commonwealth of				Philippine Islands	6	...	6
Australia—				Syria	5	2	7
New South Wales ...	6,189	5,224	11,413	Other Asiatic			
Victoria	5,565	4,396	9,961	Countries ...	22	2	24
Queensland	1,742	1,411	3,153	AFRICA—			
South Australia ...	1,787	1,430	3,217	Mauritius	9	3	12
Western Australia...	648	507	1,155	Natal ... ..	...	1	1
Tasmania	1,023	843	1,866	S. Africa (undefined)	27	10	37
Northern Territory	10	5	15	Other African Brit.			
New Zealand	115	93	208	Possessions ...	1	1	2
EUROPE—				Egypt	1	...	1
England	5,519	3,538	9,057	Other African			
Wales	141	71	212	Countries ...	4	1	5
Scotland	1,619	1,048	2,667	AMERICA—			
Ireland	2,574	2,573	5,147	Canada	52	12	64
Isle of Man	4	5	9	Jamaica	4	...	4
Other European				Newfoundland ...	4	1	5
Brit'h Possessions	24	17	41	Other American			
Austria-Hungary ...	30	...	30	Brit. Possessions	1	1	2
Belgium	9	2	11	Argentine Republic	2	...	2
Denmark	84	22	106	Brazil ... ..	...	2	2
France	70	8	78	Chile	2	1	3
Germany	601	270	871	Peru ... ..	...	1	1
Greece	23	2	25	United States of			
Italy	84	10	94	America	80	25	105
Netherlands	23	2	25	Other American			
Norway	73	6	79	Countries ...	40	16	56
Portugal	8	...	8	POLYNESIA—			
Russia	73	22	95	Fiji	4	...	4
Spain	14	2	16	Friendly Islands ...	1	...	1
Sweden	126	11	137	Papua	1	1	2
Switzerland	57	9	66	Other Polynesian			
Other European				Brit. Possessions	5	...	5
Countries	6	2	8	New Caledonia ...	3	3	6
ASIA—				New Hebrides ...	4	...	4
British India	68	30	98	Samoa	1	1	2
Ceylon	6	3	9	Other Polynesian			
Hong Kong	2	...	2	Islands	2	...	2
Straits Settlements	9	1	10	South Sea Islands			
Other Asiatic British				(so described) ...	32	1	33
Possessions	6	...	6	At Sea	55	39	94
Afghanistan	1	...	1	Not stated...	725	194	919
Arabia	8	...	8	Total Deaths ...	29,835	21,885	51,720
China	334	2	336				
Japan	57	2	59				

13. **Occupations of Male Persons who Died in 1914.**—Information as to the occupations of the 29,835 males who died in the Commonwealth in 1914, is contained in the following statement :—

OCCUPATIONS OF MALES WHO DIED IN 1914.

COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths
CLASS I.—PROFESSIONAL.		Groceries and stimulants ...	157
General Government ...	124	Living animals... ..	31
Local Government ...	32	Leather, raw material ...	4
Defence ...	60	Wool and tallow ...	3
Law and order ...	194	Hay, corn, etc. ...	31
Religion ...	105	Other vegetable matter ...	17
Charity ...	1	Wood and coal... ..	42
Health ...	167	Stone, clay, glass ...	5
Literature ...	34	Gold, silver, and precious stones ...	2
Science ...	11	Ironmongery ...	26
Civil and mechanical engineering, architecture and surveying ...	76	Merchants ...	98
Education ...	120	Shopkeepers and assistants ...	201
Fine arts ...	35	Dealers and hawkers ...	129
Music ...	42	Agents and brokers ...	113
Amusements ...	118	Clerks, bookkeepers, etc. ...	567
Total Professional ...	1,119	Commercial travellers and salesmen ...	176
		Others engaged in commercial pursuits ...	106
		Speculators on chance events ...	15
CLASS II.—DOMESTIC.		Total Commercial ...	2,423
Hotelkeepers and assistants ...	280	CLASS IV.—TRANSPORT AND COMMUNICATION.	
Others engaged in providing board and lodging... ..	69	Railway traffic ...	427
House servants ...	159	Tramway traffic ...	51
Coachmen and grooms ...	93	Road traffic ...	538
Hairdressers ...	63	Sea and river traffic ...	591
Laundrymen ...	13	Postal service ...	78
Others engaged in domestic occupations ...	133	Telegraph and telephone service ...	35
Total Domestic ...	810	Messengers, etc. ...	12
CLASS III.—COMMERCIAL.		Total Transport & Communication ...	1,732
Banking and finance ...	87	CLASS V.—INDUSTRIAL.	
Insurance and valuation ...	72	Books and publications ...	133
Land and household property ...	48	Musical instruments ...	13
Property rights, n.e.i. ...	1	Prints, pictures, and art materials ...	9
Books, publications and advertising ...	37	Ornaments and small wares ...	15
Musical instruments ...	2	Sports and games ...	2
Watches, clocks, jewellery ...	2	Designs, medals, type ...	5
Machines, tools, and implements ...	1	Watches and clocks ...	37
Carriages and vehicles ...	2	Arms and ammunition ...	7
Building materials ...	5	Engines, machines, tools, etc. ...	123
Furniture ...	5	Carriages and vehicles ...	102
Chemicals ...	1	Harness, saddlery, and leatherware ...	91
Paper and stationery ...	7	Ships, boats, and equipment ...	60
Textile fabrics ...	95	Furniture ...	107
Dress ...	8	Building material ...	40
Fibrous materials ...	4	Chemicals and by-products ...	5
Animal food ...	245		
Vegetable food ...	73		

OCCUPATIONS OF MALES WHO DIED IN 1914—Continued.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths
INDUSTRIAL—Continued.		CLASS VI.—AGRICULTURAL, PASTORAL, MINING PURSUITS, ETC.	
Textile fabrics ...	18	Agricultural ...	2,820
Dress ...	369	Pastoral ...	821
Fibrous materials ...	16	Dairy farming ...	72
Animal food ...	27	Bees, fisheries and wild animals ...	132
Vegetable food ...	195	Forestry ...	90
Groceries and stimulants ...	57	Water conservation and supply ...	12
Animal matter ...	58	Mines and quarries ...	1,645
Workers in wood not elsewhere classed ...	26		
Paper ...	5	Total Primary Producers ...	5,592
Stone, clay, glass ...	67		
Jewellery and precious stones ...	40	CLASS VII.—INDEFINITE.	
Metals, other than gold and silver	367	Independent means, having no specific occupation ...	749
Gas, electric lighting, etc. ...	58	Occupation unspecified ...	762
Buildings—			
Builders ...	93	Total Indefinite ...	1,511
Stonemasons... ..	91		
Bricklayers ...	119	CLASS VIII.—DEPENDENTS.	
Slaters ...	4	Dependent relatives (including persons under 20 years of age with no specified occupation) ...	8,406
Carpenters ...	504	Supported by voluntary and State contributions ...	244
Plasterers ...	49		
Painters and glaziers ...	188	Total Dependents ...	8,650
Plumbers ...	76		
Signwriters ...	12		
Others ...	4		
Roads, railways, and earthworks...	64		
Disposal of the dead ...	14		
Disposal of refuse ...	13		
Other industrial workers—			
Manufacturers ...	30		
Engineers, firemen ...	415		
Contractors ...	163		
Labourers, undefined ...	4,082		
Others ...	25		
Total Industrial ...	7,998	Total Male Deaths ...	29,835

14. **Index of Mortality.**—The death rates, those for age-groups on pages 177 and 180 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 1914 is shewn below for each of the States and Territories and for the Commonwealth, the distribution of the mean population of 1914 into age-groups being in accordance with the distribution as found at the Census of 1911:—

INDEX OF MORTALITY, 1914.—(STATES AND COMMONWEALTH).

Age-Group.	Mean Population, 1914, distributed according to Results of Census of 1911.	Number of Deaths, 1914.	No. of Deaths per 1000 of Mean Population, 1914, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality.
NEW SOUTH WALES.					
Under 1 year	50,940	3,723	73.09	25.5	1.86
1 year and under 20	729,495	2,116	2.90	398.0	1.15
20 years " 40	620,637	2,703	4.36	269.6	1.18
40 " " 60	335,096	3,653	10.80	192.3	2.10
60 " and upwards	116,318	6,525	56.10	114.6	6.43
Total	1,352,506	18,720	10.11	1,000.0	12.72
VICTORIA.					
Under 1 year	33,679	2,835	84.18	25.5	2.15
1 year and under 20	547,937	1,771	3.23	398.0	1.29
20 years " 40	450,599	1,989	4.41	269.6	1.19
40 " " 60	286,890	3,259	11.36	192.3	2.18
60 " and upwards	104,408	6,649	63.68	114.6	7.30
Total	1,423,513	16,503	11.59	1,000.0	14.11
QUEENSLAND.					
Under 1 year	18,251	1,273	69.75	25.5	1.78
1 year and under 20	276,491	301	3.26	398.0	1.30
20 years " 40	221,134	1,076	4.87	269.6	1.31
40 " " 60	119,897	1,416	11.81	192.3	2.27
60 " and upwards	39,159	2,065	52.73	114.6	6.04
Total	674,932	6,731	9.97	1,000.0	12.70
SOUTH AUSTRALIA.					
Under 1 year	11,331	978	86.31	25.5	2.20
1 year and under 20	172,302	463	2.69	398.0	1.07
20 years " 40	144,982	697	4.81	269.6	1.30
40 " " 60	80,440	816	10.14	192.3	1.95
60 " and upwards	30,957	1,799	56.82	114.6	6.51
Total	440,012	4,713	10.71	1,000.0	13.03
WESTERN AUSTRALIA.					
Under 1 year	8,647	630	72.86	25.5	1.86
1 year and under 20	118,464	366	3.09	398.0	1.23
20 years " 40	118,774	568	4.78	269.6	1.29
40 " " 60	64,601	833	12.89	192.3	2.48
60 " and upwards	12,976	646	49.78	114.6	5.70
Total	323,462	3,043	9.41	1,000.0	12.56
TASMANIA.					
Under 1 year	5,576	430	77.12	25.5	1.97
1 year and under 20	84,462	241	2.85	398.0	1.13
20 years " 40	60,675	248	4.09	269.6	1.10
40 " " 60	35,261	350	9.93	192.3	1.91
60 " and upwards	12,398	649	52.35	114.6	6.00
Total	198,372	1,918	9.67	1,000.0	12.11
NORTHERN TERRITORY.					
Under 1 year	33	3	90.91	25.5	2.32
1 year and under 20	690	4	5.80	398.0	2.31
20 years " 40	1,001	14	13.99	269.6	3.77
40 " " 60	1,686	37	21.95	192.3	4.22
60 " and upwards	341	23	67.45	114.6	7.73
Total	3,751	81	21.59	1,000.0	20.35
FEDERAL TERRITORY.					
Under 1 year	61	...	...	25.5	...
1 year and under 20	1,085	2	1.84	398.0	0.73
20 years " 40	813	1	1.23	269.6	0.33
40 " " 60	492	3	6.10	192.3	1.17
60 " and upwards	195	5	25.64	114.6	2.94
Total	2,646	11	4.16	1,000.0	5.17

INDEX OF MORTALITY, 1914.—(STATES AND COMMONWEALTH)—Continued.

Age-Group.	Mean Population, 1914, distributed according to Results of Census of 1911.	Number of Deaths, 1914.	No. of Deaths per 1000 of Mean Population, 1914, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality
COMMONWEALTH.					
Under 1 year	128,518	9,872	76.61	25.5	1.96
1 year and under 20	1,930,926	5,864	3.04	368.0	1.21
20 years " 40	1,618,635	7,296	4.51	269.6	1.22
40 " 60	924,363	10,367	11.22	192.3	2.16
60 " and upwards	316,752	18,321	57.84	114.6	6.63
Total	4,919,194	51,720	10.51	1,000.0	13.18

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 52 persons who died in 1914, and whose ages were not stated in the certificates of death.

It will be seen that while Victoria had in 1914, apart from the territories, the highest crude death rate, and the highest index, the crude rate was lowest in Western Australia, and the index in Tasmania. The range of the indexes was below that of the crude rates, the latter varying from 9.41 per thousand in Western Australia to 11.59 per thousand in Victoria, a range of 2.18 per thousand, while the index varied from 12.11 per thousand in Tasmania to 14.11 per thousand in Victoria, a range of 2.00 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 1904-1914 :—

INDEX OF MORTALITY, 1904-1914 (STATES AND TERRITORIES).

Year.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Northern Territory.	Federal Territory.	Commonwealth.
1904	13.90	14.46	12.89	13.45	15.49	14.13	...	...	14.11
1905	13.23	14.80	13.72	13.49	14.17	12.95	...	...	13.94
1906	12.91	15.26	12.44	13.78	15.84	14.10	...	...	13.94
1907	13.66	14.55	13.52	13.12	14.94	14.10	...	...	13.97
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	13.47	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

(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 ten times in 11 years and once in Western Australia, the index was highest in Victoria seven times, in Western Australia three times, and in New South Wales once in the same period. South Australia had the lowest index five times, Queensland and Tasmania twice, and New South Wales and Western Australia, once each, while the crude rate was lowest four times in South Australia, three times in Queensland, twice in Tasmania, and twice in Western Australia. 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 Rates.* 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 the majority of the State offices in the preparation of their monthly and quarterly bulletins of vital statistics.

(iii.) *Classification of Causes of Death, 1907 to 1914, 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 shewing 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 1907 to 1914 will be found in full in "Bulletins Nos. 8, 14, 20, 25, 29, 30, 31, and 32 of Population and Vital Statistics"; here it will suffice to give the abridged classification under thirty-eight headings for the year 1914:—

CAUSES OF DEATH—COMMONWEALTH, 1914.

(a) MALES.

Cause.	N.S.W.	Vic.	Q'land.	S.Aust.	W.Aus.	Tas.	Nor. Ter.	Fed Ter.	C'with.
1 Typhoid Fever ...	169	72	89	38	39	7	...	...	414
2 Typhus ...	...	...	...	...	...	...	...	...	...
3 Malaria ...	3	1	9	...	6	...	1	...	20
4 Small-pox ...	1	...	...	...	2	...	...	...	3
5 Measles ...	4	60	2	4	1	1	...	...	72
6 Scarlet Fever ...	5	...	2	1	1	1	...	...	10
7 Whooping Cough ...	48	40	23	17	5	5	...	...	138
8 Diphtheria and Croup ...	122	98	49	27	21	13	...	...	330
9 Influenza ...	39	60	22	12	9	8	1	1	152
10 Asiatic Cholera ...	...	...	...	...	...	...	...	...	...
11 Cholera Nostras ...	1	1	...	...	...	...	...	...	2
12 Other Epidemic Diseases	40	22	27	12	12	...	...	...	113
13 Tuberculosis of the Lungs	745	539	213	153	147	49	7	...	1,853
14 Tuberculosis of the Men- inges ...	54	47	8	13	5	3	...	...	130
15 Other forms of Tubercu- losis ...	58	53	10	10	5	3	...	...	139
16 Cancer and other Malig- nant Tumours ...	720	573	264	171	98	70	5	1	1,902
17 Simple Meningitis ...	148	154	54	41	34	20	...	...	451
18 Congestion, Hæmorrhage and Softening of Brain	425	365	164	100	52	37	...	...	1,143
19 Organic Diseases of the Heart ...	969	895	403	250	139	85	7	1	2,749
20 Acute Bronchitis ...	97	44	30	18	8	7	1	...	205
21 Chronic Bronchitis ...	174	213	79	43	24	13	1	...	547
22 Pneumonia ...	420	406	135	102	121	61	...	...	1,245
23 Other Diseases of the Res- piratory System (Tuber- culosis excepted) ...	350	428	143	70	68	45	2	...	1,106
24 Diseases of the Stomach (Cancer excepted) ...	82	59	36	12	8	4	1	...	202
25 Diarrhœa & Enteritis (chil- dren under 2 years only)	712	577	242	209	106	84	...	...	1,930
26 Appendicitis and Typhlitis	77	66	41	25	10	10	...	...	229
27 Hernia, Intestinal Ob- structions ...	104	77	33	19	17	7	...	...	257
28 Cirrhosis of the Liver ...	93	89	35	11	19	5	...	...	252
29 Nephritis and Bright's Disease ...	488	386	198	123	61	25	...	...	1,281
30 Non-cancerous Tumours and other Diseases of Female Genital Organs	...	...	...	...	...	...	...	...	...
31 Puerperal Septicæmia (Puerperal Fever, Puer- peral Peritonitis, Puer- peral Phlebitis) ...	...	...	...	...	...	...	...	...	...
32 Other Puerperal Accidents of Pregnancy and Con- finement ...	...	...	...	...	...	...	...	...	...
33 Congenital Debility and Malformations ...	857	646	255	239	144	99	1	...	2,241
34 Senile Debility ...	835	786	202	191	109	93	9	3	2,228
35 Violence ...	946	535	436	212	234	86	9	...	2,458
36 Suicide ...	211	102	111	39	55	13	3	...	534
37 Other Diseases ...	1,840	1,527	784	411	323	189	6	1	5,081
38 Unspecified or Ill-defined Diseases ...	147	96	33	48	59	20	15	...	418
Total—Males ...	10,984	9,017	4,132	2,621	1,942	1,063	69	7	29,835

CAUSES OF DEATH—COMMONWEALTH, 1914.

(b) FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. A.	W.A.	Tas.	Nor. Ter.	Fed. Ter.	C'wlth.
1 Typhoid Fever ...	77	35	38	19	17	4	...	...	190
2 Typhus ...	...	...	...	...	...	...	...	...	...
3 Malaria ...	...	1	...	...	...	...	1	...	2
4 Small-pox ...	...	...	...	...	...	...	...	...	...
5 Measles ...	9	54	11	5	4	...	...	...	83
6 Scarlet Fever ...	15	2	...	1	...	1	...	...	19
7 Whooping Cough...	76	51	20	22	11	2	...	...	182
8 Diphtheria and Croup	138	114	64	31	20	19	...	...	386
9 Influenza ...	32	84	31	15	8	9	...	...	179
10 Asiatic Cholera ...	...	...	...	...	...	...	...	...	...
11 Cholera Nostras ...	...	...	...	...	...	...	...	...	...
12 Other Epidemic Diseases ...	23	19	10	5	5	...	1	...	63
13 Tuberculosis of the Lungs...	420	482	89	138	84	45	...	...	1,258
14 Tuberculosis of the Meninges	25	31	2	11	1	7	...	...	77
15 Other forms of Tuberculosis	30	45	13	12	9	8	...	...	117
16 Cancer and other Malignant Tumours ...	642	615	175	199	65	76	...	1	1,773
17 Simple Meningitis ...	119	111	46	36	26	23	...	...	361
18 Congestion, Hæmorrhage, & Softening of the Brain ...	372	390	104	109	45	41	...	...	1,061
19 Organic Diseases of the Heart	641	810	256	222	73	82	2	1	2,087
20 Acute Bronchitis ...	89	32	26	18	8	11	...	...	184
21 Chronic Bronchitis ...	139	168	37	31	21	16	...	...	412
22 Pneumonia ...	262	282	70	58	44	31	...	...	747
23 Other Diseases of the Res- piratory System (Tuber- culosis excepted) ...	271	295	85	49	37	22	...	1	760
24 Diseases of the Stomach (Cancer excepted) ...	70	54	26	9	4	3	...	...	166
25 Diarrhœa and Enteritis (children under 2 yrs only)	596	454	186	192	90	58	...	...	1,576
26 Appendicitis and Typhlitis...	62	38	17	15	10	3	...	...	145
27 Hernia, Intestinal Obstruc- tions...	71	63	28	22	15	4	...	...	203
28 Cirrhosis of the Liver ...	37	53	18	10	7	3	...	...	128
29 Nephritis & Bright's Disease	280	311	144	62	23	26	...	...	846
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	50	43	13	16	11	4	1	...	138
31 Puerperal Septicæmia (Puer- peral Fever, Puerperal Peritonitis, Puerperal Phlebitis) ...	86	55	28	28	10	8	...	...	215
32 Other Puerperal Accidents of Pregnancy & Confinement	177	93	64	34	33	18	...	...	419
33 Congenital Debility and Mal- formations ...	637	451	214	137	106	74	...	...	1,619
34 Senile Debility ...	615	784	159	200	56	87	1	...	1,902
35 Violence ...	245	183	99	62	51	22	1	...	663
36 Suicide ...	58	24	17	8	2	...	...	...	109
37 Other Diseases ...	1,273	1,196	497	296	187	136	3	1	3,589
38 Unspecified or Ill-defined Diseases ...	99	63	12	20	18	12	2	...	226
Total—Females ...	7,736	7,486	2,599	2,092	1,101	855	12	4	21,885

CAUSES OF DEATH—COMMONWEALTH, 1914.

(c) TOTAL, MALES AND FEMALES.

Cause.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Nor. Ter.	Fed. Ter.	Com- wealth
1 Typhoid Fever ...	246	107	127	57	56	11	...	...	604
2 Typhus ...	...	...	...	...	...	...	...	...	...
3 Malaria ...	3	2	9	...	6	...	2	...	22
4 Small-pox ...	1	...	...	...	2	...	...	...	3
5 Measles ...	13	114	13	9	5	1	...	...	155
6 Scarlet Fever ...	20	2	2	2	1	2	...	...	29
7 Whooping Cough ...	124	91	43	39	16	7	...	...	320
8 Diphtheria and Croup ...	260	212	113	58	41	32	...	...	716
9 Influenza ...	71	144	53	27	17	17	1	1	331
10 Asiatic Cholera ...	...	...	...	...	...	...	...	...	...
11 Cholera Nostras ...	1	1	...	...	...	...	...	...	2
12 Other Epidemic Diseases ...	63	41	37	17	17	...	1	...	176
13 Tuberculosis of the Lungs ...	1,165	1,021	302	291	231	94	7	...	3,111
14 Tuberculosis of the Meninges ...	79	78	10	24	6	10	...	...	207
15 Other forms of Tuberculosis ...	88	98	23	22	14	11	...	...	256
16 Cancer and other Malignant Tumours ...	1,362	1,188	439	370	163	146	5	2	3,675
17 Simple Meningitis ...	267	265	100	77	60	43	...	...	812
18 Congestion, Hæmorrhage, & Softening of the Brain ...	797	755	268	209	97	78	...	...	2,204
19 Organic Diseases of Heart ...	1,610	1,705	659	472	212	167	9	2	4,836
20 Acute Bronchitis ...	186	76	56	36	16	18	1	...	389
21 Chronic Bronchitis ...	313	381	116	74	45	29	1	...	959
22 Pneumonia ...	682	688	205	160	165	92	...	...	1,992
23 Other Diseases of the Respiratory System (Phthisis excepted) ...	621	723	228	119	105	67	2	1	1,866
24 Diseases of the Stomach (Cancer excepted) ...	152	113	62	21	12	7	1	...	368
25 Diarrhoea and Enteritis (children under 2 yrs. only) ...	1,308	1,031	428	401	196	142	...	...	3,506
26 Appendicitis and Typhlitis ...	139	104	58	40	20	13	...	...	374
27 Hernia, Intestinal Obstructions ...	175	140	61	41	32	11	...	...	460
28 Cirrhosis of the Liver ...	130	142	53	21	26	8	...	...	380
29 Nephritis & Bright's Disease ...	768	697	342	185	84	51	...	...	2,127
30 Non-cancerous Tumours & other Diseases of the Female Genital Organs ...	50	43	13	16	11	4	1	...	138
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ...	86	55	28	28	10	8	...	...	215
32 Other Puerperal Accidents of Pregnancy and Confinement ...	177	93	64	34	33	18	...	...	419
33 Congenital Debility and Malformations ...	1,494	1,097	469	376	250	173	1	...	3,860
34 Senile Debility ...	1,450	1,570	361	391	165	180	10	3	4,130
35 Violence ...	1,191	718	535	274	285	108	10	...	3,121
36 Suicide ...	269	126	128	47	57	13	3	...	643
37 Other Diseases ...	3,113	2,723	1,281	707	510	325	9	2	8,670
38 Unspecified or Ill-defined Diseases ...	246	159	45	68	77	32	17	...	644
Total—Males and Females	18,720	16,503	6,731	4,713	3,043	1,918	81	11	51,720

(d) The classification for the years 1907 to 1913 is shewn for the Commonwealth in the following table, and for purposes of comparison the figures for the year 1914 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, and for 1913 on pages 182 and 183 of the eighth issue of this Year Book ; while the figures for 1914 are given on pages 188 and 189.

The figures for 1907, 1908, and 1909, which were compiled under thirty-five headings, have here been distributed among the corresponding headings of the revised classification.

CAUSES OF DEATH—COMMONWEALTH, 1907 to 1914.

MALES AND FEMALES.

Cause.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
1 Typhoid Fever ...	564	736	661	648	488	619	576	604
2 Typhus ...	...	...	...	...	...	...	...	...
3 Malaria ...	42	52	59	55	19	17	24	22
4 Small-pox ...	...	...	1	4	1	...	1	3
5 Measles ...	147	125	81	124	206	519	186	155
6 Scarlet Fever ...	37	63	74	58	24	41	39	29
7 Whooping Cough...	1,070	249	257	476	291	301	560	320
8 Diphtheria and Croup	403	421	435	555	696	754	808	716
9 Influenza ...	902	588	326	324	447	386	341	331
10 Asiatic Cholera ...	...	...	...	...	...	...	...	...
11 Cholera Nostras ...	5	4	1	1	6	5	3	2
12 Other Epidemic Diseases ...	276	268	221	184	295	224	185	176
13 Tuberculosis of the Lungs...	3,206	3,409	3,169	3,059	3,164	3,146	3,252	3,111
14 Tuberculosis of the Meninges	237	205	220	215	269	215	252	207
15 Other forms of Tuberculosis	415	352	332	343	303	327	296	256
16 Cancer & other Mal. Tumours	2,940	2,921	3,112	3,205	3,321	3,537	3,603	3,675
17 Simple Meningitis ...	648	676	616	567	636	749	753	812
18 Congestion, Hæmorrhage, and Softening of the Brain	1,901	1,867	1,665	1,704	2,178	2,176	2,281	2,204
19 Organic Diseases of the Heart	3,801	4,066	3,940	4,378	4,896	5,267	4,989	4,836
20 Acute Bronchitis...	514	412	422	420	515	460	397	389
21 Chronic Bronchitis ...	844	818	897	859	1,046	1,053	991	959
22 Pneumonia ...	1,788	1,871	1,752	1,612	1,869	2,107	1,966	1,992
23 Other Diseases of the Respir. System (Tuberculosis ex.)	1,639	1,569	1,565	1,544	1,872	1,863	1,812	1,866
24 Diseases of the Stomach (Cancer excepted) ...	334	308	272	297	370	457	447	368
25 Diarrhœa & Enteritis (Child- ren under two years only)	2,733	3,236	2,803	3,145	2,462	3,248	3,176	3,506
26 Appendicitis and Typhlitis	305	293	344	315	320	347	364	374
27 Hernia, Intest. Obstructions	411	389	396	398	439	463	486	460
28 Cirrhosis of the Liver ...	325	362	331	368	385	426	365	380
29 Nephritis & Bright's Disease	1,760	1,864	1,799	1,771	1,951	2,188	2,211	2,127
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs ...	128	159	130	149	120	145	153	138
31 Puerperal Septicæmia (Puer. Fever, Periton'ts, Phleb'ts)	179	202	201	218	209	231	235	215
32 Other Puerperal Accidents of Pregnancy & Confinement	435	404	376	373	406	413	428	419
33 Congenital Debility, etc. ...	3,038	2,973	2,905	3,221	3,142	3,611	3,823	3,860
34 Senile Debility ...	3,136	3,466	3,194	3,353	3,849	4,124	4,116	4,130
35 Violence ...	2,679	2,922	2,664	2,738	3,018	3,237	3,168	3,121
36 Suicide ...	461	497	495	516	544	631	647	643
37 Other Diseases ...	6,677	7,417	7,419	7,795	7,652	8,300	8,241	8,670
38 Unspec. or Ill-defined Dis's.	1,275	1,262	1,087	598	460	590	614	644
Total ...	45,805	46,426	44,172	45,590	47,869	52,177	51,789	51,720

17. Certification of Deaths.—Information was obtained in 1914 as to the persons by whom the 51,720 deaths which occurred in the Commonwealth were certified. The result of the enquiry shews that approximately 88.8 per cent. (in 1910, 88.1 per cent., in 1911, 88.2 per cent., in 1912, 88.1 per cent. and in 1913, 88.7 per cent.) were certified by medical practitioners, and 10.7 per cent. (in 1910, 11.1 per cent., in 1911, 10.9 per cent., in 1912, 10.9 per cent., and in 1913, 10.8 per cent.) by coroners after inquests, or magisterial enquiries, while in 0.5 per cent. (in 1910, 0.8 per cent., in 1911, 0.9 per cent., in 1912, 1.0 per cent., and in 1913, 0.5 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. 32*; a short summary will therefore suffice here:—

CERTIFICATION OF DEATHS, COMMONWEALTH, 1914.

Death Certified by—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Ter.	C'wlth.
Medical practitioner	16,363	14,535	6,237	4,296	2,689	1,746	35	7	45,908
Coroner ...	2,327	1,967	343	411	282	155	46	4	5,535
Not certified or not stated ...	30	1	151	6	72	17	...	...	277
Total Deaths ...	18,720	16,503	6,731	4,713	3,043	1,918	81	11	51,720

Of the cases certified by coroners, violent deaths numbered 2814, ill-defined causes 320, organic heart disease 494, senile decay 355, congenital debility 165, cerebral hæmorrhage and apoplexy 140, pneumonia 132, tuberculosis of lungs 95, Bright's disease 83, infantile diarrhoea and enteritis, 74, infantile convulsions 51, diseases of arteries, aneurysms, etc. 50, acute and chronic alcoholism 45, other diseases peculiar to early infancy 40, diarrhoea and enteritis of adults and children over 2, 35, epilepsy 31, broncho-pneumonia, 29, hernia and intestinal obstruction, 25; a total of 4978 out of 5535.

Of uncertified causes of death, violent deaths numbered 68, senile debility 41, ill-defined causes 22, infantile convulsions 19, congenital debility 37; a total of 187 out of 277.

18. Deaths from Special Causes.—The table on p. 191 furnishes comparisons for the last eight years only, and comparisons will, therefore, be restricted to that period.

(i.) *Typhoid Fever.* Deaths from typhoid fever were more numerous in 1908 than in 1907, numbering 736, against 564 in 1907. In 1909 the number fell to 661, in 1910, to 648, and to 488 in 1911. In 1912 the number increased to 619, and fell to 576 in 1913 increasing again to 604 in 1914, of which 246 occurred in New South Wales, 107 in Victoria, 127 in Queensland, 57 in South Australia, 56 in Western Australia, and 11 in Tasmania.

(ii.) *Typhus.* No deaths from typhus have been registered from 1907 to 1914.

(iii.) *Malaria.* Deaths from malarial diseases are practically confined to the tropical districts of Northern Queensland and Western Australia, and to the Northern Territory, 9 out of 22 deaths registered in 1914 having occurred in Queensland, 6 in Western Australia, and 2 in the Northern Territory.

(iv.) *Small-pox.* No deaths from small-pox occurred during the two years 1907 and 1908, but in 1909 one death was registered in Western Australia. In 1910 one death was registered in New South Wales, and three in Victoria, and in 1911, only one death occurred in New South Wales. No deaths were registered in 1912, but in 1913 one death occurred in New South Wales, and in 1914 one death in New South Wales and 2 in Western Australia.

(v.) *Measles*. No serious epidemic of measles has occurred for several years; the deaths in 1908 were less numerous than in 1907, numbering 125, against 147. In 1909 the deaths numbered 31, while 124 were registered in 1910, and 206 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, of which 114 occurred in Victoria, while the remainder were fairly evenly distributed among the other five States.

(vi.) *Scarlet Fever*. 29 deaths were registered in 1914, distributed over all six States, with a maximum of 20 in New South Wales.

(vii.) *Whooping Cough*. A rather severe epidemic of whooping cough visited New South Wales in the early part of 1907, causing 592 deaths out of a total of 1070 registered in the Commonwealth. The deaths in 1908 fell to 249, with a slight increase to 257 in 1909, and a much greater increase to 476 in 1910. During 1911, however, only 291 deaths, and in 1912, 301 deaths were registered. In 1913 the number of deaths was 560, and in 1914, 320, of which 124 occurred in New South Wales, and 91 in Victoria.

(viii.) *Diphtheria and Group*. Deaths in 1907, 403; in 1908, 421; in 1909, 435; in 1910, 555; in 1911, 696, in 1912, 754, in 1913, 808, and in 1914, 716, of which 260 occurred in New South Wales, 212 in Victoria, 113 in Queensland, 58 in South Australia, 41 in Western Australia, and 32 in Tasmania.

(ix.) *Influenza*. This disease was rather more prevalent in 1907 than in the two previous years, the deaths numbering 902, against 428 and 539. The deaths in 1908 were 588; in 1909, 326; 324 in 1910; in 1911, 447; in 1912, 386; in 1913, 341, and in 1914, 331, of which 71 occurred in New South Wales, 144 in Victoria, 53 in Queensland, 27 in South Australia, 17 in Western Australia, 17 in Tasmania, 1 in the Northern Territory, and 1 in the Federal Territory.

(x.) *Asiatic Cholera*. No cases of Asiatic cholera have ever occurred in the Commonwealth.

(xi.) *Cholera Nostras*. Isolated cases only of choleric form diarrhoea occurred in each of the seven years. Two deaths from this cause occurred during 1914.

(xii.) *Other Epidemic Diseases*. The number of deaths registered under this heading was 276 in 1907, 268 in 1908, 221 in 1909, 184 in 1910, 295 in 1911, 224 in 1912, 185 in 1913, and 176 in 1914. The list in 1914 includes the following diseases:—Dysentery 93, erysipelas 62, leprosy 9, of which 8 occurred in Queensland, other epidemic diseases, 12. Prior to 1910 beri-beri was included in other epidemic diseases, but is now included in No. 37 of the revised classification. Of the 83 deaths from leprosy in the years 1907 to 1914, 66 occurred in Queensland. There were no deaths from plague in the Commonwealth during 1910, 1911, 1913, and 1914. In 1907, 48 deaths were registered; in 1908, 14 deaths; in 1909, 13 deaths, and in 1912, 1 death.

(xiii.) *Tuberculosis of the Lungs and Acute Miliary Tuberculosis*. The deaths in 1914 numbered 3111, viz., 1853 males and 1258 females. The figures for the years 1907 to 1913 were 3206, 3409, 3169, 3059, 3164, 3146 and 3252 respectively. Of the deaths in 1914, 1165 occurred in New South Wales, 1021 in Victoria, 302 in Queensland, 291 in South Australia, 231 in Western Australia, 94 in Tasmania, and 7 in the Northern Territory. In accordance with the revised classification, deaths from tuberculosis of the larynx are now included with tuberculosis of the lungs, instead of in class 15 as in years prior to 1910. In the table on page 191, deaths from tuberculosis of the larynx have been included with tuberculosis of the lungs, so that the figures allow of correct comparison.

(xiiia.) *Tuberculosis of the Respiratory System*. Of the various forms of tuberculosis prevalent in the Commonwealth, that which has probably 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, etc. The results given depended upon intercensal estimates of population, and these having now 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. The figures are not now repeated.

(xiv.) *Tuberculosis of the Meninges.* The number of deaths registered in 1907 was 237; in 1908, 205; in 1909, 220; in 1910, 215; in 1911, 269; in 1912, 215; in 1913, 252; and in 1914, 207.

(xv.) *Other Forms of Tuberculosis.* Deaths numbered in 1907, 415; in 1908, 352; in 1909, 332; in 1910, 343; in 1911, 303; in 1912, 327; in 1913, 296, and in 1914, 256. The deaths in 1914 include the following forms of tuberculosis:—Abdominal tuberculosis, 108; Pott's disease, 41; white swellings, 20; tuberculosis of other organs, 35; and disseminated tuberculosis, 52. Tuberculosis of the larynx (see paragraph xiii.)

(xvi.) *All Forms of Tuberculosis.* A complete tabulation of all the different tubercular diseases from which deaths occurred in 1914, will be found in Bulletin No. 32 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 3574, viz., 2122 males and 1452 females. The following table shews the ages of these 3574 persons:—

AGES OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1914.
COMMONWEALTH.

Ages.	Male.	Female	Total.	Ages.	Male.	Female	Total.
Under 5 years ...	120	75	195	55 years and under 60	144	53	197
5 years and under 10	29	29	58	60 " " 65	104	37	141
10 " " 15	32	22	54	65 " " 70	71	32	103
15 " " 20	79	111	190	70 " " 75	31	11	42
20 " " 25	173	214	387	75 " " 80	18	10	28
25 " " 30	230	240	470	80 " " over ...	7	1	8
30 " " 35	225	176	401	Unspecified ...	5	1	6
35 " " 40	236	162	398				
40 " " 45	198	123	321				
45 " " 50	205	89	294				
50 " " 55	215	66	281	Total Deaths ...	2,122	1,452	3,574

A tabulation has been made of the occupations of males dying from tubercular diseases during 1914. A summary is here given:—

OCCUPATIONS OF MALES WHO DIED FROM TUBERCULAR DISEASES, 1914.
COMMONWEALTH.

Occupation.	No. of Deaths	Occupation.	No. of Deaths
Professional class ...	102	Agricultural class ...	139
Domestic class ...	97	Pastoral class ...	45
Mercantile class ...	329	Working in mines and quarries ...	203
Engaged in transport and communication ...	168	Other primary producers ...	12
Manufacturing class ...	235	Independent means ...	20
Engaged in building and construction ...	111	Dependents ...	245
Other industrial workers ...	374	Occupation not stated ...	42
		Total male deaths ...	2,122

The length of residence in the Commonwealth of persons who died from tubercular diseases has been tabulated for the year 1914 for all the Commonwealth States, with the following results:—

**LENGTH OF RESIDENCE IN COMMONWEALTH,
OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1914.**

Length of Residence in Commonwealth.	Male.	Fem.	Total.	Length of Residence in Commonwealth.	Male.	Fem.	Total.
Born in Commonwealth ...	1,384	1,198	2,582	Resident 10 yrs. & under 15	33	7	40
Resident under 1 year ...	32	9	41	" 15 " " 20	25	6	31
" 1 year ...	44	21	65	" 20 " over ...	350	133	483
" 2 years ...	36	16	52	Length of resid'ce not stated	118	31	149
" 3 " 	26	13	39				
" 4 " 	23	7	30				
" 5 " & under 10	51	11	62	Total Deaths ...	2,122	1,452	3,574

There would not appear, therefore, to be much ground for the statement sometimes heard that many persons arrive in Australia in the last stages of consumption.

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 on the total number of deaths registered :—

**DEATH RATES (a) FROM TUBERCULOSIS AND PERCENTAGE ON TOTAL DEATHS.
COMMONWEALTH, 1914.**

State.	Death Rates (a) from Tuberculosis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.88	0.54	0.72	7.80	6.14	7.12
Victoria ...	0.90	0.78	0.84	7.09	7.45	7.25
Queensland ...	0.63	0.34	0.50	5.59	4.00	4.98
South Australia ...	0.80	0.73	0.77	6.71	7.70	7.15
Western Australia	0.87	0.65	0.78	8.08	8.54	8.25
Tasmania ...	0.54	0.63	0.58	5.17	7.01	6.00
North. Territory	2.29	...	1.87	10.14	...	8.64
Federal Territory	...	...	...	...	...	...
Commonwealth	0.83	0.61	0.73	7.11	6.63	6.91

(a) Number of deaths from tuberculosis per 1000 of mean population.

The following table, which gives the death-rates from pulmonary and military tuberculosis per 1000 persons living for a number of countries, shews that the Commonwealth occupies a very enviable position when compared with most European countries.

PULMONARY AND MILITARY TUBERCULOSIS—DEATHS PER 1000 PERSONS LIVING.

Country.	Year.	Death Rate.	Country.	Year.	Death Rate.
Denmark ...	1912	0.48	German Empire ...	1912	1.31
New Zealand ...	1913	0.61	Switzerland ...	1912	1.43
Commonwealth ...	1914	0.63	Prussia ...	1912	1.46
Ontario (Canada) ...	1913	0.73	Sweden ...	1911	1.55
Belgium ...	1912	0.93	Japan ...	1910	1.64
England and Wales ...	1913	1.00	Norway ...	1912	1.75
Netherlands ...	1913	1.06	France ...	1911	1.80
Italy ...	1912	1.07	Ireland ...	1913	1.91
Scotland ...	1913	1.08	Chile ...	1912	2.44
United Kingdom ...	1913	1.08	Finland ...	1912	2.61
Spain ...	1913	1.20	Austria ...	1912	2.83
United States (Registration Area) ...	1913	1.28	Serbia ...	1911	3.24
			Hungary ...	1912	3.49

(xvi.) *Cancer and other Malignant Tumours.* Deaths from cancer shew a tendency to increase, the figures for 1907 being 2940 deaths; for 1908, 2921 deaths; for 1909, 3112 deaths; 1910, 3205 deaths; 1911, 3321 deaths; 1912, 3537 deaths; 1913, 3603 deaths, and 1914, 3675 deaths. Of the deaths registered in 1914, 1902 were those of males, viz., 720 in New South Wales, 573 in Victoria, 264 in Queensland, 171 in South Australia, 98 in Western Australia, 70 in Tasmania, 5 in the Northern Territory and 1 in the Federal Territory; while 1773 were those of females, viz., 642 in New South Wales, 615 in Victoria, 175 in Queensland, 199 in South Australia, 65 in Western Australia, and 76 in Tasmania, and 1 in the Federal Territory. Bulletin No. 32 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, 1914.

Seat of Disease.	Male.	Female	Total.
Cancer, etc., of the buccal cavity	207	20	227
„ „ the stomach and liver	877	529	1,406
„ „ the peritoneum, the intestines, and the rectum	226	289	465
„ „ the female genital organs ... ..	...	369	369
„ „ the breast ... ..	...	253	253
„ „ the skin	92	48	140
„ „ other organs	500	315	815
Total Deaths	1,902	1,773	3,675

Of these deaths, 935 were described as cancer, 1701 as carcinoma, 176 as epithelioma, 442 as “malignant disease,” 64 as “malignant tumour,” 14 as neoplasm, 39 as “rodent ulcer,” 235 as sarcoma, and 19 as scirrhus.

The ages of the 3675 persons who died from cancer in 1914, are shewn 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 55 to 60.

AGES OF PERSONS WHO DIED FROM CANCER, 1914.

COMMONWEALTH.

Ages.	Males.	Female	Total.	Ages.	Males.	Female	Total.
Under 15 years ...	12	18	30	55 years and under 60	258	225	483
15 years and under 20	3	3	6	60 „ „ 65	258	221	479
20 „ „ 25	9	13	22	65 „ „ 70	264	212	476
25 „ „ 30	19	16	35	70 „ „ 75	258	174	432
30 „ „ 35	20	54	74	75 „ „ 80	187	127	314
35 „ „ 40	49	68	117	80 „ „ 85	90	74	164
40 „ „ 45	68	132	200	85 years and over ...	41	44	85
45 „ „ 50	149	184	333	Unspecified ...	1	1	2
50 „ „ 55	216	207	423	Total Deaths ...	1,902	1,773	3,675

A tabulation has been made of the occupations of the males who died from cancer, of which the following is a summary :—

OCCUPATIONS OF PERSONS WHO DIED FROM CANCER, 1914.

COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Professional class	106	Pastoral class	83
Domestic class	53	Working in mines and quarries ...	124
Mercantile class	203	Other primary producers	25
Engaged in transport and communication	132	Independent means	64
Manufacturing class	185	Dependents	38
Engaged in building and construction	108	Occupation not stated	64
Other industrial workers	406		
Agricultural class	305	Total Male Deaths	1,902

As the following tables shew, the total death rates from cancer are below those for tubercular diseases in Victoria and Western Australia only. The male death rates from cancer were, in 1914, in excess of those from tuberculosis in Queensland and Tasmania, while the female death rates were in excess of it in all the States with the exception of Western 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 1907 the death rate from tuberculosis was 0.22 per thousand greater than that from cancer, and in 1908 the excess amounted to 0.25 per thousand. 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 shews 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.

DEATH RATES (a) FROM CANCER AND PERCENTAGE ON TOTAL DEATHS, 1914.

COMMONWEALTH.

State.	Death Rates (a) from Cancer.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.74	0.74	0.74	6.55	8.43	7.33
Victoria	0.80	0.87	0.83	6.35	8.22	7.20
Queensland	0.72	0.56	0.65	6.39	6.73	6.52
South Australia ...	0.77	0.86	0.82	6.52	9.03	7.64
Western Australia	0.54	0.46	0.50	5.05	5.90	5.36
Tasmania	0.68	0.79	0.74	6.59	8.89	7.61
Northern Territ'y	1.64	...	1.33	7.25	...	6.17
Federal Territory	0.61	0.98	0.74	14.29	25.00	18.18
Commonwealth	0.74	0.75	0.75	6.38	8.10	7.11

(a) Number of deaths from Cancer per 1000 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.
Chile ...	1912	0.32	New Zealand ...	1913	0.80
Hungary ...	1912	0.47	Austria ...	1912	0.81
Spain ...	1913	0.55	Prussia ...	1912	0.81
Denmark ...	1912	0.61	German Empire ...	1912	0.90
Italy ...	1912	0.65	Ireland ...	1913	0.98
Japan ...	1910	0.65	United Kingdom ...	1913	1.04
Ontario (Canada) ...	1913	0.67	England and Wales ...	1913	1.05
Belgium ...	1912	0.71	Norway ...	1912	1.05
Commonwealth ...	1914	0.75	Netherlands ...	1913	1.09
United States (Registration Area) ...	1913	0.79	Scotland ...	1913	1.09
France ..	1911	0.80	Sweden ...	1911	1.10
			Switzerland ...	1912	1.27

The fifth issue of this Year Book contains, on pages 230, etc., 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.* The table shews 648 deaths in 1907, 676 deaths in 1908, 616 deaths in 1909, 567 in 1910, 636 in 1911, 749 in 1912, 753 in 1913, and 812 in 1914.

(xviii.) *Apoplexy, Hæmorrhage, and Softening of the Brain.* The deaths registered under this heading in 1907 were 1901, viz., 1038 males and 863 females; in 1908, 1867, viz., 991 males and 876 females; in 1909, 1665, viz., 869 males and 796 females; in 1910, 1704, viz., 864 males and 840 females; in 1911, 2178, viz., 1122 males and 1056 females; in 1912, 2176, viz., 1146 males and 1030 females; in 1913, 2281, viz., 1188 males and 1093 females, and in 1914, 2204, viz., 1143 males and 1061 females. The 1914 figures are made up of hæmorrhage of the brain and apoplexy—1102 males, 1017 females, total 2119; and softening of the brain—41 males, 44 females, total 85.

(xix.) *Organic Diseases of the Heart.* The number of deaths registered in 1914 was 4836, viz., 2749 males and 2087 females. Of these deaths, New South Wales was responsible for 969 males and 641 females; Victoria for 895 males and 310 females; Queensland for 403 males and 256 females; South Australia for 250 males and 222 females; Western Australia for 139 males and 73 females; Tasmania for 85 males and 82 females; the Northern Territory for 7 males and 2 females; and the Federal Territory for 1 male and 1 female. To the figures for 1914 correspond the following death rates and percentages to total deaths:—

DEATH RATES (a) FROM ORGANIC HEART DISEASE AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1914.

State.	Death Rates (a) from Organic Heart Disease.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	1.00	0.73	0.87	8.82	8.29	8.60
Victoria ...	1.26	1.14	1.23	9.93	10.82	10.33
Queensland ...	1.04	0.83	0.98	9.75	9.85	9.79
South Australia ...	1.33	1.01	1.07	9.54	10.61	10.01
Western Australia	0.77	0.51	0.66	7.16	6.63	6.97
Tasmania ...	0.83	0.86	0.84	7.53	9.59	8.71
Northern Territory	2.29	2.88	2.40	10.14	16.67	11.11
Federal Territory	0.61	0.98	0.74	14.29	25.00	18.18
Commonwealth ...	1.07	0.88	0.98	9.21	9.54	9.35

(a) Number of deaths from Organic Heart Disease per 1000 of mean population.

(xx.) *Acute Bronchitis.* The classification of causes of deaths 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 persons under "chronic bronchitis." This rule has been followed throughout in compiling the tables for 1907-1914, with the result that acute bronchitis is credited with 514 deaths in 1907, 412 deaths in 1908, 422 deaths in 1909, 420 deaths in 1910, 515 deaths in 1911, 460 deaths in 1912, 397 deaths in 1913, and 389 in 1914, viz., 205 males and 184 females.

(xxi.) *Chronic Bronchitis.* The adjustment mentioned in the preceding paragraph gives a total of 844 deaths in 1907, 818 deaths in 1908, 897 deaths in 1909, 859 in 1910, 1046 in 1911, 1053 in 1912, 991 in 1913, and 959 in 1914, viz., 547 males and 412 females.

(xxii.) *Pneumonia.* The 1914 figures were 1245 males and 747 females, a total of 1992 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 1907 numbered 1689; in 1908, 1569; in 1909, 1565; in 1910, 1544; in 1911, 1872; in 1912, 1863; in 1913, 1812, and in 1914, 1866. The total for 1914 is made up as follows, viz.:—Diseases of the nasal fossæ, 1 death; diseases of the larynx, 60 deaths; diseases of the thyroid body, 18 deaths; broncho-pneumonia, 958 deaths; pleurisy, 203 deaths; pulmonary congestion and apoplexy, 197 deaths; gangrene of the lung, 18 deaths; asthma, 138 deaths; pulmonary emphysema, 15 deaths; fibroid phthisis, miners' complaint, 166 deaths; other diseases of the respiratory system (tuberculosis excepted), 92 deaths.

(xxiv.) *Diseases of the Stomach (Cancer excepted).* In 1914 this heading includes: Ulcer of the stomach, 68 males, 38 females; and other diseases of the stomach (cancer excepted), 134 males, 128 females; a total of 368 deaths. The corresponding figures for the years 1907 to 1913 were 334, 308, 272, 297, 370, 457, and 447 respectively.

(xxv.) *Diarrhœa and Enteritis (Children under two years only).* In 1907, deaths numbered 2738, viz., 1513 boys and 1220 girls; in 1908, 3236, viz., 1814 boys and 1422 girls; in 1909, 2803, viz., 1544 boys and 1259 girls; in 1910, 3145, viz., 1713 boys and 1432 girls; in 1911, 2462, viz., 1388 boys and 1074 girls; in 1912, 3248, viz., 1794 boys and 1454 girls; in 1913, 3176, viz., 1756 boys and 1420 girls; and in 1914, 3506, viz., 1930 boys and 1576 girls. The 1914 deaths were distributed amongst the six States as follows:—New South Wales, 712 males, 596 females, total 1308; Victoria, 577 males, 454 females, total 1031; Queensland, 242 males, 186 females, total 428; South Australia, 209 males, 192 females, total 401; Western Australia, 106 males, 90 females, total 196; and Tasmania, 84 males, 58 females, total 142.

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 1914:—

DEATH RATES (a) FROM INFANTILE DIARRHŒA AND ENTERITIS, AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1914.

State.	Death Rates (a) from Infantile Diarrhœa and Enteritis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.73	0.68	0.71	6.48	7.70	6.99
Victoria	0.81	0.64	0.72	6.40	6.06	6.25
Queensland	0.66	0.60	0.63	5.86	7.16	6.36
South Australia	0.95	0.88	0.91	7.97	9.18	8.51
Western Australia	0.58	0.63	0.61	5.46	8.17	6.44
Tasmania	0.82	0.61	0.72	7.90	6.78	7.40
Northern Territory	...	...	...	...	...	...
Federal Territory	...	...	...	...	...	...
Commonwealth	0.75	0.67	0.71	6.47	7.20	6.78

(a) Number of deaths from these diseases per 1000 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 death rates for the three States named were 0.83, 0.61, and 0.71 per 1000 respectively in 1908, compared with 0.55, 0.45 and 0.48 in 1907, and with 0.50, 0.36 and 0.51 in 1911. 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, where the 1911 rate had been 0.57, 0.58, and 0.87 respectively, compared with 0.80, 0.78, and 1.09 for 1912. 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.

(xxvi.) *Appendicitis and Typhlitis*. Prior to 1910, deaths from these causes were included in *Other Diseases*, paragraph xxxvii. Deaths numbered 305 in 1907, 293 in 1908, 344 in 1909, 315 in 1910, 320 in 1911, 347 in 1912, 364 in 1913, and in 1914, 374, viz., 229 males and 145 females.

(xxvii.) *Hernia, Intestinal Obstructions*. The number of deaths has not varied much from year to year, the number registered in 1907 being 411; in 1908, 389; in 1909, 396; in 1910, 398; in 1911, 439; in 1912, 463; in 1913, 486; and in 1914, 460, viz., 257 males and 203 females.

(xxviii.) *Cirrhosis of the Liver*. The deaths in 1907 numbered 325; in 1908, 362; in 1909, 331; in 1910, 368; in 1911, 385; and in 1912, 426; in 1913, 365; and in 1914, 380, viz., 252 males and 128 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 1907 there were registered the deaths of 1065 males and 695 females; in 1908, those of 1140 males and 724 females; in 1909, those of 1076 males and 723 females; in 1910, 1771, 1077 males and 694 females; in 1911, 1951, 1197 males and 754 females; in 1912, 2188, 1352 males and 836 females; in 1913, 2211, 1363 males and 848 females; and in 1914, 2127, 1281 males and 846 females. Of the deaths registered in 1914, those of 90 males and 66 females were ascribed to acute nephritis, and those of 1191 males and 780 females to Bright's Disease. New South Wales was responsible for 768 deaths; Victoria for 697; Queensland for 342; South Australia for 185; Western Australia for 84; and Tasmania for 51; making a total of 2127.

(xxx.) *Non-cancerous Tumours and other Diseases of the Female Genital Organs*. Deaths in 1907 numbered 128; in 1908, 159; in 1909, 130; in 1910, 149; in 1911, 120; in 1912, 145; in 1913, 153; and in 1914, 138. Included in the 138 deaths registered in 1914 were the following:—Non-puerperal uterine hæmorrhage, 4; non-cancerous uterine tumours, 36; other diseases of the uterus, 29; cysts and ovarian tumours, 34; salpingitis and other diseases of the female genital organs, 35.

(xxxi.) *Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)*. Deaths in 1907 were 179; in 1908, 202; in 1909, 201; in 1910, 218; in 1911, 209; in 1912, 231; in 1913, 235, and in 1914, 215.

(xxxii.) *Other Puerperal Accidents of Pregnancy and Confinement*. The deaths in 1907 numbered 435; in 1908, 404; in 1909, 376; in 1910, 373; in 1911, 406; in 1912, 413; in 1913, 428; and in 1914, 419. Included in the 419 deaths registered in 1914 were the following:—Accidents of pregnancy, 98; puerperal hæmorrhage, 75; other accidents of

childbirth, 108; puerperal albuminuria and convulsions, 111; puerperal phlegmasia alba dolens, embolus, sudden death, 22; death following childbirth, 5.

(xxxiii.) *All Puerperal Diseases.* The 634 deaths registered in 1914 under the two preceding headings will be found tabulated in "Bulletin No. 32; Commonwealth Demography" under various aspects. It will suffice to repeat here the following facts:—

Of the 634 mothers who died in childbirth during the year 1914, 593 were married and 41 were single. As the total number of nuptial confinements was 129,380, and of ex-nuptial confinements 7196, it follows that one in 218 of married mothers, and one in 175 of single mothers, died of puerperal disease, the general proportion being one in 215, as against one in 203 in 1913, one in 205 in 1912, one in 197 in 1911, one in 196 in 1910, one in 195 in 1909, one in 181 in 1908, and one in 178 in 1907.

The ages of the mothers who died varied from 14 to 47 years, and are shewn in the following table:—

AGES OF MOTHERS WHO DIED IN CHILDBIRTH, COMMONWEALTH, 1914.

Age at Death.	Married Women.	Single Women.	Total.	Age at Death.	Married Women.	Single Women.	Total.
14 years ...	...	2	2	32 years ...	28	...	28
16 " ...	...	1	1	33 " ...	32	1	33
17 " ...	1	...	1	34 " ...	29	2	31
18 " ...	6	1	7	35 " ...	31	1	32
19 " ...	8	2	10	36 " ...	35	...	35
20 " ...	13	5	18	37 " ...	22	...	22
21 " ...	14	6	20	38 " ...	25	...	25
22 " ...	22	2	24	39 " ...	22	...	22
23 " ...	19	4	23	40 " ...	15	...	15
24 " ...	28	3	31	41 " ...	20	...	20
25 " ...	33	5	38	42 " ...	14	...	14
26 " ...	28	3	31	43 " ...	8	...	8
27 " ...	29	...	29	44 " ...	2	...	2
28 " ...	32	1	33	45 " ...	3	...	3
29 " ...	27	...	27	47 " ...	1	...	1
30 " ...	24	2	26				
31 " ...	22	...	22	Total deaths	593	41	634

Of the 593 married women shewn in the above table, 157 died at their first confinement, 115 at their second, 72 at their third, 68 at their fourth, 55 at their fifth, 39 at their sixth, 27 at their seventh, 20 at their eighth, 14 at their ninth, 9 at their tenth, 5 at their eleventh, 6 at their twelfth, 2 at their fourteenth, and 2 at their sixteenth. In two cases no particulars are available. The total number of children of the 593 mothers was 1733.

Thirty of the mothers who died had been married less than one year, 85 between one and two years, 43 between two and three years, the duration of marriage ranging up to 27 years, apart from 19 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. 32; 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, who had been married at the age of 18 years, died at the age of 45, in the 27th year of her marriage, at her tenth confinement.

(xxxiii) *Congenital Debility and Malformations.* The total deaths registered under these heads in 1914 were 3860, of whom 3802 were children under 1 year of age, inclusive of 3424 under three months. The figures include:—Malformations, 306 males, 224 females, total 530; and congenital debility, icterus, and sclerema of children under one year of age, 1935 males and 1395 females, total 3330; or a grand total of 3860. Of these deaths, 1494 were registered in New South Wales, viz., 857 males and 637 females; 1097 in Victoria, viz., 640 males and 451 females; 469 in Queensland, viz., 255 males and 214 females; 376 in South Australia, viz., 239 males and 137 females; 250 in Western Australia, viz., 144 males and 106 females; 173 in Tasmania, viz., 99 males and 74 females; and 1 male in the Northern Territory.

(xxxiv.) *Senile Debility.* The deaths ascribed to "old age" form a large group, and are slightly in excess of those due to infantile debility. In 1907 they numbered 3136, viz., 1721 males and 1415 females; in 1908, 3466, viz., 2027 males and 1439 females; in 1909, 3194, viz., 1829 males and 1365 females; in 1910, 3353, viz., 1905 males and 1448 females; in 1911, 3849, viz., 2225 males and 1624 females; in 1912, 4124, viz., 2362 males and 1762 females; in 1913, 4116, viz., 2302 males and 1814 females; and in 1914, 4130, viz., 2228 males and 1902 females. Of the deaths registered in 1914, 1450 occurred in New South Wales, viz., 835 males and 615 females; 1570 in Victoria, viz., 786 males and 784 females; 361 in Queensland, viz., 202 males and 159 females; 391 in South Australia, viz., 191 males and 200 females; 165 in Western Australia, viz., 109 males and 56 females; 180 in Tasmania, viz., 93 males and 87 females; 10 in the Northern Territory, viz., 9 males and 1 female; and 3 males in the Federal Territory.

Of the males whose death was described as due to senility, 3 were aged between 50 and 54; 13 between 55 and 59; 45 between 60 and 64; 100 between 65 and 69; 389 between 70 and 74; 516 between 75 and 79; 621 between 80 and 84; 376 between 85 and 89; 136 between 90 and 94; 21 between 95 and 99; while 4 were 100 years old and upwards; and of four the age was not stated.

Of the females, 1 was between 55 and 59; 27 were between 60 and 64; 78 between 65 and 69; 251 between 70 and 74; 458 between 75 and 79; 528 between 80 and 84; 365 between 85 and 89; 149 between 90 and 94; 38 between 95 and 99; while 6 were 100 years old and upwards; and of one the age was not stated.

(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 1907, 2679, viz., 2038 males and 641 females; in 1908, 2922, viz., 2187 males and 735 females; in 1909, 2664, viz., 2050 males and 614 females; in 1910, 2738, viz., 2128 males and 610 females; in 1911, 3018, viz., 2323 males and 695 females; in 1912, 3237, viz., 2559 males and 678 females; in 1913, 3168, viz., 2503 males and 665 females; and in 1914, 3121, viz., 2458 males and 663 females. Of the deaths registered in 1914, those of 946 males and 245 females occurred in New South Wales; those of 535 males and 183 females in Victoria; those of 436 males and 99 females in Queensland; those of 212 males and 62 females in South Australia; those of 234 males and 51 females in Western Australia; those of 86 males and 22 females in Tasmania; and those of 9 males and one female in the Northern Territory.

The following table shews the various kinds of accidental deaths which occurred in 1914, distinguishing males and females:—

DEATHS FROM VIOLENCE, COMMONWEALTH, 1914.

Cause of Death.	Males.	Females.	Total
Poisoning by food	13	9	22
Venomous bites and stings	16	5	21
Other acute poisonings	60	23	83
Conflagration	12	4	16
Burns (conflagration excepted)	139	180	319
Absorption of deleterious gases (conflagration excepted)	67	43	110
Accidental drowning	480	75	555
Traumatism by firearms	83	9	92
Traumatism by cutting or piercing instruments	11	...	11
Traumatism by fall	295	64	359
Traumatism in mines or quarries	106	...	106
Traumatism by machines	30	...	30
Traumatism by other crushing (vehicles, railways, etc.)	513	88	601
Injuries by animals	43	10	53
Starvation, thirst, fatigue	35	2	37
Excessive cold	4	...	4
Effects of heat	83	39	122
Lightning	14	1	15
Electricity (lightning excepted)	4	...	4
Homicide by firearms	13	13	26
Homicide by cutting or piercing instruments... ..	3	5	8
Homicide by other means	32	23	55
Fractures (cause not specified)	110	40	150
Other external violence	292	30	322
Total Deaths	2,458	663	3,121

In every kind of violent death there was, therefore, an excess of males, with the exception of burning accidents, in which female deaths largely predominated.

The excessive heat of January, 1908, was responsible for an increase in the number of deaths caused by insolation, i.e., sunstroke and heat apoplexy, from 64 in 1907 to 246 in 1908, distributed as follows:—New South Wales, 46; Victoria, 130; Queensland, 14; South Australia, 39; Western Australia, 15; Tasmania, 2. In 1911 the deaths fell to 78, while in 1912 they numbered 127, in 1913, 100, and in 1914, 122.

(xxxvi.) *Suicide.* It may be said that suicides have shewn a tendency to decrease during recent years, the number in 1905 having been 520, viz., 431 males and 89 females; while in 1906 it was 499, viz., 403 males and 96 females; in 1907, 461, viz., 385 males and 76 females; in 1908, 497, viz., 413 males and 84 females; in 1909, 495, viz., 398 males and 97 females; in 1910, 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, and in 1914, 643, viz., 534 males and 109 females. Of the suicides in 1914, those of 211 males and 58 females occurred in New South Wales; those of 102 males and 24 females in Victoria; those of 111 males and 17 females in Queensland; those of 39 males and 8 females in South Australia; those of 55 males and 2 females in Western Australia; those of 13 males in Tasmania; and those of 3 males in the Northern Territory.

The modes adopted by persons who committed suicide in the years 1907 to 1914 were as follows:—

MALE AND FEMALE SUICIDES, COMMONWEALTH (MODES ADOPTED), 1907 to 1914.

Mode of Death.	Males.		Females.		Total.	
	Total of 7 years 1907-13.	1914.	Total of 7 years 1907-13.	1914.	Total of 7 years 1907-13.	1914.
Poisoning	642	121	353	61	995	182
Asphyxia	13	2	2	...	15	2
Hanging or Strangulation	505	72	90	15	595	87
Drowning	236	30	109	17	345	47
Firearms	1,011	201	50	4	1,061	205
Cutting instruments	497	76	50	3	547	79
Precipitation from a height	28	4	7	4	35	8
Crushing... ..	46	2	7	2	53	4
Other modes	126	20	19	3	145	29
Total	3,104	534	687	109	3,791	643

The death rates from suicides 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, 1914.
COMMONWEALTH.**

State.	Death Rates (a) from Suicide.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.22	0.07	0.15	1.92	0.75	1.44
Victoria	0.14	0.03	0.09	1.13	0.32	0.76
Queensland	0.30	0.05	0.19	2.69	0.65	1.90
South Australia	0.18	0.04	0.11	1.49	0.38	1.00
Western Australia	0.30	0.01	0.18	2.83	0.18	1.87
Tasmania	0.13	...	0.07	1.22	...	0.63
Northern Territory	0.98	...	0.80	4.35	...	3.70
Federal Territory	...	...	...	...	...	...
Commonwealth	0.21	0.05	0.13	1.79	0.50	1.24

(a) Number of deaths from suicide per 1000 of mean population

From the following table, which shews the ages of the persons who committed suicide in 1914, it will be seen that both extreme youth and extreme old age are represented:—

AGES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1914.

Ages.	M.	F.	Total.	Ages.	M.	F.	Total.
10 years and under 15	1	...	1	60 years and under 65	35	3	38
15 " " 20	9	9	18	65 " " 70	22	3	25
20 " " 25	38	10	48	70 " " 75	15	1	16
25 " " 30	52	17	69	75 " " 80	7	...	7
30 " " 35	65	19	84	80 " " 85	2	...	2
35 " " 40	60	10	70	85 " " 90	1	...	1
40 " " 45	61	11	72	Age not stated	3	...	3
45 " " 50	58	10	68				
50 " " 55	61	10	71				
55 " " 60	44	6	50	Total Deaths ...	534	109	643

The following table shews the occupations of the 534 males who committed suicide:—

OCCUPATIONS OF MALE PERSONS WHO COMMITTED SUICIDE, 1914.

COMMONWEALTH.

Occupation.	Deaths.	Occupation.	Deaths.
Professional class	28	Pastoral class	28
Domestic class	23	Working in mines and quarries ...	26
Mercantile class	81	Other primary producers	5
Engaged in transport and communication	40	Independent means	10
Manufacturing class	45	Dependents ... ..	...
Engaged in building and construction	26	Occupation not stated	25
Indefinite industrial workers ...	132		
Agricultural class	65	Total Deaths	534

The assertion has been made that suicide has become more frequent during recent years, but an examination of the figures from the year 1871 onwards hardly bears this out. 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 four years 1911-14, which have been added to the table, shew, however, a regrettable increase, not only absolutely, but also in proportion to the population. No particulars are available for Western Australia prior to 1886, and from 1886 to 1895 the sexes are not distinguished. All figures for the first five periods are, therefore, exclusive of Western Australia:—

SUICIDES, COMMONWEALTH, 1871-75 TO 1911-14.

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	a1,686	179.20	43.97	c116.92	20.95	24.54
1891-95	1,574	337	b1,911	181.34	44.09	d117.07	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
1911-14	2,010	455	2,465	204.81	50.31	130.71	22.64	24.56

a. 1705 inclusive of Western Australian figures. b. 1884 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, etc.), the result of a series of investigations into the periodicity of suicide was published. The paper was partly reprinted in the sixth issue (pp. 241, etc.), 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 shewn in the detailed classification, and deaths were recorded under every one of these with the exception of the following four:—Glanders, rabies, pellagra, and intestinal parasites. The total number of deaths under "other diseases" in 1907 was 6677, viz., 3393 males and 2744 females;

in 1908, 7417, viz., 4351 males and 3066 females; in 1909, 7419, viz., 4344 males and 3075 females; in 1910, 7794, viz., 4590 males and 3204 females; in 1911, 7652, viz., 4508 males, 3144 females; in 1912, 8300, viz., 4777 males and 3523 females; in 1913, 8241, viz., 4794 males and 3447 females; and in 1914, 8670, viz., 5081 males and 3589 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 (1866 deaths) are now shewn under a new head (xxiii.), and appendicitis and typhlitis (374 deaths) under head xxvi. Some of the diseases included here account for very considerable numbers of deaths. Thus there were 815 deaths ascribed to diarrhœa and enteritis of children over two years of age and of adults; 599 to diseases of the arteries, atheroma, and aneurysm; 570 to "other diseases peculiar to early infancy"; 467 to diabetes; 429 to convulsions of children under five years of age; 362 to paralysis without indicated cause; 331 to embolism and thrombosis; 303 to "other diseases of the spinal cord"; 293 to anæmia and chlorosis; 292 to acute endocarditis; 253 to "other diseases of the nervous system"; and 240 to simple peritonitis. Particulars of the deaths included in 1914 are shewn in the following table:—

CAUSES OF DEATH INCLUDED UNDER "OTHER DISEASES," COMMONWEALTH, 1914.

Causes.	M.	F.	T'tal.	Causes.	M.	F.	T'tal.
Purulent Infection and Septicæmia	75	77	152	Diseases of the Lymphatic System	17	9	26
Anthrax	1	1	2	Hæmorrhages, Other Diseases of Circulatory System ...	35	14	49
Tetanus	65	25	90	Diseases of the Mouth and its Associated Organs	5	10	15
Mycoses	2	4	6	Diseases of the Pharynx ...	29	33	62
Beri-beri	23	...	23	Diseases of the Oesophagus ...	14	7	21
Rickets	3	3	6	Diarrhœa and Enteritis of Children over two years of age and Adults ...	397	418	815
Syphilis	105	62	167	Ankylostomiasis ... ..	...	1	1
Gonococcus Infection ...	1	2	3	Other Diseases of the Intestine's Acute Yellow Atrophy of the Liver	40	38	78
Other Tumours (Tumours of the female genital organs excepted)	18	21	39	Hydatid Tumours of the Liver	6	7	13
Acute Articular Rheumatism ...	77	91	168	Biliary Calculi	32	21	53
Chronic Rheumatism & Gout ...	59	50	109	Other Diseases of the Liver ...	92	100	192
Scurvy	4	3	7	Diseases of the Spleen	6	4	10
Diabetes	205	262	467	Simple Peritonitis (non-puerperal)	115	125	240
Exophthalmic Goitre	6	54	60	Other Diseases of the Digestive System	16	10	26
Addison's Disease	10	17	27	Chyluria ... ..	...	1	1
Leucæmia	56	26	82	Other Diseases of the Kidneys and their Adnexa ...	101	58	159
Anæmia, Chlorosis	159	138	293	Calculi of Urinary Passages ...	28	11	39
Other General Diseases	71	54	125	Diseases of the Bladder	146	22	168
Acute and Chronic Alcoholism ...	143	39	182	Other Diseases of the Urethra, Urinary Abscess, etc. ...	30	...	30
Chronic Lead Poisoning	5	1	6	Diseases of the Prostate	174	...	174
Other Chronic Poisonings due to occupations	4	...	4	Non-venereal Diseases of the Male Genital Organs ...	3	...	3
Other Chronic Poisonings	6	3	9	Non-puerperal Diseases of the Breast ... ..	...	1	1
Encephalitis	50	24	74	Gangrene	75	60	135
Progressive Locomotor Ataxia ...	60	6	66	Furuncle	16	4	20
Other Diseases of the Spinal Cord	181	122	303	Acute Abscess	64	22	86
Paralysis without indicated cause	216	146	362	Other Diseases of the Skin and Adnexa	24	18	42
General Paralysis of the Insane ...	111	23	134	Non-tuberculous Diseases of the Bones	31	27	58
Other Forms of Mental Alienation	44	34	78	Other Diseases of the Joints (Tuberculosis & Rheumatism excepted)	6	1	7
Epilepsy	123	68	191	Amputations	2	1	3
Convulsions (non-puerperal) ...	11	20	31	Other Diseases of the Organs of Locomotion	4	...	4
Convulsions of Children under five years of age	233	196	429	Other Diseases peculiar to Infancy	335	235	570
Chorea	1	3	4	Want of Care (Infants) ...	13	2	15
Neuralgia and Neuritis	16	15	31	Total Deaths	5,081	3,589	8,670
Other Diseases of the Nervous System	145	108	253				
Diseases of the Eye	1	...	1				
Diseases of the Ear	23	8	31				
Pericarditis	62	20	82				
Acute Endocarditis	158	134	292				
Angina Pectoris	84	32	116				
Diseases of the Arteries, Atheroma, Aneurysm	421	178	599				
Embolism and Thrombosis	146	185	331				
Diseases of the Veins (Varices, Varicose Ulcers, Hæmorrhoids)	11	17	28				

(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 1275 in 1907, 1262 in 1908, 1087 in 1909, 598 in 1910, 460 in 1911, 590 in 1912, 614 in 1913, and 644, viz., 418 males and 226 females in 1914. The detailed classification distinguishes these ill-defined diseases under three headings:—Ill-defined organic diseases, including such definitions as dropsy, anasarca, ascites, general œdema, etc.; sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Asthenia, coma, dentition, exhaustion, heart failure, etc. In 1914 the number of cases of death which would have to be classed under the first of these categories was 24; those belonging to the second, 26; and those belonging to the third, 594. 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, etc., some observations were published, dealing with the incidence of scarlet fever, measles, whooping cough, diphtheria and croup, typhoid, diarrhoea, 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 compiler 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, 1914.—COMMONWEALTH.

Class.	Total Deaths.			Death Rate. (a)			Percentage on Total Deaths.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1. General diseases ...	6,372	5,262	11,634	2.49	2.23	2.36	21.36	24.04	22.48
2. Diseases of the Nervous System & of the Organs of Special Sense...	2,809	2,195	5,004	1.10	0.93	1.02	9.42	10.03	9.68
3. Diseases of the Circulatory System	3,683	2,676	6,359	1.44	1.13	1.29	12.34	12.23	12.30
4. Diseases of the Respiratory System	3,103	2,103	5,206	1.21	0.89	1.06	10.40	9.61	10.07
5. Diseases of the Digestive Organs...	3,656	3,049	6,705	1.43	1.29	1.36	12.25	13.93	12.96
6. Diseases of the Genito-Urinary System and Adnexa ...	1,763	1,077	2,840	0.69	0.46	0.58	5.91	4.92	5.49
7. Puerperal Condition ...	...	634	634	...	0.27	0.13	...	2.90	1.23
8. Diseases of the Skin and of the Cellular Tissue...	179	104	283	0.07	0.04	0.06	0.60	0.48	0.55
9. Diseases of the Organs of Locomotion ...	43	29	72	0.02	0.01	0.01	0.14	0.13	0.14
10. Malformations ...	306	224	530	0.12	0.09	0.11	1.03	1.02	1.02
11. Infancy ...	2,283	1,632	3,915	0.89	0.69	0.79	7.65	7.46	7.57
12. Old Age ...	2,228	1,902	4,130	0.88	0.81	0.84	7.47	8.69	7.98
13. Violence ...	2,992	772	3,764	1.17	0.33	0.77	10.03	3.53	7.28
14. Ill-defined Diseases ...	418	226	644	0.16	0.10	0.13	1.40	1.03	1.25
Total ...	29,835	21,885	51,720	11.67	9.27	10.51	100.00	100.00	100.00

(a) Number of deaths per 1000 of mean population.

20. Deaths of Children under 1 Year.—"Bulletin No. 32; Commonwealth Demography" contains tables shewing the age at death of children dying during the first year of life from nineteen causes. 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 shewn for both sexes combined:—

DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1914.

Age at Death.	Whooping Cough.	Pulmonary Tuberculosis.	Acute Miliary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Pott's Disease.	Disseminated Tuberculosis.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week ...	...	...	...	...	...	...	...	5	19	125	8
1 week and under 2 ...	1	...	...	...	...	...	...	5	8	51	16
2 weeks " 3 ...	6	...	...	...	...	...	...	4	3	10	19
3 " " 1 month ...	4	...	...	...	...	...	...	6	2	12	16
1 month " 2 ...	49	...	...	1	...	...	...	24	9	13	42
2 months " 3 ...	28	...	...	4	1	...	...	11	19	14	32
3 " " 4 ...	21	1	2	4	2	...	1	16	19	11	17
4 " " 5 ...	20	1	1	2	3	...	...	5	22	13	12
5 " " 6 ...	15	2	2	1	1	...	...	6	15	11	6
6 " " 7 ...	11	1	...	...	1	1	1	3	27	11	13
7 " " 8 ...	14	3	...	1	1	...	...	3	27	9	9
8 " " 9 ...	14	2	...	6	1	...	...	3	22	10	6
9 " " 10 ...	10	1	1	2	1	...	...	...	25	14	8
10 " " 11 ...	16	...	...	5	2	...	...	3	17	10	7
11 " " 12 ...	8	2	...	3	2	...	...	...	27	7	3
Total under 1 year ...	217	13	6	29	15	1	2	94	261	321	214

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 ...	6	16	11	9	235	2,079	468	10	139	3,130
1 week & under 2 ...	17	7	41	6	63	298	54	2	51	620
2 weeks " 3 ...	13	5	52	...	23	163	17	...	57	372
3 " " 1 month ...	18	11	56	5	17	142	8	...	36	333
1 month " 2 ...	56	31	194	2	29	222	14	2	74	762
2 months " 3 ...	43	12	316	1	33	120	8	1	47	690
3 " " 4 ...	28	12	336	3	18	75	1	...	45	612
4 " " 5 ...	16	25	334	9	10	50	...	...	51	574
5 " " 6 ...	26	15	313	12	14	41	...	...	30	510
6 " " 7 ...	18	18	280	10	7	42	...	...	43	487
7 " " 8 ...	18	11	238	7	8	26	...	...	30	405
8 " " 9 ...	29	10	202	8	4	16	...	...	44	377
9 " " 10 ...	19	21	196	7	5	21	...	...	41	372
10 " " 11 ...	11	16	180	3	3	13	...	...	38	324
11 " " 12 ...	21	15	144	4	7	18	...	...	32	293
Total under 1 year ...	339	225	2,893	86	476	3,326	570	15	758	9,861

It will be seen that the maximum number of deaths from convulsions, pneumonia, acute bronchitis, malformations, congenital debility, icterus and sclerema, other diseases peculiar to early infancy, and lack of care, occurred during the first month of life, while broncho-pneumonia was most fatal during the second

month. Diarrhœa and enteritis carried off more children in the third and fourth months than in any other, the numbers gradually decreasing toward the end of the year. Whooping cough reached its maximum during the second month of life.

21. **Ages at Death of Married Males and Females, and Issue.**—"Bulletin No. 32; 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 1914. A short summary of the tables mentioned is given hereunder. Deaths of married males in 1914 numbered 13,037, and of married females, 12,237. The ages at death of the males ranged from 18 to 102 years, and those of the females, from 17 to 106 years. The total number of children in the families of the 13,037 males was 68,567, the maximum in one family being 21; and of the 12,237 females, 64,745, 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, 1914.

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 ...	...	0.55	70 to 74 years ...	6.56	6.67
20 to 24 years ...	1.22	1.26	75 " 79 " ...	6.65	6.65
25 " 29 " ...	1.49	1.80	80 " 84 " ...	6.72	6.67
30 " 34 " ...	2.10	2.56	85 " 89 " ...	6.59	6.23
35 " 39 " ...	2.70	3.34	90 " 94 " ...	6.15	6.24
40 " 44 " ...	3.25	4.21	95 " 99 " ...	6.41	6.02
45 " 49 " ...	3.39	4.23	100 years and upwards	5.50	5.83
50 " 54 " ...	4.41	4.82	Age not stated ...	5.43	5.00
55 " 59 " ...	5.06	5.66			
60 " 64 " ...	5.68	5.81			
65 " 69 " ...	6.23	6.18	All ages ...	5.26	5.29

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 1000 to 306, or, roughly speaking, as ten to three. The totals are shewn in the following table:—

ISSUE OF MARRIED MALES AND FEMALES.

COMMONWEALTH, 1914.

Issue of Married Males.	Males.	Females.	Total.	Issue of Married Females.	Males.	Females.	Total.
Living ...	27,402	26,330	53,732	Living ...	24,370	23,977	48,347
Dead ...	7,994	6,841	14,835	Dead ...	8,763	7,635	16,398
Total ...	35,396	33,171	68,567	Total ...	33,133	31,612	64,745

These figures shew a masculinity in the births of 105.78, which agrees fairly well with the experience of the birth statistics, the masculinity of the births in the Commonwealth from 1904 to 1914 having averaged 105.17.

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, 1914.

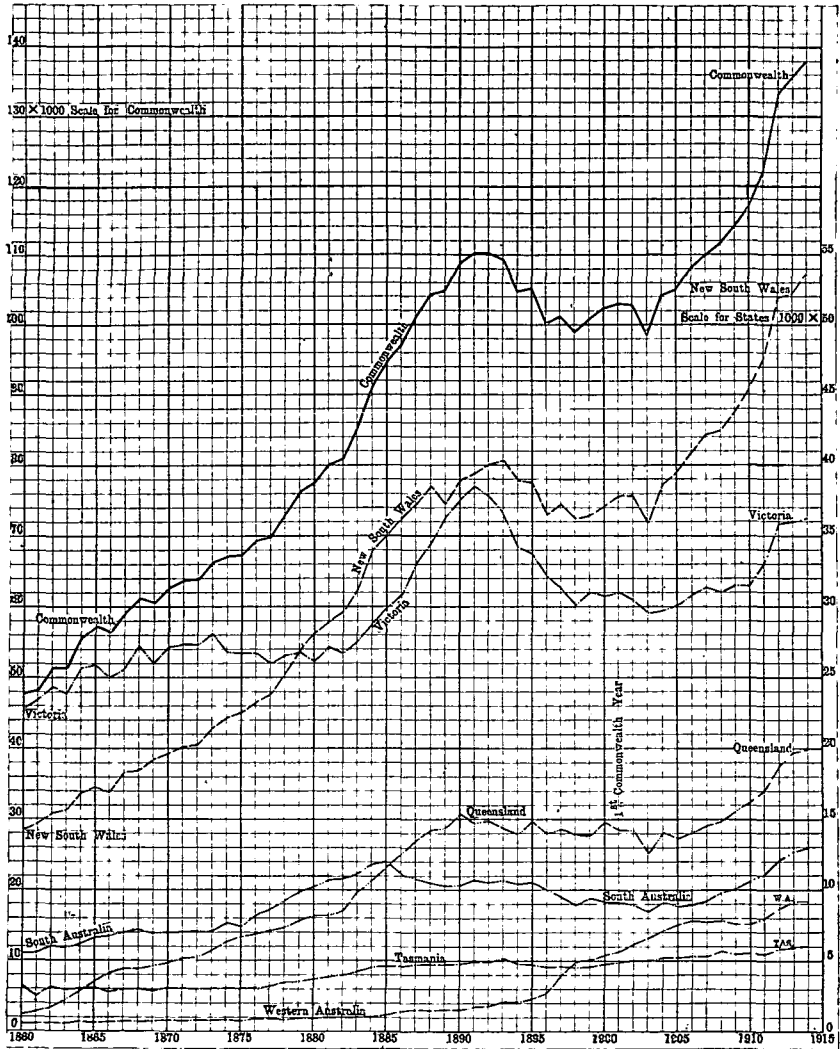
Age at Marriage.	Average Family of Males.	Average Family of Females.	Age at Marriage.	Average Family of Males.	Average Family of Females.
Under 20 years ...	6.87	7.14	55 to 59 years ...	0.71	...
20 to 24 years ...	6.35	5.69	60 „ 64 „ ...	0.54	...
25 „ 29 „ ...	5.51	4.23	65 years and upwards ...	0.56	...
30 „ 34 „ ...	4.71	2.85	Age not stated ...	4.59	4.90
35 „ 39 „ ...	3.98	1.53			
40 „ 44 „ ...	2.80	0.55			
45 „ 49 „ ...	2.26	0.04			
50 „ 54 „ ...	2.30	...	All ages ...	5.26	5.29

It will be seen that of women who were married at ages from 40 to 44 years, one in every two gave birth to a child, while in the case of women who were married at ages from 45 to 49 years, the proportion fell to about one in every twenty-five.

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. 32 of Commonwealth Demography," pages 198 to 203.

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 1914, 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 4.70, and that of deceased females who were natives of the Commonwealth, 4.55.

GRAPHS SHEWING TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA. 1860-1914.



(See Table page 151.)

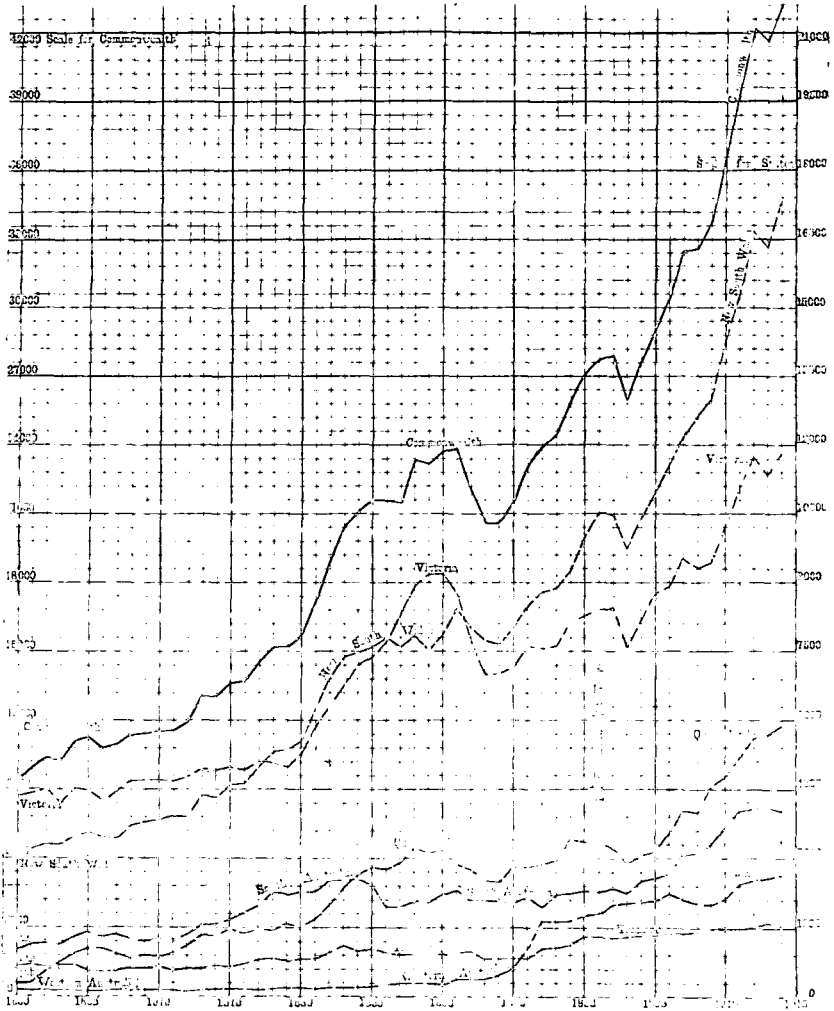
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth, and 1000 for the States.

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, ————; South Australia, ————; Western Australia, ————; Tasmania, ————.

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1914



(See Table page 19.)

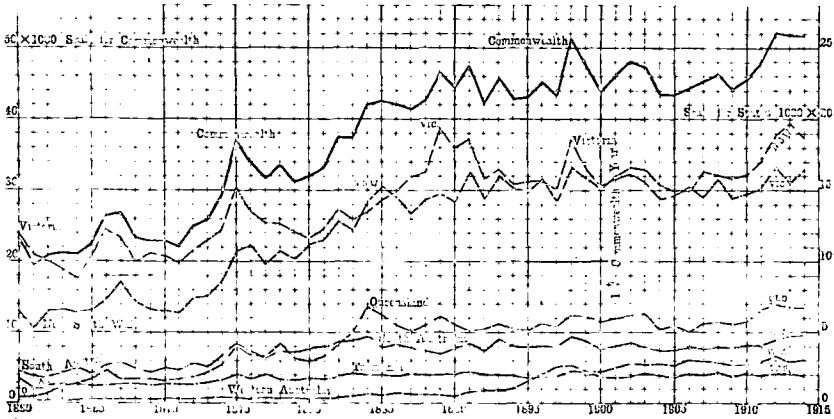
EXPLANATION OF GRAPHS. -The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 800 marriages for the Commonwealth and 300 for the States.

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, 1860-1914.



(See Table page 171.)

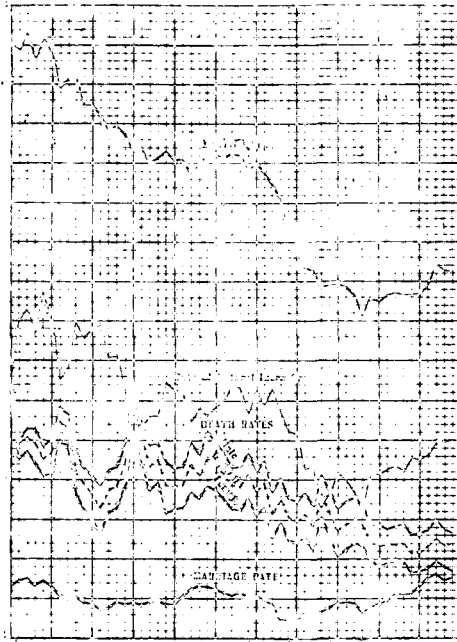
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 250 persons for the Commonwealth and 1000 for the States.

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 RATE,
GENERAL AND FEMALE, AND MARRIAGE RATES IN THE COMMONWEALTH OF
AUSTRALIA, 1891-1921.



(See pages 154, 166, 171, 194, 224.)

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 birth or one death per thousand of the population—the basic line being five per thousand of the population.

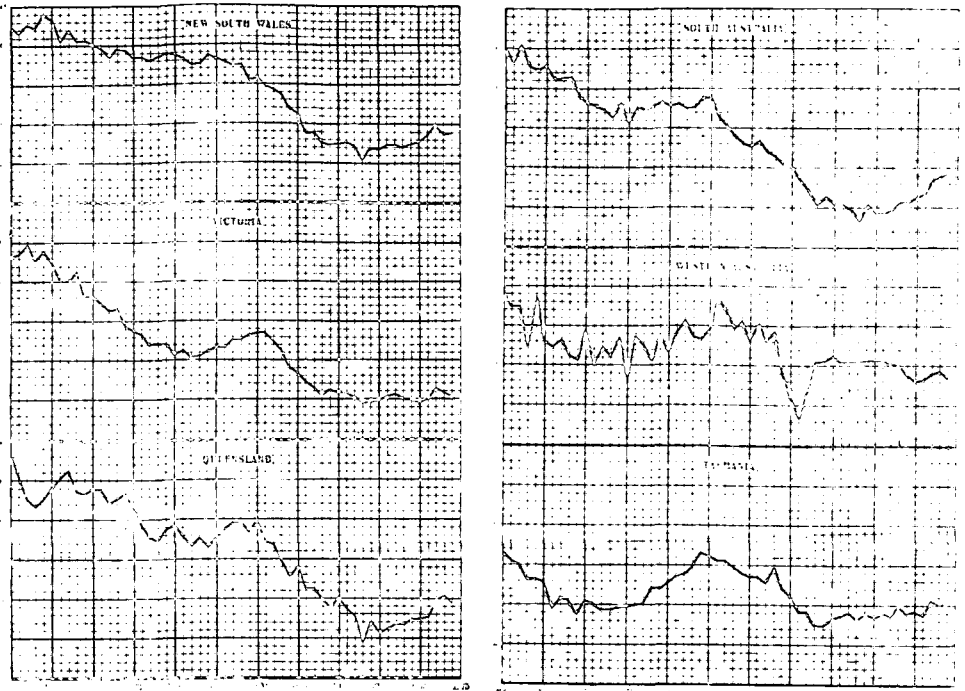
BIRTH RATE GRAPHS. See next page.

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.

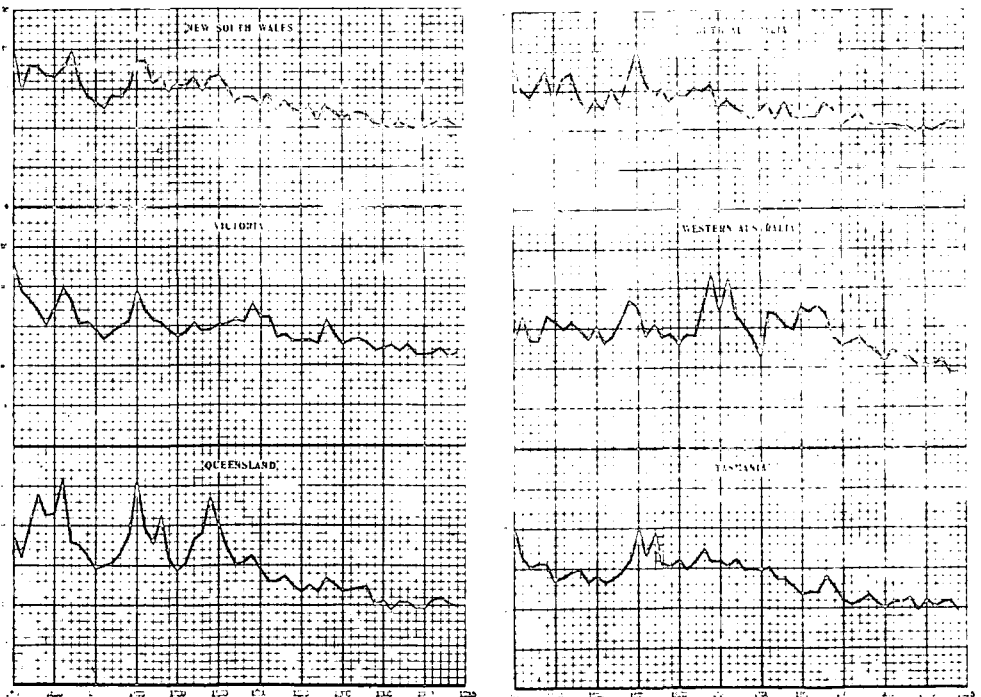
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shown by a thickened line.

GRAPHS SHEWING BIRTH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA,
QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1880-1914.



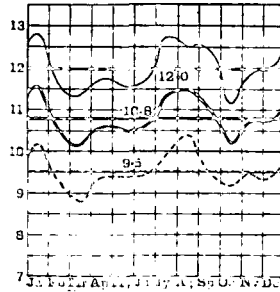
(See Table page 151.)

GRAPHS SHEWING DEATH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA,
QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1880-1914.

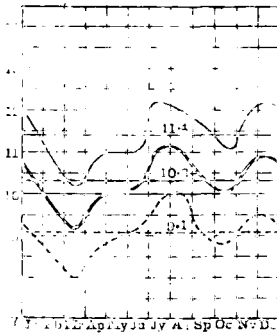


(See Table page 174.) For explanation of above graphs see page 214.

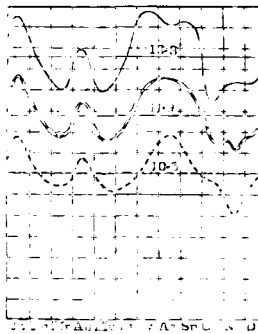
GRAPHS SHOWING GENERAL MONTHLY DEATH RATES, 1907-1912



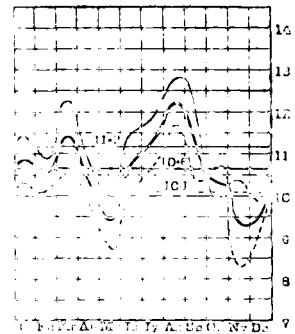
COMMONWEALTH.



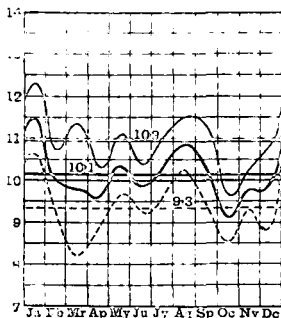
NEW SOUTH WALES.



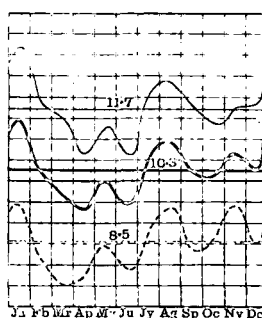
VICTORIA.



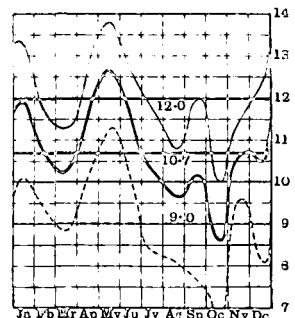
TASMANIA.



SOUTH AUSTRALIA.



QUEENSLAND.



WESTERN AUSTRALIA

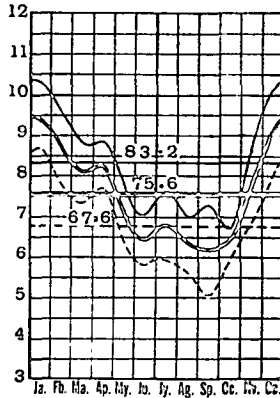
Male Death Rates shown:

Female

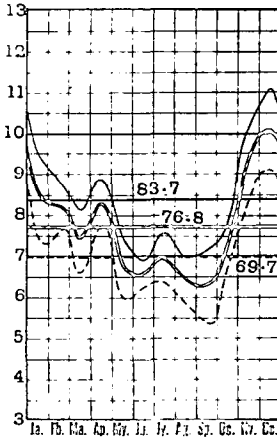
General

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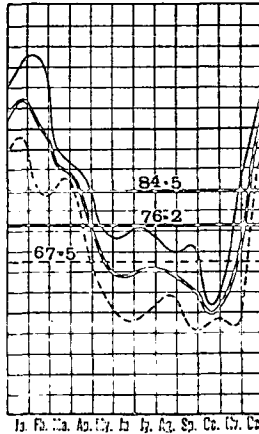
GRAPHS SHEWING INFANTILE MONTHLY DEATH RATES 1907-1912.



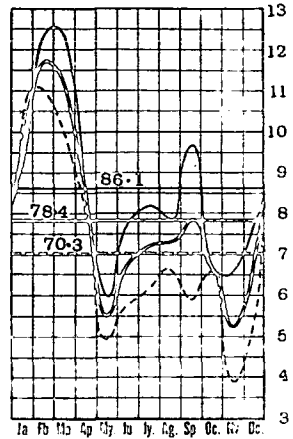
COMMONWEALTH.



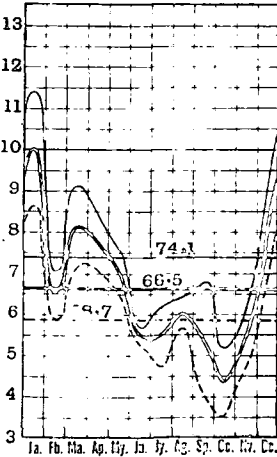
NEW SOUTH WALES.



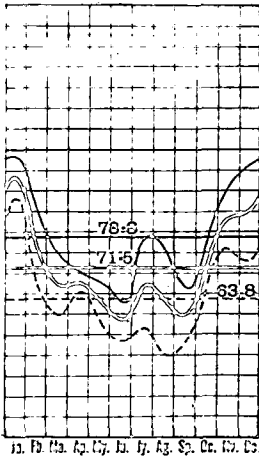
VICTORIA.



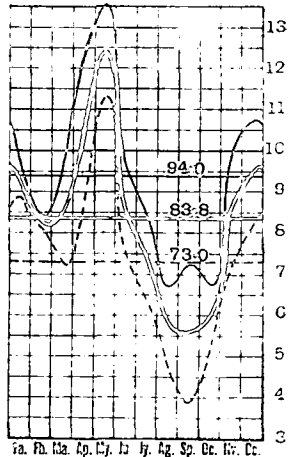
TASMANIA.



SOUTH AUSTRALIA.



QUEENSLAND.



WESTERN AUSTRALIA.

Male Death Rates shown: ————
 Female " " - - - - -
 General " " ————

BIRTHPLACES AT MARRIAGE OF MALES AND FEMALES, AND AVERAGE ISSUE.
COMMONWEALTH, 1914.

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	1,903	5.31	2,147	4.97	China ...	61	2.41	2	4.00
Victoria	1,708	3.96	1,694	4.05	Japan ...	4	1.00	1	...
Queensland	259	3.72	331	3.51	Java ...	1	9.00	...	...
South Australia	608	4.78	633	4.45	Philippine Islands	1	...	...	...
Western Australia	72	5.92	69	5.20	Syria ...	3	8.33	2	5.00
Tasmania	422	5.44	422	5.49	Mauritius	1	3.00	2	8.00
New Zealand	60	3.72	67	3.33	South Africa (so desc'd.)	14	5.00	7	5.14
England	4,018	5.65	3,140	5.92	Other African British Possessions	1	3.00	1	8.00
Wales	102	5.15	60	5.40	Other African C'ntries	1	13.00	...	...
Scotland	1,112	5.37	940	5.98	Canada	31	4.71	10	5.30
Ireland	1,598	6.08	2,201	5.86	Jamaica	4	5.50	...	...
Isle of Man	3	1.00	3	3.67	Newfoundland	2	5.00	1	11.00
Other European British Possessions	17	6.06	13	8.77	Other American British Possessions	1	6.00	2	4.00
Austria-Hungary	17	4.19	...	...	Brazil	...	...	2	9.50
Belgium	4	4.00	1	...	Chile	1	12.00	1	11.00
Denmark	54	4.44	20	6.25	Peru	...	...	1	1.00
France	34	5.56	7	3.14	United States	52	4.40	26	3.92
Germany	455	5.94	255	6.26	Other American Countries	23	5.22	10	4.10
Greece	6	4.33	2	4.00	Fiji	2	0.50	...	...
Italy	51	3.88	8	5.00	Friendly Islands	1	2.00	...	...
Netherlands	14	5.21	2	4.50	Papua	...	...	1	1.00
Norway	34	4.09	4	3.00	New Caledonia	...	...	1	...
Portugal	6	3.17	...	...	New Hebrides	1	2.00	...	...
Russia	31	5.10	16	6.25	Samoa	1	2.00	...	...
Spain	2	2.00	2	1.50	S. Sea Islands (so desc'd.)	3	3.00	1	...
Sweden	60	5.23	10	3.10	At Sea	40	6.50	35	6.11
Switzerland	30	5.73	6	3.33	Not stated	64	4.06	51	4.45
Other Europ. Countries	5	3.80	2	1.50					
British India	38	4.53	23	4.83					
Ceylon	...	...	2	5.00					
Hong Kong	1	2.00	...	...	Total	13,037	5.26	12,237	5.29

25. **Occupations of Married Males, and Issue.**—A final tabulation shews 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, 1914.

Occupation.	Deaths of Married Males.	Average Family.
Professional class	795	4.44
Domestic class	480	3.93
Mercantile class	1,645	4.42
Engaged in transport and communication	1,082	4.76
Manufacturing class	1,407	5.04
Engaged in building and construction	898	5.13
Indefinite industrial workers	2,107	5.13
Agricultural class	2,052	6.79
Pastoral class	575	6.17
Working in mines and quarries	942	5.24
Other primary producers	99	5.01
Independent means	547	5.95
Dependents	50	3.56
Occupation not stated	358	5.31
Total	13,037	5.26

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. 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 1914, both for the States and the Commonwealth. The facts are very significant from the national point of view and call for serious consideration. To properly appreciate the situation 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 has continually advanced. The same characteristic is not seen in the curve of births, which discloses a recovering tendency only in 1904.

The table printed below 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.

ACTUAL BIRTHS, DEATHS, AND MARRIAGES.

EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1914,
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	42,268	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	121,002	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	23,939	27,393
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	33,388
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	36,740
1914	137,983	172,073	51,720	70,394	43,311	37,583

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.

In the case of Victoria the graph shews the increase between 1860 and 1890 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.

Starting in 1860 with a lower number of births than any State except Western Australia, the Queensland graph shews 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 and subsequent years was recorded. The South Australian graph is crossed by that of Queensland at the year 1885. From 1890 onwards the number of births has fluctuated somewhat, but has, 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 since 1906.

The South Australian graph, a slow but practically continuous rise from 1860 to 1885, exhibits the 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.

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 onwards, a period of steady recovery.

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 onwards.

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	1914	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, a still more rapid increase between 1879 and 1885. From 1885 to 1891 the numbers continued to increase, but with marked fluctuations in rate. 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 were 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 1914 was greater than in any preceding year.

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 and 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. Thus there is no real indication of the periodicity of the death rate.

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.

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 1000 of the population of the Commonwealth, for each of the years 1860 to 1914.

(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 28.05 per 1000 in 1914. 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 28.05 in 1914. The lowest point reached, viz., 25.29, was attained in 1903, the year in which the Commonwealth suffered severely from the worst drought it has ever experienced.

Since then a small but well defined advance in the birth rate has been in evidence. 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 preventative measures, are generally considered the most potent.

(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 death rate of the Commonwealth, a fall having taken place from 20.86 in 1860 to 10.51 in 1914. 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 11.51 in 1909. For females the highest was 20.71 in 1860, and the lowest 9.06 in 1909. 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 1914, the final year of the period, viz., 8.80, 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 the present time 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.

(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 a 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 the very low rate accompanying the drought in 1903, the variations in any of the States since 1901 have not been very marked, and in some 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 (1910), 24.51; Queensland (1903), 24.53; South Australia (1903), 23.84; Western Australia (1896), 23.44; Tasmania (1899), 27.43.

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 (1909 and 1910), 9.89; Victoria (1913), 11.11; Queensland (1906), 9.50; South Australia (1909), 9.74; Western Australia (1913), 9.34; and Tasmania (1914), 9.67.

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 186 and 187.

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 *bonâ 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 license, 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 years 1895 to 1912, the Labour Settlements Act 1902, the Closer Settlement Acts 1904 to 1909, and the Closer Settlement Promotion Act 1910, which offer *bonâ 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 1901-1915, 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. 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 Acts and Closer Settlement Acts 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 Closer Settlement Acts 1906-1913 and the Land Act 1910 control the alienation of Crown lands in this State. The latter Act consolidates, amends and simplifies the law relating to the occupation and alienation of Crown lands.

4. **South Australia.**—*Acts now in Force.* The Crown Lands Act 1903, amended in subsequent years, repealed and consolidated previous Land Acts, and also repealed the earlier Closer Settlement and Village Settlement Acts. Acts amending the provisions relating to Closer Settlement were passed in 1910, 1911, 1912, and 1914. These Acts were consolidated by the Act of 1915. The Pastoral Act 1904 controls the pastoral occupation of lands, and the Irrigation and Reclaimed Land Acts of 1914 provide 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 repurchasing 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; and in the Closer Settlement Act 1918.

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 Director of Agriculture, and the Chief Surveyor.

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 Lands Departments, or from the Agents-General of the respective States. 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.**—The freehold of Crown lands in the several States of the Commonwealth 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 228 and 229 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. In the State of Victoria it is proposed to amend and consolidate the Land Acts at an early date, and to abolish some of the existing forms of tenure. Reference to any amending Acts which are passed up to the latest available date prior to the publication of this book may be found in the Appendix.

(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.
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FREE GRANTS, RESERVATIONS, AND DEDICATIONS.

Free grants in trust Volunteer land grants Reservations and dedications under Land Act 1884 and Mining Act 1906	Free grants in trust and re- servations under Land Act 1901	Free grants in trust Reservations under Land Act 1910 and under State Forests and National Parks Act 1906
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SALES BY AUCTION AND SPECIAL SALES.

Auction sales for cash or on credit After-auction sales Special sales Improvement purchases	Auction sales for cash or on credit Special sales	Auction sales for cash or on credit After-auction sales Special sales Unconditional selections
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CONDITIONAL PURCHASES.

Residential or non-residential conditional purchases Conversion of conditional pur- chase leases Homestead selections	Agricultural allotments, resi- dential or non-residential Grazing allotments, residen- tial or non-residential Selection from grazing area, perpetual or auriferous leases Selection from pastoral leases Mallee agricultural licenses Murray settlements leases Selection purchase leases	Agricultural farms Agricultural homesteads Prickly pear selections Free homesteads
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LEASES AND LICENSES.

Conditional leases Conditional purchase leases Settlement leases Improvement leases Annual leases Residential leases Special leases Snow leases Pastoral leases Scrub leases Inferior lands leases Occupation licenses Western lands leases Homestead farms Suburban holdings Crown leases Leases in Irrigation Areas	Grazing area leases Perpetual leases Mallee leases Licenses of auriferous lands Leases of swamp or reclaimed lands Grazing licenses Leases and licenses for other than pastoral or agricultural purposes State forest and timber re- serve licenses	Grazing homesteads Grazing farms Occupation licenses Special leases Perpetual lease selections Pastoral leases
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CLOSER SETTLEMENT SALES, LEASES AND LICENSES.

Sales by auction Settlement purchase Annual leases Labour settlements	Special sales	Sales by auction Agricultural farms Unconditional selections
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MINES DEPARTMENTS' LEASES AND LICENSES.

Miners' rights Business licenses Authorities to prospect Leases	Mining leases Special licenses Miners' rights Business & residence licenses	Miners' rights Mining leases and licenses Miners' homestead leases
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CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

South Australia.	Western Australia.	Tasmania.
FREE GRANTS, RESERVATIONS, AND DEDICATIONS.		
Free grants in trust Reservations and dedications under Crown Lands Act 1903 Artesian leases	Free grants in trust and free leases Reservations under Land Acts 1898 and 1906	Free leases Reservations under Crown Lands Act 1911
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 are sold by auction)	Auction sales or cash or on credit After-auction sales Special sales of residence or business allotments
CONDITIONAL PURCHASES.		
Agreements to purchase Special agreements under Pin- naroo Railway Act	Conditional purchase, resi- dential or non-residential Conditional purchase by direct payment Conditional purchase of small blocks Free homestead farms Conditional auction sales Workingmen's blocks	Selection of rural lands Homestead areas Selection in mining areas Conditional auction sales
LEASES AND LICENSES.		
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 *Timber licenses Special leases Quarrying licenses *The Woods and Forest Depart- ment is now under the control of the Mines Department.	Grazing leases Miscellaneous leases Timber licenses and leases Occupation licenses Temporary licenses
CLOSER SETTLEMENT SALES, LEASES, AND LICENSES.		
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
MINES DEPARTMENTS' LEASES AND LICENSES.		
Miners' rights Mining leases Miscellaneous leases Business claims Occupation licenses	Miners' rights Mining leases Miners' homestead leases	Prospectors' licenses Miners' rights Mining leases Miscellaneous licenses

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.

(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 Departments 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.

(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 he lodge 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 migration areas, but any alien who shall become the holder of any of these tenures shall 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 (sections 59 b 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 1910 to 1914 inclusive:—

PARTICULARS OF FREE GRANTS, RESERVATIONS, AND DEDICATIONS, 1901 AND 1910-14.

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
1910 ...	2,039	103	186	300	280	288†	3,196
1911 ...	2,186	38,830	287	211	309	109†	41,932
1912 ...	3,805	358	283	173	2,663	3,054	10,336
1913 ...	2,256	62	1,805	42	106	118	4,889
1914 ...	1,888	290	295	33	17	223	2,746
RESERVATIONS AND DEDICATIONS.							
1901 ...	1,595	19,278	811,200	†	189,856	4,231	1,026,160§
1910 ...	437	1,575	122,272	6,587	1,985,807	24,825	2,141,503
1911 ...	2,195	34,080	200,062	14,179	4,603,748	16,949	4,871,213
1912 ...	1,915	3,686	250,372	13,975	724,757	14,402	1,009,107
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

* Including both permanent and temporary reservations and dedications.

† Free leases.

‡ Not available. § Exclusive of South Australia.

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, 1914-15.* During the financial year 1914-15, the total area for which free grants were prepared was 1596 acres, including grants of 1485 acres of land resumed under the 12th clause of the Public Roads Act 1902. During the same period 512 acres were dedicated and permanently reserved, the number of separate dedications being 108.

On the 30th June, 1915, the total area temporarily reserved was 26,606,768 acres, of which 6,137,758 acres were for travelling stock, 6,606,017 acres for forest reserves, 2,517,069 acres for water, 1,337,082 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 1901, 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 1914 ten free grants, comprising an area of 290 acres, were issued. During the same year reservations of both a permanent and temporary nature, comprising an area of 5303 acres, were made; of this area 1548 acres were reserved for recreation grounds.

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, 1914.* During the year 1914 there were 51 free grants issued for a total area of 295 acres. During the same period the area of reserves cancelled exceeded the area reserved. The total area reserved up to the end of the year 1914 was 13,437,034 acres.

5. **South Australia.**—Under Section 7 (d) of the Crown Lands Act 1903, 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 (a) for the use of aborigines, (b) for the purposes of military defence, (c) for forest or travelling stock reserves, (d) for public recreation grounds, (e) for railways or tramways, and (f) for park lands.

(ii.) *Artesian Leases.* Under special circumstances free leases of pastoral lands may be granted to discoverers of artesian wells.

(iii.) *Areas Granted and Reserved, 1914.* During the year 1914 there were 14 free grants issued for a total area of 33 acres. During the same year 116 reserves, comprising 16,120 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 1914, 9 free grants totalling 17 acres were issued, while the area reserved was 502,167 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 30th June, 1914, there were 9 free leases, comprising an area of 103 acres, issued. During the same period 7,392 acres were reserved, 15 acres being reserved for marine board purposes, 6,850 acres for re-afforestation purposes, 40 acres for recreation grounds, and 487 acres for other public reserves. The total area permanently reserved to the end of the year 1914 was 1,084,718 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, 1915, the area of Crown lands sold by auction and special sales for which grants were prepared amounted to 3522 acres, of which 812 acres were sold by auction in 545 lots; 921 acres were sold by after-auction sales in 571 lots; 42 acres were sold as improvement purchases in 124 lots; and 1747 acres were sold as special purchases in 212 lots. The following table gives particulars of Crown lands alienated by auction and special sales during 1901 and for each year from 1910 to 1915:—

NEW SOUTH WALES—AUCTION AND SPECIAL SALES, 1901 and 1910-15.

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
1910 ...	7,980†	86	1,109	9,175	91,374
1911 ...	6,732†	47	1,348	8,127	86,601
1912 ...	4,530†	32	2,063	6,625	77,274
1913 ...	3,764†	53	2,739	6,556	58,552
1914 ...	748†	51	2,801	3,600	32,222
1915 ...	501†	49	1,837	2,447	36,411

* 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 hereafter. (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 $12\frac{1}{2}$ 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 1910 to 1914:—

VICTORIA.—AUCTION AND SPECIAL SALES, 1901 and 1910-14.

Particulars.	1901.	1910.	1911.	1912.	1913.	1914.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Country lands	4,079	2,469	1,096	1,178	1,196	983
Town and suburban lands	2,127	1,789	1,263	1,412	1,278	1,273
Special sales	846	1,537	1,709	1,530	1,731	1,449
Total	7,052	5,795	4,068	4,120	4,205	3,705

Particulars of total areas alienated are given hereafter. (See § 11.)

4. **Queensland.**—The Minister may, with the approval of the Governor-in-Council, cause any Crown lands to be offered for sale by auction. The notification must specify the amount of deposit, and the term for payment of the balance of the money, which term may not exceed ten years. The upset price may not be less than £8 per acre for town lands, £2 per acre for suburban lands, and 10s. per acre for country lands.

(i.) *After-auction Sales.* The notification of lands for sale by auction may declare that any lands therein mentioned, which have been offered at auction, but not sold or withdrawn, shall be open to purchase at the upset price by the first applicant. The price may 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 may 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 proves that, owing to danger from floods or other reasons, it is unsafe to reside on his holding, he may 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.

(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 1910 to 1914:—

QUEENSLAND.—AUCTION AND SPECIAL SALES, 1901 and 1910-14.

Particulars.			1901.	1910.	1911.	1912.	1913.	1914.
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Town	...	...	334	464	764	646	608	446
Suburban	...	...	793	1,175	1,462	1,015	741	923
Country—								
Ordinary sales	...	...	52,132	8,939	7,897	4,733	8,770	5,260
Special Sales	...	...	55	542	155	200	835	87
Total	...	...	53,314	11,120	10,278	6,594	10,954	6,716

Particulars of total areas alienated are given hereafter. (See § 11.)

(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 1280 acres. A deed of grant may be obtained upon payment of the purchase money.

The following table shews the number and area of unconditional selections for which applications were accepted during the year 1901 and from 1910 to 1914 :—

QUEENSLAND.—UNCONDITIONAL SELECTIONS, 1901 and 1910-1914.

Particulars.			1901.	1910.	1911.	1912.	1913.	1914.
Number	...	...	151	98	76	51	41	48
Area	...	Acres	24,322	15,930	12,968	14,578	6,603	12,081
Rent	...	£	1,180	685	525	565	266	448

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 1910 to 1914. 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 1910-1914.

Year	1901.	1910.	1911.	1912.	1913.	1914.
Area in acres	11,314	386,977	470,003	277,665	106,432	51,248

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 shows the areas of town and suburban lands sold at auction during the year 1901 and from 1910 to 1915 :—

WESTERN AUSTRALIA.—AUCTION SALES, 1901 and 1910-1915.

Year	1901.	1910. ¹	1911. ¹	1912. ¹	1913. ¹	1914. ¹	1915. ¹
Area sold ... Acres	856	1,643	1,848	1,359	1,087	890	1,396
Number of Allotments	1,366	783	778	705	530	263	353

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 shows the areas sold for cash during the year 1901 and from 1910 to 1914 :—

TASMANIA.—AUCTION AND SPECIAL SALES, 1901 and 1910-1914.

Year	1901.	1910.	1911.	1912.	1913.	1914.
Area in acres	1,915	55	190	2,026	383	2,260

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 Commonwealth 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 Queensland 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, 1915, deeds of grant were prepared on the completion of conditional purchases for 304,012 acres, making the total number of conditional purchases in existence at the end of the financial year 90,904 for a total area of 18,035,210 acres. The following table gives particulars of conditional purchases in 1901 and from 1910 to 1915:—

NEW SOUTH WALES.—CONDITIONAL PURCHASES, 1901 and 1910 to 1915.

Year.		Applications Made.		Applications Confirmed.		Areas for which Deeds have been Issued.	
		Number.	Area.	Number.	Area.	During the Year. ^a	To end of Year.
			Acres.		Acres.	Acres.	Acres.
1901	...	2,277	549,898	1,555	360,910	500,554	4,212,189
1910 ¹	...	2,264	342,367	1,984	294,897	1,079,887	13,928,053
1911 ¹	...	1,602	221,537	1,613	227,520	632,738	15,614,036
1912 ¹	...	1,258	190,969	1,099	175,004	671,564	15,232,355
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	...	362	47,175	287	35,249	304,012	16,264,942

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.)

During the year ended 30th June, 1915, there were 10 original and 20 additional homestead selections applied for, comprising an area of 16,983 acres. During the same period the total number of applications confirmed was 18, comprising 7233 acres, and 3788 homestead selections and grants, comprising an area of 1,365,719 acres, were in existence on the 30th June, 1915. 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 6273 acres were subdivided as homestead allotments, and 50,345 acres as dry farm allotments, while at Nyah 1960 acres were subdivided as homestead allotments. No additional subdivision has been made during 1914.

The subjoined table gives particulars shewing the areas selected conditionally during the year 1901 and from 1910 to 1914. 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 1910 to 1914.

(Exclusive of selection in the Mallee country.)

Particulars.	1901.	1910.	1911.	1912.	1913.	1914.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
With residence ...	466,155	210,331	172,599	97,766	138,955	132,085
Without residence ...	50,257	38,363	33,109	16,864	30,392	23,599
Total ...	516,412	248,694	205,708	114,630	169,347	155,684
No. of selectors ...	2,979	1,740	1,608	1,072	1,548	1,307

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 may be 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 may be selected under this form of tenure. (See No. 6, p. 280.)

Number and Area of Conditional Purchases. The following table shews the number and area of conditional purchases for which applications were accepted in 1901 and from 1910 to 1914:—

QUEENSLAND.—CONDITIONAL PURCHASES (APPLICATIONS ACCEPTED),

1901 AND 1910 TO 1914.

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
1910 ...	1,733	623,222	67	14,778	920	1,308,170	2,720	1,951,170
1911 ...	2,046	714,733	30	5,814	806	1,020,615	2,882	1,741,162
1912 ...	1,717	614,269	18	3,771	544	628,614	2,279	1,246,654
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

During the year 1914, applications were accepted to select agricultural farms to the number of 1554 for 538,844 acres, an average area of 347 acres, at an average price of 18s. 9d. per acre. The number of selections and the total area selected are more than the corresponding figures for the previous year by 77 and 11,383 acres respectively. The average area is less by 10 acres, and the average price per acre is 4d. less.

The average area of agricultural homesteads was 237 acres. The average price of the land selected as prickly pear selections during the year was 3s. 8d. per acre.

During the year 1914 for land opened for selection as free homesteads, 4 applications totalling 640 acres, were accepted.

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 1903 to 1914, 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 1914 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, etc., 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 1903. 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, 1915, was 982,479 acres; of this area purchase has been completed of 458,982 acres, and 16,984 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 1910 to 1914 :—

**SOUTH AUSTRALIA—AREAS ALIENATED UNDER AGREEMENTS TO PURCHASE,
1901 AND 1910 TO 1914.**

Year	...	...	...	1901.	1910.	1911.	1912.	1913.	1914.
Area in acres	...	...	...	57,460	160,668	153,594	51,702	59,670	36,186

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 1910 to 1915.

WESTERN AUSTRALIA.—AREAS SELECTED CONDITIONALLY FOR WHICH CROWN GRANTS WERE ISSUED, 1901 and 1910-15.

Particulars.	1901.	1910. ¹	1911. ¹	1912. ¹	1913. ¹	1914. ¹	1915. ¹
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Free homestead farms	147	35,334	93,444	83,686	96,435	80,784	62,520
Conditional purchases	5,234	64,957	92,986	97,286	113,885	101,421	144,684
Poison land leases ...	...	3,284	...	2,593	6,232	5,357	4,001
Total ...	5,381	103,575	186,430	183,565	216,552	187,562	211,205
Number of holdings	48	564	1,073	998	1,232	994	859

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 1910 to 1915:—

WESTERN AUSTRALIA.—AREAS CONDITIONALLY ALIENATED, 1901 and 1910-15.

Particulars.	1901.	1910. ¹	1911. ¹	1912. ¹	1913. ¹	1914. ¹	1915. ¹
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Conditional Purchase—</i>							
Deferred payments (with residence)	161,302	910,353	899,816	791,844	510,195	338,804	164,461
" (without residence)	46,498	475,860	574,805	391,397	149,648	88,854	43,203
Direct payments (without residence)	1,909	3,641	2,458	5,661	3,548	985	685
<i>Free Homestead Farms</i>	63,623	238,102	201,172	203,791	151,985	112,874	62,140
<i>Under the Agric. Lands Purchase Acts</i>	4,235	23,787	49,993	8,375	10,835	2,451	4,122
<i>Grazing Leases</i>	64,834	238,876	194,839	568,958	565,382	454,881	227,940
<i>Poison Land Leases</i> ²	...	9,530	...	...	...	...	...
<i>Workingmen's Blocks</i> ³	...	8	148	99	56	4	1
Total ...	351,999	1,891,367	1,923,172	1,970,082	1,411,597	998,850	502,551
Number of holdings ...	1,888	5,403	4,265	4,871	3,771	2,788	1,514

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 shows the areas alienated absolutely under systems of conditional purchases and sales on credit, the conditions having been fulfilled, and also shows the areas sold conditionally and the applications for conditional purchases received and confirmed, during the year 1901 and from 1910 to 1914:—

TASMANIA.—CONDITIONAL PURCHASES, 1901 and 1910 to 1914.

Particulars.	1901.	1910.	1911.	1912.	1913.	1914.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Completion of Conditional Purchases</i> ¹	23,781	42,276	33,055	39,844	45,937	34,756
<i>Sold Conditionally—</i>						
Free Selections	40,004	145,651	211,447	91,513	51,622	38,774
Homestead Areas	9,108	364	274	199	370	164
Auction Sales on Credit	12,961	4,365	2,437	2,026	1,916	986
Other Sales (Town Lands)	636	2,380	1,493	1,915	1,037	1,260
Total... ..	62,709	152,760	215,651	95,653	54,945	41,184
<i>Applications—</i>						
Received	1,444	3,171	2,136	1,800	1,631	1,515
Confirmed	768	1,180	1,241	652	698	543

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.

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, 1915, there were 60,118 leases and licenses current under the Lands Department and the Western Land Board, comprising 121,565,598 acres of Crown lands. Of these leases there were 57,066, comprising 45,489,036 acres, in the Eastern and Central Divisions; and 3,052, comprising 76,076,562 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 1911-12 and following financial years, and also the area and rental of leases current on the 30th June, 1915 :—

**NEW SOUTH WALES.—AREAS OCCUPIED UNDER LEASES AND LICENSES,
1901 AND 1911-1915.**

Leases and Licenses.	1901.	1911-12.	1912-13.	1913-14.	1914-15.	
					Area.	Rent.
	Acres.	Acres.	Acres.	Acres.	Acres.	£
Pastoral	44,805,221	1,137,095	1,137,095	1,137,095	1,136,475	734
Outgoing pastoral leases ...	—	1,098,981	996,272	1,061,240	964,081	9,080
Western land leases & licenses	—	74,838,648	74,368,024	*74,434,751	74,197,826	91,077
Occupation { (i.) Ordinary	25,812,215	6,553,241	6,401,989	5,923,013	5,672,117	10,119
(ii.) Preferential	12,985,651	2,046,163	1,703,260	1,487,289	1,304,376	7,097
Homestead leases	10,953,388	489,788	480,210	388,378	351,374	613
Condit'l. leases—(i.) Gazetted	13,014,055	15,670,320	15,967,366	15,688,322	15,995,625	196,371
(ii.) Not gazetted (under pro-						
visional rent) ...	966,887	490,507	202,155	110,549	65,477	546
Conditional purchase leases ...	—	632,515	611,152	579,108	549,772	16,956
Settlement leases	3,468,675	7,829,712	7,256,701	6,591,911	6,316,739	69,003
Improvement "	5,551,060	6,418,260	6,014,906	5,448,966	5,181,979	37,523
Annual "	6,755,942	4,262,930	4,237,898	3,705,570	3,184,630	23,471
Scrub "	1,535,415	2,273,123	2,211,234	2,053,634	1,991,066	7,639
Snow land "	79,582	60,104	60,104	52,970	11,549	180
Special "	124,877	596,179	620,447	622,079	648,509	36,289
Inferior land "	288,530	129,651	108,664	104,674	104,524	355
Artesian well "	358,071	71,680	71,680	71,680	71,680	143
Blockholders' "	—	1	1	1	1	6
Residential leases (on gold and						
mineral fields)	5,751	13,637	13,427	13,353	13,366	1,613
Church and school lands ...	97,307	9,720	6,855	4,384	4,082	403
Permissive occupancies† ...	118,634	949,941	1,002,794	1,203,244	1,409,502	8,789
Prickly pear leases	—	57,691	62,687	50,187	47,329	623
Crown lease	—	168,392	555,864	880,785	1,563,684	16,114
Homestead farms	—	27,815	241,221	450,499	748,918	1,600
Suburban holdings	—	1,085	9,731	22,114	30,717	3,495
Total under Lands Dept. and Western Land Board	126,921,161	125,827,179	124,361,737	122,085,796	121,565,596	538,869

* Includes 1,108,706 acres held under Permissive Occupancy at a rental of £677.

† Permissive Occupancies in the Western Division not included.

‡ Rent received.

The total annual rent derived from the leases and licenses issued by the Lands Department and the Western Lands Board amounted to £538,870, or an average of 1.063 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.) Selection purchase leases; (ii.) grazing area leases; (iii.) perpetual leases; (iv.) Mallee perpetual leases; (v.) licenses of auriferous lands; (vi.) swamp or reclaimed lands leases; (vii.) grazing licenses and pastoral leases; (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 shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901, and from 1910 to 1914.

**VICTORIA.—OCCUPATION OF CROWN LANDS UNDER LEASE OR LICENSE,
1901 AND 1910-14.**

Tenure.	Area in Acres.					
	1901.	1910.	1911.	1912.	1913.	1914.
Pastoral Leases	39,450	14,200				
Grazing Area Leases	2,338,649	3,006,998	2,950,226	2,869,095	2,747,571	2,648,281
Grazing Licenses—						
Land Acts 1890-91	5,908,985					
Land Acts 1901 (exclus. of Mallee)	...	5,763,489	5,328,249	5,777,386	5,291,179	5,437,929
Mallee Lands		5,273,592	5,413,216	5,016,456	4,694,213	4,851,246
Auriferous Lands (Licenses)	377,427	101,623	99,008	92,873	86,667	82,032
Swamp Lands (Leases)	4,200	4,038	4,001	3,981	3,900	3,865
Perpetual Leases	8,137	22,159	9,950	7,899	8,407	8,344
Mallee Pastoral Leases						
Mallee Allotment Leases	7,980,592	637,083	327,149	114,287	...	...
Perpetual Leases under Mallee Lands						
Acts 1896-1901	448,842	610,693	587,350	561,214	398,274	293,716
Wattles Act 1890	4,427	...	...	...	...	...
Total	17,110,709	15,433,875	14,719,149	14,443,191	13,230,211	13,325,416

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; and (vi.) pastoral 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. Personal residence is necessary for the first 5 years, and prior to the expiration of such period or the earlier death of the lessee, a grazing homestead cannot be assigned or transferred. Without the special permission of the Minister it may not be mortgaged during the five years except to the Agricultural Bank; thereafter the lease is subject to the condition of occupation.

(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, Homestead and Scrub Selections.* The following table shews the number of grazing farms, grazing homesteads, and scrub selections, for which applications were accepted in 1901 and from 1910 to 1914:—

**QUEENSLAND.—GRAZING FARMS, HOMESTEAD AND SCRUB SELECTIONS,
1901 AND 1910-14.**

Year.	Grazing Farms.		Grazing Homesteads		Scrub Selections.		Total.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ...	247	1,371,283	47	290,785	19	48,450	313	1,710,518
1910 ...	182	1,406,087	243	2,477,743	1 ¹	5,324	426	3,889,154
1911 ...	161	1,762,406	253	2,726,306	...	...	414	4,488,712
1912 ...	223	1,834,920	348	3,860,887	...	...	571	5,695,807
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

1. The Land Act 1910 makes no provision for the further selection of land as scrub selections.

The average rent in 1914 was .8d. per acre for grazing farms and 1.5d. 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 1914 was 2155, comprising an area of 73,149 square miles, the total rent being £51,787. 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 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 1914 there were 97 leases for special purposes granted, comprising an area of 2658 acres, the total annual rent being £338, and there were extant at the end of the year 613 such leases, reserving rents amounting to £3468 per annum. In addition, 48 leases of reserves, aggregating 14,441 acres, were granted at rentals amounting to £142 per annum; the total number of these leases of reserves in force at the end of the year being 237, reserving rents amounting to £877. Particulars of special leases for previous years are given in a later part of this section. (See § 11.)

(vi.) *Perpetual Lease Selections.* Land proclaimed to be open for agricultural farm selection (see § 6, 4) may also be opened for perpetual lease selection, and the latter mode may be conceded priority of application over the former. The rent for the first period of ten years of the lease is $1\frac{1}{2}$ per cent. on the proclaimed purchase price of the land for agricultural farm selection. The rent for each succeeding period of ten years is determined by the Land Court. Similar conditions of occupation and improvement as are prescribed for agricultural farms are attached to perpetual lease selections.

QUEENSLAND—PERPETUAL LEASE SELECTIONS, 1910 to 1914.

Particulars.	1910.	1911.	1912.	1913.	1914.
Number	1	24	20	12	18
Area—Acres	660	16,660	19,226	10,887	12,991
Rent £	7	292	212	106	153

(vii.) *Special Licenses.* Licenses to cut timber or to dig for any stone, gravel, earth, shells, or guano, may be issued.

(viii.) *Pastoral Leases.* Existing pastoral leases are now deemed to be held under the Land Act 1910. Lands open for pastoral lease may 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 become enhanced by the development of public works in the neighbourhood, or by the occurrence of minerals on or near the holding, the rent may be redetermined.

The following table shews the total areas of pastoral leases occupied under the various Acts at the end of the year 1901 and from 1910 to 1914 inclusive:—

* QUEENSLAND.—PASTORAL LEASES OCCUPIED UNDER VARIOUS ACTS, 1901 AND 1910 TO 1914.

Particulars.	Area in Square Miles.					
	1901.	1910.	1911.	1912.	1913.	1914.
Pastoral Leases Act 1869	39,307	890	...	...	...	...
Crown Lands Act 1884	243,586	11,710	...	...	...	...
Land Act 1897	15,046	86	...	...	...	...
Pastoral Leases Act 1900	50,076	21,739	...	...	...	...
Pastoral Holdings New Leases Act 1901	—	500	...	...	...	...
Land Act 1902	—	305,924	...	...	...	...
Land Act 1910	—	—	346,637	354,843	357,615	353,312
Total	348,015	340,849	346,637	354,843	357,615	353,312

* 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 1914 for purely pastoral purposes (under *Occupation Licenses and Pastoral Leases*) was 426,460 square miles, at rentals aggregating £352,062 per annum. The area was 5,509 square miles more than that for the previous year, and the rental was £7893 more. The average rent was 16s. 6d. per square mile, as against 16s. 4½d. for the previous year.

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 Acts of 1903 to 1914. 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 1914 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, etc., 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.) *Area held under Lease.* The following table shews the area held under leases and licenses at the end of the year 1901, and from 1910 to 1914 :—

SOUTH AUSTRALIA.—AREA UNDER LEASES AND LICENSES, 1901 and 1910 to 1914.

Particulars.	1901.	1910.	1911.	1912.	1913.	1914.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases ...	5,639,619	3,697,423	3,150,533	2,836,346	2,702,210	2,634,685
Perpetual Leases ...	7,115,782	14,789,305	15,020,544	15,070,607	15,048,199	14,569,877
Pastoral Leases ...	68,916,125	91,434,450	91,546,770	96,356,850	96,933,810	96,382,130
Other Leases ...	3,905,729	1,394,964	1,263,663	1,273,350	1,230,105	1,193,767
Total held under Lease ...	85,577,155	111,316,142	111,001,510	115,537,153	115,914,324	115,180,459

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 area of leases and licenses issued during the year 1901, and from 1910 to 1915:—

WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED, 1901 and 1910 to 1915.

Particulars.	1901.	1910.*	1911.*	1912.*	1913.*	1914.*	1915.*
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Pastoral Leases ...	19,909,251	10,130,358	9,057,002	11,245,895	18,135,488	8,365,927	7,639,023
Special Leases ...	149	6,212	3,112	6,760	3,993	3,382	5,571
Leases in Reserves ...	324	327,020	174,107	188,444	2,901,238	239,037	196,340
Timber Leases and Permits†	109,630	236,970	68,430	119,000	129,317	20,141	†
Residential Lots ...	221	6	4	18	2	...	...
Total ...	20,019,575	10,700,566	9,302,655	11,560,117	21,170,038	8,622,487	7,831,934
Number Issued ...	1,466	505	396	487	1,018	1,709	1,410

* 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).

Area 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 1910 to 1914:—

TASMANIA.—LEASES AND LICENSES ISSUED, 1901 and 1910-14.

Particulars.	1901.	1910.	1911.	1912.	1913.	1914.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Ordinary Leased Land ...	1,280,688	1,176,900	1,242,400	1,245,400	1,280,400	1,400,300
Islands ...	149,165	87,100	62,000	135,025	134,908	135,000
Land Leased for Timber ...	40,768	108,889	134,516	136,471	160,216	162,631
Total ...	1,470,621	1,372,889	1,438,916	1,516,896	1,575,524	1,697,931

8. **Northern Territory.**—The system of land settlement in the Northern Territory is being 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 1280 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 twenty-one 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.

Area held under Lease, License, and Permit. The following table shews the total area held under lease, license, and permit at the end of the year 1901 and 1910 to 1914:—

**NORTHERN TERRITORY.—AREA HELD UNDER LEASE, LICENSE OR PERMIT,
1901 AND 1910-1914.**

Particulars.	1901.	1910.	1911.	1912.	1913.	1914.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases ...	1,067	667	667	667	667	436
Pastoral Leases ¹ ...	111,476,240	98,729,120	92,045,540	94,329,600	93,748,100	104,370,160
Other Leases ¹ ...	1,176,981	445,236	1,698,754	1,696,171	1,762,538	88,637
Total Leased ...	112,654,288	99,175,023	93,744,961	96,026,438	95,511,305	104,459,233

1. See Table given below.

The following table gives particulars of the areas held under the various types of lease and license as at the end of the year 1914, and included in the previous table under the heads of "pastoral leases" and "other leases."

**NORTHERN TERRITORY.—AREA HELD UNDER LEASE, LICENSE OR PERMIT.
AT 31ST DECEMBER, 1914.**

Particulars.	No. of leases.	Area in acres.
(UNDER SOUTH AUSTRALIAN ACTS.)		
Pastoral leases ...	236	65,561,840
Pastoral permits ...	102	14,164,480
Annual pastoral leases ...	7	236,800
Mixed farming leases ...	1	1,280
Right of purchase leases ...	3	436
Agricultural leases ...	24	6,287
Leases, special purposes ...	2	10
Occupation, special licenses and permits ...	18	37
Gold-mining leases ...	14	209
Mineral leases ...	14	970
Tin-dredging applications ...	1	118
Water leases ...	3	6,400
(UNDER CROWN LANDS ORDINANCE, 1912.)		
Grazing Licenses ...	103	21,034,240
Pastoral leases ...	12	3,372,800
Miscellaneous leases ...	11	401
Agricultural leases (cultivation) ...	15	7,583
Agricultural leases (mixed farming and grazing) ...	5	8,363
Town leases ...	43	99
(UNDER MINERAL OIL ORDINANCE, 1913.)		
Mineral oil licenses ...	16	50,880
(UNDER ENCOURAGEMENT OF MINING ORDINANCE, 1913.)		
Licenses ...	3	6,000
Total ...	...	104,459,233

§ 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, 1915.

Particulars.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Cwlth.
Area acquired ... acres	685,156	576,993	664,363	658,564	446,804	73,162	3,105,042
Purchasing price ... £	2,542,489	4,230,055	1,713,165	2,092,101	421,373	258,237	11,257,420
Farms, etc., allotted { No. 1,588 2,878 2,595 2,565 708* 239 10,573							
{ acres 4742,610 454,781 570,281 602,775 272,190 64,965 2,707,602							

* Includes only farms for which Crown Grants have not issued.

† Including 38 Settlement purchases converted into Homestead Farms of an area 19,897 acres.

The following table shews the areas of private lands acquired in each State for the financial year 1901, and for each year from 1910 to 1915 :—

CLOSER SETTLEMENT.—AREAS OF PRIVATE LANDS ACQUIRED, 1901 and 1910 to 1915.

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
1910 ...	461,723	343,829	497,095†	527,501†	249,522	34,441§	2,114,111
1911 ...	676,278	455,954	537,449†	592,972†	297,391	34,448§	2,594,492
1912 ...	676,438	515,604	664,363†	619,469†	303,469	45,731§	2,825,074
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

* Particulars are for calendar years.

† To the preceding 31st December.

‡ To 30th June. § 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, 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, etc., 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 $5\frac{1}{2}$ 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 $4\frac{1}{2}$ per cent., is paid off. Unless otherwise notified, the deposit, annual instalments and rate of interest on a settlement purchase within a settlement purchase area notified prior to 1st January, 1913, are 5, 5 and 4 per cent. respectively. Under this system the balance due to the Crown will be paid off in thirty-eight years, the holding then becoming a freehold. A condition of residence for ten years attaches to every settlement purchase. Under the amending Act of 1909 postponement of the payment of instalments may be granted by the Minister, subject to the conditions (a) that additional improvements to the value of the amount postponed be made on the land within twelve months, and (b) that interest at 4 per cent. per annum be paid on the amount postponed. The Minister may also grant extension of time to pay overdue instalments under certain conditions. The period allowed under any one such extension must not exceed five years, interest being charged on overdue instalments at the rate of 5 per cent. per annum.

(ii.) *Closer Settlement Permissive Occupancies.* The Minister may grant permits to occupy from month to month 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.) *Private Subdivision.* An important feature of the amending Act of 1909 is the power which is given to owners for private subdivision of lands which have been notified by proclamation for resumption. Upon the owner entering into an agreement with the Minister to subdivide the land and to sell or lease in such areas and subject to such terms as may be agreed upon, the Minister is empowered to suspend the power of resumption for a period not exceeding two years.

(v.) *The Closer Settlement Promotion Act 1910.* Under this Act any three or more persons who are 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.—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
Total 	787	301,416	1,634,731

(vi.) *Areas Acquired and Disposed of.* Up to the 30th June, 1915, twenty-eight 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 1911 to 1915:—

NEW SOUTH WALES.—CLOSER SETTLEMENT AREAS, 1911 to 1915.

Year Ended 30th June.	Areas.			Capital Values.		
	Acquired Lands.	Adjoining Crown Lands.	Total.	Acquired Lands.	Adjoining Crown Lands.	Total.
	Acres.	Acres.	Acres.	£	£	£
1911 ...	591,861	86,127	677,988	2,293,399	148,696	2,442,095
1912 ...	676,438	87,760	764,198	2,666,516	156,796	2,823,312
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

The total area thus set apart has been divided into 1611 farms comprising 748,549 acres, the remaining area being reserved for recreation areas, roads, stock routes, schools, etc.

The following table gives particulars as to the disposal of the farms by closer settlement purchase for the years ended the 30th June, 1911 to 1915:—

NEW SOUTH WALES.—CLOSER SETTLEMENT ALLOTMENTS, 1911 to 1915.

Year.	Farms Allotted by Board to Date.			Total Amount received in respect of Settlement Purchases.	Total Number of Applications received.
	Number.	Area.	Value.		
	No.	Acres.	£	£	No.
1909-11 ...	1,316	604,319	2,420,035	220,720	1,328
1909-12 ...	1,485	673,610	2,722,564	274,440	1,555
1909-13 ...	1,554	724,924	2,767,370	363,425	1,568
1909-14 ...	1,567	734,125	2,806,285	493,795	1,578
1909-15 ...	1,588*	742,610*	2,834,792*	506,073	1,591

* Including 38 Settlement Purchase Farms of 19,887 acres, with a capital value of £88,373, since converted into Homestead Farms.

(vii.) *Labour Settlements.* These settlements were founded by the Labour Settlements Acts 1893 and 1894, which have now been amended and repealed by the Labour Settlements Act 1902. Land may 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 are 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 is empowered to grant financial assistance to the Board of Control.

Settlements Established. Only two settlements had been established under the Act up to the 30th June, 1915. Particulars are given in the following statement:—

NEW SOUTH WALES.—PARTICULARS OF LABOUR SETTLEMENTS, 30th JUNE, 1915.

Settlement.	Date of Establish- ment.	Area.	Population.				Value of Improve- ments.	Loans Advanced by the Govern- ment.
			Men Enrolled.	Women.	Children.	Total.		
Bega ...	1893	Acres.	27	29	89	145	£	£
Wilberforce ...	1893	1,036 409	9	10	24	43	3,100 1,550	2,420 2,479
Total ...	—	1,445	36	39	113	188	4,650	4,899

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. (See *Water Conservation*, Section XVI., § 3.)

4. **Victoria.**—(i.) *Closer Settlement Acts, 1904 to 1909.* The Closer Settlement Acts in Victoria are administered by a Board consisting of three persons appointed by the Government-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 £2500 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 £2500 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 amending Act of 1906 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.

(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.* Under the Amendment Act of 1907 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 shows the operations which have taken place in Victoria under the provisions of the Closer Settlement Acts, 1898 to 1910, up to the 30th June, 1901 and 1911 to 1915:—

VICTORIA.—CLOSER SETTLEMENT, 1901 and 1911-1915.

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.	No.	£	£	Acres.
1901	28,553	151,566	28,461	69	—	44	240	193	7,529	—	—
1911	455,954	3,177,831	363,676	571	2,761	—	—	2,708	606,558	234,038	54,214
1912	515,604	3,721,485	474,410	512	3,651	—	—	3,354	765,076	318,338	71,367
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	4,232,248	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

* During 1915, areas previously classed as Workmen's Homes and Agricultural Allotments were transferred to Farm Allotments.

(ii.) *The Small Improved Holdings Act 1906.* Under this Act, which has been repealed, 2822 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 is 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, 1914, was £67,379, of which sum the amount repaid to date was £41,927. After three years a lease may be obtained.

Particulars of areas in process of cultivation under the Act are given hereinafter. (See § 11, 3.)

On the 30th June, 1915, there were 759 settlers actually residing, and 101 not residing, but improving, making a total of 860 in occupation. Including wives and children the total number in residence was 3653. At the same date the area under cultivation was 10,132 acres; the value of live stock £42,013, and of improvements, £144,490.

(iv.) *Closer Settlement in the Irrigated Districts.* The movement for closer settlement in the irrigated districts started about six years ago. 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, more than half the available water was being wasted. 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 20 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 now purchased 110,550 acres for this purpose. This land is sold to settlers on 31½ years' terms with 4½% 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 8 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 six per cent. in all, on the cost for 31½ years pay off both principal and interest. To help the settler of small capital, the State will build him a house and give 20 years to pay for it, will prepare a part of his area for irrigation and allow payments to be extended

over 10 years. The cash payments required are as follows:—On houses costing less than £100, £10; from £100 to £150, £15; while on houses costing more, the cash payment varies from 12 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 20 years. Five per cent. interest is charged on all advances—whether for houses, preparing land, or money furnished the settler. During the past six years 70,000 acres have been settled in farms averaging 61 acres each—the homes of 1146 new settlers—768 Australian, and 378 from oversea. There are also 400 allotments comprising 20,000 acres ready for immediate occupation, and a further 17,000 acres being prepared for settlers. At Shepparton, one of the oldest of these settlements, there are now 246 settlers living where there were originally 19. In Koyuga there are 47 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. Taking the settlements as a whole, there are now ten settlers' homes for every one that existed on these areas when repurchased by the State.

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.

5. Queensland.—(i.) Closer Settlement. Under the provisions of the Closer Settlement Act of 1906, private lands 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 on the acquisition of land for the purpose of closer settlement is £500,000 in any one year.

(b) *Disposal of Land.* A sufficient part of the land acquired must be set apart for roads, public reserves, and townships, and the remainder is 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 is 40 years. The rent to be paid for the first year is 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, will, at the end of the term, have paid off the principal sum together with interest.

(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 1910 to 1914:—

QUEENSLAND.—CLOSER SETTLEMENT, 1901 and 1910-14.

Year.	Number of Estates Acquired.	Total Area Acquired to Date.	Total Amount of Purchase Money.	Total Area Selected to Date.
		Acres.	£	Acres.
1901	15	132,760	335,056	124,710
1910	27	537,449	1,490,489	437,496
1911	29	644,385	1,670,330	498,315 ¹
1912	29	664,363	1,713,165	525,168
1913	29	664,363	1,713,165	543,788
1914	29	664,363	1,713,165	559,597

1. In addition there were at the end of the year 1913, 12,236 acres sold at auction and 3184 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 1914 was 638,250 acres, of which 559,597 acres had been selected by 2184 selectors. There remained 78,653 acres unselected or reserved. The total amount of rent paid up to the same date was £1,055,089, the amount in arrear being £19,320. At the end of the year 1914 there were 2184 selectors holding 2322 agricultural farms, 244 unconditional selections, and three prickly pear infested selections. In addition, land and improvements to the value of £89,143 had been sold at auction.

(ii.) *Group Settlement.* The Special Agricultural Selections Act 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 1914 numbered 222, and comprised a gross area of 150,919 acres. Up to the end of that year 174 portions, comprising 102,864 acres, valued at £41,266, had been applied for by members of the bodies of settlers for whom they were opened. The greater part of the remaining lots have since been selected.

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 has already been made to the provisions of the Irrigation and Reclaimed Lands Acts 1908, regarding the settlement of reclaimed lands. (See § 7, 5 iv.)

(i.) *Disposal of Land.* The Crown Lands Act Further Amendment Act 1910 enlarges the value of the blocks into which estates may be subdivided for closer settlement purposes from £2000 to £5000 unimproved value. The purchase money with interest thereon at 4 per cent. per annum is payable in seventy half-yearly instalments, the first ten payments being interest only.

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 shows 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 1910 to 1914:—

SOUTH AUSTRALIA.—CLOSER SETTLEMENT, 1902 and 1910-14.

Year.	Area of Lands Repurchased to 31st Dec.	Agreements with Covenantants to Purchase.	Total Area Leased as Homestead Blocks.		Perpetual Leases.	Miscellaneous Leases.	Sold.	Remainder Unoccupied (including Roads).
			Right of Purchase.	Perpetual Lease.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1902	156,481	—	2,717	3,073	90,128	809	403	59,851
1910	527,501	357,480	1,241	1,510	62,386	40,077	35,266	29,541
1911	622,422	411,970	1,077	1,414	55,121	40,082	43,969	69,389
1912	624,122	436,038	894	1,386	49,857	40,101	57,884	38,408
1913	629,574	434,417	818	1,344	50,998	134	61,061	82,146
1914	657,629	476,332	796	1,584	51,863	164	63,964	63,204

During the financial year 1914-15 seven properties of 20,843 acres were repurchased. The total area repurchased at 30th June, 1915, was 658,664 acres, the purchase money being £2,092,101. Of that area 603,279 acres had been allotted to 2565 persons, the average area to each being 235 acres.

(iii.) *Irrigation Areas.* Under the Irrigation and Reclaimed Lands Act, 1908, 1909, 1910 and 1912, 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, etc. 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, etc. 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, deferred payments bearing interest at 5 per cent. per annum. The total amount advanced up to the 30th June, 1915, was £38,934, of which £41,252 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, 1914, was 2172, comprising 33,049 acres, at a purchase price of £78,116, or an average of £2 7s. 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 1000 acres; in special cases 2000 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 1910 to 1915 in the subjoined table:—

WESTERN AUSTRALIA.—CLOSER SETTLEMENT, 1901 and 1910-11 to 1914-15.

* Year.	Total Area Acquired.	Total Purchase- money.	Roads, Reserves, etc.	Total Area made available for Selection.	Area Se- lected during the Year.	Total Area oc- cupied to Date.	Balance of Area available for Selection.	Total Re- venue received to Date.
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	£
1901 ...	46,624	52,764	1,459	45,165	4,295	37,235	7,929	14,451
1910-11	297,391	262,302	14,876	282,515	50,032	261,942	20,573	129,386
1911-12	303,469	270,622	14,506	282,985	8,375	264,885	18,000	151,110
1912-13	446,804	421,333	12,799	290,670	10,335	270,945	19,724	175,245
1913-14	446,804	421,333	128,605	315,133	2,451	268,280	45,873	210,675
1914-15	446,804	421,373	15,825	430,979	4,122	272,190	158,789	239,409

* The figures for 1901 are up to 31st December. For subsequent years they are given as up to 30th June.

On the 30th June, 1914, the total expenditure, exclusive of purchase-money but including interest, was £123,849, which left a balance of £115,559. At the same date the amount invested as sinking fund was £103,779.

(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 1910 to 1915:—

**WESTERN AUSTRALIA.—PARTICULARS OF WORKINGMEN'S BLOCKS,
1901, and 1910-15.**

Year ...	1901.	1910. ¹	1911. ¹	1912. ¹	1913. ¹	1914. ¹	1915. ¹
NUMBER AND AREA OF ACCEPTED APPLICATIONS DURING YEAR.							
Number	2	122	53	28	1	1	Nil.
Area in Acres	6	148	99	56	4	1	Nil.
NUMBER AND AREA OF BLOCKS OCCUPIED AT END OF YEAR.							
Number	7	440	388	327	230	168	189*
Area in Acres	31	719	722	688	617	590	584

1. 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 £4000 in value—and are disposed of by way of lease for ninety-nine 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 $2\frac{1}{2}$ 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, 1915, twenty-one areas had been opened up for closer settlement. Particulars are given in the following statement:—

TASMANIA.—CLOSER SETTLEMENT, 1908 to 1915.

Year.			Number of Farms made Available.	Number of Farms Allotted.	Area of Farms Allotted.	Rental of Farms Allotted.	Total Area Purchased.
					Acres.	£	Acres.
1908	...	...	28	26	8,191	634	11,780
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

The total purchase-money paid by the Government up to the 30th June, 1914, was £258,237.

§ 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, etc., 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 1910 to 1914 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
1910 to 1914.**

Particulars.			N.S.W.	Victoria. ¹	Qld. ²	S. Aust. ³	W. Aust.	Tas.	Cwlth.
AREAS FOR WHICH LEASES AND LICENSES ISSUED.									
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901	...	...	50,349	...	55,693	93,985	37,593	18,125	255,750
1910	...	...	31,674	38,655	41,687	216,273	87,429	24,173	439,891
1911	...	...	42,865	25,353	40,642	59,918	94,853	26,454	290,085
1912	...	...	15,548	34,047	50,783	259,381	64,939	13,920	438,618
1913	...	...	25,154	36,141	146,366	244,528	62,773	15,534	530,496
1914	...	...	31,573	12,774	144,160	766,866	29,127	15,123	999,623
TOTAL AREA OCCUPIED AT END OF YEAR.									
				Not					
1901	...	...	134,209	available	124,182	14,140	66,682	50,362	4389,575
1910	...	...	235,235	136,710	164,737	197,714	164,963	57,908	957,267
1911	...	...	233,030	116,420	171,078	89,077	158,946	58,038	826,589
1912	...	...	228,526	123,228	203,059	292,320	144,846	49,239	1,041,218
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

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, 1914.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1914:—

NEW SOUTH WALES.—LEASES AND LICENSES
ISSUED BY MINES DEPARTMENT DURING YEAR 1914.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
<i>Leases—</i>	Mining Act 1906	To mine for—	Acres.
	" " " " " " " "	Gold	2,170
	" " " " " " " "	Minerals other than coal ...	7,436
	" " " " " " " "	Coal	19,154
	Mining Act 1906 (Dredging)	Leases (mining purposes) ...	802
	" " " " " " " "	Gold	1,877
	" " " " " " " "	Minerals other than gold }	
<i>Other forms of occupancy—</i>	Mining Act 1906	Authorities to prospect ...	134
Total	—	—	31,573

(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 1910 to 1914 inclusive:—

NEW SOUTH WALES.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 AND 1910-1914.

Purposes for which Issued or Occupied.	1901.	1910.	1911.	1912.	1913.	1914.
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LEASES AND LICENSES ISSUED.

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	2,272	6,412	3,708	3,584	4,253	4,047
Mining for other minerals ...	47,990	16,493	27,347	11,671	14,248	26,590
Authorities to prospect ... ..	...	8,107	11,569	183	6,385	134
For other purposes	87	662	241	110	268	802
Total	50,349	31,674	42,865	15,548	25,154	31,573

TOTAL AREAS OCCUPIED.

	6,942	18,917	15,455	15,531	12,623	12,832
Gold mining	6,942	18,917	15,455	15,531	12,623	12,832
Mining for other minerals ...	126,885	199,497	213,209	208,286	198,415	212,864
Authorities to prospect ... ..	...	12,441	...	139	3,989	10
For other purposes	382	4,380	4,366	4,570	4,461	4,787
Total	134,209	235,235	233,030	228,526	219,488	230,493

3. **Victoria.**—The occupation of Crown lands for mining and auxiliary purposes in this State is regulated by the Mines Act 1890-1907. The Department of Mines and Forests is authorised to issue mining leases (gold-mining, mineral, and dredging), and special license (searching, tailings, and water-right), while the issue of miners' rights, business licenses and residence areas is restricted to the Treasury Department. 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. (§ 7, 3 iv.)

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 1914 the number of mining leases, licenses, etc., issued was 207, covering an area of 12,774 acres; the rent, fees, etc., received amounted to £983. 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, and the Mining for Coal and Mineral Oil Act 1912. 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 twenty-one 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 30 acres may be granted for a term of 21 years at an annual rental of 6d. per acre, with a royalty of 5% of the value of all crude oil produced. Licenses to occupy not more than 2560 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, etc. on and under private land, under conditions as to compensation, etc.

(i.) *Particulars of Leases and Licenses Issued, 1914.* The subjoined table gives particulars of the leases and licenses of Crown lands issued for mining purposes during the year 1914:—

QUEENSLAND.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT DURING YEAR 1914.

Lease or License.	Mining Leases.				Miners' Homestead Leases.	Coal Prospecting Licenses.	Miscellaneous Rights & Licenses.
	To mine for gold.	To mine for minerals other than gold.	Tramways	Buildings and machinery.	Residence, business, etc.	To prospect for coal.	Mining, residence, etc.
Purpose for which issued.							
Area in acres...	356	10,895	2	10	10,685	104,212	*18,000

* Approximate.

(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 1910 to 1914 inclusive.

The particulars given are exclusive of miners' rights.

QUEENSLAND.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT, 1901 AND 1910-1914.

Particulars.	1901.	1910.	1911.	1912.	1913.	1914.
* LEASES AND LICENSES ISSUED DURING YEAR.						
Gold mining	Acres. 3,581	Acres. 1,306	Acres. 532	Acres. 918	Acres. 1,055	Acres. 356
Mining for other minerals	7,142	3,105	2,715	3,198	7,248	10,895
For other purposes	44,975	37,276	37,417	46,667	138,072	114,909
Total	55,698	41,687	40,664	50,783	146,375	126,160
* TOTAL AREA OCCUPIED AT END OF YEAR.						
Gold mining	11,296	8,082	7,820	6,884	5,915	5,479
Mining for other minerals	23,113	25,188	24,895	31,253	34,711	39,205
For other purposes	89,773	131,467	138,363	164,922	245,340	239,020
Total	124,182	164,737	171,078	203,059	285,966	283,704

* 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 1914:—

SOUTH AUSTRALIA.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT DURING YEAR 1914.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
			Acres.
<i>Leases ...</i>	Mining Act 1893	To mine for—	3,231
<i>Mineral claims</i>		Gold and other metals and miner's	18,007
<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	745,600
<i>Occupation licenses</i>	Mining Act 1893	Occupation by miners	28
Total	—	—	766,866

(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 1910 to 1914 inclusive:—

SOUTH AUSTRALIA.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT, 1901 AND 1910 TO 1914.

Particulars.	1901.	1910.	1911.	1912.	1913.	1914.
LEASES AND LICENSES ISSUED.*						
Gold mining	Acres. 1,377	Acres. 145	Acres. 340	Acres. 480	Acres. 312	Acres. 625
Mining for other minerals	92,587	216,128	59,578	258,901	244,204	766,213
For other purposes	21	...	...	...	12	28
Total	93,985	216,273	59,918	259,381	244,528	766,866
TOTAL AREAS OCCUPIED.*						
Gold mining	14,140	1,353	1,512	1,536	1,419	1,581
Mining for other minerals ... ..	...	196,256	87,459	290,667	411,175	804,205
For other purposes ... ..	...	105	106	117	99	103
Total	14,140	197,714	89,077	292,320	412,693	805,889

* Exclusive of miners' rights.

The following table shews the total area occupied (exclusive of miners' rights) at the end of the year 1914, classified according to the nature of the holding:—

SOUTH AUSTRALIA.—TOTAL AREA UNDER MINING ACTS, 1914.

Nature of Holding.	Number.	Area.	Nature of Holding.	Number.	Area.
		Acres.			Acres.
Mineral leases	309	14,222	Search licenses ...	286	748,800
Gold leases ...	85	1,579	Coal and oil claims ...	18	11,320
Gold dredging leases	...	...	Gold claims ...	1	2
Miscellaneous leases	64	15,952	Coal and oil leases ...	...	...
Mineral claims	356	13,911			
Occupation licenses	206	103	Total	1,325	805,889

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, 1915.* The following table gives particulars of mining leases and licenses of Crown lands issued during 1915 :—

**WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED BY MINES
DEPARTMENT, 1915.***

Particulars.	Gold-Mining.	Minerals other than Gold.	Miners' Homesteads.	Miscellaneous.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.
Leases ...	8,999	2,367	2,204	39	13,609
Licenses ...	17,163	7,022	...	195	24,380

* 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 1911 to 1915 inclusive :—

**WESTERN AUSTRALIA.—LEASES AND LICENSES
ISSUED BY MINES DEPARTMENT, 1901 AND 1911-1915.**

Particulars.	1901.	1911.	1912.	1913.	1914.	1915.
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LEASES AND LICENSES ISSUED DURING YEAR.*

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining ...	17,454	47,385	23,285	20,657	18,070	26,162
Mining for other minerals	19,281	40,085	33,318	40,111	9,434	9,389
For other purposes	858	7,883	8,336	2,005	1,623	2,438
Total ...	37,593	94,853	64,939	62,773	29,127	37,989

* Exclusive of miners' rights.

TOTAL AREA OCCUPIED AT END OF YEAR.*

	40,525	44,163	33,737	30,464	26,941	30,532
Gold mining ...	14,091	70,944	62,998	71,291	57,495	70,146
Mining for other minerals	12,066	43,839	48,111	48,046	44,173	45,242
For other purposes	66,682	158,946	144,846	149,801	128,609	145,920
Total ...						

* Exclusive of miners' rights.

7. Tasmania.—Under the provisions of the Mining Act 1905, 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. (See § 7, 8 iv.)

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, 1914.* 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 1914 :—

TASMANIA.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT DURING 1914.*

Mineral.	No. of Applications.	Area.	Mineral.	No. of Applications.	Area.
		Acres.			Acres.
Asbestos ...	6	342	Silver ...	4	124
Chrysotile ...	3	160	Tin ...	201	3,546
Coal ...	12	3,728	Dredging claims ...	8	97
Copper... ..	11	465	Machinery sites ...	6	26
Gold ...	56	1,354	Mining easements...	10	14
Limestone ...	2	242	Water rights ...	61	141
Minerals ...	67	4,130			
Nickel... ..	2	138			
Osmiridium ...	38	616	Total... ..	487	15,123

* 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 tables give 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 1910 to 1914 inclusive :—

TASMANIA.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT, 1901 AND 1910 TO 1914.*

Particulars.	1901.	1910.	1911.	1912.	1913.	1914.
LEASES AND LICENSES ISSUED.*						
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	1,067	448	737	477	529	1,354
Mining for other minerals	17,058	23,669	25,316	12,729	14,444	13,588
For other purposes ... ..	...	56	401	714	561	181
Total	18,125	24,173	26,454	13,920	15,534	15,123
TOTAL AREAS OCCUPIED.*						

Gold mining	3,394	1,159	1,220	1,344	988	2,130
Mining for other minerals	46,968	55,050	55,007	45,500	42,360	44,593
For other purposes ... ..	...	1,699	1,811	2,395	2,565	3,240
Total	50,362	57,908	58,038	49,239	45,913	49,963

* See note to preceding table.

8. **Northern Territory.**—The granting of leases and licenses for mining purposes in 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 246).

§ 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 authorised 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 Act 1906, 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 Railways Commissioners Act 1887, the Water Conservation Act 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. 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 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 to 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 insures 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 1910-14:—

AREAS OF PRIVATE LANDS RESUMED BY THE CROWN

(EXCLUSIVE OF RESUMPTIONS FOR CLOSER SETTLEMENT), 1901 AND 1910-14.

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‡
1910 ...	3,878	†	92	†	†	544	†
1911 ...	2,169	†	...	†	†	690	†
1912 ...	2,021	†	123	†	†	†	†
1913 ...	2,363	†	79	†	†	†	†
1914 ...	527	†	...	†	†	†	†

* 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.

§ 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, etc. 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 198,054,420 acres, of which on the 30th June, 1915, 40,100,492 acres, or nearly one-fifth, were alienated absolutely; 19,064,618 acres, or over one-tenth, were in process of alienation; 121,796,091 acres, or about three-fifths, were occupied under Lands Department, Western Land Board, or Mines Department leases and licenses; and the remaining 17,093,219 acres, or about one-eleventh, were unoccupied. The next table shows the areas alienated, in process of alienation, held under leases and licenses, and unoccupied, in 1901 and from 1911-12 to 1914-15.

During the year 1914-15, a total area of 1,577,283 acres became available for Crown leases, homestead farms, suburban holdings, additional holdings, etc. Of this area, 4,352 acres were made available for irrigation farms, and 41,235 acres were acquired under the Closer Settlement Promotion Act.

NEW SOUTH WALES.—ALIENATION AND OCCUPATION OF CROWN LANDS,

1901 and 1911-15.*

Particulars.	Area in Acres.				
	1901.	1911-12.	1912-13.	1913-14.	1914-15.
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
Sold by auction and other sales, 1862 to date ...	14,638,868	14,909,311	14,912,708	14,914,336	14,914,920
Conditionally sold, 1862 to date ...	4,212,189	15,232,355	15,638,374	15,960,930	16,264,942
Granted under Volunteer Land Regulations, 1867 to date ...	168,545	171,498	171,998	172,198	172,198
Granted for public and religious purposes ...	241,968	232,822	234,192	235,622	236,134
Homestead grants ...	35,385	1,518,703	1,480,834	1,396,911	1,365,719
Total area alienated ...	26,443,554	39,211,268	39,584,685	39,826,576	40,100,492
2. In Process of Alienation.					
Under system of deferred payments ...	20,044,703	16,529,008	17,305,305	17,837,702	18,035,210
Under system of homestead selections (including leases converted, but excluding grants issued) ...	1,550,985	\$	\$	\$	\$
Closer settlement purchases ...	...	812,426	928,033	999,579	1,029,408
Total area in process of alienation ...	21,595,688	17,341,434	18,233,338	18,837,281	19,064,618
3. Held under Leases and Licenses.					
Total under Lands Department and Western Land Board ...	126,921,161	125,827,179	124,361,637	122,085,796	121,565,598
Mineral and auriferous leases and licenses (Mines Department) ...	134,209	236,852	228,526	219,488	230,493
Total leases under all Government Departments ...	127,055,370	126,064,031	124,590,163	122,305,284	121,796,091
4. Unoccupied ...	23,543,468	15,437,687	15,646,234	17,086,475	17,093,219

Area of State (exclusive of Commonwealth Territory)—198,054,420 acres.

* The figures for 1901 are up to the 31st December, while for the other years given they are up to the 30th June. † Inclusive of alienated and dedicated areas within Commonwealth Territory, and areas acquired for closer settlement and promotion of same. § Now included under Homestead grants.

3. **Victoria.**—The total area of the State of Victoria is 56,245,760 acres, of which 24,138,965 acres, or about three-eighths, had been alienated absolutely up to the end of the year 1914; 7,362,890 acres, or about one-eighth, were in process of alienation under deferred payments; and 13,325,416 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 1910 to 1914 :—

VICTORIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,

1901 and 1910-14.

Particulars.	Area in Acres.					
	1901.	1910.	1911.	1912.	1913.	1914.
1. <i>Alienated</i>	20,066,875	23,568,070	23,727,962	23,856,389	24,009,440	24,138,965
2. <i>In Process of Alienation</i> —						
Exclusive of Mallee, etc. ...	3,587,668	*2,079,977	1,953,268	1,932,189	1,971,614	2,004,248
Mallee Lands	87,606	3,493,952	4,076,792	4,838,883	5,165,799	5,334,113
Under Closer Settlement Acts ...	...	221,565	303,024	397,402	§(449,791)	§(484,548)
Village Settlements	55,077	39,278	31,911	30,067	25,103	24,529
Total	3,730,351	5,834,772	6,364,995	7,198,531	7,162,516	7,362,890
3. <i>Leases and Licenses Held</i> —						
Under Lands Department ...	17,110,709	15,433,875	14,719,149	14,443,191	13,230,211	13,325,416
Under Mines Department† ...	...	...	...	...	...	...
4. <i>Unoccupied Crown Land‡</i> ...	15,337,825	11,409,043	11,433,654	10,747,649	11,843,593	11,418,489

Total area of State—56,245,760 acres.

* Including 197,778 acres which, having reverted to the Crown in March, 1911, are now included in Mallee Lands. † 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, 1,726,094 acres; water reserves, 316,070 acres; agricultural colleges, etc., 85,107 acres; State forests and timber reserves (now under Forests Act 1907), 3,817,068 acres; State forests and timber reserves under Land Acts, 246,544 acres; reserves in the Mallee, 397,881 acres; unsold land in towns, etc., 2,715,075 acres; and other reserves, 304,835 acres.

4. **Queensland.**—The total area of this State is 429,120,000 acres, of which, on the 31st December, 1914, 16,244,541 acres, or about one-twenty-seventh, were alienated absolutely; 10,586,914 acres, or about one-fortieth, were in process of alienation; 331,499,708, or three-quarters, were occupied under leases and licenses; roads, reserves, etc., occupied 15,561,184 acres, the remaining 55,227,653 acres being unoccupied. From 1901 to 1914 the area alienated absolutely increased by 2,711,073 acres or 20 per cent., and the area in process of alienation by 7,795,250 acres or 279 per cent.

The following table shews the area alienated absolutely, the area in process of alienation, and the area held under various forms of lease and license at the end of the year 1901 and from 1910 to 1914 :—

**QUEENSLAND.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1910-14.**

Particulars.	Area in Acres.					
	1901.	1910.	1911.	1912.	1913.	1914.
1. Alienated Absolutely—						
By Purchase	13,462,304	15,377,626	15,626,173	15,790,907	15,956,663	16,159,145
Without Payment	71,164	82,726	83,013	83,295	85,100	85,396
Total	13,533,468	15,460,352	15,709,186	15,874,202	16,041,763	16,244,541
2. In Process of Alienation ...	2,791,664	7,971,342	9,025,049	9,577,037	10,039,255	10,586,914
3. Occupied under Leases and Licenses—						
Runs in Settled Districts ...	176,000	218,142,640	222,158,880	227,410,480	228,873,480	226,119,640
" Unsettled Districts ...	223,553,760					
Occupation Licenses ...	35,103,600	37,834,960	43,478,880	42,465,360	40,535,160	46,814,960
Grazing Farms and Homesteads ...	21,793,242	38,460,439	42,130,631	47,179,483	52,251,784	57,869,972
Scrub Selections ...	272,946	235,150	234,435	233,436	216,438	214,932
Leases Special Purposes ...	249	57,782	45,000	88,147	107,707	121,595
Under Mines Department ...	124,182	187,158	140,021	203,059	310,966	308,704
Perpetual Lease Selections ...	...	...	18,089	35,179	42,363	49,905
Total	280,023,979	294,918,129	308,205,936	317,615,144	322,337,898	331,499,708
4. Roads and Reserves ...	...	...	14,828,256	15,371,446	15,473,444	15,561,184
5. Unoccupied	132,770,889	110,870,177	81,351,573	70,682,171	65,227,640	55,227,653

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 1914 was 11,013,736 acres, and the area opened during the year was 8,919,269 acres, while the area withdrawn was 1,487,260 acres. The area selected was 8,114,816 acres, and the area remaining open at the end of the year was 10,330,929 acres. The number of grazing selections was 560 as against 547 in the previous year, and their gross area 6,843,406 acres, as against 6,380,548 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 1914, there were 10,506,471 acres, or about one twenty-fourth, alienated absolutely; 2,410,137 acres, or about one one-hundred and thirty-sixth, were in process of alienation; 115,986,348 acres, or about one-half, were occupied under leases and licenses; while the remaining 114,341,844 acres were unoccupied. From 1901 to the end of 1914, the area of land absolutely alienated has increased by very nearly three million acres, or over 36 per cent., while, during the same period, the area of land in process of alienation has increased by almost two million acres, or over 220 per cent. The subjoined table shews for South Australia the area 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 1910-14.**

Particulars.	Area in Acres.					
	1901.	1910.	1911.	1912.	1913.	1914.
1. Alienated—						
Sold	7,413,510	9,146,396	9,769,993	10,129,969	10,296,156	10,383,620
Granted for Public Purposes	121,613	122,393	122,604	122,777	122,818	122,861
Total	7,535,123	9,268,789	9,892,597	10,252,746	10,418,974	10,506,471
2. In Process of Alienation—	553,774	1,463,038	1,761,442	1,782,451	2,032,635	2,410,137
3. Held under Lease and License—						
Right of Purchase	5,639,519	3,697,423	3,150,533	2,836,346	2,701,392	2,634,685
Perpetual	7,115,782	14,789,305	15,020,544	15,070,607	14,997,201	14,969,877
Pastoral	68,916,125	91,434,450	91,546,770	96,356,860	96,933,610	96,382,130
Other Leases and Licenses	3,905,729	1,394,964	1,283,663	1,273,350	1,229,971	1,193,767
*Mining " "	14,140	197,714	89,077	292,323	412,693	805,889
Total	85,591,295	111,513,856	111,090,587	115,829,476	116,275,067	115,986,348
4. Total Occupied	93,680,192	122,245,683	122,744,626	127,864,673	128,726,676	128,902,956
5. Area Unoccupied	149,564,608	120,909,117	120,500,174	115,380,127	114,518,124	114,341,844
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, 1914, 8,007,937 acres, or about a one-seventy-eighth part, were alienated absolutely; 14,079,386 acres, or about one-forty-fourth part, were in process of alienation; while 189,773,915 acres, or nearly one-third, were occupied under leases and licenses issued either by the Lands or the Mines Departments. The remaining 412,727,562 acres, or about two-thirds, were unoccupied.

The following table shews 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, 1911 to 1915:—

**WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1911-15.**

Particulars.	Area in Acres.					
	1901.	1910-11.*	1911-12.*	1912-13.*	1913-14.*	1914-15.*
1. Absolutely Alienated	3,468,878	7,202,696	7,387,929	7,606,759	7,795,319	8,007,937
2. In Process of Alienation—						
Midland Railway Concessions	2,768,810	121,800	121,800	121,800	121,800	54,800
Free Homestead Farms	283,455	1,454,275	1,531,424	1,547,817	1,517,330	1,469,132
Conditional Purchases... ..	1,349,554	7,305,932	8,285,058	8,294,524	8,255,604	8,402,856
Selections from the late W.A. Company	75,213	33,259	16,413	12,716	7,182	4,851
Selections under the Agricultural Lands Purchase Act	37,235	250,646	253,588	261,517	258,191	260,697
Special Occupation Leases and Licenses	8,867	2,404	2,110	2,010	1,803	1,498
Homestead or Grazing Leases	286,425	2,592,043	3,115,727	3,442,557	3,634,233	3,832,648
Poison Land Leases or Licenses	1,306,270	82,019	78,426	72,194	56,862	52,266
Immigrants' Grants	400	100	100	...	...	...
Village Allotments	6	36	35	35	35	34
Working-men's Blocks... ..	31	722	688	617	590	584
Total in Process of Alienation	6,116,266	11,843,236	13,405,369	13,755,787	13,553,630	14,079,386

WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 and 1911-1915.—Continued.

Particulars.	Area in Acres.					
	1901.	1910-11.*	1911-12.*	1912-13.*	1913-14.*	1914-15.*
3. Leases and Licenses in Force—						
(i.) <i>Issued by Lands Department</i>						
Pastoral Leases	96,508,549	167,933,347	173,431,848	183,477,495	180,891,721	186,418,417
Special Leases	448	26,710	33,157	34,442	30,401	35,948
Leases of Reserves	5,296	572,400	630,127	3,402,605	2,136,072	2,129,118
Selections in Goldfields	3,955	100	100	100	100	...
Timber Leases and Licenses	865,180	1,304,282	1,423,282	775,769	658,146	†650,613
Timber Permits ... ..	...	...	...	761,790	411,191	†410,943
Residential Lots	550	468	405	318	224	267
(ii.) <i>Issued by Mines Department</i>						
Gold Mining Leases... ..	34,066	† 100,337	† 158,946	† 94,899	† 149,801	† 128,609
Mineral Leases	6,576					
Other Leases	8,623					
Licenses	17,397					
Total under Leases and Licenses	97,450,660	169,937,644	175,677,865	188,547,418	184,277,656	189,773,915
4. Area Unoccupied ...	517,552,996	435,605,224	248,117,637	414,678,836	418,662,195	412,727,562

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 1914, 5,085,863 acres, or about three-tenths, alienated absolutely; 1,248,844 acres, or about one-thirteenth, were in process of alienation; 1,826,805 acres, or about one-tenth, were occupied under leases and licenses for either pastoral, agricultural, timber, or mining purposes, the remaining 8,616,083 acres, or nearly one-half, being unoccupied. The following table shows 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 1910 to 1914:—

TASMANIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 and 1910-14.

Particulars.	Area in Acres.					
	1901.	1910.	1911.	1912.	1913.	1914.
1. Alienated Absolutely ...	4,621,585	4,932,276	4,965,331	5,005,175	5,051,112	5,085,868
2. In Process of Alienation ...	272,376	1,104,379	1,274,947	1,310,728	1,290,705	1,248,844
3. Leases or Licenses						
(i.) <i>Issued by Lands Department—</i>						
Islands	149,165	87,100	62,000	135,025	134,908	135,000
Ordinary Leased Land	1,280,688	1,176,900	1,242,400	1,245,400	1,280,400	1,400,300
Land Leased for Timber	40,768	108,889	134,516	136,471	160,216	162,631
Closer Settlement	—	29,726	34,841	46,317	*45,572	*52,800
(ii.) <i>Issued by Mines Department</i>	50,362	57,908	44,953	79,239	45,913	52,376
(iii.) <i>Occupied by Commonwealth and State Departments</i> ... ..	...	...	...	...	7,121	8,498
(iv.) <i>Reserved for Public Purposes</i> ... ..	...	...	...	...	63,000	68,000
Total	1,520,983	1,460,523	1,518,710	1,642,352	1,691,558	1,826,805
4. Total Area Occupied ...	6,414,944	7,497,178	7,758,988	7,958,255	8,033,375	8,161,517
5. Area Unoccupied ...	10,362,656	9,280,422	9,018,612	8,819,345	8,744,225	8,616,083

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 1914, there were 474,470 acres, or only about one seven-hundred-and-seventh part alienated absolutely; 104,459,233 acres, or nearly two-sevenths, were held under leases and licenses; while the remaining 230,183,097 acres, or about five-sevenths, were unoccupied. The following table shews the area of land alienated absolutely, and also the area under lease:—

**NORTHERN TERRITORY.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1910-14.**

Particulars.	Area in Acres.					
	1901.	1910.	1911.	1912.	1913.	1914.
1. Alienated—						
Sold	473,230	473,942	474,147	473,942	473,942	474,222
Granted for Public Purposes	48	48	48	48	48	48
Total Alienated	473,278	473,990	474,195	473,990	473,990	474,470
2. Leased—						
Right of Purchase	1,067	667	667	667	667	436
Pastoral	111,476,240	98,729,120	100,522,240	94,329,600	93,748,100	104,370,160
Other Leases	1,176,981	445,236	385,277	1,696,171	1,762,538	88,637
Total Leased	112,654,288	99,175,023	100,908,184	96,026,438	95,511,305	104,459,233
3. Total Occupied	113,127,566	99,649,013	101,382,379	96,500,428	95,985,295	104,933,703
4. Remainder Unoccupied*	221,989,234	235,467,787	233,734,421	238,616,372	239,131,505	230,183,097

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.

A table shewing the movement of land consequent on the operation of the Commonwealth Land Tax Act of 1910, can be found in the section dealing with Commonwealth Finance.

The following table gives particulars of the number and aggregate area of holdings of lands alienated and in process of alienation in area series, as returned to the collectors of agricultural statistics, for all the States excepting Queensland for the season 1914-15:—

**CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES,
1914-15.**

Size of Holdings.	N.S.W.	Victoria.*	S. Aust.	W. Aust.	Tasmania.	N. Territory	Federal Territory	Total.
NUMBER.								
Acres.								
1 to 50 ...	39,602	18,757	7,013	4,031	4,416	...	38	73,857
51 " 100 ...	8,771	7,356	1,778	645	2,306	4	28	20,888
101 " 500 ...	26,576	24,735	5,801	3,349	5,165	19	81	65,726
501 " 1,000 ...	9,068	10,181	3,835	3,676	731	4	30	27,525
1,001 " 5,000 ...	7,777	5,364	3,417	4,025	676	...	38	21,297
5,001 " 10,000 ...	928	267	114	235	168	...	4	1,716
10,001 " 20,000 ...	389	116	41	93	70	...	...	709
20,001 " 50,000 ...	231	34	23	25	35	...	3	351
50,001 and over ...	78	1	1	7	3	...	...	90
Total... ..	93,420	66,811	22,023	16,086	13,570	27	223	212,159

AREA.

Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1 to 50 ...	501,236	356,959	114,909	47,180	73,012	...	662	1,094,002
51 " 100 ...	691,393	558,534	139,585	55,129	159,601	307	2,214	1,606,763
101 " 500 ...	6,822,664	6,359,230	1,647,435	912,033	1,049,400	4,170	21,224	16,816,156
501 " 1,000 ...	6,353,324	7,123,402	2,809,481	2,993,551	489,801	2,560	22,208	19,794,327
1,001 " 5,000 ...	15,443,352	9,552,404	6,044,452	7,916,061	1,387,235	...	72,143	40,415,647
5,001 " 10,000 ...	6,345,809	1,825,862	734,288	1,614,111	798,000	...	31,790	11,349,860
10,001 " 20,000 ...	5,373,204	1,609,045	574,105	1,322,918	933,125	...	...	9,812,397
20,001 " 50,000 ...	6,848,152	992,521	700,008	716,343	900,150	...	83,070	10,240,244
50,001 and over ...	6,881,261	51,400	58,880	487,272	321,150	...	...	7,800,063
Total... ..	55,260,545	28,429,357	12,823,143	16,064,598	6,111,474	7,037	233,311	118,929,465

* For the year 1912-13.

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, 1914, the corresponding number was 93,420, shewing an increase of about 34 per cent. The following table shews the number of holdings of land alienated and in process of alienation, on the 31st March, 1901, and from 1910 to 1915:—

**NEW SOUTH WALES.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF
ALIENATION, 1901 and 1910-15.**

Size of Holdings.	1900-01.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50 ...	28,155	36,288	37,272	38,211	38,641	39,268	39,602
51 " 100 ...	8,929	9,173	9,159	9,027	8,955	8,923	8,771
101 " 500 ...	20,504	24,672	25,322	25,964	26,251	26,493	26,576
501 " 1,000 ...	6,105	7,632	7,911	8,329	8,616	8,842	9,068
1,001 " 5,000 ...	4,464	5,991	6,395	6,934	7,287	7,529	7,777
5,001 " 10,000 ...	579	711	738	825	853	889	928
10,001 " 20,000 ...	352	348	344	371	379	394	389
20,001 " 50,000 ...	202	264	267	247	245	235	231
50,001 and over ...	149	99	95	84	86	82	78
Total	69,439	85,178	87,503	89,992	91,313	92,655	93,420

3. **Victoria.**—Lands alienated absolutely and in process of alienation in this State were classified according to size in 1906, 1908, 1910, and 1912. The following table shews the number and area of holdings of such lands on the 1st March of those years:—

VICTORIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF ALIENATION, 1906-1912.

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

4. **South Australia.**—In the State of South Australia the number of holdings of alienated lands, and lands in process of alienation, was available for the first time in 1910-11. The following table shews the number and area of such holdings for that and each subsequent year:—

SOUTH AUSTRALIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF ALIENATION, 1911-12 to 1914-15.

Size of Holdings.				1911-12.	1912-13.	1913-14.	1914-15.
Acres.				Number.	Number.	Number.	Number.
1 to	50	...	...	6,823	6,909	6,757	7,013
51 "	100	...	...	1,728	1,724	1,726	1,778
101 "	500	...	...	5,729	5,691	5,800	5,801
501 "	1,000	...	...	3,538	3,590	3,707	3,835
1,001 "	5,000	...	...	2,844	3,075	3,196	3,417
5,001 "	10,000	...	...	118	109	112	114
10,001 "	20,000	...	...	52	48	42	41
20,001 "	50,000	...	...	21	22	22	23
50,001 and over		...	...	1	...	1	1
Total	...	...	...	20,854	21,168	21,369	22,023

5. **Western Australia.**—In this State the number of holdings of one acre and over in area was 5699 for the season 1900-1 (see Year Book No. 1), and 22,023 for the season 1914-15, shewing an increase of 16,324, or nearly 300 per cent. The subjoined table shews the number of holdings of land alienated, and in process of alienation, for 1901 and 1911-1915:—

**WESTERN AUSTRALIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS
OF ALIENATION, 1901 and 1911-15.**

Size of Holdings.	1900-1.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50 ...	1,728	3,135	3,274	3,656	3,820	4,031
51 „ 100 ...	198	549	571	609	608	645
101 „ 500 ...	2,302	3,212	3,171	3,320	3,354	3,349
501 „ 1,000 ...	717	2,777	3,024	3,465	3,569	3,676
1,001 „ 5,000 ...	607	2,616	2,967	3,545	3,912	4,025
5,001 „ 10,000 ...	73	189	200	213	240	235
10,001 „ 20,000 ...	38	79	77	82	82	93
20,001 „ 50,000 ...	36*	24	26	28	27	25
50,001 and over ...	...	7	6	7	8	7
Total ...	5,699	12,588	13,316	14,925	15,620	16,086

* Including all holdings of 20,001 acres and upwards.

6. **Tasmania.**—In Tasmania the total number of holdings of land alienated and in process of alienation 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 1910-11 and subsequent years :—

**TASMANIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF
ALIENATION, 1910-11 to 1914-15.**

Size of Holdings.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Acres.	Number.	Number.	Number.	Number.	Number.
1 to 50 ...	4,596	4,624	4,752	4,402	4,416
51 „ 100 ...	2,334	2,413	2,378	2,271	2,306
101 „ 500 ...	4,957	5,036	5,161	5,088	5,165
501 „ 1,000 ...	675	669	705	721	731
1,001 „ 5,000 ...	589	621	634	667	676
5,001 „ 10,000 ...	119	117	123	116	168
10,001 „ 20,000 ...	51	60	62	69	70
20,001 „ 50,000 ...	26	31	28	34	35
50,001 and over ...	2	2	1	3	3
Total ...	13,349	13,573	13,844	13,371	13,570

§ 13. The Progress of Land Settlement, 1901 to 1914.

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 1910 to 1914 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 *bonâ fide* settlers by the introduction of new forms of tenure on easy terms and conditions.

From 1901 to 1914 the area alienated absolutely in the whole Commonwealth increased by 28,469,603 acres, or 37 per cent. ; the area in process of alienation increased by 19,782,667 acres, or 56 per cent. ; the area leased by 157,573,858 acres, or 22 per cent. ; while the area unoccupied decreased by 205,826,128 acres, or 24 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 1910-14.

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, 198,054,420 ACRES.								
1901†	26,443,554	13.32	21,595,688	10.87	127,055,370	63.96	23,543,468	11.85
1910	37,999,049	19.13	15,460,919	7.78	125,733,630	63.30	19,444,482	9.79
1911	38,741,736	19.50	16,210,185	8.16	123,223,559	62.04	20,462,600	10.30
1912‡	39,211,268	19.75	17,341,434	8.75	126,064,031	63.65	15,437,687	7.85
1913‡	39,584,685	19.98	18,233,338	9.21	124,590,163	62.91	15,646,234	7.90
1914‡	39,825,380	20.11	18,837,281	9.51	122,305,284	61.75	17,086,475	8.63
1915‡	40,100,492	20.25	19,064,618	9.62	121,796,091	61.50	17,093,219	8.63
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
1910	23,568,070	41.90	5,869,185	10.43	15,433,875	27.45	\$11,374,630	\$20.22
1911	23,727,962	42.18	6,364,995	11.31	14,719,149	26.34	\$11,433,654	\$20.17
1912	23,856,389	42.41	7,198,531	12.79	14,443,191	25.67	\$10,747,649	\$19.13
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
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
1910	15,460,352	3.60	7,971,342	1.86	295,385,129	68.84	110,303,177	25.70
1911	15,709,186	3.66	9,025,049	2.10	308,205,936	71.82	96,179,829	22.42
1912	15,874,202	3.69	9,577,037	2.23	317,615,144	74.01	86,053,617	20.07
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
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
1910	9,268,789	3.81	1,463,038	0.60	111,513,856	45.80	120,999,117	49.79
1911	9,892,597	4.07	1,761,442	0.72	111,090,587	45.67	120,500,174	49.54
1912	10,252,746	4.22	1,782,451	0.73	115,829,476	47.62	115,380,127	47.43
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

* Including roads and reserves. † To 31st December; subsequent years to 30th June.
‡ Exclusive of Commonwealth Territory. § Including Mines Department leases and licenses.

TOTAL AREAS 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
1910*	4,449,329	0.71	12,880,195	2.06	167,236,201	26.78	440,023,075	70.45
1911*	7,202,696	1.15	11,843,236	1.90	169,937,644	27.21	435,605,224	69.74
1912*	7,387,929	1.18	13,405,369	2.16	175,677,865	28.13	428,117,637	68.53
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

* To 30th June.

TASMANIA.—AREA, 16,777,600 ACRES.

1901	4,621,585	27.54	272,376	1.62	1,520,933	9.06	10,362,656	61.78
1910	4,932,276	29.40	1,104,379	6.58	1,460,523	8.71	9,280,422	55.31
1911	4,965,331	29.60	1,274,947	7.60	1,518,710	9.05	9,018,612	53.75
1912	5,005,175	29.83	1,310,728	7.82	1,642,352	9.78	8,819,345	52.57
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

NORTHERN TERRITORY.—AREA, 335,116,800 ACRES.

1901	473,278	0.14	...	...	112,654,288	33.62	221,989,234†	66.24
1910	473,990	0.14	...	...	99,175,023	29.60	235,467,737†	70.26
1911	474,195	0.14	...	...	100,908,184	30.11	233,734,421†	69.75
1912	473,990	0.14	...	...	96,026,438	28.66	238,616,372†	71.20
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

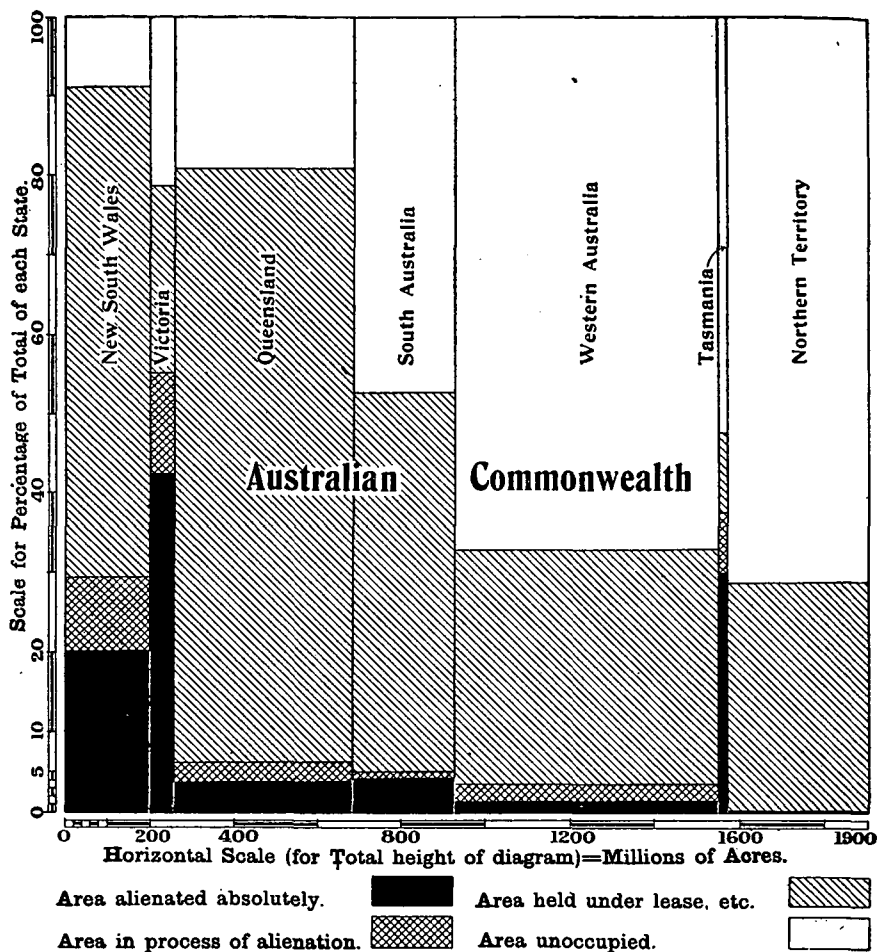
THE COMMONWEALTH.†—AREA, 1,903,731,840 ACRES.

1901	76,142,761	4.00	35,060,119	1.84	721,407,284	37.89	1,071,121,676	56.27
1910	96,151,855	5.05	44,749,058	2.35	815,938,237	42.85	946,892,690	49.75
1911	100,713,498	5.29	46,479,854	2.45	822,440,546	43.20	934,097,942	49.06
1912	102,746,699	5.40	51,977,451	2.73	858,932,085	45.11	890,075,605	46.76
1913	104,474,882	5.44	52,717,936	2.76	858,143,026	45.08	889,390,996	46.72
1914	104,612,364	5.50	54,842,786	2.88	878,981,142	46.17	865,295,548	45.45

* Including roads and reserves. † Including aboriginal reserves and mission stations.

‡ Including Federal Capital Territory.

2. **Diagram shewing Condition of Public Estate.**—The following diagram shows the condition of the public estate in the Commonwealth at the end of the year 1914. 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 1915:—

FEDERAL CAPITAL TERRITORY, TENURES OF LAND, 1915.

Area of acquired lands	...	...	...	...	* { Leased 146,956 acres Unoccupied 28,094 "	Acres. 175,050
Lands alienated	...	...	...	...	...	53,620
In process of alienation— (Conditional purchases and conditional leases)	...	...	...	...	...	89,997
Held under lease issued by the State	...	...	...	...	...	166,670
Unoccupied lands (roads, reserves, etc.)	...	...	...	...	...	98,323
Total Area of Territory	...	...	...	...	...	583,660

* Including land held under agistment or still occupied by late owners.

SECTION VII.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—In previous issues of the Year Book will be found a brief review of the history of the pastoral industry in Australia up to the year 1860. (See Year Book No. 6, page 330.)

2. **Subsequent Statistics.**—The statistical records of live stock in Australia prior to the year 1860 are somewhat defective, but 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, no such particulars were 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 thence onwards in single years, are given in the following table, and are shewn continuously in the graphs as given hereinafter.

During the fifty-four years covered by the table the live stock of the Commonwealth increased considerably, horses by 484 per cent., cattle 179 per cent., sheep 290 per cent., and pigs 146 per cent. The average annual increases which these aggregates represent are as follows:—Horses, 3.32 per cent. per annum; cattle, 1.92 per cent.; sheep, 2.55 per cent.; and pigs, 1.68 per cent.

COMMONWEALTH LIVE STOCK, 1860 to 1914.

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
1911	2,279,027	11,828,954	93,003,521	1,110,721
1912	2,408,113	11,577,259	83,263,686	845,255
1913	2,521,983	11,483,882	85,057,402	800,505
1914	2,521,272	11,051,573	78,600,394	862,447

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. The falling-off in the number of sheep in 1912 was 9,739,835, of cattle 251,695, and of pigs 265,466, being 10.47, 2.13 and 23.9 respectively. The number of horses during 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 on record. This drought was, with the exception perhaps of that of 1902, the most intense ever recorded, especially during the winter-spring seasons of 1914 which were phenomenally dry and disastrous—resulting in a general failure of the crops all through the wheat belt in 1914, and subsequently heavy stock losses and the failure of the sugar crops of the East Coast, and many of the cereal crops on the Downs in Queensland.

The extraordinary recuperative power of Australia is evidenced by the large increases in the numbers of stock which the good seasons, supervening on the various droughts, have witnessed. Thus, in the nine years from 1902 to 1911, horses increased by 754,426, cattle by 4,766,212, and sheep by 38,335,174, 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, 1911, 1,110,721.

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-four years in the manner shewn in the succeeding table:—

NUMBER OF LIVE STOCK PER HEAD OF POPULATION, 1860 to 1914.

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	1911	0.50	2.59	20.36	0.24
1880	0.48	3.37	27.87	0.37	1912	0.51	2.45	17.59	0.18
1885	0.42	2.75	25.05	0.28	1913	0.52	2.36	17.46	0.16
1890	0.48	3.27	31.06	0.28	1914	0.51	2.24	15.91	0.17
1895	0.48	3.36	25.93	0.24					

Considered in relation to population, the live stock attained its maximum in the period 1890-5, and its minimum in the year 1902. During the period of fifty-four years under review, the number of horses varied but slightly in proportion to population, the range being from 0.38 to 0.52 per head. In the case of cattle, the limits of variation were 1.82 and 3.45; sheep, 13.85 and 31.06; and pigs, 0.16 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 on 31st December, 1914, were as follows:—

NUMBER OF LIVE STOCK PER SQUARE MILE, 31st DECEMBER, 1914.

States and Territories.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales	2.36	7.99	106.23	0.93
Victoria	6.28	15.50	137.13	2.77
Queensland	1.10	8.13	34.49	0.25
South Australia	0.70	0.79	11.07	0.18
Western Australia	0.16	0.88	4.57	0.06
Tasmania	1.61	6.81	63.89	1.33
Northern Territory	0.04	0.79	0.13	0.002
Federal Territory	1.89	7.77	151.11	0.25
Commonwealth	0.85	3.72	26.42	0.29

7. **Minor Classes of Live Stock.**—The numbers of minor classes of live stock returned as at 31st December, 1914, were as follows:—Goats, 233,644; camels, 11,453; mules and donkeys, 9283; and ostriches, 1658. Of these, goats were most numerous in Queensland, camels and donkeys in Western Australia, and mules 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 233,644 goats shewn above. Of these, 7349 were in New South Wales, and 5543 in Queensland, while the quantity of mohair produced in the latter State in 1914 was set down at 3427 lbs., and the number of skins placed on the market was returned as 632.

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 1910 to 1914-15 are as follows:—

**QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS
OF THE COMMONWEALTH, 1910 to 1914-15.**

Products.	Unit of Quantity.	1910.	1911.	1912.	1913.	1914-15.
Animals (living)—						
Cattle	No.	3,641	9,861	16,050	14,548	10,121
Horses	"	6,619	4,377	7,055	7,761	23,655
Sheep	"	10,281	18,965	31,210	33,322	10,749
Bones	cwt.	14,145	17,151	20,885	37,848	33,802
Glue Pieces and Sinews	"	20,570	29,211	33,033	38,297	30,689
Glycerine	lb.	*	*	*	*	*
Hair	"	304,006	287,957	152,369	279,108	206,602
Hoofs	cwt.	7,677	8,617	10,416	12,476	11,013
Horns	"	*	*	*	*	*
Meats—						
Frozen Beef	lb.	109,421,146	108,774,397	142,186,123	218,911,159	292,056,035
" Mutton and Lamb	"	190,238,396	129,567,812	115,365,547	204,919,042	193,263,877
" Rabbits and Hares	pair	9,652,127	8,362,994	6,494,259	9,366,200	10,290,016
" Other	lb.	2,640,275	4,025,715	4,797,512	7,685,149	13,107,560
Potted and Extract of Preserved in Tins, etc.	"	33,556,048	40,347,183	33,571,112	51,731,741	57,326,285
Other	"	591,196	1,062,233	2,957,745	1,154,580	298,019
Sausage Casings	"	*	*	*	*	*
Skins—						
Hides	No.	286,639	452,942	746,088	1,037,882	1,134,483
Sheep	"	11,119,338	9,748,630	10,650,834	10,997,873	10,396,987
Rabbit and Hare	cwt.	86,930	92,587	87,878	86,998	56,437
Other, including Undressed Furs	No.	*	*	*	*	*
Tallow	cwt.	1,256,661	1,343,046	1,058,341	1,435,156	1,106,023
Wool—Greasy	lb.	586,883,111	578,622,185	557,683,801	531,248,798	443,812,275
Scoured	"	77,042,042	69,233,301	60,232,936	60,873,478	60,846,240
Tops	"	1,123,469	2,515,106	3,018,050	3,561,722	4,095,966

* Quantity not available.

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 £190,825,736 for the period, or an average of £38,165,147 per annum, of which wool represents nearly 68 per cent. Meats, skins, and tallow rank next in order of importance.

**VALUE OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE
COMMONWEALTH, 1910 to 1914-15.**

Products.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£
Animals (living)—					
Cattle	11,516	37,864	64,233	50,229	19,558
Horses	—1,267	—138,022	—23,017	63,389	378,505
Sheep	16,448	12,732	61,879	46,665	14,204
Bones	7,366	9,798	12,310	22,021	20,918
Glue Pieces and Sinews	11,037	13,645	18,139	23,328	17,641
Glycerine	10,169	15,926	13,621	13,769	13,900
Hair	25,879	24,987	29,950	28,160	26,445
Hoofs	2,804	3,169	4,922	6,178	4,156
Horns	25,532	25,673	30,339	30,444	15,300
Meats—					
Frozen Beef	1,179,060	1,101,914	1,630,306	2,652,144	4,989,810
„ Mutton and Lamb	2,161,495	1,633,597	1,592,302	2,896,292	3,413,848
„ Rabbits and Hares	486,592	407,034	320,887	497,568	531,920
„ Other	40,816	43,390	59,706	99,509	180,841
Potted and Extract of	70,504	57,356	60,779	203,412	347,471
Preserved in Tins, etc.	602,880	756,148	611,268	1,062,618	1,829,601
Other	8,173	13,010	12,944	17,677	4,375
Sausage Casings	38,204	37,129	8,735	32,133	25,872
Skins—					
Hides	286,274	467,364	871,953	1,418,191	1,234,871
Sheep	2,003,810	1,603,718	1,988,122	2,480,900	1,743,209
Rabbit and Hare	566,739	498,037	576,179	620,487	230,139
Other, including Undressed Furs	822,095	476,872	647,959	746,023	106,319
Tallow	1,888,796	1,934,009	1,545,033	2,157,610	1,566,907
Wool—Greasy	23,431,947	21,388,155	22,066,585	21,472,360	17,470,385
Scoured	5,202,683	4,398,126	3,957,792	4,380,184	4,113,951
Tops	134,874	275,406	323,299	415,670	511,021
Total Values	38,964,426	35,112,037	36,481,245	41,436,861	38,811,167

Note. — 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 742,159 horses in that State, in the same year there being 731,735 in New South Wales, and 552,053 in Victoria. The figures for the several States for a series of years are as follows:—

**NUMBER OF HORSES IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 to 1914.**

Year.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Terr.	Commonwealth.
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	304,098	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
1911...	687,242	507,813	618,954	259,719	140,277	41,853	21,407	1,762	2,279,027
1912...	714,952	530,494	674,573	276,539	147,629	44,039	18,382	1,505	2,408,113
1913...	744,458	562,331	706,472	283,641	156,636	43,941	22,792	1,712	2,521,983
1914...	†731,735	552,053	742,159	267,877	161,625	42,232	21,985	1,606	2,521,272

* Statistics not collected prior to 1880.

† 30th June, 1915.

3. Proportion in the Several States and Territories.—The percentages of the numbers 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 1910 to 1914.**

Year.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tas.	North'n Terr.	Fed. Terr.	Commonwealth.
	%	%	%	%	%	%	%	%	%
1901...	30.03	23.90	28.52	10.20	4.55	2.00	0.80	...	100.00
1910...	30.04	21.80	27.42	11.51	6.19	1.91	1.13	...	100.00
1911...	30.15	22.28	27.16	11.40	6.15	1.84	0.94	0.08	100.00
1912...	29.69	22.03	28.01	11.48	6.13	1.83	0.77	0.06	100.00
1913...	29.52	22.30	28.01	11.25	6.21	1.74	0.90	0.07	100.00
1914...	29.02	21.90	29.44	10.62	6.41	1.68	0.87	0.06	100.00

During the period under review, the proportions in Queensland, South Australia, and Western Australia have increased, those in New South Wales and Victoria have diminished, while in the case of Tasmania and the Northern Territory the proportion in 1914 was practically identical with that in 1901.

4. Oversea Export Trade in Horses.—Australia's export trade in horses is a fairly considerable, though somewhat fluctuating, one. During the past five years it has varied in number between 8,562 for the year 1913 and 24,107 in 1914-15, and in value between £163,730 in the former and £1,289,307 during the latter year. The total number of horses exported during the five years amounted to 64,146, an average of 12,829 per annum. The total value of the exports for the period was £1,289,307, or £257,861 per annum. The average export value per head for the period was £20 2s. Od. The numbers exported to the principal countries concerned in this trade are as follows :—

**NUMBER AND DESTINATION OF HORSES EXPORTED FROM THE COMMONWEALTH,
1910 to 1914-15.**

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
India	9,187	7,416	7,299	6,775	21,162	51,839
Java	450	880	584	799	65	2,778
Straits Settlements	605	481	410	436	24	1,956
Philippine Islands	727	350	247	88	...	1,412
Ceylon	265	198	156	3	...	622
Mauritius	403	112	46	95	...	656
Fiji	190	180	146	106	117	739
New Zealand	122	92	77	90	52	433
Japan	43	45	41	59	16	204
Papua	110	47	56	57	9	279
Siam ... ..	...	165	...	...	...	165
China	1	13	25	...	...	39
Hong Kong ... ..	...	32	...	...	...	32
South African Union	1	12	13	8	3	37
Other Countries	57	86	107	46	2,659	2,955
Total	12,161	10,109	9,207	8,562	24,107	64,146

The corresponding particulars relative to the value of the horses exported are given in the next table :—

VALUE OF HORSES EXPORTED FROM THE COMMONWEALTH, 1910 to 1914-15.

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 years.
	£	£	£	£	£	£
India	171,862	135,840	129,186	107,925	387,046	931,859
Java	10,424	19,235	13,459	21,465	1,243	65,826
Straits Settlements	21,185	12,939	11,322	11,614	555	57,615
Philippine Islands	14,971	7,795	5,449	2,061	...	30,276
Ceylon	7,486	3,622	3,403	840	...	15,351
Mauritius	7,191	2,371	1,358	3,229	...	14,149
Fiji	4,566	4,788	3,642	3,215	3,337	19,548
New Zealand	12,403	17,322	11,435	5,319	9,765	56,244
Japan	1,860	2,115	2,650	2,836	875	10,336
Papua	2,055	920	899	1,271	171	5,316
Siam ... ..	...	7,298	...	...	...	7,298
China	60	390	625	...	...	1,075
Hong Kong ... ..	...	800	...	...	...	800
South African Union	25	500	695	211	60	1,491
Other Countries	2,016	4,016	5,421	3,744	56,926	72,123
Total	256,104	219,951	189,544	163,730	459,978	1,289,307

It will be seen from the foregoing tables that the export trade in horses with India, the Straits Settlements, and Java was fairly uniform throughout the first four years under review, but that the particulars for some of the other countries specified exhibited marked fluctuations.

During the year ended 30th June, 1915, a large increase took place in the number and value of horses exported to India and "Other Countries." The latter included 2270 horses valued at £50,075 shipped to France, while the former increase is accounted for by the greater demand for remounts for the Indian Army. A large number of horses also left the Commonwealth with the Australian Imperial Forces and are not included with the above figures.

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 five years was £71 17s. 0d., as compared with £20 2s. 0d. per head for the exports for the same period. The average number imported per annum was, however, only 2938, and the average annual value £210,944. The following table furnishes a comparison of imports and exports of horses during the five years 1910 to 1914-15:—

COMMONWEALTH IMPORTS AND EXPORTS OF HORSES, 1910 to 1914-15.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1910 ...	5,542	307,371	12,161	256,104	6,619	— 51,267
1911 ...	5,732	347,973	10,109	219,951	4,377	— 128,022
1912 ...	2,152	217,561	9,207	189,544	7,055	— 28,017
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
Total for 5 years	14,679	1,054,719	64,146	1,289,307	49,467	234,588

Note. — signifies value of net imports.

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.	Country.	Date.	Number of Horses.
Russian Empire ...	1912	30,437,871	Sweden ...	1913	596,136
Utd. States America	1910	23,015,902	Cuba ...	1912	334,694
Argentine Republic	1912	9,427,000	Uruguay ...	1908	556,307
Germany...	1912	4,523,059	Bulgaria ...	1910	477,733
Austria-Hungary ¹ ...	1910-1913	4,379,884	Denmark ...	1914	568,240
France ...	1914	3,230,700	Spain ...	1912	525,853
Australia...	1914	2,521,272	Chile ² ...	1912-13	553,869
Canada ...	1911	2,595,912	New Zealand ...	1911	404,284
United Kingdom ...	1914	1,915,533	Netherlands ...	1913	334,445
Japan ...	1913	1,582,125	Belgium...	1910	317,080
British India ...	1913-14	1,643,374	Algeria ...	1912	221,140
Italy ...	1908	955,878	Norway ...	1910	167,714
Rumania...	1900	864,324	Servia ...	1910	152,523
Mexico ...	1902	859,217	Switzerland ...	1911	144,128
Union of Sth. Africa	1911	714,414	Egypt ...	1913	47,911

1. Austria 1910, Hungary 1913, Croatia-Slavonia 1911, Bosnia-Herzegovina 1911.

2. Including mules and asses.

9. **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 1914 than in 1901. Particulars for 1901 and the past five years are as follows:—

NUMBER OF HORSES PER HEAD OF POPULATION, 1901 and 1910 to 1914.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Terr.	C'wth.
1901	0.35	0.32	0.91	0.46	0.38	0.18	2.76	...	0.42
1910	0.40	0.36	0.99	0.61	0.48	0.21	7.42	...	0.49
1911	0.41	0.37	0.99	0.62	0.48	0.22	6.59	0.92	0.50
1912	0.40	0.38	1.06	0.64	0.48	0.22	5.29	0.78	0.51
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	0.87	0.51

§ 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.

The numbers of cattle in the several States and the Northern Territory at quinquennial intervals from 1860 to 1910 and for each subsequent year are as follows:—

**NUMBER OF CATTLE IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 to 1914.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	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	*19,720	...	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
1911	3,185,824	1,647,127	5,073,201	393,566	843,638	217,406	459,780	8,412	11,828,954
1912	3,033,726	1,508,089	5,210,891	383,418	806,294	222,181	405,552	7,108	11,577,259
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†	1,362,542	5,455,943	300,579	863,835	176,524	414,558	4,961	11,051,573

* Statistics not collected prior to 1880. † 30th June, 1915.

3. **Proportion in each State.**—During the period elapsing between 1901 and 1914 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 1910 to 1914.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Territory.	C'wealth.
	%	%	%	%	%	%	%	%	%
1901 ...	24.11	19.12	44.43	2.65	4.69	1.99	3.01	...	100.00
1910 ...	26.74	13.18	43.69	3.28	7.02	1.72	4.37	...	100.00
1911 ...	26.92	13.92	42.89	3.33	7.14	1.84	3.89	0.07	100.00
1912 ...	26.20	13.03	45.01	3.31	6.97	1.92	3.50	0.06	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

A comparison of the positions of the several States in 1901 and 1914 shews that, while New South Wales and Victoria's proportion of the Commonwealth herds suffered considerable diminution, and that for Tasmania a falling off to a slight extent, fairly large increases are in evidence in the other States, more especially in Western Australia, the Northern Territory also shewing 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 1910 to 1914.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901 ...	114	3,591	2,413	22,088	2,299	18,497
1910 ...	104	8,665	3,745	20,181	3,641	11,516
1911 ...	103	7,806	9,964	45,670	9,861	37,864
1912 ...	33	1,502	16,083	65,735	16,050	64,233
1913 ...	57	5,572	14,605	55,801	14,548	50,229
1914 ...	221	21,090	10,342	40,648	10,121	19,558

The average value of the cattle imported into the Commonwealth during the last five years was £86 3s. 4d. per head, while the average value of the cattle exported during the same period was £4 3s. 4d. The imported cattle were principally for stud purposes.

The comparatively large exports for the years 1912 and 1913 were due to shipments to Java and Philippine Islands valued at £42,290 and £61,766 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 of the missing data for these States have, however, been made, as shewn in the following table:—

CATTLE (INCLUDING CALVES) SLAUGHTERED IN STATES, TERRITORIES AND COMMONWEALTH, 1901 and 1910 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. †	N.T.	Fed. Ter.	C'wealth.
1901	335,823	251,477	377,433	*72,000	39,424	34,000	†	...	1,110,157
1910	483,947	319,665	378,514	84,164	55,723	37,000	4,061	...	1,863,074
1911	548,651	347,926	444,264	87,293	58,049	38,000	\$4,061	269	1,528,513
1912	612,773	368,512	580,332	113,344	59,695	41,000	\$4,061	267	1,779,984
1913	679,901	410,694	703,367	116,282	62,613	30,038	\$4,061	276	2,007,232
1914	635,196	470,011	776,869	112,183	61,387	30,064	*4,000	142	2,089,852

* Estimated. † Partly estimated prior to 1913. ‡ Not available. § 1910 figures, those for 1911, 1912 and 1913 not available.

For Hobart and Launceston only, the figures for the years 1901, 1909, and 1910 were, respectively, 8815, 10,059, and 11,569.

6. **Export of Beef Preserved by Cold Process.**—A large export trade in beef preserved by cold process is carried on by the Commonwealth, mainly with the United Kingdom, the Philippine Islands, and the South African Union. The quantities so exported during the five years 1910 to 1914-15 are as follows:—

**QUANTITY OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE
COMMONWEALTH, 1910 to 1914-15.**

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	91,250,736	81,501,060	108,886,860	169,963,291	253,396,440	704,998,387
Philippine Islands	10,020,181	10,336,535	13,996,124	14,535,447	11,352,425	60,240,712
South African Union	3,784,637	7,337,652	9,228,546	5,656,346	194,585	26,201,769
Egypt	1,362,686	1,905,595	2,084,806	3,990,804	4,281,049	13,624,940
Straits Settlements	1,073,889	1,646,590	1,781,817	2,053,514	2,260,587	8,816,397
United States ... ..	...	...	289	5,037,769	15,974,209	21,012,267
Malta	862,148	1,526,389	1,690,044	1,142,092	1,338,439	5,959,112
Italy	327,056	2,509,466	2,127,876	6,356,514	170,159	11,491,071
Hong Kong... ..	385,895	618,688	551,012	423,659	216,350	2,195,604
Germany ... ..	...	...	97,491	1,813,799	...	1,911,290
Canada ... ..	...	239,653	904,832	3,352,675	60,540	4,557,700
Gibraltar	70,908	403,626	...	353,582	487,289	1,315,405
Japan	22,119	77,223	1,098	36,705	...	137,145
Ceylon	99,564	151,104	150,620	221,521	210,903	833,712
Hawaiian Islands	71,606	272,559	1,198,140	2,356,115	1,538,997	5,437,417
Other countries	96,103	260,277	110,521	1,624,773	584,514	2,676,188
Total	109,427,528	108,786,417	142,210,076	218,918,606	292,066,489	871,409,116

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, 1910 to 1914-15.**

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom	967,662	813,393	1,245,536	2,037,978	4,430,370	9,494,939
Philippine Islands	128,719	114,989	162,555	183,047	169,327	756,637
South African Union	36,559	67,940	97,601	65,906	2,500	270,506
Egypt	14,582	19,308	24,537	49,134	71,040	178,601
Straits Settlements	12,452	21,065	20,141	25,576	33,447	112,681
United States ... ..	...	...	5	66,838	209,938	276,781
Malta	9,790	15,412	11,491	13,214	22,349	72,256
Italy	3,866	26,497	23,173	76,130	2,130	130,796
Hong Kong... ..	3,826	6,370	4,346	4,392	2,924	21,858
Germany ... ..	...	...	1,219	23,398	...	24,607
Canada ... ..	...	3,707	16,831	44,456	1,272	66,266
Gibraltar	517	3,751	...	3,595	6,691	14,554
Japan	205	694	13	350	...	1,262
Ceylon	1,035	1,315	1,367	2,643	3,003	9,363
Hawaiian Islands	690	4,413	20,325	38,003	24,498	87,929
Other countries	1,243	3,278	1,591	18,626	10,565	35,302
Total	1,179,146	1,102,132	1,630,731	2,652,275	4,990,054	11,554,338

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 most consistent and the second largest customer has been the Philippine Islands; the South African Union and Egypt ranked next in order of importance. The exporting States during 1914-15 were: Queensland, 244,017,053 lbs., valued at £4,065,833; New South Wales, 23,626,403 lbs., valued at £444,561; Victoria, 19,426,042 lbs., valued at £384,804; and South Australia, 4,996,991 lbs., valued at £94,856.

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.	Country.	Date.	No. of Cattle.
British India ¹ ...	1913-14	125,041,337	Spain ...	1912	2,561,894
U. S. of America ...	1910	63,682,648	Denmark ...	1914	2,462,862
Russian Empire ...	1912	41,356,310	Netherlands ...	1913	2,096,599
Argentine Republic...	1912	29,120,000	New Zealand ...	1911	2,020,171
Germany ...	1912	20,182,021	Belgium ...	1910	1,879,754
Austria-Hungary ² ...	1910-13	17,648,787	Chile ...	1912-13	2,083,997
France ...	1914	13,120,649	Bulgaria ...	1910	1,603,182
United Kingdom ...	1914	12,144,563	Switzerland ...	1911	1,443,483
Australia ...	1914	11,051,573	Japan ...	1913	1,388,708
Uruguay ...	1908	8,192,602	Algeria ...	1912	1,106,801
Canada ...	1911	6,533,436	Norway ...	1910	1,133,613
Italy ...	1908	6,193,861	Ceylon ...	1911	1,003,627
Union of South Africa	1911	5,796,949	Servia ...	1910	957,105
Mexico ...	1902	5,142,457	Portugal ...	1906	703,198
Cuba ...	1912	2,829,553	Egypt ...	1913	637,098
Sweden ...	1913	2,720,741	Tunis ...	1913	217,304
Rumania ¹ ...	1900	2,588,526			

1. Including buffaloes. 2. Austria, 1910, Hungary 1913, Croatia-Slavonia 1911, and Bosnia-Herzegovina 1911.

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 1910 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	Tas.	Northern Territ'y.	Fed. Terr.	C'wealth.
1901 ...	1.49	1.34	7.44	0.63	2.06	0.96	54.68	...	2.22
1910 ...	1.91	1.21	8.57	0.95	2.98	1.04	150.86	...	2.65
1911 ...	1.88	1.23	8.15	0.94	2.87	1.12	141.56	4.38	2.59
1912 ...	1.71	1.09	8.19	0.89	2.63	1.13	116.71	3.66	2.45
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

For the Commonwealth as a whole the ratio of cattle to population is 1 per cent. greater for 1914 than for 1901, and exhibits a continuous increase from 1902 to 1910, while the proportion for 1911 is approximately the same as for the previous year; 1912, 1913 and 1914 shew a slight decline. The excess of the 1914 figures over those for 1901 is in evidence in the States of Queensland, South Australia, and Western Australia, and is most marked in the case of the Northern Territory. In New South Wales, Victoria, and Tasmania the ratios for 1914 are the lowest for the period under review.

§ 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 onwards, the number of sheep in New South Wales has, in every year except 1902, 1908, and the past five years represented more than half the total for the Commonwealth, and even in these years it fell but little short of that amount.

The number of sheep in the several States and Territories at quinquennial intervals from 1860 to 1910, and for each year onwards to 1914, is as follows:—

**NUMBER OF SHEEP IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 TO 1914.**

Year.	New South Wales.	Victoria.	Queens- land.	South Aust.	Western Aust.	Tas- mania.	Northern Territory	Federal Territory.	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	16,306,585	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	*9,318	...	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	12,692,843	18,007,234	7,004,642	2,524,913	1,619,256	45,902	...	97,881,221
1895	47,617,687	12,791,084	19,856,959	6,531,006	2,295,632	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	...	70,602,935
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	1,768,310	57,240	...	92,047,015
1911	44,722,523	13,857,804	20,740,981	6,171,907	5,411,542	1,823,017	50,983	224,764	93,003,521
1912	38,855,861	11,892,224	20,310,036	5,481,469	4,596,958	1,862,669	75,808	188,641	83,263,686
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	432,874,359	12,051,685	23,129,919	4,208,461	4,456,186	1,674,845	70,200	134,679	78,600,334

* Statistics not collected prior to 1880.

† 30th June, 1915.

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 1910 to 1914, 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 1910 to 1914.**

Year.	N.S.W.	Vic.	Q'sland.	S. Aust.	W. Aus.	Tas.	N.T.	Fed. Terr.	C'wealth.
	%	%	%	%	%	%	%	%	%
1901	58.10	14.82	13.92	6.95	3.65	2.49	0.07	...	100.00
1910	49.50	14.00	22.09	6.81	5.60	1.94	0.06	...	100.00
1911	48.09	14.90	22.30	6.64	5.82	1.96	0.05	0.24	100.00
1912	46.67	14.28	24.39	6.58	5.52	2.24	0.09	0.23	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

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 South Australia and Tasmania, while in the case of Queensland a marked advance in proportion was experienced, and there were smaller advances in Victoria and Western Australia.

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 South African Union, Straits Settlements, and Papua, Western Australia being the principal exporting State. The following are the particulars of the imports and exports for the years 1901 and 1910 to 1914 :—

COMMONWEALTH IMPORTS AND EXPORTS OF SHEEP, 1901 and 1910 to 1914.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901	553	12,134	12,094	12,104	11,541	—30
1910	2,863	14,008	13,144	30,456	10,281	16,448
1911	5,254	25,997	24,219	38,729	18,965	12,732
1912	2,903	10,643	34,113	72,522	31,210	61,879
1913	8,448	28,508	41,770	75,073	33,322	46,565
1914	6,140	23,622	16,889	37,826	10,749	14,204

Note. — signifies net imports.

5. **Sheep Slaughtered.**—The numbers of sheep slaughtered in the several States during 1901 and from 1910 to 1914 are as follows :—

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1901 and 1910 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.†	N.T.	Fed. Terr.	C'wealth.
1901	4,519,133	2,469,797	554,705	*678,000	428,534	322,000	...	...	8,972,169
1910	7,470,002	4,245,881	1,751,151	1,316,888	549,977	346,000	516	...	15,679,915
1911	6,539,559	4,348,363	981,153	1,275,734	622,555	350,000	†516	7,366	14,125,246
1912	5,805,595	4,153,269	1,273,332	1,332,838	610,214	357,000	†516	6,587	13,539,351
1913	6,420,810	4,742,231	1,375,827	1,222,315	602,383	315,726	†516	4,765	14,684,573
1914	6,006,190	4,550,272	1,351,145	1,156,957	588,342	312,275	*500	4,351	13,970,032

* Estimated. † Partly estimated. ‡ Figures for 1910; those for 1911, 1912, and 1913 not available.

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 past two years, 1913 and 1914, was £3,155,190. 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 also an excellent carcase 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 for the home markets, as it is becoming very widely recognised that with suitable breeds, the export trade in lambs is a very profitable one.

Australia's principal customer in this trade is the United Kingdom, which has absorbed 94.8 per cent. of the total quantity exported from the Commonwealth during the past

five years. The South African Union and Canada took 1.1 and 0.9 per cent. respectively, while the balance of 3.2 per cent. was principally absorbed by the Philippine Islands, Malta, Straits Settlements, and Egypt. The recent revision of the tariff of the United States of America will doubtless have the effect of eventually opening up a vast market in that country for Australian mutton and lamb and other meat products. The quantities exported to various countries are as follow:—

**QUANTITY OF MUTTON AND LAMB PRESERVED BY COLD PROCESS EXPORTED
FROM THE COMMONWEALTH, 1910 to 1914-15.**

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	181,556,597	120,757,079	108,556,172	191,440,138	187,897,976	790,207,962
South African Union ...	2,720,584	2,657,853	1,910,196	1,550,257	387,006	9,225,896
Canada ...	2,309,441	2,077,802	1,320,718	1,662,910	413,013	7,783,884
Germany ...	...	...	133,429	5,144,062	...	5,277,491
Philippine Islands ...	788,577	859,022	677,076	778,693	370,296	3,473,664
Malta ...	838,871	699,514	266,035	1,059,183	798,996	3,662,599
Straits Settlements ...	713,836	845,079	992,831	928,783	1,068,164	4,548,693
Egypt ...	369,611	447,411	624,506	633,109	902,604	2,977,241
Hong Kong ...	318,590	417,316	328,330	401,380	256,068	1,721,684
Ceylon ...	254,212	332,011	293,523	365,065	304,115	1,548,926
Hawaiian Islands...	145,246	102,361	83,770	91,085	30,802	453,264
United States ...	...	...	2,051	571,008	195,225	768,284
Gibraltar ...	52,590	99,501	...	...	463,106	615,197
Japan ...	18,681	19,885	...	39	...	38,605
Other Countries ...	142,494	254,461	183,344	306,071	176,506	1,062,876
Total ...	190,229,330	129,569,295	115,371,981	204,931,783	193,263,877	833,366,266

The corresponding particulars concerning the values of the exports are:—

**VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM THE COMMONWEALTH,
1910 to 1914-15.**

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ...	2,069,932	1,529,633	1,499,648	2,712,682	3,321,045	11,132,940
South African Union ...	28,935	28,365	23,919	19,936	6,538	107,693
Canada ...	23,132	28,027	20,336	27,256	7,507	106,258
Germany ...	...	...	1,670	67,396	...	69,066
Philippine Islands ...	7,878	9,282	9,271	9,649	6,212	42,292
Malta ...	10,140	8,274	3,228	14,142	12,920	48,704
Straits Settlements ...	7,407	9,781	13,387	11,841	18,553	60,969
Egypt ...	4,385	6,248	8,282	9,435	16,577	44,927
Hong Kong ...	3,288	4,581	4,483	5,571	4,422	22,345
Ceylon ...	2,649	3,910	4,448	5,091	5,346	21,444
Hawaiian Islands ...	1,783	1,549	1,343	1,386	772	6,833
United States...	...	...	35	7,793	3,066	10,894
Gibraltar ...	329	829	...	...	7,660	8,818
Japan ...	240	202	...	1	...	443
Other Countries ...	1,415	2,941	2,328	4,353	3,230	14,267
Total ...	2,161,513	1,633,622	1,592,378	2,896,532	3,413,848	11,697,893

7. Comparison with other Countries.—As regards the size of its flocks and the quantity and quality of wool produced, Australia occupies the foremost position amongst the sheep-raising countries of the world. The following comparison 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	Country.	Date.	No. of Sheep.
Argentine Republic ...	1912	83,546,000	Bulgaria ...	1910	8,632,380
Australia ...	1914	78,600,334	Germany ...	1912	5,803,445
Russian Empire ¹ ...	1912	57,255,196	Rumania ...	1900	5,655,444
United States of America ...	1910	52,838,748	Chile ...	1912	4,567,194
Ottoman Empire ...	1912	27,094,678	Servia ...	1910	3,818,997
Union of South Africa ...	1913	35,710,843	Mexico ...	1902	3,424,430
United Kingdom ...	1914	27,886,095	Portugal ...	1906	3,072,988
Uruguay ...	1908	26,286,296	Canada ...	1911	2,175,302
New Zealand ...	1913	24,798,763	Norway ...	1910	1,393,383
British India ...	1913	23,091,955	Sweden ...	1913	988,163
France ...	1914	14,559,586	Netherlands ...	1913	842,018
Spain ...	1912	15,829,954	Tunis ...	1913	728,540
Italy ...	1908	11,162,926	Denmark ...	1914	514,918
Austria-Hungary ² ...	1910	12,837,542	Iceland ...	1910	578,634
Algeria ...	1912	8,338,023	Belgium ...	1910	185,373
			Switzerland ...	1911	161,414

1. Including goats.

2. Austria 1910, Hungary 1913. Croatia-Slavonia 1911, Bosnia-Herzegovina 1911.

8. **Relation to Population.**—The relation of the flocks of the several States and Territories to the populations at the end of the year 1901 and from 1910 to 1914 is as follows:—

NUMBER OF SHEEP PER HEAD OF POPULATION, 1901 and 1910 to 1914.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Ter.	C'wealth.
1901	30.43	8.82	19.80	13.95	13.56	10.23	10.34	...	18.83
1910	27.72	9.90	33.94	15.40	18.63	9.23	17.34	...	20.80
1911	26.74	10.17	33.34	14.76	18.40	9.42	15.70	117.00	20.36
1912	21.86	8.61	31.91	12.74	15.02	9.45	21.82	97.24	17.59
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

§ 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, 1915, being about £25,047,000. The bulk of the wool produced in the Commonwealth is exported, but with the increased 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 little more than 2 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 is, on the average, about 20 per cent. of the total clip. The ratio of 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" has been converted into the estimated equivalent amount of "greasy" 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 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, etc. Particulars for years prior to 1910 will be found in former issues (see Year Book No. 6, page 346). The following table gives the estimates obtained in reference to the five seasons ended 30th June, 1911 to 1915:—

ESTIMATED QUANTITY OF WOOL AS IN THE GREASE, SHORN, FELLMONGERED, OR ON SKINS SHIPPED DURING THE SEASONS ENDED 30th JUNE, 1911 to 1915.

State.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales*	374,907,068	371,546,415	326,804,000	357,985,000	318,935,000
Victoria...	101,803,644	110,463,041	88,762,612	106,833,690	95,406,867
Queensland ...	139,250,802	142,382,269	136,878,270	154,183,114	155,478,740
South Australia ...	63,613,781	60,056,470	56,691,036	55,014,048	38,848,978
Western Australia	29,984,453	30,833,837	26,849,981	26,625,787	24,562,110
Tasmania ...	11,338,540	10,726,593	12,416,014	10,092,564	8,154,824
Northern Territory	400,000	400,000	450,000	400,000	†400,000
Commonwealth	721,298,288	726,408,625	648,851,913	711,134,203	641,786,519

* Including Federal Territory.

† 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 quantity used in local manufactories. The Commonwealth total so obtained represented 758,090,676 lbs. for the season 1910-11, 785,753,099 lbs. for 1911-12, 668,667,078 lbs. for 1912-13, and 754,123,633 lbs. for 1913-14. The abnormal conditions of wool shipments obtaining during the 1914-15 season do not admit of any similar comparison with the estimated production.

4. **Wool Locally Used.**—The quantity of wool used in the manufactories of the several States of the Commonwealth during the past five calendar years was approximately as follows:—

LOCALLY USED WOOL, ESTIMATED AS "GREASY," COMMONWEALTH AND STATES, 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	1,594,712	2,401,920	2,420,000	2,484,446	*4,173,576
Victoria ...	5,309,730	5,774,868	5,535,483	6,973,300	7,215,380
Queensland ...	270,246	336,486	583,892	406,829	356,553
South Australia ...	564,432	634,238	710,000	645,000	389,700
Western Australia ...	...	...	...	...	...
Tasmania ...	1,087,400	986,000	1,082,000	1,105,000	1,141,200
Commonwealth ...	8,826,520	10,133,512	10,331,375	11,619,575	13,276,409

* Year ended 30th June, 1915.

5. **Bounties on Combed Wool or Tops Exported.**—Under the Bounties Act 1907, bounties are payable on combed wool or tops exported from the Commonwealth, provided they were produced therein. The maximum amount to be paid may not exceed a total of £10,000 per annum; any unexpended sum may 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. is payable up to 1,000,000 lbs. to any one manufacturer during a year and ½d. per lb. in excess of that quantity. 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, £18,061, 1913-14, £12,706, and in 1914-15, £7,727. 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 and 3,635,811 lbs. respectively.

Figures shewing the exports of wool tops for the years 1909 to 1914-15 inclusive will be found at the head of the next page.

6. **Exports of Wool.**—About forty-four per cent. of the exports of wool from the Commonwealth during the past five years was despatched to the United Kingdom, the other leading consignees being France, Germany, Belgium, the United States of America and Japan. The following table shews for the years 1910 to 1914-15 the quantities of "greasy" wool exported from the Commonwealth and the principal countries to which consigned:—

COMMONWEALTH EXPORTS OF WOOL IN THE GREASE, 1910 to 1914-15.

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	222,880,179	230,013,473	211,386,638	185,387,090	319,614,694	1,169,282,074
France ...	154,091,890	155,347,112	151,555,672	159,782,827	12,787,863	633,565,364
Germany ...	122,297,188	105,674,113	107,523,165	94,068,893	3,036,083	432,599,442
Belgium ...	63,305,855	58,469,298	54,679,915	51,681,724	2,984,856	231,321,648
United States of America ...	11,079,242	10,154,171	8,686,125	14,666,651	61,731,511	106,317,600
Japan ...	7,869,785	6,583,686	9,339,817	7,199,671	22,670,413	53,653,372
Italy ...	3,710,785	5,644,235	4,856,997	5,778,424	18,191,774	38,182,215
Austria-Hungary ...	...	5,836,992	7,908,480	11,731,933	829,746	26,307,151
India ...	485,990	478,353	390,536	501,827	443,451	2,300,157
New Zealand ...	1,122,446	154,193	147,794	101,104	541,513	2,067,050
Canada ...	208,269	52,299	126,517	88,916	951,452	1,427,453
Other Countries ...	41,640	415,698	1,231,062	247,918	170,474	2,106,792
Total... ..	587,093,269	578,823,623	557,832,718	531,436,878	443,953,830	2,699,140,318

Similar particulars concerning the exports of "scoured and washed" wool are as follows:—

COMMONWEALTH EXPORTS OF "SCOURED AND WASHED WOOL,"*
1910 to 1914-15.

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	35,571,404	35,940,841	28,305,314	26,176,484	48,171,821	174,166,864
France ...	15,861,390	13,989,442	15,037,742	18,804,399	2,154,275	65,847,248
Germany ...	14,145,596	12,148,316	10,541,771	10,135,857	1,748,008	48,719,548
Belgium ...	11,418,895	7,629,001	5,661,005	5,269,008	920,506	30,899,315
Japan ...	887,292	1,602,747	2,750,614	3,564,433	6,141,036	14,946,122
Italy ...	212,661	397,004	380,550	188,298	655,302	1,833,815
India ...	41,962	33,321	47,826	100,434	135,408	358,951
United States of America ...	5,319	...	49,849	124,301	4,557,800	4,737,269
New Zealand ...	32,488	2,934	42,927	11,042	1,879	91,270
Austria-Hungary ...	1,113	16,734	89,036	62,932	147,864	317,679
Other Countries ...	180	10,300	347,472	11,998	315,392	685,342
Total... ..	78,178,300	71,770,640	63,254,106	64,450,086	64,949,291	342,602,423

* Including "tops." See next page.

The figures for "scoured and washed wool" for 1909 include for the first time an export of tops, amounting to 496,492 lbs. and valued at £58,638. In 1910 the corresponding export was 1,123,469 lbs., valued at £134,874; in 1911, 2,513,106 lbs., valued at £275,406; in 1912, 3,018,050 lbs. valued at £323,299; in 1913, 3,561,722 lbs. valued at £415,670; and in 1914-15, 4,095,966 lbs. valued at £511,021. In the latter year Japan took 4,052,965 lbs., valued at £506,161.

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, 1910 to 1914-15.

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	11,447,359	11,159,335	10,418,577	9,456,636	15,413,174	57,895,081
France	6,905,177	6,016,293	6,527,854	7,429,856	694,751	27,573,931
Germany	6,053,873	4,851,785	5,050,974	4,693,157	295,376	20,945,165
Belgium	3,084,847	2,552,282	2,480,348	2,386,892	187,755	10,692,124
United States of America ...	579,605	500,015	460,275	745,354	3,110,301	5,395,550
Japan	490,622	459,000	703,371	735,018	1,502,576	3,820,587
Italy	181,457	245,804	230,436	256,718	716,260	1,630,675
Austria-Hungary	55	242,461	360,125	519,477	50,436	1,172,554
India	24,268	21,290	18,739	30,586	30,739	125,622
New Zealand	67,219	6,199	8,844	5,199	19,962	107,423
Canada	10,695	2,824	7,155	5,404	50,063	76,141
Other Countries	2,106	13,905	87,865	12,765	30,789	147,430
Total	23,777,283	26,071,193	26,354,563	26,277,062	22,102,182	129,582,263

7. Care needed in Comparing Clips.—The Customs returns do not furnish a reliable indication of increase or decrease in successive clips, since in each case up to 1913 they relate to the year ended 31st December. Ordinarily, therefore, they include for any year imports and exports of wool belonging to two distinct clips. A further defect in the comparability of successive clips arises as follows:—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 countries of the Southern Hemisphere. The figures given represent for the respective years the imports of wool into Europe and North America:—

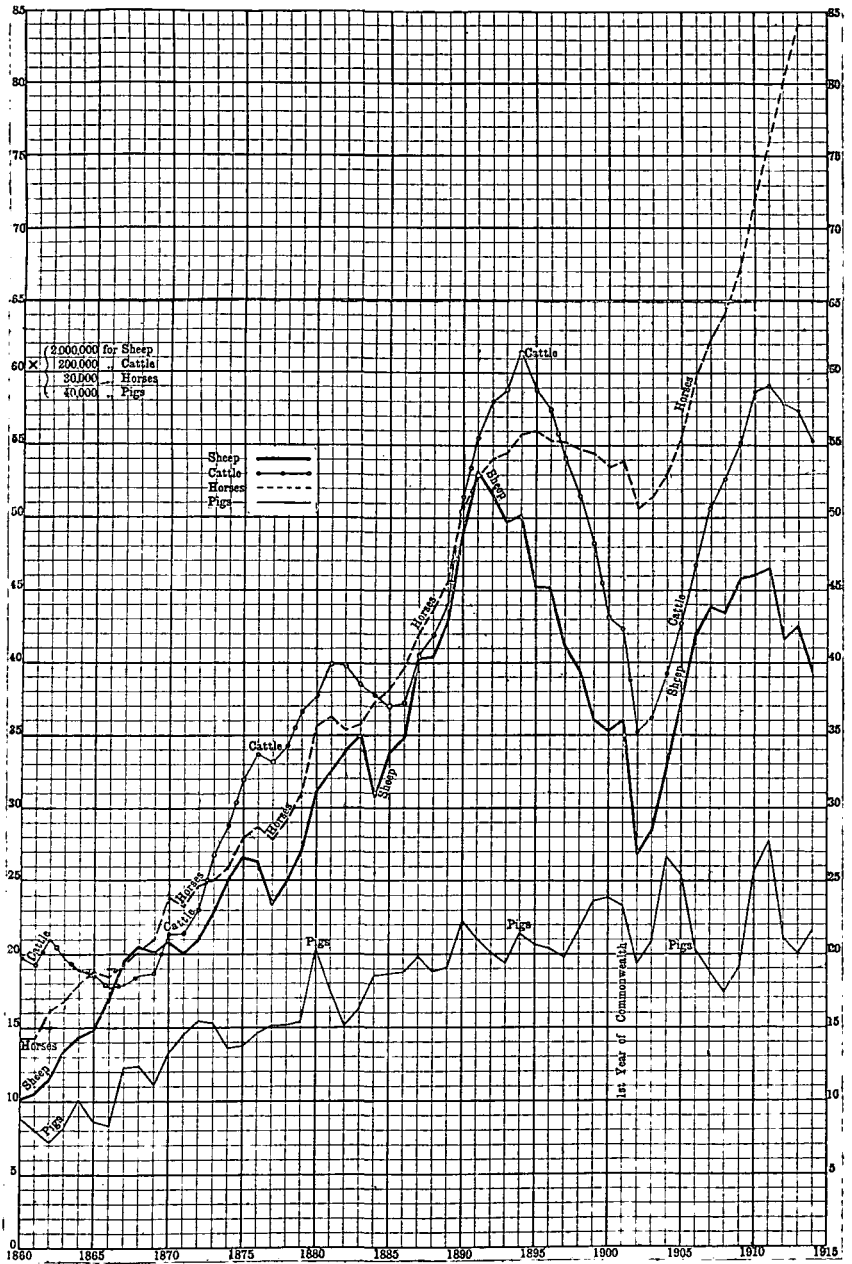
IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA, 1901, and 1910 to 1915.

Year.	Commonwealth and New Zealand.	Cape Colony.	River Plate.	Total.
	Bales.	Bales.	Bales.	Bales.
1901	1,745,000	217,000	532,000	2,494,000
1910	2,411,000	377,000	461,000	3,249,000
1911	2,524,000	376,000	499,000	3,399,000
1912	2,463,000	463,000	497,000	3,423,000
1913	2,296,000	484,000	437,000	3,217,000
1914	2,332,000	499,000	406,000	3,237,000
1915	2,157,000	519,000	378,000	3,054,000

As the River Plate bale is much larger than the Australian or Cape bale, a comparison of the number of bales would be somewhat misleading. Allowing approximately for the difference in size of the several bales, it may be said that during the last five years the importations from Australia and the Dominion of 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 1914 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:—

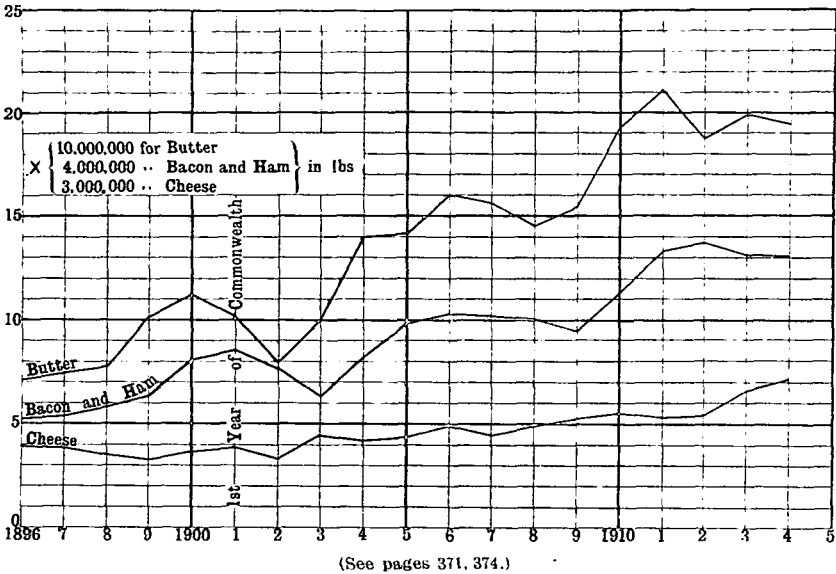
GRAPHS SHEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS IN THE
COMMONWEALTH FROM 1860 TO 1914.



(See pages 280 *et seq.*)

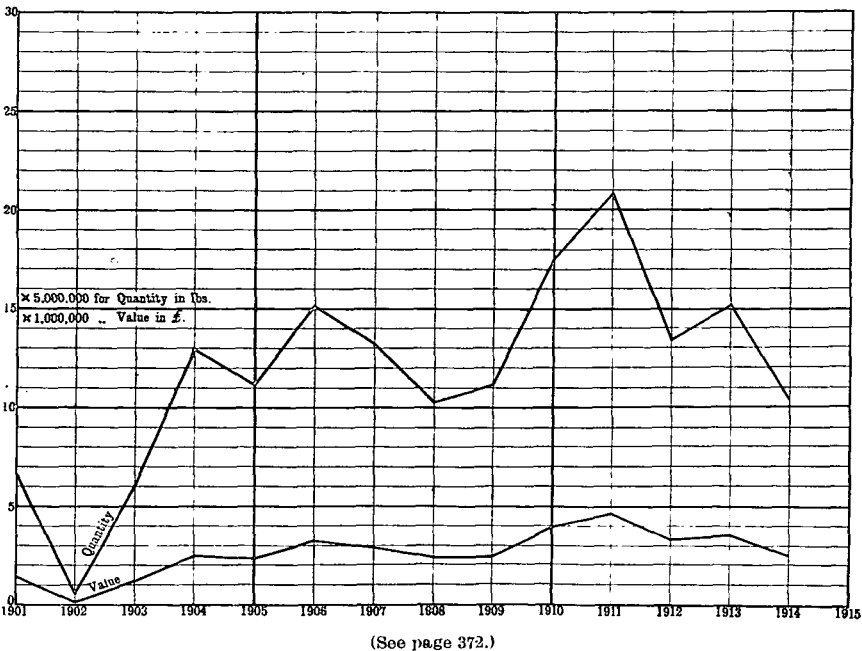
EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. The totals of the sheep, cattle, horses, and pigs for the Commonwealth are indicated by the several curves or graphs, the vertical side of a small square representing 2,000,000 in the case of sheep; 200,000 for cattle; 30,000 for horses; 40,000 for pigs.

GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM, IN THE COMMONWEALTH, FROM 1896 to 1914.



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 1914.



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.

IMPORTS OF WOOL INTO THE UNITED KINGDOM, 1914.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ...	239,233,145	11,177,492	Uruguay ...	1,729,029	79,293
New Zealand ...	184,607,963	8,628,368	Portugal ...	1,669,771	60,874
Union of Sth. Africa	121,662,961	4,715,190	China ...	1,277,972	52,522
Argentine Republic	45,906,646	1,826,228	Persia ...	1,037,596	29,553
British India ...	46,982,929	1,420,363	Italy ...	366,634	19,606
France ...	18,872,776	1,315,509	Denmark ...	256,511	12,400
Chile ...	18,007,066	571,463	Morocco ...	316,680	11,144
U.S. of America ...	4,726,658	251,915	Netherlands ...	239,920	8,398
Russia ...	3,909,781	192,071	Spain ...	105,239	3,567
Belgium ...	2,732,564	149,667	Iceland&Greenland	56,915	2,670
Falkland Islands	4,454,000	149,080	Canada ...	51,520	2,335
Egypt ...	4,196,348	136,955	Other Countries ...	894,891	34,095
Peru ...	2,866,450	134,778			
Turkey ...	4,129,230	124,806			
Germany ...	2,326,921	102,397	Total ...	712,618,116	31,212,739

It will be seen that of the total importations of wool into the United Kingdom, Australian wool represented over 34 per cent. of quantity and nearly 36 per cent. of value.

10. **The Wool Market.**—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), and for the season 1913-14 in Year Book No. 8 (page 297).

The 1914-15 season opened in the midst of a dislocation of trade, consequent on the European War. The Bank of England rate rose to 10 per cent., Stock Exchanges in Europe and America closed, and moratoria were declared in several parts of the world. The wool market, always highly susceptible to European complications, at once felt the effects, and the outlook in August was unpromising, but the various Governments took immediate measures to preserve credit, and averted a crisis. An extraordinary demand, however, soon arose for crossbred wool, this gathered strength as the army orders became more extensive, and lasted throughout the season. Merino wool, on the other hand, met with small demand at the commencement of the season, the Continental countries, that had absorbed some 60 per cent. in the previous season, were, of course, non-purchasers, while the embargo on the export of wool to America caused a further restriction. Permission to ship merino wool to America early in 1915, together with a revival in the home trade, considerably improved the market, and values rose rapidly, until towards the end of the season prices were considerably above the high levels of November, 1899.

The season closed with values for all good and superior wools on a higher plane than for many years. On the other hand, burr-infested wools met with little or no demand, few carbonising plants being available for their treatment.

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, 1905 to 1914-15.

Year ...	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914-15.
Average value per lb. ...	d. 9.83	d. 10.14	d. 10.73	d. 9.17	d. 9.35	d. 9.58	d. 8.87	d. 9.50	d. 9.70	d. 9.45

(i.) *Exports of Wool from each State, and Quantity sold Locally.* Over 78½ per cent. of the wool grown in Australia was sold in the local markets prior to export from the Commonwealth during 1914-15. Under normal conditions buyers from the United Kingdom, France, Germany, and other European countries, also from America, Japan, China, and India, attend 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, 1915, and the proportion sold at the local sales prior to shipment. It must be noted that as considerable quantities of wool grown in some States are sold in or shipped from others, these figures therefore 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 296.

EXPORTS OF WOOL TO PLACES OUTSIDE THE COMMONWEALTH, AND THE QUANTITY SOLD LOCALLY IN THE SEVERAL STATES, DURING THE SEASON ENDED 30th JUNE, 1915.

State.	Oversea Exports.		Sold at Local Sales prior to Export.		Ratio of Local Sales to	
					Oversea Exports from each State.	Total Exports from C'wealth.
	Bales.	%	Bales.	%	%	%
New South Wales ...	731,218	46.40	547,496	44.77	74.87	34.75
Victoria ...	391,626	24.85	377,541	30.87	96.40	23.96
Queensland ...	268,120	17.03	182,542	14.93	68.08	11.58
South Australia ...	101,536	6.45	92,372	7.55	90.97	5.86
Western Australia ...	65,306	4.14	...	...	...	...
Tasmania...	17,882	1.13	22,921	1.88	128.18	1.46
Commonwealth ...	1,575,688	100.00	1,222,872	100.00	...	77.61

It will be seen that in regard to the ratio of local sales to oversea exports, Victoria's sales represent over 96 per cent. of her exports, New South Wales about 75, South Australia 91, and Queensland 68 per cent. In Tasmania some of the wool sold locally was subsequently shipped to interstate ports. Of the total quantity sold in the Commonwealth, New South Wales and Victoria disposed of 44.77 and 30.87 per cent. respectively; Queensland, South Australia, and Tasmania following in the order named.

During the season under review 1,575,688 bales of wool were shipped from the Commonwealth, of which 77.61 per cent. was sold in the Australian markets. Of this percentage New South Wales and Victoria are represented by 58.71, Queensland and South Australia 17.44, while Tasmania accounts for the balance.

(ii.) *Exports of Wool from Commonwealth and Quantity sold Locally.* The number of bales of wool exported from the Commonwealth and sold at local sales prior to shipment during 1895, 1900, 1905, 1910, and the past five seasons is shewn in the following table:—

EXPORTS OF WOOL FROM THE COMMONWEALTH, AND THE QUANTITY SOLD LOCALLY, FROM 1895 to 1915.

Year ended 30th June.					Oversea Exports.	Sold prior to Export.	Ratio of Wool sold 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
1915	...	...	...	...	1,575,688	1,222,872	77.61

The steady development of the Australian wool market is clearly shewn in this table. In the nineteen years ended 1914, the quantity sold more than doubled, and the ratio of wool sold 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 during the 1914-15 season materially reduced the ratio, which was only 77.61 as compared with 86.64 for the previous season.

During the past season 1,222,872 bales of wool were sold in Australia, and 321,927 bales in New Zealand, representing the total value of £19,742,546. This enormous quantity far exceeds the sales of any other country in the world.

(iii.) *Distribution of Wool sold in Australian Markets.* The estimated approximate distribution of wool sold in the local markets during the season 1914-15 is shewn in the following table, and exhibits the world-wide representation of buyers at the Australian sales :—

**ESTIMATED APPROXIMATE DISTRIBUTION OF WOOL SOLD LOCALLY IN THE
SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON
ENDED 30th JUNE, 1915.**

Destination.	N.S.W.	Victoria.	Q'land.	S. Aust.	Tas.	C'wealth.
	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
United Kingdom	285,026	251,863	90,501	55,620	16,609	699,619
France, Belgium, and Holland	25,346	8,709	17,715	2,097	...	53,867
Germany and Austria	482	338	7,619	...	...	8,439
Italy and other European						
Countries	42,715	13,080	13,408	699	...	69,902
America	109,613	73,542	30,195	13,535	2,812	229,697
Japan, China, and India	53,291	4,992	19,380	128	...	77,791
Local Woollen Mills	31,023	25,017	3,724	20,293	3,500	36,616
Scourers and Speculators						46,941
Total Sales	547,496	377,541	182,542	92,372	22,921	1,222,872

PERCENTAGE DISTRIBUTION.

	%	%	%	%	%	%
United Kingdom	52.06	66.71	49.60	60.20	72.46	57.21
France, Belgium, and Holland	4.63	2.31	9.70	2.27	...	4.40
Germany and Austria	0.09	0.09	4.17	0.75	...	0.69
Italy and other European						
Countries	7.81	3.46	7.34	...	...	5.71
America	20.01	19.48	16.54	14.65	12.27	18.80
Japan, China, and India	9.73	1.32	10.61	0.13	...	6.36
Local Woollen Mills	5.67	6.63	2.04	22.00	15.27	2.99
Scourers and Speculators						3.84
Total Sales	100.00	100.00	100.00	100.00	100.00	100.00

Of the total quantity sold, amounting to 1,222,872 bales, 699,619 or 57.21 per cent. were purchased for the United Kingdom, 229,697 or 18.8 per cent. for America, 132,208 or 10.80 per cent. for the Continent of Europe, 77,791 or 6.36 per cent. for Japan and other Asiatic countries, 46,941 by scourers and speculators, while 36,616 bales went for consumption in the local woollen mills. Of the Continental purchases, 40.7 per cent. went to France, Belgium, and Holland, 6.4 per cent. to Germany and Austria, and nearly 52.9 per cent. to Italy and other European countries.

(iv.) *Quantities of Various Descriptions of Wool Sold 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 LOCALLY IN THE SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON ENDED 30th JUNE, 1915.

Description of Wool.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Commonwealth.
	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
Greasy ...	504,815	369,453	153,288	89,560	(a)	22,921	1,139,537
Scoured ...	43,181	8,088	29,254	2,812	...	...	83,335
Total	547,496	377,541	182,542	92,372	...	22,921	1,222,872
Fleece, etc.	524,394	351,921	175,125	87,753	...	21,636	1,160,829
Lambs ...	23,102	25,620	7,417	4,619	...	1,285	62,043
Total	547,496	377,541	182,542	92,372	...	22,921	1,222,872
Merino ...	476,321	187,329	177,144	86,227	...	8,022	935,043
Crossbred and all strong breeds	71,175	190,212	5,398	6,145	...	14,899	287,829
Total	547,496	377,541	182,542	92,372	...	22,921	1,222,872
	%	%	%	%		%	%
Greasy ...	92.11	97.85	83.97	97.00	...	100.00	93.19
Scoured ...	7.89	2.15	16.03	3.00	...	...	6.81
Total	100.00	100.00	100.00	100.00	...	100.00	100.00
Fleece, etc.	95.78	93.21	95.93	95.00	...	94.00	94.92
Lambs ...	4.22	6.79	4.07	5.00	...	6.00	5.08
Total	100.00	100.00	100.00	100.00	...	100.00	100.00
Merino ...	87.00	49.61	97.04	93.00	...	35.00	76.46
Crossbred and all strong breeds	13.00	50.39	2.96	7.00	...	65.00	23.54
Total	100.00	100.00	100.00	100.00	...	100.00	100.00

(a) No sales.

Wool in the grease represented over 93 per cent. of total sales during the period under review. Of fleece and lambs, the former shews about 94.9, and the latter 5.1 per cent. The class of wool produced is principally merino, which is almost exclusively grown in the northern and central parts of the continent, the bulk of the merino wool sold 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.

(v.) *Percentages in each State of Various Descriptions of Wool Sold.* The following table gives the percentages of each description of wool sold in the several States during the season 1914-15 :—

PERCENTAGE OF BALES OF EACH DESCRIPTION OF WOOL SOLD IN THE SEVERAL STATES TO THE TOTAL SOLD IN THE COMMONWEALTH, 1914-15.

Description of Wool.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust. (a)	Tas.	Common- wealth.
	%	%	%	%	%	%	%
Greasy ...	44.26	32.42	13.45	7.85	...	2.02	100.00
Scoured ...	51.82	9.71	35.10	3.37	...	...	100.00
Fleece, etc. ...	45.17	30.32	15.09	7.56	...	1.86	100.00
Lambs ...	37.24	41.29	11.95	7.44	...	2.08	100.00
Merino ...	50.94	20.03	18.95	9.23	...	0.85	100.00
Crossbred and all strong breeds ...	24.73	66.08	1.88	2.13	...	5.18	100.00

(a) No sales.

§ 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 1909 to 1913 being no less a sum than £15,003,959, or an average of over £3,000,000 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 France and the United Kingdom. Details concerning the number so exported during the five years 1910 to 1914-15 are as follow :—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITH WOOL, 1910 to 1914-15.

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 Years
	No.	No.	No.	No.	No.	No.
France ...	4,325,337	4,322,505	5,297,141	5,932,257	2,227,714	22,104,954
United Kingdom ...	3,763,002	3,306,567	3,707,050	3,861,161	5,844,442	20,482,222
Belgium ...	1,282,942	1,020,847	1,277,530	996,821	29,366	4,607,506
U.S. of America...	155,782	39,811	129,899	99,037	1,016,958	1,441,487
Germany ...	106,534	109,621	63,112	57,735	2,578	339,580
Canada...	10,446	...	679	...	206,876	218,001
Italy ...	29,575	26,140	...	960	...	56,675
New Zealand ...	100	...	661	...	39,083	39,844
Other Countries ...	...	6,869	...	261	1,051	8,181
Total ...	9,673,718	8,832,360	10,476,072	10,948,232	9,368,068	49,298,450

The next table furnishes corresponding particulars as to value :—

**VALUE OF SHEEPSKINS WITH WOOL EXPORTED FROM THE COMMONWEALTH,
1910 to 1914-15.**

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 Years.
	£	£	£	£	£	£
France ...	884,450	735,259	980,298	1,315,156	387,692	4,302,855
United Kingdom	710,229	568,618	666,962	804,432	1,021,432	3,771,673
Belgium ...	316,958	253,995	314,301	335,569	10,877	1,231,700
U.S. of America...	16,978	3,706	12,713	15,127	213,249	261,773
Germany ...	16,720	13,195	10,576	11,620	812	52,923
Canada...	1,071	...	66	...	46,374	47,511
Italy ...	9,630	4,075	...	100	...	13,805
New Zealand ...	25	...	113	...	9,748	9,886
Other Countries ...	...	697	...	55	468	1,220
Total ...	1,956,061	1,579,545	1,985,029	2,482,059	1,690,652	9,693,346

3. Sheepskins without Wool.—In the case of sheepskins without wool the principal countries to which export takes place are the United Kingdom and the United States of America. Particulars concerning the quantities exported are as follows :—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITHOUT WOOL, 1910 to 1914-15.

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom ...	875,994	459,252	131,103	123,578	720,417	2,315,344
United States of America	710,001	590,582	271,028	21,760	640,302	2,233,673
France ...	23,863	21,666	55,845	5,364	...	106,738
New Zealand ...	15,552	9,484	1,515	...	12	26,563
Germany ...	14,447	...	...	...	...	14,447
Belgium ...	8,428	331	167	...	...	8,926
Canada ...	1,956	...	...	...	3,096	5,052
Italy ...	...	...	...	...	...	...
Other Countries	...	...	...	...	...	...
Total ...	1,650,241	1,081,315	459,658	155,702	1,363,827	4,710,743

Corresponding details concerning value are given hereunder :—

**VALUE OF SHEEPSKINS WITHOUT WOOL, EXPORTED FROM THE
COMMONWEALTH, 1910 to 1914-15.**

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom ...	37,015	17,138	3,854	5,130	37,875	101,012
United States of America	22,544	16,295	8,730	1,550	35,766	84,885
France ...	1,711	1,225	5,948	382	...	9,266
New Zealand ...	514	196	27	...	2	739
Germany ...	538	...	...	...	...	538
Belgium ...	396	12	4	...	...	412
Canada ...	115	...	...	...	233	348
Italy ...	...	...	...	...	...	...
Other Countries	...	...	...	...	...	...
Total ...	62,833	34,866	18,563	7,062	73,876	197,200

4. **Hides.**—The Commonwealth trade in hides has now assumed considerable proportions, and during 1914-15 the total value of hides exported amounted to £1,380,886. The exports took place principally to the United Kingdom, the United States of America, and Canada. Large quantities of hides are also imported into the Commonwealth, mainly from New Zealand and the Pacific Islands. The total value of hides imported during 1914-15 was £146,015.

Particulars concerning the export of hides during the past five years are as follows:—

COMMONWEALTH EXPORT OF HIDES, 1910 to 1914-15.

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom	253,442	245,993	350,519	360,549	485,500	1,696,003
U.S. of America...	21,318	29,232	82,808	136,687	371,364	641,409
Belgium	41,326	80,453	108,455	244,394	40,211	514,839
Germany	21,810	64,536	78,059	206,588	18,773	389,766
Canada	4,000	33,519	65,407	11,205	264,785	378,916
Italy	45,541	68,991	117,352	85,984	9,830	327,698
France	11,938	15,790	15,151	16,208	8,873	67,960
Japan	4,697	6,436	5,025	155	6,863	23,176
Austria-Hungary	...	103	1,275	3,631	203	5,212
Sth. African Union	...	...	...	...	480	480
Other Countries...	1,975	5,815	9,717	7,674	11,600	36,781
Total ...	406,047	550,868	833,768	1,073,075	1,218,482	4,082,240

In the next table are given particulars relative to the value of hides exported:—

VALUE OF HIDES EXPORTED FROM THE COMMONWEALTH, 1910 to 1914-15.

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	294,702	279,474	430,609	580,195	670,421	2,255,401
U.S. of America...	21,988	28,772	94,783	196,583	375,270	717,396
Belgium	48,343	91,110	139,188	385,627	52,647	716,915
Germany	23,947	79,530	103,081	339,605	30,259	576,422
Italy	41,983	62,047	125,744	102,834	12,299	344,907
Canada	4,049	35,320	74,273	16,622	198,421	328,685
France	11,073	17,988	19,865	20,078	13,933	82,937
Japan	7,873	11,060	8,378	335	13,063	40,709
Austria-Hungary	...	161	1,757	5,545	355	7,818
Sth. African Union	...	...	...	...	531	531
Other Countries...	2,087	5,795	9,576	10,547	13,687	41,692
Total ...	456,045	611,257	1,007,254	1,657,971	1,380,886	5,113,413

The number and value of hides imported into the Commonwealth during the five years 1910 to 1914-15 are as follows:—

HIDES IMPORTED INTO THE COMMONWEALTH, 1910 to 1914-15.

Particulars.	1910.	1911.	1912.	1913.	1914-15.	Total for 5 Years.
No.	119,408	97,926	87,680	135,193	83,999	524,206
Value	£ 169,771	143,893	135,301	239,780	146,015	834,760

§ 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 increase in numbers for the Commonwealth as a whole, shewn on page 299, covers the period from 1860 to 1914.

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 disastrous drought of 1902. At this latter point the number was practically identical with that for 1890. From 1902 onwards a rapid improvement has been experienced, the totals for 1913 and 1914 being the highest recorded.

3. **Cattle.**—The graph for cattle furnishes evidence of rapid increase in number, interrupted by three marked periods of decline, of which the first extended from 1862 to 1866, the second from 1881 to 1885, and 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 1912 and 1913 figures shew a slight decline, while those for 1914 shew a more serious falling off, the difference between the 1911 and 1914 returns amounting to over $6\frac{1}{2}$ per cent.

4. **Sheep.**—In the case of sheep the graph furnishes evidence of five 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, and the fifth during 1912. 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 $7\frac{1}{2}$ per cent.

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, show an upward tendency.

SECTION VIII.

AGRICULTURAL PRODUCTION.

NOTE.—Except where otherwise stated, the "agricultural" years hereinafter mentioned are taken as ending on the 31st March.

§ 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 corn 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, 3361 acres; maize, 1527 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, 6877 acres; maize, 3389 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 four 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 1914-15.

Season.	New South Wales.	Victoria.	Queens- land.	South Australia.	W. Aust.	Tas- mania.	N.T.	Fed. Terr.	Common- wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	260,798	337,282	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
1911-12	3,628,513	3,640,241	526,388	2,965,338	1,072,653	270,000	375	3,509	12,107,017
1912-13	3,737,085	4,079,356	668,483	3,062,998	1,199,991	286,065	330	3,741	13,038,049
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

The increase in the area under crop during the past fourteen years has been most marked in the case of New South Wales, Western Australia and Victoria, the respective increases being 2,361,437, 1,666,209, and 1,508,627 acres. During the same period an increase of 912,684 acres was experienced in South Australia, 335,171 in Queensland, and 50,122 acres in Tasmania. The total area under crop in the Commonwealth increased during the period by 6,839,511 acres, and the total for 1914-15 was the highest ever attained by the Commonwealth. During the past nine seasons the percentage of increase was particularly high in Western Australia, viz., 400 per cent. New South Wales had an increase of 72½ per cent., while Queensland, South Australia, Victoria, and Tasmania added to their areas under crop to the extent of 51½, 45½, 43½, and 19½ per cent. respectively. The increase for the whole of the Commonwealth during the same period was 66 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 1911-12, increased at a rate which is somewhat greater than that

at which the population of the Commonwealth has increased. This relatively greater increase is 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 1000 OF POPULATION.

Season	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aus.	Tas.	Northern Territory	Federal Terr.	C'wlth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ..	1,656	2,451	954	6,224	1,123	1,327	...	...	2,200
1910-11 ...	2,060	3,037	1,114	6,750	3,089	1,480	109	...	2,688
1911-12 ...	2,169	2,671	846	7,091	3,646	1,396	115	1,827	2,650
1912-13 ...	2,102	2,955	1,050	7,122	3,920	1,451	95	1,928	2,755
1913-14 ...	2,494	3,110	1,133	7,203	4,796	1,310	96	2,168	3,014
1914-15 ...	2,582	3,231	1,171	7,431	5,782	1,363	98	2,486	3,168

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 represented for 1914-15 only about one acre in every 122. In Victoria the area under crop was about one acre in every 12, in New South Wales one in 41, in Tasmania one in 61, in South Australia one in 74, in Western Australia one in 334, in Queensland one in 540, in the Northern Territory one in 946,658, and in the Federal Territory one in 120.

PERCENTAGE OF AREA UNDER CROP TO TOTAL AREA OF EACH STATE AND OF COMMONWEALTH FOR SEASONS 1901-2 and 1910-11 to 1914-15.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aus.	Tas.	Northern Territory	Federal Terr.	C'wlth.
	%	%	%	%	%	%	%	%	%
1901-2 ..	1.147	5.273	0.113	0.919	0.035	1.386	...	...	0.442
1910-11 ...	1.705	7.026	0.155	1.129	0.137	1.710	0.0001	...	0.625
1911-12 ...	1.832	6.472	0.123	1.219	0.172	1.609	0.0002	0.609	0.636
1912-13 ...	1.887	7.253	0.156	1.259	0.192	1.705	0.0001	0.641	0.685
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

5. **Artificially-Sown Grasses.**—In all the States considerable areas are devoted to artificially-sown grasses, frequently sown on uncultivated land after burning off. Statistics regarding the area under such grasses are as shewn hereunder:—

AREA UNDER SOWN GRASSES, 1901-2 and 1910-11 to 1914-15.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia	Tasmania.	Fed. Terr.	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
1910-11	1,055,303	991,195	140,196	26,416	8,348	493,233	...	2,714,691
1911-12	1,119,738	1,041,772	166,175	30,431	5,760	505,940	50	2,869,866
1912-13	1,152,399	1,085,346	205,363	30,377	5,168	508,714	50	2,987,419
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

(a) Including 2 acres Northern Territory 1912-13, and 4 acres 1913-14.

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 the last ten years, and which is referred to in the succeeding section. The areas contained in the above table relate in most cases to grasses sown for grazing purposes on uncultivated land, generally after burning off, and are consequently not included with "area under crop."

§ 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 1914-15 :—

DISTRIBUTION OF CROPS IN AUSTRALIA, 1914-15.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Terr.	Total for C'wealth
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ...	2,756,843	2,863,535	127,015	2,502,630	1,376,012	23,865	...	1,681	9,651,081
Oats ...	43,285	434,815	2,728	140,567	96,085	57,063	...	191	774,734
Maize ...	143,663	19,433	176,372	189	73	...	51	...	339,781
Barley—									
Malting ...	2,501	31,268	5,367	54,240	3,139	5,415	...	...	101,930
Other ...	2,369	31,224	1,799	12,075	3,847	421	...	...	51,726
Beans and Peas ...	346	12,944	212	9,873	2,258	15,444	...	...	41,077
Rye ...	2,853	1,955	81	891	632	1,240	...	...	7,652
Other Cereals ...	...	...	...	1	19	...	...	...	20
Hay ...	783,107	895,755	79,327	445,832	332,037	89,598	120	2,837	2,628,613
Green Forage ...	*949,539	139,654	184,239	52,656	19,098	6,809	83	80	1,352,158
Grass Seed ...	...	149	1,358	...	...	1,032	...	...	2,539
Orchards&other Fruit Gardens	53,905	74,302	22,212	25,811	21,378	35,007	50	46	232,711
Vines—									
Productive ...	6,756	17,728	1,280	22,422	2,315	...	...	...	50,501
Unproductive ...	1,229	4,073	135	4,442	605	...	...	...	10,484
Market Gardens	10,475	12,935	2,648	1,830	2,785	628	60	27	31,388
Sugar Cane—									
Productive ...	6,012	...	108,013	...	...	...	...	...	114,025
Unproductive ...	5,409	...	53,182	...	...	...	...	...	58,591
Potatoes...	30,410	65,495	8,385	7,639	4,778	31,613	...	8	148,328
Onions ...	284	8,937	175	411	136	86	...	...	10,029
Other root crops	971	2,446	3,728	287	300	3,815	9	...	11,556
Tobacco ...	1,563	196	614	...	...	...	...	...	2,373
Broom Millet ...	2,027	696	697	...	...	...	1	...	3,421
Pumpkins and Melons	2,912	2,329	9,823	166	969	...	12	...	16,211
Hops ...	...	115	...	3	...	1,427	...	...	1,545
All other crops	1,051	2,775	3,178	399	1,081	1,011	5	...	9,500
Total Area...	4,807,001	4,622,759	792,568	3,292,364	1,867,547	274,474	391	4,870	15,651,974

* Including area fed off.

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 1914-15 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 latter three of these States the hay crop is second in importance. In New South Wales, owing to the unusually large area fed off during 1914-15, green forage ranks second, hay taking third place. In Victoria, South Australia, and Western Australia, the oat crop occupies third position. In Queensland, on the other hand, the three principal crops in the order of importance are green forage, maize, and sugar cane, while in Tasmania hay, oats, and orchards occupy the leading positions. For the Commonwealth as a whole, the wheat, hay, and oat crops represent nearly 83½ per cent. of the total area under crop.

PROPORTION OF AREA UNDER CHIEF CROPS, 1914-1915.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Terr.	C'wealth
	%	%	%	%	%	%	%	%	%
Wheat ...	57.34	61.94	16.03	76.24	73.68	8.69	...	34.52	61.66
Hay ...	16.29	19.38	10.01	13.58	17.78	32.64	30.69	58.26	16.79
Oats ...	0.90	9.41	0.34	4.28	5.14	20.79	...	3.92	4.95
Maize ...	2.99	0.42	22.25	0.01	...	...	13.04	...	2.17
Green Forage	19.75	3.02	23.25	1.60	1.02	2.48	21.23	1.64	8.64
Orchards and Fruit G'dens	1.12	1.61	2.48	0.79	1.14	12.75	12.79	0.94	1.49
Sugar Cane...	0.24	...	20.34	...	...	...	...	...	1.10
Potatoes ...	0.63	1.43	1.06	0.23	0.26	11.32	...	0.17	0.95
Barley ...	0.10	1.09	0.90	2.02	0.37	2.13	...	...	0.98
Vineyards ...	0.17	0.47	1.62	0.82	0.15	...	...	...	0.39
All Other ...	0.47	1.23	1.72	0.43	0.46	9.20	22.25	0.55	0.88
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 and position regarding them in each State and Territory is shewn in the following table. New South Wales exhibits the largest area under green forage; Victoria the leading position in regard to wheat, hay, oats, orchards and fruit gardens, and potatoes; and Queensland is first in sugar cane and maize and second in green forage. South Australia had the largest area under vineyards, and barley; Western Australia third position in oats and fourth in wheat, hay, barley, and vineyards; while Tasmania was second in regard to potatoes, third in orchards and fruit gardens, and fourth in oats.

RELATIVE POSITIONS OF THE SEVERAL STATES AND TERRITORIES IN REGARD TO AREA UNDER EACH OF THE PRINCIPAL CROPS DURING THE SEASON 1914-15.

Crop.	N.S.W.	Vict.	Q'land.	S. Aust.	W.A.	Tas.	N.T.	Federal Terr.	C'with.
Wheat ...	28.56	29.67	1.32	25.93	14.26	0.25	...	0.01	100.00
position	2	1	5	3	4	6	...	7	
Hay ...	29.80	34.07	3.01	16.97	12.63	3.41	...	0.11	100.00
position	2	1	6	3	4	5	...	7	
Oats ...	5.60	56.12	0.35	18.14	12.40	7.37	...	0.02	100.00
position	5	1	6	2	3	4	...	7	
Maize ...	42.28	5.72	51.91	0.06	0.02	...	0.01	...	100.00
position	2	3	1	4	5	...	6	...	
Green Forage	70.23	10.33	13.63	3.90	1.41	0.50	...	...	100.00
position	1	3	2	4	5	6	...	...
Orchards and Fruit Gardens...	23.17	31.94	9.56	11.09	9.19	15.05	...	...	100.00
position	2	1	5	4	6	3	...	...
Sugar Cane	6.62	...	93.38	...	...	...	...	...	100.00
position	2	...	1	...	...	...	...	...
Potatoes ...	20.50	44.16	5.66	5.15	3.22	21.31	...	...	100.00
position	3	1	4	5	6	2	...	...
Barley ...	3.16	40.67	4.66	43.16	4.55	3.80	...	...	100.00
position	6	2	3	1	4	5	...	...
Vineyards ...	13.09	35.75	2.32	44.05	4.79	...	...	...	100.00
position	3	2	5	1	4	...	...	...
All other crops	16.39	33.14	16.42	10.10	5.96	17.99	...	...	100.00
position	3	1	4	5	6	2	...	...
Total area under crop	30.71	29.54	5.06	20.97	11.93	1.76	...	0.03	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 shewn below:—

ACREAGE OF CHIEF COMMONWEALTH CROPS, 1910-11 to 1914-15.

Crop.				1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
				Acres.	Acres.	Acres.	Acres.	Acres.
Wheat	...	...	...	7,372,456	7,427,834	7,339,651	9,287,398	9,651,081
Hay	...	...	...	2,258,405	2,518,288	3,217,041	2,754,672	2,628,613
Oats	...	...	...	676,688	616,857	874,034	859,020	774,734
Maize	...	...	...	414,914	340,065	314,936	331,879	339,781
Green Forage	...	...	...	374,862	424,440	428,006	486,504	1,352,158
Orchards and Fruit Gardens	...	...	...	185,156	194,524	205,174	216,021	232,711
Sugar Cane	...	...	...	155,542	144,283	155,567	160,976	172,616
Potatoes	...	...	...	151,515	130,463	128,889	174,262	151,845
Barley	...	...	...	108,424	116,466	181,387	222,564	153,656
Vineyards	...	...	...	59,114	60,602	62,388	61,197	60,985
All other Crops	...	...	...	136,762	133,195	130,976	128,519	133,794
Total	...	...	...	11,893,838	12,107,017	13,038,049	14,683,012	15,651,974

During the period under review the area devoted to the several crops has varied considerably, that under wheat attaining a maximum in the season 1914-15, and a minimum in 1912-13, while hay reached its maximum area in 1912-13 and its minimum in 1910-11. Of the other crops, green forage, orchards, and sugar cane attained their maximum areas in 1914-15, maize in 1910-11, oats and vineyards in 1912-13, and potatoes and barley 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 shewn diagrammatically in the graph hereinafter:—

AREA UNDER WHEAT, 1860-1 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	N.T.	Fed. Terr.	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	131,653	178,628	2,068	410,608	22,249	73,270	...	...	818,476
1870-1	147,997	284,167	2,892	604,761	26,640	57,382	...	...	1,123,839
1875-6	133,609	321,401	4,478	898,820	21,561	42,745	...	...	1,422,614
1880-1	253,138	977,285	12,632	1,733,542	27,686	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	333,233	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	79,304	1,913,247	74,308	51,825	...	...	5,666,614
1905-6	1,939,447	2,070,517	119,356	1,757,036	195,071	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
1911-12	2,379,968	2,164,066	42,962	2,190,782	612,104	37,208	2	742	7,427,834
1912-13	2,230,500	2,085,216	124,963	2,079,633	793,096	25,226	3	1014	7,339,651
1913-14	3,203,572	2,565,861	132,655	2,267,851	1,097,193	18,432	9	1825	9,287,398
1914-15	2,756,343	2,863,535	127,015	2,502,630	1,376,012	23,865	...	1681	9,651,081

The area devoted in the Commonwealth to the production of wheat for grain was higher for the season 1914-15 than for any previous season, there being an increase in all the States with the exception of New South Wales and Queensland, which shewed a falling-off. The figures for the previous year shew that the maximum area under wheat

for grain was then attained by all the States with the exception of Tasmania, the maximum for that State being for the season 1897-8. The average area under wheat in the Commonwealth in the past ten seasons was 7,041,597 acres. The past five seasons exceeded this average, while the previous five seasons fell short of it.

Although final figures for 1915-6 for all the States are not yet available, the data to hand intimate the total area under wheat for grain in the Commonwealth to be at least 12,300,000 acres, representing an increase of over 27 per cent. on 1914-15 area. New South Wales returns are estimated at 4,235,074 acres; Victoria, 3,679,971 and South Australia, 2,739,214 acres, and the approximate total for the Commonwealth 12,314,000 acres.

(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 1915-16.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Federal Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1 ...	1,581,598	3,459,914	3,136	3,576,593	308,332	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	51,536	14,612,676	339,376	524,348	...	...	27,431,869
1890-1 ...	3,649,216	12,751,295	207,930	9,399,389	467,389	642,980	...	...	27,113,259
1895-6 ...	5,195,312	5,669,174	123,630	5,029,300	188,077	1,164,855	...	...	18,270,348
1900-1 ...	16,173,771	17,847,321	1,194,068	11,253,108	774,653	1,110,421	...	...	48,353,402
1905-6 ...	20,737,300	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
1911-12 ...	25,080,111	20,891,877	285,109	20,352,720	4,358,904	659,615	20	7,991	71,636,347
1912-13 ...	32,466,506	26,223,104	1,975,505	21,496,216	9,168,594	630,315	...	20,830	91,981,070
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	3,527,425	2,624,190	384,220	...	17,727	24,892,402
1915-16* ...	67,323,390	58,521,706	640,000	34,134,504	18,234,392	1,000,000	...	†	179,853,992

* Final figures Victoria and South Australia, those for New South Wales and Western Australia approximate, remaining States estimated. † Included with New South Wales.

The harvest of 1915-16 was the largest ever reaped in the Commonwealth, and exceeded by over 76,500,000 bushels that of 1913-14, the next largest harvest; the 1910-11 yield was 95,111,983 bushels, for 1912-13, 91,981,070 bushels, and that for 1909-10 was 90,413,597 bushels, these being the only five occasions on which a yield exceeding 90,000,000 bushels has been obtained. The harvest for 1914-15 was very poor, the prolonged drought having been very disastrous to the wheat areas. The yield was 24,892,402 bushels, the lowest since 1902.

(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 1910-11 to 1914-15 and for the decennium :—

YIELD OF WHEAT PER ACRE, 1901-2 and 1910-11 to 1914-15.

Season.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tasmania.	N.T.	Fed. Terr.	C'wealth
	Bushels.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.
1901-2 ...	10.64	6.91	19.40	4.60	10.10	21.86	...	...	7.54
1910-11 ...	13.11	14.52	9.58	11.57	10.14	21.45	10.00	...	12.90
1911-12 ...	10.54	9.65	6.64	9.29	7.12	17.73	10.00	10.77	9.64
1912-13 ...	14.56	12.58	15.81	10.34	11.56	24.99	...	20.54	12.53
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
Average for 10 seasons	10.90	10.46	11.78	9.43	8.69	20.46	...	13.47	10.22

As the above figures shew, there were considerable variations in the average yields, chiefly due of course to the vagaries of the season.

For the Commonwealth as a whole the average yield for 1914-15 of 2.58 bushels per acre was 7.64 below the average yield of 10.22 per acre during the last ten seasons. The highest average yield for any State was in Tasmania with 16.10 bushels per acre, and the lowest in Victoria with 1.38 bushels per acre. The approximate yield per acre for the Commonwealth for 1915-16 is 14.61 bushels, and exceeds that of any previous year by over three-quarters of a bushel. The average yield per acre for New South Wales and Victoria was 15.90 bushels, while that for South Australia was 12.46 bushels.

(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 $3\frac{1}{2}$ bushels in 1902-3 and $36\frac{1}{2}$ bushels in 1915-16. The State in which wheat-growing occupies the most important position relatively to population is South Australia, which in 1915-16 had a yield which averaged over $77\frac{1}{2}$ bushels per head. Taking a series of years Queensland is the State in which the average production of wheat per head is least; since 1912-13, however, Tasmania shews the lowest average. Particulars for 1901-2 and the past six seasons are as follows:—

AUSTRALIAN WHEAT PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels	Bush'ls	Bush'ls	Bushels
1901-2	10,766	10,023	3,340	22,299	4,943	5,499	...	...	10,082
1910-11	16,981	26,750	1,707	59,835	21,304	5,783	6	...	21,494
1911-12	14,993	15,330	485	48,671	14,817	3,409	6	4,056	15,955
1912-13	18,265	18,995	3,104	49,981	29,950	3,196	...	10,737	19,433
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	36,135	41,278	*	77,638	57,338	*	...	†	36,467

* Not yet available. † Included with New South Wales.

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 Netherlands with a maximum of 37.17 bushels per acre, to Tunis with a minimum of 2.2 bushels per acre. Australia with approximately 14.6 occupies a subordinate position. (See table on previous page.)

AVERAGE YIELD OF WHEAT IN VARIOUS COUNTRIES, 1914.

Country.	Average Yield in bushels per acre.	Country.	Average Yield in bushels per acre.
Netherlands*	37.17	Canada ...	15.67
Belgium* ...	34.94	Australia† ...	14.61
United Kingdom*	32.82	Italy ...	14.38
Sweden (1912)*	30.08	Spain ...	11.99
Germany ...	29.58	India ...	10.96
New Zealand	28.95	Argentine Republic*	10.88
Egypt ...	25.24	Algeria (1913) ...	10.69
Bulgaria (1913)*	23.82	Portugal (1911) ...	9.78
France* ...	19.98	Russia in Europe *†	9.24
Austria (1913)	19.89	Russia in Asia (1913)	9.21
Hungary (1913)	19.83	Rumania ...	8.87
Japan ...	18.44	Uruguay*	4.39
United States	16.64	Mexico ...	2.97
Servia ...	16.03	Tunis* ...	2.20

* Provisional. † Exclusive of Poland. ‡ 1915.

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 OF VARIOUS COUNTRIES, 1914.

Country.	Yield in Bushels.	Country.	Yield in Bushels.
United States ...	891,017,162	Austria (1913) ...	59,625,038
Russia in Europe*†	573,290,417	Rumania ...	46,295,370
France* ...	320,241,101	Algeria* (1913) ...	36,847,832
India ...	311,877,512	Egypt ...	32,831,051
Russia in Asia (1913)	189,861,342	Japan ...	21,641,521
Australia ‡	179,853,992	Servia ...	15,311,563
Italy ...	169,440,806	Belgium* ...	13,972,295
Argentine Republic*	168,283,398	Portugal (1911) ...	11,849,543
Hungary 1913 ...	168,245,869	Sweden* ...	7,797,106
Canada ...	161,280,035	New Zealand* ...	5,488,030
Germany... ..	145,943,409	Netherlands* ...	5,379,833
Spain ...	116,087,946	Mexico ...	4,388,596
United Kingdom* ...	62,519,571	Uruguay* ...	3,417,108
Bulgaria* ...	60,626,115	Tunis* ...	2,204,586

* Provisional. † Exclusive of Poland. ‡ 1915.

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 1905 to 1914 :—

WORLD'S PRODUCTION OF WHEAT.

Year.	1,000 bushels.	Year.	1,000 bushels.	Year.	1,000 bushels.
1905 ...	3,300,502	1909 ...	3,586,977	1913 ...	4,047,819
1906 ...	3,414,945	1910 ...	3,528,098	1914 ...	3,883,779
1907 ...	3,130,403	1911 ...	3,511,966		
1908 ...	3,141,456	1912 ...	3,797,529		

In this estimate the figures given for Australia and New Zealand relate to the agricultural year ending on 31st March in the year specified.

For the ten years referred to, the Australian production of wheat aggregated 749,211,000 bushels, thus representing slightly under 2½ 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 6,580 million bushels, so that the Australian production of wheat represented 11.4 per cent. of that of the British Empire, while the British Empire production represented 18.6 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 1914.

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	1906 ...	28 3	30 9	25 9
1871 ...	56 8	60 0	52 6	1907 ...	30 7	36 3	26 0
1881 ...	45 4	55 2	40 9	1908 ...	32 0	35 6	30 5
1891 ...	37 0	41 8	32 3	1909 ...	36 11	44 9	31 4
1901 ...	26 9	27 8	25 8	1910 ...	31 8	33 9	29 0
1902 ...	28 1	31 8	24 10	1911 ...	31 8	33 4	30 0
1903 ...	26 9	30 3	24 11	1912 ...	34 9	39 2	29 10
1904 ...	28 4	30 6	26 3	1913 ...	31 8	34 3	30 0
1905 ...	29 8	32 3	26 8	1914 ...	34 11	43 3	30 11

(ii.) *Australian and other Wheat.* Generally speaking, Australian wheat shows a grain of bright clear texture, rich in gluten, and of fine milling quality. Its excellence is attested by the high price which it realises in the home markets. The statement below shews, for the last five years, the average value per Imperial quarter of the wheat imported into the United Kingdom from the chief producing countries:—

**AVERAGE PRICE OF FOREIGN WHEAT IMPORTED INTO THE UNITED KINGDOM,
1910 TO 1914.**

Country.	Average Price per Imperial Quarter.					Country.	Average Price per Imperial Quarter.				
	1910.	1911.	1912.	1913.	1914.		1910.	1911.	1912.	1913.	1914.
	s. d.	s. d.	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.	s. d.	s. d.
Australia ...	37 2	34 10	38 5	37 6	36 6	Germany ...	36 11	33 6	36 8	31 0	32 0
Russia ...	35 7	33 4	37 6	33 11	33 6	Bulgaria ...	32 11	35 1	36 4	...	34 1
Rumania ...	34 2	34 7	37 3	33 3	33 7	United States	37 3	34 9	35 9	35 1	37 3
British India	35 5	33 7	37 0	36 6	39 5	Argentina ...	34 11	33 4	35 6	35 8	34 1
Chile... ..	33 7	33 0	36 9	36 7	35 7	Canada ...	36 9	34 10	35 2	34 8	37 5

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, 1905 to 1914-15.

Particulars.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914-15.
Price per bushel	3s. 5d.	3s. 3d.	3s. 4d.	4s. 1d.	4s. 2d.	4s. 2d.	3s. 6d.	3s. 11d.	3s. 9d.	3s. 9d.

The export values here shewn 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 shews the imports, exports, and net exports of wheat and flour during 1901 and 1910 to 1914-15. 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 1914-15 the Commonwealth imports of wheat and flour were equivalent to 12,607,940 and 1,646,387 bushels of wheat respectively. This importation was necessitated 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 63,942,390 bushels in 1911, the net exports for that period averaging 43,784,709 bushels.

**IMPORTS AND EXPORTS OF WHEAT AND FLOUR, COMMONWEALTH,
1901 AND 1910 TO 1914-15.**

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bshls. ¹	Bushels.	Bushels.	Eq. Bshls. ¹	Bushels.	Bushels.
1901	22,992	302,550	325,542	20,260,058	4,840,700	25,100,758	24,775,216
1910	325	8,600	8,925	47,761,895	6,997,300	54,759,195	54,750,270
1911	113	12,150	12,263	55,147,840	8,794,550	63,942,390	63,930,127
1912	1,483	7,300	8,783	32,604,248	8,404,700	41,008,948	41,000,165
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

1. 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 1910 to 1914-15. The countries are as shewn in the Australian Customs returns, but owing to the fact that 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, 1910 to 1914-15.

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for Five Years.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
U. Kingdom	36,998,625	37,475,188	23,099,670	27,922,717	1,532,693	127,028,893
Sth. African Union ...	3,001,145	2,458,780	1,784,382	4,482,865	1,088,507	12,815,679
Canary Is.*	3,280,215	4,756,647	3,107,257	1,477,005	...	12,621,124
France ...	918,815	5,468,993	53,773	1,943,208	9,482	8,394,271
Peru ...	1,270,360	1,594,610	1,201,682	943,130	290,810	5,300,592
Belgium ...	1,174,210	1,639,140	1,414,263	1,742,803	...	5,970,416
Chile ...	102,025	477,573	...	...	650,510	1,230,108
Japan ...	231,320	99,560	42,550	1,215,778	223,996	1,813,204
Germany ...	290,905	255,740	556,508	290,553	...	1,393,706
India ...	...	...	...	...	...	...
China ...	...	...	...	...	...	...
Italy ...	54,140	...	488,697	1,879,923	157,000	2,579,760
Egypt ...	...	156,485	427,988	92,413	...	676,886
Philippine I. ...	...	152	1,667	...	...	1,819
New Zealand ...	8,410	12,247	1,695	...	151,042	173,394
New Caledonia ...	470	642	1,400	1,129	743	4,384
Ceylon ...	820	1,325	1,487	1,748	853	6,233
Other Countries ...	430,435	750,758	421,229	929,615	104,957	2,636,994
Total ...	47,761,895	55,147,840	32,604,248	42,922,887	4,210,593	182,647,463

* 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, 1910 to 1914-15.

Country to which Exported.	1910.	1911.	1912.	1913.	1914-15.	Total for Five Years.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Sth. African Union	29,535	35,136	26,230	38,209	14,075	143,185
United Kingdom	23,323	24,616	38,535	18,894	850	106,218
Java ...	18,808	30,964	29,275	38,103	6,003	123,153
Portuguese East Africa ...	22,517	8,421	4,264	15,612	3,163	53,977
Philippine Islands	9,359	16,634	16,240	14,366	3,313	59,912
Straits Settlements	12,374	22,036	15,177	21,625	3,352	74,564
Hong Kong ...	1,742	5,687	1,952	2,466	140	11,987
New Zealand ...	3,148	2,818	1,641	3,057	5,064	15,728
New Caledonia ...	4,049	4,174	4,012	4,143	3,791	20,169
Mauritius ...	2,894	1,974	1,240	1,906	1,810	9,824
Ceylon ...	2,287	3,046	3,901	5,454	2,173	16,861
China ...	816	1,656	1,738	2,188	545	6,943
Fiji ...	1,760	2,230	2,429	2,619	1,834	10,872
Japan ...	815	269	453	610	2	2,149
Other Countries ...	6,519	16,230	21,007	52,406	7,399	103,561
Total ...	139,946	175,891	168,094	221,658	53,514	759,103

During the five years under review the export of wheat to the United Kingdom amounted to 127,028,893 bushels, or about $69\frac{1}{2}$ per cent. of the total export for the period. On the other hand, the export of flour to the United Kingdom aggregated only 106,218 tons, or under 19 per cent. of the total export. During the five years the heaviest exports of flour have been to South Africa, the United Kingdom, Java, Portuguese East Africa, the Philippine Islands, the Straits Settlements, and New Caledonia.

(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 17 per cent. of the total equivalent in wheat exported as wheat or flour from the Commonwealth. One cause of this, and probably the chief one, is the fact that Australian wheats are in considerable demand with the English millers for mixing purposes, while the Australian flour has not, up to the present, received that consideration from the English bakers which its admitted qualities undoubtedly merit. Steps which have recently been taken to bring these qualities before the British public may possibly have the effect of increasing the proportion of wheat exported in the form of flour.

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 past ten years the net exports from the Commonwealth of wheat and its milled products, have amounted to 311,273,838 bushels of wheat, 1,487,176 tons of flour, and 7,748,390 bushels of bran, pollard, and sharps. On the basis of the figures quoted above this export would contain no less than 163,000,000 lbs. of phosphoric acid, the value of which as a fertiliser 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.

Year.	Flour Milled.	Net Exports of Flour.		Net Quantity Available for Home Consumption.		Net Quantity Available per Head of Population.	
		Flour.	Flour in Biscuits Exp'd.	Flour.	Equivalent in Terms of Wheat.	Flour.	Equivalent in Terms of Wheat.
	Tons.	Tons.	Tons.	Tons.	Bushels.	Tons.	Bushels.
1905	...	596,908	153,206	1,100	442,602	22,130,100	.1106 5.531
1906	...	613,923	166,005	1,570	446,348	22,317,400	.1099 5.496
1907	...	652,135	163,064	1,840	487,231	24,361,550	.1182 5.908
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	...	691,301	175,649	2,570	513,082	25,654,100	.1143 5.713
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
Aggregate 10 years	...	6,511,136	1,607,945	21,030	4,882,161	244,108,050	.1113 5.563

ESTIMATED QUANTITY OF WHEAT USED FOR SEED PURPOSES IN THE COMMONWEALTH.

Year.	Wheat for Seed Purposes.		
	Quantity.	Per Acre.	Per Head of Population.
	Bushels.		Bushels.
1905	6,747,000	.946	1.686
1906	6,664,000	.954	1.641
1907	6,261,000	.960	1.518
1908	6,429,000	.962	1.533
1909	7,322,000	.960	1.713
1910	8,332,000	.966	1.907
1911	8,282,000	.922	1.844
1912	8,484,000	.919	1.827
1913	9,747,000	.908	2.029
1914	10,059,000	.914	2.045
Aggregate for 10 years	78,327,000	.938	1.785

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 is 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 1907 the flour available per head of population, after deducting net exports from quantity milled, shewed a substantial increase over the average for the previous two years, 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 0.1113 tons per head of population, this, when expressed in equivalent terms in wheat, representing 5.563 bushels. The estimates of quantity of grain used for seed purposes have been based on data supplied by the Agricultural Departments of the several States giving average quantities of seed used per acre for wheat sown either for grain, hay or green fodder. The average annual quantity thus used during the ten years was 1.784 bushels per head of population, and 0.938 bushels per acre sown.

Reference will be found in a subsequent section to Commonwealth and State legislation for control of trade and prices of commodities during the war. Various State Boards and Commissions and a Federal Royal Commission were appointed to collect information and to report on such matters as the supply of foodstuffs and other necessities required by, and available for, Australia, and other important matters relating to conditions of trade and industry arising from the war.

6. Value of the Wheat Crop.—The estimated value of the wheat crop in each State and in the Commonwealth during the season 1914-15 is shewn below :—

VALUE OF THE WHEAT CROP,* 1914-15.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'w'lth.
	£	£	£	£	£	£	£	£
Aggregate value	3,523,530	1,543,538	290,599	1,278,693	940,335	75,243	4,870	7,656,808
Value per acre	£1/5/7	£0/10/9	£2/5/9	£0/10/2	£0/13/8	£3/3/0	£2/17/11	£0/15/8

* 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.

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. It has the assistance of an Advisory Board consisting of three 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.) *Advance and Finance.* Arrangements were made between the Governments of the Commonwealth and of the interested States and various Banking Corporations, whereby advances were made to growers equivalent to 3s. per bushel. In South Australia and Western Australia farmers are paid 3s., less charges. In New South Wales and Victoria they are paid a flat rate of 2s. 6d. The difference between the amount of 3s., and the amount actually paid to the grower, is applied to meet freights, handling charges, and other expenses. It was agreed that proceeds of wheat, as realised, should be paid to the Banks in reduction of their advances. The rate of interest payable to the Banks on their outstanding advances is 5 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 were made by means of certificates issued by agents appointed by the various States. The certificates were payable at Banks named by the growers.

(iii.) *Results of the Scheme.* Deliveries under the scheme have now been practically completed, but in all the States certain wheat was not brought within its operation. This applies particularly to seed wheat. The scheme only came into operation on 1st December, 1915, but there were, of course, various purchases of wheat by millers and others before that date.

The certificates issued to 19th June, 1916, show the following deliveries:—

New South Wales	...	60,053,000 bushels.
Victoria	...	58,073,000 „
South Australia	...	28,554,000 „
Western Australia	...	14,600,000 „
Total		161,280,000 „

The Victorian total includes about 1,500,000 bushels grown in New South Wales, and the South Australian total includes a small quantity grown in Victoria.

The total amount for which certificates have been issued on the

basis of 3s. per bushel is	...	£24,192,000
The certificates actually paid amount on the same basis to	...	£22,679,000
Uncashed certificates therefore amount to	...	£1,513,000

In Victoria and South Australia inducements are held out to growers to refrain from cashing certificates. In those States growers are allowed 5 per cent. per annum on their uncashed certificates. In New South Wales and Western Australia interest is not allowed.

Of the certificates cashed, a considerable portion is, as previously indicated, set aside to meet necessary expenses.

The total amount at credit of the States to their expenses or			
similar accounts may be taken as	...	...	£1,680,000
The total receipts from sales amount to	...	...	£11,147,000
And the overdraft which on 4th April had reached its			
maximum of	...	...	£12,873,000
Has now been reduced to	...	...	£9,852,000
The above figures bring the information up to 19th June, 1916.			

8. **Lucerne Pool.**—Early in 1916 the Victorian State Government decided to formulate a Lucerne Pool, to be operated for the benefit of settlers within the Government Irrigation Settlements, which included Swan Hill, Bamawm, Ballendella, Nanneella and Tongala. The object was to advance £2 per ton on delivery at the sending station, where it was proposed to store the hay, as it was considered that the market value would be very little more than £2 per ton. The pool, however, placed itself in touch with the local market, and a few days after the commencement of the operation a large sale was made to the Defence Department at £3 8s. 6d. per ton, free on rails at sending stations, and other large orders were placed in New South Wales and Victoria at prices ranging from £3 11s. to £3 19s. per ton on rails at sending stations.

In addition to the original advance of £2 per ton, the first dividend of 10s. per ton has been paid, and the second dividend of a similar amount will be made in a few days. It is estimated that the third dividend will amount to approximately from 5s. to 7s. per ton, or a total net return to growers of from £3 5s. to £3 8s. per ton.

§ 5. Oats.

1. **Progress of Cultivation.**—Oats comes next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for nearly 62 per cent., oats represented less than 5 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, 1860-61 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Federal Terr.	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	194,089	116	4,355	1,319	19,853	...	177,655
1885-6	14,117	215,994	203	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
1911-12	70,880	302,238	557	107,881	77,488	57,583	167	616,794
1912-13	84,979	439,242	4,232	155,545	127,645	62,445	196	874,284
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

* 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, 1860-61 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush'ls	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
1911-12	1,152,827	4,585,326	5,783	1,349,480	961,385	1,504,633	2,337	9,561,771
1912-13	1,669,259	8,323,639	82,420	1,673,508	2,105,812	2,257,258	4,816	16,116,712
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	363,425	464,943	1,341,800	2,151	4,341,104

The principal oat-growing State of the Commonwealth is Victoria. During the past five seasons it has produced about 54½ per cent. of the total quantity of oats grown in the Commonwealth; Tasmania, New South Wales, Western Australia, and South Australia 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 a maximum yield in 1903-4, and Queensland, South Australia 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 16,243,857 and 16,116,712 for 1908-9 and 1912-13 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 1910-11 to 1914-15, and also for the decennium, are given in the succeeding table:—

AVERAGE YIELD OF OATS PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush'ls	Bushels
1901-2	21.31	20.43	27.50	13.54	16.78	31.48	...	21.22
1910-11	21.83	24.70	19.89	14.63	12.54	32.30	...	22.80
1911-12	16.25	15.17	10.38	12.51	12.41	26.13	13.99	15.50
1912-13	19.64	18.95	19.48	10.76	16.50	36.15	24.57	18.43
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
Average for 10 Seasons	18.91	18.80	17.53	11.52	13.07	30.44	17.08	18.19

The smallest average yield per acre for the Commonwealth for the past ten-year period was that experienced in the season 1914-15, being 8.65, while the largest was that of the season 1912-13, amounting to 21.28 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 8.8 bushels per head during the last five years under review, as compared with 2.6 bushels per head for the Commonwealth as a whole. Particulars for the seasons 1901-2 and 1910-11 to 1914-15 are furnished in the succeeding table :—

OAT PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S Aust.	W. Aust.	Tas.	Federal Territory.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	500	5,558	83	1,306	845	9,734	...	2,559
1910-11	1,036	7,453	84	2,794	2,804	10,646	...	3,487
1911-12	689	3,365	9	3,227	3,268	7,777	1,217	2,093
1912-13	939	6,029	129	3,891	6,879	11,446	2,482	3,405
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

5. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of the Commonwealth for the season 1914-15 is as follows :—

VALUE OF OAT CROP,* 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth.
Aggregate value	£121,550	£408,806	£8,358	£92,106	£116,236	£156,543	£500	£904,099
Value per acre	£2/16/2	18/9	£3/1/3	13/1	£1/4/2	£2/14/10	£2/12/4	£1/3/4

* 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, 1912, and 1914-15. The quantities and values of oats imported into and exported from the Commonwealth during the years 1901 and 1910 to 1914-15 are given hereunder :—

COMMONWEALTH IMPORT AND EXPORT OF OATS, 1901 and 1910 to 1914-15.

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
1910	19,510	2,232	129,490	14,893	109,980	12,661
1911	4,522	639	391,465	46,493	386,943	45,854
1912	2,939,325	398,114	106,275	14,688	—2,833,050	—383,426
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

Note. — signifies net imports.

The principal countries from which the Commonwealth imports of oats have been obtained are the Dominion of New Zealand, Chili, and Japan, 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, Ceylon and India in the later years.

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 1914-15 amounted to 676,560 lbs., and represented a value of £8,934 while the exports amounted to 141,119 lbs., valued at £1,738, principally to the United Kingdom and the Pacific Islands.

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, 1914.

Country.	Quantity of Oats produced.	Country.	Quantity of Oats produced	Country.	Quantity of Oats produced.
	Bushels.		Bushels.		Bushels
United States ...	912,855,936	Russia in Asia	116,450,683	Italy ...	21,462,124
Russia in		Hungary(1913)	84,776,733	Rumania ...	20,249,486
Europe (1913)†	884,476,217	Sweden* ...	70,213,552	Australia† ...	16,116,712
Germany ...	498,147,520	Argentina*		Netherlands*	15,966,304
France* ...	299,961,562	(1913) ..	45,801,296	Algeria (1913)	14,379,006
Canada ...	266,115,392	Belgium* ...	39,793,908	Bulgaria* ...	13,776,970
United Kingdom*	161,420,953	Denmark ...	37,774,247	New Zealand	11,160,073
Austria (1913)...	147,565,989	Spain ...	24,981,934	Norway ...	7,460,204

* Provisional. † Exclusive of Poland. ‡ 1912-13.

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, with the exception of Norway, for which particulars are not available, according to the magnitude of the average yield of oats for the years specified the results are as follow:—

YIELD OF OATS PER ACRE, 1914.

Country.	Average per Acre.	Country.	Average per Acre.	Country.	Average per Acre.
	Bushels.		Bushels.		Bushels.
Belgium* ...	57.99	Austria (1913) ...	31.35	Rumania ...	19.17
Netherlands* ...	46.17	France* ...	30.65	Spain ...	19.16
Germany ...	45.94	Hungary (1913) ...	27.00	Australia† ...	18.43
United Kingdom*	41.63	Algeria (1913) ...	26.70	Italy ...	17.68
New Zealand ...	38.81	Canada ...	26.45	Russia in Asia	
Sweden* ...	35.97	United States ...	23.72	(1913) ...	17.39
Denmark ...	35.68	Russia in Europe		Argentina* ...	15.96
Bulgaria* ...	32.80	(1913)† ...	21.04		

* Provisional † Exclusive of Poland. ‡ 1912-13.

10. **Price of Oats.**—The average wholesale prices of oats in the markets of the several capitals for the year 1914 are given in the following table:—

AVERAGE WHOLESALE PRICE OF OATS PER BUSHEL, 1914.

Particulars.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
Average price per bushel ...	s. d. 4 2½	s. d. 2 6½	s. d. 3 9½	s. d. 2 2	s. d. 2 11½	s. d. 2 8½

§ 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 1914-15 being 320,035 acres, or over 94 per cent. of the total for the Commonwealth. Of the balance, Victoria contributed 19,433 acres, South Australia 189 acres, Western Australia 73 acres, and the Northern Territory 51 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 one; the 1912-13 season shewed a further slight decline, and the two following seasons a small increase.

AREA UNDER MAIZE, 1875-6 to 1914-15.

Season.	N.S.W.	Victoria.	Queensland.	South Aust.	W. Aust.	N.T.	Fed. Terr.	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	*619	46	19	...	414,914
1911-12	167,712	18,223	153,916	97	29	19	69	340,065
1912-13	176,415	19,986	117,993	176	25	35	56	314,686
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

* Particulars for years prior to 1907-8 not available.

3. **Total Yield.**—The average yield per acre of this cereal for the season 1914-15 was not so high as that obtaining for some of the previous years, being 3.02 bushels below the decennial average. The 1910-11 crop was a record one, and exceeded 13,000,000 bushels. The average annual production of maize during the last decade was 9,403,097 bushels. Particulars concerning the yield from 1875 onwards are as hereunder:—

MAIZE CROP, 1875-6 to 1914-15.

Season.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	N.T.	Fed. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	B'shls.	B'shls.	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	5,687,080	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	7,594,180	982,103	4,460,306	*6,375	718	449	...	13,044,081
1911-12	4,506,547	792,660	3,637,562	1,490	401	400	795	8,939,855
1912-13	5,111,056	715,299	2,524,371	2,628	470	1,400	934	8,356,158
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

* 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 1910-11 to 1914-15, and also for the decennium:—

AVERAGE YIELD OF MAIZE PER ACRE, 1901-2 and 1910-11 to 1914-15.

Season.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	N.T.	Fed. Terr.	C'wealth
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	B'shls.	Bushels.
1901-2 ...	22.98	61.42	21.96	*	10.16	...	...	23.86
1910-11 ...	35.62	48.74	24.66	10.30	15.61	23.63	...	31.44
1911-12 ...	26.87	43.50	23.63	15.36	13.83	21.05	11.52	26.29
1912-13 ...	28.93	35.79	21.39	14.93	18.80	40.00	16.68	26.53
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
Average for 10 Seasons	29.84	48.99	23.16	†12.62	12.64	‡24.11	||13.48	27.91

* Particulars not available. † Average for 8 seasons. ‡ Average for 5 seasons.
 || Average for 3 seasons.

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 1914-15 has been estimated at £1,910,059, made up as follows:—

VALUE OF MAIZE CROP, 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	N.T.	Federal Terr.	C'wealth.
	£	£	£	£	£	£	£	£
Aggregate value	839,150	271,578	798,876	51	262	142	...	1,910,059
Value per acre	£5/16/10	£13/19/6	£4/10/7	£0/5/5	£3/11/9	£2/15/8	...	£5/15/1

6. **Relation to Population.**—During the past ten seasons the Commonwealth production of maize has ranged between $1\frac{1}{2}$ bushels per head of population in 1914-15 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 4 bushels per head in 1905-6 and $7\frac{1}{2}$ bushels per head in 1910-11. Details for the several States for the seasons 1901-2 and 1910-11 to 1914-15 are as follow:—

MAIZE PRODUCTION PER 1000 OF POPULATION, 1901-2 and 1910-11 to 1914-5.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	N. T.	Federal Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	2,795	509	5,070	...	27	...	...	1,839
1910-11	4,620	755	7,446	16	3	132	...	2,948
1911-12	2,786	596	5,921	4	1	121	447	2,013
1912-13	2,875	518	3,967	6	2	403	481	1,765
1913-14	2,431	567	5,931	5	1	368	161	1,883
1914-15	1,705	712	6,216	...	3	120	...	1,711

* 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 $71\frac{1}{2}$ per cent.

PRODUCTION OF MAIZE IN VARIOUS COUNTRIES, 1914.

Country.	Production of Maize.	Country.	Production of Maize.
	Bushels.		Bushels.
United States ...	2,672,804,037	Bulgaria (1913)*	45,273,808
Argentine Republic*	338,240,425	Spain ...	30,325,298
Hungary (1913) ...	211,027,457	Servia (1911) ...	26,531,404
Rumania ...	109,551,062	Canada ...	13,923,999
Italy ...	105,007,677	Austria (1913) ...	13,305,205
Egypt ...	78,254,758	Russia in Asia (1913) ...	10,765,860
Russia in Europe (1913)†	72,794,028	Australia ...	8,455,561

* Provisional. † Exclusive of Poland.

8. **Comparison of Yields.**—The average yield per acre of maize in the Commonwealth during the last ten years was 27.91 bushels, and may be regarded as highly satisfactory when compared with that of other maize-producing countries. Canada, Bulgaria, Egypt, Hungary, and Argentine Republic are the only countries shewing a higher average. The remaining countries shewn in the following table had average yields per acre ranging from 10 to 27 bushels.

AVERAGE YIELD OF MAIZE IN VARIOUS COUNTRIES, 1914.

Country.	Average yield per acre.	Country.	Average yield per acre.
	Bushels.		Bushels.
Canada ...	54.39	United States of America ...	25.84
Egypt ...	38.83	Australia† ...	24.89
Argentine Republic*	32.55	Rumania ...	21.46
Hungary (1913) ...	29.26	Austria (1913) ...	18.86
Bulgaria (1913)*	28.19	Servia (1911) ...	18.38
Italy ...	27.01	Russia in Europe (1913)†	17.29
Spain ...	26.67	Russia in Asia (1913)...	10.09

* Provisional. † Exclusive of Poland. ‡ 27.91 average yield for 10 years.

9. Oversea Imports and Exports.—Except in the years 1902, 1903, 1912 and 1914, when many of the maize crops failed, the Commonwealth overseas trade in maize has been practically insignificant. In the first of the years mentioned, nearly two million, and in each of the latter three years considerably more than a million bushels were imported. In 1908 and 1909 also, owing to the small harvests of 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 1910 to 1914-15.

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
1910 ...	133,730	19,554	12,557	1,904	121,173	17,650
1911 ...	31,764	4,925	19,914	3,438	11,850	1,487
1912 ...	1,133,755	218,233	37,968	8,402	1,095,787	209,831
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

The principal countries to which maize has been exported from the Commonwealth are New Zealand and China, while the principal countries from which importations have taken place are the United States, the Pacific Islands, South Africa, and Java.

10. Prepared Maize.—A fairly large 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 1914-15 these importations amounted to 415,114 lbs., and represented a value of £6,361.

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 1905 to 1914:—

AVERAGE PRICE OF MAIZE PER BUSHEL, 1905 to 1914.

Particulars.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
Average price per bushel	s. d. 3 3	s. d. 3 0	s. d. 3 2	s. d. 4 7	s. d. 4 2	s. d. 2 11	s. d. 3 0	s. d. 4 8	s. d. 4 1	s. d. 4 6

§ 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. For the season 1913-14 South Australia attained the lead for the first time and accounted for 40½ per cent. of the Commonwealth area devoted to this crop; Victoria was next in importance with a percentage of 37½; the remaining 22 per cent. being represented by New South Wales, Western Australia, Queensland, and Tasmania in the order named. The heavy falling off in area under barley during 1914-15 was primarily caused by the severe drought. A large percentage of the crop originally sown for grain promised such poor results that it was either fed off or cut for hay. 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 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	Sth. 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
1911-12	10,803	53,541	1,634	40,743	3,664	6,081	116,466
1912-13	16,909	71,631	9,447	68,964	5,626	8,802	*181,387
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

* Including 1 acre Northern and 7 acres Federal Territory in 1912-13, and 9 acres Federal Territory 1913-14.

2. **Malting and other Barley.**—In recent years the statistics of all the States have distinguished between "malting" and "other" barley. Particulars for the Commonwealth for 1914-15 season are as follows:—

AREA UNDER MALTING AND OTHER BARLEY, 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Ter.	Fed. Ter.	C'wealth.
	Acres.	Acres	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley	2,501	31,268	5,367	54,240	3,139	5,415	...	...	101,930
Other barley	2,360	31,224	1,799	12,075	3,847	421	...	...	51,726
Total ...	4,861	62,492	7,166	66,315	6,986	5,836	...	...	153,656

It will be seen that, taking the Commonwealth as a whole, about 66 per cent. of the area devoted to this grain in 1914-15 was cropped with malting barley. The proportion varies considerably in the several States.

3. **Total Yield.**—The total production of barley in the Commonwealth for the season 1914-15 amounted to 1,328,910 bushels, giving an average yield of 8.65 bushels per acre as compared with 17.82 for the decennium. Particulars concerning the yields of the several States from 1875 onwards are as follows:—

COMMONWEALTH BARLEY CROP, 1875-6 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	Sth. 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	138,893	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
1911-12	129,008	1,024,584	15,369	702,855	37,011	143,009	2,056,836
1912-13	289,562	1,744,527	146,847	1,318,734	93,418	265,908	*3,859,116
1913-14	303,297	1,812,890	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

* Including 120 bushels, Federal Territory, 1912-13, 150 bushels 1913-14.

4. **Value of Barley Crop.**—The estimated value of the total barley crop of the Commonwealth for the seasons 1913-14 and 1914-15 was £564,871 and £343,423 respectively. The extent to which the several States have contributed to the latter total is shewn in the following table:—

VALUE OF BARLEY CROP,* 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth.
Total value ...	£11,040	£168,198	£18,042	£123,459	£4,781	£17,903	...	£343,423
Value per acre	£2/5/5	£5/7/8	£4/18/9	£2/17/10	£1/8/5	£5/3/5	...	£2/4/8

* Exclusive of the value of straw.

5. **Relation to Population.**—During the seasons embraced in the following table, the quantity of barley produced in the Commonwealth has averaged about half a bushel per head of population. For the season 1914-15 the production ranged from a little over a bushel per head in South Australia to one-fortieth of a bushel in New South Wales. Details for the period are as follows:—

BARLEY PRODUCTION PER 1000 OF POPULATION, 1901-2 and 1910-11 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	75	573	547	677	179	956	397
1910-11 ...	50	1,002	140	1,338	121	734	503
1911-12 ...	78	771	25	1,709	129	778	458
1912-13 ...	163	1,264	231	3,066	305	1,348	815
1913-14 ...	166	1,284	176	3,029	524	930	805
1914-15 ...	25	420	156	1,012	75	520	269

6. **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 1903-4 furnished the material for a heavy exportation to Japan, the total exported thither during that year being 551,821 bushels. In 1909 also a fairly heavy export took place, mainly to the United Kingdom. Particulars of the Commonwealth oversea imports and exports of barley for the years 1901 and 1910 to 1914-15 are contained in the following table:—

COMMONWEALTH IMPORTS AND EXPORTS OF BARLEY, 1901 and 1910 to 1914-15.

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
1910 ...	34,684	8,498	39,146	5,155	— 4,462	— 3,343
1911 ...	218,316	58,922	9,420	1,256	—208,896	— 57,666
1912 ...	546,177	109,466	1,426	322	—544,751	—109,144
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

Note. — signifies net imports.

Only in three years during the period embraced in the above table have the Commonwealth exports of barley exceeded in value the imports, viz., in 1904, 1905, and 1909. During the last ten years the total importations amounted to 2,183,597 bushels, valued at £476,738, and the total exports to 636,978 bushels, valued at £86,824, giving a net importation of 1,546,619 bushels with a value of £389,914.

In addition to the above, which relates to the unprepared grain, there is a small importation into the Commonwealth of pearl and Scotch barley, mainly from the United Kingdom and Japan. The total imported during 1914-15 amounted to only 7,066 lbs. weight, with a value of £62.

From time to time a considerable export trade in Australian pearl and Scotch barley has been carried on, mainly with the United Kingdom and New Zealand, the total exports for 1909 reaching 1,155,346 lbs., valued at £3,573, and for 1910, 119,337 lbs., valued at £510. During 1911 and 1912, the exports were only 588 lbs., valued at £8, and 712 lbs., valued at £10, respectively; in 1913, however, they increased to 62,992 lbs., with a value of £406, while during 1914-15, 7,814 lbs., valued at £52, were exported.

7. Commonwealth Imports and Exports of Malt.—The importations of malt into the Commonwealth are fairly extensive, the supply being obtained principally from the United Kingdom. Details of imports and exports for the years 1901 and 1910 to 1914-15 are given hereunder:—

COMMONWEALTH IMPORTS AND EXPORTS OF MALT, 1901 and 1910 to 1914-15.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels	£
1901 ...	516,135	140,615	...	...	516,135	140,615
1910 ...	108,168	34,696	258	66	107,910	34,630
1911 ...	102,760	32,798	82	32	102,678	32,766
1912 ...	128,800	45,226	117	48	128,683	45,178
1913 ...	85,002	31,071	120	55	84,882	31,016
1914-15 ...	68,215	23,743	165	87	68,050	23,656

8. 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 1914 are as follows, the Australian figures being added for the sake of comparison:—

PRODUCTION OF BARLEY IN VARIOUS COUNTRIES, 1914.

Country.	Production of Barley.	Country.	Production of Barley.
	Bushels.		Bushels.
Russia in Europe*† ...	360,854,000	Denmark ...	21,468,000
United States ...	187,148,000	Sweden* ...	11,707,000
Germany ...	138,359,000	Egypt ...	10,636,000
Japan ...	87,703,000	Italy ...	6,640,000
Hungary (1913) ...	79,470,000	Chili (1913) ...	5,510,000
Austria (1913) ...	77,167,000	Servia (1911) ...	4,424,000
Spain ...	69,380,000	Belgium* ...	4,062,000
United Kingdom* ...	64,529,000	Australia (1913-14) ...	3,920,425
Algeria (1913) ...	48,030,000	Tunis* ...	3,086,000
France ...	47,968,000	Netherlands* ...	3,081,000
Russia in Asia (1913) ...	40,932,000	Norway ...	2,488,000
Canada ...	34,752,000	New Zealand ...	597,000
Rumania ...	23,660,000		

* Provisional. † Exclusive of Poland.

9. **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, are given in the following table :—

AVERAGE YIELD PER ACRE OF BARLEY, 1901-2 and 1910-11 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West 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
1910-11 ...	11.58	25.44	14.99	15.79	9.96	27.19	20.53
1911-12 ...	11.94	19.14	9.41	17.25	10.10	24.34	17.66
1912-13 ...	17.12	24.35	15.54	19.12	16.60	30.21	21.28
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
Average for 10 Seasons ...	14.28	20.59	14.67	15.49	11.83	24.73	17.82

10. **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 PRICE OF BARLEY PER BUSHEL, 1905 to 1914.

Particulars.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley	4 0	4 5	4 8	4 10	3 10	4 1	4 10 $\frac{1}{2}$	5 11 $\frac{1}{2}$	3 11 $\frac{1}{2}$	3 9 $\frac{1}{2}$
Cape barley ...	2 7	2 4	2 8	3 8	2 7	2 5	2 8	4 11	3 0	2 9 $\frac{1}{2}$

§ 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 1914-15 was 41,077 acres, giving a yield of 370,782 bushels, or an average of 9.03 bushels per acre, being 8.83 below the average yield for the decennium ended 1914-15, which was 17.91 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 1914-15 was 7,652 acres, yielding 67,482 bushels, and giving an average of 8.82, this being below the average for the past ten seasons, which is 11.99 bushels per acre. Nearly 53 per cent. of the rye grown during the season was produced in New South Wales, 20 per cent. in Victoria, and 9 $\frac{1}{2}$ per cent. in South Australia. 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 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 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 season 1914-15.

The area under potatoes in each State from 1890 onwards is given hereunder :—

COMMONWEALTH AREA UNDER POTATOES, 1890-1 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	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
1911-12 ...	43,079	47,692	7,688	7,412	2,705	21,818	69	130,463
1912-13 ...	34,093	47,575	8,822	8,581	5,175	24,612	31	128,889
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

2. **Total Yield.**—For the season 1914-15, Victoria's production represented about 53 per cent. of the total for the Commonwealth, Tasmania and New South Wales coming next in order with 22 and 11½ 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 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	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
1911-12 ...	75,040	119,092	13,087	22,668	9,312	62,164	126	301,489
1912-13 ...	91,600	191,112	16,386	33,078	13,558	72,565	42	418,341
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

3. **Average Yield per Acre.**—The suitability of the soil, climate, and general conditions of Tasmania for potato growing is evidenced by the high yields per acre which are almost invariably obtained in the island State, the average yield during the past ten seasons being 3¼ tons per acre. The lowest average yield is that obtained in Queensland

with an average of a little under two tons for the same period. Particulars for each State for the seasons 1901-2 and 1910-11 to 1914-15, and also for the past decennium, are given hereunder:—

AVERAGE YIELD OF POTATOES, 1901-2 and 1910-11 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	S.Aust.	W. Aust.	Tas.	Federal Terr.	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
1910-11	2.72	2.60	1.88	3.06	3.27	2.67	...	2.64
1911-12	1.74	2.50	1.70	3.06	3.44	2.85	1.83	2.31
1912-13	2.69	4.02	1.86	3.85	2.62	2.95	1.35	3.25
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
Average for 10 Seasons	2.38	2.82	1.78	2.69	3.06	3.25	1.64	2.70

4. **Value of Potato Crop.**—The estimated value of the potato crop of each State for the season 1914-15 is furnished in the following table, together with the value per acre:—

VALUE OF POTATO CROP, 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Federal Territory.	C'wealth.
Tot. value	£316,070	£908,280	£138,521	£106,663	£121,286	£433,988	£100	£2,024,908
Value per acre ...	£10/7/1	£13/17/4	£16/10/5	£13/19/3	£25/7/8	£13/14/7	£12/10/0	£13/13/1

5. **Relation to Population.**—The average production of potatoes per annum per head of the population of the Commonwealth for the past ten seasons has been approximately 190 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, and in 1911-12 about 6½ cwt. Details for the seasons 1901-2 and 1910-11 to 1914-15 are as follows:—

POTATO PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Federal Terr.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	28	104	44	42	30	655	...	84
1910-11	93	125	26	59	21	362	...	90
1911-12	45	90	21	55	32	327	69	67
1912-13	52	138	26	77	44	368	22	88
1913-14	59	125	25	75	56	398	22	88
1914-15	22	132	24	41	46	392	8	72

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 in 1902, 1903, and 1912, the droughts of those periods had brought about a shortage in some of the States, importations from New Zealand took place to the extent of 11,471 tons and 2,279 tons in the first two years, and 17,732 tons in 1912. The quantities and values of the Commonwealth oversea imports and exports of potatoes for 1901 and the past five years are shewn in the following table:—

**COMMONWEALTH IMPORTS AND EXPORTS OF POTATOES,
1901 and 1910 to 1914-15.**

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
1910 ...	1,665	1,313	7,089	42,395	5,424	41,082
1911 ...	245	1,831	1,834	12,241	1,589	10,360
1912 ...	18,151	163,249	1,619	15,331	— 16,532	— 147,918
1913 ...	996	5,537	1,689	12,012	693	6,475
1914-15 ...	2,708	15,406	1,803	12,690	— 905	— 2,716

Note. — signifies net imports.

7. Comparison with Other Countries.—The following table furnishes a comparison of the potato crop of Australia for 1914 with those of some of the leading potato-producing countries of the world for the same year:—

POTATO CROPS OF VARIOUS COUNTRIES, 1914.

Country.	Yield.	Country.	Yield.
	Tons.		Tons.
Germany ...	44,850,162	Sweden* ...	1,699,089
Russia in Europe (1913)*†	34,137,353	Italy ...	1,636,747
France ...	13,778,985	Russia in Asia (1913)	1,190,337
Austria (1913)	11,369,573	Denmark ...	930,734
United States ...	10,873,141	Norway ...	687,927
United Kingdom*	7,478,699	Japan*	669,695
Hungary (1913)	5,364,561	Switzerland ...	590,528
Belgium (1913)	3,150,400	Australia ...	357,614
Netherlands*	2,485,901	Luxemburg*	146,648
Canada ...	2,294,840	New Zealand ...	132,623
Spain ...	2,053,335		

* Provisional. † Exclusive of Poland.

§ 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 1914-15 being only 21,582 acres. The principal of these crops are onions, mangolds, turnips, and "sweet potatoes" (*Batatas edulis*). Of these, onions are most largely grown in Victoria, mangolds in Tasmania and Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in the Commonwealth during the season 1914-15 was 10,029 acres, giving a total yield of 35,842 tons, and averaging 3.6 tons per acre. The area devoted in 1914-15 to root crops other than potatoes and onions, viz., 11,553 acres, yielded 64,643 tons, and gave an average of 6.6 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 the year 1914-15 overseas imports of onions amounted to 2092 tons, obtained principally from Japan and New Zealand, of which total 1897 tons went to New South Wales and 165 tons to Queensland. For the same year the exports of onions totalled 3372 tons, the principal countries to which they were exported being New Zealand, the Philippine Islands, and the United States of America. 1510 tons were imported during 1913 and 3813 tons exported, of which 1318 tons were shipped to New Zealand and 961 to Philippine Islands.

§ 11. Hay.

1. Nature and Extent.—As already stated, the most important crop of the Commonwealth is that of wheat grown for grain. Next to this in importance is the hay crop, which for the five seasons ended 1914-15 averaged nearly 20 per cent. of the area under crop in the Commonwealth, and 16.8 per cent. for 1914-15. 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 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	N. T.	Fed. Terr.	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
1911-12	651,866	860,205	61,299	521,182	344,032	77,466	18	2,220	2,518,288
1912-13	944,725	1,203,728	87,643	647,069	231,690	99,839	10	2,337	3,217,041
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

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 a satisfactory one. 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 1912-13 was the highest on record, and that for 1913-14 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, 1910-11 to 1914-15.

Kind of Hay Crop.				1910-11.	1911-12.	1912-13.	1912-14.	1914-15.
				Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—								
Wheaten	...	...	...	422,972	439,591	703,509	533,890	568,982
Oaten	...	...	...	142,805	146,162	181,400	209,821	158,949
Barley	...	...	...	2,241	2,309	1,703	1,395	1,179
Lucerne	...	...	...	70,559	63,804	56,403	52,457	52,570
Other	...	...	...	...	...	1,710	1,415	1,427
Total	...	...	...	638,577	651,866	944,725	798,978	783,107
VICTORIA—								
Wheaten	...	...	...	240,026	304,388	386,370	220,560	192,562
Oaten	...	...	...	575,791	535,146	790,268	729,678	677,895
Other	...	...	...	16,852	20,671	27,090	27,446	25,298
Total	...	...	...	832,669	860,205	1,203,728	977,684	895,755
QUEENSLAND—								
Wheaten	...	...	...	19,894	1,763	12,710	12,648	14,906
Oaten	...	...	...	13,052	5,403	19,539	16,020	12,573
Lucerne	...	...	...	61,750	51,059	50,814	44,270	47,785
Other	...	...	...	3,862	3,074	4,580	3,531	4,063
Total	...	...	...	98,558	61,299	87,643	76,469	79,327
SOUTH AUSTRALIA—								
Wheaten	...	...	...	336,439	401,648	492,980	411,101	318,586
Oaten	...	...	...	96,062	113,011	147,963	151,694	118,505
Lucerne	...	...	...	2,055	2,411	2,414	2,378	3,976
Other	...	...	...	5,621	4,112	3,712	3,377	4,765
Total	...	...	...	440,177	521,182	647,069	568,550	445,832
WESTERN AUSTRALIA—								
Wheaten	...	...	...	135,521	284,073	176,744	195,497	266,113
Oaten	...	...	...	38,637	58,393	52,904	49,801	64,037
Lucerne	...	...	...	233	167	205	264	328
Other	...	...	...	1,041	1,399	1,837	1,078	1,559
Total	...	...	...	175,432	344,032	231,690	246,640	332,037

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 1914-15 amounted to 1,733,944 tons, or 1,638,652 tons less than that produced in the previous season, which represented the second largest harvested in the Commonwealth, the highest record being that of 3,955,311 tons for the season 1912-13. For many years past

the State of Victoria has been the largest hay producer in the Commonwealth, and in the five seasons, 1910-11 to 1914-15 inclusive, accounted for 38½ 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 1914-15.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	N. T.	Fed. Ter.	Commonwealth.
	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	78,753	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
1911-12	727,054	1,032,288	94,553	605,239	299,695	107,684	40	1,420	2,867,973
1912-13	1,105,350	1,572,933	119,867	714,766	255,751	183,709	10	2,925	3,955,311
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

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 1914-15:—

VALUE OF HAY CROP, 1914-15.

Particulars.	New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.	N. T.	Fed. Ter.	Commonwealth.
Total value ...	£4,037,330	£4,267,170	£481,711	£1,683,496	£1,374,587	£450,840	£2,200	£18,000	£13,315,334
Value per acre	£5/3/1	£4/15/3	£6/1/6	£3/15/6	£4/2/9	£5/0/8	£18/6/8	£6/6/11	£4/13/9

5. **Average Yield per Acre.**—The States of the Commonwealth in which the highest average yields per acre have been obtained during the 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 19 was the average yield, and the highest that of 28 cwt. in 1909-10. The average per decennium was 25 cwt. Particulars for the several States for the seasons 1901-2 and 1910-11 to 1914-15, and also for the decennium, are given hereunder:—

AVERAGE YIELD OF HAY PER ACRE, 1901-2 and 1910-11 to 1914-15.

Season.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	N. T.	Fed. Terr.	Com'twealth.
	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
1910-11 ...	1.32	1.55	1.53	1.35	1.02	1.58	...	...	1.41
1911-12 ...	1.12	1.20	1.54	1.16	0.87	1.39	2.22	0.72	1.14
1912-13 ...	1.17	1.31	1.36	1.10	1.10	1.84	1.00	1.25	1.23
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	1.33	0.94	0.66
Average for 10 seasons	1.12	1.28	1.42	1.15	0.94	1.45	*1.68	*1.00	1.19

* Average for 4 years.

6. **Relation to Population.**—During the past ten seasons the Commonwealth hay production per head of population has varied between 7 cwt. in 1914-15 and 16½ cwt. in 1912-13; averaging about 13 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 1910-11 to 1914-15 are given hereunder:—

HAY PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Vict.	Q'nd.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Ter.	C'wlth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ...	339	231	241	964	463	624	...	...	529
1910-11 ...	513	993	253	1,463	648	594	...	...	718
1911-12 ...	440	777	154	1,472	1,045	566	12	899	639
1912-13 ...	622	1,139	188	1,662	835	932	3	1,508	836
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

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 £42,785 in 1914-15, while the exports of compressed and other fodder which amounted in value to £142,472 in 1904, had shrunk to £16,081 in 1914-15.

During 1914-15 the principal purchases of the hay and chaff exported from the Commonwealth were made by India, the Straits Settlements, and Ceylon, while the bulk of the compressed fodder was exported to the Philippine Islands, and India.

Imports of hay and chaff into the Commonwealth are usually unimportant; for the year 1914-15, however, they totalled 11,947 tons, valued at £65,525, obtained principally from New Zealand.

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 an extensive comparison of the production of hay in the various countries would probably be misleading. It may be noted, however, that in the United Kingdom the production of hay from clover, sainfoin, etc., for the year 1914, amounted to 4,210,924 tons from 2,902,902 acres, while from permanent grasses a yield of 8,192,555 tons of hay was obtained from 6,489,885 acres, giving a total of 12,403,479 tons from 9,392,787 acres, or about 26.4 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 1914-15 was 1,352,158 acres, which was 865,654 acres more than the corresponding area for 1913-14. These figures include large areas in all the States, but more especially in New South Wales, originally sown for wheat and other grain crops, which, owing to drought conditions, were fed off by cattle and sheep. Of the total the New South Wales area represented about 70 per cent., that in

Queensland $13\frac{1}{2}$ per cent., while that in Victoria amounted to $10\frac{1}{2}$ per cent. ; the corresponding percentages for the previous year being 30, $35\frac{1}{2}$ and $20\frac{1}{2}$ respectively. 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 1914-15.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Terr.	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
1911-12	211,693	75,177	93,049	33,673	5,021	5,627	19	181	424,440
1912-13	154,522	84,460	135,354	39,954	7,339	6,304	60	13	428,006
1913-14	146,093	98,963	171,290	49,948	13,126	7,037	21	26	486,504
1914-15	949,539	139,654	184,239	52,656	19,098	6,809	83	80	1,352,158

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 1913-14 may be taken approximately as £1,594,834, or about £3 5s. 7d. per acre, and for 1914-15 as £2,019,365, or £1 9s. 10d. per acre.

3. **Relation to Population.**—Particulars concerning the area under green forage per 1000 of the population of the Commonwealth and the several States for the seasons 1901-2 and 1910-11 to 1914-15 are given hereunder :—

AREA UNDER GREEN FORAGE PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	82	27	79	38	8	24	...	...	54
1910-11	109	55	150	51	16	45	6	...	85
1911-12	128	57	151	82	18	30	6	102	95
1912-13	87	61	213	93	24	32	17	7	90
1913-14	80	70	259	114	41	35	6	13	100
1914-15	510	98	272	119	59	34	21	41	274

§ 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 172,616 acres under sugar-cane in the Commonwealth for the season 1914-15 there were 161,195 acres, or about 93 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 twenty 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 11,421 acres in 1914-15, the lowest area under sugar-cane since 1882-3. 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 1914-15 being the highest on record, that for the previous year being the next

highest and that for 1910-11 only a little short of it. The area under sugar-cane in the Commonwealth from 1865 is given in the following table:—

AREA UNDER SUGAR-CANE, 1865 to 1914-15.

Season.	N.S.W.	Queensland.	C'wealth.	Season.	N.S.W.	Queensland.	C'wealth.
	Acres.	Acres.	Acres.		Acres.	Acres.	Acres.
1865-6	141	450	591	1900-1	22,114	108,535	130,649
1870-1	4,082	6,342	10,424	1905-6	21,805	134,107	155,912
1875-6	6,454	13,459	19,913	1910-11	13,763	141,779	155,542
1880-1	10,971	20,224	31,195	1911-12	13,907	130,376	144,283
1885-6	16,419	59,186	75,605	1912-13	13,914	141,652	*155,567
1890-1	20,446	50,922	71,368	1913-14	13,232	147,743	*160,976
1895-6	32,927	77,247	110,174	1914-15	11,421	161,195	172,616

* Including 1 acre Northern Territory.

2. Productive and Unproductive Cane.—The areas given in the preceding table represent the total area on which sugar-cane was grown during the seasons specified for purposes other than green forage. The whole area, however, was not in any case cut for crushing during that season, there being always a considerable amount of "stand over" cane, as well as a small quantity required for plants. In the season 1914-15 the New South Wales total comprised 6,012 acres of productive and 5,409 acres of unproductive cane, while in the case of Queensland the productive cane amounted to 108,013 acres and the unproductive to 53,182 acres.

3. Yield of Cane.—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 2,271,558 tons for the record season 1913-14. 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 24.49 tons for the former and 16.78 for the latter State. During the nine seasons 1901-2 to 1909-10 in the case of New South Wales the yield remained practically constant at about 21 tons per acre, except in 1907-8 when the yield in New South Wales was so excellent that the average reached close upon 28 tons. During the past five years the average yield per acre in this State has shown an upward tendency, reaching over 30 tons during the last two years under review. In Queensland the average yield per acre for 1910-11 was by far the highest recorded for that State prior to 1913-14, viz., 19.45 tons, while that for the latter year was 20.29, being 3.51 above the average in that State for the last ten years. Particulars relative to the total and average yields of the Commonwealth sugar crops for the seasons 1901-2 and 1910-11 to 1914-15 are as follows:—

YIELD OF SUGAR-CANE, 1901-2 and 1910-11 to 1914-15.

Season.	Total Yield of Cane.			Average Yield per Acre of Productive Cane.		
	N.S.W.	Queensland.	C'wealth.	N.S.W.	Queensland.	C'wealth.
	Tons.	Tons.	Tons	Tons.	Tons.	Tons.
1901-2 ...	187,711	1,180,091	1,367,802	21.36	15.10	15.73
1910-11 ...	160,311	1,840,447	2,000,758	28.65	19.45	19.96
1911-12 ...	147,799	1,534,451	1,682,250	28.18	16.02	16.65
1912-13 ...	140,914	994,212	*1,135,141	22.96	12.72	13.47
1913-14 ...	185,970	2,085,588	2,271,558	30.05	20.29	20.84
1914-15 ...	181,606	1,922,633	2,104,239	30.21	17.80	18.45

* Including 15 tons Northern Territory.

A preliminary estimate for Queensland for the season 1915-16 states that the yield will probably prove to be about 1,153,200 tons of cane, a decrease of 769,416 tons on the previous year's returns. The sugar production is expected to be about 143,400 tons of raw sugar as compared with 225,847 tons for 1913-14.

4. Relation to Population.—The sugar-cane production of the Commonwealth during the past five seasons has averaged about 7.8 cwt. per head of population. In Queensland, the principal sugar-producing State, the production of cane per head has ranged between $1\frac{1}{2}$ tons in 1912-13 and 3 tons in 1913-14. Details for the period 1910-11 to 1914-15 are as follows:—

SUGAR-CANE PRODUCTION PER 1000 OF POPULATION.

State.				1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
				Tons	Tons.	Tons.	Tons	Tons
New South Wales	...	...	...	98	89	79	102	98
Queensland	...	...	...	3,072	2,498	1,562	3,159	2,841
Commonwealth	...	...	...	452	375	240	466	426

5. Quality of Cane.—The quantity of cane required to produce a ton of sugar varies considerably not only with the district in which the cane is grown but also with the season. In Queensland, for instance, during the seasons 1902-3 to 1906-7 the sugar content of the cane crushed continuously diminished, so that while in 1902-3 the quantity of cane used in producing a ton of sugar was 8.33 tons, in the season 1906-7 the quantity required was 9.38 tons, the production in the former case being approximately 12 per cent. and in the latter $10\frac{3}{4}$ per cent. of the weight of cane crushed. For the season 1907-8, the cane was of much better quality, and the quantity required to produce a ton of sugar was only 8.84 tons, the sugar content representing in this case somewhat more than $11\frac{1}{2}$ per cent. of the weight of cane crushed. In 1908-9, owing in large measure to the effect of frosts, the quantity of cane required to produce one ton of sugar was increased to 9.49 tons, the sugar thus representing only about $10\frac{1}{2}$ per cent. of the weight of cane crushed, while in 1909-10 only 8.65 tons of cane were required to each ton of sugar, the sugar representing about $11\frac{1}{2}$ per cent. of the weight of cane crushed. The especially favourable weather existing throughout 1910 resulted in a very high average quantity of cane per acre being obtained, while the moisture which caused this led to a slight diminution in the saccharine density as compared with the previous year. During 1910-11 and the four following seasons the quantity of cane required to produce one ton of sugar was 8.73, 8.85, 8.79, 8.59, and 8.51 tons in the order named, the sugar produced representing about $11\frac{1}{2}$ per cent. of the weight of cane crushed in each of those years, while the average quantity of sugar obtained per acre crushed was 2.23 tons in 1910, 1.81 in 1911, 1.45 in 1912, 2.36 in 1913 and 2.09 in 1914. It should be noted that in 1901-2 no less than 9.76 tons of cane were needed to produce a ton of sugar. It may be remarked in this connection that the systematic study of the beet in Germany shewed that by suitable culture its sugar content could be greatly increased, and this is by no means impossible in the case of sugar-cane.

6. 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.

7. **Beet Sugar.**—During the past few years an effort has been made to revive the sugar-beet industry in Victoria. During 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, and £1 5s. for the 1915 crop.

8. **Acreage and Yield of Sugar Beet.**—The following table shews the acreage under sugar beet, and quantity grown in Victoria during the past five seasons :—

AREA AND PRODUCTION OF SUGAR BEET IN VICTORIA, 1910-11 to 1914-15.

Particulars.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Area acres	458	752	934	1,093	990
Production tons	5,969	3,974	6,207	7,431	10,343
Average per acre "	13.03	5.28	6.65	6.80	10.45

9. **Cost of Bounties.**—The amounts paid by the Commonwealth Government in sugar bounties and the expenses in connection therewith during the period 1909-10 to 1913-14 are shewn in the following table :—

SUGAR BOUNTIES AND EXPENSES, 1909-10 to 1913-14.

Particulars.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.
	£	£	£	£	£
Bounties ...	402,132	630,762	543,503	370,306	149,244
Expenses ...	5,645	6,862	*	*	*
Total ..	407,777	637,624	*	*	*

* Not available.

10. **Collection of Sugar Excise.**—The table hereunder contains particulars concerning the net amount of excise duty on sugar collected in respect of the several States for the years 1901-2 and 1909-10 to 1914-15. In this table refunds and drawbacks have been deducted and the requisite adjustment has been made between the States :—

SUGAR EXCISE, 1901-2 and 1909-10 to 1914-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1901-2 ...	119,577	40,189	10,658	781	8,184	10,156	189,545
1909-10 ...	137,672	229,981	126,626	9,373	32,526	12,538	548,716
1910-11 ...	*	*	*	*	*	*	794,645
1911-12 ...	*	*	*	*	*	*	748,670
1912-13 ...	*	*	*	*	*	*	518,508
1913-14 ...	*	*	*	*	*	*	†179,148
1914-15 ...	*	*	*	*	*	*	1,515

* Amounts not allocated to separate States.

† Excise duty on sugar was abolished from 25th July, 1913.

11. **Production by White and Coloured Labour.**—The following table contains particulars furnished by the Commonwealth Treasury concerning the production of sugar in New South Wales and Queensland since 1902, and furnishes an indication of the decline in the employment of coloured labour in the sugar industry during that period :—

SUGAR PRODUCTION, 1902-3 to 1913-14.

Season.	New South Wales.			Queensland.			Commonwealth.		
	Cane Sugar Produced by—			Cane Sugar Produced by—			Cane Sugar Produced by—		
	White Labour.	Coloured Labour.	Total.	White Labour.	Coloured Labour.	Total.	White Labour.	Coloured Labour.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1902-3 ...	19,434	1,526	20,960	12,254	65,581	77,835	31,688	67,107	98,795
1903-4 ...	19,236	2,561	21,797	24,406	65,456	89,862	43,642	68,017	111,659
1904-5 ...	17,812	1,838	19,650	39,404	105,616	145,020	57,216	107,454	164,670
1905-6 ...	18,019	1,964	19,983	50,897	101,362	152,259	68,916	103,326	172,242
1906-7 ...	21,805	1,613	23,418	127,539	54,619	182,158	149,544	56,252	205,576
1907-8 ...	28,247	934	29,181	162,480	22,583	185,063	190,727	23,517	214,244
1908-9 ...	14,351	964	15,315	132,049	18,358	150,407	146,400	19,322	165,722
1909-10 ...	13,839	815	14,654	118,298	14,451	132,749	132,137	15,266	147,403
1910-11 ...	17,936	892	18,828	191,406	15,776	207,182	209,542	16,668	226,010
1911-12 ...	16,412	887	17,299	160,091	10,371	170,462	176,503	11,258	187,761
1912-13 ...	16,483	240	16,723	106,088	6,453	112,541	122,571	6,693	129,264
1913-14* ...	17,240	55	17,295	198,437	8,759	207,196	215,677	8,814	224,491

* Estimated.

During the period under review the proportion of sugar produced by coloured labour declined from 68 per cent. of the total for 1902-3 to 4 per cent. of the total for 1913-14.

12. **Employment of White and Coloured Labour.**—The estimated number of white and coloured persons engaged in the sugar industry is shewn in the following table. In 1905 coloured labour represented nearly 28 per cent. of the total number engaged; in 1912, the latest year for which information is available, the percentage had fallen to under 5 per cent.:—

ESTIMATED NUMBER OF WHITE AND COLOURED PERSONS ENGAGED
IN SUGAR INDUSTRY, 1905 to 1912.

Year.	White Labour.	Coloured Labour.	Total persons engaged.
1905 ...	23,162	8,952	32,114
1906 ...	33,700	7,576	41,276
1907 ...	41,800	4,068	45,868
1908 ...	38,198	3,819	41,517
1909 ...	36,619	2,325	38,944
1910 ...	34,120	2,077	36,197
1911 ...	29,776	1,778	31,554
1912 ...	27,380	1,383	28,763

13. **Imports and Exports of Sugar.**—Notwithstanding the increase in the production of sugar in the Commonwealth during recent years, Australia's over-sea 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 1908 and the following five years the imports exceeded the exports, in 1914-15, however, the exports were again the greater by 5,308 tons, representing a value of £138,474. The principal countries to which sugar is exported are the United Kingdom, the Pacific Islands, and Canada, but the bulk of the sugar exported from the Commonwealth is not of Australian origin, but merely a re-export of sugar produced elsewhere. Thus of 18,433 tons exported during 1914-15, only 137 tons were of Australian origin. The sugar so re-exported comes mainly from Fiji, Java, and Mauritius. 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 1910 to 1914-15.

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
1910 ...	34,008	406,709	6,584	108,751	27,424	297,958
1911 ...	33,276	404,474	7,331	120,956	25,945	283,518
1912 ...	98,481	1,189,763	2,257	39,614	96,224	1,150,149
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

§ 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 1914-15.

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	There are no vineyards in Tasmania.	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
1911-12 ...	8,231	24,193	1,371	23,986	2,821		60,602
1912-13 ...	8,163	24,579	1,428	25,208	3,010		62,388
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

The area devoted to vines in the Commonwealth attained its 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. The past five years were characterised by a small but persistent decline in New South Wales, Victoria and Queensland; which, however, has been more than compensated for by the increase in South Australia and Western Australia.

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 its eradication extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resisting 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 this 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 Australia 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 1910-11 to 1914-15.

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
1910-11 ...	805,600	1,362,420	74,306	3,470,058	153,665		5,866,049
1911-12 ...	850,210	983,423	57,358	2,921,597	162,559		4,975,147
1912-13 ...	719,100	1,206,111	54,627	3,974,838	149,132		6,103,808
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

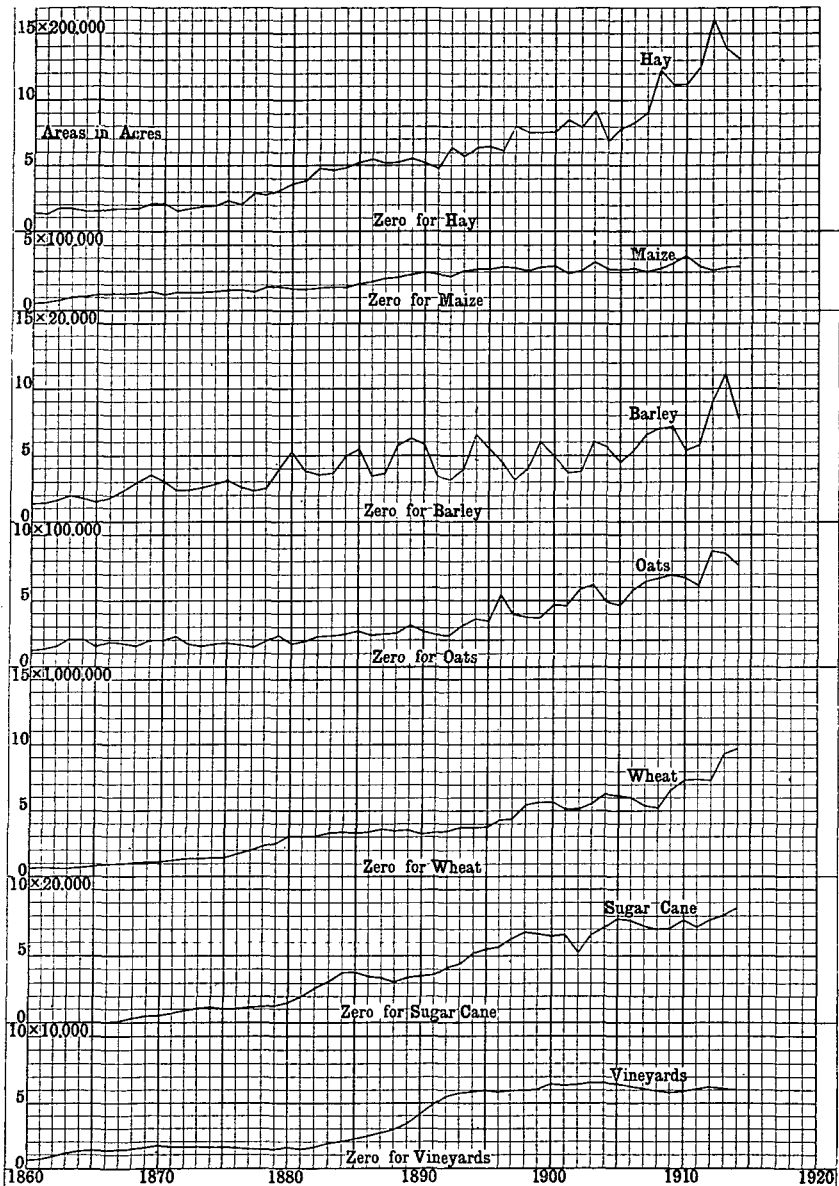
3. Relation to Population.—In relation to population the area of the vineyards of the several States exhibits a well-marked decline from 1901 to 1908, the Commonwealth total having fallen during the period from 17 to 13 acres per 1000 of the population. During the following five seasons, however, the relation remained stationary; a slight decline took place in the 1914-15 season. Details for the period are furnished in the succeeding table:—

AREA OF VINEYARDS PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ...	6	24	4	58	19	...	17
1910-11 ...	5	18	3	56	10	...	13
1911-12 ...	5	18	2	57	10	...	13
1912-13 ...	5	18	2	59	10	...	13
1913-14 ...	4	16	2	60	9	...	13
1914-15 ...	4	15	2	61	9	...	12

4. Imports and Exports.—The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Germany, 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:—

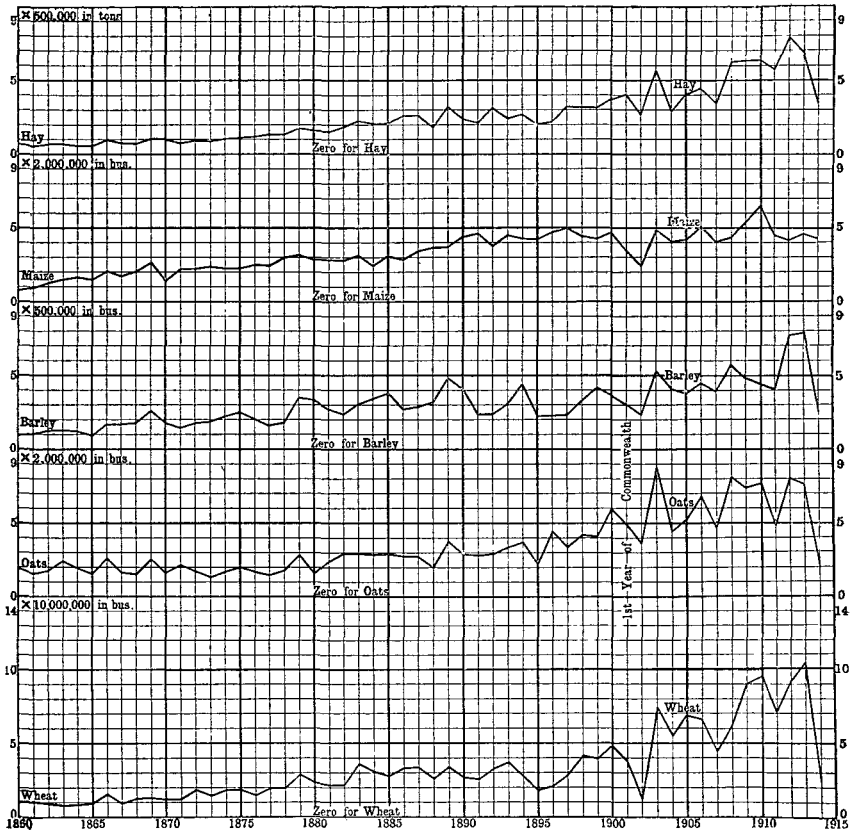
GRAPHS SHEWING THE AREA UNDER THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1914-15.



(See pages—for wheat, 314; oats, 323; maize, 327; barley, 331; hay, 338; sugar-cane, 343; and vineyards, 347.)

EXPLANATION OF GRAPHS.—The of base 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 1914-15.



(See pages—for wheat, 315; oats, 324; maize, 328; barley, 331; and hay, 340.)

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.

COMMONWEALTH IMPORTS OF WINE, 1901 and 1910 to 1914-15.

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
1910	50,982	70,903	121,885	97,296	29,106	126,402
1911	78,115	75,446	153,561	153,561	31,363	184,924
1912	67,851	85,874	153,725	132,830	36,377	169,207
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

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 1910 to 1914-15.

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
1910	2,880	949,033	951,913	5,340	123,593	128,933
1911	2,343	1,097,624	1,099,967	4,126	147,608	151,734
1912	2,467	784,371	786,838	4,803	116,327	121,130
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

The sparkling wine included in the foregoing table consists mainly 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 1910-11 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons	Tons.	Tons.	Tons.	Tons.	Tons	Tons.
1901-2	3,475	5,110	750*	2,800*	1,100*	...	13,235
1910-11	3,914	2,913	1,254	2,531	3,200	...	13,812
1911-12	4,223	3,102	973	2,123	3,506	...	13,927
1912-13	3,893	2,624	1,046	2,194	1,891	...	11,648
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

* Estimated.

Statistics of the quantities of raisins and currants dried are available for a series of years for Victoria and South Australia, and are as follows for 1901-2 and the past five seasons :—

RAISINS AND CURRANTS DRIED, 1901-2 and 1910-11 to 1914-15.

Season.	Raisins.		Currants.	
	Victoria.	Sth. Australia.	Victoria.	Sth. Australia.
	lbs.	lbs.	lbs.	lbs.
1901-2	3,083,665	822,080	285,157	382,256
1910-11	8,883,616	3,891,440	2,956,128	4,509,232
1911-12	11,527,488	3,880,912	5,240,368	5,229,840
1912-13	12,283,824	3,947,776	5,413,744	5,847,296
1913-14	13,473,936	3,981,376	6,954,976	5,507,040
1914-15	12,432,672	3,954,160	3,195,024	2,774,688

In New South Wales, Queensland, and Western Australia small quantities of raisins and currants are dried, but until recently no statistics were collected. The quantity so produced in New South Wales amounted to 100,912 lbs. in 1907-8, 160,720 lbs. in 1908-9, 165,984 lbs. in 1909-10, 297,472 lbs. in 1910-11, 429,968 lbs. in 1911-12, 494,704 in 1912-13, 545,888 lbs. in 1913-14, and 403,416 lbs. in 1914-15. In Western Australia 176,400 lbs. were dried during 1912-13, 199,024 lbs. during 1913-14, and 239,792 lbs. in 1914-15. For Queensland there are no particulars available.

§ 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 72,649 acres. The States in which the increase is most marked are:—Victoria, 21,551 acres; Tasmania, 19,546 acres; Western Australia, 11,622 acres; and South Australia, 6,939 acres. During the same period the New South Wales fruit-growing area increased 6,565 acres, while that in Queensland exhibited an increase of 6,330 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 1910-11 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Terr.	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
1910-11	47,533	57,375	15,153	22,410	16,738	25,934	13	...	185,156
1911-12	48,385	59,985	16,817	23,214	18,194	27,868	13	48	194,524
1912-13	49,329	63,209	18,556	23,905	19,540	30,575	...	60	205,174
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

The varieties of fruit grown differ materially in various parts of the several States, and range between such fruits as the pineapple, paw-paw, mango, and guava of the tropics, and 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 cherry. 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 1914-15.

Fruit.	N.S.W. (a)	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Apples ... acres	6,461	...	925	6,940	6,133	17,702	...
bushels	519,003	509,697	37,149	224,257	369,984	1,521,579	3,181,669
£	142,720	152,909	16,253	72,270	143,369	304,316	831,837
Apricots ... acres	1,035	...	101	1,957	355	782	...
bushels	61,637	109,301	5,157	73,653	31,361	48,206	329,315
£	21,570	54,651	1,354	32,659	17,640	21,692	149,566
Bananas ... acres	416	...	7,796	...	118	...	...
bunches	45,243	...	1,058,750	...	(b) 2,835	...	...
£	23,800	...	132,344	...	2,835	...	158,979
Lemons ... acres	2,757	...	135	447	139	...	...
bushels	209,013	66,704	14,288	22,816	24,846	...	337,667
£	62,700	30,017	5,715	8,556	9,007	...	115,995
Nectarines { acres	5,905	...	1,498	1,623	1,117	73	...
and { bshls.	379,673	278,635	59,728	74,994	88,246	5,971	887,247
peaches { £	132,880	104,528	13,114	29,227	36,501	1,791	318,041
Oranges ... acres	9,476	...	2,417	1,864	1,528	...	...
bushels	848,670	83,220	335,453	129,820	104,438	...	1,501,601
£	297,030	37,449	100,636	58,419	41,775	...	535,309
Pineapples acres	28	...	3,423	...	...	...	...
dozen	4,846	...	819,949	...	...	...	824,795
£	900	...	88,828	...	...	...	89,728
Pears ... acres	1,586	...	203	996	720	975	...
bushels	124,378	401,301	4,195	63,656	64,953	145,882	804,365
£	34,200	110,358	1,311	20,343	19,486	32,823	218,521
Other fruits acres	7,984	...	3,129	4,222	1,327	2,375	...
£	262,580	122,781	59,424	67,268	44,351	71,799	628,203
Total ... acres	35,648	50,794	19,627	18,049	11,437	21,907	(c) 157,512
£	978,380	612,693	418,979	288,742	314,964	432,421	3,046,679
							(c)

(a) Including Federal Territory, 39 acres, value £1000. (b) Bushels. (c) Including 50 acres Northern Territory, value £500.

2. **Relation to Population.**—In relation to population the orchards and fruit gardens of the Commonwealth have exhibited an increase during the last ten years, more than compensating for the decline which was experienced in the case of vineyards. Taking the two in conjunction, the relative area under vineyards and orchards has, during the period, considerably increased, shewing 55 acres per 1000 of population in 1901-2, and 59 in 1914-15. Details for orchards and fruit gardens for 1901-2 and the past five seasons are as follows :—

AREA OF ORCHARDS AND FRUIT GARDENS PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	N.T.	Fed. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2...	35	41	28	45	31	66	...	...	38
1910-11	29	44	25	55	60	134	4	...	42
1911-12	29	44	27	56	62	144	4	25	43
1912-13	28	46	29	56	64	155	...	31	43
1913-14	28	48	30	56	64	160	14	30	44
1914-15	29	52	33	58	66	174	13	23	47

3. **Commonwealth Imports and Exports.**—A very 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. The currants imported are mainly of Greek, the dates of Arabian, Persian, and Turkish, the raisins mainly of Spanish, and the sultanas of Turkish origin. Of the fresh fruits imported during 1914-5, the bananas were chiefly from Fiji, the oranges and lemons from Italy, and the apples from the United States and Canada. In 1907 a considerable increase in the trade in Australian dried fruits took place, the total export for the year being valued at £76,872, of which £71,506 represented Australian fruits and £5,366 re-exports of foreign fruits. In 1908 the export declined to £35,359, of which £33,111 represented Australian fruits, and £2,248 re-exports of foreign fruits. There was a further decline in 1909, when the total value was only £13,013, made up of £11,826 of Australian produce, and £1,187 of re-exports. There was a small increase in the exports in 1910 and 1911, the total for the latter year amounting to £23,900; 1912 experienced a further and more substantial increase, the value of dried fruits exported being £48,012. In 1913 the export value was £32,099, and in 1914-15 £35,691; of the latter sum £34,314 represented Australian produce, and the balance of £1377 re-exports of foreign fruits. The principal consignees of Australian dried fruits exported were United Kingdom and New Zealand. The fresh fruits exported during the year were valued at £176,024, and consisted mainly of apples. These were all of Australian origin with the exception of re-exports valued at £1341. The principal countries to which these were sent were the United Kingdom, New Zealand, the East Indies, and Uruguay.

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,
1901 AND 1910 TO 1914-15.**

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901 ...	14,265,781	179,305	831,996	14,206	13,433,735	165,099
1910 ...	9,885,118	89,076	973,171	14,765	8,911,947	74,311
1911 ...	6,526,498	68,942	1,291,795	23,900	5,234,703	45,042
1912 ...	7,484,432	81,913	2,545,779	48,012	4,938,653	33,901
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

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 1910 TO 1914-15.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Centals.	£	Centals.	£	Centals.	£
1901 ...	*	45,955	*	167,926	*	121,971
1910 ...	137,733	90,100	500,661	322,694	362,928	232,594
1911 ...	338,749	197,924	651,837	420,780	313,088	222,856
1912 ...	306,079	217,796	674,695	468,306	368,616	250,510
1913 ...	472,331	356,060	584,914	399,800	112,583	43,740
1914-15	369,996	344,466	260,314	176,024	— 109,682	— 168,442

* Not available. (—) Signifies net imports.

4. Jams and Jellies.—A small oversea trade in jams and jellies is carried on by the Commonwealth, the value of the import for the years 1914-15 amounting to £11,824, and of the exports to £90,909. The country of origin of the bulk of the importations is the United Kingdom, while the destinations of the exports are principally the United Kingdom and Pacific Islands. Particulars relative to imports and exports for 1901 and the last five years are as follow :—

**COMMONWEALTH OVERSEA TRADE IN JAMS AND JELLIES,
1901 AND 1910 TO 1914-15.**

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
1910 ...	365,752	8,859	1,814,002	28,372	1,448,250	19,513
1911 ...	322,487	8,304	1,288,729	20,896	966,242	12,592
1912 ...	476,504	13,081	1,429,338	23,089	952,834	10,008
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

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 1914-15 was £44,009, and the corresponding value of exports was £18,616.

§ 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, 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 1914-15 devoted to minor crops was 77,563 acres, of which market gardens accounted for 31,388 acres.

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 1910-11 to 1914-15.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Terr.	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
1910-11 ...	9,813	10,778	2,317	2,818	3,576	1,741	*58	...	31,101
1911-12 ...	9,488	10,331	2,293	2,848	3,120	2,144	58	10	30,292
1912-13 ...	9,836	10,414	2,386	2,857	3,664	1,458	50	11	30,676
1913-14 ...	10,585	10,777	2,611	2,265	2,851	† 769	60	22	29,940
1914-15 ...	10,475	12,935	2,648	1,830	2,785	628	60	27	31,388

* Included with South Australia prior to 1910-11. † Other than Market Gardens included in previous years.

The area for 1910-11 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 connection 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; Victoria shews the largest increase, viz., 2,157 acres, while South Australia and Western Australia shew a decrease of 988 and 791 acres respectively.

3. Grass Seed.—The total area under this crop during 1914-15, exclusive of New South Wales, for which State no figures are available, was 2,539 acres, of which 1,032 acres were in Tasmania, 149 acres in Victoria, and 1,358 acres in Queensland. The total yield for 1914-15, including New South Wales, was 25,917 bushels.

4. Tobacco.—The tobacco-growing industry is one which has experienced marked fluctuations in Australia and which once 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 prosperity was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2000 acres, and that in Queensland to

over 1,000 acres, the total area for the season 1914-15 had declined to 2373 acres, distributed as follows:—New South Wales, 1563 acres; Victoria, 196 acres; and Queensland, 614 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 the outside markets. Probably under more favourable circumstances, and with greater attention given to the production of leaf of the best quality only, the industry is one which will 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 with the requirements of consumers. The value of the net importations of tobacco into the Commonwealth during the year 1914-15 amounted to £760,850, comprising unmanufactured tobacco, £532,436, cigars £121,011, cigarettes £43,571, manufactured tobacco £63,100, and snuff £732.

5. **Pumpkins and Melons.**—The total area under this crop in the Commonwealth during 1914-15 was 16,211 acres, of which 2912 acres were in New South Wales, 2329 acres in Victoria, 9823 acres in Queensland, 969 acres in Western Australia, and 166 in South Australia. The production was 12,493, 18,334, 36,200, 3,878, and 969 tons respectively.

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 1914-15 being 1545 acres, of which 1427 acres were in Tasmania, and 115 acres in Victoria; a small area of 3 acres was also grown in South Australia. The Tasmanian area, though still small, has increased rapidly during the past nine 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, has diminished to 115 acres in 1914-15. 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 1758 acres. During the year 1914-15 the net importations of hops into the Commonwealth represented a weight of 1,051,247 lbs. and a value of £53,692. The total value of the net importations into Australia during the past ten years amounted to £583,416, thus indicating the existence of a regular and extensive local demand.

7. **Millet.**—Millet appears in the statistical records of three of the Commonwealth States. The total area devoted thereto in 1914-15 was 3421 acres, of which 2027 acres were in New South Wales, 696 in Victoria, and 697 in Queensland. 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.

8. **Nurseries.**—In all the States somewhat extensive areas are devoted to nurseries for raising plants, trees, etc., but statistics concerning the area so occupied for flowers, fruit trees, etc., are not available, and so far as they relate to forestry are given elsewhere.

9. **Cotton.**—Cotton-growing on a small scale has been tried in Queensland, but so far without very marked success; 134 acres were devoted to this crop in 1914-15, giving a yield of 20,336 lbs. of unginned cotton, valued at £509. 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.

10. **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. Since then the area continuously declined to 1906-7, when it was as low as 256 acres. During the season 1907-8 the area increased to 304 acres, declining to 285 acres in 1908-9, 200 acres in 1910-11, 198 acres in 1911-12, 196 acres in 1912-13, 165 acres in 1913-14, and 150 acres in 1914-15. In the last-mentioned season the yield amounted to 78,893 lbs., valued at £2,959.

11. **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, includes among the number of items on which bonuses are payable, several agricultural products. The most important of these, viz., sugar, has been referred to on page 344 of this publication. Minor products of the soil on which these bounties are payable are as follows:—

AGRICULTURAL PRODUCTS (OTHER THAN SUGAR) ON WHICH BOUNTIES ARE PAYABLE.

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	5 "	10 " "	8,000
Jute	5 "	20 " "	9,000
Sisal hemp	10 "	10 " "	3,000
Oil materials supplied to an oil factory for the manufacture of oil—			
Cottonseed	8 "	10 " "	1,000
Linseed (flax seed)	5 "	10 " "	5,000
Rice, uncleaned	5 "	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	5 "	2d. "	4,000
Fruits—			
Dates (dried)... ..	15 "	1d. "	1,000
Dried (except currants and raisins) or candied, and exported	5 "	10 % on market value	6,000

* Any unexpended amount assigned in any year is available for the years following.

Although the rate of bonus on the several articles, is, as shewn above, fairly liberal, the bounties have not been 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 thereof for the five financial years ended 1914-15:—

PARTICULARS OF BOUNTIES PAID ON AGRICULTURAL PRODUCTS (OTHER THAN SUGAR), 1910-11 to 1914-15.

Article.	Quantity produced on which Bounties were paid.					Amount paid as Bounties.				
	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Cotton, ginned ...lbs.	51,493	60,443	46,043	9,642	...	£ 91	£ 116	£ 95	£ 21	£ ...
Fibres—										
Flax and hemp tons	28	137	101	137	34	123	480	215	318	77
Sisal hemp	45	8	...	...	...	112	18	...	...	...
Oil materials supplied to an oil factory for the manufacture of oil—										
Cottonseed ... lbs.	97,997	99,209	84,479	6,306	...	22	21	13	1	...
Linseed (flax seed) cwt.	...	...	100	...	...	...	...	9	...	...
Coffee, raw, as prescribed ... lbs.	26,645	16,269	30,053	17,540	17,022	112	68	125	73	71
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed lbs.	10,902	9,258	25,820	41,263	41,891	90	78	215	344	349
Fruits—										
Dried (except currants and raisins) or candied, & exported. lbs.	548,123	636,452	196,837	142,928	41,212	1,078	1,734	587	433	98

During the year 1914-15 the total amount paid in respect of coffee was claimed by the State of Queensland. South Australia collected £2, and Tasmania £92 of the fruit bonus, while £239 of the bounty paid for tobacco leaf was paid to Queensland, the remainder being earned in New South Wales and Victoria, the amounts being £36 and £74 respectively. Victoria claimed the total amount paid for flax and hemp.

No bounties have yet been paid on New Zealand flax, jute, uncleaned rice or dates.

§ 18. Fertilisers.

1. **General.**—In the early days of settlement and cultivation in the Commonwealth, scientific cultivation was in a much less developed state than it is to-day. The early farmers were neither under the necessity, nor in fact, aware of such 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. A list of these Acts and their main features will be found in Year Book No. 6. (pages 406 and 407).

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. The greatest quantity of the manufactured superphosphates imported from any one country during 1914-15 was obtained from Japan, whence came 48 per cent. of the total imported, while the United Kingdom contributed 28 per cent., and the Netherlands 23½ per cent., the small balance being imported from Belgium. Ocean Island, with 57 per cent., was the principal contributor of rock phosphates; of the balance, about 40 per cent. was obtained from other South Sea Islands, and 3 per cent. from the United States of America. Guano was imported chiefly from the United Kingdom, and the balance, which was about 10 per cent., from New Zealand, while the East Indies had practically a monopoly of the bone-dust trade with the Commonwealth during 1914-15.

The import of artificial manures during the last five years is shewn in the following table. It will be noticed that the quantity of rock phosphates imported during that period has shewn a substantial increase amounting to 244 per cent. The imports were particularly large during 1910 and the last two years. The manufactured superphosphates shewed an increase of about 50 per cent. during 1910, those for 1911 shew a further increase of some 5 per cent., while those for 1912 shew a decrease of 23 per cent., those for 1913 one of 45 per cent., and those for 1914-15 one of 4 per cent. as compared with those of their respective previous year.

COMMONWEALTH IMPORTS OF FERTILISERS, 1910 to 1914-15.

Fertiliser.			1910.	1911.	1912.	1913.	1914-15.
Bonedust ...	Cwt.		12,740	4,164	8,769	15,241	10,901
" ...	£		3,294	1,086	2,309	4,378	3,136
Guano ...	Cwt.		788,304	484,003	541,873	26,819	2,053
" ...	£		89,961	52,447	64,833	5,733	814
Superphosphates ...	Cwt.		1,196,613	1,254,892	967,480	534,198	502,382
" ...	£		174,751	183,832	155,643	89,474	79,889
Rock Phosphates ...	Cwt.		2,112,127	1,721,140	1,963,640	3,200,648	3,464,547
" ...	£		294,212	228,292	259,994	397,634	397,284
Other ...	Cwt.		377,327	161,121	247,026	279,308	175,799
" ...	£		107,573	47,479	82,769	90,202	65,703
Total ... {			4,487,111	3,625,320	3,728,788	4,056,314	4,155,682
			£ 669,791	£ 513,136	£ 565,548	£ 587,421	£ 546,826

4. **Exports.**—The subjoined table shews the exports of artificial manures for the years 1910 to 1914-15. Practically the whole of the fertiliser is manufactured locally, and is shipped mainly to New Zealand, Java, Japan and the Pacific Islands:—

COMMONWEALTH EXPORTS OF FERTILISERS, 1910 to 1914-15.

Fertiliser.			1910.	1911.	1912.	1913.	1914-15.
Bonedust ...	Cwt.		80,602	122,456	125,546	86,295	148,229
" ...	£		19,066	34,787	38,188	26,023	45,707
Guano ...	Cwt.		2,812	2,719	500	6,242	2,800
" ...	£		490	603	100	848	470
Superphosphates ...	Cwt.		260,261	200,925	182,377	257,629	311,067
" ...	£		51,051	38,007	34,400	47,396	64,224
Rock Phosphates ...	Cwt.		11,190	2,106	...	18,555	22,340
" ...	£		1,819	353	...	3,050	3,429
Soda Nitrate ...	Cwt.		6,215	6,107	5,523	10,154	1,500
" ...	£		2,844	3,088	2,660	5,386	897
Ammonia Sulphate ...	Cwt.		69,015	56,630	73,193	46,067	113,801
" ...	£		43,081	37,141	51,022	31,577	75,379
Other ...	Cwt.		229,841	215,383	146,348	237,734	224,309
" ...	£		48,989	53,510	49,316	63,154	38,972
Total ... {			650,936	606,325	533,487	662,676	824,046
			£ 167,340	£ 167,499	£ 175,666	£ 177,434	£ 229,078

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 New South Wales, Victoria, South Australia, and Western Australia; those for Tasmania were collected for the first time for 1911-12. Particulars concerning the first-mentioned State are given hereunder:—

FERTILISERS USED IN NEW SOUTH WALES, 1910-11 to 1914-15.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1910-11 ...	3,386,017	1,030,554	30.43	186,204	25,017
1911-12 ...	3,628,513	1,407,453	38.80	178,689	33,820
1912-13 ...	3,737,085	1,642,078	43.94	170,312	38,918
1913-14 ...	4,567,592	2,224,623	48.70	166,503	50,476
1914-15 ...	4,807,001	2,329,819	48.47	175,088	55,169

Particulars for Victoria for 1901-2 and the past five seasons are as follows:—

FERTILISERS USED IN VICTORIA, 1901-2 and 1910-11 to 1914-15.

Season.	Total Area of Crops.	Farmers Using Manure.	Area Manured.		Manure Used.	
			Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	No.	Acres.	%	Tons.	Tons.
1901-2 ...	2,965,681	11,439	556,777	18.77	153,611	23,535
1910-11 ...	3,952,070	27,845	2,714,854	68.69	203,884	86,316
1911-12 ...	3,640,241	26,159	2,676,408	73.52	205,739	82,581
1912-13 ...	4,079,356	29,524	3,029,418	74.26	222,253	94,010
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

The figures relating to the use of fertilisers in South Australia are shewn in the table below:—

FERTILISERS USED IN SOUTH AUSTRALIA, 1910-11 to 1914-15.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1910-11 ...	2,746,334	2,235,578	81.40	129,918	81,899
1911-12 ...	2,965,338	2,511,130	84.68	134,503	87,475
1912-13 ...	3,062,998	2,603,136	84.99	111,434	91,607
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

Corresponding particulars relative to Western Australia for the seasons 1910-11 to 1914-15 are given in the following table, and furnish interesting evidence of the rapid extension of the use of manures in that State:—

FERTILISERS USED IN WESTERN AUSTRALIA, 1910-11 to 1914-15.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1910-11...	855,024	773,561	90.47	62,229	33,194
1911-12...	1,072,653	992,463	92.52	51,600	43,843
1912-13...	1,199,991	1,120,334	93.36	55,085	47,563
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

Statistics relating to the use of manures in Tasmania were collected for the first time in 1911-12, particulars for the past four seasons being as follows:—

FERTILISERS USED IN TASMANIA, 1911-12 to 1914-15.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crops.	Natural (Stableyard, etc.).	Artificial.
	Acres.	Acres.	%	Tons.	Tons.
1911-12...	270,000	129,914	48.12	25,792	8,750
1912-13...	286,065	137,653	48.12	27,328	9,272
1913-14...	264,140	136,764	51.78	30,530	14,398
1914-15...	274,474	144,732	52.73	31,572	653

A marked increase in the proportion of cropped land treated with manure is in evidence in all of the States for which returns are available. Thus, in New South Wales the area of manured land represented in 1908-9 only 18½ per cent. of the area under crop, as against nearly 46 per cent. in 1914-15. Similarly, in Victoria the percentage increased from 18½ per cent. in 1901-2 to 59½ per cent. in 1908-9 and to 80½ per cent. in 1914-15, in South Australia from 73½ per cent. in 1908-9 to nearly 83 per cent. in 1914-15, and in Western Australia from 64 per cent. in 1904-5 to nearly 97 per cent. in 1914-15. During the past three years the proportion in Tasmania increased from 48 to 52½ per cent.

6. Local Production of Fertilisers.—Statistics relative to the local production of fertilisers are very 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 86, made up as follows:—New South Wales, 18; Victoria, 32; Queensland, 15; South Australia, 13; Western Australia, 6; and Tasmania, 2. If, however, approximately complete returns of the quantities of fertilisers used in the various States could be given, a comparison with the importations would give valuable information, but, as already mentioned, such particulars are only available for four of the States prior to 1911-12, and even then do not furnish the whole of the information necessary.

7. Benefits Derived from the Use of Fertilisers.—There is little doubt that the increased and 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 of the Commonwealth, 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, have for some years been making special efforts to educate the farming community, 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 silos on very liberal terms, repayment extending over a series of years. Experts supervise the erection of 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 1910-11 to 1914-15, are furnished in the following table:—

COMMONWEALTH ENSILAGE-MAKING 1910-11 to 1914-15.

State or Territory.	1910-11.		1911-12.		1912-13.		1913-14.		1914-15.	
	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
New South Wales ...	258	29,616	158	20,477	144	18,509	129	18,358	83	10,963
Victoria ...	460	25,969	371	20,888	287	17,377	270	19,505	161	9,055
Queensland ...	97	5,804	61	4,379	58	4,156	75	4,273	52	3,363
South Australia ...	68	1,530	39	1,250	28	2,200	16	778	6	681
Western Australia ...	14	414	9	307	23	479	22	658	11	403
Tasmania ...	21	1,073	34	280	20	424	17	662	10	231
Federal Territory ...	...	...	...	...	1	10	1	8	...	...
Commonwealth ...	918	64,406	672	47,581	561	43,655	530	44,242	323	24,696

* No. of holdings on which ensilage was made.

Since the drought of 1902-3 greater attention has been 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, shew 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 recent 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.

§ 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 the tables given herewith, particulars of agricultural colleges and experimental farms in the several States of the Commonwealth in 1914-15 are shewn.

**PARTICULARS OF AGRICULTURAL COLLEGES AND EXPERIMENTAL FARMS IN THE
SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON 1914-15.**

Particulars.	Unit of Quantity.	New South Wales.	Vic.	Q'land.	South Aust.	West. Aust.	Tasmania.	Northern Terr.	C'wlth.
No. of agricultural colleges	No.	1	2	1	1	...	...	...	5
" experimental farms ...	"	18	5	6	6	6	1	2	44
" students ...	"	460	192	34	41	10	11	...	748
" hands employed ...	"	317	133	82	84	42	15	9	682
Value of plant & machinery	£	28,829	9,648	5,366	7,910	3,345	a	1,200	b 56,298
" produce for year ...	"	33,691	12,756	5,327	7,262	5,071	a	1,600	b 65,707
Receipts—									
Government grant ...	"	78,554	23,546	11,623	15,899	25,048	4,931	11,620	171,221
Fees ...	"	4,645	4,039	1,020	1,409	240	...	...	11,353
Sales of produce, &c. ...	"	24,360	7,332	5,041	4,383	...	1,007	90	...
Other ...	"	1,271	119	...	1,882	26,166	...	40	71,691
Total receipts ...	"	108,830	35,036	17,684	23,573	51,454	5,938	11,750	254,265
Expenditure—									
Salaries, professional ...	"	10,229	5,776	4,129	3,027	646	213	1,213	25,233
" general ...	"	31,442	9,570	5,821	6,593	5,696	1,436	4,353	64,847
Buildings & maintenance	"	67,159	4,560	7,734	9,081	5,100	2,750	2,455	...
Other ...	"	...	15,130	...	4,936	40,012	1,539	3,729	164,185
Total expenditure ...	"	108,830	35,036	17,684	23,573	51,454	5,938	11,750	254,265
Agriculture, &c.—									
Area under cereals for grain	Acre	1,642	1,924	408	1,861	966	31	36	6,868
" hay ...	"	1,252	720	688	726	433	59	66	3,944
" fruit trees, &c. ...	"	296	96	18	58	37	38	8	551
" vines ...	"	143	96	8	62	7	...	...	316
" green fodder ...	"	1,541	339	79	586	327	11	14	2,897
" root crops ...	"	53	...	22	7	2	16	2	102
" other crops ...	"	51	...	182	47	19	4	13	316
Total under crop ...	"	4,978	3,175	1,405	3,347	1,791	159	139	14,994
Area of land in fallow	"	520	1,597	48	1,377	1,135	13	128	4,818
" under artificially sown grasses	"	1,422	174	416	4	50	202	20	2,278
New ground broken up during season	"	1,131	345	375	244	4,203	...	90	6,388
Previously cropped land lying idle	"	1,145	1,276	32	2,117	2,807	...	20	7,397
Total area of arable land	"	9,186	6,567	2,276	7,089	9,986	374	397	35,875
Balance of area ...	"	26,878	4,991	14,191	4,469	117,101	304	5,398	173,332
Total area ...	"	36,064	11,558	16,467	11,558	127,087	678	5,795	209,207
Live stock—									
Horses ...	No.	509	256	223	221	105	9	48	1,371
Dairy cows ...	"	573	176	163	88	91	23	87	1,201
All other cattle ...	"	344	244	739	50	270	70	167	1,884
Sheep ...	"	5,517	3,630	2,685	2,779	6,531	236	84	21,462
Pigs ...	"	821	186	271	219	180	40	61	1,778
Capacity of tanks or dams ...	Gal.	17,834,000	8250000	232,200	346,800	620,000	15,000	8,400	26,706,400

(a) Not available. (b) Incomplete.

3. New South Wales.—In order to meet the demand for agricultural training, and for the purpose of conducting experiments in various branches of agriculture and of disseminating agricultural knowledge, an agricultural college and farm and seventeen experimental farms have been established by the New South Wales Government. Theoretical instruction in agriculture, with practical illustrations, forms part of the

curriculum of the Sydney Technical College. The School of Agriculture in the Sydney University, which has been established for five years, is doing very satisfactory work. At the Hurlstone Continuation College there is a special course in both theoretical and practical agriculture for teachers. Instruction in "nature knowledge" is given in the State primary schools, many of which have their own experimental plots. As a means of further encouraging the study of agriculture, the Department of Public Instruction has a travelling inspector in agriculture, whose duty it is to visit the country and metropolitan schools, lecturing on the value, necessity, and advantages of agricultural knowledge, and giving practical demonstrations wherever practicable.

4. **Victoria.**—In 1884, the Agricultural Colleges Act, passed to make provision for the establishment of agricultural colleges and experimental farms in Victoria, provided for the permanent reservation from sale of 150,000 acres of Crown lands by way of endowment of agricultural colleges and experimental farms, which, together with other lands reserved as sites for such institutions prior to the passing of the Act, are vested in three trustees appointed by the Governor. Provision was made for the appointment of a Council of Agricultural Education, consisting of eleven members, five of whom are elected by the members of the Agricultural Societies of the State, five are nominated by the Governor, whilst the Secretary for Agriculture is also a member of the Council and its Treasurer. Two agricultural colleges and five experimental farms, orchards and vineyards were in existence in different parts of the State during 1914-15. There are five Agricultural High Schools under the control of the Education Department, while elementary experimental agriculture is taught at many of the State primary schools. Instruction in agriculture is also given at the technical schools at Melbourne and Bairnsdale.

5. **Queensland.**—Organised experimental agriculture in Queensland dates from the establishment of the Department of Agriculture and Stock, but such work as has been done in connection with stock-breeding, other than that carried on by private individuals, has been of later birth, and has been confined to dairy stock and draught horses. Agriculture in Queensland in the early nineties was upon the well-defined lines of the other States, so that the knowledge to be gained as to what could be profitably adapted to Queensland, with its varied climate and rainfall, covered a wide field. Instructors were appointed conversant with the different lines of agriculture, of which grain cultivation, dairying, fruit-growing, tobacco cultivation, and tropical agriculture, such as sugar, rubber, and spices, are the most important. This has been followed by the establishment of an agricultural college, of farms in the temperate parts of the State, and of nurseries in the tropical parts. With wheaten grain, a system of experiments has been carried out for some years with the distinctive object of evolving a type of wheat adapted for Queensland, and as far as possible resistant to the attacks of rust. In dairying, a commencement was made by despatching to the different farming centres properly equipped travelling dairies with the latest appliances. The export of Queensland dairy produce has arisen through this effort. No travelling dairies are, however, now employed. A fruit farm has been established, at which fruits suitable for or likely to adapt themselves to the Queensland climate and conditions have been experimented with during a series of years. To cope with the insect and fungus pests to which such fruits are peculiarly susceptible, careful inspection is made of fruits in the markets and for export, and every effort is put forth to prevent the introduction of fresh diseases and to exterminate those which are already within the State.

6. **South Australia.**—To this State belongs the honour of starting the first experimental farm in the Commonwealth. As far back as the year 1879 a resolution was passed by the local Parliament in favour of the establishment of a School of Agriculture, with an experimental farm, under the charge of a professor of agriculture. Active operations in this connection were commenced in 1882, when the first series of plots of wheat were sown at Roseworthy. Experimental work, chiefly directed towards improving

the wheat yield, has been developed along three main lines, viz.: (a) the improvement of varieties of wheat, (b) the improvement of methods of cultivation, and (c) the use of manures. The Central Agricultural Bureau, established at Adelaide under the control of an Advisory Board, has an extensive membership distributed throughout the agricultural districts of the State. It assists farmers by the dissemination of knowledge; by helping to introduce new economic plants; by improving the breed of stock; and it acts as a means of keeping the Agricultural Department in touch with the producers. The branches of the bureau hold meetings at regular intervals in their several districts, ideas and methods as regards practical subjects are interchanged, and discussions are held on matters of general interest to agriculturists.

7. **Western Australia.**—A considerable amount of developmental work has been done of late years towards the promulgation of agricultural knowledge on the State farms at Chapman and Narrogin, and, more recently still, on the experimental farms at Brunswick, Merredin, Denmark and Yandanooka.

8. **Tasmania.**—In Tasmania there is a Council of Agriculture consisting of eleven members, whose duties are to collect and publish information of every kind calculated to prove beneficial to agriculturists, such as suitability of various districts for growth or production of animal and vegetable products, information respecting plants, methods of cultivation, breeding and feeding animals, and how best to improve the same: to prevent as far as possible the introduction and spread of diseases and pests, and to publish bulletins, abstracts, and reports containing all such information as may be desirable. Other matters embrace the employment of experts in any branch of agricultural science, distribution of plants and seeds for experiment, and the establishment of local boards of agriculture in different parts of the State. Lectures are given by the experts from time to time, and useful information and knowledge is diffused by means of the monthly gazette published by the Council, and also by means of special bulletins. There are no agricultural colleges, but a State farm consisting of 678 acres commenced operations during 1914. Practically no agricultural teaching is given in the elementary schools.

§ 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, viz., 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 an annuity 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 1846, 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, viz., 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. (See pages 248 *et seq.*)

2. **Aggregate of Transactions in each State, 1911 to 1915.**—The subjoined table gives aggregate of transactions in reference to advances to farmers in each State during the past five years.

**STATE GOVERNMENT ADVANCES DEPARTMENTS—AGGREGATE OF LOANS
TO FARMERS, 1910-11 to 1914-15 (a).**

State.	TOTAL ADVANCED TO 30TH JUNE.					BALANCE DUE AT 30TH JUNE.				
	1911.	1912.	1913.	1914.	1915.	1911.	1912.	1913.	1914.	1915.
	£	£	£	£	£	£	£	£	£	£
N.S.W.(b)...	1,617,192	1,948,885	2,422,955	3,531,263	3,918,978	928,086	1,074,358	1,396,336	2,297,981	2,514,078
Victoria ...	2,797,323	2,954,618	3,208,903	3,491,008	3,714,733	1,306,657	1,343,831	1,511,798	1,676,432	1,783,043
Q'nsland ...	306,944	430,403	623,498	851,600	1,147,996	206,997	305,652	470,795	636,790	880,204
S. Aust.(d)	1,786,762	2,064,583	2,370,076	2,601,450	2,769,609	819,818	966,670	1,150,020	1,264,417	1,330,026
W. Aust. ...	1,540,241	1,946,184	2,582,937	3,089,575	3,361,158	976,811	1,280,732	1,883,957	2,331,959	2,561,679
Tasmania	14,610	18,636	23,915	41,004	72,252	13,561	16,592	21,089	36,965	66,572
C'wealth ...	8,063,072	9,363,309	11,233,284	13,605,900	14,984,726	4,251,930	4,987,838	6,433,995	8,244,544	9,135,602
	PROFITS FOR YEAR ENDED 30TH JUNE.					ACCUMULATED PROFITS AT 30TH JUNE.				
	£	£	£	£	£	£	£	£	£	£
N.S.W.(b)...	8,200	9,543	10,335	(h)20,946	15,318	15,606	25,349	35,684	56,630	71,741
Victoria ...	3,022	3,069	5,203	9,100	10,102	84,936e	88,006e	93,209e	102,309e	112,411
Q'nsland ...	2,548	3,318	3,354	2,983	4,448	8,551	11,869	15,223	18,206	22,654
S. Aust.(d)	6,662	6,289	8,218	9,376	10,668	44,848	51,137	59,355	68,731	79,399
W. Aust. ...	6,753	8,060	10,031	(f)	f	37,831	45,892	55,923	(f)	79,479
Tasmania	48	81	472	295	712	(—) 50	31	503	798	1,509
C'wealth ...	27,233	30,360	37,613	42,700g	41,248g	191,722	222,284	259,897	246,674g	367,193

(a) Compiled from figures furnished by the Government Savings Bank of Victoria. (b) For years ended 31st December prior, except for 1914 and 1915, which ended 30th June. (c) Balance after deduction of special principal payments in advances. (d) Includes loans to farmers and other producers and to local bodies on the security of their own rates. (e) Including profits in connection with House and Shop loans. (f) Not available. (g) Exclusive of Western Australia. (h) For 18 months ended 30th June, 1914.

3. **Legislation in each State.**—An account of the initial legislation in each State in reference to advances to settlers; subsequent legislation; security on which, and objects for which, advances were made; amount of advances and repayments up to the end of 1911-12, etc., will be found in previous issues of the Year Book (see No. 6, pages 417-25).

4. **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 for the period 1860-1914 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 previous 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 process 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 2½ gallons.

5. **Butter and Cheese Factories.**—The establishments in the Commonwealth where the manufacture of butter, cheese, and condensed milk was carried on, numbered 533 in 1914. These were distributed as regards the various States as follows:—New South Wales, 165; Victoria, 197; Queensland, 94; South Australia, 46; Western Australia, 5; Tasmania, 26.

§ 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 two years' following, however, shew a decrease in all the States, with the exception of New South Wales. 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. In the tables which follow in this section, the returns for the Northern Territory and the Federal Territory are, unless shewn separately, included in South Australia and New South Wales respectively, the dairy products from the newly-acquired Commonwealth territories being small. Prior to 1913 the figures for the Northern Territory were unreliable, and those for 1914 are estimates only:—

CATTLE AND DAIRY CATTLE, COMMONWEALTH, 1910 to 1914.

State.			1910.	1911.	1912.	1913.	1914.
New South Wales	...	All Cattle	3,140,307	3,185,824	3,033,726	2,815,113	2,472,631
	...	Dairy Cows	826,443	855,926	852,040	821,923	849,900
Victoria	...	All Cattle	1,547,569	1,647,127	1,508,069	1,528,553	1,362,542
	...	Dairy Cows	668,777	699,555	655,939	656,080	610,517
Queensland	...	All Cattle	5,131,699	5,073,201	5,210,891	5,322,033	5,455,943
	...	Dairy Cows	365,444	357,095	375,660	391,439	387,311
South Australia	...	All Cattle	384,862	393,566	383,418	352,905	300,579
	...	Dairy Cows	119,628	121,803	114,734	107,879	91,181
Western Australia	...	All Cattle	825,040	843,638	806,294	834,265	863,835
	...	Dairy Cows	30,785	27,740	27,310	30,680	28,106
Tasmania	...	All Cattle	201,854	217,406	222,181	205,743	176,524
	...	Dairy Cows	52,966	56,858	60,160	59,380	51,229
Northern Territory	...	All Cattle	513,383	459,780	405,552	417,643	414,558
	...	Dairy Cows	556	300	300	701	70
Federal Territory	...	All Cattle	*	8,412	7,108	7,627	4,961
	...	Dairy Cows	*	1,192	742	744	1,057
Commonwealth	...	All Cattle	11,744,714	11,828,954	11,577,259	11,493,882	11,051,573
	...	Dairy Cows	2,064,599	2,120,469	2,086,885	2,068,195	2,019,371

* Included under New South Wales.

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, something under 300 gallons per annum. The best yields over a series of years appear to be in Victoria, New South Wales, and South Australia, while Western Australia and Tasmania are below Queensland. 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, during any part of the year, milking. The average given is considerably below that for cows which were yielding during the greater part of the year. It will be seen that the highest averages obtain in those States which have adopted more scientific methods of dairying, such as systematic breeding, culling of herds, milk testing, etc.

PRODUCTION OF MILK, COMMONWEALTH, 1910 to 1914.

Heading.	N.S.W.*	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1910—							
Dairy cows ... No.	826,443	668,777	365,444	120,184	30,785	52,966	2,064,599
Production of milk gals.	235,577,702	196,674,373	87,648,322	34,672,756	5,125,124	13,300,000†	572,998,277
Aver. yield per cow gals.	285	294	240	288	166	251	278
1911—							
Dairy Cows ... No.	857,118	699,555	357,095	121,803	27,740	56,858	2,120,169†
Production of milk gals.	237,623,000	238,149,700	71,770,148	27,952,612	5,017,004	14,214,500†	594,726,964†
Aver. yield per cow gals.	277	340	200	230	181	250	280
1912—							
Dairy Cows ... No.	852,782	655,939	375,660	114,734	27,310	60,160	2,086,585†
Production of milk gals.	225,446,209	199,296,920	82,977,730	27,547,370	5,215,779	15,040,000†	555,524,508†
Aver. yield per cow gals.	264	304	221	240	191	250	266
1913—							
Dairy Cows ... No.	822,667	656,080	391,439	107,879	30,680	59,380	2,068,125†
Production of milk gals.	231,592,000	216,947,170	90,545,516	27,593,023	5,550,197	11,557,309	583,785,215†
Aver. yield per cow gals.	282	331	231	256	181	195	282
1914—							
Dairy cows ... No.	850,957	610,517	387,311	91,181	28,106	51,229	2,019,301†
Production of milk gals.	237,930,000	193,653,330	100,189,876	22,219,509	5,569,184	11,568,364	571,150,263†
Aver. yield per cow gals.	280	317	259	244	199	226	283

* Including figures for Federal Territory, which in 1911 were 1192 dairy cows; 153,090 gallons of milk averaging 128 gallons per cow; in 1912, 742 dairy cows; 106,647 gallons of milk, averaging 144 gallons per cow; in 1913, 744 dairy cows; 89,410 gallons of milk, averaging 120 gallons per cow; and in 1914, 1057 dairy cows; 73,500 gallons of milk, averaging 70 gallons per cow.
† Estimated. ‡ 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 1913 and 1914. The year 1914 marks the highest cheese production, the return being over 7½ per cent. advance on that of 1913, the next highest record, which was upwards of 20 per cent. advance on 1910, the previous highest record. In both butter and cheese a decrease took place in some of the States in 1907, 1908 and 1914, due to the dryness of the season. For the five years from 1910 to 1914 the figures are:—

PRODUCTION OF BUTTER AND CHEESE, COMMONWEALTH, 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
BUTTER.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales* ...	76,624,830	83,204,568	76,609,528	77,779,197	84,134,280
Victoria ...	70,603,787	86,500,474	67,655,834	73,381,567	62,421,288
Queensland ...	31,258,333	27,858,535	30,307,339	35,199,387	37,230,240
South Australia ...	10,717,486	9,694,666	8,394,557	8,036,274	6,252,961
Western Australia ...	641,491	498,047	448,799	518,566	451,112
Tasmania † ...	3,365,982	3,817,455	3,778,104	3,843,247	3,480,531
Commonwealth ...	193,211,909	211,573,745	187,194,161	198,758,238	193,970,412
CHEESE.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	5,191,089	5,460,652	5,454,685	6,620,648	6,356,627
Victoria ...	4,530,893	4,549,843	4,176,778	4,856,321	4,395,502
Queensland ...	4,146,661	3,718,257	3,947,615	5,395,050	7,931,869
South Australia ...	1,796,281	1,526,930	1,958,027	2,216,985	2,000,547
Western Australia ...	3,306	900	...	...	1,675
Tasmania† ...	868,781	630,130	623,386	654,411	554,191
Commonwealth ...	16,537,011	15,886,712	16,160,491	19,743,415	21,240,411

* Including Federal Territory, where 27,630 lbs. of butter were produced in 1911; 16,561 lbs. in 1912; 12,494 lbs. in 1913; and 7387 lbs. in 1914. † Estimated.

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. In 1912 there was a further notable increase, which was well maintained during the two following years. There is still a considerable import of milk, as will be seen from the tables hereunder; but in 1912, for the first time, the balance of trade was in favour 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, 1910 to 1914.

Year.	N.S.W.	Victoria.	Queensland.	Commonwealth.
	lbs.	lbs.	lbs.	lbs.
1910	1,940,481	2,707,110	7,843,670	12,491,261
1911	3,058,497	13,697,691	6,227,519	22,983,707
1912	3,636,519	18,500,011	7,923,381	30,059,911
1913	3,682,812	20,942,620	8,059,051	32,684,483
1914	5,991,458	19,093,750	6,967,486	32,052,694

5. **Oversea Trade in Milk, Butter, and Cheese.**—The tables following 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 in 1912 the cheese import was greater than the export, while there was a net import of milk in 1910 and 1911.

IMPORTS, EXPORTS, AND NET EXPORTS OF BUTTER, CHEESE, AND MILK, COMMONWEALTH, 1910 to 1914-15.

IMPORTS.

Products.	1910.	1911.	1912.	1913.	1914-15.
Butter lbs.	71,695	22,607	44,142	13,844	2,378,893
" " " " " £	3,570	1,081	1,989	565	180,557
Cheese lbs.	303,155	318,891	443,847	364,699	230,348
" " " " " £	13,772	14,461	19,988	17,334	10,554
Milk—concentrated and preserved* lbs.	8,543,158	4,166,117	1,215,351	1,150,715	2,596,964
" " " " " £	135,297	74,278	25,949	26,579	90,146

EXPORTS.

Butter lbs.	87,928,151	101,722,136	66,685,056	75,802,303	54,105,777
" " " " " £	3,952,808	4,637,362	3,342,642	3,565,282	2,664,975
Cheese lbs.	921,583	1,159,363	146,092	1,609,452	2,547,857
" " " " " £	22,178	27,243	5,760	42,421	72,828
Milk—concentrated and preserved* lbs.	517,634	1,260,323	1,821,583	2,875,030	5,066,169
" " " " " £	10,289	21,990	37,876	75,165	126,556

NET EXPORTS.†

Butter lbs.	87,856,456	101,699,529	66,640,914	75,788,459	51,726,884
" " " " " £	3,949,238	4,636,281	3,340,653	3,564,717	2,484,418
Cheese lbs.	618,428	840,472	297,825	1,244,753	2,317,509
" " " " " £	8,406	12,782	14,228	25,087	62,274
Milk—concentrated and preserved* lbs.	8,025,524	2,905,794	606,232	1,724,315	2,469,305
" " " " " £	125,008	52,288	11,927	45,586	36,410

* See definition above.

† — signifies net 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 1912, the local supply of cheese was adequate :—

BUTTER AND CHEESE FOR LOCAL CONSUMPTION, 1910 to 1914.

Product.				1910.	1911.	1912.	1913.	1914.
				lbs.	lbs.	lbs.	lbs.	lbs.
Butter	...	Total	...	105,569,150	109,874,216	120,500,247	122,969,779	137,820,074
"	...	Per head of mean population	...	24.2	24.5	25.9	25.6	28.0
Cheese	...	Total	...	15,918,853	15,046,240	16,458,316	18,498,662	19,194,818
"	...	Per head of mean population	...	3.7	3.4	3.5	4.8	3.9

The quantity available for consumption in 1914 averaged 28 lbs. of butter and 3.9 lbs. of cheese per head of mean population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom is given as about 20 lbs. per head.

§ 3. Pigs, Bacon, etc.

1. **Pigs.**—Great attention has been paid, both privately and by the various State Governments, to the improvement in the marketable qualities of pigs. The number of pigs in the Commonwealth from 1910 to 1914 is shewn below :—

NUMBER OF PIGS, COMMONWEALTH, 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
New South Wales ...	321,632	370,700	293,450	287,896	286,478
Victoria ...	333,281	348,069	240,072	221,277	243,196
Queensland ...	152,212	173,902	143,695	140,045	166,638
South Australia ...	96,386	93,130	69,832	64,119	69,893
Western Australia ...	57,628	55,635	47,351	47,966	59,816
Tasmania ...	63,715	67,392	49,152	37,990	34,960
Northern Territory ...	996	1,500	1,500	1,018	1,240
Federal Territory ...	†	393	203	194	226
Commonwealth ...	1,025,850	1,110,721	845,255	800,505	862,447

† Included in New South Wales.

Prior to 1911 the number of pigs was highest in 1904, when for the first time it was over a million. An examination of the returns shews remarkable fluctuations. There was a general decrease in 1906 and the two following years, followed by an increase in 1909-10-11, and a heavy decline in 1912 and 1913. With the exception of New South Wales and Tasmania there was a general increase in the several States during 1914. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, pages 281 and 282.

2. **Bacon and Ham.**—From 1905 to 1908 the production of bacon and ham in the Commonwealth shewed little annual variation. In 1909 there was a considerable falling-off, but a large increase has taken place in subsequent years.

PRODUCTION OF BACON AND HAM, COMMONWEALTH, 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales* ...	12,620,067	16,102,827	16,526,376	15,192,263	15,327,048
Victoria ...	16,438,837	19,546,772	20,043,706	19,289,258	18,774,497
Queensland ...	10,758,963	11,667,654	12,437,019	13,709,716	13,339,131
South Australia ...	3,741,942	4,311,497	3,771,064	3,265,773	3,409,372
Western Australia ...	121,154	97,136	114,950	100,143	112,421
Tasmania† ...	1,468,789	1,538,766	1,299,060	1,116,535	1,612,433
Commonwealth ...	45,149,752	53,264,652	54,192,175	52,673,688	52,574,902

* Including Federal Territory, where 22,670 lbs. of bacon and ham were produced in 1911; 15,196 lbs. in 1912; 11,885 lbs. in 1913; and 3520 lbs. in 1914. † Estimated prior to 1913.

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, 1910 to 1914-15.

Particulars.	1910.	1911.	1912.	1913.	1914-15.
BACON AND HAM.					
Imports ...	... lbs.	204,488	201,309	294,130	126,692
" ...	... £	8,687	8,566	11,962	6,301
Exports ...	... lbs.	1,605,699	2,340,612	2,174,114	1,866,894
" ...	... £	57,060	74,178	68,503	74,718
Net Exports ...	... lbs.	1,401,211	2,139,303	1,879,984	1,740,202
" ...	... £	48,373	65,612	56,541	68,417

FROZEN PORK.

Imports ...	... lbs.	106,757	...	79,052	...	74,337
" ...	... £	3,227	...	2,592	...	2,601
Exports ...	... lbs.	741,410	1,641,013	897,929	215,175	48,791
" ...	... £	17,087	33,639	16,661	5,259	1,400
Net Exports*	... lbs.	634,653	1,641,013	818,877	215,175	— 25,546
" ...	... £	13,860	33,639	14,069	5,259	— 1,201

PIGS.

Imports ...	... No.	50	35	14	20	52
" ...	... £	799	539	198	54	535
Exports ...	... No.	303	385	609	440	168
" ...	... £	477	748	1,025	1,336	511
Net Exports*	... No.	253	350	595	420	116
" ...	... £	— 322	209	827	1,282	— 24

— signifies net imports.

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, COMMONWEALTH, 1910 to 1914-15—Continued.

Particulars.	1910.	1911.	1912.	1913.	1914-15.
LARD.					
Imports lbs.	198,897	387,626	794,961	884,812	268,043
" £	5,573	9,870	22,096	23,900	7,433
Exports lbs.	3,112,190	3,399,386	2,092,422	4,299,987	1,491,149
" £	62,664	57,861	37,063	85,194	31,542
Net Exports lbs.	2,913,293	3,011,760	1,297,461	3,415,175	1,223,106
" £	57,091	47,991	14,967	61,294	24,109

From 1901 to 1903 there was a considerable net import of bacon and ham, but for the following years there was a large net export. The local production of frozen pork and lard for each of the years 1910 to 1913 was more than sufficient for the local demand; during 1914-15, however, the imports of frozen pork exceeded the exports by 25,488 lbs. The net export of pig products was considerably greater in 1910 and 1911 than in previous years. There was a decline in 1912, and a further falling off in 1913 and 1914-15.

4. **Local Consumption of Bacon and Ham.**—From 1904 to 1914 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, 1910 to 1914.

Consumption.	1910.	1911.	1912.	1913.	1914.
	lbs.	lbs.	lbs.	lbs.	lbs.
Total	43,748,541	51,125,349	52,312,191	50,933,486	51,181,876
Per head of mean population ...	10.0	11.4	11.3	10.6	10.4

5. **Total Dairy Production.**—The total dairy production of the Commonwealth in 1914 is shewn below:—

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1914.

Where Produced.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
MILK.							
On Dairy & other Farms	gallons. 237,930,000	gallons. 193,653,330	gallons. 100,189,876	gallons. 22,219,509	gallons. 5,589,184	gallons. 11,568,364	gallons. 571,150,263†

BUTTER.

In Factories	lbs. 80,302,161	lbs. 57,575,759	lbs. 35,063,549	lbs. 3,258,534	lbs. 146,765	lbs. 2,432,068	lbs. 178,778,836
On Dairy & other Farms	3,832,119*	4,845,529	2,166,691	2,994,427	304,347	1,048,463	15,191,576
Total	84,134,280*	62,421,288	37,230,240	6,252,961	451,112	3,480,531	193,970,412

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1914—Continued.

Where Produced.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
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CHEESE.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ...	3,770,431	2,672,996	7,814,027	1,999,401	...	409,918	16,666,773
On Dairy & other Farms	2,586,196*	1,722,506	117,342	1,146	1,675	144,273	4,573,638
Total ...	6,356,627	4,395,502	7,931,869	2,000,547	1,675	554,191	21,240,411

CONDENSED OR CONCENTRATED MILK.

	lbs.	lbs.	lbs.	...	...	...	lbs.
In Factories ...	5,991,458	19,093,750	6,967,486	...	...	...	32,052,694

BACON AND HAM.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ...	13,564,630	16,398,474	12,685,137	2,613,713	...	4,309,256	46,471,210
On Dairy & other Farms	1,762,418*	2,476,023	653,994	795,659	112,421	303,177	6,103,692
Total ...	15,327,048*	18,774,497	13,339,131	3,409,372	112,421	1,612,433	52,574,902

* Including Federal Territory, which produced 73,500 gallons of milk, also 7,387 lbs. of butter on farms; and 3,520 lbs. of bacon and hams on farms. † Exclusive of Northern Territory, for which no returns are available.

§ 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,
1910-11 to 1914-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1910-11 ...	1,170,000	1,592,000	204,000	496,311	168,251	\$227,000	3,857,562
1911-12 ...	1,200,000†	1,618,500	195,000	533,941	175,890	\$230,000	3,953,331
1912-13 ...	1,434,000†	1,825,010	188,000	541,489	183,689	\$230,000	4,402,188
1913-14 ...	1,579,600†	1,706,700	219,400	569,254	223,713	\$230,000	4,528,667
1914-15 ...	1,598,180†	1,743,860	234,994	524,347	204,591	\$230,000	4,535,972

* Not available. † Excluding Tasmania. ‡ Including Federal Territory, where the estimated value was £1800 in 1911-12; £1880 in 1912-13; £1600 in 1913-14; and £1180 in 1914-15.
§ 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 during the last six years. In 1907 the export greatly exceeded the import, and in 1908 the imports were greater in quantity, but less in value, than the exports. There is a considerable oversea export of frozen poultry.

IMPORTS, EXPORTS, AND NET EXPORTS OF EGGS AND LIVE AND FROZEN POULTRY, COMMONWEALTH, 1910 to 1914-15.

Particulars.				1910.	1911.	1912.	1913.	1914-15.
EGGS.								
Imports	...	...	doz.	39,330	40,969	45,160	53,577	63,065.
"	...	...	£	1,111	1,209	1,464	1,748	2,431
Exports	...	...	doz.	3,853	5,734	6,211	4,872	12,119
"	...	...	£	326	1,124	518	377	735
Net exports*	...	...	doz.	—35,477	—35,235	—38,949	—48,705	—50,946
"	"	...	£	—785	—85	—946	—1,371	—1,696
LIVE POULTRY.								
Imports	...	...	No.	1,274	2,398	1,720	1,725	1,262.
"	...	...	£	663	964	1,460	913	1,857
Exports	...	...	No.	3,251	2,218	3,859	2,480	1,164
"	...	...	£	1,057	1,068	1,231	1,074	603
Net exports*	...	...	No.	1,977	—180	2,139	755	—98
"	"	...	£	394	104	—229	161	—1,254
FROZEN POULTRY.								
Imports	...	...	lbs.	4,811	5,653	2,102	10,328	1,193
"	...	...	£	131	257	64	475	53
Exports	...	...	pair	7,680	16,869	23,390	25,520	14,765
"	...	...	£	4,171	7,470	10,144	10,979	12,496
Net exports	...	...	£	†	†	†	†	†
"	"	...	£	4,040	7,213	10,080	10,504	12,443

* — signifies net imports.

† 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 annual returns of honey from the hives range between 20 lbs. and 60 lbs. per hive.

The value of the export of honey from Australia was only £2439 in 1910, £4414 in 1911, £1924 in 1912, £4094 in 1913, and £2589 in 1914-15. It is believed that this export could be considerably increased. Australian honey exhibited in 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 1914-15.

State.	Bee Hives.			Honey Produced.		Beeswax Produced	
	Productive	Un-productive.	Total.	Quantity.	Value.	Quantity.	Value
	No.	No.	No.	lbs.	£	lbs.	£
New South Wales	29,768	9,680	39,448	1,138,925	16,540	26,483	1,590
Victoria ...	18,502	16,549	35,051	700,672	9,488	20,017	1,293
Queensland ...	11,391	3,930	15,321	542,679	4,523	10,859	543
South Australia ...	17,721	2,072	19,793	1,033,556	12,919	14,365	808
Western Australia	7,604	1,847	9,451	344,054	3,496	5,471	324
Tasmania ...	3,488	4,209	7,697	37,858	947	1,354	75
Federal Territory	89	11	100	4,680	60	193	10
Commonwealth	88,563	38,298	126,861	3,802,424	47,973	78,742	4,643

QUANTITY OF HONEY AND BEESWAX PRODUCED, 1910-11 to 1914-15.

Season.	N. S. Wales.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania	Fed. Ter.	C'wealth
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HONEY.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1910-11	2,765,618	2,308,405	517,565	996,376	338,507	*	...	6,926,471†
1911-12	3,394,489	1,635,260	574,973	760,094	416,823	*	38,764	6,820,403†
1912-13	2,390,355	3,277,590	581,223	1,446,364	292,515	*	19,645	8,007,697†
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

BEESWAX.

1910-11	72,617	34,695	11,798	10,608	7,215	*	...	136,933†
1911-12	66,686	28,405	11,419	9,745	13,730	*	672	130,657†
1912-13	49,267	45,354	11,744	18,054	6,073	*	467	130,959†
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	79,742

* Not available. † Exclusive of Tasmania.

The quantity of honey and beeswax produced from year to year varies considerably according to the climatic conditions of the seasons. During the past five years, New South Wales has been the largest producer, accounting for nearly 37 per cent. of the total honey produced in the Commonwealth, and over 43 per cent. of the beeswax; Victoria, the next in importance, produced about 31½ per cent. of the honey, and 28½ per cent. of the beeswax, South Australia, Queensland, and Western Australia coming next in the order named.

3. **Oversea Trade in Bee Products.**—Both honey and beeswax are produced in the Commonwealth in sufficient quantities to supply all local requirements, and a considerable quantity of each is sent oversea.

**IMPORTS, EXPORTS, AND NET EXPORTS OF HONEY AND BEESWAX,
COMMONWEALTH, 1910 to 1914-15.**

Particulars.	1910.	1911.	1912.	1913.	1914-15.
HONEY.					
Imports lbs.	872	2,477	5,024	636	1,790
" £	23	93	89	19	51
Exports lbs.	182,083	353,367	135,318	284,322	151,405
" £	2,439	4,414	1,924	4,094	2,589
Net Exports lbs.	181,211	350,890	130,294	283,686	149,615
" " £	2,416	4,321	1,835	4,075	2,538

BEESWAX.

Imports lbs.	7,821	8,335	7,212	6,059	13,048
" £	505	564	536	480	1,013
Exports lbs.	26,408	12,691	9,453	10,455	2,173
" £	1,587	751	581	657	154
Net Exports* lbs.	18,587	4,356	2,241	4,396	10,875
" " £	1,082	187	45	177	859

* — signifies net imports.

§ 6. Summary of Australian Farmyard and Dairy Products.

The value of the principal farmyard and dairy products raised in the Commonwealth in 1914 was:—

**VALUE OF THE PRINCIPAL FARMYARD AND DAIRY PRODUCTS IN THE
COMMONWEALTH DURING THE YEAR 1914.**

Produce.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	N. T.	Fed. Ter.	C'wealth.
	£	£	£	£	£	£	£	£	£
Milk, cons'm'd as such ...	1,073,000	1,075,000	285,000	200,000	123,000	67,000	1,200	1,400	2,825,600
Butter ...	4,079,887	2,998,287	1,726,360	347,495	20,918	170,417	(a)	358	9,343,722
Cheese ...	176,443	117,256	227,217	51,261	48	12,646	(a)	...	584,871
C'densed & con- cen'ted milk	99,634	381,641	160,090	...	...	...	...	...	641,365
Bacon & ham	626,618	821,738	484,516	136,181	4,083	41,552	...	144	2,114,832
Poultry & eggs	1,597,000	1,743,860	234,994	524,347	204,591	230,000	...	1,180	4,635,972
Honey & wax	18,130	10,781	5,066	13,727	3,820	1,022	...	70	52,616

(a) Information not available.

(b) Estimate.

§ 7. Summary of Australian Farmyard and Dairy Products Exported, 1910 to 1914-15.

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 1910 to 1914-15.

Products.	1910.	1911.	1912.	1913.	1914-15.
Beeswax lbs.	26,408	12,671	9,347	10,455	2,173
Butter "	87,894,943	101,722,136	66,679,120	75,795,642	54,021,523
Cheese "	911,760	1,149,134	136,452	1,602,609	2,542,478
Egg albumen and yolk doz.	3,753	5,542	6,163	4,872	12,119
Eggs "	*	*	*	*	*
Feathers, undressed lbs.	182,023	353,367	135,318	284,322	151,381
Honey "	3,105,307	3,399,209	2,090,477	4,279,440	1,487,536
Lard "	*	*	*	*	*
Meats—					
Bacon and ham "	1,604,362	2,338,299	2,172,850	1,846,966	1,219,103
Frozen poultry pair	7,680	16,869	23,300	25,520	14,765
" pork lbs.	741,410	1,641,013	897,929	215,175	48,791
Milk, concentrated & preserved No.	266,304	1,017,072	1,646,414	2,779,963	4,907,395
Pigs, living "	303	365	609	440	168
Poultry, living "	3,251	2,198	3,849	2,480	1,154

* Quantity not available

VALUE OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING THE YEARS 1910 to 1914-15.

Products.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£
Beeswax	1,587	749	575	657	154
Butter	3,951,131	4,637,362	3,342,320	3,564,925	2,659,030
Cheese	21,730	26,754	5,303	42,030	72,527
Egg albumen and yolk	724	651	...	3	...
Eggs	320	437	516	377	735
Feathers, undressed	2,021	2,971	2,926	1,576	607
Honey	2,435	4,414	1,924	4,094	2,588
Lard	62,474	57,854	37,007	84,737	31,433
Meats—					
Bacon and ham	56,995	74,065	68,439	73,982	58,823
Frozen poultry	4,171	7,470	10,144	10,979	12,496
" pork	17,087	33,639	16,661	5,259	1,400
Milk, concentrated and preserved	4,865	16,675	34,317	72,950	122,613
Pigs, living	477	748	1,025	1,336	511
Poultry, living	1,057	1,038	1,209	1,074	591
Total	4,127,074	4,864,827	3,522,366	3,863,979	2,963,508

§ 8. British Imports of Dairy Products.

1. **Value of Britain's Imports of Dairy Products.**—Since 1910, Great Britain has paid £24,000,000 annually for imported butter, the value of the imports in 1910, 1911, 1912, 1913, and 1914 being £24,493,000, £24,600,000, £24,354,000, £24,084,000, and £24,014,000 respectively; for imported cheese the amounts in the years named were respectively £6,810,000, £7,140,000, £7,414,000, £7,035,000 and £7,966,000; for bacon and ham, £15,918,000, £17,391,000, £17,276,000, £20,497,000, and £21,289,000 respectively; and for pork, £1,500,000, £1,413,000, £1,101,000, £1,665,000, and £2,663,000 respectively.

2. **Butter.**—Australia in 1911 stood second, and in 1912, 1913 and 1914 third, in regard to value of butter imported into the United Kingdom; but the import of other Australian dairy products was inconsiderable.

IMPORT OF BUTTER INTO THE UNITED KINGDOM, 1914.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	Cwt.	£		Cwt.	£
Denmark ...	1,749,072	11,038,637	Argentine Republic	55,704	325,450
Russia ...	616,380	3,382,411	Norway...	24,618	150,346
Australia...	438,094	2,474,044	Other Countries ...	14,460	76,519
New Zealand	357,920	2,100,958			
France ...	273,819	1,674,155			
Sweden ...	270,138	1,647,575			
Netherlands	183,999	1,144,181	Total ...	3,984,204	24,014,276

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, this being the highest recorded price for Australian butter. Prices in London during the last seven years have been considerably higher than the average of any previous year since the Australian export trade was instituted twenty years ago. A marked approach to Danish values has lately been made in the prices of Australian butter.

3. **Cheese.**—The value of the British cheese import in 1914 was £7,966,000, of which over four million pounds' worth was received from Canada. Small experimental shipments from Australia were made in 1908 and following years, a fair price being realised. In 1914, the value of the import from Australia was £57,600.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1914 at £21,289,000, Great Britain received imports to the value of £9,943,000 from Denmark; £8,185,000 from the United States; and £1,442,000 from Canada. The British import from Australia was small, but experimental shipments have been made during recent years.

5. **Pork.**—The total value of British imports of pork (including refrigerated, frozen and salted) was £2,663,000 in 1914. Of this the value of Australian produce was *nil*, whilst from the Netherlands, pork valued at £2,233,000 was imported into Great Britain.

6. **Other Products.**—There is practically no British import from Australia of honey, beeswax, poultry, game, lard, or eggs, but frozen rabbits to the value of £539,000 were received from the Commonwealth in 1914.

§ 9. Graphical Representation of Dairy Production.

Two graphs shewing respectively the increase in dairy production and in the exports of butter will be found on page 300.

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, 1913.

State.	Specially Reserved for Timber.	Total Forest Area.	Percentage of State Area.		Percentage of Commonwealth Area.	
			Specially Reserved.	Total Forest.	Specially Reserved.	Total Forest.
	Acres.	Acres.	%	%	%	%
New South Wales	*6,853,823	15,000,000	3.46	7.55	0.36	0.78
Victoria ...	4,160,342	11,800,000	7.40	20.98	0.22	0.62
Queensland ...	4,108,470	40,000,000	0.96	9.32	0.22	2.10
South Australia ...	154,232	3,800,000	0.07	0.66	0.01	0.20
Western Australia	12,371,152	20,400,000†	1.98	3.27	0.65	1.07
Tasmania ...	1,017,949	11,000,000	6.07	65.56	0.05	0.58
Commonwealth	28,665,973	102,000,000	—	—	1.51	5.35

* Inclusive of Federal area. † S.W. division only.

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.

In each of the States areas have been set apart as State forests and "timber reserves," in some cases the reservation being made in perpetuity, in others for a definite period; in others again the reservation may be cancelled at any time.

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.

Country.	Total Forest Area.	Percentage of Total Area.	Country.	Total Forest Area.	Percentage of Total Area.
	Sq. Miles.	%		Sq. Miles.	%
Commonwealth ...	159,375	5.35	Rumania ...	10,836	21.36
New Zealand ...	26,562	25.63	Sweden ...	90,241	52.20
United Kingdom ...	4,820	3.84	Norway ...	26,685	21.50
France ...	36,005	17.58	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 Colony ...	537	0.19
Italy ...	17,613	15.92	British India ...	126,330	11.55
Austria ...	37,700	31.66	Japan ...	29,680	18.24
Hungary ...	34,750	29.30			

2. **Distribution of Timber.**—The characteristics of the forest areas are given in some detail for each State in the 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.

§ 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 tends to beneficially regulate 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, excepting Tasmania, 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, it is believed, caused through 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 reserves, nurseries, and trial stations are as follows:—

FOREST RESERVES AND NURSERIES, 1913.

Particulars.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
State Forest Reserves— Number (for area see page 378) ...	1,486	317	348	38	292*	63	2,544
State Forest Nurseries— Number ...	1	3	2	7	1	1	15
Area ...	126	54	1	7	17	5	210
Plantation Trial Stations— Number ...	7	11	2	...	2	...	22
Area ...	4,497	19,070	40	...	850	...	24,457
Number of persons employed in Forestry Departments— Administrative ...	16	16	2	1	6	1	42
Professional ...	6	5	1	1	...	2	15
General ...	151	116	18	174	32	7	498

* Areas specially reserved.

4. **Revenue and Expenditure.**—The revenue and expenditure of the State Forestry Departments from 1909-10 to 1913-14 are given below:—

REVENUE OF STATE FORESTRY DEPARTMENTS, 1909-10 to 1913-14.

State.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.
	£	£	£	£	£
New South Wales ...	66,030	87,618	95,231	96,145	99,333
Victoria ...	37,992	43,886	45,077	51,146	57,746
Queensland ...	35,200	39,645	53,840	63,467	62,973
South Australia ...	3,089	3,756	4,849	5,609	6,868
Western Australia ...	31,549	23,985	23,456	33,805	48,236
Tasmania ...	3,840	4,366	3,800	4,414	4,659
Commonwealth ...	177,700	203,256	226,253	254,586	279,815

EXPENDITURE OF STATE FORESTRY DEPARTMENTS, 1909-10 to 1913-14.

State.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.
	£	£	£	£	£
New South Wales ...	24,510	26,695	34,408	42,154	44,828
Victoria ...	27,230	46,448	41,686	56,899	58,007
Queensland ...	5,000	8,000	2,954	5,397	7,386
South Australia ...	16,411	20,968	23,296	22,858	22,832
Western Australia ...	10,110	8,572	8,874	10,469	11,463
Tasmania ...	260	240	220	760	760
Commonwealth ...	83,521	110,923	111,438	138,537	145,276

5. **Instruction in Scientific Forestry.**—Forestry 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.

6. **Forest Congresses.**—An Australian Interstate Conference on Forestry was held at Sydney in November, 1911. Many of the recommendations which the conference approved have been carried out. 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.

§ 3. Commercial Uses of Principal Australian Timbers.

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).

As aids in the development of Commonwealth industries, the Government is experimenting with Australian woods for rifle stocks, telephone switch boards, etc. It has also made available a sum of money for the seasoning and storing of Australian timber. Timber seasoning depôts have also been established by States 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.

§ 4. Forestal Industries and Production.

1. **Timber.**—Estimates of the quantity and value of timber cut and sawn have been prepared by the States Forestry Departments, and are as follows:—

**QUANTITIES OF LOCAL TIMBER SAWN OR HEWN IN EACH STATE OF THE
COMMONWEALTH DURING THE YEARS 1909 to 1913.**

State.	1909.	1910.	1911.	1912.	1913.
	sup. feet.	sup. feet.	sup. feet.	sup. feet.	sup. feet.
New South Wales	134,070,000	138,845,000	142,358,000	162,604,000	164,899,000
Victoria	50,000,000	51,000,000	53,000,000	60,000,000	81,770,000
Queensland	108,391,000	116,438,000	138,896,000	163,828,000	156,634,000
South Australia	240,500	210,000	217,000	183,000	100,000
Western Australia	171,825,000	174,528,000	191,114,000	217,696,000	218,908,000
Tasmania... ..	45,035,000	54,933,000	66,061,000	63,243,000	60,780,000
Commonwealth	509,561,500	535,954,000	591,646,000	667,554,000	683,091,000

2. Other Forest Produce.—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.

§ 5. Oversea Trade.

1. Imports.—The quantity and value of timber imports during the four years 1910 to 1913 inclusive are shewn according to countries of origin in the following tables:—

IMPORTS OF DRESSED TIMBER, COMMONWEALTH, 1910 to 1913.

Country of Origin.	Quantity.*				Value.			
	1910.	1911.	1912.	1913.	1910.	1911.	1912.	1913.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	12,012	6,350	95,938	3,537	409	177	1,070	191
New Zealand	2,304	6,251	77,821	4,427	30	36	1,107	32
Other British Poss.	39,459	46,375	961,085	2,344	633	227	8,468	26
Norway	48,465,404	59,396,352	45,796,037	56,251,225	338,924	446,180	341,731	399,699
Sweden	15,648,298	27,249,978	23,827,979	23,571,012	100,965	201,142	176,697	187,988
United States	1,747,748	1,812,295	4,299,739	1,938,088	21,510	23,099	37,477	19,658
Other For. Countries	231,960	399,696	22,283	700,809	4,280	3,855	417	5,566
Total	64,147,155	88,917,337	75,080,872	82,471,445	466,754	674,716	566,987	613,360

* Exclusive of timber not measured in super. feet.

**IMPORTS OF UNDRESSED TIMBER, INCLUDING LOGS, COMMONWEALTH,
1910 to 1913.**

Country of Origin.	Quantity.*				Value.			
	1910.	1911.	1912.	1913.	1910.	1911.	1912.	1913.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	65,420	97,485	311,535	65,342	738	1,509	3,409	1,189
Canada	15,585,078	25,806,593	12,371,444	12,263,586	68,308	110,238	54,116	54,369
India	483,635	826,240	740,059	682,724	13,604	15,373	20,847	18,490
New Zealand	70,604,559	85,383,540	93,524,793	64,469,843	416,630	571,979	654,093	453,798
Straits Settlements	295,525	313,443	544,190	281,155	1,799	1,658	2,785	1,454
Other British Poss.	75,033	267,545	59,607	2,793	900	2,922	550	61
Japan	7,138,554	13,218,773	11,911,714	16,011,418	29,127	62,552	61,900	72,095
Java	64,459	324,630	7,319	45,890	1,244	5,765	147	1,312
Norway	6,104,204	5,798,584	4,152,072	6,204,961	43,065	45,165	29,093	42,162
Russia	14,878,825	21,641,285	9,258,609	10,516,517	83,408	136,645	56,099	66,434
Sweden	6,506,762	6,093,004	6,986,236	5,905,476	44,378	40,459	50,072	44,696
United States	156,219,083	193,949,570	227,112,385	256,331,192	835,614	987,016	1,209,626	1,418,760
Other For. Countries	653,617	507,182	2,074,393	317,975	3,354	4,011	18,878	2,771
Total	278,674,754	354,227,874	368,954,356	373,118,802	1,542,178	1,985,292	2,161,605	2,157,591

* Exclusive of timber not measured in super. feet.

2. Exports.—The quantity and value of undressed (sawn) timber exported from 1909 to 1913 are given below, the countries of destination being also shewn.

EXPORTS OF UNDRESSED TIMBER (SAWN), COMMONWEALTH, 1909 to 1913.

Country to which Exported.	Quantity.*					Value.				
	1909.	1910.	1911.	1912.	1913.	1909.	1910.	1911.	1912.	1913.
	1000 sup. ft.	1000 sup. ft.	1000 sup. ft.	1000 sup. ft.	1000 sup. ft.	£	£	£	£	£
United Kingdom...	21,689	10,879	10,436	11,325	20,222	151,724	77,003	77,070	79,940	140,082
Canada ...	492	610	546	456	619	5,267	7,038	6,640	5,893	8,028
S. African Union ...	3,768	11,687	19,243	39,544	33,793	24,712	80,223	32,094	270,282	233,782
Ceylon ...	2,235	303	611	576	1,926	14,864	1,833	4,110	4,153	12,923
Fiji ...	1,305	1,994	1,900	2,359	1,421	7,950	13,392	12,416	17,342	12,939
India ...	55,357	44,852	52,254	31,477	23,960	364,430	300,411	353,482	209,312	160,577
Mauritius ...	8	525	273	225	235	75	3,533	2,138	1,501	1,587
New Zealand ...	25,424	20,766	27,137	21,061	38,566	172,705	147,314	199,666	162,518	278,975
Ocean Island ...	416	268	120	446	347	3,236	1,605	768	3,682	3,139
Papua ...	160	357	435	614	598	1,366	3,497	4,223	6,410	6,184
Straits Settlements	601	52	52	81	88	3,877	320	380	506	478
Other British Pos.	4,022	2,643	103	18	249	29,702	19,651	774	184	2,151
Argentine Repub.	1,134	3,007	2,474	667	1,584	7,499	19,797	16,492	4,447	10,558
Belgium ...	1,820	3,535	2,887	2,727	2,429	12,154	24,870	21,665	19,193	17,146
China ...	7,263	409	2,138	1	1	26,595	2,693	14,250	2	2
Egypt ...	10,176	15,708	7,289	50	56	62,096	104,600	48,594	333	377
Germany ...	2,027	1,944	1,829	1,774	1,762	17,987	18,555	18,122	17,394	14,293
Japan ...	73	26	36	90	86	484	317	354	771	890
Kaiser Wilhelm L.	75	43	79	98	131	556	333	648	891	1,522
Marshall Islands...	162	229	226	140	211	1,325	1,643	2,023	1,366	2,227
Netherlands ...	35	...	3	...	...	256	...	26	...	...
Neu Pommern ...	311	562	372	611	...	2,504	4,838	3,498	6,231	...
New Caledonia ...	118	441	355	232	201	949	3,511	3,096	2,017	2,123
Philippine Islands	306	3,282	2,941	61	63	3,372	21,132	19,608	414	449
Port'guese E. Africa	3,539	4,720	2,639	380	3,106	24,230	31,036	17,416	3,890	21,775
South Sea Islands (so described) ...	337	388	631	914	838	2,965	3,247	5,520	9,129	8,403
U.S. of America ...	659	2,501	4,907	942	1,295	7,703	12,693	25,032	11,182	13,579
Uruguay ...	3,894	6,240	1,888	1,754	...	25,963	41,596	12,589	11,689	...
Other For. Count.	648	4,863	2,715	778	998	5,164	29,674	16,948	7,685	10,449
Total ...	148,064	142,834	146,524	119,401	134,805	981,770	976,355	1,019,648	858,357	964,938

* Exclusive of timber not measured in super. feet.

QUANTITIES OF TIMBER IMPORTED INTO AND EXPORTED FROM THE COMMONWEALTH, 1909 to 1913.

Description.	1909.	1910.	1911.	1912.	1913.
IMPORTS.					
Veneers ... Sup. feet	296,801	599,178	994,575	1,815,917	1,959,436
Dressed ... "	57,924,923	65,609,803	90,672,708	76,513,670	83,849,002
Undressed ... "	200,469,213	257,007,893	324,325,658	350,052,617	349,680,896
Logs ... "	11,335,870	21,666,861	29,902,216	18,901,739	23,437,906
Palings ... No.	...	...	...	...	...
Pickets ... "	1,226,082	2,123,398	1,523,849	2,065,145	2,302,748
Shingles ... "	1,270,476	690,710	937,270	1,242,720	1,526,994
Staves—Dressed, etc. "	4,600	600	5,440	920	...
Undressed ... "	2,390,888	3,929,063	3,863,457	2,181,121	3,639,969
Laths for blinds ... "	...	...	...	...	...
" other ... "	25,692,686	38,564,512	30,213,094	29,631,746	46,337,501
Spokes, rims, felloes ... "	659,298	835,400	1,916,045	...	...
Doors ... "	4	2	234	12,172	1,410
Architraves, mouldings, etc. ... Lin. feet	29,725	9,045	23,601	35,106	80,398
Other (Free) ...	...	...	...	...	...

* Quantity not available.

QUANTITIES OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

Description.	1909.	1910.	1911.	1912.	1913.
EXPORTS.					
Veneers ...	...	...	...	...	...
Dressed ... Sup. feet	1,280,703	990,924	1,071,683	975,679	716,621
Undressed ... "	148,063,541	142,833,520	146,262,683	119,401,434	134,805,222
Logs ...	4,254,472	2,195,219	3,252,115	1,913,973	1,899,474
Palings ... No.	718,550	608,602	942,220	630,670	487,094
Pickets ... "	3,000	19,570	6,628	5,335	1,411
Shingles ...	12,944	100,540	35,790	21,332	31,300
Staves—Dressed, etc. "	90	5,000	1,300	...	...
" Undressed "	...	1,267	...	...	...
Laths for blinds "	*	*	*	*	*
" other "	14,240	677,280	110,900	406,980	7,190
Spokes, rims, felloes "	*	*	*	*	*
Doors ...	*	*	*	*	*
Architraves, mouldings, etc. ... Lin. feet	90,458	94,054	92,162	125,327	107,664
Other ...	...	...	...	...	...
EXCESS OF IMPORTS OVER EXPORTS.					
Veneers ...	296,801	599,178	994,575	1,815,917	1,959,436
Dressed ... Sup. feet	56,644,220	64,618,879	89,601,025	75,537,991	83,132,381
Undressed ... "	52,405,672	114,174,373	178,062,975	230,651,183	214,875,674
Logs ...	7,081,398	19,471,642	26,650,101	16,987,766	21,538,432
Palings ... No.	—718,550	—608,602	—942,220	—630,670	—487,094
Pickets ...	1,223,082	2,104,428	1,517,221	2,059,810	2,301,337
Shingles ...	1,257,532	590,170	901,480	1,221,388	1,495,694
Staves—Dressed, etc. "	4,510	—4,400	4,140	920	...
" Undressed "	2,390,798	3,927,796	3,363,457	2,181,121	3,639,969
Laths for blinds "	*	*	*	*	*
" other ...	25,678,446	37,897,232	30,102,194	29,224,766	46,330,311
Spokes, rims, felloes "	*	*	*	*	*
Doors ...	*	*	*	*	*
Architraves, mouldings, etc. ... Lin. feet	—60,733	—85,009	—68,561	—90,221	—27,266
Other ...	*	*	*	*	*

* Quantity not available.

Note. — signifies excess of exports over imports.

VALUE OF TIMBER IMPORTED INTO AND EXPORTED FROM THE COMMONWEALTH, 1909 to 1913.

Description.	1909.	1910.	1911.	1912.	1913.
IMPORTS.					
Veneers ...	£ 8,778	£ 14,814	£ 25,795	£ 42,379	£ 55,374
Dressed ...	376,732	478,162	683,430	578,427	625,032
Undressed ...	1,158,445	1,432,301	1,819,832	2,061,666	2,036,330
Logs ...	51,246	109,877	165,460	99,939	121,261
Palings ...	...	...	...	...	...
Pickets ...	4,117	8,804	5,622	10,270	8,497
Shingles ...	1,873	851	1,280	1,892	2,208
Staves—Dressed, etc. ...	342	145	131	14	...
" Undressed ...	18,178	24,542	20,417	15,744	22,870
Laths for blinds ...	83	24	38	26	4
" other ...	20,970	28,397	23,181	26,436	40,131
Spokes, rims, felloes ...	12,408	17,297	40,047	21,616	13,993
Doors ...	1	1	137	3,616	445
Architraves, mouldings, etc. ...	59	29	65	145	250
Other (Free) ...	588	136	129	1,043	81
Total value ...	1,653,820	2,115,380	2,785,564	2,863,213	2,926,476

VALUE OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

Description.	1909.	1910.	1911.	1912.	1913.
EXPORTS.					
Veneers	£ ...	£ ...	£ ...	£ ...	£ ...
Dressed	12,104	11,396	12,599	11,542	8,160
Undressed	981,770	976,355	1,016,510	858,357	964,938
Logs	23,690	16,768	23,024	14,950	25,325
Palings	3,449	3,106	4,931	3,734	2,688
Pickets	26	176	84	66	40
Shingles	29	210	91	106	42
Staves—Dressed, etc. ...	1	52	16	...	...
Undressed ... ..	...	68	...	...	...
Laths for blinds	1,179	1,136	946	363	297
" Other	20	708	105	495	11
Spokes, rims, felloes ...	5,191	8,687	9,989	12,214	8,039
Doors	991	759	743	1,053	960
Architraves, mouldings, etc. ...	511	623	589	723	541
Other ... ..	...	...	...	...	...
Total value ...	1,028,961	1,020,044	1,069,627	903,603	1,011,041

EXCESS OF IMPORTS OVER EXPORTS.

Veneers	8,778	14,814	25,795	42,379	55,374
Dressed	364,628	466,766	670,831	566,885	616,872
Undressed	176,675	455,946	803,322	1,203,309	1,071,392
Logs	27,556	93,109	142,436	84,989	95,936
Palings	—3,449	—3,106	—4,931	—3,734	—2,688
Pickets	4,091	8,628	5,538	10,204	8,457
Shingles	1,844	641	1,189	1,786	2,166
Staves—Dressed, etc. ...	341	93	115	14	...
Undressed	18,178	24,474	20,417	15,744	22,870
Laths for blinds	—1,096	—1,112	—908	—337	—293
" other	20,950	27,689	23,076	25,941	40,120
Spokes, rims, felloes ...	7,217	8,610	30,058	9,402	5,954
Doors	—990	—758	—606	2,563	—515
Architraves, mouldings, etc. ...	—452	—594	—524	—578	—291
Other	588	136	129	1,043	81
Total value ...	624,859	1,095,336	1,715,937	1,959,610	1,915,435

Note. — signifies excess of exports over imports.

The exports of sandalwood were:—

EXPORTS OF SANDALWOOD, 1909 to 1913.

Country to which Exported.	Quantity.					Value.				
	1909.	1910.	1911.	1912.	1913.	1909.	1910.	1911.	1912.	1913.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
Hong Kong	54,387	141,646	120,432	22,854	91,054	25,546	71,672	62,566	11,567	41,476
Straits Settlements	12,890	7,378	13,783	2,390	17,835	5,036	3,319	5,967	1,034	5,931
Other British Possessions ...	5,163	15,223	5,687	7,863	10,760	3,358	6,301	2,506	3,455	4,560
China	31,649	19,399	7,140	36,755	13,540	12,180	7,332	2,348	16,619	5,593
Other Foreign Countries ...	...	...	6	233	486	...	...	9	225	387
Total	104,089	183,646	147,048	70,095	133,675	45,120	88,624	73,396	32,900	57,947

Tanning bark is largely exported from the Commonwealth, as the following table shews:—

EXPORTS OF TANNING BARK, 1909 to 1913.

Country to which Exported.	Quantity.					Value.				
	1909.	1910.	1911.	1912.	1913.	1909.	1910.	1911.	1912.	1913.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom ...	19,424	12,159	3,154	605	3,078	8,188	4,674	1,195	197	1,010
New Zealand ...	69,137	55,838	66,574	73,667	45,013	31,414	25,036	29,105	34,224	20,559
Other British Poss. ...	1,745	1,895	1,868	1,684	621	902	860	921	802	307
Belgium ...	15,910	40,556	29,100	40,180	36,250	5,966	15,815	11,576	15,520	14,281
France ...	206	837	204	...	...	105	319	101	...	...
Germany ...	114,128	179,119	148,490	49,849	58,011	43,063	70,442	60,121	20,630	23,653
Other For. Countries ...	5,322	5,239	4,166	2,060	1,379	2,307	2,108	1,627	755	601
Total ...	225,872	295,616	253,556	168,045	144,352	91,945	119,254	104,646	72,128	60,411

QUANTITIES AND VALUES OF BARK IMPORTED INTO, AND EXPORTED FROM THE COMMONWEALTH, 1909 to 1913.

Particulars.	1909.	1910.	1911.	1912.	1913.
	cwt.	cwt.	cwt.	cwt.	cwt.
QUANTITIES—					
Imports ...	28,020	12,648	72,447	119,253	77,689
Exports ...	225,872	295,616	253,556	168,045	144,352
Excess of exports over imports	197,852	282,968	181,109	48,792	66,663
VALUES—	£	£	£	£	£
Imports ...	12,774	5,461	31,253	50,920	27,987
Exports ...	91,945	119,254	104,646	72,128	60,411
Excess of exports over imports	79,171	113,793	73,393	21,208	32,424

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 sometimes 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.

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.**—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 2000 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 four to twenty fathoms in depth.

In Queensland and Northern Territory the bêche-de-mer industry is carried on, and tortoiseshell is obtained on the coasts. Experiments have been made in cultivating the pearl oyster on suitable banks. In October 1911, a pearl weighing 178 grains, and valued at £3000, was obtained at Broome. Further details regarding pearl-shelling are given in Official Year Book No. 6, p. 463.

The system of licensing boats and men engaged in the pearling industry restricts, in the States where it is in force, indiscriminate exploiting of the areas, and returns a small revenue.

Poaching in Australian territorial waters has long been rife, particularly on the north-west coast, and measures have been taken to check it.

In accordance with the "White Australia" policy, it has been determined that the employment of coloured labour in the pearl-shelling industry shall be restricted, and ultimately cease altogether. After 31st December, 1913, permits to indent Asiatics for the pearling fleet ceased, and all divers employed upon the luggers will eventually be white men. Experienced divers from England have been engaged. It is believed that practical difficulties which may arise in the transition period will be overcome. In March 1912 the Commonwealth Government appointed a Royal Commission to inquire into the pearling industry generally, and particularly as regards its labour problems. The Commission commenced its work at Cairns, Queensland, on 30th April, 1912. Evidence of a valuable nature was taken in various centres; a progress report was presented in October 1913, and minutes of evidence, appendices, etc., were published in December 1913. Since that date the Commission has sat at various times, and its final report will probably be issued after the middle of the present year.

§ 2. Fisheries Statistics.

1. **Estimates for the Commonwealth.**—The returns given below have been furnished by the State departments. Estimates and approximations, where shown, 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, PEARLSHELL AND BÊCHE-DE-MER), COMMONWEALTH, 1914.

State.	No. of Boats Engaged.	Value of Boats and Equipment.	No. of Men Employed.	Total Take of		Value of Take.	
				Fish.	Lobsters.	Fish.	Lobsters.
	No.	£	No.	cwt.	doz.	£	£
New South Wales ...	717	31,133	2,982	149,553	13,592	160,746	5,629
Victoria ...	808	61,653	1,051	89,027	35,487	91,870	12,137
Queensland...	367	19,866	728	41,480	...	46,580	...
South Australia	980	31,000	1,662	90,000	24,000	157,334	9,334
Western Australia	272	24,157	618	*34,000	11,256	*42,000	3,808
Tasmania ...	169	9,758	298	*159,310	6,400	20,935	2,203
Northern Territory	8	450	24	173	...	258	...
Commonwealth ...	3,321	178,017	7,363	563,543	90,735	519,723	33,111

* Estimated.

EDIBLE OYSTER FISHERIES, COMMONWEALTH, 1914.

State.	Number of Boats Engaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed	Number of Leases.	Length of Foreshore in Leases.	Oysters Taken.	
						Quantity.	Value.
	No.	£	No.	No.	Miles.	cwt.	£
New South Wales ...	289	8,485	303	2,175	384	37,480	37,672
Victoria ...	...	...	...	...	...	...	...
Queensland...	101	10,474	136	921	*	21,822	23,136
South Australia ...	8	1,600	14	*	*	897	1,345
Western Australia ...	...	...	...	...	...	...	...
Tasmania ...	...	...	...	...	...	...	...
Northern Territory ...	...	...	...	...	...	...	...
Commonwealth ...	398	20,559	453	†3,096	†384	60,199	62,153

* Figures not available.

† Exclusive of figures for South Australia.

PEARL, PEARLSHELL, AND BÊCHE-DE-MER FISHERIES, COMMONWEALTH, 1914.

State.	Number of Boats En-gaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Quantity of Pearlshe-ll obtained.	Value of Pearlshe-ll obtained.	Value of Pearls obtained.	Value of Bêche-de-mer obtained.	Quantity of Tor-toiseshell ob-tained.	Value of Tor-toiseshell ob-tained.
	No.	£	No.	Tons.	£	£	£	lbs.	£
N.S.W. ...	...	...	...	...	...	...	...	...	...
Victoria ...	...	...	...	...	...	...	...	...	...
Q'sland ...	182	63,000	1,259	303	63,382	6,120	24,878	655	400
S. Aust. ...	...	...	...	...	...	...	...	...	...
W. Aust. ...	360	163,738	2,644	1,461	220,733	90,000	...	...	...
Tas. ...	...	...	...	...	...	...	...	...	...
N. Terr. ...	42	6,500	250	25	6,110	*1,415	2,969	312	265
C'wlth.	584	233,238	4,153	1,789	290,225	97,535	27,847	967	665

* 1913 figures.

PUBLIC REVENUE FROM FISHERIES, COMMONWEALTH, 1914.

State.	Licenses.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ...	1,319	5,671	344	560	7,894
Victoria ...	...	...	...	...	...
Queensland...	2,315	5,505	10	61	7,891
South Australia ...	728	...	20	...	748
Western Australia ...	4,580	1,647	51	20	6,298
Tasmania* ...	639	...	2	...	641
Northern Territory ...	83	...	...	21	104
Commonwealth ...	9,664	12,823	427	662	23,576

* Returns incomplete; refer mainly to Fisheries Board of Hobart.

GENERAL AND OYSTER FISHERIES, COMMONWEALTH, 1910 to 1914.

Particulars.	1910.	1911.	1912.	1913.	1914.
General Fisheries—					
No. of boats engaged ...	3,088	2,593	2,898	3,114	3,321
„ men employed ...	5,515	4,405	6,114	6,428	7,363
Fish obtained—					
Quantity ... cwt.	341,659†	350,828§	391,168‡	388,371‡	563,543
Value... .. £	381,182	474,027	497,845	489,236	519,723
Lobsters obtained—Value, £	22,172	27,718	27,840	30,879	33,111
Edible Oyster Fisheries—					
No. of boats engaged* ...	113	482	485	428	398
„ men employed* ...	174	589	518	487	453
Oysters obtained—					
Quantity ... cwt.	59,854	64,397	58,113	68,054	60,199
Value £	60,769	77,080	79,933	74,204	62,153
Public Revenue from Fisheries					
Licenses £	5,496	4,833	5,576	7,379	9,664
Leases £	9,842	11,583	11,668	11,081	12,823
Fines and forfeitures	£ 180	345	495	480	427
Other sources £	742	386	625	442	662
Total revenue	£ 16,260	17,147	18,364	19,382	23,576

* Queensland and South Australia only for year 1910. There are practically no oyster fisheries in Victoria, Western Australia, and Tasmania. ‡ Exclusive of Tasmania. § Exclusive of Western Australia and Tasmania.

PEARL, PEARLSHELL AND BÊCHE-DE-MER FISHERIES, COMMONWEALTH,*
1910 to 1914.

Particulars.	1910.	1911.	1912.	1913.	1914.
No. of boats engaged ...	586	578	607	598	581
No. of men employed ...	4,038	4,052	4,291	4,277	4,137
Pearlshell obtained—					
Quantity ... tons	1,853	1,717	2,103	2,014	1,823
Value £	299,143	327,444	530,298	346,437	297,776
Pearls obtained †—					
Value £	94,768	87,713	106,375‡	97,730‡	97,535
Bêche-de-mer obtained—					
Quantity ... tons	251	323	450	625	531
Value £	10,088	17,712	25,142	30,943	26,553
Tortoiseshell obtained—					
Quantity ... lbs.	2,070	1,056	1,302	1,382	870
Value £	998	572	785	850	625

* Queensland, Northern Territory and Western Australia only. There is no production in the other States. † As returned. ‡ Exclusive of pearls obtained by Japanese divers, estimated at £25,000.

§ 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 trade are as follows:—

IMPORTS OF FISH, COMMONWEALTH, 1910 to 1914-15.

Classification.		1910.	1911.	1912.	1913.	1914-15.
Fresh (oysters) ...	{ cwt. £	9,640 4,805	7,152 3,462	8,765 5,279	8,912 5,281	6,353 4,187
Fresh, or preserved by cold process...	{ cwt. £	11,248 23,001	20,455 44,536	25,673 56,396	34,172 78,510	27,015 65,741
Potted ...	{ cwt. £	* 25,408	* 26,024	* 35,506	* 37,644	* 38,552
Preserved in tins ...	{ cwt. £	154,547 466,381	148,846 443,049	194,092 606,969	171,733 525,996	194,005 660,693
Smoked, dried and n.e.i.	{ cwt. £	19,448 42,918	21,605 52,289	26,472 76,327	24,629 70,605	15,477 37,141
Total ...	{ cwt. † £	194,883 562,513	198,058 569,360	255,002 780,477	239,446 718,036	242,850 806,314

* Not available. † Exclusive of potted fish.

EXPORTS OF FISH (AUSTRALIAN PRODUCE), 1910 to 1914-15.

COMMONWEALTH.

Classification.		1910.	1911.	1912.	1913.	1914-15.
Fish, fresh, smoked, or preserved by cold process	{ cwt. £	912 1,963	248 1,026	137 436	114 367	1,919 9,532
Preserved in tins, dried, salted, etc.	{ cwt. £	5,346 17,532	6,891 23,185	38,268 35,827	11,334 40,573	10,655 29,337
Total ...	{ cwt. £	6,258 19,495	7,139 24,211	38,405 36,263	11,448 40,940	12,574 38,869

Although a considerable development has taken place lately in the fish preserving industry, there is for the Commonwealth an excess of imports over exports amounting approximately to £540,000 in 1910, £545,000 in 1911, £745,000 in 1912, £680,000 in 1913, and £753,000 in 1914-15.

The exports of pearlshell and tortoiseshell are given hereunder for the five years 1910 to 1914-15:—

EXPORTS OF PEARLSHELL AND TORTOISESHELL, 1910 to 1914-15.

COMMONWEALTH.

Article.		1910.	1911.	1912.	1913.	1914-15.
Pearlshell ...	{ cwt. £	40,307 322,184	39,126 330,003	64,976 524,281	41,813 383,193	26,276 179,430
Tortoiseshell ...	{ lbs. £	1,742 823	1,693 964	5,170 3,454	3,244 2,081	1,244 822

§ 4. Development of the Fishing Industry.

1. Transport and Marketing.—For many years the question of securing to the consumer a regular supply of wholesome fish at a moderate price has been under consideration. Where quick transport by rail or steamer is not provided, the catch of fish in tropical or sub-tropical waters can only be locally consumed, since speedy marketing is essential. Adequate refrigerating apparatus on railway waggons and coasting steamers and quick transport to centres of population might, however, alter the economic condition in a satisfactory direction. In the temperate regions there are adequate supplies close to the principal ports—a fact which is of considerable advantage, since short trips mean marketing of the produce in good condition, and less sea risks are incurred. At the present time the natural wealth of Australia in fish is exploited only to a very slight extent. (See § 6 hereinafter).

2. Experiment and Culture.—*The Existing Fisheries.* In many respects the fishing industry is capable of modification and development. A good deal has been effected 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.

§ 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 pearlshell and béche-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 where.
- (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 shewn 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 sea-going 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. Consumption of Fish.—The inadequacy of the present supply of fish in Australia is universally admitted, yet all reports agree that there is, off the coast, a bountiful harvest of fish. It is not, as in Great Britain and the northern countries of Europe, a popular article of diet, but is rather in the nature of a luxury. While the value of fish consumed in Norway is nearly 20s., and in Holland, Denmark, and the United Kingdom 5s. per head of population, in Australia it is little over 1s. 6d. Moreover, in the European countries named, notwithstanding the fact that the trawlers have generally to go much further afield for their catches, a shilling's worth of fish represents a much larger quantity than could be obtained for the same amount in the Commonwealth, where the wealth of the coastal waters indicates that, with satisfactory handling, the product of the sea would become an article of food for the poorest classes, and a valuable industry would be developed. The uncertainties and limitations of the market, caused by the irregularity of the supply, will be overcome when the fact is recognised that the ocean product, properly exploited, is adequate to supply the demand, however strong. Under present conditions, it is not surprising that Australians are not great fish-eaters. The quantity of fish consumed annually per head in Great Britain is 42 lbs.; in Australia it is only 9 lbs.

§ 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 the "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 the first trawler arrived in Sydney on 21st April, 1915, followed by two others shortly afterwards. In addition to the three vessels in commission, four steam vessels are under construction locally, and tenders have been called for two others. It is also proposed to construct a wooden fish-carrying vessel as well as a general fishing vessel. The existing trawlers have a gross tonnage of about 220 tons each. Twelve men are employed on each vessel and the total number of employees in connection with the undertaking is ninety-eight. During the last twelve months nearly two million lbs. of fish valued at £32,000 have been

taken. The State undertakes the retail distribution of the catch, and has four metropolitan depots for this purpose, while five others will be opened in the near future. Provision has been made for coastal receiving depots for cold storage of river and estuarine fish prior to distribution, the establishment at Newcastle being designed as a retail depot also.

§ 7. Fish Preserving.

Bounties have been provided 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; £1727 in 1908-9; £311 in 1909-10; £115 in 1910-11; £168 in 1911-12; £103 in 1912-13; £80 in 1913-14; and £156 in 1914-15. It is anticipated that the bounties, together with the increased yield that may be expected to result from the fisheries investigations now being conducted, will lead to a considerable output and consumption of locally-preserved fish. The abundance of fish in Australian waters offers excellent opportunities for the institution of preserving establishments, particularly in those coastal districts which enjoy a temperate climate. Up to the present but little development has taken place, the establishments for fish preserving numbering only five.

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, etc., 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. **Value of Production during 1914.**—The outbreak of war in August, 1914, naturally had a very serious effect on the mineral industry in Australia, and especially in New South Wales, where the total production for the year shewed a decrease of over £1,614,000 as compared with 1913. Operations on the Broken Hill field were seriously curtailed, the output of silver, lead, zinc hence shewing a decline of about £1,090,000 compared with the previous year, while the export of zinc concentrates dropped by £527,000.

The comparative value of the production of minerals raised in each State during 1914 is given in the following table :—

COMMONWEALTH MINERAL PRODUCTION IN 1914.

Minerals.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	N.T.	C'wealth.
	£	£	£	£	£	£	£	£
Alunite ...	12,160	...	...	40	...	...	...	12,200
Antimony ...	464	29,365	...	...	...	...	...	29,829
Bismuth ...	2,837	...	15,601	...	635	1,666	...	20,739
Coal ...	3,737,761	259,099	416,292	...	148,684	27,853	...	4,619,689
Coke ...	213,069	...	...	...	...	...	...	213,069
Copper ...	274,671	...	1,118,648	417,487	38,174	496,041	4,860	2,349,881
Diamonds ...	1,440	...	...	...	...	...	...	1,440
Diatomaceous earth ...	94	4,000	...	...	...	...	...	4,094
Gems (unspecified)...	...	...	15,800	...	...	...	...	15,800
Gold ...	528,873	1,755,236	1,059,674	26,581	5,237,353	111,475	10,757	8,729,949
Gypsum ...	...	924	...	12,207	...	...	...	13,131
Iron ...	254,257	...	...	...	...	...	...	254,257
Iron oxide ...	5,584	...	...	...	...	...	...	5,584
Ironstone flux ...	...	...	39,459	37,137	...	...	...	76,596
Kaolin ...	...	875	...	16,382	...	...	...	17,621
Lead (pig, etc.) ...	370,106	...	12,134	...	46,315	...	...	428,555
Limestone flux ...	11,674	...	32,581	16,892	...	...	...	61,147
Manganese ...	11,451	70	27	...	...	...	...	97
Molybdenite ...	...	...	38,190	...	...	...	...	49,641
Opal ...	26,534	...	2,000	...	...	...	...	28,534
Platinum ...	2,129	...	...	...	...	...	...	2,129
Salt ...	...	...	...	48,750	...	...	...	48,750
Scheelite ...	5,852	...	...	...	...	...	...	5,852
Shale ...	27,372	...	...	...	...	75	...	27,447
Silver ...	307,198	1,540	26,506	529	22,913	...	...	358,686
Silver-lead bullion }	2,934,065	...	...	...	...	96,225	545	3,030,835
Silver-lead ore }	...	...	...	...	...	...	...	...
Tin ...	267,130	4,955	176,197	...	35,649	259,300	15,200	758,431
Wolfram...	14,438	...	21,764	24	40	4,327	4,025	44,618
Zinc ...	1,020,711	...	...	...	379	...	...	1,021,090
Unenumerated ...	4,804	119	1,407	14,587	3,848	*10,076	420	35,261
Total ...	10,035,038	2,086,183	2,976,280	590,616	5,533,990	1,007,038	35,807	22,264,952

* Osmiridium.

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 1914 consist of—lime, £46,700; marble, £2180; Portland cement, £415,000; building stone, £404; and grindstones, £148. The South Australian figures are exclusive of flint pebbles, £829. For South Australia the principal items in the unenumerated class were phosphate rock, £6691; and radium and uranium ore, £5215.

4. Total Production to end of 1914.—In the next table will be found the estimated value of the total mineral production in each State up to the end of 1914. 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 £3,079,000 of that published by the State Department of Mines, the principal items excluded being cement, £2,657,000; lime, £366,000; and building stone, £26,000.

COMMONWEALTH MINERAL PRODUCTION TO END OF 1914.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North'n Territ'y.	C'wealth.
	£	£	£	£	£	£	£	£
Gold	60,627,551	295,306,164	77,406,272	975,191	120,117,925	7,660,633	2,089,695	564,183,431
Silver								
and lead	68,007,136	223,549	2,418,417	340,783	863,708	6,674,970	77,592	78,606,155
Copper	12,657,506	218,590	13,727,225	28,653,025	1,293,039	11,128,686	334,748	68,012,819
Tin	10,016,031	794,594	8,630,570	...	1,171,076	12,763,885	369,624	33,745,780
Coal	76,595,824	3,026,429	6,197,294	...	1,371,733	626,183	...	87,817,463
Other	21,130,466	481,700	2,355,856	1,680,765	90,616	238,160	51,547	26,029,110
Total	249,034,514	300,051,026	110,735,634	31,649,764	124,908,097	39,092,517	2,923,206	858,394,758

The "other" minerals in New South Wales include antimony, £306,095; bismuth, £132,576; chrome, £102,617; coke, £2,560,725; diamonds, £126,989; iron, £2,554,295; opal, £1,886,234; oil shale, £2,357,543; wolfram, £159,992; and zinc, £10,108,611. In the Victorian returns antimony ore was responsible for £285,501. Included in "other" in the Queensland production were opal, £177,195; gems, other, £285,294; bismuth and wolfram, £937,863; antimony ore, £50,953; manganese, £64,899; limestone flux, £350,181; and ironstone flux, £269,797. The chief item in South Australian "other" minerals was salt, £912,881. In the Tasmanian returns limestone flux was responsible for nearly £100,000, and iron ore for about £26,000.

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 1914 was much below the average, the output being the lowest recorded since 1890. Apart from the dredging industry, the business of gold-mining is at present apparently in a somewhat languishing state. In Victoria the yield for 1914 shewed a decrease of 21,714 ozs. fine on that for the preceding year. Over 14,000 ozs. of this decrease resulted from the closing of two deep alluvial mines, the Great Southern at Rutherglen, and the Burnt Creek at Dunolly. From the cyaniding of old tailings, the yield shewed a decline of 5500 ozs., and from dredging of 8637 ozs. Although several of the lode mining areas reported decreases, there were increased yields at Ballarat, and from Ararat and Stawell. The deficiency in Queensland was due to the reduced returns from some of the chief centres such as Charters Towers, Croydon, Cloncurry, Ravenswood, and Rockhampton. The chief increases were shewn by Chillagoe and Gympie. It is stated, however, that the later months in 1914 evidence an upward tendency. The future of the Charters Towers field is largely dependent on the persistence of ore in depth, but the arguments for and against such persistence do not at present admit of a definite pronouncement on the matter. For Western Australia the figures shew a decrease of over 81,000 oz. in 1914, as compared with 1913, diminished

returns being recorded at all the principal fields, with the exception of Yilgarn, Mt. Margaret, North Coolgardie, and Phillips' River. For Tasmania there was a decline of about 7000 ozs.

VALUE OF GOLD RAISED IN AUSTRALIA, 1851 to 1914.

Year.	N.S.W.	Victoria.	Q'sland.	S.A.	W.A.	Tas.	N.T.	C'wealth.
	£	£	£	£	£	£	£	£
1851 ...	468,336	851,596	...	...	...	...	...	1,319,932
1852 ...	2,660,946	9,146,140	...	...	...	...	...	11,807,086
1853 ...	1,781,172	10,976,392	...	...	...	...	...	12,757,564
1854 ...	773,209	8,873,932	...	...	...	...	...	9,647,141
1855 ...	654,594	11,277,152	...	...	...	...	...	11,931,746
1856 ...	689,174	11,214,976	...	8,800	...	...	...	12,912,950
1857 ...	674,477	11,320,852	...	876	...	...	...	11,996,205
1858 ...	1,104,175	10,384,924	...	2,348	...	...	...	11,491,447
1859 ...	1,259,127	9,394,812	...	730	...	...	...	10,654,669
1860 ...	1,465,373	8,896,276	11,631	...	...	...	...	10,373,280
1861 ...	1,806,171	8,140,692	3,137	...	...	...	...	9,950,000
1862 ...	2,467,780	6,920,804	499	12,442	...	...	...	9,401,525
1863 ...	1,796,170	6,779,276	11,820	...	...	...	...	8,587,266
1864 ...	1,304,926	6,489,788	66,513	...	...	...	...	7,861,227
1865 ...	1,231,243	6,446,216	74,216	...	...	...	...	7,751,675
1866 ...	1,116,404	6,187,792	68,325	...	...	...	...	7,372,521
1867 ...	1,053,578	6,005,784	151,125	...	...	4,382	...	7,214,869
1868 ...	994,665	6,739,672	473,956	2,936	...	2,536	...	8,213,765
1869 ...	974,149	6,179,024	417,681	15,593	...	514	...	7,586,961
1870 ...	931,016	5,217,216	390,925	24,217	...	7,475	...	6,570,849
1871 ...	1,250,485	5,475,768	492,635	6,000	...	14,218	...	7,239,106
1872 ...	1,644,177	5,325,508	527,365	6,363	...	16,055	...	7,519,468
1873 ...	1,396,375	4,681,588	572,996	293	...	18,390	...	6,669,642
1874 ...	1,041,614	4,390,572	1,082,899	4,175	...	18,491	...	6,537,751
1875 ...	877,694	4,273,668	1,196,583	7,034	...	11,962	...	6,366,961
1876 ...	613,190	3,855,040	1,140,282	9,888	...	44,923	...	5,663,323
1877 ...	471,448	3,238,612	1,043,780	...	...	23,289	...	4,777,129
1878 ...	430,200	3,032,160	1,149,240	1,225	...	100,000	...	4,712,825
1879 ...	407,219	3,035,788	1,034,216	90	...	230,895	...	4,708,208
1880 ...	444,253	3,316,484	944,869	...	...	201,237	...	4,906,903
1881 ...	573,582	3,333,512	957,570	880	...	216,901	111,945	5,194,390
1882 ...	526,522	3,458,440	785,868	3,080	...	187,337	82,274	5,043,521
1883 ...	458,530	3,121,012	736,810	10,534	...	176,442	77,195	4,580,523
1884 ...	396,695	3,114,472	1,062,471	15,469	...	160,404	77,935	4,826,810
1885 ...	378,665	2,940,872	1,062,514	18,295	...	155,309	70,414	4,626,069
1886 ...	366,294	2,660,784	1,187,189	32,535	1,148	117,250	63,139	4,428,339
1887 ...	394,579	2,471,004	1,481,990	72,003	18,517	158,533	68,774	4,665,400
1888 ...	317,241	2,500,104	1,690,477	34,205	13,273	147,154	34,802	4,737,256
1889 ...	434,784	2,459,352	2,695,629	37,305	58,871	119,703	47,651	5,853,285
1890 ...	460,285	2,354,240	2,182,563	20,808	86,664	75,888	80,769	5,261,217
1891 ...	550,231	2,305,596	2,030,312	27,380	115,182	145,459	98,701	5,281,861
1892 ...	575,299	2,617,824	2,164,391	26,097	226,284	158,917	109,658	5,878,470
1893 ...	651,286	2,684,504	2,167,794	12,561	421,385	141,326	108,130	6,186,986
1894 ...	1,156,717	2,867,816	2,330,282	33,401	787,099	217,024	109,699	7,502,038
1895 ...	1,315,929	2,960,344	2,150,561	26,060	879,748	206,115	102,816	7,641,573
1896 ...	1,073,360	3,220,348	2,132,979	14,350	1,068,806	237,574	81,210	7,828,629
1897 ...	1,104,315	3,251,064	2,562,668	39,020	2,564,977	296,660	81,210	9,889,914
1898 ...	1,201,743	3,349,028	2,750,348	10,676	3,990,698	291,496	84,789	11,678,778
1899 ...	1,623,320	3,418,000	2,838,446	15,582	6,246,732	327,545	63,665	14,533,190
1900 ...	1,070,920	3,229,628	2,871,578	14,494	6,007,610	316,220	67,968	13,578,438
1901 ...	737,164	3,102,753	2,541,764	16,613	7,235,653	295,176	76,609	14,005,732
1902 ...	684,970	3,062,028	2,720,512	24,878	7,947,661	301,573	70,325	14,811,947
1903 ...	1,080,029	3,259,482	2,839,801	28,650	8,770,719	254,403	61,600	16,294,684
1904 ...	1,146,109	3,252,045	2,714,934	76,025	8,424,226	280,015	3,968	15,897,337
1905 ...	1,165,013	3,173,744	2,517,295	45,853	8,305,654	312,380	30,971	15,550,910
1906 ...	1,078,866	3,280,478	2,313,464	27,000	7,622,749	254,963	54,225	14,631,745
1907 ...	1,050,730	2,954,617	1,978,398	20,540	7,210,749	277,607	21,928	15,515,100
1908 ...	954,854	2,849,838	1,975,554	12,300	6,999,882	242,482	23,943	13,053,853
1909 ...	869,546	2,778,956	1,935,178	30,206	6,776,274	190,201	24,148	12,604,509
1910 ...	802,211	2,422,745	1,874,955	28,000	6,246,848	157,370	21,711	11,553,490
1911 ...	769,353	2,140,855	1,640,323	15,000	5,823,075	132,108	30,910	10,571,624
1912 ...	702,129	2,039,464	1,477,979	28,000	5,445,385	161,300	22,871	9,879,929
1913 ...	635,703	1,847,475	1,128,768	27,800	5,581,701	141,876	13,250	9,376,573
1914 ...	528,873	1,755,236	1,059,574	26,561	5,237,353	111,475	10,757	8,729,949
Total	60,627,551	295,306,164	77,406,272	975,191	120,117,925	7,660,633	2,089,695	564,183,431

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, 1857; Queensland, 1900; South Australia, 1904, and Tasmania, 1899.

The following table shews 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. 11½d.:—

QUANTITY OF GOLD PRODUCED IN THE COMMONWEALTH, 1905 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
1905	274,267	747,163	592,622	10,983	1,955,317	73,540	7,103	3,660,995
1906	253,987	772,290	544,686	8,037	1,794,548	60,023	11,085	3,444,606
1907	247,363	695,576	465,882	5,609	1,697,555	65,354	4,889	3,181,728
1908	224,792	670,909	465,085	2,908	1,647,912	57,085	5,624	3,074,315
1909	204,708	654,222	455,579	7,111	1,595,270	44,777	5,685	2,967,352
1910	188,857	570,362	441,402	6,603	1,470,633	37,048	5,100	2,720,005
1911	181,120	504,000	386,165	3,537	1,370,868	31,101	7,277	2,484,068
1912	165,295	480,131	347,946	6,592	1,282,658	37,973	7,811	2,328,406
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	1,232,977	26,243	2,532	2,055,203

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 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, 1905 to 1914.

State.	Annual Average of Gold Production, 1905 to 1914.	Percentage on Commonwealth.	State.	Annual Average of Gold Production, 1905 to 1914.	Percentage on Commonwealth.
Commonwealth ...	£ 11,945,200	100.00	New South Wales	£ 855,728	7.16
Western Australia	6,525,267	54.64	Tasmania ...	198,176	1.66
Victoria ...	2,524,341	21.13	South Australia	26,128	0.22
Queensland ...	1,790,213	14.98	North'n Territ'y	25,347	0.21

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 Tiboburra, and detrital gold has been found in permo-carboniferous conglomerates at Tal-lawang. 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 there are now dredges working on practically all the auriferous rivers of New South Wales. 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 4807 ozs. in 1914, the chief yields being—Uralla, 226 ozs.; Hill End, 381 ozs.; Windeyer, 500 ozs.; Braidwood, 213 ozs.; Major's Creek, 404 ozs.; Adelong, 291 ozs.; Sofala, 281 ozs. The quantity obtained by dredging was 25,290 ozs.; the largest returns being obtained at Araluen, 11,310 ozs.; Adelong, 6851 ozs.; Nundle, 326 ozs.; Braidwood, 947 ozs.; Gundagai, 3283 ozs.; Stuart Town, 1353 ozs.; Sofala, 411 ozs. The dredges in operation during 1914 numbered 69, of which 23 were of the bucket type and 46 were suction plants. In the recovery of gold 18 bucket dredges and 8 pumping plants were employed, while 5 bucket dredges and 38 pumping plants were engaged in the winning of stream tin. The value of the plants in operation was estimated at £339,571. The quantity of gold won from quartz amounted to 91,615 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 17,868 ozs. and 30,759 ozs. Next come the Adelong field with 6589 ozs.; Hillgrove, 5744 ozs.; Wyalong, 5406 ozs.; Peak Hill, 4125 ozs.; and Gundagai, 3909 ozs. The Mount Boppy mine in the Cobar district has for some years been the premier gold mine in the State.

The table below shews as far as can be ascertained the yield from alluvial and quartz mining in each of the principal districts during 1914. 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, 1914.

District.	Alluvial.		Quartz.	Total.
	Other than by Dredging.	By Dredging.		
	ozs.	ozs.	ozs.	ozs.
Albert	41	...	2,282	2,323
Bathurst	819	...	4,327	5,146
Clarence and Richmond	119	...	658	777
Cobar ... ..	...	...	48,997	48,997
Hunter and Macleay	9	...	221	230
Lachlan	247	3,283	9,162	12,692
Mudgee	708	...	6,401	7,109
New England	247	...	155	402
Peel and Uralla	519	577	6,180	7,276
Southern	835	12,647	3,931	17,413
Tambaroora and Turon	629	1,764	2,569	4,972
Tumut and Adelong	624	7,019	6,732	14,375
Total	4,807	25,290	91,615	121,712

(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 the two deepest shafts were at the 31st December, 1914, 4614 and 4318 feet deep respectively. Altogether there were at the close of 1914 no less than fifty-three shafts in this district which had reached a depth of over 2000 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

1914 being 79, of which 45 were bucket dredges, 21 pump hydraulic sluice, and 13 jet elevator. The total quantity of gold won from dredge mining in 1914 was 56,540 ozs., and from sluicing by gravitation, 255 ozs., the total area treated being 455 acres. Tin to the value of £4358 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, 1914.

District.				Alluvial.	Quartz.	Total.
				Ozs.	Ozs.	Ozs.
Ararat and Stawell	...	...	...	32,284	4,309	36,593
Ballarat	...	...	...	10,386	48,218	58,604
Beechworth	...	...	...	47,151	17,398	64,549
Bendigo	...	...	...	2,860	155,623	158,483
Castlemaine	...	...	...	11,421	47,279	58,700
Gippsland	...	...	...	4,678	9,628	14,306
Maryborough	...	...	...	27,273	11,885	39,158
Total	...	...	...	136,053	294,340	430,393

The largest output from lode mines in 1914 was furnished by the Ajax Central at Daylesford, with 12,512 ozs.; followed by the Great Extended Hustlers at Bendigo, with 9130 ozs., and the North British at Maldon, with 8991 ozs. Of the deep alluvial mines the Cathcart Central Company, at Ararat, produced 15,495 ozs., the Cathcart 8098 ozs., and the Duke and Main Leads Consols at Maryborough, 6671 ozs. In dredging, the Campbell's Creek, at Castlemaine, headed the list with an output of 3071 ozs.

(iii.) *Queensland.* Operations in Queensland are at present chiefly confined to reefing, the yield from alluvial in 1914 being only 1598 ozs., of which 430 ozs. were won at the Gympie field, while the quantity produced from stone treated was 129,922 ozs.; from copper and other ores 114,052 ozs.; and from old tailings 3896 ozs.; making a total production of 249,468 ozs., valued at £1,059,674. The yields from the principal fields are given below:—

GOLD WON IN QUEENSLAND, ALLUVIAL AND QUARTZ, 1914.

District.				Alluvial.	From Stone Treated.	From Copper and other Ores and old Tailings.	Total.
				Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
Charters Towers	...	...	...	168	62,440	2	62,610
Gympie	...	...	...	430	40,830	1,069	42,329
Mount Morgan	...	...	...	72	216	106,232	106,520
Ravenswood	...	...	...	23	11,225	588	11,836
Croydon	...	...	...	6	3,515	1,484	5,005
Etheridge, Oaks and Woolgar	...	...	...	35	6,404	193	6,632
Cloncurry	...	...	...	26	...	4,866	4,892
Gladstone	...	...	...	41	304	813	1,158
Rockhampton	...	...	...	2	34	2,384	2,420
Chillagoe	...	...	...	16	3,117	161	3,294
Other districts	...	...	...	779	1,837	156	2,772
Total	...	...	...	1,598	129,922	117,948	249,468

(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 Teetulpia, in the northern areas. The battery and cyanide returns as published in the "Mining Review" shew that the chief producing centres in 1914 were Tarcoola and Deloraine.

The total output of gold for 1914 from the Northern Territory amounted to 2532· fine ounces, valued at £10,757.

(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 the 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 un-oxidised 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 1914 was 1,232,977 ounces, of which only about 0·2 per cent. was alluvial. The yields in each district were as shewn below:—

GOLD WON IN WESTERN AUSTRALIA, ALLUVIAL AND QUARTZ, 1914.

Goldfields.				Alluvial.	Dollied and Specimens.	Crushed.	Total.
				Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
East Coolgardie	...	...	...	140	1,700	681,056	682,896
East Murchison	...	...	...	6	2,367	68,435	70,808
Mount Margaret	...	...	...	308	667	95,818	96,793
Murchison	...	...	...	370	2,778	112,574	115,722
North Coolgardie	...	...	...	52	79	72,057	72,188
Coolgardie	...	...	...	413	230	20,339	20,982
Phillips River	...	...	...	...	...	4,665	4,665
North-east Coolgardie	...	...	...	64	140	9,930	10,134
Yilgarn	...	...	...	...	30	88,714	88,744
Broad Arrow	...	...	...	8	308	8,970	9,286
Peak Hill	...	...	...	55	10	2,538	2,603
Pilbara	...	...	...	582	16	4,579	5,177
Dundas	...	...	...	12	498	26,081	26,591
Yalgoo	...	...	...	...	201	5,825	6,026
West Pilbara	...	...	...	92	...	931	1,023
Kimberley	...	...	...	453	...	...	453
Other goldfields	...	...	...	4	...	144	148
Total	...	...	...	2,559	9,024	1,202,656	1,214,239

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 403, which represents mint and export returns.

(vi.) *Tasmania.* The yield from Tasmania is chiefly obtained from quartz reefing, although there is a little alluvial mining carried on, as shewn in the table hereunder. The yields as returned from each district in 1914 are given below:—

GOLD WON IN TASMANIA, ALLUVIAL AND QUARTZ, 1914.

District.				Quartz.	Alluvial.	Cyanide.	Blister Copper.	Total.
				Ozs.	Ozs.	Ozs.	Ozs.	Ozs.
Beaconsfield	...	...	...	9,260	21	6,124	...	15,405
Mathinna	...	...	...	1,006	...	...	...	1,006
Mt. Victoria	...	...	}	71	134	...	...	205
Mt. Cameron	...	...		...	...	...	...	...
Lefroy	...	...	...	37	...	...	...	37
Lisle	...	...	}	...	...	...	...	...
Golconda	...	...		3	126	...	...	126
Lilydale	...	...	...	...	...	...	...	...
West Coast	...	...	...	...	27	...	9,898	9,928
Total				10,377	308	6,124	9,898	26,707

The total production was valued at £111,475, equal to 26,243 ozs. fine, of which about 11,000 ounces were produced by the Tasmania Gold Mine Ltd., at Beaconsfield. About 10,000 ounces were contained in blister copper produced on the West coast.

(vii.) *Northern Territory.* Pine Creek is the chief mining field in the Northern Territory, but operations have for many years been carried on in a desultory manner, chiefly by Chinese labour. It is stated that the field has been unfairly exploited, the rich pockets only having being scooped out without any systematic prospecting. Confidence in the auriferous prospects of the area has been 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, and the Department proposes to sink to a depth of 300 feet and prove that with proper methods the area is worthy of renewed exploration. The Cosmopolitan mine was the chief producer in 1914.

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 2284 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 1905 to 1914. 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, 1905 to 1914.

Year.	World's Production of Gold.	Gold produced in Commonwealth.	Percentage of C'wealth on Total.
	£	£	%
1905	77,026,000	15,555,000	20.19
1906	83,170,000	14,636,000	17.60
1907	84,741,000	13,518,000	15.95
1908	92,157,000	13,062,000	14.17
1909	92,924,000	12,611,000	13.57
1910	93,452,000	11,554,000	12.36
1911	94,938,000	10,552,000	11.11
1912	96,820,000	9,880,000	10.20
1913	92,361,000	9,377,000	10.15
1914	92,008,000	8,730,000	9.49

While the production of gold in the Commonwealth shows a considerable decrease during the seventeen years from 1897 to 1914, the world's total production practically 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:—

INCREASE IN GOLD YIELD, VARIOUS COUNTRIES, 1897 to 1914.

Country.	1897.	1900.	1912.	1913.	1914.
	£	£	£	£	£
United States ...	11,787,000	16,269,000	19,203,000	18,144,000	19,074,000
Canada ...	1,240,000	5,742,000	2,599,000	3,411,000	3,272,000
Mexico ...	2,045,000	1,884,000	4,974,000	3,861,000	3,737,000
Transvaal ...	11,654,000	1,481,000	38,686,000	37,373,000	35,657,000
Rhodesia ...	800	308,000	2,730,000	2,931,000	3,580,000
Gold Coast ...	85,000	38,000	1,499,000	1,649,000	1,744,000
Madagascar ...	8,500	142,000	289,000	231,000	182,000
India ...	1,571,000	1,893,000	2,272,000	2,292,000	2,338,000
Corea ...	208,000	371,000	544,000	677,000	616,000
Japan ...	142,000	290,000	915,000	897,000	920,000
Java ...	24,000	112,000	550,000	531,000	547,000
Costa Rica ...	2,000	31,000	82,000	88,000	104,000

The largest increase was recorded in the Transvaal, where the production more than trebled itself in the seventeen years 1897 to 1914.

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 1910 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	C'w'lt'h.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ...	12,064	27,387	9,438	1,000	19,771	1,112	200	70,972
1910 ...	5,247	16,553	6,115	950	16,279	682	306	46,132
1911 ...	4,650	14,015	5,227	920	15,428	570	358	41,168
1912 ...	3,898	11,856	3,981	920	13,700	485	263	35,103
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

§ 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, but the entire production in 1914 was small, amounting to only 244 ozs., valued at £2129, while the total production recorded to the end of 1914 amounted to 13,676 ozs., valued at £34,274.

At Platina, gold is found in association with the platinum, and it was proposed to provide a permanent water supply with the object of treating the washdirt on an extensive scale. The falling off in the price of the metal, coupled with the lower grade of the washdirt, has, however, resulted in decreased attention being given to the industry.

(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 in 1914.

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 states 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 was as high as £7 10s. per oz., and about 100 men were engaged in the search for it. The quantity produced amounted to 272 ozs., valued at £1888. In 1912 the production was 779 ozs., valued at £5742, or an average of £7 7s. 9d. per oz. The production in 1913 amounted to 1262 ozs., valued at £12,016, and in 1914, to 1019 ozs. valued at £10,076. A specimen found by a prospector at the Whyte River weighed 2 ozs. 8 dwt. 7 gr. It is stated that the selling price has occasionally reached as high as £11 per oz., but this extraordinary value is 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. 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 1914:—

PRODUCTION OF SILVER AND LEAD, AUSTRALIA, 1881 to 1914.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tasmania.	North. Terr.	C'wealth.
	£	£	£	£	£	£	£	£
1881	...	5,239	13,494	1,182	11,224	...	...	31,139
1891	3,621,614	6,017	21,879	1,787	250	62,138	4,140	3,717,825
1901	1,954,964	6,550	69,234	3,886	7,718	325,335	...	2,367,687
1910	2,110,040	2,090	123,086	907	20,210	247,576	...	2,503,909
1911	2,652,548	2,070	79,765	140	33,335	*253,361	...	3,021,219
1912	3,745,796	2,000	121,855	326	41,995	309,098	820	4,221,890
1913	4,173,867	2,074	134,121	1,400	82,422	319,997	2,228	4,716,109
1914	3,611,369	1,540	38,640	529	69,228	96,225	545	3,818,076

* Exclusive of silver to the estimated value of £42,831 contained in blister copper.

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 quantity and value of these metals locally produced, and the quantity and value of concentrates exported during the last five years, will shew the estimated total value of the yield:—

VALUE OF PRODUCTION FROM SILVER-LEAD MINES OF NEW SOUTH WALES, 1910 TO 1914.

Year.	Value of Silver, Lead, and Spelter produced within the C'wealth.		Value of Concentrates Exported.	Total.
	£		£	£
1910	...	1,755,220	3,180,850	4,936,070
1911	...	1,949,271	3,259,246	5,208,517
1912	...	2,477,442	3,692,352	6,169,794
1913	...	2,709,867	3,759,691	6,469,558
1914	...	2,592,322	3,004,248	5,596,570

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 1904 and during the last ten years:—

ESTIMATED QUANTITY AND VALUE OF SILVER YIELDED BY MINES OF NEW SOUTH WALES TO END OF 1914.

Period.	Produced in Australia.		Contained in Concentrates, etc., Exported.		Total Production.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
To the end of 1904	Fine ozs. 90,699,071	£ 14,728,368	Fine ozs. 107,604,892	£ 18,680,038	Fine ozs. 198,303,963	£ 33,408,406
1905	6,804,934	852,533	3,480,561	436,050	10,285,495	1,288,583
1906	5,575,410	775,409	3,111,013	432,669	8,686,423	1,208,078
1907	5,921,457	795,982	6,228,225	845,845	12,149,682	1,641,827
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
Total	146,740,429	21,401,403	173,967,062	26,427,583	320,707,491	47,828,986

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. The value of the output in 1914 was £4,221,000 as compared with £4,968,000 in 1913.

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 1914.

Mine.	Authorised Capital.	Value of Output to end of 1914.	Dividends and Bonuses Paid to end of 1914.
	£	£	£
Broken Hill Proprietary Co. Ltd. ...	600,000	37,421,721*	10,638,100
Broken Hill Proprietary Block 14 Co. Ltd. ...	155,000	3,602,292	562,660
British Broken Hill Proprietary Co. Ltd. ...	339,000	3,366,847	633,800
Broken Hill Proprietary Block 10 Co. Ltd. ...	1,000,000	4,302,433	1,352,500
Sulphide Corporation Ltd. (Central Mine) ...	1,100,000	15,511,800†	1,519,375
Broken Hill South Silver Mining Co. ...	200,000	6,144,800	1,635,000
North Broken Hill Mining Co. Ltd. ...	600,000	4,060,379	1,048,940
Broken Hill Junction Lead Mining Co. ...	150,000	975,176†	85,000
Junction North Broken Hill Mine ...	250,000	1,929,412†	79,793
The Zinc Corporation Ltd. ...	||	1,363,258	10,000
Barrier South Ltd. ...	168,000	151,517	50,000
Totals	4,562,000	78,829,635†	17,615,168

* The value of the ores purchased during the years 1908 to 1914 is not included. † Output understated owing to incomplete returns. ‡ Incomplete. || Not available.

(b) *Yerranderie.* The mines on the Yerranderie field in the Southern Mining District produced 520,880 ozs. of silver in 1914, besides 1061 ozs. of gold, and 1269 tons of lead, the total production being valued at £82,053. 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 Ltd. 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 yields from outlying mines were comparatively insignificant.

(ii.) *Tasmania, West Coast.* The production of silver-lead ore in 1914 was 11,566 tons, valued at £96,225, to which the Zeehan Montana contributed £11,335 and the Mt. Zeehan £10,441. In the Mt. Farrell District the North Mt. Farrell contributed £23,722.

(iii.) *Queensland.* The yield for the chief silver-producing centres in 1914 was as follows:—Chillagoe, silver £2976, lead £4677; Charters Towers, silver £3,698, lead £1377; Cloncurry, silver £5891; Mt. Morgan, silver £3539. Production in the Chillagoe district was seriously affected by the closing down of the Chillagoe Smelters in March, since very few of the mines could bear the cost of sending the ore away to Southern smelters. In the Etheridge district the increasing difficulty of disposing of low grade ore at a profitable rate has greatly restricted operations. Work was suspended at the famous Silverspur Mine, near Texas, in the Stanthorpe District.

(iv.) *South Australia.* Rich specimens of silver ore have been discovered at Miltalie, about 18 miles from Franklin Harbour, also at Mount Malvern, and near Rapid Bay. The surrounding district is highly mineralized, but, so far, has not been thoroughly prospected.

(v.) *Northern Territory.* Silver-lead ores have been found at O'Neill's Creek about 24 miles east of Pine Creek, at Mount Bonney, and at Iron Blow.

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, 1905 to 1914.

Year ...	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
World's production in 1000 fine ozs.*	181,338	184,552	183,386	212,570	227,291	240,223	254,214	250,979	214,391	215,700

* Add 000 to figures for fine ounces.

Australasia's share in the world's silver production in 1913 was estimated at 18,855,000 ounces, or about $8\frac{1}{2}$ 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 five years is given below :—

PRICE OF SILVER, 1881 to 1914.

Year ...	1881.	1891.	1901.	1908.	1909.	1911.	1912.	1913.	1914.
Pence per standard oz.	51 $\frac{3}{4}$	45 $\frac{1}{16}$	27 $\frac{3}{16}$	24 $\frac{3}{8}$	23 $\frac{11}{16}$	24 $\frac{9}{16}$	28 $\frac{1}{16}$	27 $\frac{9}{16}$	25 $\frac{5}{8}$

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 $\frac{1}{8}$ 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 1910 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania	N. Terr.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901...	6,298	...	40	150	...	2,414*	†	8,902‡
1910...	7,999	...	590	60	21	1,173	65	9,908
1911...	8,495	...	433	30	43	1,125	47	10,173
1912...	9,062	...	208	30	60	1,681	...	11,041
1913...	9,357	...	204	30	132	1,272	16	11,011
1914...	8,242	...	130	25	100	491	10	8,998

* Including copper miners. † Included in South Australia. ‡ Including copper miners in Tasmania.

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 1910 to 1914 is shewn in the following tables :—

PRODUCTION OF COPPER, AUSTRALIA, 1881 to 1914.

State.	1881.	1891.	1901.	1908.	1910.	1911.	1912.	1913.	1914.
QUANTITY.									
N.S.W. ... { Copper	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Ore	*	*	645	6,087	8,679	8,435	10,618	8,990	9,153
Victoria... { Copper	*	*	...	983	150	36	...	36	...
& Ore	330	85	3,061	14,961	16,387	20,384	23,120	23,655	18,436
Q'land ... { Copper	3,824	3,551	6,736	6,152	15,199	5,922	6,295	7,161	6,881
Ore	21,638	13,239	2,353	...	...	...	...	...	...
S. Aust. ... { Copper	...	...	...	479	1,281	10,654	28	82	183
Ore	...	*	10,157	2,503	6,309	...	9,536	4,339	3,913
W. Aust. ... { Copper	...	...	9,730	8,833	8,864	8,308	6,528	6,535	7,509
Ore	...	...	10,029	1,18	...	...	...	...	3,288
Tasmania ... { Copper	...	...	...	...	...	163	377	41	405
Ore	...	...	...	...	...	...	...	...	...
Northern Territory	...	...	...	...	...	...	...	...	...
C'wealth { Copper	...	...	25,614	44,167	40,166	57,567	56,918	51,310	47,222
Ore	...	...	23,184	...	10,914	...	...	...	...

* Not available.

† Including 97 tons of copper, Northern Territory.

VALUE.

	£	£	£	£	£	£	£	£	£
New South Wales...	227,667	119,195	412,292	502,812	486,257	590,102	579,791	598,735	274,671
Victoria ...	8,186	216	...	3,928	450	2,088	...	2,829	...
Queensland ...	19,637	3,554	194,227	893,535	932,489	1,151,351	1,698,280	1,660,178	1,118,648
South Australia ...	418,296	235,317	500,077	345,968	*307,316	332,500	461,500	488,986	417,487
Western Australia ...	...	4,463	75,246	57,091	95,928	78,118	59,824	142,513	38,174
Tasmania ...	...	...	1,026,748	609,651	566,972	408,649	440,444	375,664	496,041
Northern Territory	...	...	...	...	...	1,470	3,998	482	4,860
Commonwealth ...	673,786	362,745	2,208,590	2,412,985	2,389,412	2,564,278	3,243,837	3,269,355	2,349,881

* Including £1,196 Northern Territory.

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 1914 was £116,460, out of a total for the State of £274,671. At the Great Cobar Mine the Company's smelters closed down on the 9th April, 1914, and the output of copper amounted to only 1410 tons as compared with 5,985 tons in the preceding year.

The Cadia Copper mine, at Cadia, in the Orange division, produced 1103 tons of copper matte valued at £41,000. The Cobar Gladstone mine returned a total of £15,000. The Lloyd Copper mine, in the Burranga division, after five years' idleness was reopened in 1913, and produced 35,000 tons of ore estimated to contain copper to the value of £92,000. In 1914, however, the production fell away to £29,912.

The Electrolytic and Refining and Smelting Company of Australia Limited, established at Port Kembla, produced 17,570 tons of copper valued at £1,074,000, chiefly from matte and ore imported from other States, especially from Queensland. The English and Australian Copper Co. Ltd., at Waratah, obtained 313 tons valued at £18,633 from local ores.

(ii.) *Queensland.* The yield in this State amounted in 1914 to 18,436 tons, valued at £1,118,648, to which the Cloncurry field contributed 8215 tons, valued at £497,098. Next in order were Mount Morgan with 7796 tons, valued at £471,658; Gladstone 996 tons, £60,249; Rockhampton, 590 tons, £38,803; Mount Perry, 318 tons, £19,239; Etheridge, 188 tons, £11,404; Chillagoe, 175 tons, £10,617; and Mackay 110 tons, £6,655.

The Cloncurry district is by far the most important copper-bearing area in Queensland, but production was hampered in 1914 by the closing of the Mount Elliott smelters, and the falling off through the war of the output of ore from the smaller mines in the area. At the Hampden smelters 60,836 tons of ore were treated, resulting in a yield of 6,079 tons of copper, 1970 oz. of fine gold, and 51,949 oz. of silver, the whole being valued at £383,000. It is now generally recognised that Cloncurry constitutes the richest and most extensive cupriferous area in Australia.

(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. The Kapunda mine, discovered in 1842 by Messrs. Dutton and Bagot, is situated fifty miles north of Adelaide, and is the oldest copper mine in the State. Up to the end of 1879 the production amounted to 70,000 tons, the metal possessing such a high standard of purity that it always obtained the highest prices in the world's markets. During the nine years 1870 to 1878 the production was valued at £157,000. The Burra Burra mine, located in 1845 by a shepherd named Pickett, is situated about 100 miles north of Adelaide. The original capital invested in this mine was £12,320 in £5 shares, on which no call was ever made, while dividends to the amount of £800,000 were paid. For many years this mine produced from 10,000 to 13,000 tons of ore, averaging 22 to 23 per cent. of copper. During the 29½ years in which the mine was worked the production was valued at £4,749,000. In 1859 as many as 1170 persons were employed on it. The mine has lain practically idle for many years.

Yorke's Peninsula, between Spencer's Gulf and St. Vincent's Gulf, contains a large area of copper-bearing country. The principal mines at Wallaroo and Moonta are situated a few miles from Port Wallaroo, and date back to 1860. For about thirty years the Moonta mines were worked independently, selling their ores to the Wallaroo company. During its separate existence the Wallaroo field produced about £2,600,000 worth of copper, while Moonta yielded £5,396,000, and was the first Australian mining field to produce £1,000,000 in dividends. The amalgamation took place in 1889, and since that year the united properties have produced about £4,500,000 worth of copper. The entire yield from the date of first working is estimated at nearly £13,000,000. The mines just enumerated represent a very small proportion only of those opened on the copper-bearing areas of the State. The bulk of the production in 1914 came from the Moonta and Wallaroo mines.

(iv.) *Western Australia.* The value of copper exported from this State in 1914 was £38,174. According to the returns, the production in the West Pilbara field was 7,764 tons, valued at £40,607, while the Phillips River field shewed a production of 4841 tons, valued at £37,524. Small quantities were also produced at Murchison and Peak Hill.

(v.) *Tasmania.* The quantity of blister copper produced in Tasmania during 1914 was 7509 tons, valued at £518,935, and of copper and copper ore, 3,288 tons, valued at £18,680, the bulk of the production being due to the Mount Lyell Mining and Railway Co. Ltd. This Company treated 338,957 tons of ore in 1914, and produced 7509 tons of blister copper, containing copper to the value of £427,704; silver, £49,657; and gold, £41,574. About 2000 men are employed at the company's mines and reduction works. In the Zeehan district, the Ring Valley mine produced 112 tons of ore valued at £2415, and the Copper-Nickel Property Syndicate sold 3089 tons of copper-nickel ore for £15,815. The Mount Balfour field raised 44 tons of ore, valued at £178. From the Jasper Copper mine in the Heazlewood district, 20 tons of ore were raised, valued at £436.

(vi.) *Northern Territory.* Copper has been found at various places, including Copperfield, 4 miles west of Pine Creek, the Daly and Mary Rivers, Mount Davis and Mount Diamond, Woollagarong, Rum Jungle, Brock's Creek, Maude Creek, Kilgour River, and Coronet Hill.

3. **Price 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, and the average given is based on the returns for the remaining nine months.

FLUCTUATION IN VALUE OF COPPER, 1901 and 1910 to 1914.

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
1910	57.05			13.04	12.74
1911	55.97			12.63	12.38
1912	72.94			16.56	16.34
1913	68.35			15.69	15.27
1914	61.52			..	13.50

* 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 last five years is estimated to have been as follows:—

WORLD'S PRODUCTION OF COPPER, 1901 and 1910 to 1914.

Year	1901.	1910.	1911.	1912.	1913.	1914.
World's production— (short tons)	583,517	966,998	969,750	1,114,769	1,104,517	1,018,395

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 1910 to 1914.

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	2,964	4	814	4,000	321	*	†	8,103‡
1910	2,286	40	2,418	4,150	559	2,042	49	11,544
1911	2,151	57	2,458	4,030	317	1,565	29	10,607
1912	2,384	6	3,457	4,500	223	1,681	52	12,303
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

* Included with silver miners. † No returns. ‡ Excluding Tasmania.

§ 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 shews the production in each of the Commonwealth States during the years 1881, 1891, 1901, and 1910 to 1914 :—

TIN PRODUCED IN AUSTRALIA, 1881 to 1914.

State.	1881.	1891.	1901.	1910.	1911.	1912.	1913.	1914.
QUANTITY.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales { Ingots	5,824	1,454	648	847	958	900	903	650
{ Ore	609	203	11	1,021	970	1,175	2,118	1,667
Victoria ... Ore	†	†	77	41	33	48	57	53
Queensland* ... Ore	†	†	1,661	2,953	3,091	3,230	3,197	2,085
West Australia (Ore & Ingots)	...	†	734	500†	495	651	484	2,683†
Tasmania ... Ore	†	†	1,790	3,701	3,953	3,714	4,010	2,573
Northern Territory Ore	...	†	81	364	239	271	258	160
Commonwealth { Ingots,	†	†	5,002	9,427	9,739	9,989	11,027	7,551
{ ore, etc.								
VALUE.								
	£	£	£	£	£	£	£	£
New South Wales... { Ingots	531,303	124,320	76,080	127,700	191,000	183,000	182,800	131,400
{ Ore	37,492	9,643	464	100,456	116,089	155,074	238,492	165,730
Victoria ... Ore	7,334	5,092	4,181	3,706	3,417	5,733	6,959	4,955
Queensland ... Ore	193,699	116,387	93,723	243,271	307,847	364,503	343,666	176,197
West Australia (Ore & Ingots)	...	10,200	40,000	45,129	55,220	79,738	72,142	35,649
Tasmania ... Ore	375,775	293,170	212,542	399,393	513,500	543,103	531,983	259,300
Northern Territory Ore	...	1,938	5,586	31,113	22,900	27,001	25,526	15,200
Commonwealth ...	1,145,603	560,750	432,576	950,768	1,209,973	1,358,152	1,401,571	758,431

* Dressed tin ore, about 70% tin. † Tin ingot and ore. ‡ Not available.

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 1914 being 1205 tons, valued at £119,167. In the Tingha division the yield amounted to 795 tons, valued at £77,651, the yield from dredging being estimated at £47,973. The Emmaville division in the New England district shewed a yield of 991 tons of ore, valued at £85,211, of which dredging produced 509 tons, valued at £49,659. In the Wilson's Downfall division, 125 tons, valued at £11,665, were raised. The Glen Innes division, also in the New England district, returned a yield of 101 tons, valued at £10,671. The Ardlethan field in the Lachlan division, discovered in January, 1912, produced ore and concentrates to the value of £25,332.

(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 1914 was obtained in the Toora district.

(iii.) *Queensland.* The chief producing districts in Queensland during 1914 were Herberton, 1141 tons valued at £86,327; Chillagoe, 228 tons, £18,588; Cooktown, 223 tons, £22,335; Stanthorpe, 211 tons, £22,000; and Kangaroo Hills, 163 tons, £16,082.

(iv.) *Western Australia.* The production of tin ore and ingot for the State during 1914 amounted to 363 tons, valued at £35,649, to which the Greenbushes field contributed 245 tons, valued at £21,145, and the Pilbara field 87 tons, valued at £8,168. There was no production from the other fields in 1914.

(v.) *Tasmania.* The tin ore raised in 1914 amounted to 2573 tons, valued at £259,300, a considerable falling-off as compared with the previous year when the production was returned as 4010 tons, valued at £531,983. This heavy decline was due to the paralysis of the tin market occasioned by the war, coupled with the dry weather conditions which prevailed, especially in the eastern and north-eastern areas. The bulk of the production in 1914 came from the North-Eastern Division with 1067 tons of ore, valued at £111,894. Of the total yield in this division, 628 tons were contributed by the Pioneer and Gladstone districts, 243 tons by Derby, and 136 tons by Branhholm. The next highest output was returned from the North Western Division with 889 tons, to which the celebrated Mt. Bischoff contributed 698 tons, and the Mt. Bischoff Extended, 111 tons.

(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 Springs, about 40 miles east of the Katherine telegraph station, promises to yield good returns. A fairly extensive deposit has been located at Hayes Creek, about 11 miles from Brock's Creek and only 6 miles from the railway line. Efficient prospecting would probably reveal the existence of other deposits. Small yields were also obtained during the year at Horseshoe Creek, Snadden's Creek, West Arm, Hidden Valley, Rum Jungle, and Mary River.

3. *World's Production of Tin.*—According to "The Mineral Industry" the world's production of tin during each of the last five years for which particulars are available was obtained as follows:—

THE WORLD'S TIN SUPPLIES, 1909 to 1913.

Country in which Smelted.	1909.	1910.	1911.	1912.	1913.
	Tons.	Tons.	Tons.	Tons.	Tons.
Australia	6,450	5,500	5,150	5,130	4,870
Austria-Hungary	52	39	16	14	13
Banka, Sales in Holland	12,150	13,631	15,147	16,111	15,173
Billiton, Sales in Holland and Java	2,280	2,240	2,240	2,243	2,243
Bolivia, Exports to England	834	1,003	464	552	300
China, Exports	4,516	6,510	6,056	8,785	3,889
France ... ..	...	...	500	500	1,200
Germany, mainly Bolivian ores	8,995	11,394	12,426	10,646	11,500
Japan	23	23	155	36	50
Straits Settlements, Exports	61,540	57,490	57,944	61,528	65,640
United Kingdom, domestic ores	5,282	4,874	4,950	5,338	5,300
United Kingdom, imported ores	11,890	13,055	13,850	13,600	16,700
Total (metric tons)	114,012	115,759	118,898	124,483	126,878

The totals are exclusive of output from the native smelters in Central and South Africa, exports from Siam and the Dutch East Indies to India, China, Korea and Japan, and local consumption in Straits Settlements, Siam, and Dutch East Indies, omissions in these and a few other cases being due to lack of returns.

4. *Prices of Tin.*—The average price of the metal in the London market for the year 1897 and from 1904 to 1914 was as follows:—

PRICE PER TON OF TIN, 1897 to 1914.

Year.	Price per Ton.	Year.	Price per Ton.
	£ s. d.		£ s. d.
1897	61 8 0	1909	134 15 6
1904	126 14 8	1910	155 6 2
1905	143 1 8	1911	192 7 0
1906	180 12 11	1912	209 8 5
1907	172 12 9	1913	206 5 7
1908	133 2 6	1914	156 11 0*

* Quotations incomplete.

According to "The Mineral Industry" the maximum price obtained for tin during the period 1897-1914 was reached in April, 1914, when the metal was quoted at £231 per ton.

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 1910 to 1914.

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
1910	2,028	25	1,932	326	1,598	322	6,231
1911	2,225	34	1,860	321	1,755	280	6,475
1912	2,646	57	2,153	409	1,762	287	7,314
1913	2,362	116	2,102	403	1,947	267	7,197
1914	2,168	65	1,570	217	1,523	186	5,729

§ 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 1914, 359,310 tons, valued at £1,020,711, the great bulk of the production being obtained from tailings. The following table shews the production of zinc in New South Wales from 1889 to 1914:—

NEW SOUTH WALES.—PRODUCTION OF ZINC, 1889 to 1914.

Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value.	Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value.
	Tons.	£		Tons.	£
1889	97	988	1911	516,378	1,414,980
1891	219	2,622	1912	520,518	1,766,242
1899	49,879	49,207	1913	506,661	1,547,987
1910	468,627	1,289,634	1914	359,310	1,020,711

The total quantity of zinc (spelter and concentrates) produced in New South Wales to the end of the year 1914 was 3,685,700 tons, valued at £10,109,000. The average price of spelter per ton in the London market during the last eight years was £23 5s. 4d., ranging from £20 3s. 3d. in 1908 to £26 8s. 5d. in 1912. The price in 1914 averaged £22 10s. 4d., but the quotation for December was £27 7s. 5d. per ton.

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.

During the year 1914, a small quantity of zinc, valued at £379, was produced in Western Australia.

§ 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 1908-12.* 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 of bounties on iron in accordance with the terms set out hereunder:—

BOUNTIES PAYABLE ON AUSTRALIAN PIG IRON, BAR IRON, STEEL, etc.

Description of Goods.	Rate of Bounty.	Total Amount which may be authorised.	Date of Expiry of Bounty.
CLASS 1.			
Pig iron made from Australian ore	12s. per ton	£150,000	30th June, 1914
Puddled bar iron made from Australian pig iron	„		
Steel made from Australian pig iron	„		
CLASS 2.			
Galvanised sheet or plate iron or steel (whether corrugated or not) made from Australian ore	10 per cent. on value	£30,000	30th June, 1914
Wire netting, not being prison made and being made from Australian ore or from wire manufactured in the United Kingdom	10 per cent. on value		
Wire made from Australian ore			
Iron and steel tubes or pipes (except riveted or cast), not more than six inches internal diameter, made from Australian pig iron or steel	10 per cent. on value		

Particulars of the bounties paid under the above Act during the half-year ended the 30th June, 1909, and during the financial years 1909-10 to 1914-15, are shewn in the following statement:—

**PARTICULARS OF BOUNTIES PAID ON PIG IRON, BAR IRON, STEEL, etc.,
1909 to 1915.**

Period.	Steel made from Australian Pig Iron.	Puddled Bar Iron made from Australian Pig Iron.	Pig Iron made from Australian Ore.	Galvanised Sheet Iron made from Australian Ore.	Wire netting made from wire manufactured in the United Kingdom.	Total.
	£	£	£	£	£	£
Half-year ended 30th June, 1909	575	568	2,314	192	...	3,649
1909-10	1,491	1,254	23,510	287	6,036	32,578
1910-11	1,940	2,080	20,462	121	4,824	29,427
1911-12	723	671	15,611	74	5,968	23,047
1912-13 ... ..	...	38	16,949	...	1,110	18,097
1913-14	7,136	...	40,121	...	4,554	51,811
1914-15	2,474	...	31,813*	...	593	34,880
Total	14,339	4,611	150,780	674	23,085	193,489

* Including £19,808 under Iron Bounty Act.

So far New South Wales is the only State where bounty has been claimed, and the above figures, taken in conjunction with those in the succeeding table, show that production has fluctuated.

(ii.) *The Iron Bounty Act 1914.* This Act repealed the Manufactures Encouragement Act 1908-14, and provides for a bounty on Australian pig iron up to the end of 1915. The rate of bounty is 8s. per ton, and the total amount authorised is £30,000. Provision is made for transfer, if required, to the State, of lands, buildings, etc., used in the manufacture of pig iron.

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 ironworks at Lithgow, will be found in earlier issues of the Year Book (see No. III., p. 508). During 1914 the following materials were received at the blast furnace at the Eskbank Iron Works, Lithgow:—Iron ore, 135,316 tons; limestone, 45,938 tons; and coke, 97,224 tons. The output was 75,150 tons of pig iron, and 24,420 tons of steel ingots.

The Broken Hill Proprietary Company has 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, abundant stores of first quality coal can be obtained from the various coalfields in the vicinity of Newcastle, and arrangements have been made for the local supply of the necessary quantities of limestone. The works have been planned so as to allow of ready extension as the business develops. By the end of August 1915 the works had produced 36,214 tons of pig iron, from which were made 17,134 tons of billets and blooms, and 11,574 tons of rails. The Company has contracts for over 100,000 tons of steel rails in Australia. Provision has been made for increasing the originally calculated output from 125,000 tons to 170,000 tons of steel per annum.

The following table shows 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, 1908 to 1914.

Particulars.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
Quantity Tons	40,207	29,762	40,487	36,354	32,677	46,563	75,150
Value ... £	118,224	106,357	161,948	145,416	130,708	186,252	254,257

The bounty paid in 1912, 1913 and 1914 on iron and steel made from ores mined in New South Wales was as follows:—

BOUNTY PAID ON IRON AND STEEL, NEW SOUTH WALES, 1912, 1913, and 1914.

Description.	1912.		1913.		1914.	
	Tonnage.	Bounty.	Tonnage.	Bounty.	Tonnage.	Bounty.
		£		£		£
Pig iron ...	31,104	18,663	40,490	24,294	58,528	35,117
Puddled bar iron	549	329	...	...	...	...
Steel ...	...	...	1,088	653	14,929	8,957
Total ...	31,653	18,992	41,578	24,947	73,457	44,074

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. At Turrawa, in the Narrabri division, a deposit of ore said to contain from 55 to 65 per cent. of pure iron oxide has been found. During 1914 the quantity raised was 3144 tons, valued at £5584, while the total output to the end of that year was 30,000 tons, valued at £39,895. 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 production of ironstone flux in 1913 or 1914. Up to the end of 1912 the total raised amounted to 107,000 tons, valued at £81,618.

(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 1914, 48,090 tons of ironstone, valued at £39,459, were raised, of which 41,000 tons, valued at £35,000, came from the Rockhampton district, and nearly 7000 tons, valued at about £4000, from the Cloncurry field. A small quantity was also raised in the Chillagoe area.

(iv.) *South Australia.* In South Australia iron ore is raised for fluxing purposes only, although the State possesses some rich deposits 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 forty 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 iron-works at Newcastle, New South Wales.

(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.

(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 3600 tons, valued at £1600, 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.

(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 coal deposits, however, the deposits possess no immediate value.

(viii.) *World's Production of Iron, 1911.* The quantity of iron produced in Australia is but a very small proportion of the world's production, which in 1911 amounted to 63,211,000 metric tons (pig iron). The leading position for magnitude of production is held by the United States, which in 1911 produced 24,028,000 tons, compared with Germany's 15,280,000 tons, and the United Kingdom 9,875,000 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.

§ 9. Other Metals.

1. **Antimony.**—This metal is widely distributed in the north-eastern portion of New South Wales, between the 148° 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. Owing to the low price ruling for the metal in 1914 production was small, the quantity raised being stated at 36 tons, valued at £464. The ore was raised in the Hillgrove division, where it is found in association with scheelite and gold. The total quantity of antimony ore raised in New South Wales up to the end of 1914 was 16,708 tons, valued at £306,095. The production of antimony ore in Victoria during 1914 amounted to 7603 tons, valued at £29,365. Practically the whole of the ore was 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. In Western Australia lodes of stibnite carrying gold have been found in the Roeburne district.

2. **Arsenic.**—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, and it is proposed to develop the deposit. It is stated that the lode is from 2½ 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 15 tons of metal and ore, valued at £2837, were exported from New South Wales during 1914; the total quantity exported to the end of that year was

565 tons, valued at £132,576. In Queensland wolfram, molybdenite, and bismuth have been found in various districts, but the chief centres of production in 1914 were the Herberton and Chillagoe fields. The total production in 1914 was valued at £37,365, of which £21,764 was returned as wolfram, £282 as bismuth, and £15,319 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 5 tons, valued at £1609, were raised in 1914 by 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 Gordon Brook, in the Clarence River district, at Bingara, Wallendbeen, and near Gundagai. The production during recent years has been trifling, the quantity raised in 1914 being 649 tons, from an area at Woods' Reef, Barraba. The total exports to the end of 1914 amounted to 31,984 tons, valued at £102,617. Chrome iron ore is found in Queensland in the Rockhampton district, where the Elgalla mine, at Cawarral, produced a small quantity in 1911. There was also some production from the mine near Broadmount.

6. **Carnotite.**—A discovery of carnotite ore was made in 1906 twenty 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 in 1914, and the total produced since 1860 amounted in value to only a little over £3000. 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 1914, amounted to 25,989 tons, valued at £370,106. The total lead exported to the end of 1914 was 187,735 tons, valued at £2,737,000. 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 1914 amounting to 724 tons, valued at £12,134, of which 260 tons, valued at £4,677, were produced from the mines in the Chillagoe district, 132 tons, valued at £1481, from Herberton, 95 tons, valued at £1710, from the Etheridge district, and 156 tons, valued at £2808, from the Burketown district. Lead ore to the value of £59,002 was exported from Western Australia in 1913, the Northampton mineral field being the chief centre of production. 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, there having been no output for the last two years.

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 quick-silver has been small, the total being only a little over 1000 lbs. At Pulganbar, in the Copmanhurst division, about 700 tons of ore were treated in the reducing plant, but as the condensers were not cleared up at the end of the year, no returns can be given of production in 1914. During the year, work was resumed at the Ewengar Cinnabar mine in the Drake division. 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 1824 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 precludes mining to any great extent, and the production to date has been trifling. In Queensland there are extensive deposits at Mount Miller, at Gladstone, and Mount Nansen, near Gympie, the product being utilised chiefly by the Mount Morgan mine. The production from the Mount Miller Mine amounted in 1914 to 6 tons of ore, valued at £27. Small quantities of manganese ore were raised in Victoria during 1914 from mines in the vicinity of Heathcote. Extensive deposits of the ore were mined at Boolcunda in South Australia some years ago, but latterly the production has ceased. Deposits have also been noted at Kangaroo Island, Quorn, Tumby, and various other parts of the State. 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 1914 being 61 tons, valued at £11,451, as compared with 79 tons, valued at £6802, in the previous year. It is stated that shortly before the war £500 and upwards per ton was paid for the mineral by German and other buyers. The production in Queensland for 1914 was 78 tons, valued at £38,190, practically the whole of which was contributed by the mines 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. The existence of molybdenite in the Darling Range, in Western Australia, has been known for many years, and the high price of the metal is causing renewed attention to be devoted to the deposits.

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 are now being mined, and the concentrates forwarded to Sydney for treatment at the company's works at Woolwich. Monazite from Pilbara, Western Australia, has been shewn to give off radium emanations. This 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.

13. Tungsten.—Wolfram and scheelite, the principal ores of tungsten, are both mined to a small extent in New South Wales. During 1914 the export of wolfram was 139 tons, valued at £14,438, and of scheelite 57 tons, valued at £5852. Wolfram was mined chiefly at Torrington, in the Deepwater division, and scheelite at Hillgrove. In Victoria small quantities of ore were raised during 1913 at Benambra and Linton. In Queensland, tungsten ores are found in several districts, the chief centres of production in 1914 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. About 47 tons of wolfram, valued at £4327, were produced in Tasmania during 1914, 14 tons valued at £1478 being raised at Avoca, and

24 tons, valued at £2012, at Middlesex. In the Northern Territory 6 tons of wolfram were raised during 1914 in the Wolfram Camp area, and there was a small output at Yenberrie. 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 1914 was, however, trifling. Wolfram is mined at various points in Tasmania, the production for 1914 being 47 tons, valued at £4327, obtained chiefly at Avoca and from the Shepherd and Murphy mine at Middlesex. Scheelite has been discovered on King Island in Bass Strait.

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 production was recorded subsequently. 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 1914 amounted to 10,390,622 tons, valued at £3,737,761, or a decrease of about 24,000 tons in quantity, and £33,000 in value, as compared with the output in 1913, the highest yet recorded.

(iii.) *Victoria.* During 1914, 620,251 tons of coal were raised, valued at £289,099. Of this total 550,107 tons, valued at £247,548, were raised by the State coal mine at Wonthaggi. The total production for 1914 was about 23,000 tons higher than in the preceding year.

(iv.) *Queensland.* The quantity of coal raised in 1914 was 1,053,990 tons, valued at £416,292, the highest yet recorded. Twenty-nine collieries were working in the Ipswich district, seven on the Darling Downs, four in the Wide Bay and Maryborough districts, one in the Central district, and four at Blair Athol. 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.* Six collieries were in operation on the Collie field during 1914, and the output for the year was 319,210 tons, or about 5,000 tons more than in 1913. The improvement is due to the more general use of up-to-date plant and machinery.

(vi.) *Tasmania.* The principal collieries in Tasmania are the Cornwall and Mount Nicholas, the former producing 24,000 and the latter 34,000 tons out of a total yield in 1914 of 61,000 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 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1881	1,769,597	...	65,612	...	...	11,163	1,846,372
1891	4,037,929	22,834	271,603	...	...	43,256	4,375,622
1901	5,968,426	209,329	539,472	...	117,836	45,438	6,880,501
1910	8,173,506	369,709	871,166	...	262,166	62,455	9,759,004
1911	8,691,604	659,998	891,568	...	249,890	57,067	10,550,127
1912	9,885,615	593,155	902,166	...	295,079	53,560	11,729,775
1913	10,414,165	596,896	1,037,944	...	313,218	55,043	12,417,866
1914	10,390,622	620,251	1,053,990	...	319,210	60,794	12,444,867
VALUE.							
	£	£	£	£	£	£	£
1881	603,948	...	29,033	...	...	4,465	636,746
1891	1,742,796	19,731	126,198	...	...	17,303	1,908,028
1901	2,178,929	147,223	189,877	...	68,561	18,175	2,602,770
1910	3,009,657	189,254	322,822	...	113,699	48,609	3,684,041
1911	3,167,165	301,141	323,998	...	111,154	26,214	3,929,672
1912	3,660,015	259,321	338,264	...	135,857	24,568	4,418,025
1913	3,770,365	274,940	403,767	...	153,614	25,367	4,628,053
1914	3,737,761	289,099	416,292	...	148,684	27,853	4,619,689

The Victorian figures for 1914 include about 2700 tons of brown coal, the bulk of which was raised at Altona.

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 4000 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 2884 feet. 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 fifteen 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 1914:—

COAL RAISED IN NEW SOUTH WALES, 1881 to 1914.

District.	1881.		1901.		1911.		1914.	
	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	7,113,991	2,734,873
Southern ...	253,283	115,505	1,544,454	407,196	2,066,621	636,163	2,362,741	749,394
Western ...	163,842	50,473	424,720	102,214	831,337	210,329	913,890	253,494
Total ...	1,769,597	603,248	5,968,426	2,178,929	8,691,604	3,167,165	10,390,622	3,737,761

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., page 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. Attempts have been made to manufacture briquettes from the brown coal, but so far without any great measure of success. At the Melbourne and Altona Colliery Company's mine at Altona, 2645 tons of brown coal, valued at £529, were raised in 1914, while 70 tons, valued at £35, were raised by the Minerals Development Co., at Morwell.

The output of coal from the chief Victorian collieries during the last ten years was as follows:—

PRODUCTION OF COAL IN VICTORIA, 1905 to 1914.

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.	£
1905	...	71,989	49,009	27,710	1,624	...	4,804	155,136	79,060
1906	...	74,812	64,222	13,214	3,977	...	4,406	160,631	80,283
1907	...	64,083	61,755	3,762	7,565	...	1,470	138,635	79,706
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

Included in the total "for other companies" is an amount of 95 tons raised by the Kilcunda Coal Mining Co., and 580 tons by the Co-operative Colliery Limited at Kilcunda. The figures also include about 2700 tons of brown coal, the bulk of which was raised at Altona.

(iii.) *South Australia.* The coal from Leigh's Creek in South Australia is subject to similar disabilities to the Victorian brown coal, and until some means are devised of overcoming these, production will probably languish. Arrangements have been made for opening up a deposit of brown coal at Bowen on the Morgan Railway Line, about 87 miles from Adelaide.

(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 Burring 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 sixty 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 1000 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 1914.

Year.	...	...	1861.	1871.	1881.	1891.	1901.	1914.
Quantity	...	Tons	14,212	17,000	65,612	271,603	539,472	1,053,990
Value	...	£	9,922	9,407	29,033	128,198	189,877	416,292

The distribution of production during the last two years was as follows:—

QUEENSLAND COLLIERIES, 1913 and 1914.

Collieries.	1913.		1914.	
	Tons Raised.	Average Value at Pit's Mouth.	Tons Raised.	Average Value at Pit's Mouth.
Ipswich	695,422	s. d. 7 1	718,205	7 1
Darling Downs	103,588	8 6	105,645	8 9
Nundah (Brisbane) ... ..	...	...	625	5 3
Wide Bay and Maryborough	129,611	10 11	118,120	11 4
Rockhampton	13,574	10 4	7,818	8 9
Clermont	95,799	7 7	102,980	8 5
Mount Mulligan (Chillagoe) ... ..	...	...	597	17 2
Total	1,037,944	7 9	1,053,990	7 11

It is estimated that about one-third of the production from Ipswich was shipped as bunker coal, while the total amount shipped at the South Brisbane railway wharf for bunkers, cargo, and other purposes was returned at 324,000 tons. The average value of Queensland coal in 1914 was the highest recorded since the year 1900.

(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 Mesozoic beds of the south-west. The coal produced is bright and clean, but very fragile when free from moisture. The increased output for the last few years is partly due to the establishment of a bunkering trade at Bunbury and Fremantle, and partly to the employment of improved machinery. The production from this field since 1901 was as follows:—

PRODUCTION OF COAL IN WESTERN AUSTRALIA, 1901 to 1914.

Year	1901.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
Quantity Tons	117,836	175,248	214,302	262,166	249,890	295,079	313,818	319,210
Value £	68,561	75,694	90,965	113,699	111,154	135,857	153,614	148,684

(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 1914.

District.	1901.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
North-western ...	2,952	...	1,543	1,720	1,496	956	1,167	1,074
Eastern ...	37,239	55,539	57,227	71,115	54,296	51,205	52,759	58,743
Midland ...	1,536	...	560	721	635	679	847	847
South-eastern ...	...	} 5,529	6,832	8,899	640	720	270	130
South-western ...	3,711							
Total ...	45,438	61,068	66,162	82,455	57,067	53,560	55,043	60,794

The bulk of the output in 1914 was raised from the Cornwall and Mt. Nicholas mines, which produced 24,466 and 34,177 tons respectively.

3. Production of Coal in Various Countries.—The total known coal production of the world in 1912 amounted to about 1100 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 1000 tons in 1901 and during each of the years from 1908 to 1914 where the returns are available :—

COAL PRODUCTION, BRITISH EMPIRE, 1901 and 1908 to 1914.

Year.	United Kingdom.	British India.	Canada.	Australian C wealth.	New Zealand.	Union of S. Africa.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901 ...	219,047	6,636	5,791	6,881	1,228	712
1908 ...	261,529	12,770	9,720	10,194	1,861	5,137
1909 ...	263,774	11,870	9,376	8,186	1,911	5,534
1910 ...	264,433	12,047	11,526	9,759	2,197	6,351
1911 ...	271,892	12,716	11,908	10,550	2,066	6,933
1912 ...	260,416	14,706	15,237	11,730	2,178	7,248
1913 ...	287,430	14,708	13,404	12,418	1,888	8,660
1914 ...	270,070	16,214	12,133	12,445	2,276	8,313

COAL PRODUCTION, FOREIGN COUNTRIES, 1901 and 1908 to 1914.

Year.	Russian Empire.	Sweden.	German Empire.	Belgium.	France.	Spain.	Japan.	United States.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901 ...	16,215	268	106,795	21,856	31,126	2,609	8,885	261,875
1908 ...	25,888	243	144,602	23,140	36,519	3,799	14,806	411,432
1909 ...	26,736	298	148,645	23,532	37,030	3,751	15,429	379,744
1910 ...	25,914	307	156,033	22,683	37,902	3,605	17,349	417,111
1911 ...	28,414	355	172,065	22,603	38,602	3,853	17,632	405,907
1912 ...	30,640	360	174,875	22,972	40,648	3,626	19,640	450,105
1913 ...	32,206	364	190,109	22,858	39,410	4,293	21,415	478,523
1914 ...	33,113	...	161,535	...	...	3,600	19,372	...

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.

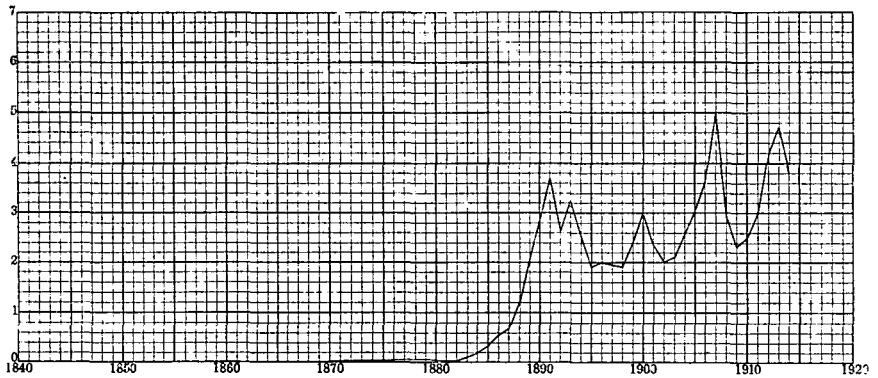
The total quantity of coal of Australian production (exclusive of bunker coal) exported from the Commonwealth to other countries in 1914 was 2,009,529 tons, valued at £1,061,127, of which amount 1,997,565 tons, valued at £1,059,323, were exported from New South Wales.

GRAPHS SHEWING VALUES OF THE PRINCIPAL MINERALS PRODUCED IN THE
COMMONWEALTH, 1840 to 1914.

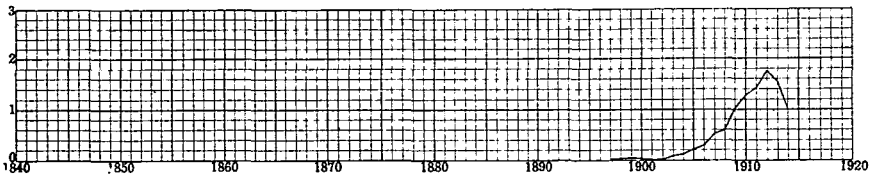
Gold, 1851-1914.



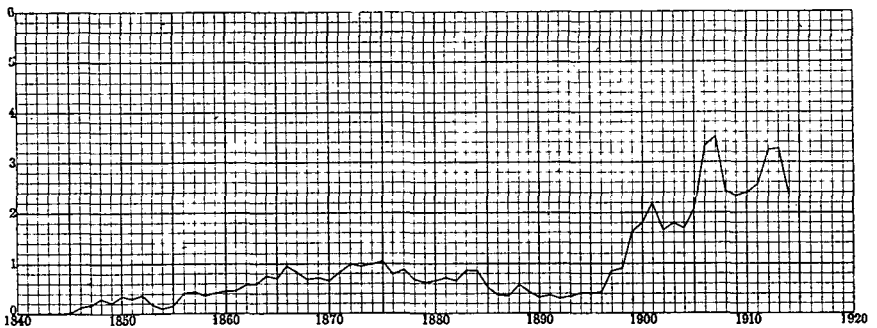
Silver and Lead, 1843-1914.



Zinc, 1897-1914.



Copper, 1842-1914.

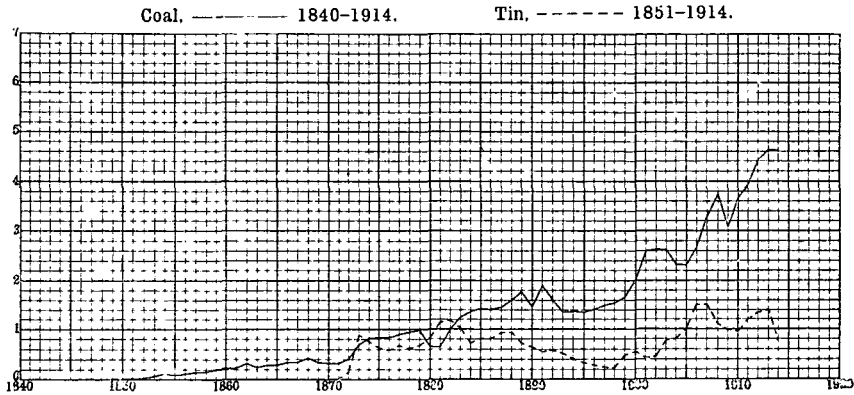


(See pages—for gold, 402; silver, 410; zinc, 418; copper, 413.)

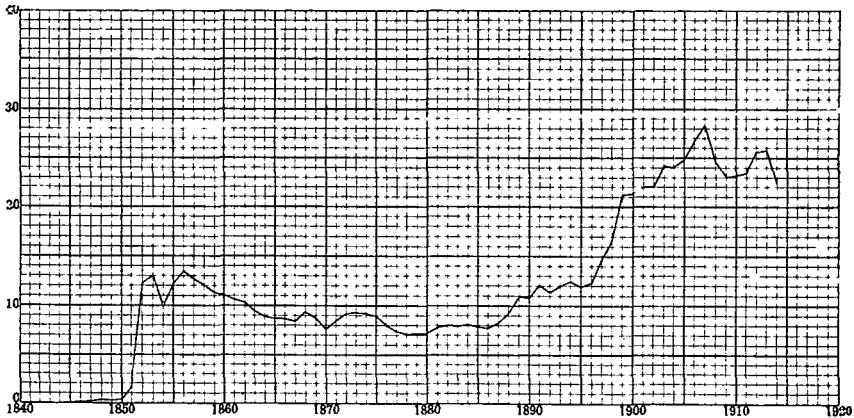
EXPLANATION OF GRAPHS—The values shewn in the above diagrams are those of the total Commonwealth production of certain of the most important minerals in successive years from 1842 to 1914.

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, and in the case of silver, zinc and copper £200,000.

GRAPHS SHEWING VALUES OF THE PRINCIPAL MINERALS PRODUCED IN THE
COMMONWEALTH, 1840 to 1914.



Total Mineral Production, 1840-1914.



(See pages 426 for coal; 416, tin; and 400 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 1914.

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.

In the following table will be found the quantity and value of the exports at decennial intervals since 1881 and during the last five years. The figures for New South Wales 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 1915.

Year.	1881.	1891.	1901.	1910.	1911.	1912.	1913.	First 6 months of 1914.	1914-15.
Quantity, 1000 tons...	1,030	2,514	3,471	4,690	5,024	6,053	6,232	1,860	2,471
Value ... £1000...	417	1,307	1,682	2,459	2,664	3,333	3,342	1,023	1,360

The principal oversea countries to which coal was exported from New South Wales during the year 1914-15 were as shewn hereunder. The quantity and value refer strictly to exports, and exclude bunker coal :—

DESTINATION OF NEW SOUTH WALES OVERSEA EXPORTS OF COAL, 1914-15.

Country.	Quantity.	Value.	Country.	Quantity.	Value.
	Tons.	£		Tons.	£
Chile ...	236,017	122,447	United States ...	105,623	51,627
Philippine Islands...	94,602	48,936	India ...	80,699	40,446
Straits Settlements	84,100	44,751	Java ...	169,073	90,453
Fiji ...	43,598	21,729	Mauritius ...	10,579	5,653
New Zealand ...	357,298	192,128	Ecuador ...	30,497	16,507
Peru ...	21,558	11,855	New Caledonia ...	15,124	8,245
Hawaii ...	80,182	43,500			

The quantity of bunker coal taken from New South Wales by oversea vessels was about 1,100,000 tons, valued at £641,000.

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, 1910 to 1914.

Year.	Exports to Australasian Ports.	Exports to other Ports.	Local Consumption.	Total.
	Tons.	Tons.	Tons.	Tons.
1910 ...	2,478,497	2,211,936	3,483,075	8,173,508
1911 ...	2,525,776	2,498,304	3,667,524	8,691,604
1912 ...	3,096,179	2,956,939	3,832,697	9,885,815
1913 ...	3,465,787	2,765,937	4,182,441	10,414,165
1914 ...	3,221,783	2,646,250	4,522,589	10,390,622

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, 1910 to 1914.

Year.	Quantity of Coal Consumed.			
	Home Produce.	Produce of the United Kingdom.	Produce of Other Countries.	Total.
	Tons.	Tons.	Tons.	Tons.
1910	6,897,000	110,000	198,000	7,205,000
1911	7,407,000	7,000	4,000	7,418,000
1912	7,907,000	1,500	14,000	7,922,500
1913	8,671,491	872	3,577	8,675,940
1914	8,944,867	23,066		8,967,933

The figures for 1910 are, of course, abnormal, the comparatively heavy importation from the United Kingdom and foreign countries being due to uncertainty in the local supply on account of the strike of coal-miners in New South Wales. Of the total importation from foreign countries in that year, India supplied 138,000 tons, and Japan 28,000 tons. The bunker coal taken away in 1914 is estimated to have been 1½ million 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., and in 1914, 7s. 2d. per ton. 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 IN NEW SOUTH WALES (PER TON), 1910 to 1914.

Year.				Northern District.	Southern District.	Western District.
				s. d.	s. d.	s. d.
1910				8 1.44	6 1.76	5 5.56
1911				8 0.13	6 1.88	5 0.72
1912				8 1.15	6 1.06	4 11.98
1913				7 9.91	6 1.13	5 1.85
1914				7 8.26	6 4.12	5 6.33

(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, the average for 1905 being 10s. 2d.; for 1909, 12s.; for 1912, 8s. 9d.; for 1913, 9s. 3d., and for 1914, 9s. 4d. These averages are exclusive of brown coal, the production of which in 1914, was valued about 4s. 2d. per ton.

(iii.) *Queensland.* Prices in the principal coal-producing districts during the last five years were as follows:—

PRICE OF COAL, QUEENSLAND, 1910 to 1914.

District.	Value at Pit's Mouth.				
	1910.	1911.	1912.	1913.	1914.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
Ipswich	6 11	6 5	6 7	7 0½	7 1
Darling Downs ... ..	..	8 5	8 6½	8 6	8 9
Nundah (Brisbane) ... ..	..	..	..	..	5 3
Wide Bay and Maryborough	10 5½	10 10	10 10½	10 11	11 4
Rockhampton	11 9	10 4½	10 6	10 4	8 9
Clermont	8 0	7 6	7 6	7 7	8 5
Mount Mulligan (Chillagoe) ... ..	..	..	..	..	17 2

(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 price 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., and in 1914, 9s. 4d. 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., and in 1914, 9s. 2d.

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. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
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. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
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 1914 is shewn below. The table also shews the number of persons killed and injured, with the proportion per 1000 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, give 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.

Recent 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 1000 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 1000.

EMPLOYMENT AND ACCIDENTS IN COAL MINING, 1914.

State.	Persons Employed in Coal Mining.	No. of Persons.		Proportion per 1000 Employed.		Tons of Coal Raised for Each Person.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	19,977	17	73	0.85	3.65	611,000	142,000
Victoria ...	1,405	2	21	1.42	14.95	310,000	30,000
Queensland ...	2,227	3	43	1.35	19.30	351,000	25,000
Western Australia ...	525	...	90	...	171.43	...	3,500
Tasmania ...	152	...	2	...	13.16	...	30,000
Commonwealth	24,286	22	229	0.91	9.43	566,000	54,000

§ 11. Coke.

1. Production of Coke.—Notwithstanding the large deposits of excellent coal in Australia, there is at the present time a fairly considerable amount of coke imported from abroad, the oversea import during the year 1914 amounting to 23,084 tons, valued at £24,657, the bulk of which came from Germany, and was taken chiefly by South Australia. The table hereunder gives the production in New South Wales during the last five years:—

COKE MADE IN NEW SOUTH WALES, 1910 to 1914.

Year.	1910.	1911.	1912.	1913.	1914.
Quantity ... Tons	282,337	264,687	241,159	298,612	304,800
Value, total ... £	189,069	184,337	162,454	208,989	213,069
Value per ton ...	13s. 4d.	13s. 11d.	13s. 5d.	14s. 0d.	13s. 11d.

The output for 1914 is the largest yet recorded, and would have been much greater but for the unsettled conditions resultant on the war.

A small quantity of coke is made in Queensland, the quantity returned in 1914 being 16,685 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 LOCALLY AND IMPORTED, 1910 to 1914.

Year.				1910.	1911.	1912.	1913.	1914.
Manufactured locally	...	...	tons	11,188	35,025	38,136	14,942	16,685
Imported	...	...	„	*32,054	†	†	†	†

* Nine months only. † Not available.

The Queensland State Mining Engineer points out that from 50,000 to 60,000 tons of coke are obtained yearly from New South Wales. During 1914 the shipments from oversea consisted of 1988 tons from Germany and 2580 tons from the United Kingdom, both consignments being landed at Rockhampton.

§ 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, cannel, 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 1914 amounted to 50,049 tons, valued at £27,372, as compared with 16,985 tons, valued at £7340 in 1913. The larger returns in 1914 were occasioned chiefly by increased activity at the British Australian Oil Company's deposits in the Northern districts. During the greater part of the year, however, comparatively little was done by the Commonwealth Oil Corporation on their properties at Wolgan, Newnes, and Glen Alice.

(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 prospecting will lead to the discovery of mineral oil in quantity in this locality. Oil-bearing shales are common in many parts of the State. The deposit at Duaringa 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 £5000 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 have been taken out, and boring operations have been started at Wanilla, near Port Lincoln, and in the vicinity of Kingston.

(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.

(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 is intended to develop the deposits on a large scale. The production in 1914 was, however, small, amounting to 75 tons, valued at £75.

(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.

2. **Export of Shale.**—In 1914 New South Wales exported 279 tons of shale, valued at £873.

3. **Shale Oils Bounties.**—The Shale Oils Bounties Act 1910 provides 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 to be made available for bounties under this Act is £50,000. Particulars are given in the following tabular statement:—

COMMONWEALTH SHALE OIL BOUNTIES—AMOUNT PAYABLE.

Description of Goods.	Rate of Bounty.	Maximum Amounts which may be paid during the Financial Year 1910-11.	Maximum Amounts which may be paid during each of the Financial Years 1911-12 and 1912-13.	Date of Expiry of Bounty.
Kerosene* ...	2d. per gallon.	£ 8,000	£ 16,000	30th June, 1913.
Refined paraffin wax ...	2s. 6d. per cwt.	2,000	4,000	

* The product of shale, having a flashing point of not lower than 73 degrees Fahrenheit, determined by the "Abel Pensky" test apparatus in manner prescribed.

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. As the bounty expired on the 30th June, 1913, the articles mentioned were produced prior to that date.

§ 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 up to the end of 1914, 44,310 tons had been exported, valued at £140,643, the exports for the year 1914 being 3040 tons, valued at £12,160.

Deposits of a high-class alunite are reported to have been discovered near Sunbury, in Victoria.

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 analysed have proved richer in valuable constituents than any similar find yet recorded. A trial shipment has been forwarded to England. Another deposit has been located near Warnertown.

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. There was, however, no record of production in 1914. In Western Australia what may prove to be a valuable deposit of the fibrous chrysolite variety has been located at Tambourah, on the West Pilbara gold-field, and in 1909 £154 worth of this mineral was raised. In 1899 Tasmania raised 200 tons, valued at £363, but there has been no production during the last ten years. 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 1914 about 158 tons of barytes, valued at £276, were obtained in the Mudgee division. Small quantities were produced also at Bunyan, in the Cooma division.

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 1914 amounted to 413 tons, valued at £364, raised in the Mudgee, Cootamundra, Parkes, and Goulburn divisions. Fireclay to the amount of 150 tons, valued at £150, was raised in the Bathurst division, and 12,100 tons, valued at £1990, were raised in the Wollongong division. Deposits of steatite near Wallendbeen were worked during 1914, the quantity raised during the year amounting to 80 tons. Near Morangaroo 2000 tons of silica were raised by the Silica Fire Brick Company. In Victoria 325 tons of kaolin were obtained at Axedale, 300 tons at Pyalong, and 181 tons at Egerton, the total value being given as £1407. In Queensland 5317 tons of fireclay, valued at £375, were mined during the year 1914, 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. Porcelain and other clays of good quality have been found in the Kingston district in Tasmania. A small parcel of kaolin from the Zeehan district yielded about 50 per cent. after treatment, but it is stated that the product could not be profitably exported to Europe. 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.

5. **Coorongite.**—This peculiar indiarubber-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 1912, from leases near Narrabri, in New South Wales, the total sold amounting to 50 tons, valued at £287.

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 of ore was forwarded in 1911 to England from a site on the Bookookoorara 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. A deposit has been located in the hundred of Roberts, about 9 miles N.W. from Arno Bay in South Australia. In Western Australia deposits occur at various points in the South Western area, and it is proposed to work the one at Kendenup.

8. **Gypsum.**—This mineral is found at 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 1914 there was a production of 1077 tons, valued at £924, of which 1032 tons were obtained at Boort, and 45 tons at Fairley. A deposit of gypsum sand containing practically an inexhaustible supply is found on the edge of Lake Austin in Western Australia.

9. **Magnesite.**—Small quantities of this mineral have been discovered at Fifield, in New South Wales, and at Heathcote, in Victoria, 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 Tumbly. The Broken Hill Co. is working a small deposit near the Beetaloo Waterworks.

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 yet been worked commercially on any considerable scale. From the deposits at Bunyan, in the Cooma division, 25 tons of diatomaceous earth, valued at £94, were produced in 1914. In Victoria there is a remarkably pure deposit at Lillieur, 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. From the deposit at Lillieur, 1000 tons, valued at £4000, were obtained in 1914. A fairly extensive deposit of tripolite exists in Queensland, between Nerang and Beaudesert, but the various outcrops have as yet been only partially examined.

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 sixty 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 recently put down near Kingscote, on Kangaroo Island, revealed brine from which salt can be profitably obtained by evaporation. In Western Australia supplies are obtained from dried-up shallow lakes and consumed locally or exported. The chief centres of production were formerly Rottnest Island, near Fremantle, and Middle Island, near Esperance, but the greater part of that now produced is obtained at Port Gregory.

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. 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 700 tons of phosphate rock, valued at £1000, were raised during 1914. In addition to use as a flux at the Lithgow Iron Works, part of the rock is ground up for manures. 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 28½ carats. It is difficult to secure accurate returns in connection with the production of precious stones, but the yield of diamonds in 1914 was estimated at 1580 carats, valued at £1440, while the total production to the end of 1914 is given as 186,124 carats, valued at £126,989. The yield in 1914 was contributed chiefly by miners working in the vicinity of Copeton, in the Tingha division. Owing to the closing of the market at the outbreak of war the production in 1914 shewed a great reduction on that for 1913, when 5573 carats, valued at £5141 were won. 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 show 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 1914 was valued at £15,800, as compared with £43,292 in 1913. The estimated return for 1914 has been distributed thus:—Purchases by gem buyers, £13,900; stones sold privately, £300; mechanical stones, £1600. The gem mining industry practically collapsed on the outbreak of war, as the German buyers ceased business. An attempt is being made to open a market for sapphires in the United States. 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 1914, however, out of a total production valued at £26,534, the yield from the Lightning Ridge field, near Walgett, amounted to £21,636, while the output from the White Cliffs field was returned at £4,898. 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 $6\frac{1}{2}$ 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 £1,386,000.

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 1914 was estimated at £2000, and up to the end of that year at £177,195. 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.

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 twenty-three carats in the rough. Altogether 2225 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 reopened and worked for a short period during 1908, when about 1000 carats of emeralds, valued at about £1650, were obtained. The largest stone in the rough weighed 60 carats. Small emeralds of fine quality have been found at Poona, 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 4 miles south of Forsyth, 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 Poona, 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 is an index of the significance of the mineral wealth. During the year 1914 the number so employed was as follows :—

NUMBER OF PERSONS ENGAGED IN MINING, 1914.

State.	Number of Persons Engaged in Mining for						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal and Shale.	Other.	
New South Wales ...	3,443	8,242	1,357	2,168	19,977	2,283	37,470
Victoria	10,898	..	...	65	1,405	205	12,073
Queensland	2,793	130	2,578	1,570	2,227	782	10,080
South Australia ...	375	25	3,000	...	...	855	4,255
Western Australia ...	12,110	100	192	217	525	30	13,174
Tasmania	402	491	2,099	1,523	152	74	4,741
Northern Territory ...	180	10	88	186	...	45	509
Commonwealth ...	29,701	8,998	9,314	5,729	24,286	4,274	82,302

The following table shews the number of persons engaged in mining in the Commonwealth during each of the years 1891, 1901, and 1914, together with the proportion of the total population so engaged:—

PROPORTION OF PERSONS ENGAGED IN MINING 1891, 1901, and 1914.

State.	1891.		1901.		1914.	
	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	37,470	2,020
Victoria	24,649	2,151	28,670	2,381	12,073	848
Queensland	11,627	2,934	13,352	2,664	10,080	1,493
South Australia ...	2,683	834	7,007	1,931	4,255	967
Western Australia ...	1,269	2,496	20,895	11,087	13,174	4,073
Tasmania	3,988	2,695	6,923	4,017	4,741	2,390
Northern Territory ...	...	...	...	...	509	..
Commonwealth ...	74,820	2,341	113,462	2,992	82,302	1,673

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, 1914.**—The following table gives particulars of the number of men killed and injured in mining accidents during the year 1914 :—

NUMBERS KILLED AND INJURED IN MINING ACCIDENTS, 1914.

Mining for—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Cwth.
KILLED.								
Coal and shale	17	2	3	...	...	...	...	22
Copper ...	3	...	5	1	...	5	...	14
Gold...	6	15	4	...	26	2	...	53
Silver, lead and zinc ...	16	...	...	...	...	3	...	19
Tin ...	1	...	...	...	...	...	...	1
Other minerals	...	...	...	...	...	...	...	...
Total ...	43	17	12	1	26	10	...	109
INJURED.								
Coal and shale	73	21	43	...	90	2	...	229
Copper ...	1	...	58	2	4	37	...	102
Gold...	3	45	44	...	735	4	...	831
Silver, lead and zinc ...	34	...	...	...	...	8	...	42
Tin ...	...	...	7	...	...	11	1	19
Other minerals	1	...	1	...	...	...	...	2
Total ...	112	66	153	2	829	62	1	1,225

§ 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 1914 the total sum expended in this manner amounted to £455,180, of which £11,519 was advanced in 1914. During the year the Government subsidy to the Miners' Accident Relief Fund amounted to £14,023.

3. **Victoria.**—Under the Mining Development and Surplus Revenue Acts the sum of £424,210 was expended from revenue, and £233,097 was provided out of votes during the period 1897 to 1914 as follows :—

	£
Advances to mining companies ...	179,673
Advances to prospectors ...	73,718
Boring for gold and coal ...	219,912
Construction of roads and tracks ...	62,345
Erection of testing plants, batteries, etc. ...	72,350
Miscellaneous, cyanide patents, Schools of Mines, etc.	49,309
Total ...	657,307

The expenditure in 1914 was £39,664, of which £14,547 was advanced to companies; £3804 was loaned to miners; £307 was spent on constructing roads, etc.; £16,052 on boring for gold, coal, etc., and £4954 on testing plants and miscellaneous. The Government batteries number 27, and of these 15 are managed by local trusts without expense to the Department so far as cost of working is concerned. For the year 1914 the net cost to the Department of the Government batteries was returned as £3009. The repayment of loans by companies amounted to £21,131, by miners £2455, and for cost of boring £8560. The State's contribution to the Coal Miners' Accident Relief Fund amounted in 1914 to £647.

4. **Queensland.**—State assistance to the mining industry in 1914 amounted to £20,546, of which £15,630 consisted of loans in aid of deep sinking; £1816 grants in aid of prospecting; £2368 in aid of roads and bridges to gold and mineral fields; £732 advance under Mining Machinery Advances Act 1906.

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 1914 the total amount of subsidy paid was £60,255, of which £7597 has been recovered, leaving a debit of £52,658. 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 1914 in accordance with the subjoined statement.—Advances in aid of mining work and equipment of mines with machinery, £3098; advances in aid of erection and equipment of crushing plants, including subsidies on stone crushed for the public, £5586; advances in aid of boring, £1085; providing means of transport, £122. In addition, amounts totalling in all £7634 were expended from the Mining Development vote on various matters such as water supply, roads, cartage, and subsidies for development below the 100 feet level in small mines. Included in this amount of £7634 is a sum of £6671 on account of purchase of tailings. The sum of £5586 shewn above includes £1337 paid to owners of plants crushing for the public at fixed rates.

In 1914 there were 34 State batteries in operation. The amount expended on the erection of State batteries up to the end of 1914 was £91,981 from revenue and £251,230 from loan, giving a total of £343,211. During the year receipts amounted to £48,583, and working expenditure to £55,930.

The total value of gold and tin recovered to the end of 1914 at the State plants was £4,395,000, resulting from the treatment of 1,018,000 tons of gold ore and 68,300 tons of tin ore.

7. **Tasmania.**—Under the terms of the Aid to Mining Act 1912 the expenditure for the year 1914 amounted to £8525. The expenditure under Part A of the Schedule, viz., Mining prospecting and development work undertaken by or under the direction of the Department of Mines, was £8409, and under Part B, viz., Advances in aid of mining and prospecting, was £116. Of the former sum, an amount of £1109 was expended on prospecting and developmental work at Zeehan. Under the Mining and Public Works Appropriation Act 1913, a sum of £27,060 was expended, of which £13,558 was absorbed in making advances on the security of ore produced in the State, £9315 in carrying on the operations of the Tasmanian Gold Mine at Beaconsfield, and £3892 in expenses connected with the State Argent Flat Mine, Zeehan. Under the Public Works Appropriation Act, 1913, a sum of £5446 was expended in carrying out the purposes of the Mining Development Act of 1912, and in assisting prospectors.

8. **Northern Territory.**—Prior to 1912, prospectors were helped by grants of rations and some monetary assistance, but it was found that these privileges were occasionally abused, and steps have now been taken to ensure the bona fides of all seeking aid. Provision is made for generous grants to discoverers of metalliferous ores. The total aid granted to prospectors and others in 1914 amounted to £7480.

§ 17. The Building Stones of the Commonwealth.

1. New South Wales.*

It is doubtful whether any country in the world has greater advantages than New South Wales as regards the possession of practically unlimited quantities of good building material. In the Metropolitan area alone, there are extensive deposits of clay-shales and clay, suitable for the manufacture of excellent bricks, as well as high-grade sandstone for building purposes. And at many centres, convenient to rail or water, throughout the State inexhaustible supplies of granite and other igneous rocks, in addition to limestone, marble, and sandstone are obtainable.

Attention was given to the building stones in the early days of settlement, as is evidenced by the number of old buildings now standing throughout the State, and also by the reference in "Mitchell's Three Expeditions into Eastern Australia," published in 1838, wherein it is stated that "a few miles from Towrang a quarry of crystalline variegated marble has been recently wrought to a considerable extent, and marble chimneypieces, tables, &c., now ornament most good houses at Sydney."

The sandstones of the Sydney district were the first stones to be used in the State, but perhaps not so much care was then exercised in the selection of stone as at the present time. For many years the light brown sandstone of the Sydney district, known in the trade as "yellow block" stone, has been deemed the only "correct" material for buildings of any pretensions. It is about sixty years since quarries were first systematically opened up with the object of obtaining the uniform coloured "yellow block stone." The first of these quarries was started at Pyrmont, close to the site of the present quarry, which is the most extensive building stone quarry in the State. Since then a number of quarries have been opened in the metropolitan area, and although several have been abandoned, the bulk of them are now being worked with rock-cutting machinery of the latest type. The stone occurs as lens-shaped masses associated with other sandstones in what is known geologically as the Hawkesbury Stage of the Triassic Period. The lenses vary considerably in size. When freshly quarried, the stone is fairly soft, and of a white to bluish grey colour, but on exposure hardens rapidly and assumes a light brown colour. The Hawkesbury Series consist mainly of sandstones and grits, and attain a maximum thickness of about 1100 feet in the neighbourhood of Sydney. They outcrop over a considerable area in the State. Many excellent beds of freestone apart from the "yellow block" occur in the Series, and have been extensively quarried, mostly for local building and road-making purposes. The stone is generally of a white or light-grey colour, is probably equal to "yellow block" in strength and durability, and is likely to be used in the future in the construction of large city buildings. The number of large quarries now being worked on this class of stone is too extensive to be included in the accompanying tabulated list.

Other good sandstones occur throughout the State in all geological formations from those of Silurian Age up to Cretaceous, and a number of quarries are worked in country districts to meet local requirements.

* Contributed by E. Fisher Pittman, Esq., A.R.S.M., Under Secretary, Department of Mines, Sydney, at the time when the article was supplied.

Extensive deposits of marble are widely distributed. Although attention has been directed to them since shortly after the foundation of the State, it is only within the past fifteen years that attempts to establish the industry have been successful. During that time a number of quarries have been opened, and within the past twelve years stone to the value of £21,157 has been marketed in Sydney.

The stone varies considerably in colour, pattern and texture, and is eminently suited for architectural purposes, or any description of work for which marbles are employed. Generally the stone is free from flaws and impurity, and, in consequence, it lends itself to thin cutting, and little or no "stopping" is required in the dressed article. Compactness of texture and high compression strength are characteristic of New South Wales marbles.

A white statuary marble has not yet been located in appreciable quantity.

Limestone occurs abundantly, but up to the present only a limited quantity has been used as building stone. The greater number of deposits occur in the eastern and central portions of the State, are very extensive, and belong to several geological ages. They vary from a few chains up to a mile in width, and can be traced for several miles along the line of strike. Practically unlimited quantities of the stone are therefore available. The stone is generally very compact, varies in colour from white to bluish grey, and is well suited for building or ornamental purposes. A number of quarries have been opened and small quantities used locally. The stone is used mainly for the production of quicklime, and in the manufacture of hydraulic cement. Extensive quarries for this purpose are worked at Portland, Taree, and Goulburn.

There are extensive deposits of slate in the State, but all attempts to produce a good roofing slate have, until quite recently, been unsuccessful. Quarries were opened at Moruya, Gundagai, Millamurrah, Caloola, Newbridge, and Grattai, but were abandoned principally owing to the fact that the slates were too hard, and not sufficiently fissile to be profitably worked.

At present there appears to be a reasonable prospect of the slate industry being established in the near future. A belt of slate from 360 feet to 380 feet in width has been located in the Goulburn district. The stone possesses all the qualities for roofing, hearths, slabs, etc., and quarries have been opened up, and up-to-date machinery for dealing with the stone installed.

During the year 1914, 40,000 slates of different sizes were marketed.

Granites suitable for engineering and architectural purposes occur extensively in many parts of New South Wales. They vary considerably in colour and texture, and are equal to most imported granites for building and ornamental purposes. Small quantities have on several occasions been introduced into Australian architecture, but practically no attempt has yet been made to develop the industry, owing probably, to the adequate supply of more cheaply worked stone.

Of recent years a syenite, or what is known commercially as "trachyte," has been extensively used in building construction in the polished and unpolished state.

Other igneous rocks such as porphyries and basalts occur abundantly in the State, but have only been used in small quantities locally for building purposes. Some of the porphyries are very handsome rocks, and well suited for ornamental work.

Serpentine of various shades of green occurs in many districts. The deposits occur in belts extending for considerable distances with broken outcrops. One belt traverses the country for a distance of about 150 miles. The stone is eminently suited for ornamental work, but has so far been quarried for exhibition purposes only. It takes a good polish.

The following tabulated information has been in part compiled from the reports of the Department of Mines, Sydney, and from "Building and Ornamental Stones of Australia," by R. T. Baker, F.L.S., etc.

IGNEOUS ROCKS.

Building Stone.	Locality.	Character.	Quantity.	Examples.
Granite (red)	Burrinjuck, 220 miles from Sydney.	A light coloured rock composed mainly of quartz and felspar. In places the felspar has a greenish tinge. It is hard and has a high specific gravity, and is a high class building stone.	Practically unlimited. The belt of granite outcrops for over 50 miles both north and south from Burrinjuck.	The dam of Burrinjuck Reservoir is constructed mainly of this granite, some of the blocks used weighing as much as 15 tons.
Granite (red)	Near Lithgow, 100 miles from Sydney.	A good red porphyritic granite.	A large quantity is available.	A small quantity has been used locally.
Granite (red)	Tarana, 120 miles from Sydney.	Both coarse and fine-grained granite of good colour. The coarse rock contains large porphyritic crystals of pink felspar.	Unlimited quantity of either variety available.	This is part of an extensive belt of granite in the central western area. Small quantities have been used locally.
Granite (red and grey)	Trial Bay, 225 miles from Sydney by water.	The red variety is a pale-coloured, coarse-grained stone, while the grey is medium grained and of a fresh grey colour. Both take a high polish.	Practically inexhaustible.	The granite outcrop occupies an area of about 1½ miles square. The prison at Trial Bay is built of these granites.
Granite (grey and red)	Braidwood, 180 miles from Sydney.	Both are coarse-grained rocks with white and pink felspars. The red variety is similar in character to the Gabo Island granite, but rather lighter in appearance.	Practically unlimited. The outcrop is very extensive.	A small amount has been quarried and used locally in the construction of churches and dwellings. The proposed railway from the Federal Capital to Jervis Bay passes over this belt of granite.
Granite (grey and red)	Albury, a border town between New South Wales and Victoria.	Several varieties which vary both in colour and texture, and take a high polish. Both pink and white porphyritic crystals occur through the rock.	Large quantities available.	Two of these are really handsome rocks; in one, the base is grey to green in colour, with large pink felspars, while the other has a grey base with porphyritic white felspars. None of these granites has as yet been quarried for building purposes.
Granite (grey)	Bathurst, 144 miles from Sydney.	A coarse-grained light coloured stone.	Large quantities are available.	Used locally for building purposes.
Granite (grey)	Gunning, 164 miles southerly from Sydney.	A fine-grained hornblende granite of a dark grey colour. Takes a good polish, and is a free working granite.	Practically unlimited quantities are available. The outcrop extends over an area of at least 24 square miles.	It has been used locally in the construction of the Anglican church and several private houses.
Granite (grey)	Montague Island, 180 miles southerly from Sydney, by water.	A very handsome and distinct granite in which large crystals of felspar (labradorite) are the chief characteristic. It is a hard close grained rock and takes a high polish.	Only a small amount of quarrying has been done, but a very large quantity is available. About two-thirds of the island, or at least 130 acres, is composed of this rock.	This stone is specially suited for ornamental building purposes. It has been used as bases for the columns in the General Post Office, Sydney, in the polished and unpolished state, and in the construction of the lighthouse on the island.
Granite (grey)	Moruya, 196 miles from Sydney, by water.	A medium to coarsely crystalline rock with numerous basic segregation. It is of a light grey colour, and takes a high polish.	Although only a limited amount has so far been quarried, the quantity available is practically inexhaustible. The granite outcrop is very extensive.	The stone has been used in the turned columns in the colonnade of the General Post Office, and in the Custom House and other buildings in Sydney.

IGNEOUS ROCKS—*continued*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Granite (grey)	Tenterfield, 480 miles north from Sydney.	A porphyritic granite with large pink felspar crystals scattered through a grey-coloured ground mass; really a combination of red and grey granite.	The outcrops are very extensive in the district, and indicate a large quantity.	The stone is most attractive in appearance, and is well adapted for ornamental building purposes. Has not yet been utilised in building construction.
Granite (grey)	Uralla, 344 miles northerly from Sydney.	A medium grained hornblende granite of a rich dark grey colour, which takes an excellent polish.	No quarrying has been done, but there is a large quantity available.	This is a very handsome stone and will no doubt be utilised in the near future. It is a splendid ornamental and monumental stone.
Granite (grey)	Young, 256 miles from Sydney.	A medium to coarse grained rock, with abundance of black mica (biotite).	The rock outcrops over a large area, and the quantity available is practically unlimited.	It has been used locally for building churches and private dwellings.
Syenite ("Trachyte")	Bowral, 80 miles from Sydney.	A fine-grained hard crystalline rock of a light grey or dark grey colour. It takes an excellent polish. In crushing strength it is equal to most granites.	It occurs as an intrusive boss, and outcrops over an area of about 40 acres. A very large quantity is available, and extensive quarries have been opened.	The stone which is known in the trade as "Bowral Trachyte" is really a syenite. The light grey stone looks well when roughly dressed, and a very fine architectural effect is produced by relieving it with a certain proportion of the darker stone in a polished condition. In recent years it has been rather extensively used in the polished and unpolished state. Good examples can be seen at the Equitable Buildings, Commonwealth Bank, Mutual Life of New York, and many other city buildings. It has also been used in the piers of the Hawkesbury Bridge.
Trachyte	Orange, 192 miles from Sydney.	A fine-grained hard crystalline rock of a greenish-grey colour with black spots. It is hard and durable, and takes a good polish.	It comprises the bulk of the Canoblas mountains, and a large quantity is available.	It has been used locally for building and paving.
Porphyry	Goulburn, 134 miles from Sydney.	A dense hard dark green rock which when polished is olive green.	A large quantity available.	It has been used locally in the construction of churches and dwellings.
Porphyry	Canberra, the Federal Capital area.	Dense dark coloured quartz porphyries. They split with rather a flinty fracture.	A large quantity available.	The church at Canberra is in part built of this stone.

Other localities worthy of note and convenient to rail or water carriage, where practically unlimited quantities of granite and other igneous rock suitable for building and ornamental purposes are available, are:—

Grey Granite.—Adelong, Arnprior, Bredbo, Bungendore, Burrowa, Cooma, Cowra, Harden, Oberon, Tumut, Glen Innes.

Red Granite.—Cowra, Bungendore, Grenfell, Carrick, near Michelago, Tarago, near Wellington.

Porphyries.—Bredbo, Burrowa, Cowra, Yass.

Tinguanite.—Barrigan.

Basalts.—Guyra, Glen Innes, Blayney, Millthorpe, Inverell, Kiama, Cooma, Nimmitabel, Merriwa, Molong, Orange, Dorrig, Murrurundi, Shell Harbour, Uralla, Werris Creek.

SEDIMENTARY ROCKS.

Building Stone.	Locality.	Character.	Quantity.	Examples.
Sandstone (white to pink) <i>Triassic age.</i>	Bundanoon, 95 miles from Sydney.	A fine-grained stone varying in colour from white to pink.	A large quantity available.	A quarry has been worked for some years, and the stone used largely in buildings at Goulburn and other towns in the Southern District.
Sandstone (light brown) <i>Triassic age.</i>	Bondi, about 4 miles from Sydney, of which it is a suburb.	A fine to medium-grained stone, which is known in the trade as "yellow block." When freshly quarried it is fairly soft and of a bluish-grey colour, and on exposure rapidly hardens and changes in colour from straw to light brown. Possesses all the qualities of a high-class building stone.	A large quantity available. The bed of stone which is now being worked varies in thickness from 20 feet to 30 feet, and was located in driving a tunnel for the sewerage system of the district.	A large amount of stone from this quarry has been used in a number of buildings in the City. Channeling and guttering machines are employed in winning the stone and, as jointing is not common, blocks up to 5 feet in thickness and of almost any desired length and breadth can be obtained. The stone cuts well and is well adapted for carvings, etc.
Sandstone (light brown) <i>Triassic age.</i>	Maroubra, about 5 miles from Sydney. Two quarries about half a mile apart, one of which is owned and worked by the State Government.	Medium-grained "yellow block" stones. Although possessing all the qualities of the Bondi stone they tone down to a slightly darker colour on exposure, owing to the presence of more iron in the cementing material. They contain as much as 2.07 per cent. ferrous oxide (Fe. O.).	A very large quantity of high-class stone is available from this district. The beds of sandstone which are being worked are on different horizons and vary from 9 feet to 22 feet in thickness. After systematically testing the ground by means of bores, it has been estimated that there is over 2,000,000 cubic feet of good building stone available at the State Quarry.	Both quarries have only been started within the past three years, and a fair amount of stone from each has been used in buildings in the city and suburbs. The stone is cut out by machinery, and blocks of almost any dimensions can be obtained. A considerable amount of machinery has been installed at the State quarry for dressing the stone.
Sandstone (light brown) <i>Triassic age.</i>	Botany, a suburb of Sydney.	Medium-grained "yellow block" stone of good quality.	A fairly large quantity available. The sandstone bed is about 15 feet thick.	A fairly extensive quarry has been opened up, and the product is used in buildings in the city and suburbs. The stone is quarried by hand labour.
Sandstone (light brown) <i>Triassic age.</i>	Pymont, within the city boundary.	Fine to medium-grained "yellow block" stone, possessing all the qualities of a first class building stone. It has been tried for over fifty years and met all the requirements of a high-grade stone.	A considerable quantity available. A very extensive quarry has been worked here for over fifty years. The bed of stone at present being worked is about 35 feet thick, but it runs as much as 51 feet in places.	The stone from this quarry has been used in most buildings of any pretensions in Sydney, and has been exported to Vancouver, Suva, New Zealand, and the sister States. One shipment was sent to England as a trial, when trade was dull in Sydney. This is the most extensive building stone quarry in the State, and as many as 300 men have been employed at one time in connection with the production of dressed and undressed stones. The quarrying is mostly done by hand labour and the use of explosives.
Sandstone (light brown) <i>Triassic age.</i>	Randwick, a suburb about 4 miles from Sydney.	Fine to medium-grained "yellow block" stone, similar to the Bondi stone.	The extent of the bed is not known. There is only a limited quantity available within the area owned by the present quarry proprietor.	A large quarry has been worked for some years, and the stone used in many buildings in Sydney. Both cutting machines and explosives are used in the quarry.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Sandstone (light brown) <i>Triassic age.</i>	Waverley, a suburb of Sydney, about 4 miles distant from the city.	Fine to medium-grained "yellow block" stone, resembling that from Pyrmont.	The extent of the bed is not known, but there appears to be a large quantity available.	A quarry has been worked for some years and the stone utilized in a number of buildings in Sydney. The stone is cut out with channelling machines, and blocks of almost any dimensions can be obtained.
Sandstone (Grey) <i>Permo-carboniferous.</i>	Waratah, 103 miles from Sydney.	Very fine-grained stone varying in colour from light grey to dark grey.	Practically unlimited quantity available. The bed varies from 30ft. to 70 feet in thickness, and can be traced for several miles.	A quarry has been opened, and the stone used largely in the New-castle district. The sandstone forms the floor of the celebrated Borehole Coal Seam in the New-castle district.
Sandstone (Grey) <i>Permo-carboniferous</i>	Ravensfield, 103 miles from Sydney.	Fine-grained stone of a brownish or bluish grey tint. The cementing material is partly lime and partly hydrated peroxide of iron.	The quantity available is practically unlimited. The bed is from 12 feet to 15 feet in thickness, and can be traced for a distance of about 20 miles.	A fairly extensive quarry has been opened up, and the stone used in many buildings in Maitland and other Northern towns. Although some of the stone has been exposed for about thirty years it shows little sign of weathering, the sharp edging of the carvings still being retained. The bed forms a well-marked and persistent horizon in the Lower Marine Series of the Maitland district.
Sandstone (Grey) <i>Silurian age.</i>	Yass, 190 miles from Sydney.	A fairly even-grained sandstone of a grey colour.	Large quantity available.	Quarries have been opened and some of the stone used locally in the construction of churches, etc.
Sandstone (white and light brown)	Undercliffe, 4½ mls. from Sydney.	Both fine and coarse-grained stone, varying in colour from white to light brown. Some "yellow block" stone is obtained here.	Practically unlimited quantities available.	Several quarries are being worked, and the stone used largely in coursing and rubble work. A limited quantity has been used in some city buildings. The quarries are worked by hand labour.

Good sandstones for building purposes which have not been worked to any appreciable extent occur in the following country districts:—Albury, Barber's Creek, near Goulburn, Galong, Grong Grong, Munderooran, Paterson, Muswellbrook, East Maitland, Wollombi, Morpeth, Greta, Rutherford.

In the Metropolitan area small quarries are worked in a number of the suburbs, and produce sufficient good building stone to meet local requirements.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Marble (red) <i>Devonian age.</i>	Attunga, 295 miles northerly from Sydney.	A brecciated marble composed of pale coloured fragments, varying from an inch to 1 foot in diameter, embedded in a red ground mass. Takes an excellent polish.	A very large quantity is available.	One of the most handsome brecciated marbles in the State, and well adapted for large panel work. Only quarried for exhibition purposes.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Marble (mottled) <i>Silurian age.</i>	Caleula, 215 miles from Sydney.	A compact to crystalline marble. The variety which is mainly quarried is white and pinkish mottled stone with green streaks of chloritic material.	A fairly large quantity available.	A considerable amount of this stone has been used recently for indoor decorations in many buildings in Sydney. It has been extensively used as wall panels in the recently built Permanent Trustee Co.'s Offices in Sydney.
Marble (red and grey) <i>Silurian age.</i>	Borenore, 206 miles from Sydney.	Several brecciated varieties occur here. They range from fine to coarsely crystalline in texture, and vary much in colour. Only two varieties are at present being utilized. (1) Breccia of various shades of red showing many fossils. (2) Breccia of a white to grey colour showing numerous encrinite fossils. This is known in the trade as "Borenore Blue." Both take a high polish.	Practically unlimited quantity available. The limestone is exposed for a distance of about two miles across the belt, and for about 1½ mls. along the strike.	Four quarries have been opened, and a very large amount of stone produced. It is sent to Sydney in blocks and sawn into slabs, etc. Up to the present more of the red marble has been utilized than any other marble in the State. It has been exported to the other States. Both the grey and red have been extensively used for interior and exterior decorations in a large number of buildings in New South Wales.
Marble (white) <i>Silurian age.</i>	Caloola, 170 miles from Sydney.	A coarsely crystalline rock of a white colour, with greyish streaks and clouds. Takes a high polish.	A large quantity available. The rock outcrops over an area of ten acres round the quarry, which has been worked for the past twelve years.	The stone has been extensively utilized in Sydney for indoor decorations, such as wall facings, tessellated pavements, and many other purposes. Examples may be seen in the vestibules of Challis House and Prince Alfred Hospital. Machinery is used in the quarry for cutting out the stone.
Marble (mainly red) <i>Silurian age.</i>	Fernbrook, 150 mls. from Sydney.	A number of varieties, mainly red, varying in texture occur in the district and take a good polish.	Large quantities available.	A small quarry has been opened, and a plant installed for cutting the blocks into slabs, but up to the present very little has been put on the market. The marbles from here will no doubt be utilized in the future.
Marble (white and red) <i>Silurian age.</i>	Marulan, 114 miles from Sydney.	Several varieties varying in colour and texture. One variety which should receive attention is a very handsome rock of a white colour with streaks and blotches of grey and red, and in places resembling the Mexican "Onyx" in texture and translucency.	Practically unlimited quantity available.	It was used in mantelpieces in the early days of the colony, but little has been utilized in recent years. A considerable amount has been quarried for the production of lime.
Marble (grey) <i>Silurian age.</i>	Molong, 216 miles from Sydney.	A fine to coarsely crystalline grey rock with white streaks.	The outcrops are very extensive, and the quantity available is practically inexhaustible.	Used locally for building and other purposes. None of the stone has yet been placed on the Sydney market.
Marble (red) <i>Devonian age.</i>	Nemingha, 287 mls. from Sydney.	A medium-grained rock with numerous fossil encrinites. The ground mass is of a rich red colour, and the fossils, which are white, are thickly studded in it. Takes an excellent polish.	A fairly large quantity available.	A small amount was quarried and placed on the Sydney market some 25 years ago, but it has received little attention since then, although it is one of the most handsome marbles in the State.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Marble (black and white) <i>Silurian age.</i>	Rockley, 166 miles from Sydney.	A medium-grained black ground, studded with fossil crinoid stems. Takes a high polish.	A very large quantity available.	A really handsome marble. It has been used in the staircase of the Sydney Art Gallery and for mantelpieces, etc.
Marble (black and white) <i>Devonian age.</i>	Rylstone, 149 miles from Sydney.	A medium-grained dark grey to black, veined with white. Takes an excellent polish.	Practically unlimited quantity.	A quarry has been opened and a fair amount of stone placed on the market for panels and other decorative purposes.
Marble <i>Devonian age.</i>	Rylstone, 149 miles from Sydney.	Several varieties scattered throughout the district. (1) "Cudgegong Ivory." A very fine grained rock ranging in colour from cream to red with dark veins. (2) "Cudgegong Golden." A brownish yellow ground with lighter rings and veins; extremely fine in texture. (3) "Carwell Satin Grey." A cloudy dark satin grey with lighter coloured patches; of fine texture.	Large quantities of each variety available.	These varieties are in course of being placed on the market. They can be obtained in fair sized blocks. The "Cudgegong Golden" is a unique stone and likely to be largely utilized.
Marble (black) <i>Silurian age.</i>	Spring Hill, 187 miles from Sydney.	A beautiful very dark grey to black with white veins and the fossil-shell <i>Pentamerus</i> scattered throughout the mass.	A large quantity available.	The stone has been used largely in a number of buildings in Sydney both for interior and exterior decoration. A good example may be seen at Messrs. Richardson and Wrench's Offices, Pitt Street, Sydney.
Marble <i>Carboniferous age.</i>	Warialda, 405 miles north of Sydney.	Several varieties occur here. (1) Red and white mottled marble of medium texture. (2) White with greyish streaks. (3) Grey to greenish base with white patches and streaks.	Large quantity available.	Used locally for building purposes. None of these marbles have yet been placed on the Sydney market.
Marble (black) <i>Silurian age.</i>	Windellama, 138 miles from Sydney.	A fine-grained dense black marble. Takes a good polish.	Quantity unknown.	The marble has so far only been quarried in small quantity.
Marble (white) <i>Silurian age.</i>	Yass, Coolalie, 190 miles from Sydney.	White and variegated marbles are being quarried, and a black variety occurs close by.	Large quantity available.	The stone is quarried mainly for lime, but small amounts are used locally as building stone.
Marble (red) <i>Permo-Carboniferous age.</i>	Kempsey, 311 mls. from Sydney by water.	A medium-grained marble. The ground mass, which is of a red to reddish brown, is studded with small white crinoid stems, and throughout the whole run veins of a white colour. Takes a high polish.	Practically unlimited quantity available.	This is a very fine ornamental marble and eminently suited for decorations on a large scale. The large columns in the National Art Gallery are made of this marble.

Other localities from which large quantities of first-class marble of various shades and patterns, and suitable for ornamental and building purposes can be obtained are:—Binalong, Bingera, Bowan Park, Buckeroo, Bungonia, Burrowa, Cooma, Cow Flat, Cudal, Gilmore, Goulburn, Michelago, Mudgee, Queanbeyan, Tarago, Tumut.

Limestone.—Extensive belts of limestone occur in the State, but up to the present a very limited quantity has been used as building stone. Generally the deposits are of exceptional purity, and little difficulty should be experienced in obtaining practically

unlimited quantities of stone containing from 90 per cent. to 95 per cent. calcium carbonate. Limestones suitable as building stones occur in very great quantities in the following districts:—Kempsey, Taree, Tamworth, Mudgee, Rylstone, Wellington, Molong, Rockley, Bathurst, Trundle, Marulan, Goulburn, Tarago, Michelago, Cooma and Yass.

SEDIMENTARY ROCKS—continued.

Building Stone.	Locality.	Character.	Quantity.	Examples.
Slate (Blue and green) <i>Ordovician</i> .	Chatsbury, some 17 miles from Goulburn, and 143 miles from Sydney.	The texture is uniformly fine. A few belts of relative hardness occur, but even these are fine in texture and quite suitable for roofing slate. An analysis of the slate gave a return of 66.60 per cent. silica, 16.14 per cent. alumina, 6 per cent. iron oxides, 0.54 per cent. lime and 2.56 per cent. magnesia. It possesses all the qualities of a good roofing slate.	A large quantity available. The width of the good slate belt, as measured across the strike of the beds, is from 360 feet to 380 feet.	Quarries have only recently been opened up. An up-to-date plant has been installed and considerable stripping done. Ten men were employed during the year 1914, and some 40,000 slates of different sizes were marketed for a return of £250.

2. Victoria.*

Victoria is rich in building stones, and certain of the granites, sandstones, marbles, limestones, and basalts have, from time to time, been freely utilized.

The following information has been compiled from reports supplied by officers of the Geological Survey, and from publications issued by certain Victorian Scientific Societies. "The Building Stones of Victoria," Part 1; "Sandstones," by Henry C. Richards, M.Sc. (Proc. Royal Soc., Vic., Vol. XXII. (N.S.), Part 2, 1909); and "Victorian Limestones," by Frederick C. Chapman, A.L.S., F.R.M.S. (Proc. Vic. Inst. of Architects, Vol. X., No. 1, 1912), have been freely consulted.

The more important granites, basalts, sandstones, marbles, and limestones are reviewed, with their localities, general character, and quantity. Examples of the stones may be seen in many of the buildings around Melbourne, and are referred to in the tabulated information herewith.

IGNEOUS ROCKS.

Building Stone.	Locality.	Character.	Quantity.	Examples.
Granite (salmon red)	Point Woolamai, Phillip Island. 90 miles from Melbourne by water.	A medium to coarsely crystalline rock, which takes a fine polish.	There is a large quantity available and a quarry has been opened near the water's edge.	This stone has been utilized in the Equitable Insurance Building, Collins Street, Melbourne.
Granite (brown red)	Werribee River, 5 miles from Bacchus Marsh, and about 36 miles from Melbourne by rail.	A finely crystalline rock which takes an even polish.	The quantity has not been ascertained.	None of this red brown granite, which is considered one of the best in the State, has, as yet, been quarried.
Granite (bright red)	Gabo Island, off the extreme east coast of Victoria, and about 340 miles from Melbourne by water.	A fine to medium crystalline rock of uniform texture.	A large quantity of handsome stone is available, but only a small amount has been quarried.	This stone is specially suitable for ornamental building purposes. It has been used in parts of the Customs House, and the Australian Insurance Co. Office, Melbourne.

* Data supplied by the Secretary for Mines, Mines Department, Melbourne.

IGNEOUS ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Granite (grey)	Trawool, near Yea, 60 miles from Melbourne by rail.	A coarse granite with one of its feldspars occurring as porphyritic white crystals throughout the mass. It is darker than the Harcourt stone and approaches a green-grey colour.	Plenty of good stone is available, and the quarry is close to the railway line.	Examples of this stone can be seen at Sargood Bros.' and Griffiths Bros., Buildings, Flinders Street, Melbourne.
Granite (dark grey)	Dandenong, 19 mls. by rail from Melbourne.	A finely crystalline rock of even texture, and retaining a fine polish.	A large quantity should be available.	Has not been quarried.
Granite (grey)	Harcourt, north of Castlemaine, 53 m. by rail from Melbourne, and within 4 miles of the Harcourt railway station.	A medium to coarsely crystalline light-grey coloured rock. For durability and usefulness it compares favorably with any of the Victorian granites.	This stone can be obtained in huge blocks. A large quarry has been opened and much of the granite utilised.	Examples of this stone may be seen at the Equitable Buildings, Collins St.; Princes Bridge; the State Savings Bank, Elizabeth St.; and Parliament House, Spring St., Melb.
Porphyry (dull pink)	Wangaratta, about 147 miles from Melbourne by rail.	A dense finely crystalline rock. The dull pink colour gives the stone, though mottled, a warm tone. It should prove a most durable and useful stone.	A large quantity is available, and it has been quarried in recent years.	"Collins House," in Collins St., near Queen St. Melbourne, is partly built of this stone. The Roman Catholic Cathedral at Wangaratta is another example.
Gabbro (dark green)	Dewing's Ford, 8 miles west of Geelong. Geelong is 50 miles from Melbourne by water, and 45 miles by rail.	A fine to medium crystalline rock of even texture and green colour. It should be well adapted for ornamental building purposes, but would be expensive to work on account of its hardness.	The outcrops of this rock are extensive, and indicate a large quantity.	Samples of this gabbro have been polished and show it to be an extremely handsome stone. No quarry has, as yet, been opened, nor any of the stone practically utilised.

Other localities worthy of mention, where granites suitable for building purposes occur, include Mt. Martha, Beechworth, Tallangatta, and Somerton.

IGNEOUS ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Basalt (dark blue-grey)	Lethbridge, 66 mls. by rail from Melbourne.	A close crystalline dark basalt. It is free from flaws, and dresses well.	A large quantity available. Large slabs have been quarried.	Used for certain parts of the Railway Buildings, Spencer St. Melbourne, the steps of Parliament House, Records Office, Crown Law Offices, and the Government Offices, Spring St., Melbourne.
Basalt (dull blue-grey)	Malmsbury, about 64 miles from Melbourne by rail.	Of slightly open texture and subject to joints, but large blocks are obtainable.	Large quantities of useful stone available.	The foundations of State Govt. Offices, Spring St., and the Records Office, Melbourne, are of this stone. It is much used in kerbings, and for foundations for monumental work.
Basalt (dark blue-grey)	Footscray, 4 miles from Melbourne.	A dense, dark blue basalt.	Large quantities available. Extensively quarried.	Some examples of this stone may be seen at St. Patrick's Cathedral, and the Telephone Exchange, Melbourne.

In addition to the preceding there are numerous basalt quarries in Victoria, those around Melbourne including Collingwood, Burnley, Clifton Hill, and Sunshine. All these basalts are valuable for paving and kerbing, and some of them, on account of their high specific gravity, have been used for pier and breakwater construction.

SEDIMENTARY ROCKS.

Building Stone.	Locality.	Character.	Quantity.	Examples.
Sandstone (white) <i>Carboniferous age.</i>	At the foot of the Grampian Ranges, 17 miles north-west of Stawell. The quarries are 172 miles from Melbourne by rail, a branch line connecting with the main trunk line at Stawell.	A very hard and compact stone, accompanied by segregation patches and veins of silica, the presence of which renders the stone expensive to dress.	Large quantities of uniform stone are available, and several quarries have been opened.	Buildings of this stone are:—Parliament House, Melbourne; portion of the National Museum, Melbourne; and recent additions to the General Post Office and Town Hall, Melbourne.
Sandstone (light brown) <i>Carboniferous age.</i>	Mount Abrupt, 3 miles from Dunkeld, which is 179 miles from Melbourne by rail.	A fine even-grained stone. One defect of this stone is the current bedding.	The stone has not been used to any extent. There is a large quantity obtainable.	Examples may be seen at the Women's Hospital, Carlton; and the Presbyterian Church, Hamilton.
Sandstone (light green-brown) <i>Jurassic age.</i>	Barrabool Hills, 5 miles west of Geelong, which is 45 miles by rail from Melbourne.	A fine even-grained soft sandstone. The stone is fairly uniform in texture, and the colour varies from a green-brown to a blue-grey. Grit bands occur here and there, but the stone dresses easily. It is only a fair stone considering the manner in which it weathers.	Large quantities of this stone are available. There are several large quarries which have been operated from time to time.	The old Police Court, and portions of the St. Paul's Cathedral, Working Men's College, Ormond College, and the Medical School Buildings, Melbourne, were partly built of this stone.
Sandstone (light brown) <i>Jurassic age.</i>	Apollo Bay, Otway, about 100 miles from Melbourne by water.	A fine even-grained sandstone somewhat similar to the Barrabool stone, but it weathers better.	Stone of this class occurs in quantity along the coast near Apollo Bay, and a quarry has been opened.	It has not been used to any extent. Examples are the recently built Windsor Exchange, and the Cape Otway Lighthouse.
Sandstone (light brown) <i>Permo-carboniferous age.</i>	Bald Hill, 3 miles from Bacchus Marsh, which is 32 miles from Melbourne by rail.	A soft even-grained sandstone, not very compact, iron-stained, and not uniform in hardness. It does not stand the weather well, and frets away easily.	A large quantity of this stone is obtainable, and it has been much used in the Bacchus Marsh district.	The Treasury Building, Melbourne, is built of this stone and many of the blocks have had to be replaced on account of weathering.
Sandstone (light buff) <i>Permo-carboniferous age.</i>	Darley, 6 miles to the north of Bacchus Marsh, and near Coimaidai. Bacchus Marsh is 32 miles by rail from Melbourne.	This stone is soft and fine-grained, and, as far as worked, proves of a poor quality.	Several small quarries have been opened.	The stone has been used in the Parliamentary Library, Melbourne, and the Treasury, Melbourne, to replace the defective blocks, but with little improvement.
Sandstone (white) <i>Ordovician age.</i>	Moorabool River, near Egerton. The nearest railway station is Gordons, 57 miles from Melbourne.	Both fine and coarse-grained sandstones occur. Both are very clean, and easily dressed.	At one exposure there is a fair thickness of fine compact stone of uniform colour.	It has been used locally for building purposes.
Sandstone (white to brown) <i>Permo-carboniferous age.</i>	Ballan district, notably at Pentland Hills, Pyke's Flat, and Greendale. Ballan is 50 miles from Melbourne by rail.	The Ballan stone is close-grained and white. The Pyke's Flat stone is of a blue-white colour, and is open-grained. The Pentland Hills stone is of a light brown colour; and that from Greendale a white to brown coloured serviceable stone.	The quantities available should be large.	These have only been utilized locally.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Marble (dark grey and dove-coloured, etc.) <i>Devonian age.</i>	South Buchan, E. Gippsland, 16 miles north of Nowa Nowa, which is 200 miles from Melbourne by rail.	Compact limestone or marble. Three varieties occur:— (i.) Dove-grey showing many fossils; (ii.) Dark grey showing many fossils; (iii.) Black with white veins or streaks.	Large quantities of the marble are available.	These marbles have been used in the additions to the Public Library, Melbourne, Carlyon's Hotel, Spencer Street, Majestic Theatre, Flinders Street, and the Commonwealth Offices, Melbourne. Two quarries are now working to supply marble for the Commonwealth Offices, London. At the Panama Pacific Exhibition, 1915, a gold medal was awarded for an exhibit of this marble.
Marble (various colours) <i>Silurian and Devonian ages.</i>	Limestone Creek, county of Benambra, N. Gippsland, over 100 mls. by road from Bairnsdale, which is an additional 171 miles by rail from Melbourne.	Handsome marbles of various colourings occur. Red mottled, red brecciated, green mottled, pink, white and blue-grey streaked, and white and yellow streaked are the main varieties.	Large quantities of the marble occur, but the development of these deposits is retarded by want of railway communication.	This marble has, so far, been quarried for exhibition purposes only.
Marble (grey encrinital) <i>Silurian age.</i>	Thomson River, near Toongabbie, Gippsland. Toongabbie is 109 miles from Melbourne by rail.	A compact limestone showing numerous encrinite fossils.	A considerable quantity is probably available, and some quarrying has been done.	It has been used for mantelpieces and table tops.
Marble (salmon pink and grey and dove-grey)	Martin's Creek, 20 miles north of Orbost on the Orbost-Bendoc road, East Gippsland. Orbost is within 230 miles of Melbourne, and will be shortly served by rail.	A very handsome marble of salmon pink and dove grey colour, compact and solid.	Large quantities are available, and a quarry has been opened.	Used in construction of the Agent-General's Office, London. An exhibit sent to the Franco-British Exhibition, 1908, gained a certificate and medal.

Palaeozoic marbles also occur at Mt. Wellington (Gippsland), Lilydale, Loyola, Deep Creek (Walhalla), Tyers River, Waratah (South Gippsland), and at Bindi, Wonnangatta, and Wombat Creek (North Gippsland). These have not yet been quarried, although some of them may in future prove to be of importance.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Limestone (yellow to red) <i>Janjukian age.</i>	At Batesford, Moorabool River, 5 miles north-west of Geelong, which is 45 miles by rail from Melbourne.	A yellow to red limestone composed of numerous fossils cemented together by a crystalline calcite base.	Large quantities available along the Moorabool River Valley.	This limestone has been used in the new Police Court Buildings, Melb., in the facings of the Malvern Post Office, and in the Roman Catholic Cathedral, Bendigo.
Limestone (snuff-brown colour) <i>Janjukian age.</i>	Waurin Ponds, 6 m. south-west of Geelong, which is 45 miles by rail from Melbourne.	An impure limestone containing iron oxide and clayey matter. It makes a fair building stone when carefully selected.	A large quantity is available, and several quarries have been worked on and off for many years.	It has been utilised in the construction of parts of the Working Men's College, St. Paul's Anglican Cathedral, and the Railway Viaduct Buildings, Melbourne.
Limestone (white) <i>Janjukian age.</i>	Portland, 251 miles from Melbourne by rail. Water carriage also available.	A white polyzoal limestone resembling the Mt. Gambier limestone. It is reputed to harden on exposure.	There appears to be a considerable thickness of this limestone.	It would probably make a good building stone.

Other Tertiary limestones of Janjukian age, and of less importance, but suitable as building stones, occur at Torquay, Drysdale, and Grange Burn. At Sorrento and Warrnambool some recent limestones (dune limestones of Pleistocene age) have been used locally for building purposes, being sometimes very hard and durable.

Flagstones and slates occurring in Victoria have been quarried for paving and building purposes. At Castlemaine useful flagstones have been largely employed for paving and hearthstones. A number of quarries were formerly in operation at Castlemaine, and large quantities of stone were made available for the Melbourne building trade, but at present there is no demand for the stone.

At Percydale slates have been quarried for hearthstones, and flagstones of slate were at one time much used. At Gisborne, Glenmaggie, Meredith, and Nowa Nowa, useful slates are known to occur, and those at Nowa Nowa will be fairly accessible on the completion of the Bairnsdale-Orbost railway.

3. Queensland.

Unfortunately there is not sufficient information available to permit of a detailed statement being given in regard to the quantity and quality of Queensland building stones.

4. South Australia.*

The principal building stones that have been employed in the construction of public and private buildings in the State of South Australia are mentioned in the accompanying table. In addition to those which appear in the table there are many others in various parts of the State which are used locally to a limited extent.

It will be seen that the great series of sediments of Cambrian age contributes a considerable portion of the building stone used in the State, and the Tertiary system provides important and useful limestones and dolomite.

There are many known occurrences of rocks which may in the future be utilized as materials of construction, but which have remained undeveloped owing to their relative inaccessibility. For example, the granites at Wudinna and Moody have recently had transport facilities provided by the construction of railway lines on Eyre's Peninsula. Other granites, suitable for building purposes, are those of Midgee, 25 miles north-east of Franklin Harbour, and Cape Willoughby at the eastern extremity of Kangaroo Island.

The felspar porphyry, the largest development of which is in the Gawler Ranges, is a very handsome rock, and would provide excellent material for decorative work or for composite artificial stones.

The Pre-Cambrian sediments of Eyre's Peninsula comprise some marbles which may prove useful in the future. The white marble of medium grain found at Ulgera Gap, 11 miles north-west of Cowell, is perhaps the most accessible of these.

IGNEOUS ROCKS.

Building Stone.	Locality.	Character.	Adaptability and Quantity.	Examples.
Granite <i>Palæozoic</i>	West Island, 1 mile S.W. of Rosetta Head, Encounter Bay; about 100 miles by sea from Port Adelaide.	A coarse-grained grey granite, porphyritic through development of large felspar crystals. Resembles the granite of Granite Island and Port Elliott.	Excellent material, and probably the most advantageously situated development of granite in the State. Has been used principally in the construction of bases for important city buildings. Very large quantity available.	Base courses and steps of Parliament House and St. Peter's Cathedral, Adelaide. Bases of the Bank of Australasia and the Bank of New South Wales, Adelaide.

* Data supplied by L. Keith Ward, Esquire, B.A.B.E., Government Geologist, South Australia.

IGNEOUS ROCKS—*continued.*

Building Stone.	Locality.	Character.	Adaptability and Quantity.	Examples.
Granite <i>Palæozoic</i>	Swanport, 3½ miles S. S. E. of Murray Bridge, which is 60 miles by rail from Adelaide.	A coarse-grained and pale reddish rock, the colour of which is best shewn by polished surfaces. The roughly-dressed rock is more nearly grey than red.	Can be readily dressed to specified shapes, and polishes well. It makes a handsome and reliable stone for foundations, base courses and monuments. A large quantity available.	Base courses of the Adelaide Railway Station, the new Education block, the Savings Bank, National Mutual Buildings. Bases of the Soldiers' Monument, North Terrace; Colonel Light's and Kingston's statues, Victoria Square; Hughes' Statue at the University of Adelaide.
Granite <i>Palæozoic</i>	Palmer, 1 mile N. W. of Palmer and 11 miles W. N. W. of Mannum on the Murray, 40 miles by road from Adelaide.	A coarse-grained granite, porphyritic in part, and to a certain extent gneissose in structure. The colour is pale reddish.	Good material, but handicapped by its position. Very little worked. It is used for the same purposes as those to which the Swanport granite has been applied. Very large quantity available.	Base of the Queen's Statue, Victoria Square. Base courses of the Beehive Buildings, King William Street, Adelaide.
Granite <i>Palæozoic</i>	Monarto, on the Railway line, 3¼ miles E. of Monarto Railway Station and 55 miles from Adelaide.	A pale grey granite of medium to fine grain. The structure is slightly gneissose.	Suitable for foundations and bases, but hitherto neglected in favour of the coarser grained varieties from Swanport and Encounter Bay. Very large quantity available.	A considerable quantity is used by the Municipality of Adelaide for kerbing in the city streets, also facings of the South Australian Gas Company's premises, King William Street, Adelaide.

SEDIMENTARY ROCKS.

Slate <i>Cambrian</i>	Mt. Lofty Ranges near Adelaide; chiefly at: Glen Osmond, 4 miles by road S. E. of Adelaide; Mitcham, 4 miles by road S. of Adelaide; Tapley's Hill, 8 miles by road S. S. W. of Adelaide.	A dark bluish to yellowish grey clay slate. The rock is thin-bedded, but does not cleave readily along the bedding planes. The joint-planes are somewhat irregularly disposed, and are tinted various shades of yellow and brown by oxide of iron.	The rock is quarried in blocks of convenient size for building purposes, and the blocks are bounded by approximately rectangular faces. The stone is usually employed with the iron-stained joint planes as facers, and the variegated appearance of large walls is pleasing. The buildings constructed mainly of this stone are dressed with sandstone, limestone, brick, or cement. This slate is used in the base courses of many buildings in Adelaide. Very large quantity available.	The Stow Memorial Church and the Baptist Church, in Flinders St., Adelaide, are examples in which the dressings are of sandstone. The Government Printing Office is an example in which the Murray Bridge limestone is used for dressings. Innumerable public and private buildings in Adelaide are constructed of this stone.
Slate <i>Cambrian</i>	Various places on the northern railway line, chiefly at: Auburn, 7½ miles by rail from Adelaide; and Tarlee, 54 miles by rail from Adelaide.	A rock varying from a thin-bedded clay slate to an argillaceous sandstone, and readily cleavable with the bedding planes into blocks or flags. The unweathered stone is dark slate-blue in colour, and the weathered material brownish grey. Joint planes are stained brown by oxide of iron.	Easily worked stone, obtainable in sizes and shapes convenient for use in building construction. Variable results have been obtained from this stone, but the best material is of good quality. Careful selection of stone in some quarries is necessary, for the good stone is in some places associated with material that rapidly frets away. Very large quantity available.	The Auburn slate has been used for the base courses of the Adelaide School of Mines, and for many buildings at Auburn. Tarlee stone is used in the base of the brick portion of the Museum, and in the construction of many railway stations, e.g.—Burra, Farrell's Flat, Riverton, Roseworthy, and Adelaide. It is also used in the Islington Railway Workshops.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Adaptability and Quantity.	Examples.
Flagstone <i>Cambrian</i>	Mintaro, 5½ miles west of Mintaro railway station, which is 83 miles north of Adelaide.	A dense bluish-grey slate or argillaceous sandstone, readily cleavable into flags. The cleavage is coincident with the bedding planes. Very large flagstones are obtainable.	It is used for all purposes to which a high-class flagstone may be put. The quality is unsurpassed, and the reliability has been proved by over 40 years of wear. It has proved adaptable for use in interiors as well as in pavements and steps exposed to the weather and to heavy traffic. Very large quantity available.	As hearthstones, sills, steps, corridor flooring, and paving stones, etc., in many public and private buildings in South Australia. It has been used in the construction of the corridor floors in Parliament House, Adelaide, and of the shelving and corridor floors of the Lands Titles Offices, Melbourne.
Roofing Slate <i>Cambrian</i>	Willunga, 34 miles by rail from Adelaide.	A thin-bedded bluish grey slate, the cleavage of which is coincident with the bedding-planes. The prepared slates are thicker and softer than the best Welsh roofing slates, and the thickness cannot be reduced without sacrificing strength. All workings are shallow and the quality of slates may improve in depth.	It has been used chiefly for roofing private dwellings. Attempts to use the thicker slates as flagstones have not been successful, as the stone is too soft and apt to flake. Very large quantity available.	The roofs of most buildings at Willunga, and of many houses in Adelaide, Melbourne and Sydney.
Limestone <i>Tertiary</i>	Murray Bridge; chief quarries are situated on the left bank of the river, 1 mile south of Murray Bridge, which is 60 miles by rail from Adelaide.	A light, buff-coloured stone, the texture of which is on the whole even and the grain fine. Shells are visible in parts of the rock. The stone, as quarried, requires careful picking in order to remove portions traversed by pipe-like cavities which are either void or filled with clay.	The rock has been used effectively on a large scale in many public buildings, either as the principal material of construction or in the form of dressings for buildings constructed mainly of slate. Very large quantity available.	The Art Gallery, Public Library and Museum, North Terrace, Adelaide; The Register Buildings, Grenfell Street; the superstructure of St. Peter's Cathedral. The dressings of the Government Printing Office, Adelaide.
Limestone <i>Tertiary</i>	Mt. Gambier and vicinity. Mount Gambier is 305 miles by rail from Adelaide.	A white porous-textured limestone, composed largely of polyzoal remains. It is soft and easily worked when freshly quarried, but hardens on exposure. It is obtainable in very large blocks.	It can be readily obtained at a low cost in any form desired. The porosity is so marked that buildings constructed of this stone are almost invariably built with hollow walls. It is used in some cases for dressings in buildings built of other limestone, but in Mt. Gambier it is customary to use the polyzoal limestone as the chief building material with dressings of dolomite. Very large quantity available.	The Convent of Mercy, the Methodist Church, the High School, and the Commercial Flour Mills at Mt. Gambier. Many private buildings in the Southern district. In the form of quoins and dressings in the Institute and Presbyterian Church at Penola, and in the Institute at Naracoorte.
Travertine Limestone <i>Tertiary to Recent</i>	Northern suburbs of Adelaide and many other places in the State.	A yellowish limestone, generally showing concretionary structure.	A hard and durable stone, obtainable in small blocks and more suitable for building private houses than for larger structures. Very large quantity available.	Many residences in the older parts of North Adelaide; the old portion of the Adelaide Railway Station; Alberton and Bowden Railway Stations.
Limestone <i>Tertiary to Recent</i>	Near Port Lincoln, in low lying areas.	Soft white limestone, hardening on exposure.	Suitable for small buildings and private residences. Large quantity available.	Many houses at Port Lincoln.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Adaptability and Quantity.	Examples.
Dolomite <i>Tertiary</i>	Near Compton, about 6 miles N.W. of Mt. Gambier, which is 305 miles by rail from Adelaide.	Crystalline dolomite, either grey or yellowish red in colour.	A dense rock which is more costly to quarry and dress than the polyzoal limestone, and hence used principally in the form of dressings for buildings constructed of the latter rock. Large quantity available.	Red dolomite is used in the columns of St. Peter's Cathedral, Adelaide; in Hospital, Town Hall, the Institute, and Blue Lake Pumping Station at Mt. Gambier. Dolomite is also used in many private buildings at Mt. Gambier.
Marble <i>Cambrian</i>	Angaston; 1½ miles south of Angaston railway station, which is 51½ miles from Adelaide.	Coarse-grained white, grey and pink marble, the grey varieties being most abundant and the pink the rarest. Different shades of colour are closely associated.	Very large blocks are obtainable and the stone lends itself to high-class architectural work and to large structures. The grain is too coarse for fine work. The stone has been much in demand for monumental work, and has also been used in the form of flagstones. Very large quantity available.	The Mechanics' Institute at Angaston is built of stone of two shades, grey and almost white. Many dwelling houses in the Angaston district are built of this marble. Pale grey stone is being shipped to London for use in the construction of Australia House.
Marble <i>Cambrian</i>	Kapunda; 8 miles S.E. of Kapunda, which is 48 miles by rail from Adelaide.	Coarse-grained white, grey and cream coloured marble. The grey-tinted stone closely resembles that of Angaston.	This marble has been applied to the same uses as that from Angaston. It is rather less easy to work, and is less accessible. Very large quantity available.	The superstructure of Parliament House, Adelaide.
Marble <i>Cambrian</i>	Macclesfield; 1 mile west of Macclesfield, which is 25 miles by road from Adelaide.	Medium to fine-grained and pink marble. The pink variety is streaked with grey.	A handsome stone which takes a splendid polish. The parti-coloured varieties are specially suited to decorative and monumental work. Very large quantity available.	The Clarendon weir across the Onkaparinga River is faced with massive blocks of this marble.
Sandstone <i>Cambrian</i>	Tea Tree Gully, 13 miles by road N.E. of Adelaide.	White to light buff-coloured stone of even texture.	A sandstone that dresses well and has proved very durable. It may be used with advantage by itself or in the form of dressings in buildings constructed mainly of Mitcham or Glen Osmond slate. It has resisted weathering better than any other South Australian or imported sandstone in Adelaide buildings. Very large quantity available.	The Law Courts, Adelaide; the Town Hall, Adelaide; the old portion of the General Post Office, Adelaide.
Sandstone <i>Cambrian</i>	Aldgate; half-mile W. of Aldgate Railway station, which is 23 miles from Adelaide.	White to light buff-coloured stone of variable quality. In part argillaceous and friable.	This stone is apt to fret on exposure. It is very soft when quarried. Large quantity available.	The Elder Hall, University of Adelaide; the piers of St. Peter's Cathedral.
Sandstone <i>Probably Permo-carboniferous</i>	Finniss River; 2 miles N.W. of Finniss railway station, which is 60 miles from Adelaide.	Pale grey to buff-coloured stone, part of which is notable for a highly-contorted grain which becomes more and more prominent on dressed surfaces as weathering proceeds.	Stone hitherto quarried is of rather variable quality. The sawn surfaces become very rough on long exposure and the stone is apt to fret away. Large quantity available.	The superstructure of the Bank of New South Wales, Adelaide; the pillars and coping stones, University Gates; the Strathalbyn Railway Station.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Adaptability and Quantity.	Examples.
Sandstone Cambrian	Mt. Lofty Ranges near Adelaide, notably: Sheoak Hill, 2 miles E.S.E. of Belair which is 14 miles by rail from Adelaide; immediately to S. of Mt. Lofty railway station, 19½ miles from Adelaide; Mitcham, 5 miles by road S. of Adelaide; Glen Osmond, 5 miles by road S.E. of Adelaide.	Soft pale buff-coloured sandstone, which hardens somewhat after being quarried.	Suitable for small buildings, such as residential villas, of which it forms either the walls or base courses. It is in very many cases used with dressings of red brick. Very large quantity available.	Many private residences in and around Adelaide.

5. Western Australia.*

Western Australia is particularly rich in building stones, but, owing to the fact that the sedimentary series occupy but a very limited area, it naturally follows that they for the most part belong to the crystalline series.

These building stones, although excellent in many ways, are not so good as they will be later when the quarry faces have penetrated further into the virgin rock, but when it is borne in mind that only a very limited quantity of rock has yet been removed, it is remarkable how fresh the stone is.

Although this State contains a great variety of granites, so far only one of these has been worked owing to the fact that it existed in the most accessible positions, but there is not the least doubt that in the near future other fine building stones of this class will be quarried.

The only sedimentary stone worthy of note is the Donnybrook freestone, which is now being used largely in the erection of the principal buildings of the metropolis.

ACID IGNEOUS ROCKS.

Building Stone.	Locality.	Character.	Quantity.	Examples.
Granite (greyish-white)	Mahogany Creek, 19 miles from Perth, on Smith's Mill railway line.	Coarse-grained orthoclase-biotite granite sometimes much kaolinised.	Unlimited.	Basement, ground and 1st floor of New G.P.O., Perth, rock-faced and fine-axed work. A beautiful stone taking a high polish.
Granite (greyish-white)	Boya, 14 miles from Perth, on Smith's Mill railway line.	Medium-grained orthoclase-microcline biotite granite with chloritis-biotite scales considerably kaolinised, but occasionally micacised, while epidote grains are associated with the biotite aggregates. Appearance closely resembles that from Mahogany Creek.	Unlimited.	No buildings. Used exclusively for granite cubes for street pitching and concrete work.
Granite (greyish-white)	Meckering, 89 miles from Perth, on the Eastern Railway line.	Fine-grained chloritis biotite muscovite granite; the feldspars are orthoclase and microcline, which are kaolinised and micacised. Weight per cub. ft., 175.7 lbs.	Unlimited.	Basement of Art Gallery and Museum and Supreme Court buildings, where it stands well although looking rusty in places and rather lacking in appearance.

* Data supplied by the Secretary for Mines, Department of Mines, Perth.

ACID IGNEOUS ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Granite (greyish)	Kellerberrin, 133 miles from Perth, on the Eastern railway line.	Coarse-grained orthoclase-microcline granite with flakes of brown biotite. More or less porphyritic. Weight per cub. ft., 171 lbs.	Unlimited.	New Public Library. Has a good appearance and takes a high polish.
Granite	Roelands, 100 miles from Perth on the South Western Railway line.	Coarse-grained biotite microcline granite with large pseudo crystals of felspar, the latter being generally kaolinised and micacised.	Unlimited.	Bunbury Breakwater.

BASIC IGNEOUS ROCKS.

Epidiorite and partially amphibolised dolerite.	Gooseberry Hill, Greenmount and Parkerville, 13 to 19 miles from Perth.	Fine-grained and consisting of hornblende, chlorite, augite, pyrites in varying amounts. Very hard and fairly fresh.	Occurs in large dykes.	Used so far for road-making and pitching.
Basalt (greyish-black)	Bunbury.	Very fine-grained sometimes porphyritic black rock, the porphyritic variety shewing large felspar crystals.	Sheet flow or sill of considerable extent.	Used for road-making and steps to local buildings.

SEDIMENTARY ROCKS.

Slate	Bridgetown, 174 miles from Perth.	Almost flinty greenish and greenish-white rock of very imperfect fissility.	Unknown.	Not used so far. Unsuitable for roofing.
Slate (Brown-chocolate) <i>Silurian?</i>	Stirling Range, 274 miles from Perth.	Massive slate cleaving into large slabs. Not suitable for roofing owing to the imperfect nature of the fissility.	Unknown.	Not used so far.
Slate (Grey-blue to Chocolate) <i>Permo-Carb.?</i>	Armada, Beenup and Cardup, 19 to 25 miles from Perth on South Western railway line.	Massive slate cleaving into large slabs. Not suitable for roofing.	Unknown.	Used for pavements, but principally for dry-pressed bricks.
Sandstone (white through cream to yellow and brick red, also sometimes variegated) <i>Permo-Carb.?</i>	Donnybrook, 132 miles from Perth on the railway.	Fine-grained felspathic sandstone with kaolinic cement, an excellent freestone suitable for rock-faced, dressed and all sorts of tooled and carved work. Weight per cub. ft., 129 to 144 lbs.	Large number of quarries over a large area, but quantity unknown.	Upper portion of Parliament House; Supreme Court; Police Court Station and Quarters; Museum, Art Gallery and Library; A.M.P. Buildings; Millars Jarrah Forests Ltd.; G.P.O., Perth; Customs House, Fremantle; Dalgety's Buildings; Haynes, Robinson & Cox; Telephone Exchange; Bunbury Colliery and Midland Junction Court Houses; Government Stores, Perth; Public Health Offices, Perth; Perth Technical School; Fremantle Railway Station; Guilford Grammar School Chapel (sculpture and carved work); Tower and Spire of St. John's Church, Fremantle.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Calcareous Sandstone (creamy-white) <i>Eocene?</i>	Rottneat Island, 10 miles off Fremantle.	A fine-grained free-stone in which the sand grains are cemented by calcareous matter. Suitable for rock-faced dressed and when selected for tooled and carved work. Weight per cub. ft., 142.5 lbs.	In large quantity, but not now worked owing to the superiority of the Donnybrook stone.	Employed in first section of Museum Buildings and in Parliament Houses.
Calcareous Sandstone (creamy-white) <i>Eocene?</i>	Cottesloe and Fremantle.	A freestone of variable texture in which the sand grains are united by calcareous matter. Suitable for rock-faced work but not for dressing or carving.	Extensive deposits all along the coast.	Government House Ball-room, and employed extensively in the older buildings of Perth and Fremantle, but now only used for foundations.
Clay Rock (white to terracotta)	Walsh's Quarry, Kalgoorlie.	Fine-grained compact kaolinised clay rock. Soft when freshly quarried, but develops a resistant surface on exposure.	Unknown.	Public Buildings, Kalgoorlie.
Clay-shale (banded brown and white) <i>Permo-Carb.?</i>	Moora, 108 miles from Perth on Midland railway.	Fine-grained compact kaolinised shale. Fairly resistant to absorption and developing a surface on exposure. Can be worked and moulded to suit all building requirements.	Unknown.	Court House, Post Office, and Police Buildings, Moora.

Stone of a similar character has been used both at Coolgardie and Yalgoo in public buildings, and in both places it is of a red colour and looks exceedingly well when walled, but is not a good weathering material. At Mullewa, however, there is a supply of a similar stone which will probably be found suitable for building purposes.

SEDIMENTARY ROCKS—*continued.*

Building Stone.	Locality.	Character.	Quantity.	Examples.
Diatomaceous Rock (french-gray) <i>Cretaceous?</i>	Gingin and Dandaraga, 40 to 80 miles north of Perth on Midland railway.	A very fine-grained rock, composed of the siliceous shells of diatoms with a little kaolin cementing material. It is easily worked and moulded, being soft when freshly quarried, case hardens on exposure to the weather.	Unknown.	Schoolhouse and Post Office at Dandaraga, and private residences at Gingin.

6. Tasmania.*

There is an abundance of building stone in Tasmania, both igneous and stratified. In the districts where it is plentiful, it is employed for buildings, and to a larger extent for road making. The total annual output is about 70,000 tons at present, but this may be expected to increase with the general progress of trade and population.

* Data supplied by the Secretary for Mines, Dept. of Mines, Hobart.

IGNEOUS ROCKS.

Building Stone.	Locality.	Character.	Quantity.	Examples.
Basalt.	On the North Coast generally, in the North West Highlands, the Midlands and Southern Tasmania.	Compact to vesicular. A dark Tertiary basalt. Where fresh, the rock is resistant and would be fairly durable, but is mostly irregularly fissured and short jointed.	Unlimited quantities can be quarried.	The quarries in this stone have been worked only for road metal.
Diabase.	Hobart, Southern Tasmania generally, Midlands, Launceston and Northern Tasmania.	A medium grained to coarse pyroxene-felspar rock, very tough; colour, dark green to greenish grey. The rock is massive and has an irregular fracture. It is consequently difficult to dress. Numerous quarries have been opened in this stone in nearly all parts of the island.	Is available in practically limitless quantities.	It is used extensively for road metalling, road culverts, bridge work, garden walls, pavements, house foundations, and in some instances for the superstructure of buildings. Examples may be seen everywhere in Hobart and Launceston in the foundations of houses and public buildings, and on the public roads. Cottages at the Launceston Electric Generating Station are built wholly of this rock.
Gabbro and Serpentine.	Near Beaconsfield, near Dundas, in Heazlewood and Heemskirk districts, Macquarie Harbour, near Point Hibbs, near Mt. Wedge and on Styx River.	Even grained to coarsely crystalline. Some of it could be used in ornamental architecture, but generally speaking would tend to weather if employed for outside purposes. Some varieties are distinctly handsome.	Large quantities of the rock could be quarried, but the tonnage would be reduced by exclusion of unduly soft and fissured varieties.	The only quarries which have been opened in this rock are those in the Heemskirk and Heazlewood districts for road metalling, and near Beaconsfield for ornamental rock.
Granite.	N.E. and E. Tasmania, Riana, Hampshire Hills and N.W. highlands, Mt. Heemskirk and Meredith Range.	Medium to coarse grained crystalline rock, frequently porphyritic, with large crystals of felspar. Colour ranges from light grey to pink. Places for quarries would have to be selected where the rock is fresh.	Would be available in large quantities.	No quarries have been opened in granite so far, and the rock has not been utilised. With increasing population there will be a wide field open for its employment in various branches of the building art.

About 60,000 tons of igneous rock are raised annually for building and road construction.

SEDIMENTARY ROCKS.

Numerous quarries have been opened in Tasmania in Trias-Jura sandstones for building materials, and the stone obtained from them has proved of excellent service in building and decorative work. The quarries are always situated in favourable positions on or near main roads or lines of railway, and are thus easily accessible for trade. They are mostly on privately-owned land and as a rule are worked in a more or less intermittent and unmethodical manner. Still, they have supplied good stone for numerous public and private buildings in Tasmania, as well as for some important edifices in Victoria. Some of the deposits are, however, Government reserves.

About 6,000 tons of sandstone are raised annually for building.

SEDIMENTARY ROCKS—*continued*.

Building Stone.	Locality.	Character.	Quantity.	Examples.
Sandstone.	Knocklofty, Hobart Waterworks, Risdon, Bellerive, Tea Tree, Brighton, New Norfolk and other places in Southern Tasmania. At Ross, Campania, Oatlands, Okehampton, Spring Bay, and elsewhere in the Midlands and on the East Coast, on the West Tamar and in the Patersonia district.	Even grained texture, white, through pink, to light brown colour. The pinkish varieties are esteemed for ornamental stone work. When freshly quarried the stone is often rather soft and friable, but hardens with time and exposure. It is easy to dress. The quartzose varieties are sought in selecting a site for a quarry, as some of the stone, particularly when associated with the Trias-Jura coal measures is distinctly felspathic and soft. The Patersonia stone has been tested to a pressure of 10,000 lbs. to the square inch. The better varieties of sandstone are extremely durable.	About 6,000 tons are raised annually for building purposes, but much larger quantities could be obtained if the quarries were worked more regularly and systematically.	The Southern quarries have provided stone for several important public buildings, such as the Tasmanian Museum, Town Hall, General Post Office, St. David's Church, St. George's Cathedral, and numerous other buildings, both public and private. The Tea Tree and Brighton quarries have supplied stone for the Launceston Post Office. The Ross quarries have provided stone for the bridge over the Macquarie at Ross, the Ross Municipal buildings; and for St. John's Church, Commercial Bank of Tasmania, A.M.P. Building and the Commercial Travellers' Club in Launceston. The Campania quarries yielded stone for the Customs House, Hobart, The Mechanics' Institute, Launceston, is built of stone from the West Tamar quarry. Some of the stone from Patersonia has been used in the enlargement of St. John's Church, Launceston, and other buildings.
Silurian Limestones.	Ida Bay and Tyenna, Southern Tasmania; Winkleigh, Railton, Chudleigh, Mole Creek; Leven, Forth, Don, Iris and Blythe Rivers in Northern Tasmania; Queenstown and Zeehan in Western Tasmania. Gordon, Denison and Franklin Rivers in Western highlands.	Grey to dark bluish limestone, developing in places to impure argillaceous varieties. The pure stone, where unfissured and compact would be of some use for building purposes.	Large and indeterminate quantities could be obtained, but the only quarries opened hitherto are for producing agricultural and building lime, and road metal.	
Flagstones and Slates. (<i>Pre-Silurian</i>).	N. and N.W. Coasts, Surprise River, South Coast and King Island.	Dark grey to bluish. Cleavages apt to be soft jointed. Further prospecting required to locate occurrences of stone suitable for roofing and window-sills, hearthstones, etc.	Small and inconclusive trials have been made of slates on N. W. coast and King Island.	

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 in the following pages of this section, this progress has been particularly in evidence since the abolition of inter-colonial tariffs which took place upon the creation of the Commonwealth of Australia in 1901.

(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 previous 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 working classes, 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 three years 1912 to 1914, will serve to indicate generally the progress which has been made:—

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 to 1914.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF FACTORIES.							
1861	601	531	...	...	...	...	...
1871	1,813	1,740	...	...	...	...	...
1881	2,961	2,488	571†	823†	...	...	...
1891	3,056	3,141	1,328†	996†	175	...	...
1901	3,367	3,249	2,110†	1,335†	662	420*	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	5,268	5,650	1,796	1,323	787	603	15,427
NUMBER OF EMPLOYEES.							
1861	...	4,395	...	...	...	...	...
1871	13,583	19,569	...	5,629†	...	...	...
1881	31,191	43,209	...	10,995†	...	...	...
1891	50,879	53,525	...	14,099†	...	...	...
1901	66,135	66,529	26,172†	19,283†	12,198	7,466*	197,783‡
1911	108,624	111,948	37,156	27,885	15,799	10,298	311,710
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	116,462	118,399	43,282	26,874	17,640	8,922	331,579

* For 1902. † Not on same basis as other States. ‡ Not on same basis for some of States as in 1911.

NOTE.—In this and all subsequent tables, except where specially mentioned, "Number of Employees" includes working proprietors.

Since the inauguration of the Commonwealth, the throwing open of the whole of the Australian markets to the industrial products of each State has facilitated the internal distribution of the products of Australian industry.

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 either 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. 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. A definite classification of industries 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 six 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 on a more uniform basis throughout.

3. Classification of Manufacturing Industries.—Under the classification adopted at the Conference of Statisticians held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein; many of the categories were also 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 shews 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.</p> <p>Boiling-down, Tallow Refining, etc.</p> <p>Tanneries</p> <p>Woolscouring & Fellmongering</p> <p>Chaff-cutting, etc.</p> <p>CLASS II.—OILS AND FAT, ETC.</p> <p>Oil and Grease</p> <p>Soap and Candles</p> <p>CLASS III.—STONE, CLAY, GLASS, ETC.</p> <p>Bricks and Tiles</p> <p>Glass (including Bottles)</p> <p>Glass (Ornamental)</p> <p>Lime, Plaster, Cement and Asphalt</p> <p>Marble, Slate, etc.</p> <p>Modelling, etc.</p> <p>Pottery and Earthenware</p> <p>CLASS IV.—WORKING IN WOOD.</p> <p>Boxes and Cases</p> <p>Cooperage</p> <p>Joinery</p> <p>Saw Mills</p> <p>Wood-turning, etc.</p> <p>CLASS V.—METAL WORKS, MACHINERY, ETC.</p> <p>Agricultural Implements</p> <p>Brass and Copper</p> <p>Cutlery</p> <p>Engineering</p> <p>Galvanised Iron-working</p> <p>Ironworks and Foundries</p> <p>Lead Mills</p> <p>Railway Carriages</p> <p>Railway and Tramway Workshops</p> <p>Smelting</p> <p>Stoves and Ovens</p> <p>Tinsmithing</p> <p>Wireworking</p> <p>Other Metal Works</p> <p>CLASS VI.—FOOD AND DRINK, ETC.</p> <p>Bacon Curing</p> <p>Butter Factories</p> <p>Butterine and Margarine</p> <p>Cheese Factories</p> <p>Condensed Milk</p> <p>Meat and Fish Preserving</p> <p>Biscuits</p> <p>Confectionery</p>	<p>Corn-flour, Oatmeal, etc.</p> <p>Flour Mills</p> <p>Jam and Fruit Canning</p> <p>Pickles, Sauces, and Vinegar</p> <p>Sugar Mills</p> <p>Sugar Refining</p> <p>Aerated Waters, Cordials, etc.</p> <p>Breweries</p> <p>Condiments, Coffee, Spices, etc.</p> <p>Distilleries</p> <p>Ice and Refrigerating</p> <p>Malting</p> <p>Tobacco, Cigars, etc.</p> <p>CLASS VII.—CLOTHING AND TEXTILE FABRICS.</p> <p>Woollen and Tweed Mills</p> <p>Boots and Shoes</p> <p>Slop Clothing</p> <p>Clothing (Tailoring)</p> <p>Dressmaking and Millinery—Makers' material</p> <p>Customers' material</p> <p>Dyeworks and Cleaning</p> <p>Furriers</p> <p>Hats and Caps</p> <p>Waterproof and Oilskin</p> <p>Shirts, Ties, and Scarfs</p> <p>Rope and Cordage</p> <p>Tents and Tarpaulins</p> <p>CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.</p> <p>Electrotyping & Stereotyping</p> <p>Paper-making, Paper Boxes, Bags, etc.</p> <p>Photo-engraving</p> <p>Printing and Binding</p> <p>CLASS IX.—MUSICAL INSTRUMENTS, ETC.</p> <p>Musical Instruments and Sewing Machines</p> <p>CLASS X.—ARMS & EXPLOSIVES</p> <p>Arms and Explosives</p> <p>CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC.</p> <p>Coach and Wagon Building</p> <p>Cycles</p> <p>Perambulators</p> <p>Saddlery, Harness, etc.</p> <p>Spokes, etc.</p>	<p>CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING.</p> <p>Docks and Slips</p> <p>Sailmaking</p> <p>Ship and Boat Building and Repairing</p> <p>CLASS XIII.—FURNITURE, BEDDING, ETC.</p> <p>Bedding, Flock, & Upholstery</p> <p>Billiard Tables</p> <p>Furniture and Cabinet Making</p> <p>Picture Frames</p> <p>Window Blinds</p> <p>CLASS XIV.—DRUGS AND CHEMICALS, ETC.</p> <p>Chemicals, Drugs, and Medicines</p> <p>Fertilisers</p> <p>Paints, Varnishes, and By-products</p> <p>CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS.</p> <p>Surgical, Optical, and other Scientific Instruments</p> <p>CLASS XVI.—TIMEPIECES, JEWELLERY, & PLATED WARE.</p> <p>Electro-plating</p> <p>Manufacturing Jewellery, etc.</p> <p>CLASS XVII.—HEAT, LIGHT, AND POWER.</p> <p>Coke Works</p> <p>Electric Apparatus</p> <p>Electric Light and Power</p> <p>Gas Works and Kerosene</p> <p>Lamps and Fittings, etc.</p> <p>Hydraulic Power</p> <p>CLASS XVIII.—LEATHERWARE (N.E.I.)</p> <p>Leather Belting, Fancy Leather, Portmanteaux & Bags</p> <p>CLASS XIX.—MINOR WARES.</p> <p>Basket and Wickerware, Matting, etc.</p> <p>Brooms and Brushware</p> <p>Rubber Goods</p> <p>Toys</p> <p>Umbrellas</p> <p>Other Industries</p>
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§ 2. Number of Manufactories.

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 manufactories in the Commonwealth during the years 1903 and 1909 to 1914, it should be noted that not only are the results affected by differences of classification prior to 1907, but also that the number of

factories from year to year does not unequivocally indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers. (See § 3, 5.)

MANUFACTORIES OF THE COMMONWEALTH, 1903, and 1909 to 1914.

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
1903 ...	3,476	4,151	2,001*	906*†	586	431	11,551
1909 ...	4,581	4,755	1,420	1,265	632	576	13,229
1910 ...	4,821	4,873	1,563	1,278	680	635	13,850
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 ...	5,268	5,650	1,796	1,323	787	603	15,427

* Not on same basis as other States. † 1904 results, those for 1903 not available.

(i.) *Classification of Factories in Commonwealth, 1909 to 1914.* The following table shews the total number of factories in the Commonwealth at the end of each year from 1909 to 1914, classified on the basis indicated in § 1, 3 hereof:—

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1909 to 1914.

Class of Industry.	1909.	1910.	1911.	1912.	1913.	1914.
	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	855	855	857	871	907	870
II. Treating oils and fats, animal, vegetable, etc. ...	94	100	105	102	100	101
III. Processes in stone, clay, glass, etc. ...	645	703	719	709	732	706
IV. Working in wood ...	1,411	1,474	1,625	1,752	1,812	1,764
V. Metal works, machinery, etc. ...	1,588	1,629	1,697	1,779	1,814	1,824
VI. Connected with food and drink, etc. ...	2,253	2,286	2,310	2,331	2,366	2,333
VII. Clothing and textile fabrics, etc. ...	2,774	2,982	3,093	3,115	3,266	3,254
VIII. Books, paper, printing and engraving ...	1,011	1,062	1,144	1,158	1,206	1,228
IX. Musical instruments, etc. ...	18	20	19	21	21	19
X. Arms and explosives ...	9	13	14	16	20	19
XI. Vehicles and fittings, saddlery & harness, etc. ...	1,117	1,195	1,208	1,249	1,396	1,365
XII. Ship and boat building and repairing ...	84	85	87	97	96	93
XIII. Furniture, bedding, and upholstery ...	512	560	613	670	719	703
XIV. Drugs, chemicals, and by-products ...	164	176	189	202	206	213
XV. Surgical and other scientific instruments ...	30	35	41	44	48	52
XVI. Jewellery, timepieces, and platedware ...	150	155	169	177	190	200
XVII. Heat, light, and power ...	314	326	351	372	420	454
XVIII. Leatherware, n.e.i. ...	55	60	62	66	67	65
XIX. Minor wares, n.e.i. ...	140	143	152	147	150	164
Total ...	13,229	13,850	14,455	14,878	15,536	15,427

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 1909 to 1914 was 2,198, or an average of 440 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, 1914.* The following table shews the number of factories in each State of the Commonwealth at the end of the year 1914, classified according to the nature of the industry. (See classification given in § 1, 3 hereof):—

CLASSIFICATION OF FACTORIES IN EACH STATE, 1914.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Cwilt.
	No.	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	281	354	46	115	30	44	870
II. Treating oils and fats, animal, vegetable, etc.	42	25	14	12	6	2	101
III. Processes in stone, clay, glass, etc.	293	213	42	90	45	23	706
IV. Working in wood	668	449	326	98	73	150	1,764
V. Metal works, machinery, etc.	568	722	326	181	83	44	1,824
VI. Connected with food and drink, etc.	757	643	433	253	136	111	3,333
VII. Clothing and textile fabrics, etc.	1,001	1,515	258	233	160	87	3,254
VIII. Books, paper, printing & engraving	457	453	141	81	71	25	1,228
IX. Musical instruments, etc.	13	5	...	1	...	...	19
X. Arms and explosives	7	11	...	1	...	...	19
XI. Vehicles and fittings, saddlery and harness, etc.	397	538	159	143	73	55	1,365
XII. Ship and boat building & repairing	43	15	13	9	7	6	93
XIII. Furniture, bedding, and upholstery	243	269	73	53	40	25	703
XIV. Drugs, chemicals, and by-products	93	91	3	10	13	3	213
XV. Surgical and other scientific instruments	15	24	6	2	5	...	52
XVI. Jewellery, timepieces, & platedware	59	98	16	14	6	7	200
XVII. Heat, light, and power	238	134	26	12	28	16	454
XVIII. Leatherware, n.e.i.	24	34	4	3	...	...	65
XIX. Minor wares, n.e.i.	69	57	10	12	11	5	164
Total ...	5,268	5,650	1,796	1,323	787	603	15,427

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, or electricity, and the horse-power of engines or motors used, in each State and in the Commonwealth, during the year 1914 :—

UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1914.

State.	Number of Establishments.			Actual Horse-power of Engines Used.				
	Using Machinery worked by Steam, Gas, Oil, or Electricity	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.
New South Wales	3,986	1,282	5,268	158,418	14,552	1,885	50,166	225,021
Victoria ...	4,028	1,622	5,650	67,649	17,432	2,390	22,584	110,055
Queensland ...	1,324	472	1,796	43,295	8,186	1,364	7,063	59,908
South Australia ...	986	337	1,323	25,568	6,238	1,829	5,684	39,319
Western Australia	595	192	787	29,911	4,273	980	5,063	40,177
Tasmania ...	476	127	603	11,625	295	144	4,680	16,744
Commonwealth	11,395	4,032	15,427	336,466	50,976	8,542	95,240	491,224

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 during 1914 was 11,395, being 73.86 per cent.; 4,032 establishments, representing 26.14 per cent., used no mechanical power. The total average horse-power in use was 491,224, of which engines in which the motive power was steam formed 68.49 per cent.; gas, 10.38 per cent.; oil, 1.74 per cent.; and electricity, 19.39 per cent.

During 1914 there were 156 more establishments using power than in 1913, the increase in horse-power employed being 49,070, or over eleven 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,
1909 to 1914.**

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.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.
1909 ...	8,738	4,491	13,229	219,224	23,749	4,530	29,861	277,364
1910 ...	9,264	4,586	13,850	228,902	28,323	4,939	36,437	298,601
1911 ...	9,972	4,483	14,455	255,061	35,889	6,024	46,576	343,550
1912 ...	10,558	4,320	14,878	284,228	43,905	6,829	56,797	391,759
1913 ...	11,239	4,297	15,536	313,085	48,677	8,142	72,250	442,154
1914 ...	11,395	4,032	15,427	336,466	50,976	8,542	95,240	491,224

During the last five years the number of establishments using mechanical power has increased over 30½ per cent., the actual horse-power of engines used increasing over 77 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.) enginedrivers and firemen; (v.) skilled and unskilled workers in the factories, mills, or workshops; (vi.) carters and messengers; and (vii.) others.

(i.) *Average Numbers Employed, 1909 to 1914.* The following table shews, for each year from 1909 to 1914 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,
1909 to 1914.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
AVERAGE NUMBER.							
1909 ...	91,702	97,355	29,504	25,709	12,826	9,565	266,661
1910 ...	99,711	102,176	33,944*	27,010	14,107	9,980	286,928
1911 ...	108,624	111,948	37,156*	27,885	15,799	10,298	311,710
1912 ...	115,561	116,108	40,948*	28,500	16,352	9,957	327,456
1913 ...	120,400	118,744	42,363*	28,511	17,299	9,784	337,101
1914 ...	116,462	118,399	43,282*	26,874	17,640	8,922	331,579

PERCENTAGE ON COMMONWEALTH TOTAL.

	%	%	%	%	%	%	%
1909 ...	34.39	36.51	11.06	9.64	4.81	3.59	100.00
1910 ...	34.76	35.61	11.83*	9.41	4.91	3.48	100.00
1911 ...	34.85	35.91	11.92*	8.95	5.07	3.30	100.00
1912 ...	35.29	35.46	12.51*	8.70	5.00	3.04	100.00
1913 ...	35.72	35.22	12.57*	8.35	5.13	2.90	100.00
1914 ...	35.12	35.71	13.05*	8.11	5.22	2.69	100.00

AVERAGE NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES, 1909 TO 1914—Continued.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
PER 10,000 OF MEAN POPULATION.							
1909 ...	574	772	518	656	487	503	624
1910 ...	611	797	574*	673	521	522	657
1911 ...	654	848	605*	679	551	541	694
1912 ...	665	856	648*	676	543	519	705
1913 ...	665	852	649*	658	551	499	702
1914 ...	629	832	641*	611	545	450	674

* Including a number of drapery and tailoring shops making to order of customer; this class of establishment was omitted in Queensland in years previous to 1910.

(ii.) *Rates of Increase, 1909 to 1914.* From the preceding table it may be seen that except during the last two years there has been a general increase in the average number of persons employed in manufacturing industries during the period referred to. The following table shews the percentage of increase on the average number for the preceding year from 1910 to 1914:—

PERCENTAGE OF INCREASE IN AVERAGE NUMBER EMPLOYED, 1910 to 1914.

Years.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1909-10 ...	8.77	4.95	15.05*	5.06	9.99	4.34	7.61
1910-11 ...	8.94	9.56	9.46*	3.32	11.99	3.19	8.65
1911-12 ...	6.35	3.72	10.20*	2.12	3.69	—3.31	5.03
1912-13 ...	4.19	2.27	3.46*	0.04	5.60	—1.74	2.95
1913-14 ...	—3.27	—0.29	2.17*	—5.74	1.97	—8.81	—1.64

Note. — signifies a decrease. * See note (*) to preceding table.

2. *Classification of Numbers Employed in Factories in the Commonwealth, 1909 to 1914.*—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1909 to 1914 inclusive:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN THE COMMONWEALTH, 1909 to 1914.

Class of Industry.	1909.	1910.	1911.	1912.	1913.	1914.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	9,549	9,655	9,805	9,624	9,495	9,221
II. Treating oils and fats, animal, vegetable, etc. ...	1,812	1,872	2,019	2,091	2,091	2,259
III. Processes in stone, clay, glass, etc. ...	9,605	10,737	12,093	12,909	13,794	13,570
IV. Working in wood ...	22,487	24,520	27,948	30,660	31,646	30,137
V. Metal works, machinery, etc. ...	49,753	54,238	60,538	66,472	68,839	66,112.
VI. Connected with food and drink, etc. ...	41,006	42,921	45,623	46,812	49,882	51,960
VII. Clothing and textile fabrics, etc. ...	73,567	78,983	83,845	84,661	84,237	81,076
XIII. Books, paper, printing and engraving ...	21,943	23,064	24,292	25,077	26,013	25,064
IX. Musical instruments, etc. ...	433	553	607	628	616	542
X. Arms and explosives ...	377	431	508	899	1,240	1,674
XI. Vehicles and fittings, saddlery and harness, etc. ...	11,366	12,484	13,294	13,400	13,913	13,125.
XII. Ship and boat building and repairing ...	2,220	2,508	2,920	3,821	4,216	5,633
XIII. Furniture, bedding and upholstery ...	7,638	8,434	9,480	10,405	10,462	9,534
XIV. Drugs, chemicals and by-products ...	3,391	3,827	4,165	4,381	4,328	4,490
XV. Surgical & other scientific instruments ...	173	190	233	238	264	282
XVI. Jewellery, timepieces, and platedware ...	1,800	1,896	2,142	2,302	2,170	2,026
XVII. Heat, light, and power ...	5,986	6,735	7,651	8,550	9,394	9,942
XVIII. Leatherware, n.e.i. ...	924	1,097	1,226	1,231	1,204	1,217
XIX. Minor wares, n.e.i. ...	2,631	2,763	3,321	3,295	3,297	3,695
Total ...	266,661	286,928	311,710	327,456	337,101	331,579

The total increase in the average number of hands employed from 1909 to 1914 was 64,918, or an annual average of 12,984. The increase was general throughout all the various classes of industry. The greatest development took place in Classes V. and VI., the increases being 16,359 and 10,974 respectively.

3. **Classification of Numbers Employed in each State, according to Class of Industry, 1914.**—The following table shews a similar classification of employees in manufacturing industries in each State for the year 1914:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES
IN EACH STATE, 1914.**

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	C'wlth.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	3,818	3,310	600	963	203	327	9,221
II. Treating oils and fats, animal, vegetable, etc.	1,008	711	153	244	113	30	2,259
III. Processes in stone, clay, glass, etc.	6,256	4,283	677	1,404	704	246	13,570
IV. Working in wood	6,254	7,472	5,275	1,568	5,779	1,789	30,137
V. Metal works, machinery, etc.	26,407	19,694	7,121	7,966	3,399	1,525	66,112
VI. Connected with food and drink, etc.	15,393	15,308	14,609	3,699	1,560	1,414	51,980
VII. Clothing and textile fabrics, etc.	24,893	39,446	7,806	4,721	2,691	1,519	81,076
VIII. Books, paper, printing & engraving	9,130	9,153	3,007	1,824	1,195	755	25,064
IX. Musical instruments, etc.	354	170	...	18	...	...	542
X. Arms and explosives	700	970	...	4	...	...	1,674
XI. Vehicles and fittings, saddlery, and harness, etc.	4,080	5,086	1,457	1,445	585	472	13,125
XII. Ship and boat building & repairing	4,710	503	115	125	48	42	5,633
XIII. Furniture, bedding, and upholstery	3,642	2,986	1,171	959	444	332	9,534
XIV. Drugs, chemicals, and by-products	1,559	1,834	72	620	396	9	4,490
XV. Surgical and other scientific instruments	112	114	32	6	18	...	282
XVI. Jewellery, timepieces, & platedware	714	925	140	140	62	45	2,026
XVII. Heat, light, and power	3,721	3,769	795	960	316	381	9,942
XVIII. Leatherware, n.e.i.	532	566	96	23	...	...	1,217
XIX. Minor wares, n.e.i....	1,182	2,009	156	185	127	36	3,695
Total	116,462	118,399	43,282	26,874	17,640	8,922	331,579

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 81,076 employees, or 24.45 per cent. of the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 282 hands, or 0.09 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, 1914.**—In the following table the average numbers of persons employed in each State during the year 1914 are classified according to the nature of their employment:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED
ACCORDING TO NATURE OF EMPLOYMENT, 1914.**

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	Carters, Messengers and Others.	
New South Wales ...	4,452	3,754	4,611	2,804	97,804	3,037	116,462
Victoria ...	5,707	3,283	3,981	1,835	99,660	3,933	118,399
Queensland ...	1,548	1,381	1,760	1,600	34,579	2,414	43,282
South Australia ...	1,322	917	1,117	556	22,332	630	26,874
Western Australia ...	579	573	630	521	13,394	1,943	17,640
Tasmania ...	464	371	439	392	6,910	346	8,922
Commonwealth ...	14,072	10,279	12,538	7,708	274,679	12,303	331,579

* Including out-workers.

5. Classification of Factories according to Number of Hands Employed, 1914.—

(i.) The number of factories in each State, classified according to the number of hands employed and the total number of hands employed therein, is shewn in the following table:—

**CLASSIFICATION OF FACTORIES IN EACH STATE ACCORDING TO NUMBER OF
HANDS EMPLOYED, 1914.**

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
NUMBER OF FACTORIES.							
Under 4 ...	962	1,045	214	184	150	100	2,655
4 ...	530	646	167	159	76	70	1,648
5 to 10 ...	1,778	1,941	627	500	270	235	5,351
11 to 20 ...	927	926	338	220	127	92	2,630
21 to 50 ...	646	659	276	167	102	81	1,931
51 to 100 ...	232	239	88	51	34	14	658
Over 100 ...	193	194	86	42	28	11	554
Total ...	5,268	5,650	1,796	1,323	787	603	15,427

AVERAGE NUMBER OF HANDS EMPLOYED.

Under 4 ...	2,234	2,411	507	458	338	253	6,201
4 ...	2,120	2,584	668	636	304	280	6,592
5 to 10 ...	12,338	13,437	4,378	3,469	1,853	1,586	37,061
11 to 20 ...	13,462	13,457	4,920	3,184	1,874	1,320	38,217
21 to 50 ...	20,194	20,838	8,480	5,215	3,246	2,309	60,282
51 to 100 ...	16,314	16,510	6,335	3,763	2,331	1,049	46,302
Over 100 ...	49,800	49,162	17,994	10,149	7,694	2,125	136,924
Total ...	116,462	118,399	43,282	26,874	17,640	8,922	331,579

(ii.) Reference to the following table will shew the tendency of the ratio of the number of hands employed in the larger establishments to still further increase and that of the smaller factories to diminish. In 1909 the ratio of hands in factories employing under 21 hands was 29.36 per cent. of total employees in factories, and in those where over 100 hands were engaged 36.89 per cent., whereas in 1914 the percentages were 26.56 and 41.30 respectively. The proportion of factories with 20 hands or under in 1909 was 80.14 per cent., this figure decreasing to 79.62 in 1914, whereas the larger factories employing over 100 hands shewed an increase from 3.34 to 3.59 per cent. The percentage of hands in factories employing from 21 to 100 hands was virtually the same during each of the two years. The average number employed in all establishments in 1909 was 20.16, and in 1914, 21.49.

**CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH ACCORDING TO
NUMBER OF HANDS EMPLOYED DURING THE YEARS 1909 to 1914.**

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.
1909—								
Number ...	10,601	78,288	2,186	89,997	442	98,376	13,229	266,661
Average per establishment ...	...	7.38	...	41.17	...	222.57	...	20.16
Percentage to total ...	80.14	29.36	16.52	33.75	3.34	36.89	100.00	100.00
1910—								
Number ...	10,985	81,561	2,381	98,243	484	107,124	13,850	286,928
Average per establishment ...	...	7.42	...	41.26	...	221.33	...	20.72
Percentage to total ...	79.31	28.43	17.20	34.24	3.49	37.33	100.00	100.00
1911—								
Number ...	11,362	85,562	2,567	106,624	526	119,524	14,455	311,710
Average per establishment ...	...	7.53	...	41.54	...	227.23	...	21.56
Percentage to total ...	78.60	27.45	17.76	34.21	3.64	38.34	100.00	100.00
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 to 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 to total ...	79.04	27.52	17.22	33.54	3.73	42.00	100.00	100.00
1914—								
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 to total ...	79.62	26.56	16.79	32.14	3.59	41.30	100.00	100.00

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 1909 to 1914 inclusive :—

NUMBER OF OUTWORKERS* CONNECTED WITH FACTORIES, 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1909 ...	630	1,695	144	65	13	...	2,547
1910 ...	720	1,584	224	68	20	76	2,692
1911 ...	784	1,906	158	88	15	96	3,047
1912 ...	895	1,959	140	71	14	86	3,165
1913 ...	724	1,910	522	54	7	72	3,289
1914 ...	582	1,737	117	58	8	58	2,560

* In all tables relating to number of hands employed in factories, outworkers are included.

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 XXVII. *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 XXVII. *Industrial Unionism and Industrial Legislation*.)

2. **Distribution of Employees according to Sex, 1909 to 1914.**—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 lower than 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 slightly under one to two. In the remaining States the ratios during 1914 were—Queensland and South Australia, less than one female employed to every four males, Western Australia more than one to five, and Tasmania slightly less than one to six. The proportion for the whole of the Commonwealth was just below 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 with commercial establishments, a considerable number of women are also employed as clerks and typists in factories.

(i.) *Average Number of Males and Females Employed, 1909 to 1914.* The following table shews the average number of male and female employees in factories in each State from 1909 to 1914:—

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1909 to 1914.

State.	1909.	1910.	1911.	1912.	1913.	1914.
MALES.						
New South Wales ...	69,184	75,384	82,083	88,178	93,036	90,286
Victoria ...	62,822	66,309	73,573	77,565	80,054	79,772
Queensland ...	24,877	*27,165	*29,832	*33,254	*34,715	*35,717
South Australia ...	20,753	21,864	22,629	23,083	23,323	22,111
Western Australia ...	10,703	11,654	13,212	13,805	14,625	14,996
Tasmania...	8,132	8,277	8,737	8,391	8,354	7,613
Commonwealth ...	196,471	210,653	230,066	244,276	254,107	250,495

**AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN
MANUFACTURING INDUSTRIES, 1909 to 1914—Continued.**

State.	1909.	1910.	1911.	1912.	1913.	1914.
FEMALES.						
New South Wales ...	22,518	24,327	26,541	27,383	27,364	26,176
Victoria ...	34,533	35,867	38,375	38,543	38,690	38,627
Queensland ...	4,627	*6,779	*7,324	*7,694	*7,648	*7,565
South Australia ...	4,956	5,146	5,256	5,417	5,188	4,763
Western Australia ...	2,123	2,453	2,587	2,577	2,674	2,644
Tasmania ...	1,433	1,703	1,561	1,566	1,430	1,309
Commonwealth ...	70,190	76,275	81,644	83,180	82,994	81,084

* See Note (*) to § 3, 1 (i).

It will be seen that during the years specified there has been for the whole Commonwealth a total increase in the number of male employees of 54,024, or an annual average of 10,805, and in the number of female employees a total increase of 10,894, or an annual average of 2,179.

(ii.) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1909 to 1914.* 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 1909 to 1914 :—

**AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000
OF MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1909 to 1914.**

State.	1909.	1910.	1911.	1912.	1913.	1914.
MALES.						
New South Wales ...	826	883	947	967	979	931
Victoria ...	1,012	1,045	1,118	1,145	1,151	1,119
Queensland ...	801	*843	*892	*970	*982	*978
South Australia ...	1,040	1,071	1,084	1,077	1,062	1,002
Western Australia ...	712	754	805	802	823	826
Tasmania ...	835	848	900	854	823	741
Commonwealth ...	887	929	986	1,009	1,015	979
FEMALES.						
New South Wales ...	296	312	334	332	319	297
Victoria ...	539	554	579	567	555	543
Queensland ...	178	*252	*262	*266	*256	*244
South Australia ...	257	261	260	261	242	217
Western Australia ...	188	210	211	199	196	186
Tasmania ...	154	182	167	168	151	137
Commonwealth ...	341	363	379	374	361	343

* See note (*) to § 3, 1 (i).

3. **Rate of Increase for each Sex.**—The percentages of annual increase during the years 1910 to 1914 in the average number of males and females employed in manufacturing industries in the several States and the Commonwealth are shewn below:—

PERCENTAGES OF ANNUAL INCREASE IN NUMBERS OF MALE AND FEMALE EMPLOYEES, 1909 to 1914.

State.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.
MALES.					
	%	%	%	%	%
New South Wales ...	9.01	8.89	7.37	5.51	—2.96
Victoria ...	5.55	10.95	5.43	3.21	—0.35
Queensland ...	*9.20	*9.82	*11.47	*4.39	*2.89
South Australia ...	5.35	3.60	1.91	1.04	—5.20
Western Australia ...	8.89	13.37	4.49	5.94	2.54
Tasmania ...	1.78	5.56	—3.96	—0.44	—8.87
Commonwealth ...	7.24	9.23	6.15	4.02	—1.42
FEMALES.					
	%	%	%	%	%
New South Wales ...	8.04	9.10	3.17	—0.07	—4.34
Victoria ...	3.86	6.99	0.44	0.38	—0.16
Queensland ...	*46.51	*8.04	*4.99	*—0.60	*—1.08
South Australia ...	3.83	2.14	3.06	—4.23	—8.19
Western Australia ...	15.54	5.46	—0.39	3.76	—1.12
Tasmania ...	18.84	—8.34	0.32	—8.68	—8.46
Commonwealth ...	8.67	7.04	1.88	—0.22	—2.36

Note.—The minus (—) sign indicates decrease. * See note (*) to § 3. 1 (i).

The above table shews that taking the Commonwealth as a whole for the first year of the quinquennial period under discussion, there has been relatively a larger increase in the number of female than in the number of male employees. This position, however, was reversed in 1911, 1912, and 1913, when the percentage of increase of male employees exceeded that of female in every State, with the exception of New South Wales in 1911 and South Australia in 1912. During 1914 the percentage of increase in females predominated in New South Wales and South Australia, and also in the total of the Commonwealth. This matter is referred to further in the following paragraph.

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 1903 to 1914 inclusive:—

RATIO OF MALES TO FEMALES PER 100 OF BOTH SEXES COMBINED, 1903 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1903	59.8	35.7	*66.8	59.7	76.2	65.6	52.5
1904	57.2	32.4	*67.1	59.7	74.7	67.3	50.6
1905	55.5	32.0	*66.8	64.3	74.2	67.8	50.3
1906	54.1	32.2	*66.6	63.2	70.8	69.9	49.6
1907	52.6	31.3	65.9	63.0	69.0	69.9	48.6
1908	51.8	29.8	68.8	62.1	68.3	68.1	48.1
1909	50.9	29.1	68.7	61.5	66.9	70.0	47.4
1910	51.2	29.6	†60.1	61.9	65.2	65.9	46.8
1911	51.1	31.5	†60.6	†62.3	67.3	69.7	47.6
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	55.6	34.8	†65.0	64.6	70.0	70.7	51.1

* Estimated. † See note (*) to § 3. 1 (i).

This table shews that the proportion of the sexes has not materially changed during the past ten years, the 1914 figures for the whole of the Commonwealth being almost identical with those of 1905. The tables given in the succeeding paragraph shew that the comparatively high ratios for 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 1914.—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 during the year 1914 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, 1914.**

Class.	N.S.W.	Vict.	Q'land.	S. Aust.	W.Aust.	Tas.	Cwlth.
AVERAGE NUMBER.							
VI. Food, drink, etc. ...	3,705	3,541	699	561	176	167	8,849
VII. Clothing and textile fabrics ...	17,517	29,615	5,839	3,453	2,091	966	59,481
VIII. Books, paper, printing, etc. ...	2,378	2,405	641	468	241	94	6,227
All other classes ...	2,576	3,066	386	281	136	82	6,527
Total ...	26,176	38,627	7,565	4,763	2,644	1,309	81,084

PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.

VI. Food, drink, etc. ...	14.15	9.17	9.24	11.78	6.66	12.76	10.91
VII. Clothing and textile fabrics ...	66.92	76.67	77.19	72.50	79.09	73.80	73.36
VIII. Books, paper, printing, etc. ...	9.09	6.22	8.47	9.82	9.11	7.18	7.68
All other classes ...	9.84	7.94	5.10	5.90	5.14	6.26	8.05
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 ratio they bore to males so employed, are shewn in the following table :—

FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII. DURING 1914.

Industry.	New South Wales.			Victoria.			Other States.		
	Males.	Femls.	Femininity.	Males.	Femls.	Femininity.	Males.	Femls.	Femininity.
Woollen & tweed mills	379	576	20.63	823	994	9.41	238	280	8.11
Boots and shoes ...	2,634	1,471	-28.33	4,391	2,533	-26.83	1,428	735	-32.04
Slop clothing	2,904	7,586	44.63	2,510	8,315	53.63	2,228	6,231	47.32
Clothing (tailoring)									
Dressmaking & millin'y	108	4,394	95.20	261	9,177	94.47	29	3,349	98.28
Dyeworks and cleaning	58	46	-11.54	72	103	17.71	28	14	-33.33
Furriers ...	35	39	5.41	58	144	42.57	2	4	33.33
Hats and caps ...	511	918	20.48	662	976	19.17	94	149	22.63
Waterproof and oilskin	21	68	52.80	58	204	55.73	...	...	...
Shirts, ties, and scarfs	239	2,168	80.14	385	6,630	89.02	87	1,432	88.55
Rope and cordage ...	275	7	-95.04	474	346	-15.61	159	92	-26.69
Tents and tarpaulins...	212	244	7.02	124	82	-20.39	95	63	-20.25
Other ...	...	...	...	13	111	79.03	...	...	...
Total Class VII....	7,376	17,517	40.74	9,831	29,615	50.15	4,388	12,349	47.57

* Excess of females over males per 100 of both sexes combined.

NOTE.—Minus sign (-) intimates excess of males over females.

§ 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 XXVII. *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, 1909 to 1914.**—In the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age, excepting in New South Wales, where it denoted, for years prior to 1907, any person under fifteen. The following table shews the average number of children of each sex employed in manufacturing industries in each State during the years 1909 to 1914.

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1909 to 1914.

State.	1909.	1910.	1911.	1912.	1913.	1914.
MALES.						
New South Wales	2,433	2,452	2,474	2,225	2,385	2,434
Victoria ...	2,817	2,753	2,623	2,652	2,743	2,898
Queensland ...	1,001	*1,031	*1,176	*1,114	*1,122	*1,148
South Australia ...	1,094	1,082	999	1,078	1,122	1,064
Western Australia	289	340	368	356	346	381
Tasmania ...	258	282	280	322	283	213
Commonwealth ...	7,892	7,940	7,920	7,747	8,001	8,138

**AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES,
1909 TO 1914.—Continued.**

State.	1909.	1910.	1911.	1912.	1913.	1914.
FEMALES.						
New South Wales ...	1,973	2,025	2,267	2,093	2,086	2,326
Victoria ...	2,496	2,174	1,937	1,740	1,840	1,816
Queensland ...	556	*733	*818	*764	*701	*713
South Australia ...	577	702	555	704	611	522
Western Australia ...	242	266	293	334	360	361
Tasmania ...	128	96	131	121	141	77
Commonwealth ...	5,972	5,996	6,001	5,756	5,739	5,815

TOTAL.

New South Wales ...	4,406	4,477	4,741	4,318	4,471	4,760
Victoria ...	5,313	4,927	4,560	4,392	4,583	4,714
Queensland ...	1,557	*1,764	*1,994	*1,878	*1,823	*1,861
South Australia ...	1,671	1,784	1,554	1,782	1,733	1,586
Western Australia ...	531	606	661	690	706	742
Tasmania ...	386	378	411	443	424	290
Commonwealth ...	13,864	13,936	13,921	13,503	13,740	13,953

* See Note (*) to § 3. 1 (i).

3. Percentage of Children to 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. These increases, however, when examined in conjunction with the total number of persons employed, shew in every State, taking one year with another, a fairly regular decrease in the percentage of child labour. This decrease is particularly noticeable in Victoria, the percentage falling from 5.46 in 1909 to 3.98 in 1914.

**PERCENTAGE OF CHILDREN IN FACTORIES TO TOTAL NUMBER OF EMPLOYEES,
1909 TO 1914.**

State.	1909.	1910.	1911.	1912.	1913.	1914.
	%	%	%	%	%	%
New South Wales ...	4.80	4.49	4.36	3.74	3.71	4.08
Victoria ...	5.46	4.82	4.07	3.78	3.86	3.98
Queensland ...	5.28	5.20	5.37	4.59	4.30	4.30
South Australia ...	6.50	6.60	5.57	6.25	6.08	5.90
Western Australia ...	4.14	4.30	4.18	4.21	4.08	4.21
Tasmania ...	4.04	3.79	3.99	4.45	4.33	3.25
Commonwealth ...	5.20	4.86	4.47	4.12	4.08	4.21

4. Industries Employing Child Labour, 1914.—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 shews the average number of children of each sex employed in the several industries indicated, in each State during the year 1914 :—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1914.

Class.	Industry.	N.S.W.		Victoria.		Q'land.		S. Aust.		W.A.		Tas.		C'w'lth.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery and earthenware ...	43	...	71	3	12	...	16	...	7	...	5	...	154	3
IV.	Joinery, boxes, cases, etc. ...	59	...	74	...	49	2	40	...	15	1	6	...	243	3
V.	Engin'ring, ironworks, and foundries ...	261	4	262	...	86	...	98	...	61	...	12	...	780	4
"	Galvanised iron-work- ing and tinsmithing ...	99	15	132	30	74	...	99	3	...	...	4	...	408	48
"	Railway carriages, rail- way & tramway work- shops ...	46	...	193	...	12	...	73	...	21	...	2	...	347	...
VI.	Biscuits, cakes, etc. ...	143	115	75	49	13	7	5	6	...	...	21	...	257	177
"	Confectionery ...	46	57	29	29	20	21	20	24	28	22	1	...	144	153
"	Jams, pickles, sauces, etc. ...	4	4	29	35	7	3	8	6	4	2	17	1	69	51
"	Aerated waters, cor- dials, etc. ...	16	1	68	2	62	10	10	...	14	...	4	...	174	13
"	Tobacco, cigars, etc. ...	83	100	30	8	...	...	2	...	1	5	...	...	116	113
VII.	Woollen, tweed, and cotton mills... ..	49	79	117	85	5	14	14	16	...	...	1	4	186	198
"	Boots and shoes ...	144	148	154	200	29	42	34	42	9	7	7	5	377	444
"	Clothing (tailoring and slop)... ..	79	550	92	248	53	266	26	86	20	97	11	23	281	1,270
"	Dressmaking and mil- linery ...	5	407	5	408	...	...	...	103	...	144	...	32	10	1,094
"	Hats and caps ...	34	99	40	25	3	10	3	3	...	...	...	1	80	138
"	Shirts, ties, scarfs, etc.	9	196	10	358	6	83	2	62	3	38	...	1	30	738
VIII.	Electrotyping, printing and binding... ..	318	152	435	117	204	89	78	9	54	27	32	7	1,121	401
"	Paper making, paper boxes, etc. ...	57	136	21	34	2	14	26	58	5	8	...	...	111	250
XI.	Coach & wagon build- ing, etc. ...	51	...	110	...	34	...	40	...	10	...	9	...	254	...
XIII.	Billiard tables, cabinet making and furniture	81	1	58	...	58	5	48	...	17	...	14	...	276	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 become inoperative at twenty-one years of age, or in the case of women, on marriage.

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. Other enactments relating to child labour are referred to in Section XXVII. of this book, *Industrial Unionism and Industrial Legislation*.

§ 6. Amount of Wages Paid and Value of Production.

1. **Introduction.**—The importance of the manufacturing industries of the Common- wealth is indicated by the fact that the total value of the output for 1914 was £166,405,923, of which amount the sum of £99,778,884 represents the value of the raw materials used. The difference between these two amounts, viz., £66,627,039, 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 1914 was £34,090,428.

2. **Amount of Salaries and Wages Paid, 1914.**—The total amount of salaries and wages paid during the year 1914 in various classes of factories in the Commonwealth (excluding all sums drawn by working proprietors) is shewn in the following table.

It has been found impracticable to shew satisfactorily herein the rates of wages paid to employees in various classes of manufacturing industries in Australia, owing to the facts—firstly, that the rates in many industries vary very considerably in different parts of the country; and secondly, that the necessary particulars are not collected by the several States on a uniform basis; while for some of the States the information given is lacking in essential details.

AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN COMMONWEALTH, 1914.*

Class of Industry.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	355,039	314,058	61,306	91,337	14,480	17,770	883,990
II. Treating oils and fats, animal, vegetable, etc. ...	101,859	74,946	14,566	27,571	10,508	3,162	232,612
III. Processes in stone, clay, glass, etc. ...	776,997	491,402	64,870	160,191	88,995	22,297	1,604,752
IV. Working in wood ...	895,202	823,585	549,228	190,684	908,187	170,249	3,537,135
V. Metal works, machinery, etc. ...	3,391,462	2,402,140	826,587	1,101,664	491,726	204,935	8,418,514
VI. Connected with food and drink, etc. ...	1,709,597	1,572,851	1,509,187	379,049	207,433	116,321	5,494,438
VII. Clothing and textile fabrics, etc. ...	1,786,584	2,411,619	461,714	296,457	186,119	90,682	5,233,175
VIII. Books, paper, printing and engraving ...	1,067,648	998,737	344,016	191,513	176,253	83,033	2,861,200
IX. Musical instruments, etc. ...	44,653	20,119	...	1,741	...	...	66,513
X. Arms and explosives ...	81,499	93,337	...	350	...	...	130,186
XI. Vehicles and fittings, saddlery and harness, etc. ...	433,016	470,600	122,210	140,265	61,729	40,045	1,267,805
XII. Ship and boat building and repairing... ..	669,916	77,472	12,220	18,709	4,865	4,221	787,403
XIII. Furniture, bedding and upholstery ...	389,634	292,668	101,820	97,806	55,666	27,326	964,920
XIV. Drugs, chemicals, and by-products ...	147,435	182,170	4,681	71,923	56,780	609	463,598
XV. Surgical and other scientific instruments ...	11,198	9,924	3,621	833	1,606	...	27,182
XVI. Jewellery, timepieces, and platedware ...	89,769	93,757	12,768	13,660	7,365	3,370	220,689
XVII. Heat, light, and power ...	523,234	521,163	105,325	144,371	58,530	49,576	1,402,199
XVIII. Leatherware, n.e.i. ...	46,886	45,652	7,484	2,353	...	...	102,375
XIX. Minor wares, n.e.i....	102,518	198,740	9,886	15,879	12,186	2,233	341,742
Total	12,654,446	11,099,940	4,211,489	2,946,296	2,342,428	835,829	34,090,428

* 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 £8,418,514, or 24.69 per cent. on the total amount; the minimum amount was in Class XV., £27,182, or 0.08 per cent. on the total amount. The State in which the largest amount was paid was New South Wales. The following statement shews the total amount of salaries and wages paid, and the average amount paid per employee in each State, during each of the years 1909 to 1914; the figures are exclusive of the amounts drawn from the business by working proprietors:—

AMOUNT OF SALARIES AND WAGES PAID AND AVERAGE AMOUNT PER ANNUM PAID PER EMPLOYEE, 1909 to 1914.

Year.	Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
		£	£	£	£	£	£	£
1909	Total amount paid ...	7,665,125	6,807,851	2,324,005	2,028,691	1,506,360	779,624	21,111,656
	Average per employee ...	87.27	73.57	83.09	83.08	122.06	86.44	82.97
1910	Total amount paid ...	8,687,007	7,600,932	2,830,704	2,323,398	1,683,657	740,463	23,866,161
	Average per employee ...	90.78	78.18	86.79	90.44	123.93	78.81	87.04
1911	Total amount paid ...	10,047,656	8,911,019	3,113,835	2,645,386	1,982,883	827,592	27,528,371
	Average per employee ...	96.35	83.48	87.15	99.64	129.80	84.47	92.26
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	105.62	136.67	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	Total amount paid ...	12,654,446	11,099,940	4,211,489	2,946,296	2,342,428	835,829	34,090,428
	Average per employee ...	112.98	98.50	100.91	115.31	137.30	98.82	107.37

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 (see § 2 hereof). In Victoria, for instance, where the average is lowest, there are a large number of hands employed in Class VII., of whom a large percentage are 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, despite the tendency of the number of females employed in certain industries to increase at a higher ratio than males. Taking the Commonwealth as a whole, during the period 1909-14 there has been an increase of 61.48 per cent. on the total amount of wages paid and 29.41 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 1914, and total amounts paid to each sex in New South Wales and Victorian factories during the last six years, in South Australia and Tasmania during the last four years, and in Queensland and Western Australia during 1912, 1913 and 1914 :—

**AMOUNT* OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS
EMPLOYED IN EACH CLASS OF INDUSTRY IN THE SEVERAL STATES OF THE
COMMONWEALTH DURING 1914.**

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wealth.
MALES.							
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	380,368	312,951	61,024	90,899	14,480	17,724	877,446
II. Treating oils and fats, animal, vegetable, etc.	91,614	71,440	14,132	26,861	10,482	2,981	217,510
III. Processes in stone, clay, glass, etc.	774,099	497,684	64,641	152,969	88,528	22,297	1,597,218
IV. Working in wood	890,275	819,157	545,705	189,745	908,143	169,475	3,522,500
V. Metal works, machinery, etc.	3,371,877	2,386,063	823,486	1,098,918	490,399	204,312	8,375,055
VI. Connected with food and drink, etc.	1,521,275	1,392,960	1,477,877	360,991	198,826	109,185	5,061,114
VII. Clothing and textile fabrics, etc.	864,219	1,035,769	211,238	135,638	72,577	52,423	2,371,864
VIII. Books, paper, printing and engraving	945,708	880,618	314,482	171,980	163,061	79,291	2,555,140
IX. Musical instruments, etc.	42,934	19,695	...	1,741	...	...	64,370
X. Arms and explosives	81,281	55,795	...	350	...	...	137,426
XI. Vehicles and fittings, saddlery and harness, etc.	425,867	462,254	119,665	138,675	60,943	38,538	1,245,942
XII. Ship and boat building and repairing	669,773	77,472	12,220	18,709	4,865	4,221	787,260
XIII. Furniture, bedding and upholstery	365,692	277,295	97,149	96,765	54,156	26,529	917,586
XIV. Drugs, chemicals and by-products	118,466	165,117	3,590	69,544	54,841	609	412,167
XV. Surgical and other scientific instruments	10,055	9,114	3,426	833	1,526	...	24,954
XVI. Jewellery, timepieces and platedware	84,409	89,976	11,920	13,151	7,307	3,320	210,083
XVII. Heat, light and power	520,855	499,495	104,717	143,177	58,530	49,376	1,376,150
XVIII. Leatherware, n.e.i.	40,190	37,564	6,294	1,913	...	...	85,961
XIX. Minor wares, n.e.i.	86,561	171,917	8,906	14,744	11,297	2,019	295,444
Total	11,285,518	9,252,336	3,880,472	2,734,603	2,199,961	782,300	30,135,190

* Exclusive of amount drawn by working proprietors.

AMOUNT* OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS EMPLOYED IN EACH CLASS OF INDUSTRY, Etc.—Continued.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wealth.
FEMALES.							
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	4,671	1,107	292	438	...	46	6,544
II. Treating oils and fats, animal, vegetable, etc.	10,245	3,506	434	710	26	181	15,102
III. Processes in stone, clay, glass, etc.	2,898	3,718	229	222	467	...	7,534
IV. Working in wood	4,927	4,428	3,523	939	44	774	14,635
V. Metal works, machinery, etc.	19,585	16,077	3,101	2,746	1,327	623	43,459
VI. Connected with food and drink, etc.	188,322	179,891	31,310	18,058	8,607	7,136	433,324
VII. Clothing and textile fabrics, etc.	922,365	1,375,850	250,476	160,819	113,542	38,259	2,861,311
VIII. Books, paper, printing and engraving	121,940	118,119	29,534	19,533	13,192	3,742	306,060
IX. Musical instruments, etc.	1,719	424	...	...	...	...	2,143
X. Arms and explosives	218	42,542	...	...	...	...	42,760
XI. Vehicles and fittings, saddlery & harness, etc.	7,149	8,346	2,545	1,530	786	1,507	21,863
XII. Ship and boat building and repairing	143	...	...	...	...	...	143
XIII. Furniture, bedding, and upholstery	23,942	15,373	4,671	1,041	1,510	797	47,334
XIV. Drugs, chemicals, and by-products	28,969	17,053	1,091	2,379	1,939	...	51,431
XV. Surgical and other scientific instruments	1,143	810	195	...	80	...	2,228
XVI. Jewellery, timepieces and plated ware	5,360	3,781	848	509	58	50	10,606
XVII. Heat, light, and power	2,372	21,668	608	1,194	...	200	26,049
XVIII. Leatherware, n.e.i.	6,696	8,088	1,190	440	...	...	16,414
XIX. Minor wares, n.e.i.	16,257	26,823	980	1,135	889	214	46,298
Total	1,368,923	1,847,604	331,017	211,693	142,467	53,529	3,955,238

* Exclusive of amount drawn by working proprietors.

AMOUNT* OF SALARIES AND WAGES PAID TO MALES AND FEMALES IN FACTORIES IN CERTAIN STATES, 1909 to 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
MALES.							
1909. Amount paid	£ 6,823,732	5,607,703	...	...	...	...	...
Per cent. on total	89.02	82.37	...	...	...	...	...
Average per employee	£ 103.96	95.61	...	...	...	...	...
1910. Amount paid	£ 7,724,310	6,273,921	...	...	...	...	...
Per cent. on total	88.92	82.54	...	...	...	...	...
Average per employee	£ 107.84	101.20	...	...	...	...	...
1911. Amount paid	£ 8,917,577	7,357,735	...	2,430,263	...	773,900	...
Per cent. on total	88.76	82.57	...	91.87	...	93.51	...
Average per employee	£ 114.22	106.62	...	113.66	...	93.67	...
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 employee	£ 122.50	115.18	106.57	121.41	152.02	100.85	118.86
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 employee	£ 127.76	118.94	112.95	127.43	146.79	105.09	123.32
1914. Amount paid	£ 11,285,518	9,252,336	3,880,472	2,734,603	2,199,961	782,300	30,135,190
Per cent. on total	89.18	83.35	92.14	92.81	93.92	93.60	88.40
Average per employee	£ 131.00	123.84	113.39	131.21	152.31	109.24	126.87
FEMALES.							
1909. Amount paid	£ 841,393	1,200,148	...	...	...	...	...
Per cent. on total	10.98	17.63	...	...	...	...	...
Average per employee	£ 37.91	35.41	...	...	...	...	...
1910. Amount paid	£ 962,697	1,327,011	...	...	...	...	...
Per cent. on total	11.08	17.46	...	...	...	...	...
Average per employee	£ 40.08	37.67	...	...	...	...	...
1911. Amount paid	£ 1,130,079	1,553,284	...	215,123	...	53,692	...
Per cent. on total	11.24	17.43	...	8.13	...	6.49	...
Average per employee	£ 43.10	41.16	...	41.44	...	34.98	...
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 employee	£ 43.39	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 employee	£ 50.29	47.01	43.66	43.94	55.42	40.24	47.74
1914. Amount paid	£ 1,368,923	1,847,604	331,017	211,693	142,467	53,529	3,955,238
Per cent. on total	10.92	16.65	7.86	7.19	6.08	6.40	11.60
Average per employee	£ 52.94	48.65	44.06	44.95	54.44	41.27	49.46

* Exclusive of amounts drawn by working proprietors.

A further analysis of salaries and wages paid during 1914 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 1914.**

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.	96,956	1,726	780,490	4,818	877,446	6,544	883,990
II. Treating oils and fats, animal, vegetable, etc.	48,885	3,185	168,625	11,917	217,510	15,102	232,612
III. Processes in stone, clay, glass, etc.	149,822	3,481	1,447,396	4,053	1,597,218	7,534	1,604,752
IV. Working in wood	351,311	12,810	3,171,189	1,925	3,522,500	14,635	3,537,135
V. Metal works, machinery, etc.	717,227	23,956	7,657,828	19,503	8,375,055	43,459	8,418,514
VI. Connected with food and drink, etc.	917,357	40,957	4,143,757	392,367	5,061,114	433,324	5,494,438
VII. Clothing and textile fabrics, etc.	370,841	160,534	2,001,023	2,700,777	2,371,864	2,861,311	5,233,175
VIII. Books, paper, printing and engraving	507,841	44,805	2,047,299	261,255	2,555,140	306,060	2,861,200
IX. Musical instruments, etc.	8,758	1,106	55,612	1,037	64,370	2,143	66,513
X. Arms and explosives	14,873	591	122,553	42,169	137,426	42,760	180,186
XI. Vehicles and fittings, saddlery and harness, etc.	111,630	9,870	1,134,312	11,993	1,245,942	21,863	1,267,805
XII. Ship and boat building and repairing	67,273	143	719,987	...	787,260	143	787,403
XIII. Furniture, bedding, & upholstery	68,489	7,664	849,097	39,670	917,586	47,334	964,920
XIV. Drugs, chemicals, and by-products	84,689	6,589	327,478	44,842	412,167	51,431	463,598
XV. Surgical & other scientific instruments	4,969	391	19,985	1,837	24,954	2,228	27,182
XVI. Jewellery, timepieces, and platedware	20,948	3,375	189,135	7,231	210,083	10,606	220,689
XVII. Heat, light, and power	230,058	5,787	1,146,092	20,262	1,376,150	26,049	1,402,199
XVIII. Leatherware, n.e.i.	11,345	1,263	74,616	15,151	85,961	16,414	102,375
XIX. Minor wares, n.e.i.	36,464	3,397	258,980	42,901	295,444	46,298	341,742
Total	3,819,736	331,630	26,315,454	3,623,608	30,135,190	3,955,238	34,090,428
Average paid per employee	200.23	88.67	120.47	47.52	126.58	49.45	107.37

3. Value of Fuel and Light used in Factories, 1914.—The amount expended in factories on fuel and light is of considerable importance; in 1914 it amounted to £3,306,582, being an increase on the previous year's figures of £65,681. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £937,228; Class VI., Connected with Food, Drink, etc., £717,356; Class XVII., Heat, Light, Power, etc., £610,031, of which amount £499,597 was expended on generating

electric light and power; and Class III., £423,694, of which £319,744 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 during 1914, and of the total used for each of the last six years:—

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1914.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	47,530	34,141	12,125	10,490	1,737	2,299	108,322
II. Treating oils and fats, animal, vegetable, etc. ...	21,239	13,497	1,931	6,308	1,125	363	44,463
III. Processes in stone, clay, glass, etc. ...	206,343	124,695	12,475	44,919	26,528	8,734	423,694
IV. Working in wood. ...	22,744	15,507	9,925	4,165	2,847	1,574	56,762
V. Metal wks., machinery, etc. ...	410,267	159,592	42,426	214,507	34,592	75,844	937,228
VI. Connected with food and drink, etc. ...	216,154	209,406	190,828	55,816	30,630	14,522	717,356
VII. Clothing and textile fabrics, etc. ...	39,903	64,609	5,767	7,656	3,780	1,758	123,473
VIII. Books, paper, printing, and engraving ...	32,111	42,834	27,125	7,471	5,900	1,436	116,877
IX. Musical instruments, etc. ...	1,486	160	...	22	...	...	1,688
X. Arms and explosives ...	3,206	4,825	...	6	...	...	8,037
XI. Vehicles and fittings, saddlery and harness, etc. ...	16,367	15,080	1,946	5,271	2,830	1,155	42,649
XII. Ship and boat building and repairing ...	18,203	2,357	271	328	36	70	21,265
XIII. Furniture, bedding, and upholstery ...	8,511	7,308	2,339	2,583	1,611	755	23,107
XIV. Drugs, chemicals, and by-products ...	13,878	14,880	670	8,857	5,091	61	43,437
XV. Surgical and other scientific instruments ...	276	329	89	23	65	...	782
XVI. Jewellery, timepieces, and plated ware ...	1,812	2,885	382	610	155	80	5,924
XVII. Heat, light, and power ...	295,911	76,492	26,636	37,671	93,014	80,307	610,631
XVIII. Leatherware, n.e.l. ...	723	1,404	186	26	...	...	2,339
XIX. Minor wares, n.e.l. ...	4,183	14,304	98	258	251	54	19,148
Total ...	1,360,847	804,325	335,219	406,987	210,192	189,012	3,306,582

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1909 ...	940,840	566,768	194,776	269,646	140,111	115,864	2,228,005
1910 ...	1,184,282	639,135	216,890	313,731	150,311	130,962	2,635,311
1911 ...	1,242,613	637,497	222,560	338,565	176,659	140,816	2,758,710
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 ...	1,360,847	804,325	335,219	406,987	210,192	189,012	3,306,582

4. Value of Raw Materials used in Factories, 1914.—The total value of raw materials worked up (i.e., exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1914 was £99,778,884, which represents 59.96 per cent. of the total value of the finished products. (See next paragraph hereof.) The following table shews the value of the raw materials worked up in various classes of industry in each State during the year 1914:—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH, 1914.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	4,846,704	2,580,862	1,340,105	653,350	168,323	191,943	9,781,285
II. Treating oils and fats, animal, vegetable, etc. ...	861,539	486,334	61,413	132,249	86,274	8,764	1,636,573
III. Processes in stone, clay, glass, etc. ...	361,286	216,604	15,106	60,075	28,969	7,501	689,541
IV. Working in wood... ..	2,121,979	1,209,966	941,237	699,083	128,742	133,251	5,234,258
V. Metal wks., machinery, etc. ...	7,339,887	3,188,553	1,061,771	2,596,263	471,741	641,371	15,299,586
VI. Connected with food and drink, etc. ...	19,674,332	12,091,986	10,747,499	2,492,456	921,905	689,653	46,617,831
VII. Clothing and textile fabrics, etc. ...	3,196,161	4,907,844	892,641	440,616	306,755	123,236	9,866,253
VIII. Books, paper, printing, and engraving ...	973,190	1,014,490	286,303	190,388	113,212	51,156	2,628,739
IX. Musical instruments, etc. ...	58,722	13,650	...	1,304	...	...	73,576
X. Arms and explosives ...	23,813	225,690	...	50	...	...	249,553
XI. Vehicles and fittings, saddlery and harness, etc.	411,066	476,155	137,186	145,584	69,922	82,068	1,321,981
XII. Ship and boat building and repairing ...	247,469	59,388	10,164	8,077	4,997	3,029	333,124
XIII. Furniture, bedding, and upholstery ...	554,181	444,383	120,593	96,327	74,447	29,683	1,319,614
XIV. Drugs, chemicals, and by-products ...	737,464	707,022	10,899	308,441	183,595	9,215	1,956,636
XV. Surgical and other scientific instruments ...	5,878	8,262	2,788	623	568	...	18,119
XVI. Jewellery, timepieces, and plated ware ...	112,097	182,714	16,356	13,886	10,146	2,662	337,861
XVII. Heat, light, and power ...	662,719	414,166	40,754	65,235	25,467	18,079	1,226,440
XVIII. Leatherware, n.e.i. ...	151,539	186,223	11,946	4,379	...	...	354,087
XIX. Minor wares, n.e.i. ...	209,164	572,402	14,033	22,869	13,250	2,109	833,827
Total	42,549,190	28,986,694	15,710,794	7,931,175	2,608,312	1,992,719	99,778,884

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £46,617,831. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £15,299,586 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £18,119. The year 1910 was the first for which reliable and complete returns were collected in every State relating to the value of raw materials worked up in factories; the following table, however, gives particulars for the six years ended 1914, so far as information is available:—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1909 ...	27,314,486	19,706,530	7,658,195	6,004,459	1,529,211	*1,816,000	64,028,881
1910 ...	31,379,604	21,941,255	9,476,819	6,695,255	1,809,959	1,456,369	72,759,261
1911 ...	33,670,951	25,029,525	8,788,335	7,503,979	2,059,346	1,952,240	79,004,376
1912 ...	37,122,441	27,002,302	11,078,954	8,199,110	2,536,195	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 ...	42,549,190	28,986,694	15,710,794	7,931,175	2,608,312	1,992,719	99,778,884

* Estimated on basis of partial returns and subsequent years' figures.

5. **Total Value of Output of Manufacturing Industries, 1914.**—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State during the year 1914 is shewn in the following table. The figures given represent not only the increased 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 COMMONWEALTH, 1914.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
	£	£		£	£	£	£
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	5,642,150	3,287,317	1,554,897	795,956	212,236	237,997	11,730,553
II. Treating oils and fats, animal, vegetable, etc.	1,176,404	763,974	119,348	187,117	123,613	14,787	2,385,243
III. Processes in stone, clay, glass, etc.	1,891,733	1,134,915	135,597	334,076	176,079	53,225	3,725,535
IV. Working in wood	3,461,373	2,470,884	1,935,315	1,011,439	1,308,928	378,714	10,566,653
V. Metal works, mach'y, etc.	13,908,681	6,772,626	2,601,997	4,549,255	1,015,699	1,060,013	29,908,271
VI. Connected with food and drink, etc.	24,910,252	16,135,907	15,392,095	3,431,957	1,543,547	1,000,855	62,414,613
VII. Clothing and textile fabrics, etc.	6,049,263	8,737,487	1,702,209	879,020	570,072	268,219	18,256,270
VIII. Books, paper, printing, and engraving...	2,528,515	2,986,410	841,179	505,281	438,625	181,505	7,481,515
IX. Musical instruments, etc.	135,524	39,887	...	3,980	...	...	179,391
X. Arms and explosives	135,341	366,266	...	400	...	...	502,007
XI. Vehicles and fittings, saddlery and harness, etc.	1,061,414	1,183,063	360,552	364,001	163,317	149,547	3,281,894
XII. Ship and boat building and repairing	1,034,070	163,970	28,756	34,051	12,251	8,722	1,281,820
XIII. Furniture, bedding, and upholstery	1,120,888	886,133	302,961	224,813	155,169	74,543	2,764,507
XIV. Drugs, chemicals, and by-products	1,239,934	1,222,929	33,888	452,923	292,064	10,360	3,252,098
XV. Surgical and other scientific instruments	24,730	25,218	8,600	2,320	2,875	...	63,743
XVI. Jewellery, timepieces, and platedware	244,561	356,188	35,385	39,794	19,542	8,494	703,964
XVII. Heat, light, and power	3,017,617	1,693,988	385,797	343,769	317,798	215,584	5,974,553
XVIII. Leatherware, n.e.i.	250,500	271,487	26,854	9,204	...	...	558,045
XIX. Minor wares, n.e.i.	375,797	891,336	26,615	46,614	29,697	5,189	1,375,248
Total	68,208,747	49,439,985	25,491,955	13,215,970	6,381,512	3,667,754	166,405,923

It may 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 £68,208,747, or 40.99 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 29.71 per cent.; the value of the output of Queensland was 15.32 per cent.; of South Australia 7.94 per cent.; of Western Australia 3.84 per cent.; and of Tasmania 2.20 per cent. The four most important classes in order of value of output (Classes VI., V., VII. and I.) 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 1914:—

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1909	42,960,689	32,898,235	12,823,695	9,928,105	4,008,604	*3,339,000	105,958,328
1910	49,615,643	36,660,854	15,792,109	11,184,695	4,533,611	3,073,246	120,860,158
1911	54,346,011	41,747,863	15,675,662	12,416,381	5,311,086	3,525,087	133,022,090
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	68,208,747	49,439,985	25,491,955	13,215,970	6,381,512	3,667,754	166,405,923

PER EMPLOYEE.†

	£	£	£	£	£	£	£
1909	469	338	435	386	313	349	397
1910	498	359	465	414	321	308	421
1911	500	373	422	445	336	342	427
1912	529	391	459	472	372	389	454
1913	545	404	559	491	375	387	479
1914	586	418	589	492	362	411	502

PER HEAD OF MEAN POPULATION.

	£	£	£	£	£	£	£
1909	26.88	26.09	23.16	25.33	15.23	17.53	24.79
1910	30.38	28.59	26.69	27.88	16.73	16.09	27.66
1911	32.70	31.62	25.52	30.19	18.52	18.52	29.62
1912	35.22	33.48	29.77	31.87	20.21	20.20	32.03
1913	36.3	34.41	36.30	32.29	20.64	19.30	33.67
1914	36.82	34.73	37.77	30.04	19.73	18.49	33.83

* See note (*) to last table § 6, 4.

† Including working proprietors.

6. **Value of Production of Manufacturing Industries, 1914.**—The difference between the figures given in paragraph 5 and the corresponding figures in paragraph 4 hereof 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 during the year 1914 for the various classes of factories:—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1914.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	795,446	706,455	214,792	142,606	43,914	46,055	1,949,268
II. Treating oils and fats, animal, vegetable, etc. ...	314,865	277,640	57,935	54,868	37,339	6,023	748,670
III. Processes in stone, clay, glass, etc. ...	1,530,447	918,311	120,401	274,001	147,110	45,724	3,035,994
IV. Working in wood ...	1,339,394	1,260,918	994,078	312,356	1,180,186	245,463	5,332,395
V. Metal works, machinery, etc. ...	6,568,794	3,584,073	1,540,226	1,952,992	543,958	418,642	14,608,685
VI. Connected with food and drink, etc. ...	5,335,920	4,043,921	4,644,596	939,501	621,642	311,202	15,796,782
VII. Clothing and textile fabrics, etc. ...	2,853,102	3,879,643	809,568	438,404	263,317	145,983	8,390,017
VIII. Books, paper, printing, and engraving ...	1,555,325	1,971,920	554,876	314,893	325,413	130,349	4,852,776
IX. Musical instruments, etc. ...	76,802	26,237	...	2,776	...	...	105,815
X. Arms and explosives ...	111,528	140,576	...	350	...	...	252,454
XI. Vehicles and fittings, saddlery and harness, etc. ...	650,348	706,908	223,366	218,417	93,395	67,479	1,959,913
XII. Ship and boat building and repairing ...	786,601	104,582	18,592	25,974	7,254	5,693	948,696
XIII. Furniture, bedding, and upholstery ...	566,707	441,750	182,368	128,486	80,722	44,860	1,444,893
XIV. Drugs, chemicals, and by-products ...	502,470	515,907	22,989	144,482	108,469	1,145	1,295,462
XV. Surgical and other scientific instruments ...	18,852	16,956	5,812	1,697	2,307	...	45,624
XVI. Jewellery, timepieces, and plated ware ...	132,464	173,474	19,029	25,908	9,396	5,832	366,103
XVII. Heat, light, and power ...	2,354,898	1,279,822	345,043	278,514	292,331	197,505	4,748,113
XVIII. Leatherware, n.e.i. ...	98,961	85,264	14,908	4,825	...	...	203,958
XIX. Minor wares, n.e.i. ...	166,633	319,934	12,582	23,745	16,447	3,080	541,421
Total ...	25,659,557	20,453,291	9,781,161	5,284,795	3,773,200	1,675,035	66,627,039

The amount of the value added in each State is not in the same order as in the case of value of output, the four most important classes being VI., V., VII., and IV., 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 1909 to 1914:—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1909 to 1914.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tas.	C'wealth.
VALUE.							
	£	£	£	£	£	£	£
1909 ...	15,646,203	13,191,705	5,165,500	3,923,646	2,479,393	*1,523,000	41,929,447
1910 ...	18,236,039	14,719,539	6,315,230	4,489,440	2,723,652	1,616,877	48,100,897
1911 ...	20,675,060	16,718,336	6,897,327	4,912,402	3,251,740	1,572,847	54,017,714
1912 ...	24,040,887	18,408,471	7,719,950	5,239,108	3,506,073	1,585,298	60,499,787
1913 ...	25,135,019	19,470,948	9,505,250	5,644,412	3,638,492	1,699,165	65,153,286
1914 ...	25,659,557	20,453,291	9,781,161	5,284,795	3,773,200	1,675,035	66,627,039
PER EMPLOYEE.							
	£	£	£	£	£	£	£
1909 ...	171	136	175	153	193	120	157
1910 ...	183	144	186	166	193	162	168
1911 ...	190	149	185	176	206	153	173
1912 ...	208	159	189	184	214	159	185
1913 ...	209	164	224	198	214	174	193
1914 ...	220	173	226	197	214	188	201

* See note(*) to last table § 6, 4.

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN
COMMONWEALTH, 1909 TO 1914—Continued.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
PER HEAD OF MEAN POPULATION.							
1909 ...	9.79	10.46	9.33	10.01	9.42	8.01	9.81
1910 ...	11.17	11.48	10.68	11.19	10.05	8.47	11.01
1911 ...	12.44	12.66	11.21	11.95	11.34	8.26	12.03
1912 ...	13.84	13.57	12.22	12.43	11.63	8.27	13.03
1913 ...	13.90	13.98	14.57	13.02	11.78	8.67	13.56
1914 ...	13.55	14.37	14.49	12.01	11.67	8.44	13.54

As the total value of the output for the Commonwealth was estimated at £166,405,923, there remained, after payment of £99,778,884, the value of the raw materials used, of £34,090,428 for salaries and wages, and of £3,306,582 for fuel, the sum of £29,230,029 to provide for all other expenditure and profits. The following table gives corresponding particulars for each State, expressed absolutely, and as percentages of the total value of the output:—

**VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH
FACTORIES, 1914.**

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 ...	42,549,190	1,360,847	12,654,446	11,644,264	68,208,747
Victoria ...	28,986,694	804,325	11,099,940	8,549,026	49,439,985
Queensland ...	15,710,794	335,219	4,211,489	5,234,453	25,491,955
South Australia ...	7,931,175	406,987	2,946,296	1,931,512	13,215,970
Western Australia ...	2,608,312	210,192	2,342,428	1,220,580	6,381,512
Tasmania ...	1,992,719	189,012	835,829	650,194	3,667,754
Commonwealth ...	99,778,884	3,306,582	34,090,428	29,230,029	166,405,923
PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.					
	%	%	%	%	%
New South Wales ...	62.38	2.00	18.55	17.07	100.00
Victoria ...	58.63	1.63	22.45	17.29	100.00
Queensland ...	61.63	1.32	16.52	20.53	100.00
South Australia ...	60.01	3.08	22.29	14.62	100.00
Western Australia ...	40.87	3.29	36.71	19.13	100.00
Tasmania ...	54.33	5.15	22.79	17.73	100.00
Commonwealth ...	59.96	1.99	20.49	17.56	100.00

§ 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 1909 to 1914 by £25,982,481, *i.e.*, from £54,527,222 to £80,509,703, or at the rate of £5,196,496 per annum.

The following statement shews for the year 1914 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, 1914.

Value of—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£
Land and buildings ...	16,813,303	11,248,120	4,434,336	3,047,791	2,409,517	1,144,714	39,097,781
Plant and machinery ...	16,833,973	10,727,526	6,898,673	3,275,579	2,484,793	1,191,378	41,411,922
Total ...	33,647,276	21,975,646	11,333,009	6,323,370	4,894,310	2,336,092	80,509,703

The total capital invested in land, buildings, plant and machinery in manufacturing industries in the Commonwealth during the year 1914 was approximately £80,509,703 (or £16 5s. 11d. per head of population); of that sum £39,097,781 was invested in land and buildings occupied as manufactories, the remaining £41,411,922 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 conducted therein.

(i.) *Total Value in Commonwealth, 1909 to 1914.* 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 1909 to 1914 inclusive:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH, 1909 to 1914.

Class of Industry.	1909.	1910.	1911.	1912.	1913.	1914.
	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	870,588	921,785	978,978	1,004,221	1,014,783	1,063,549
II. Treating oils and fats, animal, vegetable, etc. ...	376,681	394,079	445,499	449,453	452,415	466,373
III. Processes in stone, clay, glass, etc. ...	956,733	1,073,612	1,228,889	1,382,062	1,593,769	1,679,050
IV. Working in wood ...	1,285,267	1,492,673	1,668,045	1,923,963	2,184,257	2,244,995
V. Metal works, machinery, etc. ...	4,415,525	4,554,693	5,000,274	5,437,718	5,846,225	6,242,968
VI. Connected with food & drink, etc. ...	7,191,976	7,399,625	8,167,496	8,259,066	8,656,547	9,800,457
VII. Clothing and textile fabrics, etc. ...	3,809,148	4,191,488	4,601,924	4,928,474	5,188,631	5,270,374
VIII. Books, paper, printing, and engraving ...	2,642,029	2,779,754	2,964,466	3,150,049	3,388,072	3,490,769
IX. Musical instruments, etc. ...	33,314	75,632	82,168	85,731	88,136	83,375
X. Arms and explosives ...	33,016	38,763	41,462	112,300	184,772	179,723
XI. Vehicles and fittings, saddlery and harness, etc. ...	1,186,750	1,325,152	1,453,077	1,654,488	1,835,221	1,824,018
XII. Ship & boat building & repairing ...	1,033,513	1,052,868	1,163,299	1,261,647	1,113,243	1,127,521
XIII. Furniture, bedding & upholstery ...	690,588	757,485	993,408	1,043,680	1,149,120	1,117,699
XIV. Drugs, chemicals & by-products ...	543,507	687,162	760,441	823,429	831,292	929,933
XV. Surgical and other scientific instruments ...	56,378	56,149	61,703	59,308	70,968	64,263
XVI. Jewellery, timepieces, & plated-ware ...	232,483	271,834	300,717	344,306	353,900	345,018
XVII. Heat, light, and power ...	2,026,611	2,112,220	2,320,348	2,511,317	2,517,179	2,717,502
XVIII. Leatherware, n.e.i. ...	83,578	100,096	111,506	120,646	133,283	132,777
XIX. Minor wares, n.e.i. ...	210,325	220,984	250,550	257,298	270,307	317,417
Total ...	27,672,010	29,506,054	32,494,250	34,809,156	36,872,720	39,097,781

As shewn in the above table the total net increase during the five years was £11,425,771, or an annual average of £2,285,154. The largest increases were in Classes VI., V., and VII., and amounted to £2,608,481, £1,827,443, and £1,461,226 respectively.

(ii.) *Value in each State, 1914.* The following table gives similar information for each State up to the 31st December, 1914 :—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1914.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	465,505	389,688	66,073	97,166	28,985	16,132	1,063,549
II. Treating oils and fats, animal, vegetable, etc. ...	237,991	105,070	28,723	68,709	21,565	4,315	466,373
III. Processes in stone, clay, glass, etc. ...	950,702	461,703	51,162	125,793	61,313	28,377	1,679,050
IV. Working in wood ...	973,465	422,589	221,482	155,456	388,767	83,236	2,244,995
V. Metal works, machinery, etc. ...	2,941,258	1,433,378	656,677	534,736	587,572	89,347	6,242,968
VI. Connected with food and drink, etc. ...	3,381,299	2,682,669	1,928,562	773,250	439,612	595,065	9,800,457
VII. Clothing and textile fabrics, etc. ...	2,204,549	1,986,117	449,281	296,554	208,059	125,814	5,270,374
VIII. Books, paper, printing and engraving ...	1,423,747	960,715	496,026	312,410	249,230	48,641	3,490,769
IX. Musical instruments, etc. ...	57,335	24,340	1,700	...	...	...	83,375
X. Arms and explosives ...	70,926	105,297	...	3,500	...	...	179,723
XI. Vehicles and fittings, saddlery and harness, etc. ...	706,151	556,668	173,918	203,096	122,237	61,948	1,824,018
XII. Ship and boat building and repairing ...	833,804	213,595	11,040	60,000	4,635	4,447	1,127,521
XIII. Furniture, bedding and upholstery ...	492,656	350,111	99,330	76,211	76,319	33,072	1,117,699
XIV. Drugs, chemicals, and by-products ...	340,489	340,780	10,950	143,564	91,950	2,200	929,933
XV. Surgical and other scientific instruments ...	32,040	20,445	6,738	2,070	2,970	...	64,263
XVI. Jewellery, timepieces, and plated ware ...	143,786	128,981	26,331	24,680	9,270	11,970	345,018
XVII. Heat, light, and power ...	1,360,061	888,344	186,143	150,999	94,395	37,560	2,717,502
XVIII. Leatherware, n.e.i. ...	62,921	55,125	10,670	4,061	...	...	132,777
XIX. Minor wares, n.e.i. ...	144,618	122,505	11,230	13,836	22,638	2,590	317,417
Total ...	16,813,303	11,248,120	4,434,336	3,047,791	2,409,517	1,144,714	39,097,781

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £9,800,457, or 25.07 per cent. on the total value. The next classes in importance were Classes V., VII., VIII., and XVII., in which the values were £6,242,968, £5,270,374, £3,490,769, and £2,717,502 respectively. The sum of the values for the five classes mentioned amounted to £27,522,070, or 70.39 per cent. on the total value for all classes.

(iii.) *Total Value in each State, 1909 to 1914.* The following table shews the total value of land and buildings occupied as manufactories in each State at the end of each year from 1909 to 1914 inclusive :—

TOTAL VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1909 to 1914.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1909...	11,014,362	8,642,344	2,888,923	2,425,970	1,522,692	1,177,719	27,672,010
1910...	12,108,776	9,012,263	3,045,974	2,641,973	1,674,953	1,022,115	29,506,054
1911...	13,474,455	9,921,520	3,277,776	2,950,170	1,819,342	1,050,987	32,494,250
1912...	14,765,810	10,362,661	3,524,991	3,150,834	1,910,372	1,094,488	34,809,156
1913...	15,792,105	10,753,309	3,923,584	3,261,242	2,036,769	1,105,711	36,872,720
1914...	16,813,303	11,248,120	4,434,336	3,047,791	2,400,517	1,144,714	39,097,781

It will be seen that since 1909 there has been a general increase throughout the Commonwealth, Tasmania being the only State shewing a decrease. The fall in Tasmania occurred in 1910 and was due to the closing down of a large pyrites works.

3. **Value of Plant and Machinery.**—(i.) The following table shews for the whole Commonwealth the approximate value of plant and machinery used in factories at the end of each year from 1909 to 1914 inclusive:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH, 1909 to 1914.

Class of Industry.	1909.	1910.	1911.	1912.	1913.	1914.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	£ 754,556	£ 829,255	£ 877,820	£ 926,966	£ 985,619	£ 974,556
II. Treating oils and fats, animal, vegetable, etc. ...	349,479	360,660	435,315	417,231	444,502	469,680
III. Processes in stone, clay, glass, etc. ...	901,193	1,109,139	1,299,774	1,491,383	1,717,544	1,869,446
IV. Working in wood ...	1,623,497	1,852,296	2,207,703	2,455,436	2,664,508	2,737,527
V. Metal works, machinery, etc. ...	4,941,632	5,255,575	5,722,956	6,308,356	6,879,461	7,630,150
VI. Connected with food and drink, etc. ...	7,772,770	8,212,440	8,570,565	9,029,735	9,650,298	10,782,825
VII. Clothing and textile fabrics, etc. ...	1,280,102	1,403,135	1,538,062	1,620,437	1,746,713	1,774,910
VIII. Books, paper, printing, and engraving ...	2,207,930	2,362,268	2,481,999	2,628,039	2,814,226	2,941,111
IX. Musical instruments, etc. ...	11,263	16,443	17,924	20,960	22,630	19,030
X. Arms and explosives ...	45,940	47,012	56,255	158,823	190,060	216,581
XI. Vehicles and fittings, saddlery and harness, etc. ...	220,746	249,973	263,470	329,933	374,371	395,463
XII. Ship and boat building, and repairing ...	434,905	443,429	478,012	597,783	725,934	764,782
XIII. Furniture, bedding, and upholstery ...	126,000	150,774	177,924	207,211	235,068	238,547
XIV. Drugs, chemicals, & by-products ...	435,019	517,781	602,276	629,402	650,185	832,686
XV. Surgical and other scientific instruments ...	9,215	9,929	11,158	11,615	13,121	13,758
XVI. Jewellery, timepieces, and platedware ...	43,980	49,490	61,765	61,791	68,186	69,724
XVII. Heat, light, and power ...	5,561,333	5,961,816	6,611,770	7,392,958	7,880,325	9,451,227
XVIII. Leatherware, n.e.i. ...	19,555	24,651	25,565	27,695	28,035	30,576
XIX. Minor wares, n.e.i. ...	116,097	120,669	138,896	145,141	166,172	199,343
Total ...	26,855,212	28,976,735	31,599,209	34,460,895	37,256,958	41,411,922

It will be seen that during the period in question there has been a steady and substantial net increase amounting in all to £14,556,710, or an annual average of £2,911,342. Development has occurred in all classes of industry, the largest increase being in Class XVII., "Heat, Light, and Power," where it amounted to £3,889,894, while the two next largest were in Class VI., "Connected with Food and Drink, etc.," with an increase of £3,010,055, and Class V., "Metal Works, Machinery, etc.," £2,688,518.

(ii.) *Total Value in each State, 1909 to 1914.* 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., £6,503,249; while Victoria comes next with £3,587,222.

VALUE OF PLANT AND MACHINERY IN FACTORIES, 1909 to 1914.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1909	10,330,724	7,140,304	4,457,314	2,135,203	1,728,207	1,063,460	26,855,212
1910	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,046,191	28,976,735
1911	12,510,600	8,336,373	4,947,259	2,506,000	2,082,777	1,216,200	31,599,209
1912	13,795,195	9,095,134	5,442,471	2,725,540	2,241,536	1,161,019	34,460,895
1913	14,861,676	10,022,429	5,877,387	2,982,323	2,264,455	1,248,688	37,256,958
1914	16,833,973	10,727,526	6,898,673	3,275,579	2,484,793	1,191,378	41,411,922

(iii.) *Classified Value in each State, 1914.* The following table shews the value of plant and machinery used in factories in each State during the year 1914, classified according to the nature of the industry in which used:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1914.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	394,005	320,740	122,821	71,250	21,070	44,670	974,556
II. Treating oils and fats, animal, vegetable, etc. ...	250,789	136,065	41,931	26,813	12,970	1,112	469,680
III. Processes in stone, clay, glass, etc. ...	1,114,406	417,450	94,007	159,002	62,391	22,190	1,869,446
IV. Working in wood ...	838,036	594,575	501,396	85,206	531,736	186,578	2,737,537
V. Metal wks., machinery, etc. ...	3,983,195	1,469,806	803,339	533,898	567,596	272,316	7,630,150
VI. Connected with food and drink, etc. ...	3,466,183	2,261,535	3,874,680	616,907	418,035	145,485	10,782,825
VII. Clothing and textile factories, etc. ...	588,448	870,318	130,078	94,396	38,562	53,108	1,774,910
VIII. Books, paper, printing, and engraving ...	1,184,322	975,931	315,778	228,666	169,383	67,031	2,941,111
IX. Musical instruments, etc. ...	11,794	6,636	...	600	...	...	19,030
X. Arms and explosives ...	100,372	115,809	...	400	...	...	216,581
XI. Vehicles and fittings, saddlery and harness, etc. ...	144,008	134,867	32,010	50,508	21,634	12,436	395,463
XII. Ship and boat building and repairing ...	659,228	82,273	6,895	11,385	1,450	3,551	764,782
XIII. Furniture, bedding, and upholstery ...	72,902	75,815	35,744	30,631	15,249	8,206	238,547
XIV. Drugs, chemicals, and by-products ...	283,967	244,071	4,720	156,526	142,952	450	832,686
XV. Surgical and other scientific instruments ...	4,894	4,820	1,712	900	1,432	...	13,758
XVI. Jewellery, timepieces, and platedware ...	28,853	28,273	4,611	4,992	1,550	1,445	69,724
XVII. Heat, light, and power ...	3,612,157	2,864,817	924,877	1,200,881	476,070	372,425	9,451,227
XVIII. Leatherware, n.e.l. ...	12,485	15,705	2,069	317	...	...	30,576
XIX. Minor wares, n.e.l. ...	83,929	108,020	2,005	2,301	2,713	375	199,343
Total ...	16,833,973	10,727,526	6,898,673	3,275,579	2,484,793	1,191,378	41,411,923

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £10,782,825, or 26.04 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £9,451,227, or 22.82 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £7,630,150, or 18.43 per cent. on the total value. The total for these three classes amounts to £27,864,202, or 67.29 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 position of the industry in the several States in 1914 was as follows:—

TANNERIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	77	50	18	11	6	4	166
" employees	1,109	1,443	205	196	74	64	3,091
Actual horse-power of engines employed...	1,269	1,779	314	225	158	58	3,803
Approx. value of lands and buildings £	142,608	180,325	16,012	20,330	23,495	9,650	392,420
Approx. value of plant and machinery £	92,910	136,555	19,422	10,672	13,100	10,840	283,499
Total amount of wages paid during year £	130,059	173,596	22,953	23,852	9,042	6,983	366,484
Value of fuel used	£ 7,555	10,848	980	1,702	983	505	22,573
Value of raw material worked up	£ 1,058,887	1,244,008	197,245	121,480	56,661	54,244	2,732,525
Total value of output	£ 1,314,631	1,585,151	261,007	161,056	74,286	72,344	3,468,475
Value added in process of manufacture £	255,744	341,143	63,762	39,576	17,625	18,100	735,950

* Including three bone milling establishments in order to avoid disclosing particulars of individual establishments.

(ii.) *Raw Materials used in Tanneries, 1914.* The quantity of raw materials used in tanneries in each State during the year 1914 is shewn in the following table:—

RAW MATERIAL USED IN TANNERIES, 1914.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
RAW MATERIALS USED.							
Hides & calf skins ... No.	535,641	765,136	136,919	83,496	27,735	27,191	1,576,118
Sheep pelts	4,068,137	805,525	77,405	76,122	...	23,796	5,050,985
Other skins	166,700	131,450	94,420	5,020	8,000	1,104	406,694
Bark Tons	11,810	11,400	2,137	1,419	694	310	27,770

(iii.) *Progress of Tanning Industries, 1909 to 1914.* The development of the tanning industry during the period 1909 to 1914 is shewn in the following table:—

DEVELOPMENT OF TANNING INDUSTRY IN THE COMMONWEALTH, 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.*
Number of factories	179	176	176	174	164	166
Number of employees	2,980	3,110	3,247	3,071	2,892	3,091
Actual horse-power of engines used ...	2,846	3,125	3,168	3,274	3,748	3,803
Approx. value of land and buildings £	281,898	301,500	343,914	366,898	366,696	392,420
Approx. value of plant and machinery £	202,961	212,253	241,245	250,495	276,610	283,499
Total amount of wages paid	£ 266,797	303,012	332,206	328,060	322,747	366,484
Value of fuel used	£ 21,381	23,644	21,711	21,341	19,642	22,573
Value of raw materials worked up	£ 1,832,309	1,988,512	2,069,034	2,216,705	2,428,003	2,732,525
Value of final output	£ 2,320,190	2,570,858	2,698,250	2,834,007	3,030,785	3,468,475
Value added in process of manufacture £	487,881	572,346	599,216	617,302	602,782	735,950

* Including three bone milling establishments in Western Australia.

It will be seen from the above table that as regards the number of factories and of hands employed, the figures during the last five years have been almost stationary. The approximate amount of permanently invested capital, however, shews a very substantial increase, amounting to 39.2 per cent. in the value of land and buildings, and 39.7 per cent. in that of plant and machinery. The amount of wages paid, value of materials used, and of final output, also shew a substantial increase during the period.

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 for the year 1914:—

FELLMONGERING AND WOOL-SCOURING, 1914.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	54	29	21	4	...	...	108
Number of employees	1,451	432	355	60	...	...	2,298
Actual horse-power of engines used ...	2,398	655	599	120	...	...	3,772
Approx. value of land and buildings £	151,195	54,018	44,024	7,093	...	...	256,330
Approx. value of plant and machinery £	174,598	53,905	93,034	8,510	...	...	330,047
Total amount of wages paid	£ 149,800	36,411	34,489	5,809	...	...	226,509
Value of fuel used	£ 21,930	4,936	9,060	732	...	...	36,658
Value of raw material worked up	£ 2,552,400	473,648	1,134,350	79,307	...	...	4,238,705
Value of final output	£ 2,928,057	547,784	1,277,282	89,408	...	...	4,742,531
Value added in process of manufacture £	275,657	75,136	142,932	10,101	...	...	503,826

(ii.) *Development of Fellmongering and Wool-scouring, 1909 to 1914.*—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, 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	124	122	112	120	119	108
Number of employees	2,655	2,674	2,590	2,544	2,375	2,298
Actual horse-power of engines used ...	2,473	2,896	3,230	3,831	3,966	3,772
Approx. value of land and buildings £	255,030	274,122	273,281	267,188	269,895	256,330
Approx. value of plant and machinery £	213,894	298,548	308,211	348,970	346,381	330,047
Total amount of wages paid	£ 210,500	217,919	208,627	209,352	230,445	226,509
Value of fuel used	£ 25,907	31,250	21,581	31,445	33,404	36,658
Value of raw materials worked up	£ 3,714,968	3,965,303	3,757,750	3,859,200	4,365,413	4,238,705
Value of final output	£ 4,550,457	4,855,517	4,343,690	4,444,938	4,940,410	4,742,531
Value added in process of manufacture £	835,489	690,214	585,940	585,738	574,997	503,826

A slight decline has taken place in this industry during the last five years as regards the number of establishments and of employees. On the other hand, the horse-power used, the value of plant and machinery, and of fuel used, all show substantial increases amounting to 52.5 per cent., 35.32 per cent. and 41.49 per cent. respectively.

4. *Soap and Candle Factories.*—(i.) In Class II. (see § 1. 3 hereof) the manufactures of soap and candles are the most important industries. These two manufactures are frequently carried on in the same establishments, 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 1914 :—

SOAP AND CANDLE FACTORIES, 1914.

Items.	N.S.W.	Vic.	Qld.	S.A.	* W.A.	Tas.	Cwlth.
Number of factories	32	17	14	5	6	1	75
“ employees	753	617	153	201	113	24	1,861
Actual horse-power of engines employed ...	548	442	189	162	141	2	1,434
Approximate value of land and buildings £	174,161	90,125	28,723	55,679	21,565	4,165	374,418
“ “ plant and machinery £	187,617	120,215	41,931	23,349	12,970	662	385,744
Total amount of wages paid during year £	71,350	65,155	14,566	26,168	10,508	2,602	190,349
Value of fuel used	£ 13,094	11,463	1,931	6,093	1,125	303	33,049
Value of raw material worked up	£ 432,508	397,924	61,413	130,422	86,274	8,599	1,117,140
Total value of output	£ 675,893	641,104	119,348	183,293	123,613	13,687	1,756,938
Value added in process of manufacture £	243,385	243,180	57,935	52,871	37,339	5,088	639,798

* Including three bark milling establishments in order to avoid disclosing particulars of individual establishments.

(ii.) *Development of Soap and Candle Factories, 1909 to 1914.* 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, 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories...	73	78	81	77	74	75
" employees	1,582	1,606	1,668	1,776	1,755	1,801
Actual horse-power of engines used...	920	1,002	1,266	1,274	1,314	1,434
Approximate value of land and buildings	£ 296,312	311,333	347,824	360,572	360,783	374,418
" plant and machinery	£ 300,015	305,693	326,273	348,365	364,357	385,744
Total amount of wages paid...	£ 139,959	140,423	148,592	162,551	172,247	190,349
Value of fuel used	£ 30,270	33,222	31,701	30,896	31,692	33,949
" of raw material worked up	£ 832,263	952,770	1,018,757	1,030,770	1,067,001	1,117,140
" of final output	£ 1,304,483	1,410,176	1,588,416	1,614,898	1,644,188	1,756,938
" added in process of manufacture	£ 472,220	487,406	569,659	584,128	577,187	639,798

* Including three bark milling establishments in Western Australia.

(iii.) *Production of Soap and Candles, 1909 to 1914.* The subjoined statement shows that, taking the Commonwealth as a whole, there has been a considerable and consistent increase in the output of soap during the past five years.

PRODUCTION OF SOAP AND CANDLES IN THE COMMONWEALTH, 1909 to 1914.

Particulars.	1909.	1910.	1911.	1912.	1913.	1914.
Soap cwt.	567,648	617,458	639,458	688,722	700,878	697,807
Candles "	143,722	144,621	130,122	130,785	129,877	110,734

* Exclusive of Western Australia, for which State particulars are not available for publication.

(iv.) *Raw Materials Used, 1909 to 1914.* The following statement shows the quantity of certain raw materials used in soap and candle factories in the Commonwealth during the years 1909 to 1914:—

RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1909 to 1914.

Particulars.	1909.	1910.	1911.	1912.	1913.	1914.
Tallow cwt.	346,591	349,035	356,471	411,701	391,133	410,235
Alkali "	107,225	134,010	133,675	135,643	135,231	158,624
Cocconut oil gal.	*	355,802	505,612	499,329	457,693	460,561

* Figures not available. † Exclusive of Western Australia, for which State figures are not available for publication.

5. *Saw Mills, etc.*—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., 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	610	394	312	90	73	144	1,623
" employees	7,736	6,939	5,170	1,469	5,779	1,771	28,864
Actual horse-power of engines employed	17,157	9,265	8,212	1,581	8,489	2,634	47,341
Approx. value of land and buildings	£ 872,636	368,655	209,485	144,072	388,767	79,822	2,063,437
" plant and machinery	£ 774,294	568,428	495,250	77,999	531,736	184,758	2,632,465
Total amount of wages paid during year	£ 838,642	770,075	536,203	178,620	908,187	169,318	3,401,045
Value of fuel used	£ 20,295	13,044	9,230	3,833	2,847	1,401	50,650
Value of raw material worked up	£ 2,024,512	1,149,065	914,929	662,537	1,287,742	132,426	5,012,211
Total value of output	£ 3,264,614	2,323,598	1,883,868	943,874	1,308,928	375,804	10,100,686
Value added in process of manufacture	£ 1,240,102	1,174,533	968,939	281,337	1,180,186	243,378	5,088,475

The development of forest and other saw mills, etc., since 1909, is shewn in the following table :—

**DEVELOPMENT OF SAW MILLS, FOREST AND OTHER, Etc., IN THE
COMMONWEALTH, FROM 1909 to 1914.**

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of establishments	1,284	1,350	1,494	1,609	1,670	1,623
" employees	21,416	23,424	26,785	29,358	30,371	28,864
Actual horse-power of engines used...	27,141	30,520	34,540	40,256	45,684	47,341
Approximate value of land and buildings	£ 1,160,713	1,363,927	1,532,620	1,754,241	2,008,035	2,063,437
" of plant and machinery	£ 1,562,130	1,794,078	2,141,883	2,365,462	2,571,701	2,632,465
Total amount of wages paid...	£ 2,007,298	2,290,059	2,749,209	3,211,625	3,383,907	3,401,045
Value of fuel used	£ 28,694	29,856	37,308	43,913	51,436	50,650
" of raw material worked up ...	£ 2,977,219	3,372,421	4,208,333	4,900,612	5,273,688	5,012,211
" of final output	£ 6,098,939	6,928,310	8,535,800	9,882,810	10,411,923	10,100,686
" added in process of manufacture	£ 3,121,720	3,555,889	4,327,467	4,982,198	5,168,235	5,088,475

The great development in the building and other trades that has taken place in Australia during late years is 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.

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 is one of the first industries to which what has been called the "New Protection" system was sought to be applied (see Section XXVII. hereof). The nature of the machines manufactured may be gathered from the machines scheduled in the Customs tariff, 1906-7, which includes stripper harvesters, strippers, stump-jump ploughs, disc 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 1914 :—

AGRICULTURAL IMPLEMENT WORKS, 1914.

Items.	N.S.W.	Victoria	Q'land.	S.Aust.	W.A.	Tas.	C'w'ith.
Number of factories	24	65	6	54	4	1	154
" employees	599	1,968	104	952	237	5	3,865
Actual horse-power of engines employed	313	1,238	64	862	185	3	2,665
Approx. value of land and buildings	£ 100,235	160,980	4,150	66,966	28,465	100	360,916
" plant and machinery	£ 36,494	186,272	7,135	78,803	15,288	300	324,292
Total amount of wages paid during year	£ 70,028	242,158	9,798	111,637	32,774	291	466,686
Value of fuel used	£ 2,812	16,866	412	7,182	2,590	30	29,892
Value of raw material worked up	£ 275,630	278,283	14,397	114,418	66,125	300	749,153
Total value of output	£ 387,974	638,827	32,356	269,641	84,118	873	1,413,789
Value added in process of manufacture	£ 112,344	360,544	17,959	155,223	17,993	573	664,636

Development of Agricultural Implement Works. The following table shews the progress of this industry during the years 1909 to 1914 to have been very satisfactory. Notwithstanding a general decline in the year 1914, during the five year period under review the number of establishments increased 4 per cent., the value of plant and machinery over 90 per cent., and the value of output about 15 per cent. :—

DEVELOPMENT OF AGRICULTURAL IMPLEMENT WORKS IN THE COMMON-WEALTH, FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	148	150	155	159	154	154
Number of employees	4,081	4,868	5,156	4,733	4,444	3,865
Actual horse-power of engines used ...	1,713	2,228	2,347	2,419	2,698	2,665
Approx. value of land and buildings £	199,544	227,936	284,469	331,348	348,666	360,916
Approx. value of plant and machinery £	169,778	208,185	245,025	281,923	309,015	324,292
Total amount of wages paid	£ 356,710	470,931	550,922	527,406	502,244	466,686
Value of fuel used	£ 23,992	35,070	32,342	30,961	30,408	29,592
Value of raw material worked up	£ 559,141	743,032	811,322	751,596	824,556	749,153
Value of final output	£ 1,227,339	1,560,880	1,656,364	1,538,421	1,536,378	1,413,789
Value added in process of manufacture £	668,198	817,848	845,042	786,825	711,822	664,636

7. Engineering, 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 by the limited classification still adopted by some of the States.

ENGINEERING, IRONWORKS, AND FOUNDRIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	312	388	99	62	66	23	950
employees	10,059	9,032	3,088	1,817	1,257	463	25,766
Actual horse-power of engines employed	20,239	8,537	1,901	1,285	1,297	371	33,630
Approx. value of land and buildings £	1,183,283	615,069	191,310	105,437	128,335	41,455	2,264,589
plant and machinery £	1,627,923	823,341	213,236	117,258	112,582	52,007	2,946,347
Total amount of wages paid during year £	1,258,032	1,089,633	346,033	220,406	175,948	53,868	3,143,920
Value of fuel used	£ 205,905	97,667	17,509	16,598	14,559	4,833	357,071
Value of raw materials worked up	£ 1,717,110	1,401,268	361,176	246,859	189,551	44,288	3,960,252
Total value of output	£ 3,671,429	3,152,868	947,605	570,762	413,811	125,302	8,881,777
Value added in process of manufacture £	1,954,319	1,751,600	586,429	323,903	224,260	81,014	4,921,525

In addition to engineering works which supply ordinary requirements, there are 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, ironworks, and foundries in the Commonwealth since 1909 is shewn in the following table :—

DEVELOPMENT OF ENGINEERING, IRONWORKS, AND FOUNDRIES, FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	754	781	820	877	919	950
Number of employees	17,882	20,109	22,539	25,151	26,014	25,766
Actual horse-power of engines used ...	11,403	13,493	16,015	18,744	20,630	33,630
Approx. value of land and buildings ...	£ 1,335,863	1,382,872	1,579,925	1,792,169	1,980,453	2,264,889
Approx. value of plant and machinery ...	£ 1,414,187	1,541,107	1,706,405	1,953,478	2,188,935	2,946,347
Total amount of wages paid	£ 1,715,292	1,948,326	2,342,603	2,846,180	3,044,263	3,143,920
Value of fuel used	£ 149,346	166,449	178,546	195,729	217,173	357,071
Value of raw material worked up	£ 2,076,291	2,414,210	2,832,181	3,536,179	3,719,643	3,960,252
Value of final output	£ 4,822,169	5,636,048	6,614,535	7,930,060	8,815,320	8,881,777
Value added in process of manufacture £	2,745,878	3,221,838	3,782,354	4,393,581	4,595,677	4,921,525

The progress in these industries during late years has been very rapid. Since 1909 the number of establishments has increased over 24 per cent., the number of hands employed 44 per cent., the amount of wages paid 83 per cent., the amount of capital invested in land, buildings, plant and machinery, 89½ per cent., and the output 84 per cent.

8. Railway and Tramway Workshops.—(i.) 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 establishments manufacturing rolling stock:—

RAILWAY AND TRAMWAY WORKSHOPS, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.Aust.	W. Aust.	Tas.	C'w'lth.
Number of factories ...	26	17	8	8	9	7	75
" employees ...	9,577	5,346	2,084	2,576	1,867	295	21,745
Actual h.p. of engines employed ...	5,493	1,423	1,137	576	2,243	153	11,025
Approx. value of land and buildings £	1,057,558	337,164	292,366	258,344	426,257	7,075	2,378,764
Approx. value of plant and mach'ny £	965,664	252,356	206,310	193,806	438,543	84,975	2,141,654
Total amt. of wages paid during year £	1,366,091	756,146	298,632	354,745	278,775	42,345	3,096,734
Value of fuel used ...	31,503	26,561	6,220	7,224	17,337	1,487	90,332
Value of raw material worked up £	854,595	916,026	256,208	234,620	210,338	20,430	2,492,217
Total value of output ...	2,426,094	1,839,388	636,186	661,657	505,284	65,979	6,134,588
Value added in process of manuf'ct're £	1,571,490	923,362	379,978	427,037	294,946	45,549	3,642,371

(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 publication.

(iii.) *Development of Railway and Tramway Workshops, 1909 to 1914.* The following table shews the development of railway and tramway workshops in the Commonwealth since 1909:—

DEVELOPMENT OF RAILWAY AND TRAMWAY WORKSHOPS, Etc., FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories...	68	68	72	73	73	75
" employees ...	13,176	14,915	17,425	19,662	26,014	21,745
Actual horse-power of engines used ...	10,731	7,384	8,373	9,637	9,581	11,025
Approx. value of land and buildings £	1,884,351	1,939,092	2,036,178	2,128,273	2,213,697	2,378,764
" plant and machinery £	1,284,764	1,394,657	1,433,093	1,563,710	1,685,050	2,141,654
Total amount of wages paid... £	1,628,379	1,842,142	2,163,460	2,702,711	3,018,988	3,096,734
Value of fuel used ...	43,114	57,777	69,919	75,476	77,155	90,332
" of raw material worked up ...	1,426,542	1,558,898	1,939,477	2,574,737	2,874,535	2,492,217
" of final output ...	3,234,955	3,648,168	4,468,096	5,695,221	6,435,823	6,134,588
" added in process of manufacture	1,808,413	2,089,270	2,528,619	3,120,484	3,561,288	3,642,371

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 (see Section XVII., § 2 and 3), has resulted in an enhanced activity in those workshops engaged in the manufacture or repair of rolling stock, etc. The above table shews the number of employees to have increased 65 per cent. during the last five years, the

amount of wages paid 90 per cent., the final output nearly 90 per cent., while the value added in process of manufacture shews an increase of 101 per cent.

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 an 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, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	26	55	11	6	...	3	101
" employees	2,909	370	559	1,580	...	646	6,064
Actual horse-power of engines employed	13,402	395	3,781	3,780	...	2,501	23,859
Approx. value of land and buildings £	212,398	10,056	55,717	19,748	...	32,897	330,816
" plant and machinery £	1,087,273	44,656	306,463	68,420	...	132,777	1,639,599
Total am't of wages paid during year £	342,958	35,936	52,649	298,388	...	97,324	827,255
Value of fuel used	156,149	4,480	16,383	180,139	...	69,210	426,361
Value of raw material worked up	£3,624,155	89,424	202,847	1,748,692	...	563,181	6,228,299
Total value of output	£5,884,456	169,032	572,747	2,604,336	...	837,332	10,032,903
Value added in process of manufacture £	2,260,301	79,608	334,900	855,644	...	274,151	3,804,604

* See third paragraph below.

In New South Wales and Queensland the above figures represent smelting works; those for Victoria include forty-seven cyanide works, two metallurgical, four pyrites, and two smelting works; South Australia four cyanide and two smelting; and Tasmania two smelting and one cyanide and pyrites works.

The largest output for the year under review was in New South Wales, viz., £5,884,456, or 58.65 per cent. on the total output for the Commonwealth. South Australia came next with £2,604,336, or 25.96 per cent.; this amount is made up of £2,598,639 smelting and £5697 cyanide. Of the total for Tasmania, the output of smelting was £788,935, the balance £48,397 representing that of cyanide and pyrites works. The output in Victoria was £65,032, £63,038, £40,035, and £927 from cyanide, pyrites, smelting, and metallurgical works in the order named.

In Western Australia all the plants are worked on the mines and are therefore not included.

10. **Bacon-curing Factories.**—(i.) The following table gives particulars of factories engaged in bacon-curing in each State during the year 1914 :—

BACON-CURING FACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	* W.A.	Tas.	C'w'lth.
Number of factories	21	26	9	11	...	5	72
" employees	202	475	350	78	...	24	1,129
Actual horse-power of engines employed	315	831	577	68	...	28	1,819
Approx. value of land and buildings £	72,277	91,960	90,817	11,574	...	5,447	272,075
" plant and machinery £	27,314	61,069	51,795	5,100	...	1,922	147,200
Total amount of salaries and wages paid £	30,927	57,965	46,697	8,394	...	2,400	146,383
Value of fuel used	4,174	6,398	4,088	639	...	380	15,679
Value of raw material worked up	£536,416	673,930	334,300	96,878	...	25,367	1,666,891
Total value of output	£617,406	772,318	541,975	110,934	...	43,492	2,086,125
Value added in process of manufacture £	60,990	98,388	207,675	14,056	...	18,125	419,234

* Two establishments, particulars not available for publication.

(ii.) *Quantity and Value of Production, 1914.* The following table shews the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State during the year 1914 :—

PRODUCTION OF BACON-CURING FACTORIES, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.*	Tasmania.	C'wealth.
QUANTITY (,000 omitted).							
Bacon & ham lbs.	13,565	16,298	12,685	2,614	...	1,309	46,471
Lard ... lbs.	634	798	930	117	...	275	2,754
VALUE.							
Bacon & ham £	554,692	713,365	460,761	104,400	...	33,739	1,866,957
Lard ... £	18,999	23,094	23,426	3,243	...	2,602	71,364
Other products £	25,460	35,859	57,788	3,291	...	7,215	129,613
PIGS KILLED.							
Number ...	172,876	181,756	164,416	30,421	...	10,134	559,603

* In Western Australia all bacon and hams treated in factories are imported and subsequently smoked in that State.

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.) The subjoined table gives particulars of butter, cheese, and condensed milk factories in each State during the year 1914. The returns are exclusive of butterine and margarine factories.

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	162	196	94	46	5	25	528
" employees ...	1,087	1,343	810	175	22	111	3,568
Actual horse-power of engines employed	2,892	2,820	1,551	331	66	232	7,895
Approximate value of land and buildings	200,553	307,051	98,194	35,674	6,380	17,147	664,999
plant & machinery £	286,323	336,626	177,160	28,544	3,750	13,367	850,770
Total amount of wages paid ...	£ 152,954	161,740	98,755	14,368	3,128	8,176	439,121
Value of fuel used ...	£ 32,109	31,211	14,234	2,600	424	1,231	81,809
Value of raw material worked up	£ 3,815,028	2,840,526	1,643,100	202,289	104,777	103,552	8,709,272
Total value of output ...	£ 4,187,034	3,228,640	2,009,822	232,318	112,123	128,461	9,898,398
Value added in process of manufacture	£ 572,006	388,114	366,722	30,029	7,346	24,909	1,189,126

* Including two bacon-curing establishments, in order to avoid disclosing particulars of individual establishments.

(ii.) *Development of Factories, 1909 to 1914.* The following table shows the progress of the factories in this industry during the past five years:—

DEVELOPMENT OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES IN THE COMMONWEALTH, 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories ...	550	548	540	530	531	528
" employees ...	3,263	3,479	3,730	3,518	3,507	3,568
Actual horse-power of engines used	6,045	6,182	6,818	8,156	7,726	7,895
Approx. value of land and buildings	£ 545,145	576,644	677,139	659,673	664,735	664,999
plant and machinery £	694,129	708,239	775,792	788,922	828,986	850,770
Total amount of wages paid ...	£ 295,826	324,505	375,221	385,793	411,491	439,121
Value of fuel used ...	£ 52,789	59,616	67,555	70,155	72,214	81,809
" raw material worked up	£ 6,012,094	7,378,146	8,341,125	8,676,346	8,146,178	8,709,272
final output ...	£ 6,727,324	8,230,782	9,432,122	9,760,205	9,284,747	9,898,398
Value added in process of manufacture	£ 715,230	852,636	1,090,997	1,083,859	1,138,569	1,189,126

(iii.) *Quantity and Value of Production, 1914.* 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 during 1914 :—

PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Butter lbs.	80,302	57,576	35,063	3,258	147	2,432	178,778
Cheese "	3,770	2,673	7,814	1,999	...	410	16,666
Condensed and concentrated milk ... lbs.	6,002	19,094	6,967	...	...	...	32,063
VALUE (,000 OMITTED).							
Butter £	3,894	2,766	1,626	181	*	119	8,586
Cheese £	105	71	224	51	...	9	460
Condensed and concentrated milk ... £	100	371	160	...	...	...	631
MILK USED (,000 OMITTED).							
Butter factories ... gals.	181,121	134,694	75,185	6,657	324	6,082	404,063
Cheese " " "	3,882	2,671	7,714	1,977	...	424	16,668
Condensed milk factories " "	1,601	6,390	1,889	...	...	...	9,869

* Not available for publication.

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. The freezing of various kinds of produce for export has long been an established industry. Large freezing works have been installed at many ports in the Commonwealth for the purpose of freezing produce chiefly for export, and 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. Particulars regarding the export of frozen beef and mutton may be found on pages 290 and 294 hereof respectively. Special terms have been made by the Commonwealth Government in its English mail contract for the provision by the contractors of ample cold-storage facilities. The export of frozen produce is stated to be capable of considerable expansion. 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, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	102	36	54	17	13	6	228
" employees	2,610	1,807	5,310	367	101	29	10,224
Actual horse-power of engines employed	5,621	5,800	9,610	847	765	270	22,913
Approx. value of land and buildings £	611,458	442,117	869,553	148,986	56,155	9,300	2,137,569
" plant and machinery £	516,434	247,886	922,468	85,527	38,940	4,711	1,815,966
Total amount of wages paid during year £	337,433	903,651	588,605	51,716	15,013	2,567	1,198,985
Value of fuel used	£ 55,973	38,560	72,043	8,451	6,253	587	181,867
Value of raw material worked up	£5,815,122	1,446,262	4,917,600	162,385	2,506	1,415	12,345,290
Total value of output	£6,805,729	1,797,734	6,628,311	241,109	34,168	7,581	15,514,632
Value added in process of manufacture £	990,607	351,472	1,710,711	78,724	31,662	6,166	3,169,342

The following table gives particulars, so far as available, of various classes of meat preserved during the year 1914 :—

MEAT-PRESERVING WORKS—PARTICULARS OF ANIMALS TREATED, 1914.

Particulars.		N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lt'h.
Sheep treated	... No.	415,397	1,710,152	756,691	1,124	...	...	2,883,364
Cattle	" " No.	103,778	24,990	546,409	6,170	...	...	681,347
Pigs	" " No.	...	42	648	...	...	...	690

Large quantities of rabbits, hares, and poultry for which, however, complete returns are not available, were treated in freezing works. During 1914, 1,917,870 pairs of rabbits and hares were treated in Victoria, and 993,793 pairs of rabbits in South Australia. Exclusive of Victoria, for which State particulars are not available, the returns show that 96,076 tons of ice, valued at £180,530, were manufactured in the Commonwealth in 1914.

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 Manufactories.**—The following table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1914:—

BISCUIT, Etc., MANUFACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	*W.A.	Tas.	C'w'lt'h.
Number of factories	7	6	16	3	...	4	36
" employees	1,410	1,405	501	118	...	120	3,554
Actual horse-power of engines employed	672	313	328	62	...	67	1,442
Approx. value of land and buildings	£ 117,231	73,650	54,305	17,170	...	21,300	283,716
" plant and machinery	£ 103,970	59,675	39,878	10,579	...	10,500	226,602
Total amount of wages paid during year	£ 78,010	103,214	49,515	9,803	...	7,953	243,323
Value of fuel used	£ 9,616	9,791	2,100	1,728	...	1,228	24,463
Value of raw material worked up	£ 428,520	344,588	97,760	28,155	...	25,945	924,968
Total value of output	£ 681,142	574,133	224,027	56,860	...	49,514	1,585,576
Value added in process of manufacture	£ 252,622	229,545	126,267	28,705	...	23,563	660,708

* In order to avoid disclosing particulars of individual establishments, three biscuit factories in Western Australia are included with confectionery.

14. **Jam and Fruit Preserving, Pickles, Sauces, and Vinegar Manufactories.**—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 young, but is of increasing value, and is stated to be capable of considerable expansion. The subjoined table gives particulars of factories at which these industries were carried on in each State during the year 1914. Separate returns for the individual industries are not available for most of the States.

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR MANUFACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lt'h.
Number of factories	36	33	11	29	8	19	136
" employees	1,074	1,857	220	604	65	710	4,530
Actual horse-power of engines employed	366	400	98	137	29	531	1,561
Approx. value of land and buildings	£ 114,333	115,425	15,997	38,166	5,342	60,175	349,438
" plant and machinery	£ 55,794	59,550	10,903	17,584	1,767	22,980	168,578
Total amount of wages paid during year	£ 88,512	133,229	13,765	30,687	4,690	47,649	318,532
Value of fuel used	£ 4,893	8,623	669	2,413	391	4,897	21,886
Value of raw material worked up	£ 464,530	556,396	38,840	141,185	12,114	231,177	1,444,242
Total value of output	£ 656,308	835,807	67,877	203,629	18,916	327,650	2,110,187
Value added in process of manufacture	£ 191,778	279,411	29,037	62,444	6,802	96,473	665,945

Quantity and Value of Production, 1914. The following table shews the quantity and value of jams, pickles, and sauces manufactured in each State during the year 1914:—

QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCE MANUFACTURED, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
QUANTITY (,000 OMITTED).							
Jam ... lbs.	29,799	30,437	1,279	7,284	†	18,505	\$87,304
Fruit, preserved lbs.	2,135	9,120	2,958	3,280	...	12,399	19,922
Pickles ... pints	2,626	1,641	*87	343	100	26	5,023
Sauce ... pints	2,952	5,648	339	922	376	84	10,321
VALUE.							
Jam ... £	429,896	521,469	22,797	105,027	†	242,626	\$1,321,815
Fruit, preserved £	33,049	123,918	30,917	56,177	...	138,650	282,711
Pickles ... £	49,778	45,717	1,707	7,245	2,691	545	107,683
Sauce ... £	63,885	144,703	5,429	18,249	7,041	1,685	240,992

* Approximate. † Exclusive of 44,790 cwt. fruit pulped, value £43,735. ‡ Information not available for publication. § Exclusive of Western Australia.

15. **Confectionery.**—The following table shews the position of the confectionery industry in 1914, and its growth will be apparent when it is stated that at the close of 1900 there were in New South Wales 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, the plant and machinery in the former State being valued at £2815, and at £19,070 in the latter.

CONFECTIONERY FACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'ldh.
Number of factories ...	53	33	9	7	7	5	114
employees ...	1,534	1,656	407	260	279	27	4,163
Actual horse-power of engines employed	714	663	191	241	232	15	2,056
Approx. value of land and buildings £	249,578	100,335	29,862	30,154	25,005	5,500	440,534
plant and machinery £	95,512	108,749	20,240	32,435	29,637	1,085	287,658
Total amount of wages paid during year £	130,222	127,153	26,078	19,882	24,536	2,238	333,009
Value of fuel used ...	8,650	8,410	1,597	1,965	2,976	217	23,815
Value of raw material worked up	£522,514	436,518	44,129	55,599	66,418	5,760	1,130,938
Total value of output ...	£816,389	676,067	127,420	97,590	110,946	9,810	1,838,222
Value added in process of manufacture £	293,875	239,549	83,291	41,991	44,528	4,050	707,284

* Including three biscuit factories.

16. **Flour Mills.**—(i.) The following table shews the position of the flour-milling industry in the year 1914 :—

FLOUR MILLS, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.*	W.A.*	Tas.*	C'w'ldh.
Number of factories ...	63	57	11	46	17	14	208
employees ...	901	887	182	519	230	114	2,833
Actual horse-power of engines employed	4,781	4,467	901	2,851	1,691	588	15,279
Approx. value of land and buildings £	363,641	227,460	62,769	118,781	89,428	50,375	912,454
plant and machinery £	334,602	276,425	77,877	149,417	98,593	27,730	964,644
Total am't of wages paid during year £	139,702	109,910	19,781	63,576	34,046	12,615	379,630
Value of fuel used ...	£22,687	24,046	2,963	12,242	6,069	2,232	70,239
Value of raw material worked up	£2,827,968	2,284,345	350,533	793,852	563,672	233,500	7,054,370
Total value of output ...	£3,351,289	2,726,878	429,017	954,794	704,228	260,538	8,426,744
Value added in process of manufacture £	523,321	442,033	78,484	160,942	140,556	27,038	1,372,374

* The manufacture of cornflour, oatmeal, etc., was worked in conjunction with these establishments.

(ii.) **Production of Flour Mills, 1909 to 1914.** The production of flour by the mills in each State of the Commonwealth in the years 1909 to 1914 was as follows :—

FLOUR MILLS—PRODUCTION, 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.	C'wealth.
	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*
1909	214,426	215,547	29,451	97,967	24,878	21,419	603,688
1910	242,813	225,282	27,559	95,885	36,818	20,925	649,282
1911	253,556	247,434	27,960	100,374	40,642	21,335	691,301
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	246,136	35,402	84,701	61,922	19,382	713,845

* Tons of 2000 lbs.

The total production of flour for the Commonwealth for 1914, viz., 713,845 tons, was valued at £6,543,613; in addition 315,825 tons of bran and pollard, valued at £1,760,584, were made. The total quantity of wheat ground in 1914 was 34,932,614 bushels.

17. **Sugar Mills.**—The following table shews the position of the cane-crushing branch of the sugar-making industry in 1914. 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, 1914.

Items.	N.S.W.	Queensland.	Total.
Number of factories	3	47	50
" employees	437	4,835	5,272
Actual horse-power of engines employed ...	2,750	11,473	14,223
Approximate value of land and buildings £	54,000	338,398	392,398
" " plant and machinery £	478,927	2,096,490	2,575,417
Total amount of wages paid during year £	54,708	463,094	517,802
Value of fuel used	£ 5,507	57,566	63,073
Value of raw material worked up	£ 200,009	2,215,752	2,415,761
Total value of output	£ 320,464	3,319,293	3,639,757
Value added in course of manufacture £	120,455	1,103,541	1,223,996

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 turned into food cake for cattle, and part is used for manuring land, but fully a third is put to no use whatever. 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 1914.

Items.	1870.	1877.	1886.	1896.	1901.	1910.	1911.	1912.	1913.	1914.
No. of factories	27	50	64	23	12	4	4	3	3	3
" employees	...	1,065	2,259	1,475	695	506	469	469	486	437
Cane crushed tns	...	*	*	*	*	160,311	167,799	141,274	185,910	181,606
Sugar produced tons	677	7,537	13,750	28,557	19,519	20,115	17,299	16,817	22,192	20,029
Molasses produced gals.	...	345,543	507,000	2,520,580	1,300,909	918,900	796,440	667,100	966,000	1,104,000

* 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 pastures in connection with the dairying industry.

SUGAR MILLS, QUEENSLAND, 1868 to 1914.

Items.	1868.	1876.	1886.	1896.	1901.	1910.	1911.	1912.	1913.	1914.
No. of factories	10	70	118	63	52	49	49	47	48	47
" employees	...	*	*	3,796	*	4,036	4,295	3,891	4,524	4,835
" acres	...	...	...	...	...	...	...	...	...	...
" crushed ...	...	7,245	40,756	66,640	78,160	1,840,447†	1,534,451†	994,212†	2,085,588†	1,922,633†
Sugar produced...tons	...	8,214	59,225	100,774	120,858	210,756	173,296	113,060	242,837	225,847
Molasses produced gals.	68,622	416,415	1,784,266	2,195,470	3,679,952	7,329,870	6,451,193	4,988,988	4,263,186	2,374,501

* Not available. † Tons of cane crushed.

Information regarding the cultivation of sugar-cane and the bounties payable on cane grown by white labour may be found in the section of this book dealing with *Agricultural Production*. (See pages 342 to 347.)

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 1914 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 1751 hands was employed during the year 1914. The approximate value of land and buildings was £450,921; of plant and machinery, £1,041,862; and the total amount of wages paid during the year was £223,243. The value of all materials used in sugar refineries during 1914 was £4,443,863, while the total output represented £5,123,360. The amount of crude sugar used was 267,964 tons, and of refined sugar produced 256,767 tons, valued at £4,970,817.

19. Breweries.—(i.) The following table gives particulars of breweries in each State during the year 1914:—

BREWERIES, 1914.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Number of factories ...	27	25	10	13	15	5	95
" employees ...	1,045	1,050	430	387	480	143	3,535
Actual horse-power of engines employed ...	2,208	3,151	461	995	1,414	84	8,313
Approx. value of land and buildings ...	£ 620,102	396,030	134,189	122,358	191,955	395,950	1,860,584
Approx. value of plant and machinery ...	£ 564,327	394,785	120,447	110,774	201,326	41,957	1,433,616
Total amount of wages paid during year ...	£ 168,997	167,352	66,421	60,347	91,150	21,179	575,446
Value of fuel used ...	£ 28,096	25,354	7,412	9,704	12,633	2,976	86,175
Value of raw material worked up ...	£ 630,314	483,098	134,860	119,122	129,347	37,915	1,534,656
Total value of output ...	£ 1,533,435	1,196,306	467,765	349,735	444,757	115,500	4,107,498
Value added by process of manufacture ...	£ 903,121	713,208	332,905	230,613	315,410	77,585	2,572,842

(ii.) *Production and Materials Used, 1914.* 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 1914:—

PRODUCTION AND MATERIALS USED IN BREWERIES, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
ALE AND STOUT BREWED.							
Quantity gallons	23,516,887	23,865,467	6,138,587	5,987,185	5,544,090	1,985,013	67,037,219
Value* ... £	1,148,945	1,196,306	467,765	343,876	429,904	116,248	3,703,044
RAW MATERIALS USED.							
Malt ... bush.	838,148	678,526	190,770	140,427	165,689	74,355	2,087,915
Hops ... lbs.	893,050	738,953	272,175	197,741	213,431	112,756	2,428,106
Sugar ... cwt	103,848	133,707	44,785	35,253	27,625	9,374	354,592
RAW MATERIALS USED PER 1000 GALLONS OF ALE AND STOUT PRODUCED.							
Malt ... bush.	35.64	28.43	31.08	23.46	29.89	37.46	31.15
Hops ... lbs.	37.97	30.96	44.34	33.03	38.50	56.80	36.22
Sugar ... cwt.	4.42	5.60	7.30	5.89	4.98	4.72	5.29

* Exclusive of excise duty.

(iii.) *Development of Breweries, 1909 to 1914.* The following table shews the progress of this industry during the past five years:—

DEVELOPMENT OF BREWERIES FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	125	124	121	110	101	95
" employees	3,238	3,333	3,450	3,532	3,551	3,535
Actual horse-power of engines used ...	3,704	4,663	5,008	5,678	6,930	8,313
Approx. value of land and buildings £	1,398,283	1,453,696	1,469,449	1,526,629	1,554,187	1,860,584
" plant and machinery £	817,671	903,521	970,618	1,078,724	1,171,595	1,433,616
Total amount of wages paid ...	420,032	445,342	483,393	523,812	552,843	575,446
Value of fuel used	68,963	77,101	69,284	76,906	75,824	86,175
" raw material worked up ...	1,157,707	1,138,145	1,273,522	1,494,070	1,568,620	1,534,656
" final output	2,864,923	3,076,736	3,318,937	3,647,850	3,817,396	4,107,498
Value added in process of manufacture £	1,707,216	1,938,591	2,045,415	2,153,780	2,248,776	2,572,842

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 £2,864,923 in 1909 to £4,107,498 in 1914, equal to 43.4 per cent. during the period.

20. *Distilleries.*—The subjoined table gives particulars of distilleries in each State during the year 1914. There are no distilleries in either of the States of Western Australia or Tasmania.

DISTILLERIES, 1914.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	3	9	3	18	...	...	33
" employees	22	101	40	79	...	...	242
Actual horse-power of engines employed ...	124	212	55	200	...	...	591
Approximate value of land and buildings £	19,330	99,575	13,603	25,183	...	...	157,691
Approx. value of plant and machinery £	58,008	73,750	18,136	22,747	...	...	172,641
Total amount of wages paid during year £	5,513	8,774	5,546	6,015	...	...	25,848
Value of fuel used	1,403	3,887	3,490	2,378	...	...	11,164
Value of raw materials worked up ...	34,180	60,377	11,698	52,368	...	...	158,643
Total value of output	53,079	89,399	58,358	77,526	...	...	278,362
Value added in process of manufacture £	18,899	29,022	46,060	25,138	...	...	119,719

Production of Spirits and Materials Used, 1914. The total quantity of brandy distilled in 1914 was 208,730 proof gallons, and of other spirits was 3,086,205 proof gallons. The materials used comprised 308,038 cwt. of molasses and sugar, and 2,816,141 gallons of wine. Particulars for the separate States are not available for publication.

21. *Tobacco, Cigars, and Cigarettes.*—(i.) During the year 1914 there were thirty-six 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, 1914.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	11	13	3	3	6	...	36
" employees	1,763	1,684	75	101	35	...	3,658
Actual horse-power of engines employed ...	413	353	20	10	12	...	808
Approx. value of land and buildings £	212,726	168,955	3,352	13,089	4,340	...	402,462
" plant and machinery £	118,606	109,270	8,708	11,104	844	...	248,532
Total amount of wages paid during year £	173,440	192,194	7,293	6,283	1,611	...	390,821
Value of fuel used	4,451	2,493	214	175	32	...	7,365
Value of raw material worked up ...	1,187,756	672,665	28,835	9,749	6,484	...	1,905,489
Total value of output	1,767,898	1,158,067	53,149	16,592	10,776	...	3,006,482
Value added in process of manufacture £	580,142	485,492	24,314	6,843	4,292	...	1,100,993

(ii.) *Quantity of Goods Produced, and Tobacco Leaf Used, 1914.* 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 during the year 1914 :—

PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Manufact'ed tobacco lbs.	4,524	5,141	197	97	5	...	9,964
Cigars lbs.	102	286	...	13	...	...	401
... .. No.	8,966	23,533	...	935	...	...	33,434
Cigarettes lbs.	2,866	330	...	...	1	...	3,197
... .. No.	1,256,542	140,101	...	...	449	...	1,397,092
TOBACCO LEAF USED (,000 OMITTED).							
Australian leaf ... lbs.	925	340	239	35	...	...	1,539
Imported leaf ... lbs.	5,756	4,708	5	77	6	...	10,552

(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 1914-15 were—manufactured tobacco 2,156,406 lbs., cigars 283,901 lbs., and cigarettes 138,455 lbs., while the quantities manufactured in Australian factories were respectively 9,963,739 lbs., 401,132 lbs., and 3,196,791 lbs. The following tables shew the development of the tobacco industry in the Commonwealth during recent years :—

DEVELOPMENT OF TOBACCO, CIGAR, AND CIGARETTE FACTORIES IN THE COMMONWEALTH, 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	37	35	33	35	36	36
Number of employees	3,991	3,923	3,730	3,484	3,566	3,658
Actual horse-power of engines used	764	830	1,045	917	1,119	808
Approx. value of land and buildings £	366,502	379,866	373,895	349,022	353,447	402,462
Approx. value of plant and machinery £	241,374	250,351	214,576	227,294	231,547	248,532
Total amount of wages paid £	296,638	322,171	346,258	358,081	373,963	380,821
Value of fuel used £	4,370	4,535	4,488	4,267	4,053	7,365
Value of raw material worked up £	1,266,284	1,385,863	1,468,212	1,622,713	1,651,226	1,905,489
Value of final output £	1,938,567	2,332,986	2,518,946	2,696,157	2,713,363	3,006,482
Value added in process of manufacture £	672,283	947,123	1,050,734	1,073,444	1,062,137	1,100,993

PRODUCTION.

Tobacco made lbs.	9,440,167	9,933,087	10,048,396	10,298,241	9,956,045	9,963,739
Cigars "	285,330	319,903	356,127	388,906	405,901	401,132
Cigarettes "	1,623,679	1,862,178	2,163,729	2,605,840	2,767,550	3,196,791
Leaf used "	9,959,650	10,950,775	10,993,024	11,826,658	11,677,099	12,091,216

22. **Woollen, Cotton, and Tweed Mills.**—(i.) 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 during the year 1914, shews that the industry is now well established :—

WOOLLEN, COTTON, AND TWEED MILLS, 1914.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	5	10	1	2	...	4	22
" employees	955	1,817	129	161	...	228	3,290
Actual horse-power of engines employed ...	2,173	2,356	135	290	...	118	5,072
Approx. value of land and buildings ...	£ 127,040	141,740	9,629	12,132	...	20,850	311,391
" plant and machinery ...	£ 185,767	263,050	20,650	24,067	...	38,550	532,084
Total amount of wages paid during year ...	£ 90,877	133,596	8,614	9,579	...	14,924	257,590
Value of fuel used	£ 9,424	14,983	*	*	...	1,199	27,306
Value of raw material worked up	£ 246,425	302,798	*	*	...	20,089	603,387
Total value of output	£ 459,150	577,434	*	*	...	51,688	1,152,657
Value added in process of manufacture ...	£ 212,725	274,636	*	*	...	31,599	549,270

* As there is only one factory in Queensland and two in South Australia, particulars of output, etc., are not disclosed; the amounts, however, are included in the totals for the Commonwealth.

(ii.) *Progress of Industry, 1909 to 1914.* 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 COMMONWEALTH
FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	24	25	32	32	22	22
" employees	2,965	3,030	3,200	3,379	3,030	3,290
Actual horse-power of engines used ...	3,522	3,243	3,444	3,692	4,358	5,072
Approx. value of land and buildings ...	£ 222,925	249,787	233,115	307,049	299,306	311,391
" plant and machinery ...	£ 423,772	436,921	478,859	497,827	516,659	532,084
Total amount of wages paid	£ 155,675	172,394	203,194	232,561	231,018	257,590
Value of fuel used	£ 18,892	20,033	20,863	22,709	21,778	27,306
Value of raw material worked up	£ 303,283	347,226	447,829	468,728	475,637	603,387
Value of final output	£ 596,665	693,297	860,789	930,485	925,602	1,152,657
Value added in process of manufacture ...	£ 293,382	346,071	412,960	461,757	449,965	549,270

* Excluding 13 establishments for the manufacture of hosiery and knitted goods included in New South Wales returns previous to 1913.

(iii.) *Quantity and Value of Production, 1914.* 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 1914 was 3,221,950 yards. In New South Wales 1,718,903 yards of tweed and cloth, in Victoria 1,036,079 yards, and in Tasmania 21,890 yards were manufactured. The production of flannel in the Commonwealth in 1914 amounted to over 6,222,000 yards, while blankets, shawls, and rugs to the number of about 1,061,000 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. For particulars of the quantity ginned on which bounties were paid, see page 359.

23. **Boots and Shoes.**—(i.) Among the manufactories of Australia the boot and shoe industry holds an important place both in respect to the employment afforded by it and the extent of its output. The following table shews particulars of this industry for each State during the year 1914:—

BOOT AND SHOE FACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	108	172	27	27	10	13	357
" employees	4,105	6,924	1,047	724	188	204	13,192
Actual horse-power of engines employed	1,114	1,474	245	177	35	46	3,091
Approx. value of land and buildings £	282,397	253,743	41,418	48,783	15,190	15,045	656,576
" plant and machinery £	143,619	201,415	26,294	25,572	8,380	10,415	415,695
Total amt. of wages paid during year £	398,404	603,318	91,119	66,722	18,722	15,615	1,193,900
Value of fuel used	6,046	10,306	1,059	1,061	369	61	18,902
Value of raw material worked up £	783,880	1,281,352	177,288	118,532	44,065	31,952	2,437,169
Total value of output	1,355,896	2,160,500	302,524	208,666	71,792	57,212	4,156,590
Value added in process of manufacture £	572,016	879,148	125,236	90,034	27,727	25,260	1,719,421

(ii.) *Progress of Industry, 1909 to 1914.* 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,
1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	315	337	341	332	346	357
Number of employees	14,023	13,810	13,772	13,341	13,456	13,192
Actual horse-power of engines used ...	2,008	2,248	2,405	2,646	2,823	3,091
Approx. value of land and buildings £	500,518	527,805	565,735	598,659	629,787	656,576
Approx. value of plant and machinery £	337,734	360,818	389,879	398,014	429,994	415,695
Total amount of wages paid	900,812	968,375	1,096,575	1,144,465	1,154,658	1,193,900
Value of fuel used	14,051	14,699	16,792	17,244	18,073	18,902
Value of raw material worked up	1,804,444	2,000,704	2,151,101	2,184,750	2,308,194	2,437,169
Value of final output	3,112,212	3,396,172	3,713,948	3,819,371	4,004,486	4,156,590
Value added in process of manufacture £	1,307,768	1,395,468	1,562,847	1,634,621	1,696,292	1,719,421

Although the average number of employees in boot and shoe factories shews a slight decline during the past five years, yet a substantial and consistent advance in the value of output is in evidence during the same period. This is doubtless attributable to the increase in mechanical power employed, and the introduction of improved plant and machinery, the value of which was £415,695 in 1914, as compared with £337,734 in 1909.

(iii.) *Value and Quantity of Production, 1914.* The number and value of boots, shoes and slippers made at factories in each State during the year 1914 are shewn in the following table :—

PRODUCTION OF BOOT AND SHOE FACTORIES, 1914.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Boots and shoes ... pairs	3,528	4,913	744	617	+196	133	10,131
Slippers ... pairs	312	273	3	12	†	1	601
Uppers* ... pairs	55	37	48	17	§	2	¶ 159
VALUE.							
Boots and shoes ... £	1,263,771	2,105,900	268,734	192,256	+67,064	54,761	3,952,506
Slippers ... £	31,802	27,000	563	1,755	†	125	61,245
Uppers* ... £	14,501	9,300	18,220	3,807	§	612	¶ 46,440

* Made for other than factory use. † Including slippers. ‡ Included with boots and shoes.
§ Information not available for publication. ¶ Exclusive of Western Australia.

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, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	461	489	143	131	72	44	1,340
" employees	10,490	10,825	4,064	2,430	1,237	678	29,774
Actual horse-power of engines employed	432	407	253	90	58	17	1,257
Approx. value of land and buildings	£ 1,018,718	592,447	278,340	149,456	109,665	70,720	2,219,346
" plant and machinery	£ 63,852	78,501	38,951	14,656	10,428	2,779	209,167
Total amount of wages paid during year	£ 776,766	667,678	241,672	147,712	101,160	44,100	1,979,088
Value of fuel used	£ 11,575	12,607	1,970	3,318	1,910	445	31,825
Value of raw material worked up	£ 1,034,936	1,137,073	348,603	164,164	131,896	48,221	2,864,893
Total value of output	£ 2,195,381	2,201,353	779,654	381,256	277,905	117,452	5,953,001
Value added in process of manufacture	£ 1,160,445	1,064,280	431,051	217,092	146,009	69,231	3,088,108

Progress of Industry, 1909 to 1914. 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 amount of wages paid increased from £1,869,138 in 1909 to £1,979,088 in 1914, or nearly 45 per cent., while the output increased approximately 40 per cent. during the same period.

DEVELOPMENT OF CLOTHING (TAILORING AND SLOP) FACTORIES IN THE COMMONWEALTH, FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	1,004	1,111	1,182	1,238	1,342	1,340
" employees	24,811	27,451	30,549	31,068	30,965	29,774
Actual horse-power of engines used	741	851	1,020	1,206	1,201	1,257
Approx. value of land and buildings	£ 1,637,795	1,778,985	1,931,274	2,155,643	2,212,346	2,219,346
" plant and machinery	£ 131,004	143,793	160,935	173,706	191,752	209,167
Total amount of wages paid ...	£ 1,369,138	1,589,636	1,854,135	2,010,779	2,075,916	1,979,088
Value of fuel used	£ 22,602	24,985	28,561	29,550	31,219	31,825
" raw material worked up	£ 2,097,483	2,304,362	2,610,348	2,696,937	2,732,241	2,864,893
" final output	£ 4,260,162	4,805,629	5,486,388	5,807,431	5,878,119	5,953,001
Value added in process of manufacture	£ 2,162,679	2,501,267	2,876,040	3,110,444	3,145,878	3,088,108

25. Dressmaking and Millinery.—Particulars of dressmaking and millinery establishments for the year 1914 are given in the following table:—

DRESSMAKING AND MILLINERY ESTABLISHMENTS, 1914.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wlth.
Number of factories	279	525	58	50	59	20	991
" employees	4,502	9,438	1,425	770	818	365	17,318
Actual horse-power of engines employed	93	272	8	13	17	7	410
Approx. value of land and buildings	£ 336,950	459,130	49,371	42,745	51,920	16,300	956,416
" plant and machinery	£ 19,250	46,217	5,410	2,602	4,769	934	79,162
Total amount of wages paid during year	£ 206,604	403,992	59,833	32,115	42,290	14,387	759,221
Value of fuel used	£ 1,429	6,704	111	318	566	36	9,164
Value of raw material worked up	£ 288,476	766,671	90,851	45,879	60,005	20,538	1,272,420
Total value of output	£ 605,913	1,383,952	193,328	96,291	110,287	37,362	2,429,133
Value added by process of manufacture	£ 317,437	619,281	102,477	50,412	50,282	16,824	1,156,713

Progress of Industry, 1909 to 1914. 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 1909 to 1914.**

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	1,009	1,056	1,050	994	995	991
" employees	16,324	18,040	18,803	18,476	18,217	17,318
Actual horse-power of engines used ...	157	254	319	371	376	410
Approx. value of land and buildings £	735,528	811,464	879,098	878,231	939,072	956,416
" plant and machinery £	57,752	60,937	67,307	74,466	72,257	79,182
Total amount of wages paid ...	508,501	600,484	695,319	748,222	772,748	759,221
Value of fuel used	7,076	8,185	8,722	9,143	9,238	9,164
Value of raw material worked up £	932,509	1,065,979	1,161,260	1,249,930	1,287,050	1,272,420
Value of final output	1,752,037	2,046,931	2,280,553	2,429,315	2,492,105	2,429,133
Value added in process of manufacture £	819,528	980,952	1,119,293	1,179,385	1,205,055	1,156,713

The above table shews the amount of wages paid to have increased over 49 per cent. during the last five years, and the final output 39 per cent. during the same period.

26. 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 during the year 1914. The returns include establishments for the manufacture of wheels, spokes, etc.

COACH AND WAGON BUILDING WORKS, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	233	329	87	100	41	24	814
" employees	2,436	2,891	780	806	286	204	7,403
Actual horse-power of engines employed ...	1,143	646	239	421	164	50	2,663
Approx. value of land and buildings £	333,585	271,783	71,723	102,191	56,932	21,900	858,114
" plant and machinery £	92,653	67,190	21,318	29,550	12,485	5,070	228,266
Total amount of wages paid during year £	251,304	247,931	66,457	72,769	32,299	15,616	686,376
Value of fuel used	13,086	9,170	1,258	3,249	2,085	629	29,477
Value of raw material worked up £	235,480	275,468	63,425	70,462	34,863	17,275	696,973
Total value of output	614,500	663,533	175,900	184,969	82,367	44,253	1,765,522
Value added in process of manufacture £	379,020	388,065	112,475	114,507	47,504	26,978	1,068,549

27. 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 1914:—

**FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE
MAKING, 1914.**

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	173	191	62	34	27	15	502
" employees	2,502	1,925	1,074	819	370	266	6,956
Actual horse-power of engines employed ...	1,477	876	670	530	256	149	3,958
Approx. value of land and buildings £	346,120	248,273	85,908	58,401	59,758	26,040	824,500
" plant and machinery £	55,546	46,529	33,235	27,791	13,603	6,049	182,753
Total amount of wages paid during year £	286,698	193,315	95,167	84,647	49,687	21,900	731,414
Value of fuel used	6,061	3,561	2,041	2,132	1,375	475	15,645
Value of raw material used	287,119	232,696	106,127	69,937	60,171	20,468	776,518
Total value of output	680,505	520,299	274,667	176,501	128,426	55,334	1,835,732
Value added in process of manufacture £	393,386	287,603	168,540	106,564	68,255	34,866	1,059,214

28. Electric Light and Power Works.—Particulars of the electric light and power works of the Commonwealth in the year 1914 are given in the subjoined table. In 1909 there were 148 establishments employing 1827 hands, whose salaries and wages amounted to £241,945: in 1914 these had increased to 233 establishments, 3298 hands, salaries and wages £482,082, while the value of output had increased during the five years from £1,185,426 to £2,548,651.

ELECTRIC LIGHT AND POWER WORKS, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	129	58	8	4	21	13	233
employees	1,161	924	237	494	247	235	3,228
Actual horse-power of engines employed	91,143	25,485	11,799	14,061	19,496	7,701	172,685
Approx. value of land and buildings	£ 599,514	305,975	30,508	135,082	74,064	6,260	1,151,403
" plant and machinery	£ 1,597,624	1,418,511	134,057	757,459	433,023	216,108	4,556,781
Total amount of wages paid during year	£ 179,248	131,854	25,771	71,464	45,712	28,033	482,082
Value of fuel used	£ 217,238	68,568	22,784	35,529	88,909	66,569	499,597
Total value of output	£ 1,367,742	473,918	131,053	149,419	270,123	156,396	2,548,651

* Including manufacture of electric apparatus.

29. 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, 1914.

Items.	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	C'wlth.
Number of factories	66	47	18	5	4	3	143
employees	1,957	2,117	558	423	62	146	5,263
Actual horse-power of engines employed	4,461	1,326	207	267	40	32	6,333
Approx. value of land and buildings	£ 628,541	475,825	153,635	11,612	18,866	31,300	1,321,779
" plant and machinery	£ 1941,337	1,320,895	790,820	441,717	42,468	156,317	4,693,544
Total amount of wages paid during year	£ 275,852	332,971	79,554	69,132	11,887	21,543	790,939
Value of fuel used	£ 74,880	2,471	3,852	1,925	4,060	13,738	100,926
Value of raw material used ...	£ 538,670	297,437	40,754	61,996	17,914	11,655	968,426
Total value of output	£ 1454,490	979,229	254,744	185,935	45,497	59,188	2,979,083
Value added in process of manufacture	£ 915,820	681,792	213,990	123,939	27,583	47,533	2,010,657

* Including thirteen coke factories worked as separate industries. † Including two coke factories worked as separate industries.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1914:—

PRODUCTION OF GAS AND COKE WORKS, 1914.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
QUANTITY.							
Gas made ... 1000 cub. ft.	6,080,270	3,806,880	799,491	609,564	134,933	192,548	11,623,186
Coke tons	543,789	195,178	50,070	25,246	6,770	9,959	831,012
VALUE.							
Gas £	953,602	699,000	205,697	132,291	28,829	46,277	2,065,696
Coke £	359,364	195,000	36,586	27,460	13,035	8,479	638,924
COAL USED.							
Coal tons	854,339	300,152	99,165	51,451	11,307	15,961	1,332,375

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, etc. (See map on page 529.)

(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 529) 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, and 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 hereafter (see page 524).

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.* In August 1910 a report was issued by the Government Geologist of South Australia on the geology of the country south and east of the Murray River, with special reference to subterranean water supply in wells and bores along the Pinnaroo and Bordertown railways. The tertiary formation in the district under consideration occupies the western portion of a vast basin or depression, of which the greater part extends eastward into Victoria and northward into New South Wales. This basin is bounded on the west by the azoic and palæozoic rocks of the Mount Lofly 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 must exist along the courses of other branches of the River Murray system, where they cut through the tertiary formation.

(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 the Government Geologist of New South Wales.² (See Year Book No. 6, p. 570.)

(v.) *Particulars of Artesian and Sub-artesian Bores, 1915.* The following table gives particulars of artesian and sub-artesian bores in each State and in the Northern Territory up to the end of the year 1915:—

COMMONWEALTH AND STATES.*—PARTICULARS OF ARTESIAN AND SUB-ARTESIAN BORES, 1915.

Particulars.	N.S.W.	Vict.	Q'land. ¶	S. Aust.	W. Aust.	N. Ter.	Total.
Bores existing ... No.	486	167	2,448	127	114	128	3,470
Total depth bored ... feet	803,940	199,665	2,489,326	91,164†	119,804	52,294	3,756,193
Daily flow ... ,000 gals.	99,350	†	480,485	63,000	30,991	†	†
Depth at which artesian water was struck—				§			
Maximum ... feet	4,338	675	5,045	4,850	4,016	502	5,045
Minimum ... feet	89	131	10	233	175	110	10
Temperature of flow—							
Maximum ... ° Fahr.	148	†	211	208	140	†	211
Minimum ... ° Fahr.	70	†	81	82	60	†	60

* There are no artesian bores in Tasmania. † Not available. ‡ To 31st December, 1914.
§ Exclusive of flow from pumping bores. ¶ To 30th June, 1915.

2. *New South Wales.*—(i.) *Artesian Water Supply.* 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. At the end of 1915, out of 486 known artesian bores in New South Wales, 157 were Government bores.

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 distribution of these bores was as follows:—

NEW SOUTH WALES ARTESIAN BORES ON 31st DECEMBER, 1915.

Particulars.				State.	Private.	Total.
Bores existing ...	...	No.		157	329	486*
Total depth bored ...	...	feet		320,813	483,127	803,940*
Daily flow ...	...	gallons		46,944,072	52,406,347†	99,350,419
Depth at which water was struck—						
Maximum ...	...	feet		4,338	3,642	...
Minimum ...	...	„		89	100	...
Temperature of flow—						
Maximum ...	...	° Fahr.		142	148	...
Minimum ...	...	„		70	70	...

* Exclusive of 18 Government and 27 private bores which failed; the total depth bored being 26,524 feet and 33,089 feet respectively. † Excluding the flow from nineteen pumping bores, the particulars of which are not available.

Of the wells at the end of June, 1915, the depth is stated in 486 cases, ranging from 46 to 4338 feet. There is a preponderance of wells from 1000 to 2000 feet in depth, but neither the shallow wells under 500 feet nor the very deep wells over 3000 feet are so numerous in proportion as in Queensland. The two deepest wells in New South Wales are those at Boronga, in the County of Stapylton, with a depth of 4338 feet and a daily outflow of 1,044,749 gallons; and at Dolgelly, in the Parish of Careunga, in County Stapylton, with a depth of 4086 feet, and an outflow of 592,588 gallons per day. The largest outflow is stated to be that at the Boobora bore, in the County of Stapylton, which yields 1,062,133 gallons a day, and has a depth of 3225 feet.

The flow from seventy of the State Government 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 39,047,267 gallons per day, watering an area of 4,304,898 acres by means of 2632 miles of distributing drains. The average rating by the Bore Trusts to repay the capital cost with 4 per cent. interest in twenty-eight years, is 1.515d. 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; but, what is of perhaps the greater importance, it has made comparatively small pastoral settlement practicable in country previously confined almost entirely to the operations of companies holding immense areas.

A general yearly decrease in the flow from the bores is still being recorded, and action is being taken to prove whether this observed decrease is due to loss in supply under pressure, or to local causes, such as lateral leakage.

For this purpose, a new bore was sunk in close proximity to the existing Bellata Bore, which has decreased in flow from a little over 400,000 to under 50,000 gallons per day. In the sinking of the new bore the casing was bedded in cement, in an impermeable stratum immediately above the flow. On completion of the new bore the old bore was plugged and sealed with cement above the flow, thus preventing any possibility of lateral leakage in either bore. Notwithstanding this, the flow obtained from the new bore did not exceed the quantity flowing from the old, when the work was commenced, by more than was accounted for by the lower altitude of the bore head and slightly larger hole. The installation of an air lift pump, on both the old and new bores, proved that a quantity equal to the original flow could be pumped from either bore.

The net result of these investigations is to prove that in this case, while there is a large volume of water available in the water-bearing bed, the pressure head is now insufficient to enable the quantity originally discharged to be obtained, except by artificial means. It further demonstrates that the decrease in flow in the original bore was due to loss of pressure head and was not attributable to local causes. It has also verified in a practical manner the conclusions previously arrived at by carefully analysing all data when available.

(ii.) *Shallow Boring.* Water has been obtained in shallow bores by private enterprise in a very large number of districts, particularly west of the Dividing Range ; but, generally speaking, these bores have not exceeded 200 ft. in depth, and in many cases failure in respect of either quantity or quality is possibly due to the bores not being of sufficient depth. There is also still a large area of country in various localities which has not yet been tested for underground water at shallow depths.

For many years the question of the exploration by the Government of underground water which could be reached at sufficiently shallow depths to provide a water supply for small settlers, at a reasonable cost, has been under consideration, but until three years ago no definite action had been taken. In the latter part of 1912, the shallow boring policy for settlers now in operation was formulated, and actual boring operations commenced early in 1913. The regulations under which the work is being carried out, briefly stated, provide for defined areas being declared Shallow Boring Districts with a Boring Centre. In the first instance a certain time is given within which applications for bores are received from settlers within the district. On the expiration of the time allowed, the sinking of the bores for those settlers whose applications have been approved by the Commissioner is proceeded with in such order as to minimise the cost of transport from one site to another. The applicant is responsible for the transport of the plant to his holding, and must also provide the necessary wood and water during the progress of the work. The Commissioner supplies all plant, material, casing, tools, labour, etc. The applicant on signing an agreement for the hire of the plant has the option of either paying cash for the completed work or availing himself of a system of time payment, without interest, spread over a period of five years, or, in other words, he can pay one-tenth of the total cost of the work every six months for five years. Every effort is, of course, made to carry out the work as expeditiously as possible, compatible with good workmanship, but the settler is safeguarded against any excessive cost by the regulations, which provide that the completed cost shall not be less than a minimum of 7s. 6d. per foot, or greater than a maximum of 11s. per foot. The maximum depth provided for is 500 feet, as it is considered that the cost at this depth at the maximum price charged would not be more than a settler could afford to pay for a permanent water supply. It is not intended that the scheme should be wholly self-supporting, because failure to strike water in test bores means that the Government will have to bear the expense, but in regard to bores put down for individual settlers on tested country, the scheme promises to be a self-supporting one.

Operations commenced with one plant only. The number has been gradually increased until eight plants are now at work, and steps are being taken to purchase thirteen additional plants.

A large number of applications from settlers wishing to take advantage of the liberal conditions offered under the regulations have been received, and further applications are daily coming to hand, so that even when the thirteen plants referred to are all at work, they will probably be insufficient to cope with the demand. Out of 30 bores put in hand up to the present, one was abandoned owing to it being found impossible to recover lost tools, and one other was a failure. Of the remaining 28 bores completed, the cost to the settler has averaged about half the cost charged by private contractors, while in all the latter bores a small profit has been made after charging the settler the minimum cost.

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, three additional plants are at present engaged sinking bores on Crown Lands in the Pilliga scrub for the Lands Department. The primary object of these bores is to supply water for sleeper-getters, but later on, when the required timber has been taken out of the scrub, it is proposed to throw open lands for settlement, when the bores referred to will be taken over by the incoming settler. Under this scheme three bores have been completed, and three are in progress, making in all 33 sunk by the Commission, out of which two were failures.

The fact that of the bores put down in the Pilliga scrub, six 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.

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 too much 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, not 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 2000 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, 87 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 four to seventeen 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. Information as to the geological formation of this district is given on page 518 preceding.

At the end of 1915 the number of existing Government bores in use in Victoria was 79, from which supplies are obtained by pumping. The total depth bored amounted to 29,320 feet, while the maximum and minimum depths at which water was struck were 675 and 131 feet respectively. There are also about 72 existing private bores, with a total depth of about 162,000 feet.

4. **Queensland.**—A return relating to the 30th June, 1915, classifies the Queensland artesian bores under the following headings:—

QUEENSLAND ARTESIAN BORES ON 30th JUNE, 1915.

Sunk by—	Artesian Flows.	Sub-Artesian or Pumped Supplies.	In Progress, Abandoned, or Uncertain.	Total.
Government	48	31	138	217
Local governing authorities	14	13	15	42
Private owners	965	635	589	2,189
Total	1,027	679	742	2,448

Of the 1027 flowing bores, 90 were of less than 10,000 gallons per day; 211 from 10,001 to 100,000 gallons; 410 from 100,001 to 500,000 gallons; 256 from 500,001 to 1,500,000 gallons; 55 from 1,500,001 to 3,000,000 gallons; and 5 from 3,000,001 gallons upwards. The deepest well was one known as Bimerah Run No. 3, White-wood, lying between the Barcoo and Thomson Rivers; this had a depth of 5045 feet, and was stated to yield 70,000 gallons daily. This 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, 1915:—

QUEENSLAND ARTESIAN AND SUB-ARTESIAN BORES ON 30th JUNE, 1915.

Particulars.	State and Local Authorities.	Private.	Total.
Bores existing No.	259	2,189	2,448
Total depth bored feet	212,976	2,276,350	2,489,326
Daily flow gallons	33,071,300	447,413,300	480,484,600
Depth at which artesian water was struck—			
Maximum feet	4,256	5,045	...
Minimum "	354	10	...
Temperature of flow—			
Maximum °Fahr.	198	211	...
Minimum °Fahr.	85	81	...

5. **South Australia.**—There were in South Australia 131 bores existing at 31st December, 1915, of which 32 were artesian and 99 sub-artesian. There are 102 under 1000 feet in depth, 19 from 1000 to 2000 feet; four from 2000 to 3000 feet; four from 3000 to 4000 feet, and two over 4000 feet. The deepest flowing bore was at Goyder's Lagoon, on the Hergott to Birdsville route, measuring 4850 feet, and yielding 600,000 gallons per day. A bore at Patchawarra, 35 miles north of Innamincka, has been sunk to a depth of 5458 feet, where operations have been stopped for the present. Water was struck in this bore at various depths down to 4000 feet. At that depth the water rose and ran over the surface at the rate of 400 gallons daily. Further sinking was carried on in the hope of getting a better supply, but, so far, without success. 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 the end of December 1915:—

SOUTH AUSTRALIAN BORES, 1915.

Particulars.					Artesian and Sub-artesian.
Bores existing	...	...	...	...	131
Total depth bored	...	...	...	feet	* 91,164
Daily flow	...	...	...	gals.	†
Depth at which water was struck—					
Maximum	...	...	...	feet	4,850
Minimum	...	...	...	feet	233
Temperature of flow—					
Maximum	...	...	...	°Fahr.	208
Minimum	...	...	...	°Fahr.	82
Total cost of construction of bores up to end of year	...	...	...	...	£231,361
Expenditure during year on boring operations	...	...	...	...	£28,802

* To 31st December, 1914. † 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 ft., none was reported to have been struck. Ki Ki bore was sunk in 1887, and at 361 ft. 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 Primpun in the Hundred of Peebinga, and Lotnumpie in the Hundred of Livingstone. The former has a depth of 275 feet, and the water, which is in large supply, rises to within about 114 feet of the surface. The latter is 302 feet in depth, and the water rises to within 80 feet of the surface. The water is fresh, containing about $\frac{3}{8}$ oz. salts and other solid matter per gallon.

(ii.) *Bores West of Oodnadatta.* A series of bores has been sunk, beginning with Breaden bore, 20 miles west of Oodnadatta, which was put down in 1911. The others since put down in this district are Gypsum, Imbitcha, Mirackina, Raspberry Creek and Appreetinna. Of these the only artesian supply is 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 1122 feet at Breaden, and the water from all of them is good.

(iii.) *Other New Bores.* A new bore was sunk on allotment 292, at Hergott, with good results. It has been named Abdul bore. At 340 feet a supply of first-class water is obtained, rising to the surface at the rate of 70,000 gallons per day. Another bore was sunk for the Crown Lands Department on the Dulkaninna pastoral block. At 1800 feet a flowing supply of 430,000 gallons of water ($\frac{1}{4}$ oz. of salts to the gallon) per day was obtained.

(iv.) *Eyre Peninsula.* From time to time bores have been sunk on Eyre Peninsula, but with little success. In some instances, stock water, ($1\frac{1}{2}$ ozs. salts to the gallon), was obtained, but this only occurred on the Nullabor 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 the 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, 1915 :—

WESTERN AUSTRALIAN ARTESIAN BORES, 1915.

Particulars.	State.	Private.	Total.
Bores existing	65	49	114
Total depth	79,860	39,944	119,804
Daily flow	22,784,700	8,206,700	30,991,400
Depth at which artesian water was struck—			
Maximum	4,016	*	...
Minimum	175	*	...
Temperature of flow—			
Maximum	140°	*	...
Minimum	60°	*	...

* Not available.

To 30th June, 1915, the total number of Government bores was 65, and there were approximately 49 private bores recorded in addition. The total cost of construction of State bores to 30th June, 1915, was about £137,728, of which amount £9728 was expended during the eighteen months ended 30th June, 1915. The maximum outflow, 4,000,000-gallons per day, was obtained at Leederville in connection with the Metropolitan Water Supply at 2097 feet.

The boring operations which have been carried out in the four artesian basins along the West Australian Coast, and which have been specified on page 517 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.

There are fifty-seven 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 of 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, some 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 five bores have been sunk, two being at Broome and two at Derby, and the other 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, west of Israelite Bay. So far, beyond the bores put down on the survey line 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 cliffs and nearer the coast, when an artesian supply of stock water was obtained at a depth of 2101 feet, yielding 31,000 gallons per day.

This was followed later with four 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 1344 feet. In most instances only stock water was struck in these bores, at depths varying between 300 and 1300 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 128 have been put down, 25 belonging to the Commonwealth Government. The cost of construction of the Government bores to 31st December, 1914, was £6254.

The following table gives further particulars of the Northern Territory bores at 31st December, 1914 :—

NORTHERN TERRITORY BORES, 1914.

Particulars.	State.	Private.	Total.
Bores existing	25	103	128
Total depth bored	17,600	34,694	52,294
Daily flow	*	*	*
Depth at which water was struck—			
Maximum	213	502	...
Minimum	110	128	...
Temperature of flow—			
Maximum	*	*	...
Minimum	*	*	...

* Not available.

§ 2. Irrigation Plants.

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 settlements 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.* Since the 1st January, 1913, irrigation has been recognised in the State of New South Wales as of sufficient importance to warrant the formation of an entirely separate department, the Water Conservation and Irrigation Commission.

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 which is liable to dry seasons which affect extensive areas. Much of the area of the State receives an adequate and regular rainfall, but over a considerable extent of country all the factors exist which are requisite to success in agricultural pursuits except 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 led the State to undertake various schemes in detached groups, which will constitute portion of the ultimate irrigation system necessary to serve the whole State.

(ii.) *Murrumbidgee Irrigation Scheme.* The main features of the work include a 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 220 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; large branch canals; and a series of subsidiary canals and distributing channels through the area to be irrigated; concrete checks and regulators throughout the entire system and meters for measuring the flow to each farm; 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 drained 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 5000 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, 13 miles, and 11 miles respectively. Direct communication between Burrinjuck and the Main Southern railway has been provided by the construction of a 2-foot gauge line from Goondah, a distance of 26 miles.

The diversion weir is situated at Berembé, 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 movable 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 (1000 cubic feet per second) has been recommended by the Public Works Committee. There are two main branch canals, viz., the Gogeldrie canal, which offtakes at 47 miles from Berembé, and runs approximately parallel to the Narrandera-Hay railway through the Yanco Area, and the Mirrool branch canal, which offtakes at 78 miles from Berembé and supplies portion of the Mirrool Area.

The scheme, as described above, applies only to the land on the northern side of the Murrumbidgee River. It was originally intended to provide a canal to supply the land on the southern side, but subsequently it was decided to apply all the water available from the Burrinjuck Dam to the northern areas, these lands being eminently suitable for irrigation. For this reason the main canal is to be enlarged, and when complete will be capable of supplying an area of about 200,000 acres, which, it is anticipated will be worked profitably in small blocks devoted to mixed farming, dairying, and stock raising, or fruit and vegetable growing, tobacco culture, etc. In addition, there is an area of about a million acres to be set aside for use as "dry" lands in conjunction

with those under irrigation. When the areas are fully settled it is estimated that there will be nearly 6000 farms and 100,000 people. With the aid of irrigation the soils and climate of these areas are suitable for the production of apricots, peaches, nectarines, prunes, pears, plums, almonds, melons, cantaloups, and all kinds of citrus fruits, also wine and table grapes, raisins, sultanas, figs, olives, and most varieties of vegetables. There is every probability that the cultivation of such fruits as the apple and the walnut will be attended with success. Other products include wheat and oats, hay, maize, lucerne, and fodder crops, such as sorghum, maize and millet. Dairying, pig-raising, mixed farming, and ostrich farming are already being successfully undertaken by settlers in the areas.

The Murrumbidgee Irrigation Act, passed in December 1910, constituted a trust for the administration of the scheme, and provided the necessary authority for the acquisition of land, construction of improvements, levying rates, and generally for administering the irrigation areas and work. This Act was repealed in December 1912, and the whole scheme is now under the control of the Water Conservation and Irrigation Commission.

The lands acquired for irrigation under the provisions of the Act include the North Yanco estate, the Gogeldrie holding, and various holdings in the Brobenah and Mirrool Creek districts—the total area resumed to 30th June, 1915, being about 322,000 acres, at an estimated cost of £865,585.

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, will be served by an extension of the railway from Barellan, which is now practically completed.

Farms have been made available varying in size from 2 acres to 200 acres. The smaller farms—2 acres to 15 acres—are intended for the farm laborer, the vegetable grower, the small orchardist, and, in some cases, the business man of the adjoining towns. The "water right" or number of "acre feet" of water allotted to each holding is definitely specified when a sub-division is notified. An "acre foot" means such a quantity of water, 12 inches deep, as would cover an area of one acre. The cost of water is five shillings per acre foot, and additional water may be obtained at a similar rate. The 50 acre farm is the largest "all-irrigable" unit, but to suit the requirements of dairymen and other stock farmers, blocks of larger areas are being made available. These comprise non-irrigable or "dry" areas, in addition to the irrigable portion to which is attached a statutory water right. Some of these mixed farms are 200 acres or upwards in extent.

Areas of non-irrigable or "dry" lands are made available for the depasturing of stock, or for wheat growing, and these will be leased either as additional holdings for the individual, or, in some cases, as commons for the joint use of groups of settlers.

The conditions for the disposal of irrigation blocks are contained in the Crown Lands Consolidation Act of 1913, and the Crown Lands and Irrigation (Amendment) Act of 1914. Any male over the age of 16 years, or female over 18 years (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, destruction of noxious plants, and the cultivation of a specified area in each year.

The assistance granted to settlers is both practical and liberal. Aid is given in connection with the erection of homesteads, barns and outbuildings, the degree of assistance varying according to the size of the holding. Repayments for assistance in this direction may be spread over 12 years. Assistance is also granted for the construction of head ditches, grading, and also such agricultural work as is necessary thereto, and, up to a

limit varying with the size of the block, the cost is repayable on terms; repayments for this form of assistance may be spread over a period of 10 years. Fencing posts are available for purchase on 10 years' terms. Fruit trees and vines may be purchased from the Government Nursery. The terms of repayment for these have been determined, having regard to the period which will elapse before the settler obtains revenue from his orchard work. Lucerne seed is supplied during a settler's first planting season on terms, to a maximum value of £10, according to the settler's requirements, and limited assistance is also given in connection with the purchase of horses for farm work. A settler who may adopt dairying as a "pot-boiler," whilst fruit trees or vines are coming into bearing, or as a permanent revenue producer, is assisted in the purchase of dairy stock. The amount of help given depends *inter alia* on the quantity of planted feed a settler has in sight. A deposit is payable in respect of each cow purchased, the payment of the balance being by monthly instalments spread over two years. Pedigree bulls may be leased. Machinery and implements may be hired up to the limit of the Commissioner's plant. The Government Savings Bank Commissioners have statutory power to make loans upon mortgage of irrigation farm leases; many settlers have already obtained help from the Bank. The actual terms on which assistance is granted by the Commission are subject to alteration as may be deemed necessary, but the information given above outlines the system at present adopted. Concessions in railway fares and freights are made on New South Wales railways to *bona fide* applicants for land. The annual charge for water (5s. per acre foot), is reduced to one-half for the first year, and is then increased yearly by sixpence per acre foot, so that a settler is not required to pay the full charge until he is in the sixth year of occupation.

Townships have been established at centres of the Yanco and Mirrool areas; the Commissioner is empowered to construct streets, and to provide water supply, sanitary and other services.

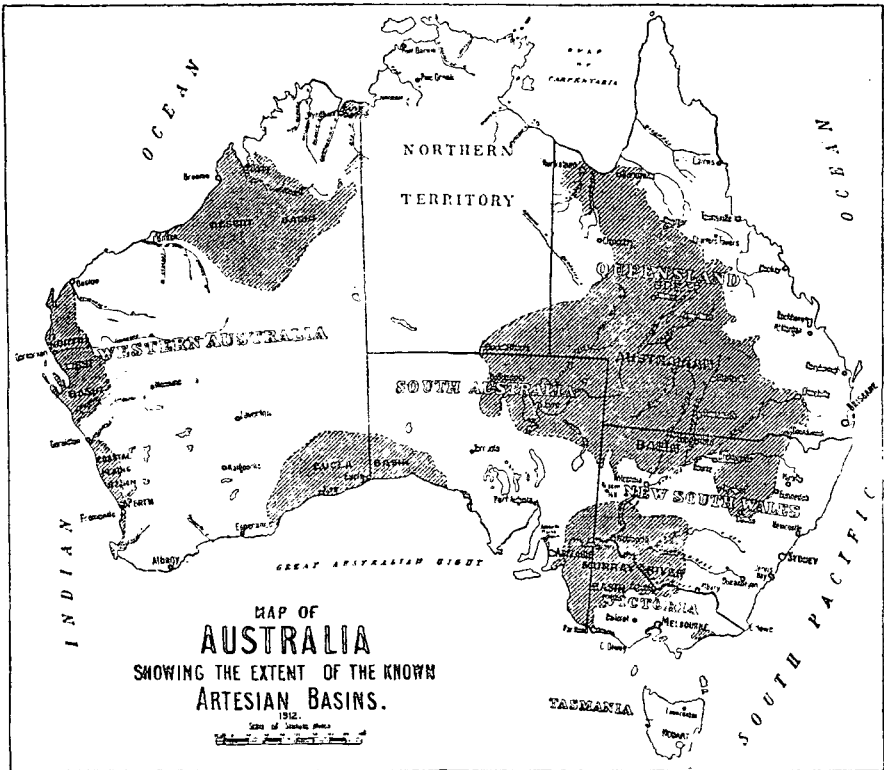
A butter factory, equipped with the latest plant and with the capacity for dealing with the product of 10,000 cows, has been established. Cash payments are there made monthly for cream supplied by the settlers, who are thus assured of an immediate and regular income, and placed in the position to turn their attention to other forms of farming, if they so desire. A vegetable and fruit canning factory has also been provided, at which vegetables and fruits grown by the settlers are purchased from them. A bacon factory and abattoirs also have been erected, and although their operations are at the present time being confined to slaughtering for the butchers operating in the district, and bacon curing, they may, as the settlement develops, be extended to include also the chilling of fat lambs for the local or export market. It is felt that for some years to come the plant will be capable of dealing not only with the pigs produced on the settlement, but with considerable numbers from districts in the Riverina outside the irrigation areas.

The Mirrool settlement being situated over 30 miles from Leeton, settlers carrying on dairying there have been under great disadvantages owing to the difficulty attending the transport of cream. To obviate this a small cheese factory has been opened at Mirrool. Experiments already carried out have proved that a good marketable cheese can be produced on the irrigation areas. As an adjunct to the canning factory, a pulping plant also has been installed at Mirrool, the idea being to forward the pulp to the central cannery for working up during the slack season.

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 this year a second nursery is being established at Mirrool. 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.

A State Experiment Farm and an Official Vegetable Experiment Plot are in operation, and various commercial crops are also tested on settlers' farms as to their suitability for local cultivation. The methods of treatment and the marketing of the different products are being investigated, and the experience thus gained is at the disposal of settlers, free information and instruction being afforded by the Government

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 Encla Basin, the Coastal Plains Basin, the North-West Basin, the Desert Basin, and the Gulf Basin. (See also pages 517 to 524.)

officials on all agricultural matters and irrigation methods. An electric power-house has been erected near Yanco Siding; electric light and power are supplied to the business people, and are available for settlers when the number of applicants warrants the connections being made.

On the 31st December, 1915, 881 farms were held, representing a total area of 40,546 acres. The revenue payable by these farms for rent and water rates is £28,147.

In addition, 118 township and village blocks are in occupation, the annual rentals for which aggregate £1071, while 272 miles of roads, 305 miles of reticulation channels, and 217 miles of drains have been constructed. In the matter of cultivation, the following particulars indicate the extent of the work performed by the settlers:—1200 acres under stone fruits, 225 under vines, 327 under citrus fruits, 2210 under lucerne, 10,350 under other fodder crops, and 450 acres under vegetables. The estimated population of the irrigation area is about 5000 persons, and the production this season is estimated at a gross value of £100,000.

(iii.) *Other Irrigation Settlements.* Irrigation settlements have been established at Wentworth and at Hay, and were, in 1913, placed under the control of the Commissioner for Water Conservation and Irrigation. In Wentworth irrigation area, embracing 10,600 acres, 1364 acres have been subdivided into 92 irrigable blocks; 1361 acres are held under lease in 88 blocks; the balance is still available for lease. The balance of the total area (10,600 acres) is being made available as grazing leases, with the exception of 1290 acres which will be reserved as a common. During 1914-15, 1178 acres were under cultivation, the greater part being devoted to fruit trees, oranges, grapes, sultanas, and currants. In this area is instituted a dual scheme of irrigation and intense cultivation of small areas, and the results of the experiment will be regarded with interest, as of exceptional value from the educational standpoint. 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 4600 gallons per minute. The length of the main channels is about 4 miles 24 chains, and of subsidiary channels 4 miles 31 chains; total length, 8 miles 55 chains. The land may be leased for periods not exceeding 30 years. The rents vary from 1s. to 5s. per acre; the rate for water varies from 10s. to 20s. per acre. 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. During the year 1914-15, 159 tons of dried fruits were produced in this area, the principal items being sultanas, 70 tons; peaches, 33 tons; and currants, 27 tons. In addition 30 tons of currants were carted to Mildura, and 2000 cases of fruit were sent to Melbourne. The production of citrus fruits during 1915 was about 2000 cases.

The Hay irrigation area consists of about 3842 acres, and previous to 1913 was controlled by a Trust appointed in 1897. The area held and used for irrigation purposes is 997 acres by 80 holders. The lands may be leased for periods not exceeding 99 years. The rentals vary from 5s. to 10s. per acre. The water-rate is fixed from time to time by the Commissioner, the present rate being 20s. per acre per annum. The pumping machinery is, however, similar to that employed at Wentworth, the capacity of the pumps being 4000 gallons per minute.

(iv.) *Water Rights.* The Water Act 1912 consolidates the Acts relating to Water Rights, Water and Drainage, Drainage Promotion and Artesian Wells. Part II. of the Act vests in the Crown the right to the use, flow, and 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. It abolishes "riparian rights," and establishes a system of licenses for works of water conservation, irrigation, and drainage. Prior to the passing of the Act relating to Water Rights, such works on creeks and rivers, constructed by private individuals, were liable to destruction by any person who considered their existence opposed to his interests. It is now illegal to interfere with any work for which a license has been granted. The security provided is stimulating the construction of irrigation works of a

better class throughout the State, and during the year ended 31st December, 1915, 248 applications were made for new licenses, and 111 for the renewal of existing licenses. At the date mentioned, 960 licenses were in force.

(v). *Water Trust 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. For the supply of water, trusts have been constituted in connection with (a) seventy-five artesian wells; (b) six schemes for the improvement of natural off-takes of effluent channels, for the purpose of diverting supplies from the main rivers; (c) three schemes for the construction of dams across stream channels; and (d) two pumping schemes from natural watercourses. The total area included within these trusts amounts to 5,439,809 acres.

(vi.) *Projected Irrigation Schemes.* The following proposals are under investigation by the Water Conservation and Irrigation Commission:—

(a) *Murray River.* The Burrinjuck dam on the Murrumbidgee River in New South Wales and the storages on the Upper Goulburn River in Victoria are the only works at present in operation for regulating the flow of the Murray River. In 1911, a Conference of Engineers, representing the three States interested, was appointed to report and make recommendations essential or conducive to the settlement of the question of the Murray River and its tributaries. This conference, whose report was presented in July, 1913, recommended that a storage of about one million acre feet capacity be provided on the Upper Murray, and that Lake Victoria be converted into a storage basin. The basis of an equitable agreement was formulated by the Victorian and New South Wales representatives with regard to the apportionment of the regulated water, and the foundations of the site of the proposed storage dam at Cumberoona and other sites are now being further investigated. Certain suggestions with regard to the navigation of the Murray River were submitted in a minority report by the South Australian representatives, and this matter formed one of the subjects of discussion at a conference held on 7th April, 1914, between the Prime Minister of the Commonwealth and the State Premiers. At this conference certain resolutions were passed, having for their object the economical use of the waters of the Murray River and its tributaries for the purpose of irrigation and permanent navigation, and the reconciling of the interests of the Commonwealth and the riparian States. The full text of the resolutions passed at this conference may be found in previous issues of the Year Book (see No. 8, page 507). Pending the results of the investigations of the dam foundations of the proposed storage sites, surveys are being made by officers of the Water Conservation and Irrigation Commission of lands on the New South Wales side of the Murray River which are capable of irrigation from that stream.

(b) *Darling River.* A preliminary investigation has been made of the Darling River, which shows that the most suitable site for the storage of large volumes of water for irrigation purposes is in the Lake system to the east of the river, comprising Lake Boolabooka, Ratcatcher's Lake, and Victoria Lake, and a number of other lakes fed from the river in high floods from the Talywalka Creek, which takes off from the river about 260 miles above Menindie. A large area of high-class land can be commanded from this storage, and this area will be served by the Condobolin-Broken Hill railway when constructed. The question of establishing a small irrigation area in the vicinity of Lake Menindie has also been receiving attention.

- (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 bank 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 5000 acres adjacent to the lake.
- (d) *Macquarie River.* The construction of a storage reservoir has been proposed on this river at Burrendong, below the confluence of the Cudgegong River, for the purposes of affording water by gravitation for the irrigation of certain lands to the west of Narromine. Smaller schemes have also received consideration for the construction of storage dams at White Rock and on Campbell's River above Bathurst. The run-off from this catchment is somewhat uncertain and further investigation is required.
- (e) *Hunter River.* A scheme has been prepared for providing water for irrigation, by means of pumping on the area adjacent to the Hunter River, which is one of the most fertile districts in the State, and is capable of carrying a dense population under the conditions of intense culture by irrigation. Alternative proposals have been investigated for the construction of a storage dam, either on the Upper Hunter or Goulburn Rivers, and an examination has been made for storage sites on the whole of the tributaries of the Hunter River.
- (f) *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 a storage dam on the Peel River near Bowling Alley, and are in progress for a dam on the Namoi River above Manilla.
- (g) *Warragamba River.* The Warragamba project will serve the dual purpose of amplifying the Sydney water supply, and irrigating the best lands in the Hawkesbury Valley. The percentage 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 at least 80 million gallons daily for domestic service, 30 million gallons daily for trade purposes, and 80 million gallons daily for irrigation purposes in the Hawkesbury Valley. The waters made available by this project will be used upon an area of probably about 30,000 acres in the vicinity of the Nepean and Hawkesbury Rivers. Surveys are being made and details prepared of the irrigation portion of the scheme for submission to the Public Works Committee.

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, 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 first-named class, particulars as to these works will be found in the section on "Local Government" of this book.

(ii.) *Works Controlled by the Commission.* With the exception of the First Mildura Irrigation and Water Supply Trust, all the irrigation schemes 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 seventeen irrigation districts. Up to 1906 these schemes were controlled by local Trusts which had obtained the moneys for their construction on loans 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, 1915, on water supply in the irrigation and water supply districts under the control of the Commission, and at Mildura, was £3,604,000. 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 £1,120,000, 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 324,345 acres, an increase of 7000 acres over the area irrigated in the previous year, notwithstanding the abnormal drought conditions which prevailed. Within the last six years the State has adopted the policy of purchasing large areas of land commanded by these schemes and subdividing them for intensive culture. Settlement of this kind largely increases the population of the State. 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. Pending the ratification in 1915 of the resolutions adopted at the Premiers' Conference, 1914, relative to the control, conservation, and use of the Murray River (see page 537), the Commission co-operated with the Water Conservation authorities of New South Wales in testing suitable storage sites on the Upper Murray as recommended by the Interstate Conference of Engineers in July, 1913.

(b) *Domestic and Stock Schemes.* 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, 1915, was £4,683,000. 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 Melbourne and its suburbs, is 152, serving an estimated population of 295,000. The principal works of this division are situated in the Wimmera and Mallee districts, and cover an area of over 12,000 square miles. In addition to the Commission's districts some large areas are still administered by local authorities.

(iii.) *Mildura.* The first settlement of Mildura dates from 1884. After being managed until 1887 by Chaffey Bros., and then until 1895 by the Mildura Irrigation Company Limited, it was in that year taken over by the First Mildura Irrigation Trust under special Acts of Parliament, and has since then made great progress. Its population at the Census of 1911 was 6145. The area of the settlement is 45,000 acres, of which over 12,000 acres are under intense culture, principally fruit. Water is pumped from the Murray River by five pumping stations, collectively raising 8,000,000 gallons per hour. The length of the main irrigation channels is 280 miles. For the year ending 30th June, 1915, the receipts of the Trust aggregated £36,617, and its expenditure £39,799. For the same period the area of land under cultivation and the record of water acres were 12,063 and 42,111 acres respectively, the value of the fruit crops for the year being about £400,000.

No precise figures are available as to the capital cost of the works at Mildura; probably the sum was not less than £180,000. The amount due to Government is £72,451, exclusive of £12,659 for accumulations of interest.

4. **Queensland.**—The main irrigation works in Queensland are as follow:—(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 626 irrigators in the State in 1914, chiefly farmers and graziers, and the area irrigated was 11,809 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, and the area under irrigation 5270 acres. The dried fruit pack for 1913 was 2600 tons, the largest on record, and the value of the production for that year was £150,000. The population of the town and settlement is 3000. The chief products are sultanas, currants, raisins, oranges, apricots, peaches, pears and olive oil.

(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, etc., 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, since when the preparation of land for irrigation settlement has 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 2515 acres, in addition to 4372 acres of "dry" land; Kingston with 415 acres of irrigable and 3096 of "dry" land; and Moorook, now in course of extension; 2950 acres are available at this settlement, of which 1200 acres will be irrigated. The new areas commenced by the Department are Berri, where 3043 acres of irrigable land and 2364 acres of "dry" land have been allotted to 160 settlers. Further pumping plants are to be installed, which will enable this settlement to be extended to 9000 acres of irrigable land and 11,000 acres of "dry" land. The adjoining area of Cobdogla, the preparatory survey of which has been completed, contains approximately 20,000 acres of first-class land suitable for intense culture, in addition to 111,000 acres of "dry" land. The first section of this area, comprising about 2000 acres, which can be watered from a lift of about 20 feet, will soon be available 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 comprised an area of 4000 acres. At New Era an area of 2700 acres is being acquired, 1200 acres of which is first class irrigable land; this will be prepared and offered for settlement by the Department. The reclaimed swamps, which have already been completed and allotted, comprise 1930 acres, while other swamp lands of about 1200 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. These areas comprise, Mypolonga, 1700 acres of reclaimed land, 1254 acres of irrigable, and 1481 acres of "dry" land; Pompoota, 560 acres reclaimed land, 250 acres irrigable land, and 3277 acres of "dry" land; Jervois, 990 acres of reclaimed land, 290 acres of irrigable land, and 260 acres of "dry" land; Swanport, 116 acres of reclaimed and a similar area of irrigable land; Neeta, 560 acres reclaimed, 1820 acres irrigable, and 2348 acres of "dry" land. With the exception of Mypolonga, these 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 grape vines.

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 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 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% 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 £ of the fair estimated value of the improvements already made.

In the section dealing with Closer Settlement (page 255) 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 a work is in hand for irrigating about 4000 acres. Practically all the channels have been constructed, and some orchards

are being irrigated. It was anticipated the work would be completed by June, 1916. The area is devoted chiefly to fruit growing, principally oranges. 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.—The relative rights of the States of New South Wales, Victoria, and South Australia to the waters of the Murray River are undetermined. Territorially the south bank of the Murray was the boundary between the two former States, i.e., the region of the River itself, up to the point where it enters South Australia, was wholly within New South Wales.

At the Federal conventions which preceded the establishment of the Commonwealth, the South Australian representatives expressed their fear lest too much irrigation on the Murray and Darling might impair the navigability of the latter river, and 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 the residents therein to the reasonable use of the waters of rivers for conservation or irrigation."

Under this section negotiations have been in progress for several years between the three interested States. In January 1911 a conference took place in Melbourne between the Premiers of New South Wales, Victoria, and South Australia on the Murray Waters question. Briefly stated, the results of the conference were that South Australia was to be allowed to carry out storage works at Lake Victoria, New South Wales, and lock her own portion of the Murray at her own expense, but New South Wales and Victoria would not recognise the claims of navigation in any way, and would not bind themselves to deliver any quantity of water at the point of intake into South Australia. No rights to navigation were conceded by New South Wales and Victoria, and 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 be conducive to a settlement of the question of the River Murray and its tributaries. The board in its report stated that it was agreed that the interests of irrigation are more important than those of navigation, and that the heavy expense of maintaining the latter is not warranted. In Year Book No. 7 (page 510), will be found the suggestions of the Board relative to the apportionment of the cost of works and of water between the three States. In April, 1914, the question was again discussed at the Premiers' Conference held in Melbourne, when certain resolutions were agreed to by the Prime Minister of the Commonwealth and the Premiers of New South Wales, Victoria, and South Australia. The full text of these resolutions may be found in previous issues of the Year Book (see No. 8, page 507).

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 25 (section 51 (i.) and pp. 31 to 33 (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 does 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 Commission 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 the 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" amends the Customs Tariff of 1902 in relation to the duties on harvesters and agricultural implements and machinery and prescribes the prices to be the maximum prices 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*; 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 33 *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.”

§ 3. Regulation of Trade during the War.

1. **Authority for.**—By the Customs Act 1901-1910 it is enacted that the Governor-General may, by proclamation, prohibit the exportation or transfer from any State to any other State of the Commonwealth of any goods, being arms, explosives, military stores or naval stores, or being goods which, in his opinion, are capable of being used as or in the manufacture of arms, explosives, military stores, or for any purpose of war; and, by the Defence Act 1903-1912, it is enacted that the Governor-General may, subject to the provisions of that Act, do all things deemed by him to be desirable for the efficient defence and protection of the Commonwealth or of any State.

By virtue of the above, proclamations prohibiting or controlling exports from the Commonwealth have been issued from time to time as circumstances appeared to warrant.

§ 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 cost plus 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 acceptance of the term.

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.

4. **Vessels (Ships) Imported and Exported.**—The imports or exports of vessels were not recorded prior to the year 1905. The value of vessels imported during each of the years 1905-1914-15 were as follows:—1905, £265,957; 1906, £366,300; 1907, £680,700; 1908,

* 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 referred to throughout this chapter.

£700,500; 1909, £757,100; 1910, £711,850; 1911, £340,045; 1912, £1,257,655; 1913, £1,662,300; 1914-15, £340,530. The exports during the same years were:—1905, £79,975; 1906, £51,365; 1907, £90,201; 1908, £82,355; 1909, £38,600; 1910, £72,000; 1911, £17,605; 1912, £66,300; 1913, £418,220; 1914-15, £129,950.

5. **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 ships' stores during 1906 amounted to £375,966 (of which bunker coal represented £575,471, or 65.7 per cent.), during 1907 to £998,897 (bunker coal representing £663,724, or 66.45 per cent.), during 1908 to £1,196,106 (bunker coal £867,707, or 72.55 per cent.), during 1909 to £1,071,677 (bunker coal £781,113, or 72.90 per cent.), during 1910 to £1,080,133 (bunker coal £740,567, or 68.57 per cent.), during 1911 to £1,238,446 (bunker coal £858,783, or 69.35 per cent.), during 1912 to £1,431,985 (bunker coal £1,008,259, or 70.41 per cent.), during 1913 to £1,458,702 (bunker coal £1,018,595, or 69.82 per cent.), and during 1914-15 to £1,587,757 (bunker coal £829,875, or 52.26 per cent.).

§ 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 is 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 1858, it had declined to £31 19s. 6d. per head. The period 1867-1872 shews 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 since adhered to in Victoria, was assented to.

OVERSEA TRADE OF COMMONWEALTH, 1826 to 1914-15.

Period.	Recorded Value.			Value per Inhabitant. ¹			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 5 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

1. Reckoned on mean population of the year.

OVERSEA TRADE OF COMMONWEALTH, 1826 TO 1914-15.—Continued.

Year.	Recorded Value.			Value per Inhabitant. ¹			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	26,667	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 Mths 1914	39,777	37,930	77,707	8 2 7	7 15 0	15 17 7	95.4
1914-15	64,432	60,593	125,025	13 0 10	12 5 3	25 6 1	94.0

1. Reckoned on mean population of the year.

The graphs illustrating the movement of the oversea trade of Australia (see pages 547 and 548) shew 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 shews 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 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 1903, were in 1910 still further reduced by £4,264,368 to £4,103,783, 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 in paragraph 4 of this section. 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. Decline in Exports, 1914-15.—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.

4. Ratio between Exports and Imports.—The foregoing table shows 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 TRADE.

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	15,641	189	
1912	937	29	12,205	13,264	161	
1913	1,178	36	19,666	18,488	225	
1914 (Jan. to June)	1,847	*	*	1,847	*	
1914-15	3,839	119	19,301	15,462	187	

* Prior to June, 1914, the figures relating to Debt were six months in advance of the Trade figures, the periods to which the figures relate are now identical.

† For individual years 1826 to 1860 see Official Year Book, No. 7, and previous issues.

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. In regard to the importation of private capital, it may not be without significance that the tariff of 1908 was followed by a pronounced diminution in the excess of exports, the suggestion being that industrial enterprise had been augmented by imported capital in consequence of the increased protection to local industries.

The general relationship between the balance of trade of the Commonwealth and the borrowing of money abroad is demonstrated by the following figures :—

BALANCE OF TRADE AND PUBLIC DEBT.

Period.			Annual Average.					
			Imports.	Exports.	Recorded Excess of		New Debt. *	Excess of Exports modified by elim- ination 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
1912-1914-15	...	...	74.9	73.2	1.7	...	17.1	15.4

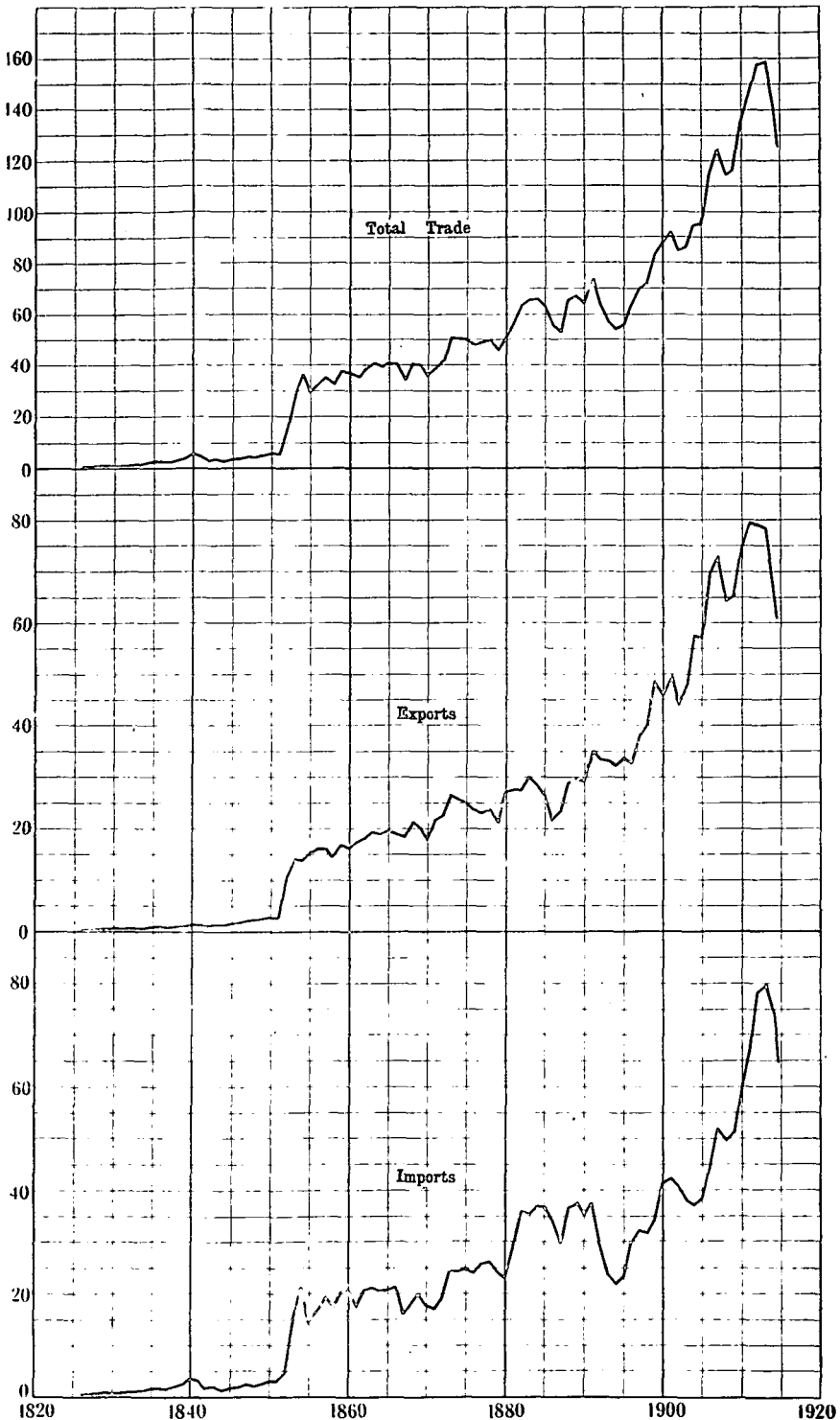
* Subsequent to 1897 these figures relate to moneys raised outside of Australia only. Prior to 1893 the amounts raised locally were insignificant, but it is probable that the amount of new debt raised during 1892-6 is somewhat overstated. Loans raised by Local Government Bodies are not included.

From the above results it would appear that a sum of about 16 million pounds is required annually to meet the "invisible" obligations of the Commonwealth.

§ 6. Direction of Trade.

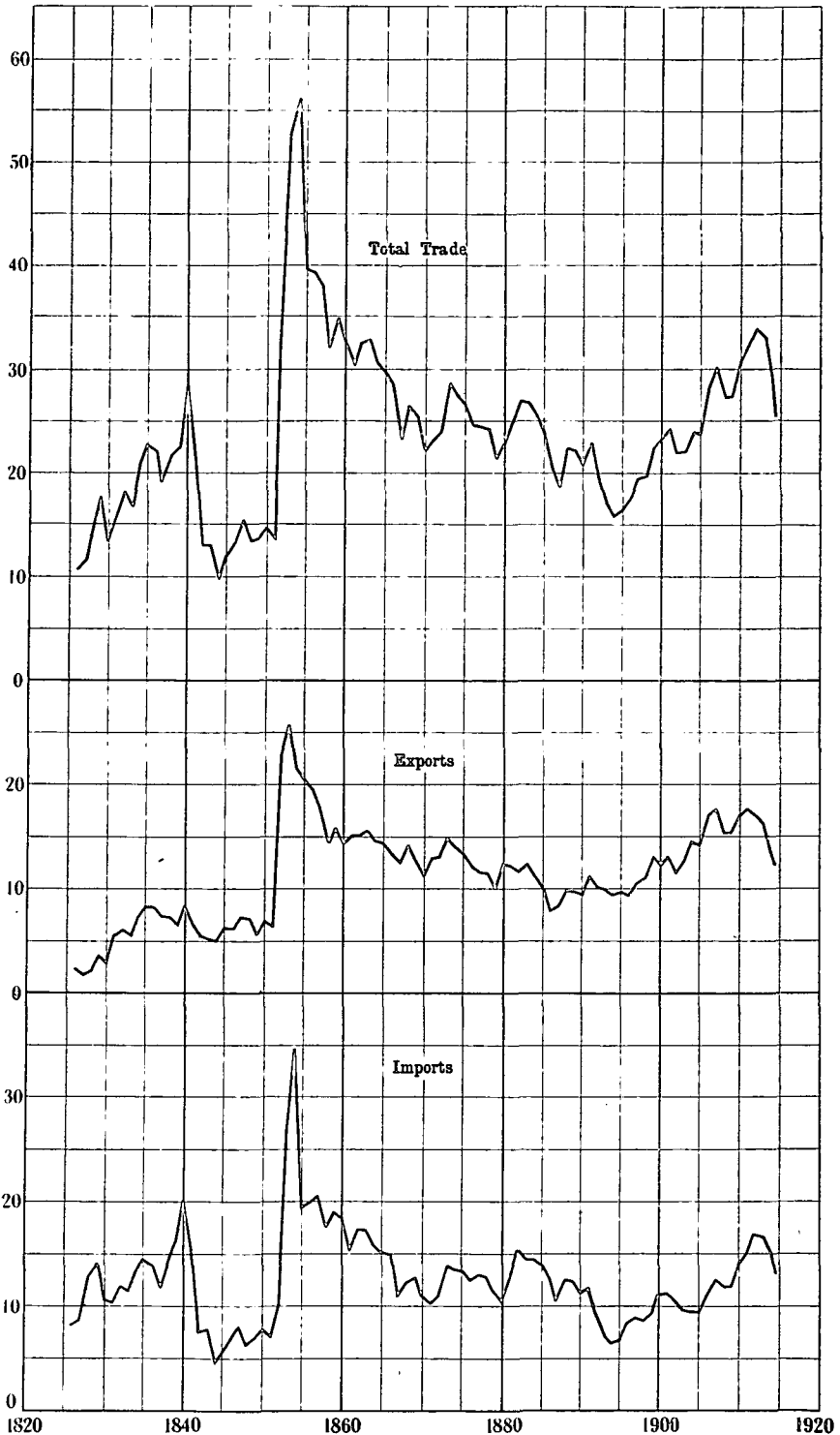
1. **Country of Shipment and Country of Origin.**—The following table shews, for the years 1908 and 1914-15, the value of imports recorded as direct from the principal countries, and also the disposition of the value of imports against the countries where they were produced or manufactured. A similar comparison for the years 1905-13 will be found in previous issues of this work.

GRAPHS SHEWING VALUES OF TOTAL TRADE, EXPORTS, AND IMPORTS OF
COMMONWEALTH, 1826 to 1915.



EXPLANATION OF GRAPHS.—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.

GRAPHS SHEWING THE VALUES PER HEAD OF POPULATION OF TOTAL TRADE,
EXPORTS, AND IMPORTS OF COMMONWEALTH, 1826 to 1915.



(See pages 542 and 543.)
EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height five pounds per head of the population.

COMMONWEALTH IMPORTS FROM COUNTRIES OF SHIPMENT AND COUNTRIES OF ORIGIN, 1908 and 1914-15.

Country.	Imports according to—							
	Country of Shipment.				Country of Origin.			
	1908.		1914-15.		1908.		1914-15.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
	£		£		£		£	
United Kingdom ...	29,930,157	60.10	37,896,655	58.82	25,274,661	50.75	32,494,821	50.43
BRITISH POSSESSIONS—								
Canada ...	321,041	0.64	1,487,592	2.31	532,752	1.07	1,235,452	1.92
Ceylon ...	683,813	1.37	977,368	1.52	681,950	1.37	972,519	1.51
Hong Kong ...	247,689	0.50	332,862	0.52	7,321	0.01	10,132	0.01
India ...	1,630,246	3.28	2,748,173	4.26	1,668,140	3.33	2,884,832	4.45
New Zealand ...	2,276,597	4.57	2,065,723	3.25	2,196,433	4.41	1,905,202	2.95
Straits Settlements ...	384,567	0.77	787,384	1.22	158,603	0.32	190,721	0.30
Other British Possessions	845,671	1.70	1,002,043	1.56	994,755	2.00	1,416,187	2.20
Total British Possessions ...	6,389,624	12.83	9,431,145	14.64	6,229,954	12.51	8,615,035	13.37
Total British Countries ...	36,319,781	72.93	47,327,800	73.46	31,504,615	63.26	41,109,856	63.80
FOREIGN COUNTRIES—								
Austria-Hungary*	16,947	0.03	*14,661	0.02	265,345	0.53	*128,758	0.20
Belgium ...	970,187	1.95	524,396	0.81	636,450	1.28	324,102	0.50
China ...	69,363	0.14	126,434	0.20	315,887	0.63	463,606	0.72
France ...	479,642	0.97	237,627	0.36	1,775,389	3.56	1,754,494	2.71
Germany*	3,509,130	7.05	*1,296,917	2.02	4,482,394	9.00	*2,005,137	3.12
Japan ...	543,789	1.09	1,392,317	2.16	574,906	1.15	1,436,310	2.23
Netherlands ...	173,528	0.35	133,961	0.21	311,832	0.63	368,611	0.60
Norway ...	314,685	0.63	788,913	1.22	420,470	0.85	840,553	1.30
Spain ...	12,131	0.02	53,031	0.08	108,104	0.22	149,066	0.23
Sweden ...	206,614	0.41	487,479	0.75	348,666	0.70	535,480	0.84
Switzerland ...	38,498	0.08	19,160	0.03	754,110	1.51	1,142,823	1.78
United States ...	6,093,753	12.13	9,585,617	14.89	6,581,846	13.22	10,871,298	16.89
Other Foreign Countries	1,105,236	2.22	2,443,524	3.79	1,719,259	3.46	3,281,693	5.08
Total Foreign Countries ...	13,479,492	27.07	17,104,037	26.54	18,294,658	36.74	23,321,981	36.20
Total Imports from all Countries ...	49,799,273	100	64,431,837	100	49,799,273	100	64,431,837	100

* The imports shown as from enemy countries during 1914-15 were received during July, or were on the sea at the time of the declaration of war. Goods on board German ships interned in South Africa and elsewhere were subsequently forwarded to Australia. (See also page 581).

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 1914-15 shew that while the total direct imports from that country amounted to £37,896,655, the value of the manufactures or produce of the United Kingdom itself, imported from all countries whatsoever during the same year, was £32,494,821. From the foregoing figures it appears that goods to the value of at least £5,401,834 were received from other countries through the United Kingdom.

Other countries which 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 1914-15. The countries mentioned in this table are those where the goods were shipped or whence they were directly consigned to Australia.

**IMPORTS INTO THE COMMONWEALTH FROM VARIOUS COUNTRIES,
1894 to 1914-15.**

Country	Yearly Average of Quinquennial Periods.				Year 1914-15.
	1894-8.	1899-1903.	1904-8.	1909-13.	
	£	£	£	£	£
United Kingdom	18,957,688	23,107,178	26,789,801	40,171,599	37,896,655
British Possessions—					
Canada	145,655	285,312	292,801	857,133	1,487,592
Ceylon	292,653	481,627	679,572	816,220	977,368
Fiji	110,167	91,918	89,425	389,276	404,889
Hong Kong	374,974	299,872	279,030	297,127	332,862
India	655,090	998,326	1,563,604	2,350,599	2,748,173
Mauritius	225,459	156,485	51,239	69,533	8,790
New Zealand	1,030,079	2,096,004	2,441,722	2,647,942	2,095,723
Papua	25,010	67,655	63,746	80,179	70,531
South African Union	3,944	5,626	50,232	137,911	116,748
Straits Settlements	184,628	234,001	270,550	625,079	787,384
Other British Possessions	8,548	49,334	168,318	298,640	401,085
Total British Possessions ...	3,056,207	4,766,160	5,950,239	8,569,639	9,431,145
Total British Countries ...	22,013,895	27,873,338	32,740,040	48,741,238	47,327,800
Foreign Countries—					
Belgium	264,743	428,305	815,228	1,724,846	524,396
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and South Sea Ids.	114,816	149,889	167,665	230,888	270,008
Chile and Peru	3,894	32,956	22,611	47,818	124,721
China	271,799	249,940	70,887	83,628	126,434
France	324,368	504,558	455,301	545,071	237,627
Germany	1,423,498	2,521,486	3,112,897	4,329,681	†1,296,917
Italy	93,774	157,502	197,464	343,894	394,606
Japan	116,716	290,835	460,514	804,346	1,392,317
Java	310,423	648,729	314,745	848,213	737,602
Netherlands	18,548	59,576	133,191	234,650	133,961
Norway	*207,296	*425,664	312,357	599,801	788,913
Philippine Islands	22,807	84,660	79,056	113,156	102,722
Sweden	*	*	105,828	489,113	487,479
United States of America	2,368,737	5,342,307	5,124,191	7,643,641	9,585,617
Other Foreign Countries	84,253	553,542	232,183	432,463	†900,717
Total Foreign Countries ...	5,625,672	11,449,949	11,604,118	18,471,159	17,104,037
Total	27,639,567	39,323,287	44,344,158	67,212,397	64,431,837

*Norway and Sweden combined in these years.

† See note on preceding page.

‡ Includes Argentine Republic, £421,836.

Expressing each item as percentage on the total of the imports, the following results are obtained :—

COMMONWEALTH IMPORTS.—PERCENTAGES OF THE IMPORTS FROM EACH COUNTRY ON THE TOTAL IMPORTS, 1894 to 1914-15.

Country.	1894-8.	1899-1903.	1904-8.	1909-13.	1914-15.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	68.59	58.76	60.41	59.77	58.82
BRITISH POSSESSIONS—					
Canada	0.53	0.73	0.66	1.28	2.31
Ceylon	1.06	1.22	1.53	1.21	1.52
Fiji	0.40	0.23	0.20	0.58	0.62
Hong Kong	1.86	0.76	0.63	0.44	0.52
India	2.37	2.54	3.53	3.50	4.26
Mauritius	0.81	0.40	0.12	0.10	0.01
New Zealand	3.73	5.33	5.51	3.94	3.25
Papua	0.09	0.17	0.14	0.12	0.11
South African Union	0.01	0.01	0.11	0.21	0.18
Straits Settlements... ..	0.67	0.60	0.61	0.93	1.22
Other British Possessions	0.03	0.13	0.38	0.44	0.64
Total British Possessions	11.06	12.12	13.42	12.75	14.64
Total British Countries	79.65	70.88	73.83	72.52	73.46
FOREIGN COUNTRIES—					
Belgium	0.96	1.09	1.84	2.57	0.81
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and South Sea Islands	0.42	0.38	0.38	0.34	0.41
Chile and Peru	0.01	0.08	0.05	0.07	0.19
China	0.98	0.64	0.16	0.12	0.20
France	1.18	1.28	1.02	0.81	0.36
Germany	5.15	6.41	7.02	6.44	†2.02
Italy	0.34	0.40	0.45	0.52	0.61
Japan	0.42	0.74	1.04	1.20	2.16
Java	1.12	1.65	0.71	1.26	1.15
Netherlands	0.07	0.15	0.30	0.35	0.21
Norway	0.75*	1.08*	0.70	0.89	1.22
Philippine Islands	0.08	0.22	0.18	0.17	0.16
Sweden	*	*	0.25	0.73	0.75
United States of America	8.57	13.59	11.55	11.37	14.89
Other Foreign Countries	0.30	1.41	0.52	0.64	†1.40
Total Foreign Countries... ..	20.35	29.12	26.17	27.48	26.54
Total	100	100	100	100	100

* Norway and Sweden combined in these years.

† See note on page 549.

‡ Includes Argentine Republic 0.68.

3. Imports from the United Kingdom.—The foregoing tables shew that notwithstanding the smaller imports from the United Kingdom during 1914-15 as compared with the average of the immediately preceding quinquennial period, the figures were

just twice as much as the average of the period 1894-8. It will be noticed, however, that the development of the import trade from the United Kingdom has not kept pace with the total trade, inasmuch as the *proportions* of imports shipped from the United Kingdom has, during the period under review, declined from 68.59 per cent. during the years 1894-8 to 58.82 per cent. for the year 1914-15. The apparent diversion of Australian trade from Great Britain is more fully dealt with in sub-section 12 of this chapter. The values of the principal imports of United Kingdom origin during the year 1914-15 are as follows :—

Ale and beer, £347,565 ; apparel and textiles—apparel, £2,792,980, textiles, £8,117,025 ; arms, ammunition and explosives, £609,780 ; books and periodicals, £531,256 ; brushware, £76,774 ; earthenware, etc., £299,023 ; clocks and watches, £29,350 ; cocoa and chocolate, £150,743 ; confectionery, £268,892 ; cordage, metal, £101,293 ; cordage, other, £131,147 ; cutlery, £239,370 ; drugs and chemicals—alkalies (soda), £111,715, fertilizers, £33,591, medicines, £179,320, other drugs and chemicals, £604,110 ; electrical and gas appliances, £215,805 ; electrical materials, £414,956 ; fancy goods, £185,719 ; fish, fresh and preserved, £219,237 ; furniture, £50,349 ; glass and glassware, £239,147 ; indiarubber and manufactures, £227,584 ; instruments, musical, £96,797 ; instruments, scientific, surgical, etc., £79,350 ; iron and steel—pig iron, £89,012, bar, hoop, ingot, etc., £638,305, scrap, £55,791, girders, beams, etc., £178,394, plate and sheet, galvanized or corrugated, £1,363,276, not galvanized or corrugated, £202,468, pipes and tubes, £557,279, rails, fishplates, etc., £635,591, tinned plates, plain, £551,435 ; wire, £55,213 ; wire netting, £151,042 ; jewellery and precious stones, £174,153 ; leather and leather manufactures, £86,202 ; machines and machinery, £1,988,598 ; metals, manufactures of, £2,408,895 ; milk, preserved, £22,574 ; oils (not essential), £195,250 ; paints and colours, £439,568 ; paper, £790,211 ; pickles, sauces, etc., £112,609 ; soap, £38,827 ; specie, £431,574 ; spirits, £394,831 ; stationery, £280,823 ; tobacco, £33,038 ; tools of trade, £230,366 ; varnishes, £57,449 ; vehicles—bicycles, etc., £120,345, motors, £457,079, other vehicles, £192,878 ; vessels (ships), £305,608 ; yarns, £252,035.

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 14.64 per cent. in 1914-15, the actual values being respectively £3,056,207 in the earlier period and £9,431,145 in 1914-15. Of the total imports from British possessions during 1914-15, 22.22 per cent., or 3.25 per cent. of all imports, was from New Zealand ; 29.14 per cent., or 4.26 per cent. of all imports, from India ; 15.77 per cent., or 2.31 per cent. of all imports, from Canada ; and 10.36 per cent., or 1.52 per cent. of all imports, from Ceylon. The imports from Canada shew an increase of £328,759, or 28.36 per cent. over those of 1913, and an increase of £630,459, or 73.55 per cent. over the average of the period 1909-13. A small part of this is due to larger shipments from Canadian ports of goods from the United States of America.

5. Principal Imports, the Produce of British Possessions, 1914-15.—These are as follows :—

(i.) *Canada.* Apparel and textiles—corsets, £24,785, other, £10,651, boots and shoes, £8169 ; carbide of calcium, £27,317 ; fish, £85,588 ; fruit—apples, £17,094 ; furniture, £7862 ; indiarubber and manufactures, £36,393 ; agricultural implements and machinery, £261,878 ; other machines and machinery, £11,065 ; railway material, £230,853, other metal manufactures, £71,138 ; paper, £148,340 ; timber, £17,653 ; motor chassis, £163,755, motor bodies, £35,053, other vehicles, £21,686.

(ii.) *Ceylon.* Coir fibre, £1390 ; nuts, £26,249 ; rubber and manufactures, £84,508 ; tea, £839,910. The large increase in the imports from Ceylon—from £271,883 during the years 1893-7, to £972,519 in 1914-15—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 1914-15, 54.97 per cent. was the produce of Ceylon.

(iii.) *Fiji*. Bananas, £228,450; copra, £75,687; sugar—produce of cane, £74,184; molasses, £8073.

(iv.) *India*. Bags and sacks, £1,544,171; hessians, £352,273; cameos, precious stones, unset, £4317; carpets, mats, etc., £22,858; coffee and chicory, £29,332; cotton, raw, £3043; other unmanufactured fibres, £15,891; dyes, £14,794; grain—beans and peas, £11,477; iron, pig, £57,127; linseed, £51,224; oils—castor, £32,063, linseed, £5150; rice, £164,485; shellac, £12,613; skins and hides, £26,592; spices, £15,366; tea, £364,808; timber, £26,550; wax, paraffin, £34,005; yarns, £16,432.

(v.) *Mauritius*. Sugar, £8952.

(vi.) *New Zealand*. Apparel and textiles, £21,904; animals—horses, £24,214, sheep, £21,301; cement, £32,409; coal, £15,400; flax and hemp, fibre, £57,699; fish, £41,053; fodder—hay and chaff, £52,138, bran and pollard, £41,949; gold, bullion and ore, £413,929; grain—barley, £5548; implements and machinery (agricultural), £4482; machines and machinery, £3722; meats, £19,593; milk and cream, £41,253; potatoes, £14,563; seeds, £45,483; skins and hides, £115,135; timber, £469,431; wool £2697.

(vii.) *Papua*. Gold bullion and ore, £40,997.

(viii.) *South African Union*. Bark, tanning, £24,924; explosives, £21,738; grain—maize, £23,422, oats, £10,173; precious stones, £153,740; tobacco, etc., £7106.

(ix.) *Straits Settlements*. Spices, £56,209; sago and tapioca, £44,626; canes and rattans, etc., unmanufactured, £10,434; rubber and rubber manufactures, £35,751; fodder—oil cake, £14,232.

6. Imports Shipped from Foreign Countries.—The imports direct from foreign countries during the year 1914-15 represented 26.54 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 1914-15, 56.04 per cent.—14.89 per cent. of all imports—was from the United States. The small imports from Germany were, of course, due to the war.

7. Principal Imports the Produce of Foreign Countries, 1914-15.—(i.) *Austria-Hungary*. Apparel and textiles, £60,010; furniture, £5933; chinaware, £5830; glassware, £5187; fancy goods, £5953; jewellery and precious stones, £2922; manufactures of metals, including machinery, £6397; paper and stationery, £7836; pipes, smoking, etc., £5701.

(ii.) *Belgium*. Apparel, £31,428; textiles, £35,163; cement, £1536; drugs, chemicals, and fertilizers, £4563; glass and glassware, £50,955; iron and steel—partly manufactured, £35,320, girders, beams, etc., £842, pipes and tubes, £1888, plate and sheet, £10,017, railway iron, £5765, wire, £4871; jewellery, £7370; machines and machinery, £4973; matches and vestas, £2554; metal manufactures, £15,302; motors and parts, £18,761; paper, £8812; zinc manufactures, £5283.

(iii.) *Chile*. Soda nitrate, £33,939; oats, £91,698.

(iv.) *China*. Apparel and textiles, £131,009; cotton, raw, £16,240; fish, £16,236; fruit, £8731; ginger, £9762; grain—bran and pollard, £18,213, rice, £48,042; nuts, £19,368; oils, £14,820; tea, £93,372.

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.

(v.) *France*. Apparel and textiles, £887,055; cream of tartar, £128,624; other drugs and chemicals, £23,562; fruits, £5259; fancy goods, £22,760; gelatine, £7266; jewellery, £7001; kinematographs, films, etc., £13,008; pipes, smoking, etc., £35,933; motor vehicles and parts, £69,572; paper and stationery, £25,473; perfumery, £21,183; resin, £12,551; rubber manufactures, £32,532; leather, £7983; machinery and manufactures of metal, £30,806; spirits, £209,940; tartaric acid, £6666; tiles, £28,977; wine, £61,810.

(vi.) *Germany*. Ale and beer, £23,954; apparel and textiles, £593,119; arms, ammunition, and explosives, £5041; brushware, £7317; cement, £30,512; chinaware, etc., £20,414; copper wire and cable, covered, £9738; earthenware, £10,663; coke, £4076; dyes, £4110; fertilizers, £9112; other drugs, etc., £63,507; fancy goods, £63,039; furniture, £3397; glass and glassware, £28,941; hops, £1690; indiarubber manufactures, £55,647; metals and manufactures of metals—iron and steel: bar, hoop, ingot, etc., £44,113, plate and sheet, £37,712, pipes and tubes, £37,819, railway iron, £34,288, tools of trade, £8781; wire, £102,894; wire netting, £24,131; machines and machinery, £107,993; lamps and lampware, £16,022; electrical and gas appliances, £18,762; other manufactures of metals, £157,234; jewellery, cameos, etc., £22,528; leather and leather manufactures (excluding boots and shoes), £21,260; musical instruments, £98,181; paper, £40,904; seeds, £565; spirits, £10,801; stationery, £37,009; tobacco, £1993; paints and varnishes, £6749; yarns, £3225; zinc, bar, and manufactures of zinc, £4239.

(vii.) *Italy*. Apparel and textiles, £182,593; flax and hemp, £9940; fruits, £30,403; hides, £2793; matches and vestas, £2742; marble and stone, £38,420; oils—olive, £11,336, essential, £31,312; nuts, £21,276; sulphur, £2403; motors and parts, £47,598; rubber manufactures, £12,029; cream of tartar, £24,409; tartaric acid, £34,680.

(viii.) *Japan*. Apparel and textiles, £731,904; bags, baskets, etc., £36,876; brushware, £20,429; chinaware, earthenware, and glass, £44,659; fancy goods, £24,437; fertilizers (superphosphates), £43,556; furniture, £8987; grain—bran and pollard, £55,013, oats, £51,913; grass straw for hats, £20,805; oils and waxes, £56,184; rice, £3522; spices, £2894; sulphur, £101,159; timber, etc., £79,665.

(ix.) *Java*. Cotton, raw, £616; hats and caps, £2086; rice, £6702; kapok, £95,262; rubber, £6332; sugar, £97,508; tobacco, £2736; tea, £225,369; maize, £196,538.

(x.) *Netherlands*. Apparel and textiles, £71,855; cocoa and chocolate, £53,231; cameos and precious stones, £11,317; metal manufactures, £32,586; paper, £23,723; spirits, £94,373; superphosphates, £19,032.

(xi.) *Norway*. Calcium carbide, £97,165; fish, £166,424; milk, preserved, £21,820; paper, £152,793; timber, etc., £368,014.

(xii.) *Philippine Islands.* Flax and hemp, £72,602; cigars, £29,099.

(xiii.) *Russia.* Flax, £4044; furs, £5533, oils, £14,010; timber, £47,948.

(xiv.) *Spain.* Corks, etc., £41,339; liquorice, £2751; nuts, £21,100; ores, £47,083; wine, £9375.

(xv.) *Sweden.* Calcium carbide, £13,311; earthenware, glassware, etc., £13,417; electrical machinery and fittings, £3559; cream separators, £53,237; other machinery, £28,908; manufactures of metals, £30,970; matches and vestas, £3013; paper, £217,538; telephones, £21,930; timber, £118,022.

(xvi.) *Switzerland.* Apparel and textiles, £874,929; chassis for motor cars, £732; cigars, £3194; cocoa and chocolate, manufactured, £58,166; confectionery, £37,201; milk, £4406; watches, £87,836.

(xvii.) *United States of America.* Ale and beer, £17,982; apparel and textiles—boots, shoes, etc., £111,053; other apparel, £330,047, textiles, £255,901; arms, £41,882; ammunition and explosives, £55,215; cameras, magic lanterns, phonographs, etc., £138,745; clocks and watches, £80,899; confectionery, £49,204; drugs and chemicals—cream of tartar, £20,684, medicines, £122,822, other, £160,024; fancy goods, etc., £36,066; fish, £210,574; fruit, £104,039; furniture, £76,935; glass and glassware, £87,866; glucose, £13,227; grain—barley, £57,180, oats, £40,653, wheat, £147,447; hops, £27,023; indiarubber manufactures, £126,175; leather, £317,139; meats, £73,172; metal manufactures—iron and steel: bars, ingots, hoops, etc., £115,111, girders, beams, etc., £20,380, pipes and tubes, £157,381, plate and sheet, £132,806, railway iron, £176,601; tools of trade, £250,339; wire, £274,917; machines and machinery, agricultural, £188,355; other machines and machinery, £1,305,450; other metal manufactures, £704,675; musical instruments, £69,551; oils, fats, and waxes—benzine and gasoline, £233,596, kerosene, £534,613, lubricating oils and greases, £197,127, paraffin wax, £15,338, turpentine, £51,343; paints and varnishes, £95,855; paper, £323,934; resin, £23,750; soap, £79,859; stationery, £121,232; surgical and dental instruments, £63,657; timber, £1,021,190; tobacco, cigars, etc., £673,773; vehicles, motors and parts, £479,535; other vehicles and parts, £172,888; wood and wicker manufactures, £112,631.

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 largely increased proportion of exports to the United Kingdom during 1914-15 was due to Government control, with the purpose of assuring requisite supplies to the Imperial Government. The larger proportions shipped to Japan and to the United States of America were mainly due to increased shipments of wool.

TRADE OF THE COMMONWEALTH WITH VARIOUS COUNTRIES, 1894 to 1914-15.

EXPORTS (INCLUDING BULLION AND SPECIE).

Country.	Yearly Average of Quinquennial Periods.				Year 1914-15.
	1894-8.	1899-1903.	1904-8.	1909-13.	
	£	£	£	£	£
United Kingdom ...	23,610,267	23,432,513	30,114,565	34,028,258	38,546,018
British Possessions—					
Canada ...	32,362	67,776	201,832	125,942	388,562
Ceylon ...	635,626	2,223,487	4,050,826	3,194,757	435,440
Fiji ...	124,453	205,731	284,636	402,877	420,258
Hong Kong ...	414,326	403,776	747,025	741,365	633,161
India ...	440,062	2,348,420	2,828,280	2,231,306	1,425,377
Mauritius ...	43,158	40,425	46,378	32,424	29,698
New Zealand ...	961,817	1,432,227	2,060,900	2,385,078	2,808,860
Papua ...	27,609	48,720	50,174	120,401	127,634
South African Union	217,047	4,276,976	2,065,014	1,799,435	2,022,839
Straits Settlements	92,663	105,824	391,409	834,156	541,714
Other British Possessions	11,841	41,941	70,843	75,913	459,167
Total British Possessions	3,000,964	11,195,303	12,797,317	11,943,654	9,292,710
Total British Countries ...	26,611,231	34,627,816	42,911,882	45,971,912	47,838,728
Foreign Countries—					
Argentine Republic ...	609	25,398	40,094	126,142	2,344
Belgium ...	1,289,242	1,667,396	3,930,612	6,172,958	804,956
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and South Sea Is. ...	383,179	789,966	442,050	631,465	569,357
Chile and Peru ...	159,501	299,097	624,168	616,704	325,814
China ...	25,030	237,376	340,726	161,527	130,098
France ...	2,289,284	2,754,889	5,686,867	8,183,825	1,279,513
Germany ...	1,678,313	2,549,266	5,140,556	6,938,358	478,396
Italy ...	102,495	159,017	207,218	525,903	771,432
Japan ...	91,630	198,434	869,350	1,194,271	1,966,944
Java ...	72,204	153,439	209,310	480,984	384,105
Netherlands ...	24,718	107,914	299,231	298,879	39,720
Norway ...	*2,765	*1,192	4,624	2,039	197,012
Philippine Islands	40,422	229,414	463,283	525,443	375,547
Spain ...	1,698	15,383	59,264	23,540	14,751
Sweden ...	*	*	4,219	4,888	1,656
United States of America ...	2,511,255	3,270,940	2,483,637	2,067,313	4,947,446
Other Foreign Countries	52,912	194,127	522,913	1,456,269	464,757
Total Foreign Countries	8,725,257	12,653,248	21,328,120	29,410,508	12,753,848
Total ...	35,336,488	47,281,064	64,240,002	75,382,420	60,592,576

* Norway and Sweden combined for these years.

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 1914-15.**

Country.	1894-8.	1899-1903.	1904-8.	1909-13.	1914-15.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom ...	66.82	49.56	46.88	45.14	63.61
British Possessions—					
Canada ...	0.09	0.14	0.31	0.17	0.64
Ceylon ...	1.80	4.70	6.32	4.24	0.72
Fiji ...	0.35	0.44	0.44	0.53	0.69
Hong Kong ...	1.17	0.85	1.16	0.98	1.05
India ...	1.25	4.97	4.40	2.96	2.35
Mauritius ...	0.12	0.09	0.07	0.04	0.05
New Zealand ...	2.72	3.03	3.21	3.16	4.63
Papua ...	0.08	0.10	0.08	0.16	0.22
South African Union ...	0.62	9.05	3.21	2.39	3.34
Straits Settlements ...	0.26	0.22	0.61	1.11	0.89
Other British Possessions ...	0.03	0.09	0.11	0.10	0.76
Total British Possessions	8.49	23.68	19.92	15.84	15.34
Total British Countries ...	75.31	73.24	66.80	60.98	78.95
Foreign Countries—					
Argentine Republic ...	0.00	0.05	0.06	0.17	0.00
Belgium ...	3.65	3.53	6.12	8.19	1.33
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and South Sea Is. ...	1.08	1.67	0.69	0.84	0.94
Chile and Peru ...	0.45	0.63	0.97	0.82	0.53
China ...	0.07	0.50	0.53	0.20	0.25
France ...	6.49	5.83	8.85	10.86	2.11
Germany ...	4.75	5.39	8.00	9.21	0.79
Italy ...	0.29	0.34	0.32	0.70	1.27
Japan ...	0.26	0.42	1.35	1.58	3.25
Java ...	0.20	0.32	0.33	0.64	0.63
Netherlands ...	0.07	0.23	0.47	0.40	0.06
Norway ...	0.01*	0.00*	0.01	0.00	0.32
Philippine Islands ...	0.11	0.49	0.72	0.70	0.62
Spain ...	0.00	0.03	0.09	0.03	0.02
Sweden ...	*	*	0.01	0.01	0.00
United States of America ...	7.11	6.92	3.87	2.74	8.16
Other Foreign Countries ...	0.15	0.41	0.81	1.93	0.77
Total Foreign Countries...	24.69	26.76	33.20	39.02	21.05
Total ...	100	100	100	100	100

* Norway and Sweden combined for these years.

9. **Exports to the United Kingdom.**—The principal exports to the United Kingdom during the year 1914-15 were as follows:—Butter, £2,327,604; cheese, £60,263; fruit—apples, £124,657, other, including pulp, £15,327; grain and pulse—wheat, £302,853, flour, £7968, other, £29,882; hair, £28,223; jewellery and precious stones, £28,744; lard and refined animal fats, £16,370; leather, £948,522; meat—bacon and ham, £5927, frozen—beef, £4,430,370, mutton, £2,183,790, lamb, £1,137,255, rabbits and hares, £528,351, other frozen meat, £178,615, potted meat, £396,386, meat preserved in tins, £1,199,088; minerals and metals—copper—concentrates, £1201, ingots, £1,391,378, in matte, £453,034, ore, £68,312; gold—bullion, £86,874, in matte, £198,806, ore, £52,514; silver—bullion, £65,025, in matte, £247,012; silver and silver-lead—concentrates, £6, ore, £64,439; lead—pig, £704,181, in matte, £602,985; tin—ingots and ore, £187,168; zinc—concentrates, £74,585; ores, other, £151,049; oil—cocoanut, £158,001, whale, £48,000; pearlshell, £160,099; skins—hides, £670,421, rabbit and hare, £128,445, sheep, £1,059,307, other skins, £51,643; specie—gold, £24,410; tallow, £1,365,665; timber, £143,706; wine, £66,911; wool—greasy, £12,267,050; scoured, £3,146,124.

10. **Principal Exports to British Possessions, 1914-15.**—(i.) *Canada.* Butter, £9458; coal, £1145; fruit—dried, £871; meats, £12,583; oil—cocoanut, £3584; skins, £248,015; sugar cane, £54,000, timber—undressed, £990; wool, £50,063.

(ii.) *Ceylon.* Butter, £9909; fodder, £5312; grain—flour, £20,117; lead—pig, £24,220; meats, £10,920; silver—bullion, £238,160; soap, £11,958; specie, £50,000; sugar, £2918; timber, £36,142.

(iii.) *Egypt.* Butter, £28,344; flour, £31,583; meats—beef, £71,040, mutton and lamb, £16,577, other meats, £1531; sugar cane, £18,050.

(iv.) *Fiji.* Apparel and textiles—apparel, including boots and shoes, £14,653, textiles, £11,700; bags, sacks, and cordage, £13,594; biscuits, £22,942; coal, £21,729; drugs and chemicals—fertilizers, £26,231, other, £7577; grain, prepared—bran, pollard, and sharps, £37,427, flour, £20,686, rice, cleaned, £10,957; machines and machinery, £13,286; metal manufactures, £35,037; oils, £6,713; specie, £23,709; timber, undressed, £17,238; vehicles, £5312.

(v.) *Hong Kong.* Butter, £19,489; fish, £34,607; flour, £1283; lead, pig, £105,140; leather, £3739; sandalwood, £48,338; soap, £2088; specie, gold, £380,729; meats, £13,167.

(vi.) *India.* Biscuits, £7709; coal, £40,446; copper, ingots, £127,959; fruit, fresh, £352; gold, bullion, £392,083, specie, £8500; horses, £387,046; hay and chaff, £32,210; lead, pig, £48,097; meats, £48,809; silver, bullion, £129,662; stearine, £6757; tallow, £16,916; timber, undressed, £87,550; wool, £30,739; flour, £1515; bran, pollard and sharps, £9894; sandalwood, £6424.

(vii.) *New Zealand.* Apparel and textiles, etc.:—apparel—boots and shoes, £6644, other apparel, £25,300, textiles, £64,801; bags and sacks, £14,798; bark, tanning, £24,604; books and periodicals, £51,858; cameras, magic lanterns, phonographs, etc., £37,873; coal, £192,132; copper, ingots, £10,023; drugs and chemicals—fertilizers, £129,929, medicines, £45,079, other drugs, etc., £46,789; electrical materials, £10,939; fodders, £994; fruit—fresh, £29,383, dried, £26,787; glass and glassware, £14,255; grain—flour, £44,877, rice, £52,330; horses, £9765; indiarubber manufactures, £93,914;

iron, pig, £8068; jewellery and precious stones, £4960; lead, pig, £17,959; leather and leather manufactures, £53,066; metals, manufactures of—agricultural implements and machinery, £6261, other machines and machinery, £74,746, other manufactures of metals, £95,238; motor vehicles and parts, £24,202; oils, etc., £16,805; onions, £11,057; plants, trees and bulbs, £12,433; paper, £11,417; salt, £8156; seeds, £6967; soap, £36,630; specie—gold, £658,072; spirits, £44,235; stationery, £10,309; sugar, £9700; tea, £85,733; timber, £211,987; tin, ingots, £23,570; tobacco, £86,973; wine, £26,821.

(viii.) *Papua*. Apparel and textiles, etc., £9345; flour, £3630; machinery and manufactures of metal, £15,393; meats, £13,080; rice, £9778; tobacco, £12,896; timber, £3562.

(ix.) *South African Union*. Animals, living—sheep, £23,750; butter, £64,758; fruits—fresh, £335, other, £2670; grain—wheat, £234,221; flour £130,565; jams and jellies, £969; leather, £129,124; meats—frozen beef, £2500, mutton and lamb, £6538, preserved, in tins, £460,806, other meats, £4551; oil, cocoanut, £7713; seeds, £1432; specie, £550,036; tallow, unrefined, £55,094; timber, £241,891; soap, £7260.

(x.) *Straits Settlements*. Butter, £25,137; coal, £44,751; copper, in matte, £35,166; grain, flour, £32,998; horses, £555; machines and machinery, £49,899; meats, £69,768; tin ore, £179,962; tin concentrates, £1825; sandalwood, £9854; soap, £13,764.

11. **Exports to Foreign Countries.**—The foregoing table shews that prior to the outbreak of war an increasingly large proportion of the exports from the Commonwealth was shipped to foreign countries. Owing to the restriction of exports for war purposes, the exports to foreign countries during 1914-15 were much contracted, the only exceptions being the United States, Italy, Japan and Norway. With regard to the three first-mentioned countries, the increases were due to larger shipments of wool, skins, zinc, and meats, while in the case of Norway the whole exports comprised whale oil collected by Norwegian ships operating from the Australian coast. The value of exports to foreign countries during 1913 shewed an increase of 361 per cent. over similar figures for the years 1893-7, thus increasing the proportion per cent. of all exports from 21.92 per cent. in the earlier years to 43.67 per cent. in 1913. This increase was largely due to the direct consignment of wool and other produce to European countries, instead of distributing from London, as in the earlier years. It will be observed that approximately two-thirds of the exports from Australia to foreign countries were shipped to Belgium, France and Germany. Of the exports to these three countries during 1913, wool represented 60 per cent., ores and minerals, 22 per cent., and hides and skins, 11 per cent. The exports to the United States of America did not shew the same expansion as those to the European countries mentioned. This, however, was due largely to the fact that the figures for the earlier years under review included large shipments of gold, whereas, during the later years, gold had not been shipped to the United States from Australia.

12. Principal Exports to Foreign Countries, 1914-15.—These are as follow:—

(i.) *Argentine Republic*. Agricultural implements and machinery, £2013; timber, £25.

(ii.) *Belgium*. Bark, tanning, £2688; copper, £105,663; silver and silver-lead ore, £3555, concentrates, £189,604; hides and skins, £74,176; tallow, £10,117; timber, £1378; wool, £187,755; zinc concentrates, £223,176.

(iii.) *Chile*. Coal, £122,447; coke, £5897; wheat, £127,376.

(iv.) *China*. Butter, £21,227; flour, £5244; lead, £30,789; leather, £2892; sandalwood, £27,544; specie, gold, £13,000; timber, £17,869.

(v.) *Dutch East Indies: Java*. Butter, £98,543; biscuits, £4356; cattle, £22,325; coal, £90,453; fertilizers, £24,785; flour, £55,740; horses, £1243; meats, £23,626; leather and manufactures, £24,506; soap, £2999.

(vi.) *Other East Indies*. Butter, £4201; biscuits, £7462; flour, £11,820; meats, £1928; gold, specie, £4450; soap, £12,858.

(vii.) *France*. Animals living—horses, £50,075; concentrates—silver, £4220, zinc, £27,253; copper—ingots, £37,247, copper in matte, £10,980; hides and skins, £402,767; lead, £6300; ores, £21,491; tallow, £11,045; wheat, £1699; wool, £694,751.

(viii.) *Germany*. Bark, tanning, £1109; concentrates—silver, £12,415, zinc, £31,391; copper, £28,820; fruit, fresh, £354; hides and skins, £34,017; lead, £3600; meats, preserved in tins, £2620; ores—silver and silver lead, £6674, wolfram, £7245, other ores, £1251; precious stones, unset, £4617; sausage casings, £12,874; tallow, £15,454; timber, £1424; tin ingots, £7429; wool, £295,376.

(ix.) *Italy*. Meats, preserved, £2130; skins, £12,299; tallow, £9095; wheat, £30,474; wool, £716,260.

(x.) *Japan*. Bones, £21,599; butter, £1986; glue pieces and sinews, £10,675; grain, wheat, £42,933; hides, £13,084; lead, £232,637; manures, £7126; oils, £8168, tallow, £63,762; wool, £1,502,576; zinc bar, blocks, etc., £18,800.

(xi.) *Netherlands*. Concentrates—silver, £22,500, zinc, £13,700.

(xii.) *Peru*. Coal, £11,855; wheat, £57,076.

(xiii.) *Philippine Islands*. Butter, £17,319; cattle, £14,701; coal, £48,936; flour, £33,528; fodder, £7644; machines and machinery, £2516; meats—bacon and hams, £18,317, beef, £169,327, mutton and lamb, £6212, other meats, £2210; milk, concentrated, £7927; onions, £6151.

(xiv.) *United States of America*. Butter, £15,440; coal, £51,627; copper, £32,400; gold, in matte, £3600; hides and skins, £802,620; meats, £312,027; pearlshell, £17,027; specie, gold, £210,000; tin, £14,611; wool, £3,110,301; zinc concentrates, £243,114.

§ 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 1910 to 1914-15.**

Article.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
Butter	64,838	173,817	185,379	242,561	230,640	198,782
Coal	155,120	265,011	241,366	291,182	285,853	225,221
Copper	39,375	29,080	26,296	91,580	84,758	127,959
Grain and Pulse—						
Wheat	46,685	49,596	17,502	8,605	226,641	43,169
Flour	135,092	446,408	704,070	690,403	825,112	162,262
Other (prepd. & unprepd.)	4,806	21,631	21,790	13,973	15,927	16,531
Hay, chaff, and comp. fodder	13,081	31,924	50,855	50,210	45,679	56,556
Horses	101,866	227,890	182,736	166,134	146,741	389,719
Lead	10,454	230,461	343,917	407,475	445,294	440,999
Meats	194,071	232,809	263,098	308,935	354,557	368,208
Sandalwood	77,237	88,624	73,386	32,675	57,560	92,400
Skins, hoofs, horns, bones, sinews, tallow	16,419	28,169	85,732	126,289	108,479	134,443
Tin ore	4,096	194,066	277,961	387,524	447,875	179,962
Timber, undressed	79,915	352,175	398,313	221,144	180,329	142,157
Wool	56,618	444,890	480,850	722,133	765,604	1,533,525
Other merchandise	226,540	352,988	434,645	549,114	641,910	617,145
Total merchandise	1,226,213	3,169,539	3,787,896	4,309,937	4,862,959	4,729,038
Specie & gold & silver bullion	3,339,953	1,878,102	8,951,059	10,678,501	2,425,024	1,217,174
Total exports	4,566,166	5,047,641	12,738,955	14,988,438	7,287,983	5,946,212

It may be mentioned that exports of gold from Australia to eastern countries, chiefly to India and Ceylon, have no bearing upon the business connections of the Commonwealth with those countries, as the destination of these gold shipments, which are merely a contribution towards the liquidation of the international obligations of the Commonwealth, is determined almost entirely by London bankers.

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 1910 to 1914-15:—

**VALUE OF COMMONWEALTH EXPORTS OF MERCHANDISE TO PRINCIPAL
EASTERN COUNTRIES, 1901 and 1910 to 1914-15.**

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China	33,906	95,771	133,634	163,891	147,056	117,098
East Indies	204,315	388,102	568,732	658,430	817,987	433,481
Hong Kong	31,853	251,469	263,867	239,886	277,941	251,842
India and Ceylon	417,291	759,057	773,359	723,007	686,924	1,042,412
Japan	123,355	657,057	832,958	1,169,335	1,429,310	1,966,944
Philippine Islands	302,086	473,268	512,085	565,345	545,080	375,547
Straits Settlements	113,467	544,815	703,261	790,043	958,661	541,714
Total	1,226,213	3,169,539	3,787,896	4,309,937	4,862,959	4,729,038

BUTTER.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China	1,987	19,352	12,345	35,789	30,993	21,227
East Indies	12,172	63,811	80,579	87,439	91,365	102,894
Hong Kong	8,555	21,767	21,303	25,570	21,711	19,489
India and Ceylon	9,696	9,239	8,942	12,381	13,830	10,730
Japan	1,504	5,383	8,067	5,713	4,864	1,986
Philippine Islands	21,061	30,865	25,252	40,296	34,091	17,319
Straits Settlements	9,863	23,400	28,891	35,863	33,786	25,137
Total	64,838	173,817	185,379	243,051	230,640	198,782

The exports of butter given above for the year 1914-15 were shipped from the several States as follows:—New South Wales, £52,890; Victoria, £120,367; Queensland, £25,525.

COAL.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	...	1,245	2,700	510	940	...
East Indies ...	43,280	47,856	67,173	106,844	144,185	90,453
Hong Kong ...	7,653	5,321	...	192	...	635
India and Ceylon ...	17,639	32,753	18,924	66,699	33,018	40,446
Japan ...	1	63	...	...	...	...
Philippine Islands...	59,936	105,195	82,914	54,932	25,939	48,936
Straits Settlements...	26,611	72,578	69,655	62,005	81,771	44,751
Total ...	155,120	265,011	241,366	291,182	285,853	225,221

These exports of coal are chiefly from New South Wales.

COPPER.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	...	18,469	18,050	28,406	8,275	...
East Indies ...	...	...	...	...	...	...
Hong Kong ...	...	1,120	5,426	12,293	1,638	...
India and Ceylon ...	39,375	8,959	300	45,403	71,097	127,959
Japan ...	...	...	2,520	5,478	3,748	...
Straits Settlements...	...	...	...	...	...	...
Philippine Islands...	...	532	...	...	...	...
Total ...	39,375	29,080	26,296	91,580	84,758	127,959

The copper exported to the East during 1914-15 was shipped entirely from New South Wales.

GRAIN AND PULSE—WHEAT.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	...	18	...	...	...	...
East Indies ...	9	17	11	22	6	14
Hong Kong ...	...	14	...	...	...	...
India and Ceylon ...	35,660	162	228	316	316	201
Japan ...	11,016	49,379	17,211	7,844	226,287	42,933
Philippine Islands ...	...	...	29	418	28	12
Straits Settlements...	...	6	23	5	4	9
Total ...	46,685	49,596	17,502	8,605	226,641	43,169

The exports of wheat given above for the year 1914-15 were shipped from the following States:—New South Wales, £42,967; Victoria, £202.

GRAIN AND PULSE—FLOUR.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	1,147	6,094	12,615	15,918	19,780	5,244
East Indies ...	82,566	191,141	291,681	326,093	416,302	67,560
Hong Kong ...	4,489	16,144	44,784	17,133	20,440	1,283
India and Ceylon ...	22,275	23,857	32,319	44,715	47,534	21,632
Japan ...	7,206	7,583	2,172	3,990	5,246	17
Philippine Islands ...	4,046	87,668	141,498	149,500	128,311	33,528
Straits Settlements...	13,363	113,921	179,001	133,054	187,499	32,998
Total ...	135,092	446,408	704,070	690,403	825,112	162,262

The flour exported during 1914-15, as above, was shipped from the several States as follows:—New South Wales, £89,676; Victoria, £54,490; Queensland, £35; South Australia, £11,536; Western Australia, £6524; Northern Territory, £1.

GRAIN AND PULSE, OTHER THAN WHEAT AND FLOUR.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	43	759	861	66	677	3
East Indies ...	...	2,114	1,532	1,617	1,623	1,117
Hong Kong ...	777	95	5	129	3	20
India and Ceylon ...	3,033	9,687	9,894	6,061	10,448	14,010
Japan ...	7	12	133	61	67	18
Philippine Islands ...	946	8,115	7,881	4,942	2,167	573
Straits Settlements...	...	849	1,484	1,097	942	790
Total ...	4,806	21,631	21,790	13,973	15,927	16,531

The exports given above for 1914-15 were shipped from the following States:—New South Wales, £2661; Victoria, £13,804; Queensland, £2; South Australia, £31; Western Australia, £33.

HAY AND CHAFF, AND COMPRESSED FODDER.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	2,934	45	21	33	69	...
East Indies ...	14	1,197	1,688	1,634	920	920
Hong Kong ...	28	149	989	230	1,350	373
India and Ceylon ...	5,848	11,204	14,094	18,621	15,077	44,277
Japan ...	57	3	591	58	79	24
Philippine Islands ...	2,582	15,037	27,332	23,695	24,254	7,644
Straits Settlements	1,618	4,289	6,140	5,939	3,930	3,318
Total ...	13,081	31,924	50,855	50,210	45,679	56,556

The exports given above for the year 1914-15 were shipped from the several States as follows:—New South Wales, £1579; Victoria, £54,815; South Australia, £10; Western Australia, £152.

HORSES.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	4,460	60	390	625	...	...
East Indies ...	2,105	10,466	19,235	13,459	21,465	1,243
Hong Kong ...	775	...	800	40	...	...
India and Ceylon ...	78,723	179,348	139,462	132,589	108,765	387,046
Japan ...	100	1,860	2,115	2,650	2,836	875
Philippine Islands ...	190	14,971	7,795	5,449	2,061	...
Straits Settlements...	15,513	21,185	12,939	11,322	11,614	555
Total ...	101,866	227,890	182,736	166,134	146,741	389,719

The horses exported to the above countries during 1914-15 were shipped from the following States:—New South Wales, £2365; Victoria, £98,104; Queensland, £205,345; South Australia, £83,875; Western Australia, £30.

LEAD, PIG.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	6,102	24,661	48,586	38,481	50,902	30,695
East Indies ...	18	...	2	232	1,381	...
Hong Kong ...	1,257	66,997	63,257	92,199	101,280	105,140
India and Ceylon ...	315	56,717	43,190	41,408	39,156	72,317
Japan ...	2,750	77,493	187,778	233,154	250,978	232,637
Philippine Islands ...	12	4,553	1,104	1,212	547	77
Straits Settlements...	...	40	...	789	1,050	133
Total...	10,454	230,461	343,917	407,475	445,294	440,999

The above lead is almost entirely from the Broken Hill mines of New South Wales.

MEATS—PRESERVED BY COLD PROCESS.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	...	...	...	...	...	354
East Indies ...	98	945	3,556	950	6,118	8,875
Hong Kong ...	3,195	7,373	11,273	9,109	10,347	7,502
India and Ceylon ...	5,907	4,252	6,029	6,864	9,072	9,570
Japan ...	19	445	935	15	433	4
Philippine Islands ...	153,250	143,581	135,249	182,724	199,199	177,696
Straits Settlements...	...	25,849	37,593	43,453	45,845	58,753
Total...	162,469	182,445	194,635	243,115	271,014	262,754

The exports to the above-mentioned Eastern countries during 1914-15 of meats preserved by cold process were shipped from the following States:—New South Wales, £43,602; Victoria, £4140; Queensland, £215,012.

MEATS—OTHER THAN MEATS PRESERVED BY COLD PROCESS.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	491	5,205	6,531	5,902	7,138	2,885
East Indies ...	15,035	11,914	12,495	16,449	20,272	16,679
Hong Kong ...	571	1,853	4,238	3,220	4,633	5,665
India and Ceylon ...	11,464	12,986	14,415	3,143	8,279	50,159
Japan ...	893	1,137	1,659	1,778	1,292	656
Philippine Islands ...	2,617	10,707	22,336	29,043	28,758	18,395
Straits Settlements	531	6,612	6,789	6,285	13,171	11,015
Total ...	31,602	50,364	68,463	65,820	83,543	105,454

The exports given above for the year 1914-15 were shipped from the following States:—New South Wales, £8937; Victoria, £5005; Queensland, £85,067; South Australia, £6324; Western Australia, £112; Northern Territory, £9.

SANDALWOOD.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	7,905	7,332	2,348	16,619	5,593	27,544
Hong Kong ...	53,991	71,672	62,566	11,567	41,476	48,338
India and Ceylon ...	...	6,301	2,505	3,455	4,560	6,424
Japan ...	...	...	...	...	...	240
Straits Settlements	15,341	3,319	5,967	1,034	5,931	9,854
Total ...	77,237	88,624	73,386	32,675	57,560	92,400

The exports of sandalwood in 1914-15 were shipped from New South Wales, £160; Queensland, £13,439; and Western Australia, £78,801.

SKINS, HOOFS, HORNS, BONES, SINEWS, AND TALLOW.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	...	...	977	661	6	...
East Indies ...	...	348	1,327	920	1,149	2,048
Hong Kong ...	1,234	401	129	403	333	150
India and Ceylon ...	2,761	3,485	9,880	13,538	17,523	17,369
Japan ...	11,829	23,145	72,509	109,562	88,193	113,169
Philippine Islands ...	165	389	577	397	562	987
Straits Settlements	430	401	333	808	713	720
Total ...	16,419	28,169	85,732	126,289	108,479	134,443

The above exports of skins, etc., in 1914-15 were shipped from the several States as follows:—New South Wales, £60,752; Victoria, £22,193; Queensland, £51,294; Western Australia, £4; Northern Territory, £200.

TIN ORE.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
Straits Settlements	4,096	194,066	277,961	387,524	447,875	179,962

The export of tin ore to the Straits Settlements—the centre of the world's tin production—is for the purpose of treatment, and was shipped from the several States during 1914-15 as follows:—New South Wales, £104,320; Queensland, £69,812; Northern Territory, £5830.

TIMBER, UNDRESSED.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	4,090	2,699	14,250	2	2	17,869
East Indies ...	22	652	279	1,691	554	252
Hong Kong ...	...	19,590	763	3	2,155	142
India and Ceylon ...	61,246	307,001	362,549	217,556	175,757	123,692
Japan ...	418	781	476	972	959	73
Philippine Islands ...	9,278	21,132	19,616	414	449	...
Straits Settlements...	4,861	320	380	506	453	129
Total ...	79,915	352,175	398,313	221,144	180,329	142,157

The above exports of timber during 1914-15 from the several States were shipped as follows:—New South Wales, £911; Victoria, £125; Queensland, £444; Western Australia, £139,447; Tasmania, £1230.

WOOL.

Country.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
China ...	...	...	560	...	...	...
East Indies ...	112	...	...	...	...	...
Hong Kong ...	...	...	...	23	...	...
India and Ceylon ...	7,853	24,268	21,290	18,739	30,586	30,739
Japan ...	48,653	420,622	459,000	703,371	735,018	1,502,576
Philippine Islands...	...	...	...	...	...	210
Total...	56,618	444,890	480,850	722,133	765,604	1,533,525

The wool exported to the East by the several States during 1914-15 was shipped as follows:—New South Wales, £1,215,977; Victoria, £79,614; Queensland, £237,934.

§ 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 1910 to 1914-15, 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 FERTILIZERS.
XXIV.	MISCELLANEOUS.

COMMONWEALTH IMPORTS ARRANGED IN CLASSES, 1901 and 1910 to 1914-15.

Classes.	1901.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£	£
I. Animal foodstuffs, etc.	793,365	873,697	816,915	1,037,692	947,697	1,265,068
II. Vegetable	2,925,985	1,944,050	2,352,957	4,455,662	3,315,825	3,686,926
III. Beverages (non-alcoholic), etc.	1,054,324	1,646,052	1,673,449	1,863,712	1,833,235	1,987,878
IV. Alcoholic liquors, etc.	1,845,438	1,654,237	1,920,824	2,022,986	2,095,896	1,780,927
V. Tobacco, etc.	717,915	769,470	899,110	1,045,841	1,114,949	902,471
VI. Live animals	40,306	337,040	395,665	243,489	145,215	135,259
VII. Animal substances, etc.	124,017	370,634	296,926	337,052	417,039	309,959
VIII. Vegetable	459,361	1,120,045	1,329,295	1,493,582	1,344,204	1,386,802
IX. Apparel, etc.	12,065,367	17,438,605	17,840,496	19,495,762	19,705,768	17,577,422
X. Oils, etc.	1,290,252	1,596,643	1,807,983	2,192,317	1,969,628	2,100,177
XI. Paints, etc.	385,049	481,392	485,240	676,861	609,859	610,113
XII. Stones, etc.	131,095	469,598	173,533	201,317	218,332	162,071
XIII. Specie	172,395	374,484	381,482	542,937	377,220	433,301
XIV. Metals, unmanufd., ores, etc.	984,327	1,221,721	1,937,723	1,488,167	1,575,734	788,872
XV. Metals, part manufactured	1,062,309	1,035,864	1,169,509	1,424,261	1,500,436	955,791
XVI. Metals, manufactured	7,491,636	12,074,821	14,211,581	16,985,089	16,623,135	13,455,001
XVII. Leather, etc.	523,565	1,303,134	1,586,503	1,788,272	1,749,046	1,234,057
XVIII. Wood, etc.	1,814,382	2,583,065	3,361,477	3,565,445	3,573,753	2,565,473
XIX. Earthenware, etc.	925,101	1,015,313	1,228,122	1,445,090	1,580,615	1,208,186
XX. Paper, etc.	1,731,330	2,457,216	2,831,808	3,116,215	3,134,750	2,745,827
XXI. Jewellery, etc.	1,065,348	1,428,029	1,755,583	1,873,917	1,410,555	1,102,462
XXII. Instruments, etc.	218,437	444,990	504,775	517,677	754,589	543,463
XXIII. Drugs, etc.	1,472,162	2,186,005	2,178,600	2,394,162	2,493,192	2,425,689
XXIV. Miscellaneous	3,140,345	5,188,246	5,827,932	7,951,095	11,258,981	5,068,642
Grand total ...	42,433,811	60,014,351	66,967,488	78,158,600	79,749,653	64,431,837

* Includes warships, £2,495,000.

The exports are shown 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, and that the latter consist largely of specie minted from imported gold.

**COMMONWEALTH EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING
AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES,
1901 and 1910 to 1914-15.**

Classes.	1901.	1910.	1911.	1912.	1913.	1914-15.
AUSTRALIAN PRODUCE.						
I. Animal foodstuffs, etc.	£ 4,104,196	£ 8,791,463	£ 9,015,595	£ 7,991,038	£ 11,459,049	£ 14,491,163
II. Vegetable foodstuffs, etc.	4,633,926	11,884,299	11,910,303	8,741,065	10,648,506	2,022,397
III. Beverages (non-alcoholic), etc.	2,598	5,826	5,534	4,895	5,742	16,635
IV. Alcoholic liquors, etc.	134,630	137,826	167,137	131,850	114,973	125,938
V. Tobacco, etc.	5,030	67,226	69,035	78,901	72,374	79,796
VI. Live animals	473,601	306,724	298,691	327,524	297,812	536,613
VII. Animal substances, etc.	16,754,006	33,128,767	29,714,471	31,283,280	32,332,945	25,903,510
VIII. Vegetable substances, etc.	142,060	279,053	245,771	173,685	194,982	193,457
IX. Apparel, etc.	42,142	77,217	72,852	76,912	72,307	104,260
X. Oils, etc.	843,755	2,192,992	2,234,884	1,845,916	2,512,265	2,052,692
XI. Paints, etc.	620	5,871	6,577	6,799	6,188	2,735
XII. Stones, etc.	1,041,974	943,195	926,655	1,160,962	1,133,528	741,996
XIII. Specie	8,884,816	1,199,679	8,210,595	9,057,444	710,180	1,485,736
XIV. Metals, unmanufactd., ores, etc.	8,916,269	10,341,849	10,674,748	12,364,321	12,689,990	7,238,886
XV. Metals, part manufactured	3,802	8,922	10,270	18,907	43,262	142,657
XVI. Metals, manufactured	117,662	221,037	252,756	303,219	380,299	176,344
XVII. Leather, etc.	660,692	576,918	583,556	715,961	688,373	1,267,985
XVIII. Wood, etc.	666,024	1,020,917	1,061,582	908,049	1,014,973	808,816
XIX. Earthenware, etc.	6,600	13,284	13,967	18,915	12,481	15,539
XX. Paper, etc.	22,171	58,066	68,957	71,905	66,806	55,597
XXI. Jewellery, etc.	67,978	135,068	161,553	170,962	170,147	34,708
XXII. Instruments, etc.	507	6,922	5,312	6,347	5,929	9,179
XXIII. Drugs, etc.	86,299	243,885	255,716	267,946	269,387	313,860
XXIV. Miscellaneous	130,418	189,189	218,382	234,760	235,649	302,074
Total	47,741,776	71,836,195	76,205,210	75,961,563	75,138,147	58,122,573

OTHER PRODUCE.

I. Animal foodstuffs, etc.	£ 35,291	£ 23,722	£ 25,369	£ 23,486	£ 19,642	£ 27,675
II. Vegetable foodstuffs, etc.	80,371	192,832	210,515	170,060	161,886	476,367
III. Beverages (non-alcoholic), etc.	43,308	91,514	85,661	78,329	65,030	104,993
IV. Alcoholic liquors, etc.	55,732	37,234	40,744	42,407	39,086	71,255
V. Tobacco, etc.	61,753	57,133	52,697	52,501	55,155	61,825
VI. Live animals	105	5,335	12,017	5,433	2,806	4,687
VII. Animal substances, etc.	10,070	7,363	8,392	5,709	6,892	1,315
VIII. Vegetable substances, etc.	17,625	18,483	26,755	65,955	28,262	17,733
IX. Apparel, etc.	171,014	200,870	185,412	204,565	197,971	240,351
X. Oils, etc.	42,292	38,394	45,960	52,019	62,687	57,914
XI. Paints, etc.	15,186	8,135	7,408	8,263	7,815	6,222
XII. Stones, etc.	2,043	2,779	1,646	1,846	1,296	1,125
XIII. Specie	846,921	1,047,758	1,639,951	1,420,151	1,481,765	508,664
XIV. Metals, ores, etc.	9,744	8,463	17,820	23,414	34,136	40,481
XV. Metals, part manufactured	13,806	32,994	24,952	25,404	7,748	10,631
XVI. Metals, manufactured	196,334	261,708	266,681	268,603	269,001	248,497
XVII. Leather, etc.	13,074	59,653	65,321	55,210	71,532	42,146
XVIII. Wood, etc.	32,135	37,290	34,966	33,627	34,305	23,266
XIX. Earthenware, etc.	23,337	16,839	15,237	15,702	16,846	16,172
XX. Paper, etc.	52,171	75,103	77,951	111,817	79,512	71,276
XXI. Jewellery, etc.	54,431	147,493	148,854	87,186	89,845	30,331
XXII. Instruments, etc.	13,555	54,125	66,171	93,072	65,944	67,941
XXIII. Drugs, etc.	42,976	51,154	49,658	55,367	60,026	66,014
XXIV. Miscellaneous	121,122	178,581	166,910	234,401	574,431	272,922
Total	1,954,396	2,654,955	3,277,048	3,134,527	3,433,622	2,470,003

EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES, 1901 and 1910 to 1914-15.—Continued.

Classes.	1901.	1910.	1911.	1912.	1913.	1914-15.
TOTAL EXPORTS.						
I. Animal foodstuffs, etc. ...	£ 4,139,487	£ 8,815,185	£ 9,040,964	£ 8,014,524	£ 11,478,691	£ 14,518,838
II. Vegetable foodstuffs, etc. ...	4,714,297	12,077,131	12,120,818	8,911,125	10,810,392	2,498,764
III. Beverages (non-alcoholic), etc. ...	45,906	97,340	91,195	83,224	70,772	121,628
IV. Alcoholic liquors, etc. ...	190,362	175,060	207,881	174,257	154,059	197,193
V. Tobacco, etc. ...	66,783	124,359	121,732	131,402	127,529	141,621
VI. Live animals ...	473,706	312,059	310,708	332,957	300,618	541,300
VII. Animal substances, etc. ...	16,764,076	33,136,130	29,722,863	31,288,989	32,339,837	25,904,825
VIII. Vegetable substances, etc. ...	159,685	297,536	272,526	239,640	223,244	211,190
IX. Apparel, etc. ...	213,156	278,087	258,264	281,477	270,278	344,611
X. Oils, etc. ...	886,047	2,231,386	2,280,844	1,897,935	2,574,952	2,110,606
XI. Paints, etc. ...	15,806	14,006	13,985	15,062	14,006	8,957
XII. Stones, etc. ...	1,044,017	945,974	928,301	1,162,808	1,134,824	743,121
XIII. Specie ...	9,731,737	2,247,437	9,850,546	10,477,595	2,191,945	1,994,400
XIV. Metals, unmanufactd., ores, etc. ...	8,926,013	10,350,312	10,692,568	12,387,735	12,724,126	7,279,367
XV. Metals, part manufactured ...	17,609	41,916	35,222	44,311	51,010	153,488
XVI. Metals, manufactured ...	313,996	482,745	519,437	571,822	649,300	424,841
XVII. Leather, etc. ...	673,766	636,571	648,877	771,171	759,905	1,310,131
XVIII. Wood, etc. ...	638,159	1,058,207	1,116,548	941,676	1,049,278	832,082
XIX. Earthenware, etc. ...	29,937	30,123	29,204	34,617	29,327	31,711
XX. Paper, etc. ...	74,342	133,169	146,908	183,722	146,318	126,873
XXI. Jewellery, etc. ...	122,409	282,561	310,407	258,148	259,992	65,039
XXII. Instruments, etc. ...	14,062	61,047	71,794	99,419	71,873	77,120
XXIII. Drugs, etc. ...	129,275	295,039	305,374	323,313	329,413	379,874
XXIV. Miscellaneous ...	251,540	367,770	385,292	469,161	810,080	574,966
Total ...	49,696,172	74,491,150	79,482,258	79,096,090	78,571,769	60,592,576

The principal causes of the decline in the value of exports from £78,571,769 in 1913 to £60,592,576 in 1914-15, together with the approximate effect of each, have already been shewn on page 544.

§ 9. Movement of Specie and Bullion.

1. **Specie and Bullion.**—The following tables shew the value of gold and silver bullion and specie, including bronze specie, imported and exported during the years 1901 and 1910 to 1914-15 :—

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND BULLION,
1901 and 1910 to 1914-15.

Items.	1901.	1910.	1911.	1912.	1913.	1914-15.
IMPORTS.						
Gold—Specie ...	£ 3,710	£ 26,008	£ 25,534	£ 244,737	£ 187,025	£ 3,447
Bullion ...	762,415	952,436	1,584,036	1,125,807	1,171,382	432,680
Total ...	766,125	978,444	1,609,570	1,370,544	1,358,407	436,127
Silver—Specie ...	158,656	332,054	338,765	277,614	177,045	423,836
Bullion ...	54	5,040	4,063	6,496	4,942	2,075
Total ...	158,710	337,094	342,828	284,110	181,987	425,911
Bronze—Specie ...	10,029	16,422	17,183	20,586	13,150	6,018
Grand total ...	934,864	1,331,960	1,969,581	1,675,240	1,553,544	868,056

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND BULLION, 1901 AND 1910 TO 1914-15.—Continued.

Items	1901.	1910.	1911.	1912.	1913.	1914-15.
EXPORTS.						
Gold—Specie ...	£ 9,708,037	£ 2,178,123	£ 9,839,689	£ 10,440,058	£ 2,092,891	£ 1,941,447
Bullion ...	4,616,039*	1,930,660	1,711,093	1,403,621	972,160	479,797
Total ...	14,324,076	4,108,783	11,540,782	11,843,679	3,065,051	2,421,244
Silver—Specie ...	23,370	69,134	20,823	37,537	99,034	52,238
Bullion ...	922,443†	457,180	485,447	580,384	634,630	433,469
Total ...	945,813	526,314	506,270	617,921	733,664	485,707
Bronze—Specie ...	330	180	34	...	20	715
Total { Australian produce ...	14,423,298	3,587,201	10,403,796	11,039,919	2,300,955	2,366,346
{ Other produce ...	846,921	1,048,076	1,643,290	1,421,651	1,497,780	541,320
Grand total ...	15,270,219	4,635,277	12,047,086	12,461,600	3,798,735	2,907,666

* Includes gold contained in matte. The value of gold contained in matte exported during 1910 was £549,924; 1911, £437,761; 1912, £473,791; 1913, £403,869, and 1914-15, £203,606. † Includes silver contained in matte. The value of silver contained in matte exported during 1910 was £206,228; 1911, £219,971; 1912, £255,728; 1913, £266,444; and 1914-15, £247,012.

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND GOLD AND SILVER BULLION FROM AND TO PRINCIPAL COUNTRIES, 1914-15.

Country.	Imports.			Exports.		
	Specie.	Bullion.	Total.	Specie.	Bullion	Total.
	£	£	£	£	£	£
United Kingdom ...	428,545	1,610	430,155	31,785	151,899	183,684
Ceylon ...	...	...	...	50,000	288,160	288,160
Fiji ...	...	...	...	23,709	482	24,191
Gilbert Islands ...	...	...	...	5,266	...	5,266
Hong Kong ...	2	...	2	380,729	590	381,319
India... ..	...	...	...	8,500	521,745	530,245
New Zealand ...	600	399,269	399,869	683,172	140	683,312
Ocean Island ...	...	...	...	1,000	...	1,000
Papua ...	...	33,368	33,368	20	...	20
Solomon Islands ...	...	...	...	3,931	...	3,931
South African Union ...	...	...	...	550,036	...	550,036
Tonga ...	...	...	...	12,700	...	12,700
Total British Countries	429,147	434,247	863,394	1,750,848	913,016	2,663,864
China ...	...	...	...	13,000	...	13,000
East Indies ...	...	...	...	4,450	...	4,450
Germany ...	...	56	56	...	250	250
Pacific Islands ...	3,654	...	3,654	15,602	...	15,602
United States of America ...	500	452	952	210,000	...	210,000
Other Countries ...	...	...	...	500	...	500
Total Foreign Countries	4,154	508	4,662	243,552	250	243,802
Grand total ...	433,301	434,755	868,056	1,994,400	913,266	2,907,666

2. Imports of Bullion and Specie.—Of the total imports of bullion and specie into the Commonwealth during 1914-15, 49.84 per cent. was in the form of gold bullion, and was received almost entirely from New Zealand for the purpose of minting.

3. Exports of Bullion and Specie.—Of the total exports of bullion and specie during 1914-15, gold represented 83.27 per cent., 66.77 per cent. being in the form of specie, and 16.50 per cent. bullion.

The exports of gold during the period from 1st January, 1913, to 30th June, 1915, were exceptionally small. In 1915-16, however, it became necessary to export gold in much larger quantities, the exports during this year amounting to £10,600,000.* After the 14th July, 1915, gold specie and bullion could be exported only with the consent of the Commonwealth Treasurer. Notwithstanding a gradual diminution during the last ten years of gold production in Australia, the stocks of gold held in the country have, by reason of the small exports, been materially augmented during recent years.

The countries which appear as the largest recipients of gold from Australia are New Zealand, South African Union, India, Hong Kong, Ceylon, United States of America and United Kingdom, in the order named, but as large amounts of gold, recorded as exported to Ceylon, are shipped *under option*, and may be despatched thence to any other country, the actual amount received by each country cannot be stated. Moreover, the dimensions of the gold shipments from Australia to particular countries are without any significance regarding the business transactions between Australia and those countries. Shipments of gold merely represent a contribution towards the liquidation of liabilities or the establishment of credit abroad; and Great Britain being the principal creditor and banker, shipments of gold from the Commonwealth are for the most part directed by London bankers to suit their requirements.

§ 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 followed is to select all such articles of export as are recorded by units of quantity, and to apply 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 ratio which the total actually recorded for the year under review bears to the total obtained by applying to the quantities of the year under review the average prices ruling during the basic year, may be called the “price-level” of the latter—as compared with the former—for the group of commodities considered, and may be taken as a measure of the effect of the change of price in the intervening period. Since the value of the articles used in the calculations represents as much as 82 per cent. of all exports during 1914-15—after excluding specie and gold bullion, which are not subject to price changes—a fairly extensive basis is afforded on which to found an estimate of the effect of prices over the full range of exports.

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

* Preliminary figures including gold in ores, and in matte.

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 1914-15 for example, would have been £44,678,179 only, instead of £58,118,379—the value actually recorded. The difference between these amounts (£13,440,200) results from a rise of 30.1 per cent. (i.e., from 1000 to 1301) in the price of commodities for the period intervening between 1901 and 1914-15.

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 1914-15.

(BASIC YEAR, 1901.)

Year.	Exports of Specie and Gold Bullion.	Other Exports.		Total Exports (including Specie and Gold Bullion).		Price-Levels. ¹ Year 1901 = 1000.
		Values as Recorded.	Values Computed on 1901 Prices.	Values as Recorded.	Values Computed on 1901 Prices.	
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	27,375,976	43,915,087	41,944,616	1072
1903 ...	18,408,702	29,841,410	26,697,120	48,250,112	45,105,822	1118
1904 ...	16,914,691	40,571,224	36,139,840	57,485,915	53,054,531	1123
1905 ...	10,977,111	45,863,924	38,465,210	56,841,035	49,442,321	1192
1906 ...	16,895,059	52,842,704	42,295,310	69,737,763	59,190,369	1249
1907 ...	10,571,263	62,252,984	47,557,141	72,824,247	58,128,404	1309
1908 ...	13,608,531	50,702,527	43,072,809	64,311,058	56,681,340	1177
1909 ...	8,390,397	56,928,460	46,973,200	65,318,836	55,363,576	1212
1910 ...	4,178,097	70,313,053	56,571,308	74,491,150	60,749,405	1243
1911 ...	11,561,639	67,920,619	58,104,744	79,482,258	69,666,383	1169
1912 ...	11,881,216	67,214,874	53,175,536	79,096,090	65,056,752	1264
1913 ...	3,164,105	75,407,664	58,683,007	78,571,769	61,847,112	1285
1914-15 ...	2,474,197	58,118,379	44,678,179	60,592,576	47,152,376	1301

1. These are index-numbers for the total group of exports, excluding specie and gold bullion.

3. **Influence of Quantity and Price on Total Increased Value of Exports.**—The estimated actual and relative effects of the influence of—(i.) increase or decrease in the exports of specie and gold bullion, (ii.) increase or decrease of *quantities* of other exports, (iii.) variation of prices on the value of the exports of each year compared with 1901, are shewn on the next page.

From the following figures it will be seen that exports of 1914-15, for example, of specie and gold bullion compared with 1901, shew a decrease of 82.76 per cent., other exports (merchandise) shew an increase of 26.39 per cent. in quantities, and an increase of 30.08 per cent. in the group-prices. These several influences effect an aggregate increase of £10,896,404, or 21.92 per cent., over 1901 as follows:—By increased quantities of merchandise, £9,329,783 (85.62 per cent.); by increased prices, £13,440,200 (123.35 per cent.) accompanied by a decrease of £11,873,579 (108.97 per cent.) in the exports of specie and

gold. Of the greater value of merchandise exported during 1914-15 as compared with 1901, 40.97 per cent. represented increased production, and 59.03 per cent. was due to higher prices.

**ANALYSIS OF INFLUENCE OF QUANTITY AND PRICE ON INCREASE OR DECREASE
IN COMMONWEALTH EXPORTS, 1903 to 1914-15, COMPARED WITH 1901.**

Year.	Particulars.	Variation above (+) or below (—) 1901 Exports due to change in:—			Total Variation above (+) or below (—) Value of 1901 Exports.
		Export of Specie and Gold.	Quantity of Export other than Specie and Gold.	Prices of Export other than Specie and Gold.	
1903.	Variation, actual £	+4,060,926	—8,651,276	+3,144,290	—1,446,060
	Relative magnitude of variation. Total	+280.81	—598.25	+217.44	—100
	variation taken as 100	+28.30	—24.47	+11.78	—2.91
	Variation, per cent.				
1904.	Variation, actual £	+2,566,915	+791,444	+4,431,384	+7,789,743
	Relative magnitude of variation. Total	+32.95	+10.16	+56.89	+100
	variation taken as 100	+17.90	+2.24	+12.26	+15.67
	Variation, per cent.				
1905.	Variation, actual £	—3,370,665	+3,116,814	+7,398,714	+7,144,863
	Relative magnitude of variation. Total	—47.18	+43.62	+103.56	+100
	variation taken as 100	—23.48	+8.82	+19.24	+14.37
	Variation, per cent.				
1906.	Variation, actual £	+2,547,283	+6,946,914	+10,547,394	+20,041,591
	Relative magnitude of variation. Total	+12.71	+34.66	+52.63	+100
	variation taken as 100	+17.76	+19.65	+24.94	+40.32
	Variation, per cent.				
1907.	Variation, actual £	—3,776,513	+12,208,745	+14,695,843	+23,128,075
	Relative magnitude of variation. Total	—16.32	+52.78	+63.54	+100
	variation taken as 100	—26.32	+34.55	+30.90	+46.56
	Variation, per cent.				
1908.	Variation, actual £	—739,245	+7,794,413	+7,629,718	+14,614,886
	Relative magnitude of variation. Total	—5.06	+52.85	+62.21	+100
	variation taken as 100	—5.15	+21.85	+17.72	+29.43
	Variation, per cent.				
1909.	Variation, actual £	—5,957,400	+11,624,804	+9,955,260	+15,622,664
	Relative magnitude of variation. Total	—38.13	+74.40	+63.73	+100
	variation taken as 100	—41.52	+32.89	+21.19	+31.43
	Variation, per cent.				
1910.	Variation, actual £	—10,169,679	+21,222,912	+13,741,745	+24,794,978
	Relative magnitude of variation. Total	—41.01	+85.59	+55.42	+100
	variation taken as 100	—70.88	+60.04	+24.32	+49.90
	Variation, per cent.				
1911.	Variation, actual £	—2,786,137	+22,756,348	+9,815,875	+29,786,086
	Relative magnitude of variation. Total	—9.35	+73.40	+32.95	+100
	variation taken as 100	—19.42	+64.57	+16.89	+59.95
	Variation, per cent.				
1912.	Variation, actual £	—2,466,560	+17,827,140	+14,039,338	+29,399,918
	Relative magnitude of variation. Total	—8.39	+60.64	+47.75	+100
	variation taken as 100	—17.19	+50.43	+26.40	+59.16
	Variation, per cent.				
1913.	Variation, actual £	—11,183,671	+23,334,611	+16,724,657	+28,875,597
	Relative magnitude of variation. Total	—38.73	+80.81	+57.92	+100
	variation taken as 100	—77.95	+66.01	+28.50	+58.10
	Variation, per cent.				
1914 -15.	Variation, actual £	—11,873,579	+9,329,783	+13,440,200	+10,896,404
	Relative magnitude of variation. Total	—108.97	+85.62	+123.35	+100
	variation taken as 100	—82.76	+26.59	+30.08	+21.92
	Variation, per cent.				

§ 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.	Im-ports.	Ex-ports.	Total.
		£	£	£	£ s. d.	£ s. d.	£ s. d.
C'WEALTH OF AUSTRALIA	30/6/16*	77,377,000	74,906,000	152,283,000	15 13 10	15 3 10	30 17 8
	30/6/15	63,261,000	58,123,000	121,384,000	12 16 6	11 15 8	24 12 2
United Kingdom ...	31/12/15	754,959,000	409,237,000	1,164,196,000	16 2 8	8 14 10	24 17 6
	31/12/14	630,268,000	430,721,000	1,060,989,000	13 11 8	9 5 8	22 17 4
Canada ...	31/3/15	114,673,000	84,139,000	198,812,000	13 19 8	10 5 3	24 4 11
New Zealand ...	31/12/14	21,579,366	25,984,717	47,564,083	19 15 10	23 16 8	43 12 6
United States of America	30/6/14	391,780,000	493,182,000	884,962,000	4 0 0	5 0 8	9 0 8
Argentine Republic ...	31/12/12	84,187,000	96,195,000	180,382,000	11 9 2	13 1 8	24 10 10
Austria-Hungary ...	"	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	14 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 9 0
Italy ...	"	149,113,000	97,536,000	246,649,000	4 5 2	2 15 8	7 0 10
Japan ...	"	66,007,000	57,972,000	123,979,000	1 5 3	1 2 2	2 7 5
Norway ...	"	28,756,000	18,147,000	46,903,000	11 15 9	7 8 10	19 4 7
Portugal ...	"	17,035,000	7,867,000	24,902,000	3 0 10	1 8 2	4 9 0
Spain ...	"	42,069,000	41,826,000	83,915,000	2 2 9	2 2 6	4 5 3
Sweden ...	"	44,095,000	42,257,000	86,352,000	7 17 4	7 10 10	15 8 2
Switzerland ...	"	81,577,000	55,629,000	137,206,000	21 6 7	14 10 11	35 17 6
Uruguay ...	31/12/11	9,333,000	8,840,000	18,173,000	7 18 6	7 10 1	15 8 7

* Preliminary figures.

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. Of all the countries mentioned in the foregoing table, the trade per unit of population was greatest in Belgium (£48 18s. 1d. in 1912), with New Zealand next (£43 12s. 6d.), 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 is 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 its 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 1903, 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 1914-15:—

**PROPORTION OF COMMONWEALTH IMPORT TRADE FROM VARIOUS COUNTRIES,
1886 to 1914-15.**

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	1901	59.47	11.23	6.59	13.80	29.31
1887	72.26	12.50	2.28	5.37	15.24	1902	58.64	13.23	6.53	12.27	28.14
1888	71.62	12.03	2.71	6.48	16.35	1903	52.51	13.17	6.24	16.84	34.32
1889	68.98	13.45	3.65	6.67	17.57	1904	60.68	12.23	7.17	12.40	27.10
1890	68.08	12.66	4.77	6.54	19.26	1905	60.17	14.04	6.42	11.70	25.79
1891	70.15	11.40	4.53	6.79	18.45	1906	59.39	15.09	7.16	10.36	25.52
1892	70.74	11.37	4.32	6.04	17.89	1907	61.59	12.93	6.85	11.33	25.48
1893	72.78	12.14	3.40	4.98	15.08	1908	60.10	12.83	7.05	12.13	27.07
1894	71.92	11.96	3.78	5.39	16.12	1909	60.92	13.45	6.51	9.78	25.63
1895	71.62	11.46	4.42	5.95	16.92	1910	61.06	13.11	6.30	10.82	25.83
1896	68.28	10.74	5.31	8.59	20.98	1911	58.98	12.86	6.63	11.57	28.16
1897	66.22	10.72	5.75	10.10	23.06	1912	58.76	12.26	6.58	12.09	28.98
1898	66.62	10.88	5.86	10.16	23.50	1913	59.70	12.42	6.22	11.94	27.88
1899	61.85	11.75	6.07	13.00	26.40	1914-15	58.82	14.64	2.02	14.89	26.54
1900	61.28	11.28	6.54	12.16	27.44						

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 1914-15 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 1914-15.

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
	1914-15	355,136	17,954	283,899	1,265,068
Alcoholic liquors ...	1886	1,801,200	82,185	82,730	2,126,877
	1906	1,053,154	109,426	24,867	1,388,671
	1913	1,571,425	228,028	15,965	2,095,896
	1914-15	1,567,301	43,740	33,081	1,780,927
Apparel, textiles, etc. (incl. 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
	1914-15	13,760,893	144,582	551,203	17,577,422
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	1,897,846
	1914-15	902,339	24,480	157,010	1,309,908
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	16,643,444
	1914-15	9,137,666	351,800	3,060,740	13,455,001
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
	1914-15	1,805,444	64,115	316,519	2,745,827
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
	1914-15	790,077	69,178	101,707	1,102,462
Earthenware, cements, etc. ...	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
	1914-15	776,209	102,008	121,241	1,208,186
Drugs, chemicals, fertilizers, etc.	1886	511,216	8,660	33,382	766,243
	1906	887,325	193,615	82,739	1,732,543
	1913	941,113	233,792	103,308	2,493,192
	1914-15	1,101,031	50,486	222,396	2,425,689
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	889,370	243,471	289,285	1,749,046
	1914-15	630,809	63,640	308,739	1,234,057
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
	1910	29,641,027	2,883,216	3,366,314	41,660,324
	1911	32,038,457	3,282,974	4,103,528	45,826,196
	1912	36,450,681	3,736,567	4,790,930	51,964,357
	1913	35,503,919	3,589,492	4,410,495	51,658,809
	1914-15	30,826,905	931,983	5,156,535	44,104,547
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
	1910	36,273,169	3,777,669	6,494,588	58,682,391
	1911	39,145,829	4,427,153	7,747,470	64,934,538
	1912	45,630,869	5,134,594	9,448,643	76,488,360
	1913	47,422,225	4,956,828	9,522,502	78,196,109
	1914-15	37,466,460	1,296,861	9,584,665	68,563,781

* Mainly pig iron and bar and rod iron.

PERCENTAGE ON TOTAL COMMONWEALTH IMPORTS OF PRINCIPAL *DIRECT* IMPORTS FROM UNITED KINGDOM, GERMANY, AND UNITED STATES, 1886, 1906, 1913, and 1914-15.

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
	1914-15	28.07	1.42	22.44	100
Alcoholic liquors ...	(1886	84.69	3.86	3.89	100
	1906	75.84	7.88	1.75	100
	1913	74.97	10.88	0.76	100
	1914-15	88.00	2.46	1.86	100
Apparel, textiles, etc. (including boots)	(1886	95.44	0.53	0.15	100
	1906	81.93	3.10	1.64	100
	1913	78.62	2.93	2.00	100
	1914-15	78.28	0.82	3.14	100
Metals unmanufactured and partly manufactured ...	(1886	93.72	0.52	—	100
	1906	75.06	6.78	3.76	100
	1913	62.79	5.96	5.62	100
	1914-15	68.88	1.87	11.99	100
Manufactures of metals ...	(1886	88.93	1.83	6.00	100
	1906	64.85	11.68	17.39	100
	1913	67.78	7.42	17.12	100
	1914-15	67.91	2.61	22.75	100
Paper and stationery ...	(1886	94.03	1.57	2.96	100
	1906	65.69	14.23	15.69	100
	1913	66.47	8.14	7.36	100
	1914-15	65.75	2.34	11.53	100
Jewellery, timepieces, and fancy goods	(1886	83.62	3.07	7.28	100
	1906	70.89	13.48	5.66	100
	1913	68.42	12.91	6.42	100
	1914-15	71.66	6.27	9.23	100
Earthenware, cements, etc. ...	(1886	80.55	8.39	2.63	100
	1906	45.93	33.03	5.42	100
	1913	44.32	29.05	3.81	100
	1914-15	64.25	8.44	1.00	100
Drugs, chemicals, fertilizers, etc. ...	(1886	66.71	1.13	4.36	100
	1906	51.92	11.18	4.78	100
	1913	37.75	9.38	4.14	100
	1914-15	45.39	2.08	9.17	100
Leather and mfs. thereof, and substitutes therefor, including indiarubber	(1886	78.60	1.75	15.30	100
	1906	73.75	7.60	12.58	100
	1913	50.88	13.92	16.54	100
	1914-15	51.12	5.16	2.50	100
Total above-mentioned imports ...	(1886	89.31	1.65	3.01	100
	1906	71.98	7.94	7.79	100
	1910	71.04	6.91	8.07	100
	1911	69.91	7.16	8.95	100
	1912	70.14	7.19	9.22	100
	1913	68.73	6.95	8.54	100
	1914-15	69.89	2.11	11.69	100
Total imports (less bullion and specie)	(1886	73.71	2.06	6.16	100
	1906	62.34	7.55	10.92	100
	1910	61.82	6.44	11.07	100
	1911	60.28	6.82	11.93	100
	1912	59.66	6.71	12.35	100
	1913	60.66	6.34	12.18	100
	1914-15	58.95	2.04	15.08	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 over 80 per cent. of the total imports from that country—has declined from 89.31 per cent. of the whole in 1886 to 69.89 per cent. in 1914-15. The value of these imports from the United Kingdom has increased from £20,489,153 in 1886 to

only £30,826,905 in 1914-15, or by 50.45 per cent., while the total value of similar imports has increased from £22,937,818 to £44,104,547, or by 92.28 per cent. Had the same proportion of the total trade in these goods been shipped from the United Kingdom during 1914-15 as in 1886 it would have represented £39,396,285 instead of £30,826,905.

The following table gives an analysis of the imports during the quinquennium 1906-10, and the years 1911 to 1914-15 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 1906-10 to 1914-15.

Nature of Imports.	Year.	United Kingdom.	France.	Germany.	Japan.	U.S. of America.	All Countries
		£	£	£	£	£	£
Foodstuffs of animal origin	1906-10	260,519	7,265	8,043	1,842	194,282	769,151
	1911	266,740	3,199	8,354	7,764	226,495	816,915
	1912	268,870	3,807	9,775	14,218	335,533	1,037,692
	1913	301,025	3,093	12,071	6,988	289,229	947,697
	1914-15	297,767	2,940	1,323	8,330	298,639	1,265,068
Alcoholic liquors, etc.	1906-10	984,134	267,668	78,479	506	19,959	1,534,247
	1911	1,138,158	443,587	112,904	914	23,758	1,920,824
	1912	1,323,859	290,159	157,668	1,602	21,542	2,022,986
	1913	1,298,717	361,734	171,055	1,755	22,313	2,035,836
	1914-15	1,251,151	271,758	35,852	1,726	45,460	1,780,927
Apparel (including boots), textiles, etc.	1906-10	9,625,419	828,752	1,255,147	325,293	390,673	14,985,096
	1911	11,462,927	861,323	1,608,348	428,916	515,806	17,840,496
	1912	12,514,286	932,798	1,923,217	485,446	619,944	19,495,762
	1913	12,057,643	960,479	1,702,145	475,954	624,682	19,705,768
	1914-15	11,149,935	887,141	594,096	733,101	709,110	17,577,422
Metals unmanufactured or partly manufactured, excluding gold and silver bullion	1906-10	732,907	3,284	133,397	200	47,686	1,061,050
	1911	928,172	2,616	230,180	192	58,691	1,519,133
	1912	1,217,280	812	251,710	148	74,146	1,780,125
	1913	1,202,514	3,674	302,466	...	108,000	1,897,846
	1914-15	898,390	906	51,110	108	156,951	1,309,908
Manufactures of metals	1906-10	6,493,408	38,659	1,185,546	1,805	1,948,443	10,216,458
	1911	8,507,499	57,977	1,724,344	4,774	3,029,091	14,211,581
	1912	10,837,604	67,850	1,808,057	7,503	3,341,481	17,010,136
	1913	10,874,005	44,736	1,735,452	7,601	3,078,610	16,643,444
	1914-15	8,777,732	30,806	547,165	11,464	3,210,904	13,455,001
Paper and stationery	1906-10	1,243,375	13,188	278,960	5,375	290,433	2,140,121
	1911	1,651,715	22,148	311,030	12,409	303,015	2,331,808
	1912	1,748,338	24,657	293,233	9,385	367,264	2,116,215
	1913	1,789,577	21,930	266,483	10,656	403,679	2,134,750
	1914-15	1,602,290	25,473	77,913	10,709	445,166	2,145,827
Jewellery, timepieces and fancy goods	1906-10	493,842	106,007	226,428	14,086	107,907	1,208,082
	1911	611,355	151,788	323,482	22,577	202,772	1,755,583
	1912	624,911	163,776	294,483	22,795	234,558	1,873,917
	1913	506,608	85,430	250,846	19,192	136,965	1,410,555
	1914-15	453,166	68,418	97,352	35,193	131,896	1,102,462
Earthenware, cements, glass, etc.	1906-10	397,071	26,705	212,015	12,093	50,762	843,046
	1911	553,817	35,594	318,258	21,390	60,043	1,228,122
	1912	617,470	34,366	413,322	23,112	71,236	1,445,090
	1913	655,778	40,504	458,007	21,493	64,482	1,580,615
	1914-15	740,002	36,899	104,936	44,659	126,287	1,208,186
Drugs, chemicals, fertilizers	1906-10	833,137	184,505	185,422	80,079	135,107	1,584,036
	1911	896,921	233,370	212,045	126,696	152,413	2,178,500
	1912	929,142	252,358	235,903	136,632	172,070	2,394,162
	1913	902,343	226,917	266,811	129,188	178,501	2,493,192
	1914-15	928,736	180,035	76,729	170,852	303,530	2,425,689
Leather and manufactures thereof and substitutes therefor, including india-rubber (excluding boots)	1906-10	407,730	49,427	154,450	1,132	271,978	1,049,035
	1911	544,583	57,172	257,117	3,157	323,825	1,586,503
	1912	574,325	71,588	306,297	1,250	473,379	1,788,572
	1913	515,169	68,746	347,550	692	435,071	1,749,046
	1914-15	359,178	40,515	76,907	844	443,314	1,234,057
Total above-mentioned imports	1906-10	21,478,542	1,525,460	3,717,887	442,461	3,457,230	35,690,322
	1911	26,561,887	1,868,774	5,106,062	628,789	4,894,909	45,889,565
	1912	30,656,085	1,842,171	5,693,665	709,081	5,711,154	51,964,357
	1913	30,103,379	1,817,243	5,512,886	673,519	5,341,532	51,658,809
	1914-15	26,458,347	1,544,891	1,663,383	1,016,986	5,871,257	44,104,547
Total imports (less bullion and specie)	1906-10	26,019,659	1,745,081	4,556,714	595,800	6,506,859	49,959,132
	1911	32,365,588	2,268,692	6,363,248	832,757	9,007,065	64,997,907
	1912	38,589,434	2,233,291	7,153,643	950,298	10,763,615	76,483,360
	1913	40,948,803	2,222,631	7,029,325	918,681	10,907,512	78,196,109
	1914-15	32,062,380	1,754,432	2,005,131	1,392,317	10,870,742	63,563,781

* Mainly pig iron and bar and rod iron.

NOTE.—Figures for the years 1905-10 will be found in previous issues.

**COMMONWEALTH PERCENTAGE ON TOTAL IMPORTS, OF IMPORTS OF PRODUCTS
OR MANUFACTURES OF THE UNITED KINGDOM, FRANCE, GERMANY, JAPAN,
AND THE UNITED STATES OF AMERICA DURING THE YEARS 1906-10 to 1914-15.**

Nature of Imports.	Year.	United Kingdom.	France.	Germany.	Japan.	U.S.A.	All Countries
Foodstuffs of animal origin	1906-10	33.42	0.98	1.05	0.24	25.01	100
	1911	32.65	0.39	1.02	0.95	27.73	100
	1912	25.92	0.37	0.94	1.37	32.34	100
	1913	31.77	0.33	12.74	0.74	30.52	100
	1914-15	23.54	0.23	0.10	0.66	23.61	100
Alcoholic liquors, etc.	1906-10	64.14	17.44	5.10	0.03	1.31	100
	1911	59.95	23.09	5.88	0.04	1.18	100
	1912	65.42	14.64	7.79	0.08	1.07	100
	1913	61.96	17.26	8.16	0.08	1.06	100
	1914-15	70.25	15.26	2.01	0.10	2.55	100
Apparel (including boots), textiles, etc.	1906-10	64.38	5.55	8.35	2.17	2.61	100
	1911	64.25	4.83	9.02	2.40	2.89	100
	1912	64.19	4.79	9.87	2.49	3.18	100
	1913	61.18	4.87	8.64	2.42	3.17	100
	1914-15	63.43	5.05	3.38	4.17	4.03	100
Metals unmanufactured or partly manufactured, ex- cluding gold and silver bullion	1906-10	69.40	0.32	12.46	0.02	4.57	100
	1911	61.10	0.17	15.15	0.01	3.86	100
	1912	68.38	0.05	14.14	0.01	4.15	100
	1913	63.36	0.19	15.94	—	5.69	100
	1914-15	68.58	0.07	3.90	0.01	11.98	100
Manufactures of metals	1906-10	63.50	0.37	11.66	0.02	19.07	100
	1911	59.87	0.41	12.14	0.03	21.32	100
	1912	63.72	0.40	10.63	0.05	19.64	100
	1913	65.34	0.27	10.43	0.05	18.50	100
	1914-15	65.24	0.23	4.07	0.09	23.86	100
Paper and stationery	1906-10	54.23	0.60	13.18	0.25	13.76	100
	1911	58.33	0.78	10.99	0.44	10.70	100
	1912	56.05	0.79	9.47	0.30	11.79	100
	1913	57.41	0.70	8.50	0.34	12.88	100
	1914-15	58.36	0.93	2.84	0.39	16.21	100
Jewellery, timepieces, and fancy goods	1906-10	41.22	8.77	18.92	1.17	8.83	100
	1911	34.83	8.64	18.44	1.29	11.55	100
	1912	33.35	8.74	15.71	1.22	12.51	100
	1913	35.92	6.06	17.77	1.36	9.71	100
	1914-15	41.11	6.21	8.83	3.19	11.96	100
Earthenware, cements, glass, etc.	1906-10	46.92	3.16	25.49	1.43	6.00	100
	1911	45.09	2.90	25.91	1.74	4.88	100
	1912	42.73	2.38	28.61	1.60	4.93	100
	1913	41.49	2.56	28.98	1.36	4.08	100
	1914-15	61.26	3.05	8.69	3.70	10.45	100
Drugs, chemicals, and fertilizers	1906-10	44.30	9.84	9.93	4.25	7.20	100
	1911	41.18	10.71	9.73	5.81	6.99	100
	1912	38.81	10.54	9.85	5.71	7.19	100
	1913	36.19	9.10	10.70	5.18	7.16	100
	1914-15	38.29	7.42	3.16	7.04	18.28	100
Leather and manufactures thereof and substitutes therefor, including india- rubber (excluding boots)	1906-10	39.04	4.69	14.65	0.11	26.06	100
	1911	34.32	3.60	16.21	0.20	20.41	100
	1912	32.12	4.01	17.13	0.07	26.50	100
	1913	29.45	3.93	19.87	0.04	24.88	100
	1914-15	29.10	3.28	6.23	0.07	35.92	100
Total above-mentioned articles	1906-10	60.26	5.49	10.46	1.24	9.68	100
	1911	57.88	4.07	11.13	1.37	10.67	100
	1912	58.99	3.55	10.96	1.35	10.99	100
	1913	58.33	3.52	10.67	1.30	10.34	100
	1914-15	59.99	3.50	3.77	2.31	13.32	100
Total imports (less bullion and specie)	1906-10	52.15	5.49	9.13	1.19	13.03	100
	1911	49.90	3.49	9.79	1.28	13.68	100
	1912	50.45	3.00	9.36	1.24	14.07	100
	1913	52.37	2.84	8.99	1.17	13.95	100
	1914-15	50.45	2.76	3.16	2.19	17.10	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. The imports from Japan have expanded rapidly during recent years. In 1914-15 they were 52 per cent. greater than in 1913, and 94 per cent. greater than in 1910. Some small portion of this increase was due to imports of oats and bran, etc., in consequence of the failure of Australian harvests. This may be

considered as non-recurring trade. The greater part of the increase, however, has been in apparel and textiles, while glass, fancy goods, and chemicals also show material increases.

It is gratifying to find that the United Kingdom was, during the first year of the war, able to so well maintain her previous share of the import trade of the Commonwealth. It will be noticed that, of the total of the groups shewn in the foregoing tables, the United Kingdom supplied 59.99 per cent. during 1914-15, which was the highest position attained since 1909, and was very little below the average of the years 1906-10. Although the same proportion of the total trade does not represent the same actual amount as in the immediately preceding years, the total value of the imports of United Kingdom origin was almost the same in 1914-15 as in 1911.

Apart from 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 that the United States of America has maintained the value of exports to Australia on a parity with previous years, although the total imports into the Commonwealth during 1914-15 were 18 per cent. less than in 1913. This has been done, too, notwithstanding that the imports of United States timber was less by £500,000, unmanufactured tobacco by £150,000, and resin by nearly £50,000. The following are some of the principal lines in which United States sales to Australia were increased:—Ale and beer, £17,500; spirituous essences, £3000; manufactured tobacco, £29,000; apparel and textiles, £85,000; unmanufactured metals, £48,000; manufactured metals and machinery, £130,000; leather, £19,000; glass and glassware, £54,000; tiles and other earthenware, £11,000; paper, £40,000; fertilizers, £9500; medicines, £25,000; perfumery, £14,000; other drugs, £80,000; pianos, £23,000; soap, £16,000; motor vehicles and parts, £42,000; bicycles, etc., £3500; other vehicles, £10,000.

In view of the fact that the United States was the one great industrial country not engaged in the war, and that transport between that country and Australia was comparatively immune from war risk, it was natural that Australian merchants should look in that direction for emergency supplies.

It may, perhaps, be necessary to explain the magnitude of imports of German goods during the year 1914-15, of which nearly eleven months were under war conditions. In the first place a number of German ships *en route* to Australia, were, on the outbreak of war, interned in neutral ports and in South Africa. Subsequently the cargoes of these vessels were released and forwarded to Australia. British ships on the water on the 4th August, 1914, also, subsequently delivered their cargoes, which included German goods. Further, the earlier proclamations relating to trading with the enemy did not prohibit the importation of goods of enemy origin, provided they had not been purchased from an enemy country by a resident in Australia since the outbreak of war. Proclamation of the 12th September, 1914, provided that "where an enemy has a branch locally situated in British, allied or neutral territory, not being neutral territory in Europe, transactions by or with such branch shall not be treated as transactions by or with an enemy." It was not until the 11th December, 1915, that the importation, except with the consent in writing of the Minister of State for Trade and Customs, was prohibited of goods manufactured or produced in or bought directly or indirectly from an enemy country.

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 operation 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.

Recent editions of this Year Book have 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 was 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 73 per cent. of all imports and about 80 per cent. of imports of United Kingdom origin will be affected by the preferential tariff.

§ 13. Customs Tariff, 1914.

The following tables shew as nearly as possible the results which would be obtained by applying to the imports of 1913 the rates of duty imposed under the tariffs of 1908-11 and 1914 respectively. The figures for 1913 have been selected in preference to those for 1914-15 because it was considered that the trade of the earlier year would represent normal conditions more approximately :—

TOTAL IMPORTS.—COMPARISONS OF TARIFFS FOR 1908-11 AND 1914 APPLIED TO TOTAL IMPORTS DURING 1913.

Class*	Value of Imports, 1913.	Under Tariff of 1908-11.				Under Tariff of 1914.			
		Dutiable Imports.		Equivalent <i>ad val.</i> rate of duty.		Dutiable Imports.		Equivalent <i>ad val.</i> rate of duty.	
		Value.	Per cent. on Total Imports.	On Dutiable Goods.	On all Goods.	Value.	Per cent on Total Imports	On Dutiable Goods.	On all Goods.
	£	£	%	%	%	£	%	%	%
I.	947,697	848,910	89.58	17.23	15.43	848,910	89.58	20.30	18.19
II.	3,315,825	3,127,278	94.32	35.79	33.76	3,127,278	94.32	36.68	34.62
III.	1,833,235	471,777	25.73	20.74	5.34	471,777	25.73	22.02	5.67
IV.	2,095,896	2,095,896	100.00	136.94	136.94	2,095,896	100.00	169.98	169.98
V.	1,114,949	1,114,949	100.00	159.03	159.03	1,114,949	100.00	202.20	202.20
VI.	145,215	17,842	12.29	0.59	0.07	17,842	12.29	0.59	0.07
VII.	417,039	109,022	26.14	17.77	4.64	109,022	26.14	17.78	4.65
VIII.	1,344,204	231,746	17.24	18.78	3.24	265,263	19.73	20.42	4.03
IX.	19,705,768	11,498,498	58.35	22.44	13.09	14,364,931	72.90	22.57	16.46
X.	1,969,628	1,326,051	67.32	16.44	11.07	1,426,339	72.41	17.74	12.85
XI.	609,850	583,096	95.60	17.01	16.25	583,096	95.60	21.36	20.42
XII.	218,332	182,219	83.46	23.11	19.28	200,869	91.99	24.38	22.43
XIII.	377,220	...	...	...	...	...	...	...	...
XIV.	1,675,734	18,002	1.14	15.28	0.17	84,717	5.38	7.59	0.41
XV.	1,600,436	...	...	...	...	542,283	36.14	5.23	1.89
XVI.	16,623,135	10,281,812	61.85	15.98	9.88	13,120,157	78.92	17.07	13.48
XVII.	1,749,046	1,296,278	74.11	21.59	16.00	1,299,603	74.30	29.14	21.65
XVIII.	3,573,753	3,300,002	92.34	16.91	15.62	3,487,323	97.59	22.33	21.79
XIX.	1,580,615	1,468,735	92.91	27.58	25.63	1,542,984	97.61	32.95	32.16
XX.	3,134,750	934,636	29.82	22.99	6.85	1,759,097	56.12	20.30	11.39
XXI.	1,410,555	1,121,742	79.51	25.64	20.39	1,121,742	79.51	28.05	23.31
XXII.	754,569	186,175	24.67	14.26	3.52	393,580	52.15	25.62	13.36
XXIII.	2,493,192	565,569	22.69	20.08	4.56	1,196,301	47.98	12.85	6.17
XXIV.	11,258,981	3,853,022	34.22	21.23	7.27	3,937,906	34.98	24.30	8.50
Total	79,749,653	44,633,257	55.97	29.93	16.75	53,111,865	66.60	31.65	21.08
Total†	78,196,109	44,633,257	57.07	29.93	17.08	53,111,865	67.92	31.65	21.50

* For description of the Classes of imports see page 567. † Less bullion and specie.

COMPARISONS OF TARIFFS OF 1908-11 AND 1914 APPLIED TO IMPORTS OF UNITED KINGDOM ORIGIN DURING 1913.

Class.*	Total Imports of U.K. Origin.	Under Tariff of 1908-11.							Under Tariff of 1914.						
		Dutiable Imports.			Per cent. of Dutiable Imports on Total Imports.	Equivalent a.v. Rate of Duty.	On Dutiable Goods.	On all Goods.	Dutiable Imports.			Per cent. of Dutiable Imports on Total Imports.	Equivalent a.v. Rate of Duty.	On Dutiable Goods.	On all Goods.
		Under General Tariff.	Under Preference Tariff.	Total.					Under General Tariff.	Under Preference Tariff.	Total.				
I.	£ 301,025	£ 235,623	£ 9,925	£ 295,548	98.18	23.08	22.66	101,110	£ 194,438	£ 295,548	98.18	23.08	22.66		
II.	789,600	177,299	518,788	696,087	88.16	22.58	19.90	64,177	631,910	696,087	88.16	24.87	21.93		
III.	173,775	36,876	136,897	173,775	100.00	18.92	18.92	34,322	139,453	173,775	100.00	19.55	19.55		
IV.	1,298,717	1,298,717	...	1,298,717	100.00	145.44	145.44	887,846	410,871	1,298,717	100.00	178.51	178.51		
V.	81,665	81,665	...	81,665	100.00	103.59	103.59	24,010	57,655	81,665	100.00	126.80	126.80		
VI.	46,189	5,265	...	5,265	11.40	0.30	0.03	5,265	...	5,265	11.40	0.30	0.03		
VII.	73,746	2,105	60,814	62,919	85.30	14.93	12.74	544	62,375	62,919	85.30	14.93	12.74		
VIII.	372,170	25,237	42,058	67,295	18.08	22.36	4.04	5,367	61,939	67,306	18.09	22.71	4.11		
IX.	12,057,643	182,107	6,534,701	6,716,808	55.71	23.38	13.03	26,759	6,690,049	6,716,808	55.71	27.06	15.09		
X.	301,078	250,216	40,645	290,861	96.61	19.44	18.78	19,210	271,651	290,861	96.61	19.44	18.78		
XI.	494,268	41,729	425,776	467,505	94.59	16.34	15.46	...	467,505	467,505	94.59	20.79	19.66		
XII.	74,556	12,332	57,269	69,601	93.37	22.28	20.80	...	69,601	69,601	93.37	23.08	21.55		
XIII.	377,020	...	...	...	...	...	...	...	...	...	...	...	...
XIV.	246,240	...	16,969	16,969	6.89	15.00	1.03	...	16,969	16,969	6.89	15.00	1.03		
XV.	958,153	...	...	...	...	...	...	...	...	...	...	...	...
XVI.	10,855,417	617,754	6,630,316	7,248,070	66.78	14.21	9.49	1,994	7,350,667	7,352,661	67.74	16.70	11.31		
XVII.	515,169	49,925	342,991	392,916	76.28	20.26	15.45	...	392,916	392,916	76.28	24.79	18.91		
XVIII.	230,941	9,473	157,735	167,208	72.40	28.48	20.62	9,052	158,272	167,324	72.45	31.26	23.65		
XIX.	655,778	53,434	564,713	618,147	94.27	23.35	22.02	47,794	570,353	618,147	94.27	26.94	25.40		
XX.	1,789,577	98,312	130,161	408,473	22.82	23.37	5.33	...	494,894	494,894	27.65	24.76	6.85		
XXI.	506,608	2,837	478,757	481,594	95.05	22.62	21.51	...	481,594	481,594	95.05	24.18	22.98		
XXII.	333,179	...	60,861	60,861	18.27	19.63	3.59	...	103,340	103,340	31.02	25.95	8.05		
XXIII.	902,343	218,489	92,346	310,835	34.45	18.07	6.23	...	310,835	310,835	34.45	18.30	6.30		
XXIV.	7,892,845	103,448	1,019,219	1,122,667	14.22	23.43	3.32	15,453	1,107,214	1,122,667	14.22	25.37	3.61		
Total ...	41,327,702	3,552,845	17,500,941	21,053,786	50.94	27.62	14.07	1,242,903	20,044,501	21,287,404	51.51	32.26	16.62		
Total†...	40,948,803	3,552,845	17,500,941	21,053,786	51.41	27.62	14.20	1,242,903	20,044,501	21,287,404	51.99	32.26	16.77		

* For description of classes of imports see page 567.

† Less bullion and specie.

COMPARISON OF TARIFFS OF 1908-11 AND 1914 APPLIED TO IMPORTS OF THE PRODUCE OR MANUFACTURE OF COUNTRIES OTHER THAN THE UNITED KINGDOM.

Class.†	Imports of Foreign Origin.†	Under 1908-11 Tariff.							Under 1914 Tariff.						
		Dutiable Imports.				Equivalent a.v. Rate.			Dutiable Imports.				Equivalent a.v. Rate.		
		Opposed by Pre-ference Rates.‡	Common Rates.§	Total.	Per cent. on Total Imports.	On Dutiable Imports.	On all Imports.	Opposed by Pre-ference Rates.‡	Common Rates.§	Total.	Per cent. on Total Imports.	On Dutiable Imports.	On all Imports.		
I.	£ 616,672	£ 16,673	£ 536,689	£ 553,362	85.57	14.09	12.06	£ 464,674	£ 88,688	£ 553,362	85.57	18.82	16.10		
II.	2,526,925	203,883	2,227,308	2,431,191	96.24	39.58	38.09	208,669	2,222,522	2,431,191	96.24	40.06	38.56		
III.	1,659,460	166,957	1,314,045	298,002	17.96	21.81	3.92	178,553	119,449	298,002	17.96	23.46	4.21		
IV.	797,179	...	797,179	797,179	100.00	123.10	123.10	136,995	660,184	797,179	100.00	156.09	156.09		
V.	1,033,284	...	1,033,284	1,033,284	100.00	163.40	163.40	190,720	842,564	1,033,284	100.00	208.17	208.17		
VI.	99,026	...	12,577	12,577	12.70	0.71	0.09	...	12,577	12,577	12.70	0.71	0.09		
VII.	343,293	35,697	10,406	46,103	13.43	21.64	2.91	36,165	9,938	46,103	13.43	21.67	2.91		
VIII.	972,034	26,203	138,248	164,451	16.92	17.31	2.93	54,030	143,927	197,957	20.37	19.64	4.00		
IX.	7,648,125	4,702,225	79,465	4,781,690	62.52	21.08	13.18	7,615,629	32,494	7,648,123	100.00	18.61	18.61		
X.	1,668,550	743,616	291,574	1,035,190	62.04	15.59	9.67	1,056,400	79,078	1,135,478	68.06	17.29	11.77		
XI.	115,591	83,748	31,843	115,591	100.00	19.66	19.66	115,591	...	115,591	100.00	23.69	23.69		
XII.	143,776	48,426	64,192	112,618	78.33	23.60	18.49	131,268	...	131,268	91.31	25.06	22.88		
XIII.	200	...	...	...	...	...	...	...	...	...	...	...	...
XIV.	1,329,494	1,033	...	1,033	0.08	19.94	0.02	67,748	...	67,748	5.10	5.74	0.29		
XV.	542,283	...	...	...	...	...	...	542,283	...	542,283	100.00	5.23	5.23
XVI.	5,767,718	2,408,495	625,247	3,033,742	52.59	20.21	10.63	5,659,720	107,776	5,767,496	99.98	17.53	17.53		
XVII.	1,233,877	531,201	372,161	903,362	73.21	32.17	16.23	906,687	...	906,687	73.50	31.03	22.81		
XVIII.	3,342,812	355,125	2,777,669	3,132,794	93.72	16.30	15.27	395,894	2,924,105	3,319,999	99.32	21.88	21.73		
XIX.	924,837	827,998	22,590	850,588	91.96	30.65	28.13	911,495	13,342	924,837	100.00	36.96	36.96		
XX.	1,445,173	449,394	76,769	526,163	39.12	22.69	8.88	1,264,203	...	1,264,203	93.98	18.55	17.44		
XXI.	903,947	637,400	2,748	640,148	70.82	27.91	19.76	640,148	...	640,148	70.82	30.97	21.93		
XXII.	421,410	125,314	...	125,314	29.74	11.65	3.47	290,240	...	290,240	68.88	25.51	17.57		
XXIII.	1,590,849	118,751	135,983	254,734	16.01	22.54	3.61	885,466	...	885,466	55.67	10.94	6.09		
XXIV.	3,366,136	2,552,378	177,977	2,730,355	81.12	20.32	17.11	2,807,524	7,715	2,815,239	83.64	23.87	19.97		
Total	38,421,951	14,034,517	9,544,954	23,579,471	61.37	31.99	19.63	24,560,102	7,264,359	31,824,461	82.83	31.24	25.87		
Total*	37,947,306	14,034,517	9,544,954	23,579,471	63.30	31.99	20.25	24,560,102	7,264,359	31,824,461	85.44	31.24	26.69		

* Less bullion and specie. † Imports other than the produce of United Kingdom. ‡ Similar imports of United Kingdom origin are admitted free under preference tariff, or at a rate of duty lower than the general rate. § Dutiable at rates similar to those on goods of United Kingdom origin. ¶ For description of classes, see page 567.

In order to facilitate the interpretation of the foregoing tables, and also to deal further with the extension of preferential tariff treatment to the United Kingdom, the following synopsis of the changes made in rates of duty on the various classes of goods is appended. On pages 592 to 594 will be found a summary of the tariff changes as they affect the total imports and the imports of United Kingdom origin and the produce of "British Possessions" and "Foreign Countries" respectively.

SYNOPSIS OF THE PRINCIPAL DIFFERENCES BETWEEN THE TARIFF OF 1914 AND THE TARIFF OF 1908-11 AS APPLIED TO THE CLASSES OF COMMODITIES IMPORTED INTO THE COMMONWEALTH DURING 1913.

CLASS I.—FOODSTUFFS OF ANIMAL ORIGIN.

General Comparisons. The total value of imports in this class during 1913 was £947,697, of which the import of fish represented £718,036. The amount of *dutiable* goods would be the same under both tariffs, viz., £848,910 or 89.58 per cent. The average rate of duty on *dutiable* goods has been raised from an equivalent *ad valorem* rate of 17.23 per cent. to 20.30 per cent., thus increasing the average rate of duty on the total imports of the class from 15.43 per cent. to 18.19 per cent.

Imports from the United Kingdom. The value of foodstuffs of animal origin the produce of the United Kingdom imported during 1913 amounted to £301,025, of which 98.18 per cent. would be dutiable under both tariffs at an average *ad valorem* rate of 23.08 per cent.; including the small amount of free goods (sheet isinglass and sausage casings), the average rate of duty would be 22.66 per cent.

Under the earlier tariff, £9925 would have been favoured by preferential rates, whereas under the 1914 tariff, by the raising of the rates on similar imports from other countries, the United Kingdom would receive preferential treatment on goods to the value of £194,438. On these goods (£194,438) the United Kingdom would, under the existing tariff, pay duty to the amount of £46,088 (23.70 per cent.), while the same goods from other countries under the general tariff would pay £65,304 (33.58 per cent.), an advantage to the United Kingdom of £19,216, or 9.88 per cent. *ad valorem*. Under the 1908-11 tariff the margin of preference would have been £547 only, equal to 5.51 per cent. on the smaller value of imports affected.

CLASS II.—FOODSTUFFS OF VEGETABLE ORIGIN AND SALT.

General Comparisons. During 1913 imports of this class amounted to £3,315,825, of which 94.32 per cent. would be dutiable under both tariffs. The average rate of duty on *dutiable* goods has been increased from the average equivalent *ad valorem* rate of 35.79 per cent. to 36.68 per cent., the average rate on all goods within the class rising from 33.76 per cent. to 34.62 per cent.

Imports from United Kingdom. The imports of vegetable foodstuffs of United Kingdom origin amounted to £789,600, of which 88.16 per cent. would have been dutiable under the 1908-11 tariff at an equivalent *ad valorem* rate of 22.58 per cent., while under the 1914 tariff the average rate would be 24.87 per cent., the value of dutiable goods being unaltered. Including free goods (chiefly Infants' and Invalids' Foods) the average rate on all goods of United Kingdom origin within the class would be under the respective tariffs 19.90 per cent. and to 21.93 per cent.

Under the 1908-11 tariff, preferential treatment would apply to £526,613, or 66.69 per cent., of goods of United Kingdom origin, whereas under the 1914 tariff, £639,735, or 81.02 per cent. of the total imports from the United Kingdom, would be admitted under preferential rates (£7825 being free), the average preferential advantage being equal to 7.5 per cent. of the value of the goods, or £47,981 less than the same goods would have to pay if from other countries. Under the earlier tariff the margin of preference on goods of this class was £32,395, equal to 6.15 per cent. *ad valorem*.

CLASS III.—BEVERAGES (NON-ALCOHOLIC) AND SUBSTANCES USED IN MAKING.

General Comparisons. The value of imports during 1913 in this class was £1,833,235, of which tea was responsible for £1,328,471. The tariff changes in this class were small. The amount of *dutiable* goods represents 25.73 per cent. under both tariffs. The equivalent average *ad valorem* rate on dutiable goods has been increased from 20.74 per cent. to 22.02 per cent., the rates on all goods within the class being raised from 5.34 per cent. to 5.67 per cent. Tea in bulk and cocoa beans are free.

Imports from the United Kingdom. This class contains a small proportion only of produce of the United Kingdom, the amount during 1913 being £173,775, all of which would be dutiable under both tariffs. Preference equal to 10 per cent. *ad valorem* has been extended to mineral waters, while the margin of $\frac{1}{4}$ d. per lb. on cocoa and chocolate in powdered form has been increased to $\frac{3}{4}$ d. per lb. The average rate of duty on produce of the United Kingdom has been raised from 18.92 per cent. to 19.55 per cent., although the goods favoured by preferential rates have been increased from £136,897 to £139,453, and the margin of preference from 1.98 per cent. to 3.25 per cent. *ad valorem*.

CLASS IV.—SPIRITS AND ALCOHOLIC LIQUORS, INCLUDING INDUSTRIAL SPIRITS AND PHARMACEUTICAL PREPARATIONS DUTIABLE AS SPIRITS.

All imports under this class are dutiable. Prior to the 1914 tariff, goods of United Kingdom origin had no preferential tariff treatment. The present tariff has raised the general tariff rate on ale, beer and porter in bottle from 1s. 6d. to 2s. 6d. per gal., with a preferential rate of 2s. per gal., the duty on ale, etc. in bulk has been raised from 1s. per gal. to 2s. per gal. under the general tariff, and 1s. 6d. per gal. under the preferential tariff; and the rates on cider and perry have been raised from 1s. 6d. per gal. in bottle and 1s. in bulk to 2s. 6d. per gal. under the general tariff, and 2s. per gal. under the preferential tariff, whether in bottle or bulk. The imports of beer and cider from the United Kingdom during 1913 were valued at £410,871. Under the 1914 tariff, this would pay duty to the amount of £257,936, whereas the same goods if from other countries would have to pay £323,984, representing a margin of preference equal to 16.08 per cent. *ad valorem*. It is true that while preference has been extended to British beer, the rates of duty now charged on them are 16 per cent. higher than formerly, but at the same time the excise duties on locally manufactured beers and spirits have also been increased. Duties on imported potable spirits have been increased by 3s. per gal. (14s. to 17s.), on sparkling wine by 8s. per gal. (12s. to 20s.), and on other wines by 4s. per gal. The result of these changes has been to raise the average equivalent *ad valorem* rate over the whole class from 136.94 per cent. to 169.98 per cent.

CLASS V.—TOBACCO AND PREPARATIONS THEREOF.

General Comparisons. All goods in this class are dutiable. Under the 1914 tariff the duties have been raised on all forms of tobacco except snuff, so that the equivalent *ad valorem* rate on the imports of all tobacco has been raised from 159.03 per cent. to 202.20 per cent. Under the 1914 tariff the preferences of 1s. 3d. per lb. on cut tobacco and 1s. on other manufactured tobacco, formerly given to produce of the South African Union, have been reduced to 9d. per lb.

Imports from United Kingdom. Under the tariff of 1914 cigars manufactured in the United Kingdom have a preference of 1s. per lb. and cigarettes of 6d. per lb. This represents a remission of duty as compared with the general tariff rates of £4302, or 7.46 per cent. on the value of imports affected. Formerly no preference was given to the United Kingdom in this class.

CLASS VI.—ANIMALS, LIVING.

No alterations have been made in regard to this class. Most of the animals imported are for the improvement of stock, and are admitted free of duty. Of the total imports during 1913, 12.29 per cent. would now be dutiable at an equivalent average *ad valorem* rate of 0.59 per cent.

CLASS VII.—ANIMAL SUBSTANCES, MAINLY UNMANUFACTURED, WHICH ARE NOT FOODSTUFFS.

General Comparisons. The only changes in this class have been made by the extension of preference to hair curled for upholstering, and to printers' roller composition. On the former the duty under the general tariff has been raised 5 per cent. *ad valorem*, and on the latter by 10 per cent. *ad valorem*, while the rates on produce of the United Kingdom remain as formerly. Of the total imports of this class during 1913, 26.14 per cent. would be dutiable at an average equivalent *ad valorem* rate of 17.78 per cent., while the average rate on all goods (dutiable and free) within the class would be 4.65 per cent.

Imports from the United Kingdom. The imports of United Kingdom produce amounted to £73,746, of which 85.30 per cent. would be dutiable.

Under the tariff of 1908-11, £60,814 would be favoured by preferential rates, the margin of preference being 5.51 per cent., equal to £3350, whereas by the 1914 tariff, £62,375 would be favoured by a remission of £3484, or 5.58 per cent. of the value of the goods.

CLASS VIII.—VEGETABLE SUBSTANCES AND NON-MANUFACTURED FIBRES.

General Comparisons. In this class the application of duties has been extended to 19.73 per cent. (£265,263) of imports as compared with 17.24 per cent. dutiable under the former tariff. The equivalent average *ad valorem* rate on dutiable goods has been raised from 18.78 per cent. to 20.42 per cent. Including free goods, the average rate of duty would now be 4.03 per cent. instead of 3.24 per cent.

Imports from the United Kingdom.—The imports of United Kingdom origin in this class amounted to £372,170, the principal items being yarns, cotton waste, starch, and seeds.

Under the tariff of 1908-11, goods to the value of £270,439 were favoured by a preference equal to 5.34 per cent. *ad valorem*; under the 1914 tariff, preferential treatment has been extended to embrace £290,868, while the margin of preference has been increased to 5.52 per cent.

CLASS IX.—APPAREL AND TEXTILES AND MANUFACTURED FIBRES.

General Comparisons. The value of the total imports of this class during 1913 was £19,705,768, representing 25.20 per cent. of the total imports of merchandise. Under the 1908-11 tariff, 58.35 per cent. of these goods would be dutiable at an average equivalent *ad valorem* rate of 22.44 per cent., and under the 1914 tariff, 72.90 per cent. would be dutiable at an average rate of 22.57 per cent. The increase in the dutiable goods is due to the imposition of duties on goods not of United Kingdom origin, which were formerly free. These goods, if of United Kingdom origin, are still free. Including free goods, the average rate of duty on all goods within the class has been increased from 13.09 per cent. to 16.46 per cent.

Imports from the United Kingdom. The imports of this class from the United Kingdom during 1913 were valued at £12,057,643, equal to 29.44 per cent. of all imports of United Kingdom merchandise. Of these goods 55.71 per cent. would be dutiable under both tariffs, though the average rate would be increased from 23.38 per cent. under the 1908-11 tariff to 27.08 per cent. under the 1914 tariff, the corresponding rates on all goods within the class (dutiable and free) rising from 13.03 per cent. to 15.09 per cent.

Under the 1908-11 tariff, preferential rates applied to £10,594,158, with a margin of preference equal to 5.12 per cent. *ad valorem*, while under the 1914 tariff, preferential treatment has been extended to embrace £12,016,659 (99.66 per cent. of all goods within the class), on which an average preference equal to 5.36 per cent. of the goods (£643,544) is given.

CLASS X.—OILS, FATS, AND WAXES.

General Comparisons. In this class the imposition of new duties brings 72.41 per cent. (£1,426,339) of the imports into the dutiable class, as compared with 67.32 per cent. under the 1908-11 tariff. The average rate of duty on *dutiable* goods has been raised

from 16.44 per cent. to 17.74 per cent., so raising the average rate on all goods within the class from 11.07 per cent. to 12.85 per cent.

Imports from the United Kingdom. No changes have been made in the duties on goods of United Kingdom origin in this class. The increased rates mentioned in the previous paragraph are due to higher rates on foreign goods. By reason of these higher duties, oils, etc., of United Kingdom manufacture, to the value of £281,864 (93.60 per cent.), have the advantage of preferential duties, as compared with £40,645 (13.50 per cent.) under the former tariff. The margin of preference has also been slightly increased from 5.23 per cent. to 5.37 per cent. on the value of the goods.

CLASS XI.—PAINTS AND VARNISHES.

General Comparisons. In this class the value of *dutiable* goods would be the same under both tariffs, but the average rate of duty on all *dutiable* goods within the class would be raised from 17.01 per cent. to 21.36 per cent., and the rates on all goods within the class would be raised from 16.25 per cent. to 20.42 per cent.

Imports from the United Kingdom. Of the imports of paints and varnish manufactured in the United Kingdom, 94.59 per cent. would be dutiable under both tariffs. The average *ad valorem* rate of duty on dutiable goods has, however, been raised from 16.34 per cent. to 20.79 per cent., so raising the rates on all goods within the class from 15.46 per cent. to 19.66 per cent.

Under the tariff of 1908-11, £452,539, or 91.56 per cent. of all paints and varnishes of United Kingdom origin, was favoured by preferential tariff rates, while under the 1914 tariff all goods within the class have the advantage of preferential rates, but, through this extension, the average margin has been slightly reduced from 5.06 per cent. to 4.93 per cent. of the value of the goods.

CLASS XII.—STONES AND MINERALS USED INDUSTRIALLY.

General Comparisons. Under the 1908-11 tariff, 83.46 per cent. of the imports under this class would be dutiable at an average equivalent *ad valorem* rate of 23.11 per cent. Under the present tariff, dutiable goods comprise 91.99 per cent. of the total, and the average rate has been raised to 24.38 per cent. On all goods within the class (dutiable and free) the average rate has been increased from 19.28 to 22.43 per cent.

Imports from the United Kingdom. Of the imports from the United Kingdom, 93.37 per cent. would be dutiable under both tariffs. Under the 1914 tariff the average rate is slightly higher than formerly, the rates being respectively:—On dutiable goods 22.28 per cent., increased to 23.08 per cent.; and on all goods 20.80 per cent., raised to 21.55 per cent.

Under the 1908-11 tariff, preferential rates affected 76.80 per cent. of the stones, etc. of United Kingdom origin, the margin of preference being 5 per cent.; under the present tariff, 96.84 per cent. is favoured by an average margin of 8.06 per cent.

CLASS XIII.—SPECIE.

All specie is exempt from duty.

CLASS XIV.—METALS (UNMANUFACTURED) AND ORES.

This class includes ore of all kinds and gold and silver bullion. The proportion of dutiable goods is small, representing £18,002 or 1.14 per cent. of the total. The average rate on these dutiable goods is, now, 17.59 per cent., as against 15.28 per cent. formerly. Under the 1914 tariff, duties have been imposed on imports of pig iron and steel; mixed metals—aluminium, bronze, britannia metal, etc.; and on platinum bars when not the produce of the United Kingdom. Consequently, under the present tariff, imports of this class to the value of £236,985 would have the advantage of preference equal to 6.21 per cent. *ad valorem*, whereas, under the 1908-11 tariff, the advantage was restricted to 5 per cent. on £16,969.

CLASS XV.—METALS PARTLY MANUFACTURED.

All metals in this class are exempt from duty.

CLASS XVI.—METALS MANUFACTURED, INCLUDING MACHINERY.

General Comparisons. The imports under this class during 1913 amounted to £16,623,135, representing 21.25 per cent. of the total imports of merchandise. Under the 1908-11 tariff, 61.85 per cent. was dutiable at an equivalent average *ad valorem* rate of 15.98 per cent. Under the 1914 tariff, 78.92 per cent. would be dutiable at an average rate of 17.07 per cent., thus raising the rate on all goods (dutiable and free) within the class from 9.88 per cent. to 13.48 per cent. The greater proportion of dutiable goods under the 1914 tariff is almost entirely due to the imposition of duties on goods not of United Kingdom origin.

Imports from the United Kingdom. The imports from the United Kingdom of metal manufactures and machinery during 1913 amounted to £10,855,417, or 26.51 per cent. of the total imports of merchandise of United Kingdom origin. Under the 1914 tariff a small amount of imports which were formerly free became dutiable, thus increasing the proportion of dutiable goods from 66.78 per cent. to 67.74 per cent. The average rate of duty on *dutiable* goods has been raised from 14.21 per cent. to 16.70 per cent., and the rates on all goods (dutiable and free) from 9.49 per cent. to 11.31 per cent. *ad valorem*.

Under the 1908-11 tariff, imports of metals and machinery of United Kingdom manufacture to the value of £7,645,503 were favoured by preferential tariff treatment equal to 4.50 per cent. *ad valorem*, while under the 1914 tariff, preferential rates apply to £10,818,350, or 99.66 per cent., the margin of preference being raised to 6.14 per cent. *ad valorem*. This represents a remission of £664,000 of duty as compared with what the same goods would have to pay if manufactured outside the United Kingdom.

CLASS XVII.—LEATHER AND MANUFACTURES OF LEATHER AND SUBSTITUTES THEREFOR, ALSO INDIARUBBER AND INDIARUBBER MANUFACTURES.

General Comparisons. The total imports under this class amounted to £1,749,046, of which 74.30 per cent. (£1,299,603) would be dutiable under the 1914 tariff at an average rate equal to 29.14 per cent., as against 74.11 per cent. (£1,296,278) bearing an average rate of 21.59 per cent. under the 1908-11 tariff. The average rate of all goods in the class has been raised from 16 per cent. to 21.65 per cent.

Imports from the United Kingdom. The proportion of dutiable goods of United Kingdom origin would be the same under both tariffs (76.28 per cent.). The average rate on *dutiable* goods in this class has been raised from 20.26 per cent. to 24.79 per cent., and on all goods (dutiable and free) from 15.45 per cent. to 18.91 per cent.

Under the 1908-11 tariff, £342,991 was favoured by a preferential margin of duty equal to 5 per cent. Under the 1914 tariff, preferential treatment has been extended to £458,390 with a margin of 4.98 per cent. of the value of the goods. This slight decrease in the margin of preference is due to a new preference on patent and enamelled leather of $\frac{1}{4}$ d. per lb., which is less than the 5 per cent. otherwise allowed throughout the class.

CLASS XVIII.—WOOD AND WICKER, RAW AND MANUFACTURED.

General Comparisons. The total imports under this class amounted to £3,573,753. Under the 1908-11 tariff, 92.34 per cent. (£3,300,002) of the imports of this class was dutiable at an equivalent average *ad valorem* rate of 16.91 per cent. Under the 1914 tariff, 97.59 per cent. (£3,487,323) would become dutiable at an average rate of 22.33 per cent., thus raising the rate of duty on all goods (dutiable and free) within the class from 15.62 per cent. to 21.79 per cent. of the value of the imports.

Imports from the United Kingdom. The imports of this class from the United Kingdom are relatively small (£230,941), representing, in 1913, slightly more than 6 per cent. of all imports of wood, etc., and comprise chiefly furniture, picture frames, and miscellaneous manufactured articles of wood. Under the 1908-11 tariff, 72.40 per cent. of the imports of United Kingdom origin was dutiable at an average rate of 28.48 per cent., while under the 1914 tariff, 72.45 per cent. would become dutiable at an

average of 31.26 per cent. The average equivalent *ad valorem* rate on all imports of this class of United Kingdom origin was thus raised from 20.62 per cent. to 22.65 per cent.

Under the tariff of 1908-11, 68.34 per cent. of the imports from the United Kingdom was favoured by preferential treatment equal to 5.11 per cent. *ad valorem*, whereas, under the 1914 tariff, 95.93 per cent. would be favoured by a preferential margin of 5.02 per cent.

CLASS XIX.—EARTHENWARE, CEMENTS, CHINA, GLASS AND STONEWARE.

General Comparisons. The total imports under this class amounted to £1,580,615. Under the 1908-11 tariff, 92.91 per cent. was dutiable at an equivalent average *ad valorem* rate of 27.58 per cent. Under the 1914 tariff, 97.61 per cent. would be dutiable at an average of 32.95 per cent., the average rate on all goods within the class being raised from 25.63 per cent. to 32.16 per cent. The increased proportion of dutiable goods is due entirely to the imposition of duties of 5 per cent. on goods not of United Kingdom origin which were formerly free.

Imports from the United Kingdom. The dutiable imports of this class of United Kingdom origin would be the same under both tariffs (£618,147 or 94.27 per cent.), but the average rate of duty would be raised by the 1914 tariff from 23.35 per cent. to 26.94 per cent., so raising the rates on all goods within the class from 22.02 per cent. to 25.40 per cent.

Under the tariff of 1908-11, 86.11 per cent. of the imports from the United Kingdom was favoured by preferential treatment equal to 6.46 per cent. *ad valorem*, whereas, under the 1914 tariff, 92.66 per cent. would be favoured by a preferential margin of 8.98 per cent.

CLASS XX.—PAPER AND STATIONERY.

General Comparisons. The imports of paper and stationery during 1913 amounted to £3,134,750, of which £1,996,894 was paper and £1,137,856 was stationery. Under the 1908-11 tariff, 29.82 per cent. was dutiable at an average equivalent *ad valorem* rate of 22.99 per cent. Under the 1914 tariff, 56.12 per cent. would be dutiable at an average rate of 20.30 per cent. Over all goods within the class (dutiable and free) the average rate would be raised, under the 1914 tariff, to 11.39 per cent., as against the former average rate of 6.85 per cent.

With regard to the imports of paper—apart from those of stationery—the proportion subject to duty has been raised from 28.26 per cent. to 65.96 per cent. The average rate of duty on dutiable paper has declined from 22.30 per cent. to 18.71 per cent., while the average rate on all imports of paper, dutiable and free, has increased from 6.30 per cent. to 12.34 per cent. The larger proportion of paper imports subject to duty, in conjunction with the lower average rate thereon, is due to the imposition of comparatively low rates on goods (formerly free) produced outside the United Kingdom. For instance, prior to the introduction of the 1914 tariff, printing paper was free, whereas now, when not made in the United Kingdom, it is subject to a duty of 10 per cent.

Of the imports of stationery—as distinct from paper, previously dealt with—the proportion subject to duty has been raised from 32.55 per cent. to 38.92 per cent., the average rate on these dutiable goods rising from 24.03 per cent. to 25.58 per cent., thus increasing the average rate on all imports of stationery from 7.82 per cent. to 9.93 per cent. Nearly 60 per cent. of the imports of stationery consist of printed books, which are entirely free from duty.

Imports from the United Kingdom. The imports of paper and stationery manufactured in the United Kingdom amounted to £1,789,577, of which £901,099 was paper and £888,478 was stationery. Under the 1908-11 tariff, 22.82 per cent. was dutiable at an average rate of 23.37 per cent. Under the 1914 tariff, 27.65 per cent. would be dutiable at 24.76 per cent., thus increasing the average rate on all paper and stationery from 5.33 per cent. to 6.85 per cent. Under the 1908-11 tariff, preferential rates favoured £652,183 (36.45 per cent. of all imports), with a rebate of duty equal to 4.84 per cent. of

the value of the goods. Under the 1914 tariff, preferential treatment has been extended to embrace goods to the value of £1,192,111 (66.62 per cent.), the margin of preference at the same time being increased to 6.64 per cent. *ad valorem*.

Dealing with the imports of paper and of stationery separately, the tariff alterations affecting the trade of the United Kingdom would be as follows:—*Paper*. Of the imports of paper (£901,099), the proportion subject to duty under the 1908-11 tariff was 19.57 per cent., and under the 1914 tariff 24.60 per cent. The average *ad valorem* rate on these dutiable goods has been increased from 23.44 per cent. to 25.36 per cent., the rate on all paper (dutiable and free) rising from 4.59 per cent. to 6.24 per cent. *Stationery*. The imports of stationery of United Kingdom manufacture amounted to £888,478, of which 26.13 per cent. was dutiable under the 1908-11 tariff at an average rate of 23.33 per cent. Under the 1914 tariff, 30.74 per cent. would be dutiable at 25.13 per cent., so raising the average rate on all stationery (dutiable and free) from 6.09 per cent. to 7.73 per cent. *ad valorem*.

CLASS XXI.—JEWELLERY, TIMEPIECES, AND FANCY GOODS.

General Comparisons. The value of imports of this class during 1913 amounted to £1,410,555, of which £1,121,742, or 79.51 per cent., would be dutiable under both tariffs. Under the 1908-11 tariff, the average equivalent *ad valorem* rate on *dutiable* imports was 25.64 per cent., and under the 1914 tariff 28.05 per cent, the average rates on all imports of the class being raised from 20.39 per cent. to 22.31 per cent. *ad valorem*.

Imports from the United Kingdom. The imports of goods of this class produced in the United Kingdom amounted to £506,608, of which £481,594, or 95.05 per cent., would be dutiable under both tariffs, though the rate of *dutiable* goods has been raised from 22.62 per cent. to 24.18 per cent., and on all goods (dutiable and free) from 21.51 per cent. to 22.98 per cent.

Under the 1908-11 tariff, preferential treatment was given to 94.49 per cent. (£478,757) of imports of United Kingdom origin; the margin of preference being equal to 5.38 per cent. of the value of the goods. Under the 1914 tariff, 95.04 per cent. (£481,594) would be favoured by a margin of 9.12 per cent.

CLASS XXII.—OPTICAL, SURGICAL, AND SCIENTIFIC INSTRUMENTS.

General Comparisons. The imports of this class during 1913 amounted to £754,589. Under the 1908-11 tariff, 24.67 per cent. (£186,175) was dutiable at an average rate of 14.26 per cent., while under the 1914 tariff, 52.15 per cent. (£393,580) would be dutiable at an average rate of 25.62 per cent. The average rate on all goods within the class would thus be raised from 3.52 per cent. to 13.36 per cent.

Imports from the United Kingdom. The imports of goods of this class manufactured in the United Kingdom amounted to £333,179. Under the 1908-11 tariff, 18.27 per cent. (£60,861) was dutiable at an average rate equal to 19.63 per cent.; whereas, under the 1914 tariff, 31.02 per cent. (£103,340) would pay duty at the average rate of 25.95 per cent. The average rate on all goods, including free goods, has been raised from 3.59 per cent. to 8.05 per cent.

Under the 1908-11 tariff, 44.24 per cent. (£147,398) of the imports of United Kingdom manufacture was favoured by a preferential tariff margin equal to 5.09 per cent. *ad valorem*. Under the 1914 tariff, 59.15 per cent. (£197,061) would be favoured by a tariff margin increased to 6.55 per cent.

CLASS XXIII.—DRUGS, CHEMICALS, AND FERTILIZERS.

General Comparisons. The imports of this class during 1913 were valued at £2,493,192. Under the 1908-11 tariff, 22.69 per cent. (£565,569) was dutiable at an average rate of 20.08 per cent. Under the 1914 tariff, 47.98 per cent. (£1,196,301) would pay duty at an average rate of 12.85 per cent., the rate over all imports of the class being raised from 4.56 per cent. to 6.17 per cent. *ad valorem*. The smaller average rate of duty on dutiable imports is due to the imposition of 5 per cent. duties on goods manufactured outside the United Kingdom which were formerly free.

Imports from the United Kingdom. The imports of this class from the United Kingdom during 1913 amounted to £902,343, of which 34.45 per cent. would be dutiable under both tariffs, the average rate being slightly increased from 18.07 per cent. to 18.30 per cent., the average rate on all goods in the class rising from 6.23 per cent. to 6.30 per cent.

Under the 1908-11 tariff, 12.92 per cent. (£116,543) of the imports of drugs, etc., made in the United Kingdom was favoured by a tariff margin of 4.58 per cent. *ad valorem*, whereas, under the 1914 tariff, preferential rates have been extended to 94.94 per cent. of the class, and the margin of preference has been increased to 5.09 per cent.

CLASS XXIV.—MISCELLANEOUS.

General Comparisons.—The total value of imports under this class during 1913 amounted to £11,258,981, of which £2,495,000 was in respect of warships for the Commonwealth Government, and £1,662,300 was for mercantile ships. Under the 1908-11 tariff, £3,853,022 (34.22 per cent.) would be dutiable at an average rate of 21.23 per cent., and under the 1914 tariff, £3,937,906 (34.98 per cent.) would be dutiable at an average rate of 24.30 per cent. The rate of duty on all imports of the class would be raised from 7.27 per cent. to 8.50 per cent. *ad valorem*. If the value of imports for the Commonwealth Government be excluded from the figures, the proportion of dutiable goods in this class under the 1908-11 tariff would be 46.83 per cent., and the average rate of duty on all other goods of the class 9.95 per cent., and under the 1914 tariff, 47.91 per cent. would be dutiable at an average rate for all goods (dutiable and free) of 11.64 per cent.

Imports from the United Kingdom. The imports of manufactures of the United Kingdom of this class amounted to £7,892,845, of which £4,073,452, or 51.60 per cent., was in respect of ships. Dutiable goods would represent, under both tariffs, 14.22 per cent. (£1,122,667) of the total. Under the tariff of 1908-11, the average rate of duty on dutiable goods would be 23.43 per cent., and under the tariff of 1914 it would be 25.37 per cent. The average rate on all imports of the class (dutiable and free) of United Kingdom origin would be raised from 3.32 per cent. to 3.61 per cent. If the value of imports for the Commonwealth Government be eliminated, the portion of dutiable goods would be 22.20 per cent. under both tariffs, the average rates on all goods being respectively 5.15 per cent. under the tariff of 1908-11 and 5.58 per cent. under the tariff of 1914.

Under the tariff of 1908-11 preferential tariff treatment was given to imports of this class from the United Kingdom to the value of £2,716,217, or 34.41 per cent. of such imports. Under the tariff of 1914, preference favoured £2,883,474, or 36.54 per cent., with an average tariff margin of 8.79 per cent., as against a former margin of 6.76 per cent.

TOTAL IMPORTS.

General Comparisons.—The total imports of merchandise (bullion and specie not included) into the Commonwealth during 1913 amounted to £78,196,109. Under the tariff of 1908-11, the dutiable goods would be £44,633,257, or 57.07 per cent. of the total imports of merchandise. Under the 1914 tariff, the dutiable goods would be increased to £53,111,865, or 67.92 per cent. of the total. Under the 1914 tariff, the average equivalent *ad valorem* rate of duty on dutiable goods would be 31.65 per cent., as compared with 29.93 per cent. under the tariff of 1908-11, the average rate on all imports (dutiable and free) being raised accordingly from 17.08 per cent. to 21.50 per cent. If the value of warships and other goods imported for the Commonwealth Government (£3,039,876) be excluded, the proportion of dutiable goods under the 1914 tariff would be 70.76 per cent., as compared with 59.38 per cent. under the former tariff, while the average rate on all other goods within the class would now be 22.35 per cent., as against 17.77 per cent. under the 1908-11 tariff. The increased rates of duty represent £3,400,000 increase of duty.

**SUMMARISED COMPARISON OF THE TARIFFS OF 1908-11 AND 1914, BASED UPON
THEIR APPLICATION TO THE IMPORTS OF MERCHANDISE INTO THE
COMMONWEALTH DURING 1913.**

	Tariff of 1908-11.	Tariff of 1914.
Imports of free merchandise—	£	£
Favoured by preferential tariff (United Kingdom) ...	7,485,367	12,485,947
Under tariff common to all countries ...	26,077,485	12,598,297
 Total imports of free merchandise ...	 33,562,852	 25,084,244
Percentage of free imports on total imports ...	42.93	32.08
Imports of dutiable merchandise—		
Favoured by preferential tariff—		
From United Kingdom ...	17,500,941	20,044,501
„ South Africa ...	38,569	38,569
Adversely affected by preferential tariffs—		
From British Possessions ...	491,972	3,260,633*
„ Foreign countries ...	13,542,545	21,299,469
Under tariff common to all countries ...	13,059,230	8,468,693
 Total imports of dutiable merchandise ...	 44,633,257	 53,111,865
Percentage of dutiable imports on total imports ...	57.07	67.92
 Total imports favoured by preferential tariffs ...	 25,024,877	 32,569,017
„ adversely affected by „ „ ...	14,034,517	24,560,102
„ under tariff common to all countries ...	39,136,715	21,066,990
 Total imports of merchandise ...	 78,196,109	 78,196,109
 Equivalent <i>ad valorem</i> rates of duty—	Per cent.	Per cent.
On total imports of merchandise ...	17.08	21.50
On imports of merchandise, less drink and tobacco ...	11.62	14.65
On <i>dutiable</i> merchandise ...	29.93	31.65
On <i>dutiable</i> merchandise, less drink and tobacco ...	21.79	23.23

* The surcharge on these imports as compared with similar imports from the United Kingdom would be at the average rate of 9.46 per cent.

Imports from the United Kingdom. The total imports of merchandise from the United Kingdom during 1913 amounted to £40,948,803. Under the tariff of 1908-11, the dutiable goods represented £21,053,786, or 51.41 per cent., the average equivalent *ad valorem* rate thereon being 27.62 per cent. Under the 1914 tariff, dutiable goods are increased slightly to £21,287,404 (51.99 per cent.), while the average rate on dutiable goods has been raised to 32.26 per cent. The average equivalent *ad valorem* rate on all imports from the United Kingdom would, under the 1914 tariff, be 16.77 per cent., compared with 14.20 per cent. under the former tariff. Omitting the value of imports for the Commonwealth Government (£2,786,430), the proportion of dutiable goods would now be 55.78 per cent., as against 55.16 per cent. formerly, and the average *ad valorem* rate on all goods (dutiable and free) would now be 18.04 per cent. instead of 15.24 per cent. The increased rates on imports of United Kingdom origin represent an additional impost of £1,050,000 on the same trade.

Under the tariff of 1908-11, imports of United Kingdom origin to the value of £24,986,308, representing 61.01 per cent. of the total imports of United Kingdom produce, were favoured by preferential tariff rates equal to 5.14 per cent. of the value of the goods. Under the 1914 tariff, preferential treatment is extended to £32,530,448, or 79.42 per

cent. of United Kingdom goods, the margin of preference being extended, at the same time, to 6.30 per cent. *ad valorem*. This means that if the same goods were imported from countries other than the United Kingdom, £2,050,000 additional duty would now be charged, whereas under the 1908-11 tariff the rebate of duty would have been £1,280,000.

A comparison of the results given on the second and third tables of the series shews that while the average rate of duty on goods produced or manufactured in the United Kingdom has been increased by 2.57 per cent. of the value of the goods (from 14.20 per cent. to 16.77 per cent.), the rates on goods from other countries have been increased by 6.44 per cent. (from 20.25 per cent. to 26.69 per cent.). This is the combined result of an extension of duties to 85.44 per cent. (£31,824,461) of the imports as compared with 63.30 per cent. (£23,579,471) previously dutiable, in conjunction with a decrease of the average rate on dutiable goods from 31.99 per cent. to 31.24 per cent.

Not only has the "preference" to the United Kingdom been increased by an extension of the principle to goods which did not formerly come within its scope, but in regard to many items, new duties have been imposed under the general tariff, or previous rates have been raised, while the rates on similar imports from the United Kingdom have not been altered. Thus many items which are still free if produced in the United Kingdom have become dutiable if produced elsewhere. The higher average rate of duty on United Kingdom goods is due to the increase of duties previously in force, rather than to any contraction of the free list.

SUMMARISED COMPARISON OF THE TARIFFS OF 1908-11 AND 1914 BASED UPON THEIR APPLICATION TO THE PRODUCE OR MANUFACTURE OF THE UNITED KINGDOM IMPORTED INTO THE COMMONWEALTH DURING 1913.

	Tariff of 1908-11.	Tariff of 1914.
Imports of free merchandise—	£	£
Favoured by preferential tariff	7,485,367	12,485,947
Under tariff common to all countries	12,409,650	7,175,452
Total imports of free merchandise	19,895,017	19,661,399
Percentage of free imports on total imports	48.59	48.01
Imports of dutiable merchandise—		
Favoured by preferential tariff	17,500,941	20,044,501
Under tariff common to all countries	3,552,845*	1,242,903*
Total imports of dutiable merchandise... ..	21,053,786	21,287,404
Percentage of dutiable imports on total imports	51.41	51.99
Total imports of merchandise	40,948,803	40,948,803
Total imports favoured by preferential tariff	24,986,308	32,530,448
Total imports favoured by preferential tariff, per cent. on total imports	61.01	79.42
Margin of preference—Per cent. <i>ad valorem</i>	5.14	6.30
Equivalent <i>ad valorem</i> rates of duty—	Per cent.	Per cent.
On total imports of merchandise	14.20	16.77
On imports of merchandise, less drink and tobacco	9.71	11.88
On <i>dutiable</i> merchandise	27.62	32.26
On <i>dutiable</i> merchandise, less drink and tobacco	19.53	23.62

* Includes tobacco to the value of £23,154 imported in competition with similar imports from South Africa, which is favoured by preferential rates under the South African Preference Act.

Imports from British Countries other than the United Kingdom.—With the exception of some imports from South Africa, which are admitted under special rates by virtue of the South African Preference Act, imports from "British Possessions" are subject to the same tariff as similar goods imported from "Foreign Countries." The rebate of duty on South African goods imported during 1913 amounted to £4296 under the tariff of 1908-11. Under the 1914 tariff the rebate, as compared with similar imports from the United Kingdom, would be £3345, and against similar imports from other countries the rebate would be £3517. The smaller rebate under the 1914 tariff is the effect of the reduction of the margin on cut tobacco from 1s. 3d. to 9d. per lb., and other manufactured tobacco from 1s. to 9d. per lb.

The imports of merchandise from "British Possessions" during 1913 were valued at £7,804,483. Under the tariff of 1908-11, 34.53 per cent. of this was dutiable at an average rate of 32.46 per cent., with the result that all imports from "British Possessions" would pay an average rate of 11.21 per cent. Under the 1914 tariff, £5,239,246 (67.12 per cent.) would become dutiable, but at an average rate reduced to 23.67 per cent., the effect being to increase the average rate on all imports, dutiable and free, to 15.89 per cent. This means that under the 1914 tariff these imports would be required to pay £1,240,485 duty, whereas, formerly, the duty on the same goods would have been £874,905 only. The lower average rate of duty on dutiable goods, in conjunction with the higher proportion of these goods to the total imports, is due to the imposition of comparatively low duties (10 per cent.) on jute goods from India, and on printing paper from Canada. It may be well to explain that the lower rate of duty on imports from "British Possessions" than on imports from foreign countries, although both are subject to the same tariff, is also largely due to the influence of bags and sacks, which are obtained almost entirely from India. The lower proportion of dutiable goods from "British Possessions," as compared with "Foreign Countries," is due to the fact that raw materials, and animals for breeding purposes, which are free, enter more largely into the trade of the former than that of the latter.

Of the imports from "British Possessions" (£7,804,483), £3,260,633 would be adversely affected by the preferential tariff in favour of the United Kingdom by a surcharge of £308,534, or 9.46 per cent. *ad valorem*. Under the 1914 tariff, jute goods imported from India—£2,153,000 in 1913—pay a duty of 10 per cent., whereas similar goods manufactured in the United Kingdom are free. Canadian goods to a value of over £750,000 would be similarly affected, the chief lines being—agricultural implements, printing paper, motor and other vehicles and parts, fish, rubber goods and furniture.

A tabular presentation of the changes made by the tariff of 1914 as they affect imports from "British Possessions" and from "Foreign Countries" is appended:—

IMPORTS OF MERCHANDISE FROM BRITISH POSSESSIONS AND FROM FOREIGN COUNTRIES, ANALYSED ACCORDING TO THE TARIFFS OF 1908-11 AND 1914.

	Imports from British Possessions.		Imports from Foreign Countries.	
	According to Tariff of—		According to Tariff of—	
	1908-11.	1914.	1908-11.	1914.
	£	£	£	£
Free	5,108,991	2,565,237	8,558,844	2,857,608
Dutiable	2,695,492	5,239,246	20,883,979	26,585,215
Total imports	7,804,483	7,804,483	29,442,823	29,442,823
Duty payable	874,905	1,240,485	6,667,041	8,700,316
Proportion of dutiable goods ...	Per cent. 34.53	Per cent. 67.12	Per cent. 70.91	Per cent. 90.28
Average rate of duty on—				
Dutiable imports	32.46	23.67	31.92	32.72
All imports	11.21	15.89	22.65	29.55

§ 14.—Rates of Duty in Australia and other Countries.

The following table shews 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. (b)	New Zealand.	U.S. of America.
	31/12/06	30/6/15 (a)	Tariff of 1914 applied to Imports of 1913.	31/3/15	31/12/14	30/6/14
Year ended						
Percentage of free merchandise ...	35.18	35.07	32.08	38.56	53.78	60.45
Equival't <i>ad val.</i> rates of duty on	%	%	%	%	%	%
Spirits, wines, and malt liquors	153.23	159.39	169.98	144.53	141.63	94.80
Tobacco, and preparations thereof	168.65	144.06	202.20	17.40c	109.54	79.76e
Other dutiable merchandise ...	17.04	20.90	23.23	24.34	21.99	33.86
Other merchandise dutiable & free	10.75	13.24	14.65	14.96	9.49	12.83
Total dutiable merchandise ...	27.14	29.64	31.65	27.20	34.36	37.61
Total merchandise dutiable & free	17.59	19.24	21.50	16.71	15.90	14.88
Customs duty per head ...	£ s. d. 1 15 10	£ s. d. 2 9 2	£ s. d. —	£ s. d. 2 0 3	£ s. d. 3 1 6d	£ s. d. 0 12 0

(a) Tariff changed in this year (see letterpress). (b) The rates of duty given in relation to imports are exclusive of war tax, £565,000, which, however, is included in the duty per head of population. (c) Unmanufactured tobacco is admitted to Canada free of duty. (d) Exclusive of Maoris. (e) Tobacco is admitted free of Customs duty from the Philippine Islands.

The figures given above for Australia during the year ended 30th June, 1915, are the results of two tariffs, each operating for a part of the year—the tariff of 1908-11 till the 3rd December, 1914, and the tariff of 1914 subsequently. These figures are supplemented by the results obtained from the application of the tariff of 1914 to the imports during 1913, while 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 much more widely over imported commodities than in New Zealand or the United States of America. In the latter country, 60 per cent. of all imports are free of duty, whereas under the tariff at present in force in the Commonwealth, about 32 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 free goods represented only 42 per cent. of the total imports, while in New Zealand they comprised 52 per cent. By the extension of the application of duties and by increasing pre-existing duties, the average rate of duty on all imports is now higher in Australia than in any of the other countries named.

SECTION XVI.

SHIPPING.

§ 1. General.

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 this made the mere aggregation of State records correspondingly misleading. It has, as a matter of fact, led to some erroneous publications of statistical results and deductions.

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 paragraph 1 above, it is obviously impossible now to obtain results for Australia 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 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 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.

§ 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 1914-15 (MULTIPLE RECORD EXCLUDED BY ESTIMATION PRIOR to 1904).

Year.	Vessels.	Tons.	Year.	Vessels.	Tons.	Year.	Vessels.	Tons.
1822	73	30,683	1853	3,364	1,490,422	1884	4,315	4,064,947
1823	76	30,543	1854	3,781	1,744,251	1885	4,052	3,999,917
1824	71	29,029	1855	3,239	1,449,657	1886	3,793	3,853,246
1825	80	30,786	1856	2,669	1,195,794	1887	3,454	3,764,430
1826	65	23,587	1857	2,842	1,530,202	1888	3,933	4,464,895
1827	95	29,301	1858	2,607	1,378,050	1889	3,897	4,460,426
1828	124	38,367	1859	2,759	1,403,210	1890	3,363	4,150,027
1829	185	56,735	1860	2,464	1,288,518	1891	3,778	4,726,307
1830	195	56,185	1861	2,466	1,149,476	1892	3,432	4,239,500
1831	185	52,414	1862	2,917	1,389,231	1893	3,046	4,150,433
1832	206	59,628	1863	3,378	1,564,369	1894	3,397	4,487,546
1833	241	72,647	1864	3,344	1,537,433	1895	3,331	4,567,883
1834	249	77,068	1865	3,005	1,317,934	1896	3,309	4,631,266
1835	310	96,928	1866	3,378	1,470,728	1897	3,279	4,709,697
1836	310	93,974	1867	2,927	1,277,679	1898	3,222	4,681,398
1837	442	113,432	1868	3,080	1,350,573	1899	3,356	5,244,197
1838	471	132,038	1869	3,107	1,472,837	1900	3,719	5,894,173
1839	652	191,507	1870	2,877	1,381,878	1901	4,028	6,541,991
1840	915	277,335	1871	2,748	1,312,642	1902	3,608	6,234,460
1841	900	278,738	1872	2,788	1,380,466	1903	3,441	6,027,843
1842	862	232,827	1873	3,159	1,609,067	1904	3,700	6,682,011
1843	736	183,427	1874	3,153	1,728,269	1905	4,088	7,444,417
1844	629	155,654	1875	3,437	1,914,462	1906	4,155	7,966,658
1845	735	164,221	1876	3,295	1,863,343	1907	4,394	8,822,866
1846	888	211,193	1877	3,157	1,930,434	1908	4,051	8,581,151
1847	1,033	245,358	1878	3,372	2,127,518	1909	3,910	8,516,751
1848	1,182	305,840	1879	3,344	2,151,388	1910	4,048	9,333,146
1849	1,137	355,886	1880	3,078	2,177,877	1911	4,174	9,984,801
1850	1,300	425,206	1881	3,284	2,549,364	1912	4,052	10,275,314
1851	1,576	515,061	1882	3,652	3,010,944	1913	3,985	10,601,948
1852	1,896	844,243	1883	3,857	3,433,102	1914-15	3,211	8,599,258

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 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.		Country.	Year.	Tonnage Entered and Cleared.	
		Total.	Per Inhabitant.			Total.	Per Inhabitant.
Argentine Rep.	1912	23,372,714	3.2	Japan	1912	43,492,604	0.8
Belgium	1912	32,672,989	4.3	New Zealand	1914	3,506,830	3.2
Canada	1913	29,568,486	3.7	Norway	1912	10,806,050	4.4
Commonw'lth	1914-15	8,599,258	.7	S. African Un.	1913	10,631,118	1.7
Denmark	1912	18,537,064	6.6	Sweden	1912	25,511,890	4.6
France	1912	62,775,775	1.6	United K'dom	1913	164,809,581	3.6
Germany	1912	51,065,940	0.8	United States	1914	79,795,501*	0.8
Italy	1912	56,889,048	1.6				

* Exclusive of Northern Border and Lake Ports.

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 600 shews the tonnage of vessels which were recorded as having cleared the Commonwealth for the particular countries, while on page 601 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 1914-15, together with its altered distribution among the various countries, was, of course, almost entirely due to the war, though the failure of the wheat crop for that season undoubtedly had some effect in this direction. 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.

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 1910 to 1914-15.**

ENTERED.

Country.	1910.	1911.	1912.	1913.	1914-15.
United Kingdom ...	1,377,151	1,464,057	1,625,733	1,607,943	1,285,791
Canada ...	108,727	107,932	112,729	118,604	144,229
Fiji ...	49,493	77,745	73,033	86,442	85,442
Hong Kong ...	22,327	17,880	27,440	33,156	19,898
India and Ceylon ...	169,800	99,196	93,787	107,721	265,273
Mauritius ...	43,133	23,443	27,203	36,092	19,569
New Zealand ...	766,777	841,746	926,342	908,484	771,656
Papua ...	47,881	78,468	73,010	74,943	72,837
South African Union ...	208,140	289,229	96,679	198,505	84,365
South Sea Islands ...	64,164	61,983	37,472	58,498	24,279
Straits Settlements ...	89,731	97,735	102,598	100,238	106,534
Other British Countries ...	13,588	324	3,068	10,826	134,057
Total British Countries ...	2,960,912	3,159,738	3,199,094	3,341,452	3,013,930
Africa, Portuguese East ...	96,966	74,083	46,751	53,870	14,391
Belgium ...	15,273	18,734	11,852	9,563	6,871
Chile ...	111,504	182,460	176,416	108,121	38,288
Dutch East Indies ...	72,212	43,458	67,761	87,428	87,245
France ...	99,308	83,627	47,191	63,632	34,633
Germany ...	290,834	314,167	427,320	414,294	74,208
Hawaiian Islands ...	32,020	17,167	16,508	10,101	...
Japan ...	153,547	157,533	157,734	160,241	125,789
Mexico ...	24,366	16,481	19,445	9,973	...
New Caledonia ...	62,542	71,390	77,265	86,702	41,398
Norway ...	37,201	40,204	34,715	26,200	47,649
Peru ...	27,051	32,922	35,482	21,504	5,973
Philippine Islands ...	28,550	56,603	56,216	47,220	26,943
South Sea Islands (foreign) ...	37,684	56,878	67,805	66,651	73,762
Sweden ...	41,231	77,983	48,060	80,546	37,504
United States ...	338,587	389,208	453,854	509,922	426,513
Other Foreign Countries ...	178,032	200,584	220,388	264,111	119,858
Total Foreign Countries ...	1,646,908	1,833,482	1,964,263	2,030,079	1,161,025
Total all Countries ...	4,607,820	4,993,220	5,163,357	5,371,531	4,174,955

SHIPPING TONNAGE ENTERED AND CLEARED, ETC.—(Continued.)

CLEARED.

Country.	1910.	1911.	1912.	1913.	1914-15.
United Kingdom ...	1,467,925	1,537,084	1,369,143	1,455,018	1,031,279
Canada ...	50,510	54,732	54,661	82,849	90,105
Fiji ...	53,713	90,574	85,372	94,958	91,343
Hong Kong ...	31,145	19,155	32,121	27,959	30,566
India and Ceylon ...	139,584	143,632	144,487	126,656	210,688
Mauritius ...	9,396	2,953	4,526	3,505	7,681
New Zealand ...	975,121	1,044,013	1,183,741	1,198,837	916,809
Papua ...	50,552	71,811	66,409	73,923	63,962
South African Union ...	92,070	85,346	75,467	136,986	67,278
South Sea Islands ...	43,539	38,133	55,717	58,267	24,484
Straits Settlements ...	156,704	127,725	137,139	155,364	115,894
Other British Countries ...	2,924	...	...	2,270	522,870
Total British Countries	3,073,183	3,215,158	3,208,783	3,416,592	3,172,959
Africa, Portuguese East ...	18,716	6,949	3,836	5,447	2,691
Belgium ...	115,121	168,397	169,020	151,718	34,245
Chile ...	342,478	393,642	508,724	398,322	255,547
Dutch East Indies ...	105,293	115,499	155,332	189,499	180,649
France ...	113,226	155,506	94,062	81,240	54,642
Germany ...	312,128	321,502	349,685	385,752	38,358
Hawaiian Islands ...	32,520	26,200	34,009	45,634	37,770
Japan ...	102,183	103,550	96,108	117,472	73,228
Mexico ...	13,146	13,565	12,757	25,735	4,461
New Caledonia ...	47,071	62,165	74,063	86,321	43,581
Peru ...	52,243	70,960	64,881	52,626	24,431
Philippine Islands ...	106,087	102,748	95,120	46,746	72,272
South Sea Islands (foreign)	57,790	50,022	44,875	36,826	52,785
Sweden ...	...	...	...	...	...
United States ...	184,153	145,926	149,449	148,754	266,133
Other Foreign Countries	49,988	39,792	51,253	41,733	110,551
Total Foreign Countries	1,652,143	1,776,423	1,903,174	1,813,825	1,251,344
Total all Countries	4,725,326	4,991,581	5,111,957	5,230,417	4,424,303

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 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, 1910 to 1914-15.**

Country.	1910.	1911.	1912.	1913.	1914-15.
United Kingdom	2,845,076	3,001,141	2,994,876	3,062,961	2,317,070
Canada	159,237	162,664	167,390	201,453	234,334
Fiji	103,206	168,319	158,405	181,400	176,785
Hong Kong	53,472	37,035	59,561	61,115	50,464
India and Ceylon	309,384	242,828	238,274	234,377	475,961
Mauritius	52,529	25,396	31,729	59,597	27,250
New Zealand	1,741,696	1,885,759	2,110,063	2,107,321	1,688,465
Papua	98,433	150,279	139,419	148,866	136,799
South African Union	300,210	374,575	172,146	335,491	151,643
South Sea Islands	107,703	100,116	93,189	116,765	48,763
Straits Settlements	246,435	225,460	239,737	255,602	222,428
Other British Countries	16,512	324	3,068	13,096	656,927
Total British Countries	6,034,095	6,374,896	6,407,877	6,758,044	6,186,889
Africa, Portuguese East	115,682	81,032	50,587	69,317	17,082
Belgium	130,394	187,131	180,872	161,281	41,116
Chile	453,982	576,102	685,140	506,443	293,835
Dutch East Indies	177,505	158,957	223,093	276,927	267,894
France	212,534	239,133	141,253	144,872	89,275
Germany	602,962	635,669	777,005	800,046	112,566
Hawaiian Islands	64,540	43,367	50,517	55,735	37,770
Japan	255,730	261,083	253,842	277,713	199,017
Mexico	37,512	30,046	32,202	35,708	4,461
New Caledonia	109,613	133,555	151,328	173,023	84,979
Norway	37,201	40,204	34,715	26,289	47,649
Peru	79,294	103,882	100,363	74,130	30,404
Philippine Islands	134,637	159,351	151,336	93,966	99,215
South Sea Islands (foreign)	95,474	106,900	112,680	103,477	126,547
Sweden	41,231	77,983	48,060	80,546	37,504
United States	522,740	535,134	602,803	658,676	602,646
Other Foreign Countries	228,020	240,376	271,641	305,755	230,409
Total Foreign Countries	3,299,051	3,609,905	3,867,437	3,843,904	2,412,369
Total all Countries	9,333,146	9,984,801	10,275,314	10,601,948	8,599,258

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, etc., 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, 1910 to 1914-15.

TONNAGE ENTERED.

Countries.	—	1910.	1911.	1912.	1913.	1914-15.
United Kingdom & European Countries	Cargo...	1,770,356	1,953,962	2,152,304	2,216,449	1,509,237
	Ballast	120,542	68,193	71,746	25,087	15,382
New Zealand	Cargo...	654,215	676,235	751,759	681,650	649,252
	Ballast	112,562	165,511	174,583	226,834	122,404
Asiatic Countries & Islds. in the Pacific	Cargo...	706,226	765,373	761,854	785,031	799,811
	Ballast	156,165	100,500	104,197	163,630	217,666
Africa	Cargo...	30,038	26,718	23,561	33,174	50,315
	Ballast	323,960	368,759	151,459	269,181	154,550
North and Central America	Cargo...	429,021	479,382	560,933	694,275	568,329
	Ballast	43,529	34,239	24,595	14,224	4,065
South America	Cargo...	14,698	13,114	31,291	23,876	26,798
	Ballast	246,508	341,243	355,075	300,130	56,246
	Cargo...	3,604,554	3,914,784	4,281,702	4,369,455	3,603,742
	Ballast	1,003,266	1,078,436	881,655	1,002,076	571,213
Total ... ..	...	4,607,820	4,993,220	5,163,357	5,371,531	4,174,955

TONNAGE CLEARED.

United Kingdom & European Countries	Cargo...	2,019,567	2,190,650	2,006,275	2,102,203	1,169,592
	Ballast	—	—	44	162	—
New Zealand	Cargo...	920,939	981,126	1,148,166	1,166,598	865,780
	Ballast	54,182	62,887	35,575	32,239	51,029
Asiatic Countries & Islds. in the Pacific	Cargo...	856,486	932,091	984,875	995,644	966,549
	Ballast	76,409	24,093	42,738	66,414	99,715
Africa	Cargo...	136,042	106,321	83,829	148,750	559,540
	Ballast	—	—	—	237	6,130
North and Central America	Cargo...	194,697	182,440	204,116	251,739	305,835
	Ballast	53,112	31,783	12,751	5,599	56,762
South America	Cargo...	407,911	476,385	592,248	460,832	210,292
	Ballast	5,981	3,805	1,340	...	133,079
	Cargo...	4,535,642	4,869,013	5,019,509	5,125,766	4,077,588
	Ballast	189,684	122,568	92,448	104,651	346,715
Total ... ..	...	4,725,326	4,991,581	5,111,957	5,230,417	4,424,303

TONNAGE ENTERED AND CLEARED.

Countries.	1910.	1911.	1912.	1913.	1914-15.	1914-15 Compared with 1910.
United Kingdom & European Countries	3,910,465	4,212,805	4,230,369	4,346,901	2,695,111	— 1,215,354
New Zealand	1,741,898	1,885,759	2,110,083	2,107,321	1,688,465	— 53,433
Asiatic Countries and Islands in the Pacific	1,795,286	1,822,057	1,893,664	2,010,709	2,063,741	+ 288,455
Africa	490,040	501,789	258,849	456,342	770,535	+ 280,495
North and Central America	720,359	727,844	802,395	895,837	934,991	+ 214,632
South America	675,098	834,547	979,954	784,838	426,415	— 248,683
Cargo	8,140,196	8,783,797	9,301,211	9,495,221	7,681,330	— 458,866
Ballast	1,192,950	1,201,004	974,103	1,106,727	917,928	— 275,022
Total	9,333,146	9,984,801	10,275,314	10,601,948	8,599,258	— 733,888

From these tables it would appear that the tonnage between Australia and Asia and Africa was greater during 1914-15 than in 1913. This, however, is merely the effect of the diversion of shipping from the usual occupation to military transport between this country and India and Egypt. The outward tonnage to North America both with cargo and in ballast was actually much greater than during the previous year. The increased

tonnage with cargo was engaged in carrying the unusually large exports of wool to the United States and Canada, while the tonnage in ballast consisted of vessels which, owing to the abnormal circumstances previously alluded to, were unable to procure cargoes in Australian ports.

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 from 72.83 per cent. during 1913 to 82.41 per cent. in 1914-15. This increase was almost entirely due to the withdrawal of German ships.

NATIONALITY OF ALL VESSELS WHICH ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO OVERSEA COUNTRIES, 1910 TO 1914-15.

Nationality.	Tonnage.				
	1910.	1911.	1912.	1913.	1914-15.
BRITISH—					
Australian	742,772	848,240	889,285	851,931	1,107,402
United Kingdom... ..	5,252,308	5,511,504	5,299,157	5,590,966	4,897,452
New Zealand	968,551	1,008,036	1,274,584	1,247,742	1,017,721
Other British	26,223	38,871	51,199	30,459	64,040
Cargo	6,295,935	6,656,932	6,949,115	6,915,261	6,406,393
Ballast	693,919	749,719	565,110	805,837	680,222
Total British	6,989,854	7,406,651	7,514,225	7,721,098	7,086,615
Per cent. on total	74.89	74.18	73.13	72.83	82.41
FOREIGN—					
Austro-Hungarian	30,059	—	28,689	32,940	—
Danish	4,010	10,510	5,573	10,138	—
Dutch	153,255	139,606	120,864	193,880	198,223
French	457,676	424,461	356,207	366,730	199,619
German	868,263	1,005,986	1,211,738	1,211,404	172,679
Italian	93,978	65,415	51,098	55,898	39,147
Japanese	89,358	158,047	252,081	224,293	257,709
Norwegian	482,637	582,352	527,121	471,914	302,767
Russian	33,145	38,463	63,286	75,303	56,528
Swedish	51,601	50,207	37,330	59,484	60,600
United States	48,477	67,745	92,605	154,486	178,620
Other Foreign	30,833	35,358	14,497	24,380	46,751
Cargo	1,844,261	2,126,865	2,352,096	2,579,960	1,274,937
Ballast	499,031	451,285	408,993	300,890	237,706
Total Foreign	2,343,292	2,578,150	2,761,089	2,880,350	1,512,643
Per cent. on total	25.11	25.82	26.87	27.17	17.59
Cargo	8,140,196	8,783,797	9,301,211	9,495,221	7,681,330
Per cent. on total	87.22	87.97	90.52	89.56	89.33
Ballast	1,192,950	1,201,004	974,103	1,106,727	917,928
Per cent. on total	12.78	12.03	9.48	10.44	10.67
Grand Total	9,333,146	9,984,801	10,275,314	10,601,948	8,599,358

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 is in consequence of the diversion of vessels from the interstate trade to military purposes in transporting troops, etc., abroad.

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 are the result of abnormal conditions, and are, therefore, of little economic significance.

**PROPORTION OF TONNAGE OF BRITISH AND FOREIGN NATIONALITY ENTERED
AND CLEARED THE COMMONWEALTH WITH CARGO, 1910 to 1914-15.**

Nationality.				1910.	1911.	1912.	1913.	1914-15.
British	...	...	...	77.34	75.79	74.71	72.83	82.41
Foreign	...	...	...	22.66	24.21	25.29	27.17	17.59
Total	...	...	...	100.00	100.00	100.00	100.00	100.00

The principal increases in foreign tonnage in the Australian trade have been German, Japanese, United States of America, Norwegian, and Dutch. The greater amount of German and Japanese tonnage is due to the extension of services between those countries and the Commonwealth, while the revival of the service between this country and San Francisco, which was discontinued after the great earthquake in that city in 1906, accounts for the larger American tonnage in 1913. The Norwegian tonnage, which is largely composed of sailing ships, is chiefly engaged under charter in the carriage of coal, wheat, ore, etc. 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.

The following table shews the direction of the activities of the principal foreign countries engaged in the oversea carrying trade of the Commonwealth. It is well to bear in mind that the French shipping to and from France and to and from New Caledonia is practically identical with the steamers of the Messageries Maritimes, which

maintains a regular service between France and New Caledonia *via* Australian ports. 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 1914-15.

Countries.	Nationality.					
	French.		Japanese.		Norwegian.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
EUROPEAN COUNTRIES—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom ...	7,539	3,924	...	...	1,474	2,635
Belgium ...	3,712	...	...	...	...	...
France ...	22,870	17,682	...	...	907	...
Norway ...	...	...	...	...	30,226	6,659
Sweden ...	...	...	...	...	9,274	...
Other European Countries ...	5,919	...	...	...	...	...
NEW ZEALAND ...	...	...	3,308	3,308	16,882	12,177
ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—						
Japan ...	...	...	92,637	41,644	...	...
New Caledonia ...	28,572	35,398	...	...	...	...
South Sea Islands ...	...	9,900	5,529	7,257	4,770	6,072
Straits Settlements ...	...	...	...	8,015	...	...
Other Asiatic Countries ...	10,233	...	23,473	*51,168	13,194	13,542
AFRICAN COUNTRIES—						
South African Union ...	4,250	...	...	...	9,067	11,944
Other African Countries ...	...	...	...	...	2,793	1,670
NTH. AMERICAN COUNTRIES—						
United States ...	12,661	27,125	2,601	...	23,663	21,900
Other Nth. Amer. Countries...	...	...	...	...	2,413	...
STH. AMERICAN COUNTRIES—						
Chile ...	...	9,834	8,706	10,063	7,100	64,896
Peru ...	...	...	...	...	4,163	7,343
Other South American Countries ...	...	...	...	...	12,293	15,710
With Cargo ...	76,268	103,530	102,466	111,357	89,701	115,547
In Ballast ...	19,488	333	33,788	10,098	48,518	49,001
Total ...	95,756	103,863	136,254	121,455	138,219	164,548

* Of this tonnage, 41,644 tons cleared for the Philippine Islands.

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 1910 to 1914-15.

STEAM AND SAILING VESSELS ENTERED AND CLEARED, 1910 to 1914-15.

Description and Nationality of Vessels.	1910.		1911.		1912.		1913.		1914-15.	
	Ton-nage.	Perce-nages.	Ton-nage.	Perce-nages.	Ton-nage.	Perce-nages.	Ton-nage.	Perce-nages.	Ton-nage.	Perce-nages.
Steam—										
British ...	6,432,290	82	6,912,085	81	7,084,126	79	7,375,109	77	6,939,087	86
Foreign ...	1,436,917	18	1,609,048	19	1,908,888	21	2,173,491	23	1,103,092	14
Total Steam	7,869,207	100 (84)	8,521,133	100 (85)	8,993,014	100 (88)	9,548,600	100 (90)	8,042,179	100 (94)
Sailing—										
British ...	557,564	38	494,566	34	430,099	34	345,989	33	147,528	26
Foreign ...	906,375	62	969,102	66	852,201	66	707,359	67	409,551	74
Total Sailing	1,463,939	100 (16)	1,463,668	100 (15)	1,282,300	100 (12)	1,053,348	100 (10)	557,079	100 (6)
Steam and Sailing—										
British ...	6,989,854	75	7,406,651	74	7,514,225	73	7,721,098	73	7,086,615	82
Foreign ...	2,343,292	25	2,578,150	26	2,761,089	27	2,860,850	27	1,512,643	18
Total	9,333,146	100	9,984,801	100	10,275,314	100	10,601,948	100	8,599,258	100

6. Tonnage in Ballast.—The following table shews the tonnage of oversea vessels which entered and cleared the Commonwealth in ballast during the years 1910 to 1914-15. The decline in tonnage which entered in ballast during 1914-15 was due to the failure of the wheat crop, and the increase in tonnage which cleared in ballast was owing to many vessels being unable to procure cargoes of coal owing to the restriction of exports.

TONNAGE ENTERED AND CLEARED IN BALLAST, 1910 to 1914-15.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1910 ...	603,511	399,755	1,003,266	90,408	99,276	189,684
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

PROPORTION OF TOTAL BRITISH AND FOREIGN TONNAGE WHICH ENTERED AND CLEARED IN BALLAST, 1910 to 1914-15.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
1910 ...	17.52	34.38	21.77	2.55	8.41	4.01
1911 ...	18.09	31.61	21.60	2.19	3.23	2.46
1912 ...	13.31	27.24	17.08	1.66	2.21	1.81
1913 ...	18.39	19.37	18.66	2.23	1.89	2.00
1914-15 ...	12.88	17.36	13.68	6.51	14.12	7.84

The tonnage which entered each State of the Commonwealth, in ballast, during 1914-15, was as follows:—

**TONNAGE OF OVERSEA VESSELS IN BALLAST WHICH ENTERED EACH STATE AND
THE NORTHERN TERRITORY DURING 1914-15.**

State ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	C'wealth.
Tonnage ...	279,604	140,107	24,591	18,667	102,755	5,473	16	571,213
Percentage of total ...	48.95	24.53	4.30	3.27	17.99	0.96	0.00	100.00

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 South Australia for wheat and ore, and into Western Australia for timber and cattle.

§ 3. Shipping of Ports.

1. Shipping of Ports.—Appended is an abstract of the total shipping tonnage—over-sea and coastwise—which entered the more important ports of Australia during the year 1914-15, together with similar information in regard to some of the ports of New Zealand for the year 1914, 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—	
Sydney ...	8,164,333	London ...	20,088,071
Melbourne ...	5,658,930	Liverpool (inc. Birkenhead) ...	15,574,989
Newcastle ...	4,097,060	Cardiff ...	12,603,349
Brisbane ...	2,686,917	Tyne ports ...	11,701,605
Port Adelaide ...	*2,603,156	Southampton ...	8,268,860
Fremantle ...	1,659,679	Hull ...	5,904,698
Albany ...	1,485,850	Plymouth ...	4,717,738
Townsville ...	1,463,303	Newport ...	3,630,681
Mackay ...	1,006,073	Middlesbrough ...	3,416,582
Rockhampton ...	881,986	Swansea ...	3,374,439
Hobart ...	709,107	Sunderland ...	3,288,949
Bowen ...	686,654	Grimsby ...	3,056,578
Cairns ...	675,885	Bristol ...	2,732,832
Thursday Island ...	420,198	Manchester ...	2,685,184
Geelong ...	397,788	Dover ...	2,606,277
Port Pirie ...	357,722	SCOTLAND—	
Wallaroo ...	349,848	Glasgow ...	6,101,819
NEW ZEALAND—		Leith ...	2,344,195
Wellington ...	3,375,015	IRELAND—	
Lyttelton ...	2,195,795	Cork (inc. Queenstown) ...	4,317,966
Auckland ...	1,918,093	Belfast ...	3,345,779
Dunedin ...	972,029	Dublin ...	2,495,854

* Exclusive of coastal shipping, particulars of which are not available.

From the figures above it may be seen that the shipping business of the port of Sydney is exceeded by that of five ports only in the United Kingdom, viz., London, Liverpool, Cardiff, the Tyne, and Southampton.

§ 4. Vessels Built and Registered.

1. **Vessels Registered.**—The following table shows 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, 1914.

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 ...	47	1,719	591	107,101	93	1,628	377	29,868	51	9,690	1,159	150,006
Victoria ...	25	2,561	171	121,218	21	792	111	3,872	90	30,774	418	159,217
Queensland ...	23	3,089	79	11,492	19	190	129	2,409	41	4,141	291	21,321
South Australia ...	22	722	95	54,699	4	97	96	4,893	73	13,456	290	73,867
Western Australia ...	13	247	36	20,095	5	159	301	4,968	29	7,599	384	33,068
Tasmania ...	5	302	56	5,798	37	885	115	4,015	2	563	215	11,563
Northern Territory	...	...	2	62	...	...	38	533	...	...	40	595
Total ...	135	8,640	1,030	320,465	179	3,751	1,167	50,558	286	66,223	2,797	449,637

2. **Vessels Built.**—The following tables shew the number and tonnage of vessels built in the Commonwealth during each of the years 1901-1914, 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 1914.

NUMBER.

Year.	Steamers Built of—					Oil Motor Vessels.	Sailing.	Pontoons, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Com-posite.	Total.				
1901 ...	18	...	1	...	19	4	39	...	62
1902 ...	29	...	...	1	30	8	74	1	113
1903 ...	15	1	2	...	18	17	156	2	193
1904 ...	14	...	1	1	16	13	74	...	103
1905 ...	15	...	4	...	19	22	17	2	60
1906 ...	12	1	1	...	14	22	20	3	59
1907 ...	17	...	...	1	18	12	34	1	65
1908 ...	13	...	3	...	16	18	17	2	53
1909 ...	10	...	...	...	10	12	35	1	58
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	1	57
1913 ...	16	...	2	...	18	12	28	...	58
1914 ...	10	...	...	...	10	3	21	1	35

VESSELS BUILT IN THE COMMONWEALTH, 1901 TO 1914—continued.

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	1,083	958	...	...	3,394	2,242
1902 ...	3,166	1,849	96	82	2,409	2,087	64	64	5,735	4,082
1903 ...	1,569	956	624	455	3,179	2,731	385	350	5,757	4,492
1904 ...	2,094	1,240	161	125	1,607	1,388	...	...	3,862	2,753
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	791	736	152	145	3,432	2,279
1908 ...	2,492	1,317	265	199	493	418	260	260	3,510	2,194
1909 ...	1,351	735	184	151	789	664	98	98	2,422	1,648
1910 ...	1,944	1,105	137	124	807	691	688	646	3,576	2,566
1911 ...	2,092	1,116	143	115	779	694	762	720	3,776	2,645
1912 ...	2,592	1,592	391	304	673	579	78	78	3,734	2,553
1913 ...	2,177	1,167	300	205	494	472	...	...	2,971	1,844
1914 ...	2,181	1,176	22	15	408	363	43	43	2,654	1,597

§ 5. Interstate Shipping.

1. **Total Vessels and Tonnage.**—In the following tables are shewn 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 clearing from each State to other Commonwealth States. The table gives results for the quinquennial intervals since 1891 and for 1914-15. The shipping on the Murray River, between the States of New South Wales, Victoria and South Australia, is not included:—

INTERSTATE SHIPPING, 1891 to 1914-15.—NUMBER OF VESSELS.

ENTERED.

State.	1891.	1896.	1901.	1906.	1911.	1914-15.
New South Wales ...	1,692	1,470	1,611	1,575	1,791	1,934
Victoria ...	1,525	1,280	1,502	1,561	1,648	1,732
Queensland ...	376	439	430	478	567	584
South Australia ...	611	823	650	752	789	662
Western Australia ...	149	520	446	335	415	349
Tasmania ...	680	567	713	840	864	909
Northern Territory ...	*	*	*	*	39	49
Total ...	5,033	5,099	5,352	5,541	6,113	6,219

CLEARED.

	1891.	1896.	1901.	1906.	1911.	1914-15.
New South Wales ...	1,415	1,275	1,473	1,417	1,728	1,792
Victoria ...	1,733	1,380	1,569	1,610	1,765	1,890
Queensland ...	389	455	395	431	572	554
South Australia ...	716	918	756	802	900	766
Western Australia ...	158	496	456	363	394	341
Tasmania ...	679	573	694	809	836	884
Northern Territory ...	*	*	*	*	40	39
Total ...	5,090	5,097	5,343	5,432	6,235	6,266

INTERSTATE SHIPPING, 1891 TO 1914-15.—NUMBER OF VESSELS—contd.

TOTAL.

State.	1891.	1896.	1901.	1906.	1911.	1914-15.
New South Wales ...	3,107	2,745	3,084	2,992	3,519	3,726
Victoria ...	3,258	2,660	3,071	3,171	3,413	3,622
Queensland ...	765	894	825	909	1,139	1,138
South Australia ...	1,327	1,741	1,406	1,554	1,689	1,428
Western Australia ...	307	1,016	902	698	809	690
Tasmania ...	1,359	1,140	1,407	1,649	1,700	1,793
Northern Territory ...	*	*	*	*	79	88
Total ...	10,123	10,196	10,695	10,973	12,348	12,485

* Included with South Australia.

INTERSTATE SHIPPING, 1891 to 1914-15.—TONNAGE.

ENTERED.

State.	1891.	1896.	1901.	1906.	1911.	1914-15.
New South Wales	1,617,559	1,589,753	2,031,089	2,456,269	3,318,605	4,033,368
Victoria ...	1,392,818	1,486,624	1,956,900	2,473,771	2,959,551	3,246,141
Queensland ...	267,753	343,026	545,469	692,354	840,052	1,169,991
South Australia ...	658,600	1,051,893	1,124,499	1,582,802	1,970,490	1,801,181
Western Australia ...	237,708	683,918	973,474	968,664	1,378,800	1,363,190
Tasmania ...	371,205	281,029	485,023	721,240	895,546	818,124
North'm Territory	*	*	*	*	64,518	106,433
Total ...	4,545,643	5,436,243	7,116,454	8,895,100	11,427,562	12,538,428

CLEARED.

State.	1891.	1896.	1901.	1906.	1911.	1914-15.
New South Wales	1,314,339	1,341,635	1,856,501	2,177,496	3,209,723	3,612,502
Victoria ...	1,692,189	1,599,065	2,038,424	2,617,966	3,233,531	3,653,856
Queensland ...	302,723	359,046	440,659	578,561	855,776	1,002,809
South Australia ...	829,616	1,203,830	1,365,668	1,772,356	2,343,269	2,169,611
Western Australia ...	269,256	687,632	977,846	1,051,629	1,303,359	1,210,138
Tasmania ...	352,406	250,557	433,735	636,944	728,170	721,144
North'm Territory	*	*	*	*	66,357	76,476
Total ...	4,760,529	5,441,765	7,112,833	8,834,952	11,740,185	12,451,536

TOTAL.

State.	1891.	1896.	1901.	1906.	1911.	1914-15.
New South Wales	2,931,898	2,931,388	3,887,590	4,633,765	6,528,328	7,645,870
Victoria ...	3,085,007	3,085,689	3,995,324	5,091,737	6,193,082	6,904,997
Queensland ...	570,476	702,072	986,128	1,270,915	1,695,828	2,172,800
South Australia ...	1,488,216	2,255,723	2,490,167	3,355,158	4,313,759	3,970,792
Western Australia ...	506,964	1,371,550	1,951,320	2,020,293	2,682,159	2,573,328
Tasmania ...	723,611	531,586	918,758	1,358,184	1,623,716	1,539,268
North'm Territory	*	*	*	*	130,875	182,909
Total ...	9,306,172	10,878,008	14,229,287	17,730,052	23,167,747	24,989,964

* 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 section 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 1914-15, 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 OVERSEAS COUNTRIES VIA
OTHER COMMONWEALTH STATES, 1914-15.**

State.	Entered.		Cleared.		Total.		
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	
New South Wales ...	440	1,653,893	416	1,653,996	856	3,307,889	
Victoria ...	356	1,383,057	353	1,389,614	709	2,772,671	
Queensland ...	153	604,175	171	750,424	324	1,354,599	
South Australia ...	141	581,385	84	391,160	225	972,545	
Western Australia ...	20	80,610	4	9,161	24	89,771	
Tasmania ...	14	36,411	46	203,918	60	240,329	
Total ...	1914-15	1,124	4,339,531	1,074	4,398,273	2,198	8,737,804
	1906 ...	1,045	3,349,036	1,107	3,442,747	2,152	6,791,783

2. **Total Interstate Movement of Shipping.**—From the foregoing it has been seen 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 INTERSTATE MOVEMENT OF SHIPPING, 1910 to 1914-15.

	1910.	1911.	1912.	1913.	1914-15.
	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate ...	9,223,166	10,049,659	10,711,434	11,472,490	8,737,804
Vessels solely interstate ...	6,384,108	6,548,069	6,809,428	8,080,267	8,140,155
Total ...	15,607,274	16,597,728	17,520,862	19,552,757	16,877,959

The following table shews the number and tonnage of vessels which entered and cleared each State during 1914-15, including the coastal movements of oversea vessels :—

INTERSTATE SHIPPING OF EACH STATE, 1914-15.

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage	Vessels.	Tonnage.
New South Wales ...	2,374	5,687,261	2,208	5,266,498	4,582	10,953,759
Victoria ...	2,088	4,629,198	2,243	5,048,470	4,331	9,677,668
Queensland ...	737	1,774,166	725	1,753,238	1,462	3,527,399
South Australia ...	803	2,382,566	850	2,560,771	1,653	4,943,337
Western Australia ...	369	1,443,800	345	1,219,299	714	2,663,099
Tasmania ...	923	854,535	930	925,062	1,853	1,779,597
Northern Territory ...	49	106,433	39	76,476	88	182,909
Total ...	1914-15	7,343	16,877,959	7,340	16,849,809	...
	1906 ...	6,586	12,244,136	6,539	12,277,699	...

3. **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 1910 to 1914-15 will be found to be as follows:—

NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1910 to 1914-15.

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1910 ...	4,645	6,384,108	4,674	6,471,566
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

This treatment cannot be extended to the individual States, as the records do not disclose the particular relationship of the States concerned.

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 rapid vessels, until at the end of the year 1914 the total net tonnage owned by the twenty-three companies from whom returns have been received amounted to 206,424 tons. A summary of the various mail services carried on during the year 1916 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 1910 to 1914. The figures for 1910 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 1910 to 1914.

Particulars.	1901.	1910.	1911.	1912.	1913.	1914.
Number of companies making returns ...	11	24	24	24	23	23
Number of steamships ...	113	180	178	180	190	174
Tonnage { Gross ...	184,574	291,470	288,181	311,144	364,967	340,852
Net ...	114,080	172,410	170,062	179,996	206,340	206,424
Horse-power { Nominal ...	18,237	22,128	29,456	32,520	37,655	35,722
Indicated ...	122,519	245,608	249,388	276,703	321,754	288,856
Number of passengers { 1st class ...	4,617	7,041	8,616	9,084	9,826	8,068
for which licensed to { 2nd class ...						
carry { steerage ...	4,490	6,395	6,256	6,376	7,635	8,666
Complement { Masters and officers ...	403	600	590	604	649	622
of Crew { Engineers ...	332	499	491	509	559	527
Crew ...	2,875	4,440	4,369	4,609	5,506	5,493

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 shews the number and tonnage of vessels wrecked, or otherwise lost, on the coast of the Commonwealth, or under the jurisdiction of the several States, during the years 1901 and 1906 to 1914 :—

NUMBER AND TONNAGE OF VESSELS WRECKED,* 1901 and 1906 to 1914.

Year.	Class of Vessel.	Number and Tonnage of Vessels.										Passengers and Crew.	Lives Lost.
		Under 50 tons.		50 to 500 tons.		500 to 2000 tons.		Over 2000 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
1906	Steam ...	4	89	2	154	...	...	1	2,415	7	2,658	60	12
	Sailing ...	5	77	3	276	1	1,725	2	5,022	11	7,100	105	1
	Total ...	9	166	5	430	1	1,725	3	7,437	18	9,758	165	13
1907	Steam ...	3	71	4	916	3	3,572	...	...	10	4,559	204	16
	Sailing ...	8	162	6	421	5	6,895	...	...	19	7,478	170	29
	Total ...	11	233	10	1,337	8	10,467	...	...	29	12,037	374	45
1908	Steam ...	6	137	7	816	2	2,930	2	5,585	17	9,468	299	37
	Sailing ...	56	775	3	276	3	4,074	1	2,062	63	7,187	348	219
	Total ...	62	912	10	1,092	5	7,004	3	7,647	80†	16,655	647	256
1909	Steam ...	1	48	3	359	1	1,382	1	2,286	6	4,075	131	40
	Sailing ...	6	163	3	362	2	2,681	...	...	11	3,206	88	6
	Total ...	7	211	6	721	3	4,063	1	2,286	17	7,281	219	46
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

* In some cases the vessels included in the above return were subsequently recovered. † The large number of wrecks during 1908 was due to cyclones on the north-west coast of Western Australia destroying a large number of the pearling vessels. ‡ Not including two dredges, particulars of whose tonnage are not available.

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.

2. **Expenditure on Roads and Bridges.**—Figures shewing 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, 1915:—

**ROADS AND BRIDGES.—TOTAL GOVERNMENT LOAN EXPENDITURE TO THE
30th JUNE, 1915.**

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.*	C'wealth.
Expenditure.	£1,861,738	£469,261	£923,656	£1,520,484	£427,040	£4,639,286	£9,841,465

* Including harbours, rivers, and lighthouses.

The following table shews the annual expenditure from loans on roads and bridges by the central Governments in each State and in the Commonwealth during the year 1901 and from 1910 to 1915:—

**ROADS AND BRIDGES.—LOAN EXPENDITURE BY STATE GOVERNMENTS,
1901-2 and 1910-15.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1901-2 ...	150,777	47,104	...	185	740	77,536 ¹	276,342
1910-11 ...	...	183	...	...	52,296	80,816	133,295
1911-12 ...	...	...	...	...	35,414	145,556	180,970
1912-13 ...	53,263	...	...	...	37,037	183,625 ²	273,925
1913-14 ...	23,553	...	...	17,838	...	191,428 ²	232,819
1914-15 ...	8,609	274,362	...	37,910	31,974	424,584	777,439

1. For the calendar year 1902. 2. See note * to previous table.

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 (see Section xxvi. *Local Government*). 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 District Councils. 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 June, 1915, 31 miles of roads, 350 bridges, 55 wharves, 99 jetties, and 14 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.; 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 1914 was approximately 94,796 miles, of which 9762 miles were controlled by municipalities, 79,079 by the shires, and 5945 miles were in the unincorporated areas of the Western Division. The following table gives particulars for the year 1913-14 (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, 1913-14.

Classification.				Metalled. Ballasted. Gravelled etc.	Formed only.	Cleared only.	Natural surface.	Total.
				Miles.	Miles.	Miles.	Miles.	Miles.
Metropolitan...	...	...	...	1,172	353	216	244	1,985
Country municipalities	...	...	...	2,553	1,549	1,851	1,824	7,777
Shires	...	...	...	12,631	9,247	22,076	35,135	79,089
Western Division	...	...	...	91	145	3,160	2,549	5,945
Total	...	...	...	16,447	11,294	27,303	39,752	94,796

(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 1913-14, the latest year for which figures are available, are given in the following table:—

NEW SOUTH WALES.—BRIDGES, CULVERTS, AND FERRIES, 1913-14.

Particulars.	Bridges.		Culverts.		Ferries.
	No.	Length.	No.	Length.	No.
		ft.		ft.	
"National" works	273	*	...	...	13
Metropolitan... ..	127	5,486	748	46,173	...
Country municipalities	647	37,704	3,335	89,943	13
Shires	3,435	202,704	32,394	285,989	99
Western Division (unincorporated)	117	20,576	88	845	3
Total	4,599	*	36,565	422,950	128

* Not available.

(iv.) *Expenditure on Roads and Bridges.* Since the year 1857 the total expenditure by the Roads Department and Roads Trust on roads and bridges is £25,146,612. 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 1915, 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 ROAD DEPARTMENTS AND ROAD TRUSTS, 1857 to 1915.

Period.	Expenditure by Roads Department.	Expenditure by Trustees.	Total.
	£	£	£
1857 to 30th June, 1900	18,714,078	1,258,027	19,972,105
1900-09	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
Total	23,857,921	1,288,691	25,146,612

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, who 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.

(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 half the amount expended on permanent works and maintenance is to be refunded by the municipalities affected.

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 rateable 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, are to be credited to the Country Roads Board Fund.

Up to the 30th June, 1915, there were 6420 miles of declared main roads, agreed to by the councils, and gazetted. In addition, there were 192 miles of proposed main roads not yet gazetted. The total amount of authorized contracts for permanent works was £496,878, affecting 92 municipalities. The expenditure incurred during the year ending 30th June, 1915, including contracts, day labour, and material supplied, amounted to £342,681. The net receipts for the year were £60,368, of which amount the chief items were: motor registration fees, £32,434, and unused roads and water frontages license fees, £23,526.

(ii.) *General and Local Government Expenditure.* The gross amount expended directly by the State Government of Victoria on roads and bridges was £8,724,027 up to the end of June, 1915. 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 1911 to 1915:—

VICTORIA.—EXPENDITURE ON ROADS AND BRIDGES, 1901 and 1911 to 1915.

Financial Year. ¹	Annual Expenditure by State Government.	Municipal Loan Expenditure.		Formation of Private Roads, Streets, Lanes, etc. ²	
		Cities, Towns, and Boroughs.	Shires.	Cities, Towns, and Boroughs.	Shires.
	£	£	£	£	£
1901	72,890	16,844	12,928	18,829	4,521
1911	67,001	41,247	24,978	41,167	5,682
1912	58,917	28,237	31,940	59,845	6,890
1913	73,374	49,743	30,758	51,034	5,566
1914	56,649	57,411	23,749	59,093	11,372
1915	47,898	103,124	40,129	53,365	8,647

1. 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.

2. Including the cost of flagging, asphaltting footpaths, etc., but exclusive of loan expenditure.

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) towns and (b) 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. 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 the section of this book on *Local Government*.

6. **South Australia.**—Under the provisions of the District Councils Acts 1887 to 1904, and the Municipal Corporations Acts 1890 to 1903, and of the Roads Acts 1884 to 1908, 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 main road fund, 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 1908, a number of roads were declared to be main roads.

The total estimated length of streets and roads in South Australia up to the 30th June, 1914, was as follows:—

SOUTH AUSTRALIA.—ESTIMATED LENGTH OF ROADS AND STREETS, 1914.

Particulars.	Woodblocked.	Macadamised.	Other.	Total.
Miles	2	8,436	27,686	36,124

(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 1901-2, and each year from 1910 to 1914 inclusive:—

SOUTH AUSTRALIA.—EXPENDITURE BY CORPORATIONS ON STREETS, ROADS, AND BRIDGES, 1901 and 1910-14.

Year. ¹	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
1910	4,031	70,660	14,392	16,000	1,178	13,999
1911	5,673	63,897	12,935	14,294	1,053	13,634
1912	10,907	59,609	11,477	11,865	322	12,590
1913	31,797	89,830	11,817	13,128	463	13,142
1914	8,909	95,970	12,573	13,516	361	11,949

1. 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 1910-14.

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
1910	33,853	64,079	106,096	106,221	10,752	76,150
1911	44,289	63,811	110,397	111,182	24,660	82,115
1912	54,342	68,108	119,331	123,154	20,414	102,759
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

7. **Western Australia.**—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State, except those within the boundaries of municipalities, are under the control of District Road Boards, constituted by the Roads Act 1911.

(i.) *District Roads and Bridges.* Under the provisions of this Act 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 and sixpence 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. 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 Act 1906. 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 Road District Boards since the 1st January, 1910 :—

WESTERN AUSTRALIA.—PARTICULARS OF ROADS UNDER CONTROL OF DISTRICT ROADS BOARDS, 1910 to 1914.

Year ended the 30th June.	Area.	Revenue.				Expenditure.	Length of Roads.*				No. of Bridges and Culverts.	
		From Rates.	From Grants and Subsidies.	From other Sources.	Total.		Cleared only.	Formed only.	Metalled or otherwise Constructed.	Total.	Bridges.	Culverts.
Sq. m.	£	£	£	£	£	Miles.	Miles.	Miles.	Miles.	No.	No.	
1910 ...	975,793	54,115	61,301	14,201	129,617	114,947	14,167	4,622	2,958	21,747	678 ¹	4,853 ⁴
1911 ...	975,800	59,302	100,126	16,474	175,902	141,015	15,169	4,874	3,119	23,162	653	5,211
1912 ...	975,809	70,397	64,774	36,497	171,668	196,576	16,484	4,555	3,432	24,471 ²	719 ²	5,808 ³
1913 ...	975,815	80,551	60,687	29,770	171,008	184,587	19,236	4,429	3,651	27,316 ³	721 ⁴	6,157 ⁴
1914 ...	975,815	93,705	63,671	46,023	203,399	187,800	19,921	4,626	3,804	28,351 ³	731 ¹	6,450 ¹

* Approximate only.

1. Exclusive of two Boards which have not supplied the information. 2. Exclusive of five Boards. 3. Exclusive of four Boards. 4. Exclusive of three Boards.

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 1910-14.**

Year ended the 31st October.	No. of Municipalit ^s .	Length of Streets and Roads.*					Revenue.		Expenditure.	
		Paved, M't'll'd or Gr'y'll'd	Form'd only.	Clear'd only.	Not Clear'd	Total.	From Rates.	From Grants.	Works and Impr'v- ments.	Street Light'g and Wat'r'g
		Miles.	Miles.	Miles.	Miles.	Miles.	£	£	£	£
1901	42	195	30	149	137	511	78,021	66,850	111,256	15,969
1910	42 ¹	525	104	309	297	1,235	138,719	13,336	87,998	30,965
1911	42	521	105	292	294	1,202	144,933	27,944	75,697	30,341
1912	36 ²	529	103	278	312	1,221	148,538	25,902	78,576	27,322
1913	33	544	95	267	266	1,172	153,966	19,382	159,445	26,089
1914	33	551	95	258	256	1,160	153,686	13,142	225,099	19,055

* Approximate only.

1. Exclusive of three municipalities which have not supplied the information. 2. Including particulars of four municipalities which were dissolved during the year.

8. **Tasmania.**—In 1906 all the existing Road Trusts and Main Road Boards were abolished by the Local Government Act, which 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 and Main Road Boards by the Roads Act of 1884. The whole State is divided into municipal districts, 49 rural and 2 city, each rural district being under the control of a warden and councillors, and deemed to be a road district and a main road district for the purposes of the Roads Act 1884.

(i.) *Mileage of Roads and Number of Bridges.* The following table gives particulars for the year 1914 as to length of roads and number of bridges and culverts under the control of the municipalities:—

TASMANIA.—ROADS AND BRIDGES IN MUNICIPALITIES, 1914.

Roads.			Bridges.	Culverts.
Macadamised or Gravelled.	Other.	Total.		
Miles. 5,825	Miles. 4,982	Miles. 10,807	No. 1,120*	No. 19,702*

* Last available figures.

(ii.) *Revenue and Expenditure.* The following table gives particulars for the year 1914 of the revenue and expenditure of municipal councils in respect of roads and bridges:—

TASMANIA.—ROADS AND BRIDGES, REVENUE AND EXPENDITURE, 1914.

Revenue.				Expenditure.
From Government.	Rates.	All other. ¹	Total.	
£ 14,416	£ 51,012	£ 163,260	£ 228,688	£ 202,602

1. Including current receipts from loans. 2. Municipal "Works and Services."

§ 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 issue for last year 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.

2. **Railway Statistics.**—In previous 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* (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 previous issues of the 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 roughly running parallel to the coast. These are shewn on the map on page 645. In the east, lines radiating from 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 and meeting the main line from Melbourne on the border of South Australia and Victoria. The main interstate line (indicated by a heavier line in the map), which permits of direct communication between the four capital cities—Brisbane, Sydney, Melbourne, and Adelaide—covers a distance from end to end of 1790½ miles. This journey occupies three days, two hours and ten minutes. In the opposite direction the journey occupies three days, three hours and twenty minutes. Both of these are actual times. The distances and the times occupied between the capitals and the duration of stops at Sydney and Melbourne are as follows:—

From—	To—	Distance.	Time (Actual).	Stops at—	
				Sydney.	Melbourne.
		Miles.	h. m.	h. m.	h. m.
Brisbane ...	Sydney ...	725	25 50	9 55	...
Sydney ...	Melbourne ...	582½	16 51	...	3 39
Melbourne ...	Adelaide ...	482½	17 55	...	...
Brisbane ...	Adelaide ...	1,790½	60 36	9 55	3 39
Adelaide ...	Melbourne ...	482½	16 59	...	7 1
Melbourne ...	Sydney ...	582½	17 10	8 40	...
Sydney ...	Brisbane ...	725	25 30	...	...
Adelaide ...	Brisbane ...	1,790½	59 39	8 40	7 1

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Longreach in Queensland to Oodnadatta in South Australia, a total distance of 3303 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.

In the northern parts of Queensland and in the Northern Territory there are also number of 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. 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, 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 passing 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 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. Recently, however, the Queensland Government has purchased two short lengths of line laid on a 2-ft. gauge. In South Australia the broad gauge of Victoria was at first adopted, and the part of the interstate line between Adelaide and the Victorian boundary was constructed to that gauge, so that the line from Melbourne to Adelaide is uniform. In the lines which have been constructed more recently, however, and in the Northern Territory, the South Australian Government has, with a view to economy in construction, adopted a gauge of 3-ft. 6-in. In Western Australia and Tasmania the 3-ft. 6-in. gauge was also adopted. 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, light railways have been constructed in recent years to a gauge of 2-ft. 6-in., whilst in Tasmania short lengths have been laid down to a 2-ft. gauge.

5. 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 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, 2900 feet in length, and railway communication was thus established between the four capital cities, Brisbane, Sydney, Melbourne, and Adelaide.

The effect of the east to west transcontinental railway now under construction by the Commonwealth Government and to which reference is made in "B" hereof, will be that Western Australia will also be linked to the other States, and an unbroken line of communication established from one end 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.

6. 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. 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 Government railways only, the New South Wales gauge has a mileage of 4134 (4094 of 4 ft. 8½ in. gauge and 40 of 3 ft. 6 in. gauge); Victoria and South Australia have a combined mileage of 4723 of 5 ft. 3 in. gauge; while Queensland, South Australia, Western Australia, and the Northern Territory have together 9952 miles of 3 ft. 6 in. gauge. 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 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 is that there would be no necessity for the alteration of tunnels, cuttings, bridges, or viaducts.

In 1897 a conference was held between the Railway Commissioners of New South Wales, Victoria, and South Australia to consider and report upon the unification of the railway gauges of these States. In their report the Commissioners estimated the cost of converting all the lines in the three States to a 5 ft. 3 in. gauge at £4,260,000, and to one of 4 ft. 8½ in. at £2,360,500. In 1903 the question was again brought up, more particularly with regard to the proposed transcontinental line, and the Engineers-in-Chief reported in favour of a gauge of 4 ft. 8½ in. At the Premiers' Conference, held in January 1912, the subject was again under consideration, but no decision was come to.

In November 1912, another conference of railway engineers, representing the six States and the Federal Government, was held, and the question of unification of gauge was again discussed. The necessity for such a step was emphasised, and a conclusion was come to that the relative advantages of the 5 ft. 3 in. and 4 ft. 8½ in. gauges, from the point of view of efficiency and economy of working, were approximately equal, and that the determination of the most suitable gauge should be made on the basis of cost. Owing, however, to the fact that track mileage, ton mileage, and wage, had at the time increased 90, 200, and 50 per cent. respectively since 1897, together with a correspondingly large increase in the cost of material, the Conference estimated the cost of converting all lines to a 5 ft. 3 in. gauge at £51,659,000 and to a 4 ft. 8½ in. gauge at £37,164,000. It recommended that the latter gauge should be adopted, and pointed out

that the longer the work of conversion was delayed, the greater the cost would become. An alternative scheme by which the main trunk lines and more important branches should be converted was also proposed, as possibly meeting immediate requirements, and being, from a Federal point of view, perhaps a more attractive proposition than any other which could be suggested at the present time. The estimated cost of this limited scheme was £12,142,000. The subject was again under discussion at the Premiers' Conference, held in Melbourne in April 1914, when it was decided to refer the matter to the Interstate Commission, that the latter body might furnish a report as to the benefits of unification, its cost, and the apportionment of such cost.

In May 1915 another Premiers' Conference took place at Sydney, and the uniform gauge question again received consideration, with the result that the following resolution was carried without dissent:—"That . . . two leading railway experts, preferably from outside Australia, should be forthwith appointed by the Government of the Commonwealth and the mainland States to . . . report on—(1) the need of a uniform gauge, (2) the most suitable gauge, (3) the best method of carrying out uniformity, (4) what benefits would result to the Commonwealth and to the States, and (5) the probable cost."

7. **Loading Gauges.**—Allied to the question of the gauges of the railways of Australia is that of the loading gauges which are in use, the loading gauge being the maximum dimensions to which the rolling stock may be constructed. In the following tables will be found particulars of the loading gauges at present in use on the Government railways, State and Federal:—

LOADING GAUGES IN USE ON STATE AND FEDERAL GOVERNMENT RAILWAYS.

PASSENGER ROLLING STOCK.

Railways.	Gauge.	Maximum—					
		Width.	Height ab'v'e Rail Level.	Length over all.	Tare.		
	ft. in.	ft. in.	ft. in.	ft. in.	T.	c.	q.
New South Wales ...	4 8½	9 7½	13 10½	74 4½	44	2	1
Victoria ...	5 3	9 11½	14 0½	74 1½	46	17	2
„ ...	2 6	7 0½	10 4½	31 8	8	11	0
Queensland ...	3 6	9 4	12 9	53 5	26	0	0
„ ...	2 0	6 3¾	10 0	22 0	3	0	0
South Australia ...	5 3	10 4½	14 1½	74 1½	37	11	2
„ ...	3 6	9 4½	12 1	62 6	24	18	0
Western Australia ...	3 6	8 10	12 7	60 4	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 ...	4 8½	10 6	14 6	75 0	58	0	0

GOODS ROLLING STOCK.

Railway.	Gauge.	Maximum—					
		Width.	Height ab'v'e Rail Level.	Length over all.	Tare.	Carrying Capacity.	
	ft. in.	ft. in.	ft. in.	ft. in.	T.	c.	q.
New South Wales ...	4 8½	9 8	13 6	60 11	20	10	3
Victoria ...	5 3	9 7½	13 5	55 4½	20	6	0
" ...	2 6	6 5½	9 7½	27 3½	7	12	2½
Queensland ...	3 6	8 0	12 0	45 5	11	10	0
" ...	2 0	6 6	9 0	22 0	4	10	0
South Australia ...	5 3	10 0½	12 10½	48 6	16	0	0
" ...	3 6	8 6	12 1	38 9	11	15	0
Western Australia ...	3 6	8 10	12 6	44 9	17	18	0
Tasmania ...	3 6	8 10	11 0	40 10	12	5	0
" ...	2 0	6 0	6 6	27 0	5	15	2
Federal ...	4 8½	10 6	14 6	45 0	15	0	0

In the above tables the dimensions given are not necessarily those of one particular vehicle, but are the greatest employed on any vehicle.

8. 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 practically the whole of the railway traffic in the Commonwealth is in the hands of the various State Governments. A large proportion of the private lines which are at present running have been laid down for the purpose of opening up forest lands or mining districts, and are not generally used for the conveyance of passengers or the public conveyance of goods. (See E. *Private Railways*, hereinafter.)

Mileage of Government and Private Lines, 1855 to 1915. The subjoined table shews 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 1915. 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; 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 all cases taken for the calendar year:—

GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OPEN 1855 to 1915.

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wlth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1855	14	2½	...	6½	...	...	...	23½
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	2,656	2,425	145	10,123
1900-1... ..	2,926	3,238	2,904	1,736	1,984	3,618	145	13,551
1910-11	4,027	3,574	4,390	1,993	3,208	675	145	18,012
1912-13	4,197	3,698	4,936	2,202	3,827½	729	145	19,734½
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

1. To the 31st December. The line between Goolwa and Port Elliot was opened in 1854 as a horse tramway, but now forms part of the railway system. 2. To the 31st December, 1891. 3. 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 following periods from June 1891 to June 1901, and from June 1901 to June 1911, were 343 and 452 miles respectively. Since June, 1911, the average annual length opened for traffic has been 850 miles.

9. Comparative Mileage of Government and Private Lines, 1915.—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 of course 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, 1915; those given for private lines are to the 31st December, 1914 :—

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARATIVE MILEAGE OF GOVERNMENT LINES, OF PRIVATE LINES AVAILABLE FOR GENERAL TRAFFIC, AND OF PRIVATE LINES NOT SO AVAILABLE, 1914-15.

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.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	¹ 4,139	181	4,320	124	4,444
Victoria...	3,875	24½	3,899½	37	3,936½
Queensland ...	4,888	⁴ 497½	5,385½	114	5,449½
South Australia ...	² 2,921	...	2,921	34	2,955
Western Australia	³ 3,610	277	3,887	666	4,553
Tasmania ...	533	163½	696½	83	779½
Northern Territory	146	...	146	...	146
Total ...	20,062	1,143½	21,205½	1,058	22,263½

1. Including the Queanbeyan-Canberra Line (5 miles). 2. Including the Port Augusta-Oodnadatta Line (478 miles), and Kalgoorlie-Port Augusta Line (286 miles). 3. Including the Kalgoorlie-Port Augusta Line (278 miles). 4. Exclusive of Mount Garnet Line (33 miles), included in mileage of Queensland Government Railways.

10. Comparative Railway Facilities in Different States, 1915.—The area of territory and the population per mile of line open to the public for general traffic (including both Government and private lines) on the 30th June, 1915, are shewn in the subjoined statement for each State and also for the Commonwealth :—

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARISON OF RAILWAY FACILITIES IN DIFFERENT STATES, 1915.

State or Territory.	Population, 30th June, 1915.	Area.	Per Mile of Line Open.	
			Population.	Area.
	Number.	Sq. miles.	Number.	Sq. miles.
New South Wales ¹ ...	1,871,398	310,372	421	69.84
Victoria ...	1,426,415	87,884	362	22.33
Queensland ...	689,678	670,500	126	123.04
South Australia ...	438,195	380,070	148	128.62
Western Australia ...	322,526	975,920	71	214.35
Tasmania ...	198,417	26,215	255	33.63
Northern Territory ...	4,448	523,620	30	3,586.44
Total ...	4,951,077	2,974,581	222	133.61

1. Including Federal Territory.

11. Classification of Lines according to Gauge, 1914-15.—The subjoined tables shew the total mileage, exclusive of sidings and cross-overs, of (i.) Commonwealth Government railways, given in the State in which situated; (ii.) State Government railways; (iii.) Private railways open to the public for general traffic; and (iv.) Private lines used for special purposes, classified according to gauge. Particulars of Government railways are up to 30th June, 1915, of private railways open for general traffic to the 31st December, 1914, and of private railways open for special purposes to the 31st December, 1913.

**GOVERNMENT AND PRIVATE RAILWAYS.—CLASSIFICATION ACCORDING
TO GAUGE, 1914-15.**

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.	
FEDERAL RAILWAYS.							
South Australia ...	Miles. ...	Miles. 286	Miles. 478	Miles. ...	Miles. ...	Miles. ...	Miles. 764
Western Australia ...	...	278	...	...	...	...	278
Northern Territory...	...	...	146	...	...	...	146
Federal Territory ...	...	5	...	...	...	...	5
Total... ..	...	569	624	...	...	...	1,193
STATE RAILWAYS.							
New South Wales ...	...	4,094	40	...	...	...	4,134
Victoria ...	3,753	...	...	...	122	...	3,875
Queensland ...	...	...	4,809	...	...	29	4,838
South Australia ...	970	...	1,187	...	...	...	2,157
Western Australia ...	...	...	3,332	...	...	...	3,332
Tasmania ...	...	...	509	...	...	24	533
Total... ..	4,723	4,094	9,877	...	122	53	18,869
PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.							
New South Wales ...	45	74	36	...	...	26	181
Victoria ...	14	...	...	10½	...	...	24½
Queensland ...	...	...	405½	...	...	91½	497½
South Australia ...	...	...	...	...	...	...	...
Western Australia ...	...	...	277	...	...	...	277
Tasmania ...	...	...	153½	...	...	10	163½
Total... ..	59	74	872½	10½	...	127½	1,143½
PRIVATE RAILWAYS OPEN FOR SPECIAL PURPOSES.							
New South Wales ...	...	120½	3½	...	...	...	124
Victoria ...	37	...	...	...	...	...	37
Queensland ...	...	...	65½	...	...	48½	114
South Australia ...	...	...	34	...	...	...	34
Western Australia ...	...	...	598½	...	...	1 67½	666
Tasmania ...	...	...	68½	...	...	14½	83
Total... ..	37	120½	769½	...	...	130½	1,058
ALL RAILWAYS.							
New South Wales ...	45	4,288½	79½	...	...	26	4,439
Victoria ...	3,804	...	...	10½	122	...	3,936½
Queensland ...	...	...	5,280	...	...	169½	5,449½
South Australia ...	970	286	1,699	...	...	...	2,955
Western Australia ...	...	278	4,207½	...	...	1 67½	4,553
Tasmania ...	...	...	731	...	...	48½	779½
Northern Territory...	...	...	146	...	...	...	146
Federal Territory ...	...	5	...	...	...	...	5
GRAND TOTAL ...	4,819	4,857½	12,143	10½	122	311½	22,263½

1. Including 21 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 also been constructed connecting Canberra, in the Federal Territory, with the New South Wales railway system at Queanbeyan.

2. **Darwin to Pine Creek Railway.**—This line at first came under the jurisdiction of the Department of External Affairs, and was worked under the Administrator of the Northern Territory. On the 1st July, 1915, the management of the line was handed over to the Commonwealth Railway Department.

Particulars as to the working of this line prior to its passing under the control of the Commonwealth Government will be found in 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 is now under construction, while the connecting line from Katherine River to Oodnadatta is in course of survey.

3. **Port Augusta to 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. 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. **Port Augusta-Kalgoorlie Line.**—The Transcontinental Railway Bill, passed in 1907 by the Federal Houses of Parliament, 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 of the preliminary survey may be seen on reference to the map on page 645 hereof; 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 1063 miles, was £3,988,000. In September, 1911, a Bill was introduced into the Commonwealth Parliament to authorise the construction of the line, and 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. A commencement was also made at Kalgoorlie, and it was estimated that the line, which is being built from both ends, and has a gauge of 4 ft. 8½ in., would be completed in three years. The delay in its progress has been caused by the war, difficulties having arisen in obtaining supplies of materials. At the 30th June, 1915, 286 miles had been laid in the South Australian division, and 278 miles in the Western Australian division. It should be mentioned that owing to deviations from the original route the length of this line will on completion have a length of about 1053 miles, a saving of about 10 miles.

5. Queanbeyan-Canberra Railway.—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, for the time being, agreed with the Commonwealth Government to work it. The line was opened for Commonwealth departmental goods traffic on 25th May, 1914.

The Queanbeyan-Canberra railway connects with the New South Wales railway system at Queanbeyan, and is 4 miles 75 chains in length, in addition to which the sidings cover $2\frac{3}{4}$ miles.

6. Summary of Federal Railways.—The following table shews the railway lines under the control of the Commonwealth at 30th June, 1915, together with the lines under construction and those which have been or are being surveyed:—

COMMONWEALTH GOVERNMENT RAILWAYS, 30th JUNE, 1915.

Terminals.						Miles.
OPEN FOR TRAFFIC.						
Darwin to Pine Creek (Northern Territory)	...	...	...	...	...	146
Port Augusta to Oodnadatta (South Australia)	...	...	...	...	...	478
Queanbeyan (New South Wales) to Canberra (Federal Territory)	...	...	...	...	...	5
Kalgoorlie to 278 mile	...	...	...	...	...	278
Port Augusta to 286 mile	...	...	...	...	...	286
Total opened for traffic	...	...	...	...	...	1,193
UNDER CONSTRUCTION.						
Kalgoorlie (Western Australia) to Port Augusta (South Australia)	...	...	...	...	...	489 $\frac{1}{2}$
Pine Creek to Katherine River (Northern Territory)	...	...	...	...	...	54 $\frac{1}{2}$
Total under construction	...	...	...	...	...	544
SURVEYED OR BEING SURVEYED.						
Katherine River to Bitter Springs (Northern Territory)	...	...	...	...	...	65
Katherine to Mataranka (Northern Territory)	...	...	...	...	...	265
Mataranka to Daly Waters (Northern Territory)	...	...	...	...	...	367
Bitter Springs (Northern Territory) to Oodnadatta (South Australia)	...	...	...	...	...	965
Pines to Coward Springs (South Australia)	...	...	...	...	...	148
Kingoonya to Oodnadatta (near) (South Australia)	...	...	...	...	...	176
Newcastle Waters (Northern Territory) to Camooweal (Queensland)	...	...	...	...	...	360
Canberra (Federal Territory) to Jervis Bay (New South Wales)	...	...	...	...	...	135
Canberra (Federal Territory) to Yass (New South Wales)	...	...	...	...	...	40
Total surveyed or being surveyed	...	...	...	...	...	2,521

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, expenditure, train mileage, number of passenger journeys, and tonnage of goods and live stock carried on the Federal lines during the undermentioned periods:—

KALGOORLIE—PORT AUGUSTA.

Year ended June 30.	Average Miles Open.	Cost of Construction.	Revenue.	Expenditure.	Train Miles run.	No. of Pass. Journeys.	Tonnage of Goods and Live Stock.
1915	370	£ 2,846,090	£ 139,612	£ 147,846	497,553	12,234	282,471

PORT AUGUSTA—OODNADATTA.

1911	4239	2,151,309	429,954	433,150	490,031	1 ...	1 ...
1912	478	2,151,710	57,939	72,569	214,323	1 ...	14,071
1913	478	2,153,323	75,955	89,068	281,739	1 ...	15,302
1914	478	2,153,438	77,263	97,081	296,044	1 ...	1 ...
1915	478	2,155,156	67,340	109,982	273,488	1 ...	1 ...

CANBERRA—QUEANBEYAN.

1915	5	45,486	1,088	1,626	26,000	1 ...	1 ...
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DARWIN—PINE CREEK.

1911	472	1,040,734	45,620	46,707	415,046	41,130	4935
1912 ³	145	1,040,702	11,363	13,398	30,323	1,791	1,895
1913 ³	145	1,040,702	14,703	13,845	31,278	1,249	2,781
1914 ³	146	1,040,702	17,566	16,643	30,087	2,739	3,615
1915	146	1,040,702	21,545	26,099	39,652	3,857	11,995

1. Not available. 2. Estimated. 3. The figures for 1912, 1913 and 1914 are for the calendar years 1911, 1912 and 1913. 4. For six months only.

8. Number and Description of Rolling Stock, 1915.—The following table shows 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, 1914-15.

Railway.	Gauge.		Total.
	4 ft. 8½ in.	3 ft. 6 in.	

LOCOMOTIVES.

Kalgoorlie-Port Augusta ...	24	...	24
Port Augusta-Oodnadatta ...	...	1	...
Canberra-Queanbeyan ...	2	...	...
Darwin-Pine Creek ...	...	5	5
Total ...	24	5	29

PASSENGER VEHICLES.

Kalgoorlie-Port Augusta ...	11	...	11
Port Augusta-Oodnadatta ...	...	1	...
Canberra-Queanbeyan ...	2	...	...
Darwin-Pine Creek ...	...	4	4
Total ...	11	4	15

See page 633 for notes 1 and 2.

CLASSIFICATION OF LOCOMOTIVES AND ROLLING STOCK ON FEDERAL RAILWAYS, 1914-15—continued.

Railway.	Gauge.		Total.
	4 ft. 8½ in.	3 ft. 6 in.	
ALL OTHER VEHICLES.			
Kalgoorlie-Port Augusta	534	...	534
Port Augusta-Oodnadatta ... ..	...	...¹	...
Canberra-Queanbeyan ... ..	...²	...	...
Darwin-Pine Creek ... ..	...	138	138
Total	534	138	672

1. South Australian Government railway locomotives and rolling stock used. 2. 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, 1915, classified according to (a) salaried staff, and (b) wages staff.

FEDERAL RAILWAYS.—NUMBER OF EMPLOYEES ON RAILWAYS, 1914-15.

Railway.	1914-15.	
	Salaried Staff.	Wages Staff.
Kalgoorlie-Port Augusta	226	3,501
Port Augusta-Oodnadatta ... ..	...¹	... ¹
Canberra-Queanbeyan	1	3
Darwin-Pine Creek	9	90
Total	236	3,594

1. Worked by South Australian 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, 1911-1915.

Railway.	1911.*		1911-12.		1912-13.		1913-14.		1914-15.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Kalgoorlie-Port Augusta ... ..	...	...	...	...	...	...	2	3	13	34
Port Augusta-Oodnadatta	1	1	...	1	...	2	...	13	2	2
Canberra-Queanbeyan ... ..	...	...	...	...	...	...	...	...	...	...
Darwin-Pine Creek ... ..	...	1	...	...	...	...	...	...	...	...
Total	1	2	...	1	...	2	2	16	15	36

* To 30th June.

(c) State Railways.

1. **Mileage Open, 1901 to 1915.**—The following table shews the length of State railways open for traffic on the 30th June in the years 1901-2 and 1910-15 :—

STATE RAILWAYS.—MILEAGE OPEN FOR TRAFFIC, 1901-2 AND 1910-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1901-2 ...	3,026	3,302	2,801	1,736	1,360	1,462	145	12,832
1909-10 ...	3,641	3,491	3,661	1,912	2,145	469	145	15,464
1910-11 ...	3,758	3,523	3,868	1,457	2,376	470	³ ...	15,452
1911-12 ...	3,832	3,622	4,123	1,460	2,598	496	...	16,131
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	...	17,708
1914-15 ...	4,134	3,875	4,838	2,157	3,332	533	...	18,869

1. To the 31st December, 1902. 2. Including the mileage (478) of the Port Augusta to Oodnadatta line to 31st December, 1910 (see page 630). 3. Taken over by Commonwealth Government, 1st January, 1911 (see page 630).

The following statement shews the actual mileage opened for traffic in the year 1914-15, and also the annual average increase in mileage opened since 1905 in each State :—

STATE RAILWAYS.—MILEAGE OPENED ANNUALLY.

Mileage.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'with.
Mileage opened during 1914-15 ...	167	40½	268	312	365	14	1166½
Average annual mileage increase (1906 to 1915) ...	74½	48	170	41	172	7	512½

(i.) *New South Wales.* During the year ended 30th June, 1915, the following lines were opened for traffic :—Finley to Tocumwal (11 miles); Parkes to Peak Hill (31½ miles); Garah to Mungindi (40½ miles); Galong to Boorowa (17½ miles); Taree to Wauchope (47½ miles); Muswellbrook to Denman (15½ miles); and increases by deviations (3½ miles)—a total of 167 miles.

(ii.) *Victoria.* The following lines were opened for traffic during 1914-15 :—Rushworth to Colbinabbin (12½ miles); and Swan Hill to Piangil (27½ miles)—a total of 40½ miles.

(iii.) *Queensland.* The increase of 268 miles in the mileage opened for traffic in 1914-15 was due to the opening of the following lines :—Geraldton line and branches, 2-ft. gauge (21 miles); Cooladdi to Cheepie (28 miles); Maher to Jandowae (28 miles); Cloncurry to Koolamarra (42 miles); Gilligulgul to Juandah (19 miles); Benlidi to Emmet (26 miles); Mount Garnet Tramway (33 miles, by purchase); Wowan to Rennes (15 miles); Mourilyan Tramway and Extension, 2-ft. gauge (8 miles); Kurukan to Rollingstone (9 miles); Dimbulah to Mount Mulligan (30 miles); and Kandanga to Brooloo (9 miles).

(iv.) *South Australia.* The lines opened for traffic in this State during the year 1914-15 were on the 3 ft. 6 in. gauge from Yeelanna to Mount Hope (23 miles), and Minnipa Hill to Thevenard (112½ miles); and on the 5 ft. 3 in. gauge, from Marino to Willunga (22½ miles); Karoonda to Waikerie (73½ miles); Karoonda to Peebinga (65½ miles); Eudunda to Robertstown (13½ miles), and a deviation at Goolwa involving an increase of 1 mile—a total of 312 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 have undergone a reduction 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 630.)

(v.) *Western Australia.* The following new sections of railway were taken over from the Public Works Department during the year 1914-15 and opened for public traffic:—Corrigin to Bruce Rock ($37\frac{1}{2}$ miles); Wongan Hills to Mullewa ($198\frac{3}{8}$ miles); Williminning to Kondinia ($73\frac{1}{2}$ miles), and Brookton to Corrigin ($55\frac{1}{2}$ miles)—a total of 365 miles.

(vi.) *Tasmania.* During the year 1914-15 the Staverton branch was opened for traffic—a distance of 14 miles.

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 at head of page 634 gives the actual 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 1910-15 inclusive:—

STATE RAILWAYS.—AVERAGE MILEAGE WORKED, TRAIN MILES RUN, NUMBER OF PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE STOCK CARRIED, 1901 and 1910-15.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust. 2	West. Aust.	Tasmania.	N. Ter.	All States.
AVERAGE MILEAGE WORKED.								
1901-2	2,953	3,265	2,801	1,736	1,356	5 468	145	12,724
1910-11	3,710	3,505	3,735	1,676	2,286	478	8 73	15,523
1911-12	3,799	3,543	3 4,144	1,460	2,471	503	7 ...	15,920
1912-13	3,872	3,639	3 4,351	1,534	2,733	508	...	16,687
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
TRAIN MILES RUN (,000 OMITTED).								
1901-2	11,649	11,285	5,666	4,196	4,508	5 903	30	38,237
1910-11	17,007	12,973	9,367	5,856	4,963	1,041	8 15	51,222
1911-12	18,521	13,836	10,327	6,029	5,227	1,047	7 ...	54,987
1912-13	19,184	14,235	11,464	6,343	5,623	1,006	...	57,855
1913-14	20,550	15,029	11,346	6,731	5,565	1,001	...	60,222
1914-15	20,420	15,303	11,989	5,581	5,404	1,005	...	59,702
NUMBER OF PASSENGER JOURNEYS (,000 OMITTED).								
1901-2	30,885	57,465	1 8,421	9,643	8,158	5 762	4	115,338
1910-11	60,920	93,796	14,791	16,620	14,828	1,682	8 1	202,638
1911-12	70,707	104,235	17,081	18,353	16,390	1,715	7 ...	228,481
1912-13	79,490	111,614	19,999	19,382	17,920	1,650	...	249,855
1913-14	86,328	116,612	22,253	19,810	19,208	1,708	...	265,919
1914-15	88,774	117,260	24,258	18,831	18,635	1,751	...	269,509
TONNAGE OF GOODS AND LIVE STOCK CARRIED (,000 OMITTED).								
1901-2	6,468	3,434	1,882	1,392	1,888	5 6 407	2	4 15,473
1910-11	10,355	4,968	3,295	2,731	2,489	364	8 1	24,203
1911-12	10,910	5,298	3,494	2,782	2,542	470	7 ...	25,496
1912-13	11,666	5,150	3,798	3,016	2,866	465	...	26,961
1913-14	13,246	5,816	4,301	3,103	3,170	409	...	30,045
1914-15	11,921	5,410	4,971	2,076	2,524	408	...	27,310

¹ These figures are partly estimated, the actual returns excluding journeys by season ticket holders.

² Exclusive of the Port Augusta-Oodnadatta line as from the 1st January, 1911.

³ Including the Etheridge railway 143 miles in length.

⁴ Exclusive of live stock returns for Tasmania.

⁵ For the calendar year 1902. The average mileage worked is larger than the actual mileage open, owing to the fact that the Government railways have running powers over certain private lines.

⁶ Exclusive of live stock.

⁷ Taken over by Commonwealth Government, 1st January, 1911 (see page 632).

⁸ For six months only.

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 645 hereafter. 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 above in dealing with the history of construction of the railways. The subjoined summary shews concisely the gauge and length of the main and branch

Particulars.	Suburban.	Length, including Suburb'n.	Gauge.
1. NEW SOUTH WALES.	Miles.	Miles.	ft. in.
(i.) The Northern line and branches—			
(a) Main line. Strathfield-Wallangarra ...	73½	488½	4 8½
(b) Branch lines	18¼	584	4 8½
(ii.) The North Coast line and branches—			
(a) Main line. West Maitland-Murwillumbah ...	13	312	4 8½
(b) Branch lines ... ..	...	18	4 8½
(iii.) The Western line and branches—			
(a) Main line. Sydney-Bourke ...	34½	508¾	4 8½
(b) Branch lines	24¾	848¼	4 8½
(iv.) The Southern line—			
(a) Main line. Granville-River Murray ...	20¾	383¾	4 8½
(b) Branch lines ... ..	...	845	4 8½
(v.) The South-coast (Illawarra) line—			
(a) Main line. Sydney to Nowra ...	32	95	4 8½
(b) Branch lines	10	11	4 8½
(vi.) Broken Hill line. Broken Hill-Tarrawingee ...	...	40	3 6
Total	226½	4,134½	...
2. VICTORIA.			
(i.) The South-eastern system—			
(a) Main lines. Dandenong-Port Albert ...	...	117½	5 3
Caulfield-Stony Point ...	11½	38¾	5 3
(b) Branch lines	{ ...	47½	5 3
		3½	2 6
(ii.) The Eastern system—			
(a) Main lines. South Yarra-Bairnsdale ...	16	167¾	5 3
(b) Branch lines	{ 1½	96	5 3
		26	2 6
(iii.) The North-eastern system—			
(a) Main line. Essendon Junc.-River Murray... ..	14¾	187½	5 3
(b) Branch lines	{ 1½	538	5 3
		30½	2 6
(iv.) The Northern system—			
(a) Main line. Melbourne-Echuca ...	20½	156	5 3
(b) Branch lines ... ..	...	849	5 3
(v.) The North-western system—			
(a) Main line. Sunshine-Serviceton ...	11	280½	5 3
(b) Branch lines ... ..	...	425	5 3
(vi.) The Western and South-western system—			
(a) Main line. Footscray-Port Fairy ...	16½	183½	5 3
(b) Branch lines	{ ...	507¾	5 3
		44	2 6
(vii.) Metropolitan District—			
(a) Richmond-Healesville line ...	17	37½	5 3
(b) Branch lines	{ 4½	32½	5 3
		18½	2 6
(c) Port Melbourne, St. Kilda, Sandringham, Burnley - Darling, Deepdene - Burwood, Hurst Bridge, Whittlesea, Fawkner, Wil- liamstown lines, etc. ...	77¾	88¾	5 3
Total	192	3,875	...

Particulars.					Length.	Gauge.
					Miles.	ft. in.
3. QUEENSLAND.						
(i.) The Southern division—						
(a)	The Southern line.	Ipswich-Wallangarra	...	...	221	3 6
(b)	The Western line.	Gowrie Junction-Cunnamulla	...	...	569	3 6
(c)	The South-western line.	Warwick-Dirranbandi	...	...	256	3 6
(d)	The Nth.-coastline.	Northgate Junction-235 mls. 14 chs.	...	...	234	3 6
(e)	The South-coast line.	Sunnybank-Tweed Heads	...	...	62	3 6
(f)	Suburban lines	...	...	...	73	3 6
(g)	Branch lines	...	...	...	934	3 6
(ii.) The Central division—						
(a)	The Coast line.	235 miles 14 chains-Rockhampton	...	...	183	3 6
(b)	The Central line.	Archer Park-Longreach	...	...	445	3 6
(c)	Branch lines	...	...	...	426	3 6
(iii.) The Northern division—						
(a)	Mackay line	...	...	...	83	3 6
(b)	Bowen line	...	...	...	70	3 6
(c)	The Great Nthn. Rlwy.	Townsville-Selwyn branches	...	...	841	3 6
(d)	Geraldton and Mourilyan Tramway	...	...	...	29	2 0
(e)	Cairns line	...	...	...	186	3 6
(f)	Mount Mulligan Railway	...	...	...	30	3 6
(g)	Mount Garnet Railway	...	...	...	32	3 6
(h)	Cooktown line	...	...	...	68	3 6
(i)	Normanton line	...	...	...	96	3 6
Total					4,838	...
4. SOUTH AUSTRALIA.						
(i.) The Midland system—						
(a)	Main line.	Adelaide-Terowie	...	...	140	5 3
(b)	Branch lines	...	...	...	142	5 3
(ii.) The Northern system—						
(a)	Terowie-Quorn	...	...	...	94½	3 6
(b)	Other lines	...	...	...	455	3 6
					5	5 3
(iii.) The Southern system—						
(a)	Main line.	Adelaide-Serviceton	...	...	194½	5 3
(b)	Branch lines	...	...	...	190	5 3
(iv.) The South-eastern system—						
(a)	Wolseley-Mount Gambier	...	...	...	112	3 6
(b)	Branch lines	...	...	...	113	3 6
(v.)	Port Broughton line	...	...	...	10	3 6
(vi.) The Eyre Peninsula system—						
	Port Lincoln-Cape Thevenard and Branches	...	...	...	402½	3 6
(vii.) Murray Lands lines. Taillem Bend-Faringa, and branch line...					298	5 3
Total					2,156½	...
5. WESTERN AUSTRALIA.						
(i.) Eastern railway—						
(a)	Main line.	Fremantle-Northam	...	...	78	3 6
(b)	Branch lines	...	...	...	78½	3 6
(ii.) South-western railway—						
(a)	East Perth-Picton Junction	...	...	...	110	3 6
(b)	Branch lines	...	...	...	498½	3 6
(iii.) Great Southern railway—						
(a)	Main line.	Spencer's Brook-Albany Jetty	...	...	280	3 6
(b)	Branch lines	...	...	...	531½	3 6
(iv.) Eastern Goldfields railway—						
(a)	Main line.	Northam-Laverton and Leonora	...	...	533½	3 6
(b)	Branch lines	...	...	...	156½	3 6
(v.) East Northern-Mullewa railway—						
(a)	Main line	...	...	...	263	3 6
(b)	Branch lines	...	...	...	112½	3 6
(vi.) Northern railway—						
(a)	Main line.	Geraldton-Meekatharra	...	...	333½	3 6
(b)	Branch lines	...	...	...	208½	3 6
(vii.) Hopetoun-Ravensthorpe railway					33½	3 6
(viii.) Port Hedland-Marble Bar					114½	3 6
Total					3,332	...

Particulars.				Length.	Gauge.
6. TASMANIA.				Miles.	ft. in.
(i.)	Main line.	Hobart-Evandale Junction	...	124 $\frac{1}{2}$	3 6
(ii.)	Derwent Valley line.	Bridgewater-Glenora	...	30 $\frac{1}{2}$	3 6
(iii.)	Apsley line.	Brighton Junction-Apsley	...	26	3 6
(iv.)	Parattah-Oatlands line	...	...	4 $\frac{1}{2}$	3 6
(v.)	Fingal line.	St. Mary's-Conara	...	46 $\frac{3}{4}$	3 6
(vi.)	Western line.	Launceston-Burnie	...	134 $\frac{1}{2}$	3 6
(vii.)	Chudleigh line	...	...	12 $\frac{1}{2}$	3 6
(viii.)	North-eastern line.	Launceston-Scottsdale	...	71 $\frac{1}{2}$	3 6
(ix.)	Sorell-Bellerive line	...	...	14 $\frac{1}{2}$	3 6
(x.)	Zeehan line.	Regatta Point-Zeehan	...	29 $\frac{1}{2}$	3 6
(xi.)	Staverton line	...	...	14	3 6
(xii.)	North-east Dundas tramway.	Zeehan-Williamsford	...	20 $\frac{1}{2}$	2 0
(xiii.)	Comstock tramway	...	...	4 $\frac{1}{4}$	2 0
Total				533	...
GRAND TOTAL OF STATE RAILWAYS				18,868 $\frac{3}{4}$	...

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 previous Year Books (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 and Proposed Lines, 1915.**—The following statement gives particulars up to the 30th June, 1915, of the mileage of State railways (a) under construction, and (b) authorised for construction but not commenced:—

MILEAGE UNDER CONSTRUCTION AND AUTHORISED, 30th JUNE, 1915.¹

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction	1,128 $\frac{1}{2}$	304 $\frac{1}{2}$	503	178 $\frac{1}{4}$	170 $\frac{1}{4}$	20	2,304 $\frac{1}{2}$
Mileage authorised	148 $\frac{1}{4}$	52 $\frac{3}{4}$	1,549	107 $\frac{1}{4}$	246	...	2,103 $\frac{1}{4}$

¹ For similar statistics of Federal Railways see page 631.

(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 lines under construction on 30th June, 1915, were those from *Wauchope* to *Kempsey* (30 $\frac{1}{2}$ miles), *Kempsey* to *Macksville* (30 $\frac{1}{2}$ miles), *Coff's Harbour* to *Raleigh* (13 $\frac{1}{2}$ miles),

and Glenreagh to South Grafton (28 miles). These lines, when completed, will form an alternative main route between Newcastle and Brisbane. Other lines under construction are as follow:—Glenreagh to Dorriggo (42 miles), Forbes to Stockinbingal (83½ miles), Wagga to Tumbarumba (76½ miles), Condobolin to Broken Hill (370 miles), Denman to Merriwa (33 miles), Dunedoo to Coonabarabran (76½ miles), Wyalong to Lake Cudgellico (70½ miles), Dubbo to Werris Creek (157½ miles), Barellan to Mirool (32 miles), Tullamore to Tottenham (33 miles), Nimmitabel to Bombala (40 miles), and Flemington to Belmore, and Wardell Road to Glebe Island and Darling Island (11½ miles). (b) *Victoria*. In this State the following lines were under construction by the Board of Land and Works on the 30th June, 1915:—5 ft. 3 in. gauge: Bairnsdale to Orbost (60 miles), Heywood to Mumbannar (39½ miles), Tallangatta to Cudgewa (42½ miles), Elmore to Cohuna (57½ miles), Hamilton to Cavendish (15½ miles), Cavendish to Toolando (44 miles), Neerim South to Tooronga River (14 miles), Lorquon to Yanac-a-Yanac (18½ miles), and Linton to Skipton (12½ miles), making in all 304½ 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 1198 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 Wallal, Blackall, Winton, and Malbon, in such a manner that they will form junctions with a line to be made running north-westerly from Tobermory to Camooweal. These extensions, together with the north-westerly line, will make an aggregate distance of 1282 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, 1915, the following lines were under construction:—Logan Village to Canungra (21 miles), Drayton deviation (11 miles), Sarina to Koumala (13 miles), Yaamba to Kunwarara (22 miles), Oakley to Mount Russell (19 miles), Enoggera to Terror's Creek (24 miles), Malanda to Millaa-Millaa, first section (9 miles), Munbilla to Mount Edwards (16 miles), Kingaroy to Tarong (19 miles), Tumoulin to Cedar Creek (5 miles), Roma to Orallo (29 miles), Koolamarr to Mount Cuthbert (28 miles), Mount Morgan to Dawson Valley, third section (25 miles). Of the Great Western Railway the following parts are under construction:—Section A: From Cheepie to Bulloo River (48 miles); Section B: From Emmet to near Welford (32 miles); Section C: From Winton to Elderslie (38 miles); Section D: From Duchess to Carbine Creek (23 miles). The following parts of the North Coast Railway are under construction:—Section A: Kunwarara to Marlborough (18 miles); Section B: Koumala to Carmila Creek (26 miles); Mackay to St. Helens (31 miles); Section D: From Rollingstone to Ingham (34 miles); Section E: From Mooliba to Innisfail (12 miles). (d) *South Australia*. In this State the lines under construction on the 30th June, 1915, were as follow:—Pinnaroo to the Victorian Border (3½ miles), Mt. Gambier to the Victorian Border (12 miles), Riverton to Spalding (51½ miles), Salisbury to Long Plains (34½ miles), Paringa to Renmark (2½ miles), Balhannah to Mount Pleasant (22 miles), Palmer to Sedan (20 miles), Nuriootpa to Truro (10 miles), 5 ft. 3 in. gauge; Booleroo Centre to Wilmington (22½ miles), 3 ft. 6 in. gauge. (e) In *Western Australia* the following lines were in course of construction by the Public Works Department on the 30th June, 1915:—Wyalkatchem to Mount Marshall (52 miles), Wagin to Bowelling (62½ miles), Bolgart Extension (34½ miles), and Kukerin to Lake Grace (21 miles). (f) *Tasmania*. At 30th June, 1915, the line from Burnie to Flowerdale, 20 miles long, was under construction.

(ii.) *Lines Authorised for Construction.* (a) *New South Wales*. In addition to the North coast railway extension between Glenreagh and Dorriggo (42 miles), the construction of lines from Macksville to Raleigh (20½ miles), and Coff's Harbour to

Glenreagh (26½ miles)—(part of the North Coast railway)—Coonabarabran to Burren Junction (95 miles), and Sydenham to Botany (6 miles) had been authorised up to 30th June, 1915. (b) In *Victoria* the following lines were authorised, but their construction had not been commenced up to the end of June, 1915:—5 ft. 3 in. gauge: White Cliffs to Yelta (9¾ miles), Koo-wee-rup to McDonald's Track (30¾ miles), and Alberton to Won Wron (12¼ miles)—a total of 52¾ 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 Bulloo River (120 miles); Section B, from near Welford (251 miles); Section C, from Elderslie (324 miles); and Section D, from Carbine Creek (269 miles); and in the North Coast Railway, Section A, from Marlborough to St. Lawrence (60 miles); Section B, from Carmila Creek to St. Lawrence, and St. Helens to Midge Point (32 miles); Section C, from Midge Point to Proserpine (13 miles); Section D, from Ingham to near Cardwell (19 miles); Section E, from Innisfail to near Cardwell (71 miles). The following lines were also authorised for construction: Inglewood to Texas and Silverspur (44 miles), Rockhampton to Alton Downs (18 miles), Mount Edwards to Maryvale (28 miles), Lanefield to Rosevale (17 miles), Gatton to Mount Sylvia (11 miles), Murgon to Proston (26 miles), branch to Windera (12 miles), Juandah to Taroom (42 miles), Dirranbandi extension (52 miles), Goondoon towards Kalliwaa Creek (31 miles), Mundubbera to the Northern Burnett (32 miles), Malanda to Millaa Millaa—second section—(8 miles), extension beyond Tara (50 miles), and Mount Russell to Cecil Plains (19 miles). (d) In *South Australia* it is proposed to electrify the Adelaide-Glenelg (6½ miles) line at an estimated cost of £115,000, and also in newly-settled districts to construct light lines to be run by District Councils. (e) In *Western Australia* the following lines were authorised for construction up to the 30th June, 1915:—Busselton-Margaret River (38 miles), Esperance northward (60 miles), Dwarda-Narrogin (33 miles), Kondinin-Merredin (89 miles), and Nyabing-Pingerup (26 miles).

6. Cost of Construction and Equipment of State Railways.—The total cost of construction and equipment of the State railways of the Commonwealth at the 30th June, 1915, amounted to £187,139,867, or to an average of £9918 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.—COST OF CONSTRUCTION AND EQUIPMENT TO 30th JUNE, 1915.

State.				Length of Line Open.	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.
				Miles.	£	£	£
New South Wales	...	...	...	4,134	64,008,436	15,483	34.25
Victoria	...	...	...	3,875	51,518,792	13,295	36.12
Queensland	...	...	...	4,838	33,405,877	6,905	48.44
South Australia	...	...	...	2,157	16,597,139	7,695	37.88
Western Australia	...	...	...	3,332	16,980,712	5,096	52.65
Tasmania	...	...	...	533	4,628,911	8,685	23.33
Total	...	...	...	18,869	187,139,867	9,918	37.85

It will be seen that the lowest average cost per mile open is in Western Australia, and is only £5096, which is less than one-third of the highest average cost, namely, £15,483 in New South Wales, compared with an average of £9918 for all the State Government railways. In Western Australia there have been comparatively few engineering

difficulties to contend with, moreover the system has been adopted in that State of giving contractors the right to carry traffic during the period of their contracts, with the result that, at all events in all goldfields railway contracts, the cost of construction has been considerably lessened.

In the above table the figures for Queensland relating to cost of construction and equipment do not agree with those contained in the report of the Railway Commissioner for that State. The amount in the report is given as £35,464,770, which includes discount and flotation charges on loans allocated to railways, but as no other State includes this depreciation of loan capital, it is necessary to exclude it in order to place the cost of railway construction in all States on the same basis.

(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 £1750 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 over one thousand four hundred miles of the "pioneer" lines have been opened in New South Wales, the average cost ranging from about £2000 to £7500 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, the average cost of which, to the end of June, 1915, was £3786. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost to the 30th June, 1915, of the narrow gauge (2 ft. 6 in.) lines, having a length of one hundred and twenty-two miles, was only £331,282, which gives an average cost per mile of only £2718. In the other States also the cost of construction per mile has been 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 :—

**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	70.94	40.11	111.05	3,846,446	34,638	1876
Sydney to Kiama ...	4 8½	25.46	72.23	97.69	3,845,376	39,363	1887
Homebush to Waratah ...	4 8½	95.71	...	95.71	3,527,130	36,851	1889
VICTORIA—							
Melbourne to Bendigo ...	5 3	100.89	...	100.89	4,927,955	48,845	1862
N. Geelong to Ballarat ...	5 3	41.45	11.98	53.43	1,936,105	36,236	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 £39,416, whereas the average cost of the 322.16 miles referred to in the next table was £1842.

**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	132,496	2,111	1898
Burren Junction to Collarenebri	4 8½	42.55	103,771	2,439	1906
VICTORIA—					
Wangaratta to Whitfield ...	2 6	30.49	39,846	1,307	1899
Wycheproof to Sealake ...	5 3	47.89	84,272	1,760	1895
Ultima to Chillingollah ...	5 3	20.14	33,667	1,672	1909
QUEENSLAND—					
Dalby to Bell ...	3 6	23.50	38,216	1,626	1906
Mahar to Jandowae ...	3 6	28.24	57,548	2,038	1914
SOUTH AUSTRALIA—					
Wandilo to Glencoe ...	3 6	9.13	11,620	1,273	1904
Cummins to Yeelanna ...	3 6	8.82	15,110	1,712	1909
WESTERN AUSTRALIA—					
Southern Cross to Bullfinch ...	3 6	22.04	36,821	1,674	1911
Narrogin to Wickepin ...	3 6	26.61	40,142	1,515	1909

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 preceding table.

(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 1910 to 1915 is shewn in the following table:—

**STATE RAILWAYS.—CAPITAL COST OF CONSTRUCTION AND EQUIPMENT,
1901-2 and 1910-15.**

TOTAL COST.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tas.	N. Ter.	All States
	£	£	£	£	£	£	£	£
1901-2	40,565,073	40,613,734	20,119,143	12,769,999	7,410,426	3,840,747	1,018,700	126,337,772
1910-11	50,863,449	43,882,338	25,898,841	12,258,174	12,019,927	4,079,831	...	149,002,560
1911-12	53,139,612	45,543,054	27,751,227	12,810,815	13,233,093	4,253,013	...	156,730,814
1912-13	57,003,036	46,989,111	29,895,220	14,035,437	14,913,128	4,400,292	...	167,236,224
1913-14	60,128,491	49,216,744	31,817,792	15,240,779	15,873,852	4,496,634	...	176,774,292
1914-15	64,008,436	51,518,792	33,405,877	16,597,139	16,980,712	4,628,911	...	187,139,867

COST PER MILE OPEN.

	£	£	£	£	£	£	£	£
1901-2	13,405	12,300	7,183	17,428	5,449	3,313	7,124	9,860
1910-11	13,534	12,456	6,696	8,411	5,060	8,675	...	9,643
1911-12	13,867	12,574	6,731	8,766	5,094	8,583	...	9,716
1912-13	14,505	12,884	6,824	8,307	5,225	8,679	...	9,773
1913-14	15,157	12,834	6,962	8,260	5,350	8,664	...	9,986
1914-15	15,483	13,295	6,905	7,695	5,096	8,635	...	9,918

1. Including the Port Augusta-Oodnadatta line.

2. To the 31st December, 1902.

3. Transferred to Commonwealth Government, 1st January, 1911 (see page 630).

(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 the years 1910-11 to 1914-15.

STATE RAILWAYS.—LOAN EXPENDITURE, 1901-2 and 1910-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£000.	£000.	£000.	£000.	£000.	£000.	£000.
1901-2 ¹	2,244	483	751	122	579	81 ²	4,260
1910-11	2,127	1,230	1,686	591	748	82	6,464
1911-12	2,851	1,703	2,855	789	1,317 ¹	120 ¹	9,635
1912-13	3,614	1,231	2,067	1,207	1,949	116 ¹	10,184
1913-14	4,903	2,362	1,679	1,489	1,228 ¹	146 ¹	11,807
1914-15	4,394	2,810	1,739	1,285	670	228 ¹	11,126

1. Including Tramways. 2. For the calendar year 1902.

The following statement shews the total loan expenditure to the 30th June, 1915 :—

STATE RAILWAYS.—TOTAL LOAN EXPENDITURE IN EACH STATE TO 30th JUNE, 1915.

State, etc.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Expenditure	68,594,086	50,124,838	35,306,560	18,803,862	16,618,860	5,044,382	194,492,588

1. Including Tramways.

7. Gross Revenue, Total, per Average Mile Worked, and per Train-mile Run.—

The following table shews 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 1910 to 1915 inclusive :—

STATE RAILWAYS.—GROSS REVENUE, TOTAL, PER AVERAGE MILE WORKED, AND PER TRAIN MILE RUN, 1901-2 and 1910-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
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TOTAL GROSS REVENUE.

	£	£	£	£	£	£	£	£
1901-2 ...	3,668,686	3,367,843	1,382,179	1,085,175	1,521,429	¹ 233,211	12,522	11,271,045
1910-11 ...	6,042,205	4,896,210	2,730,430	2,015,182	1,844,419	277,916	² 5,907	17,812,269
1911-12 ...	6,491,473	5,218,967	3,032,858	2,090,563	1,884,604	312,786	...	19,031,251
1912-13 ...	6,748,985	5,205,442	3,321,672	2,222,436	2,037,853	327,113	...	19,863,501
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

GROSS REVENUE PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£	£
1901-2 ...	1,242	1,031	493	625	1,122	¹ 498	86	886
1910-11 ...	1,629	1,397	719	1,202	807	582	² 81	1,147
1911-12 ...	1,709	1,473	732	1,430	763	622	...	1,195
1912-13 ...	1,743	1,430	763	1,449	732	644	...	1,190
1913-14 ...	1,956	1,484	812	1,238	776	629	...	1,253
1914-15 ...	1,877	1,341	810	861	665	603	...	1,134

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	¹ 61.99	99.27	70.74
1910-11 ...	85.27	90.58	69.96	82.59	89.19	64.06	² 91.51	83.46
1911-12 ...	84.12	90.53	70.48	83.22	86.53	71.73	...	83.06
1912-13 ...	84.43	87.77	69.54	84.09	86.98	78.00	...	82.40
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

1. For the calendar year 1902.

2. See Commonwealth Government Railways (page 631).

3. For six months only.

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 1910-15, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph.

COACHING, GOODS, AND MISCELLANEOUS RECEIPTS, 1901-2 and 1910-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	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
1910-11	2,385,725	2,354,855	934,541	641,651	596,593	144,132	³ 1,850	7,059,347
1911-12	2,691,741	2,624,493	1,069,533	697,775	630,673	152,304	⁴ ...	7,866,519
1912-13	2,940,230	2,762,163	1,153,384	733,159	646,218	160,792	...	8,395,946
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
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
1910-11	3,585,424	2,457,678	1,771,876	1,322,339	1,174,075	124,354	³ 3,098	10,438,844
1911-12	3,715,707	2,506,982	1,940,596	1,345,879	1,173,844	148,199	⁴ ...	10,831,207
1912-13	3,705,375	2,352,638	2,140,503	1,441,859	1,299,019	154,522	...	11,093,916
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
MISCELLANEOUS RECEIPTS.								
1901-2	37,053	68,163	84,511	34,453	41,611	6,954	1,494	274,239
1910-11	71,056	83,677	24,013	51,192	73,751	9,430	³ 959	314,078
1911-12	84,025	87,492	22,729	46,909	80,087	12,283	⁴ ...	333,525
1912-13	103,380	90,641	27,785	47,418	92,616	11,799	...	373,639
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

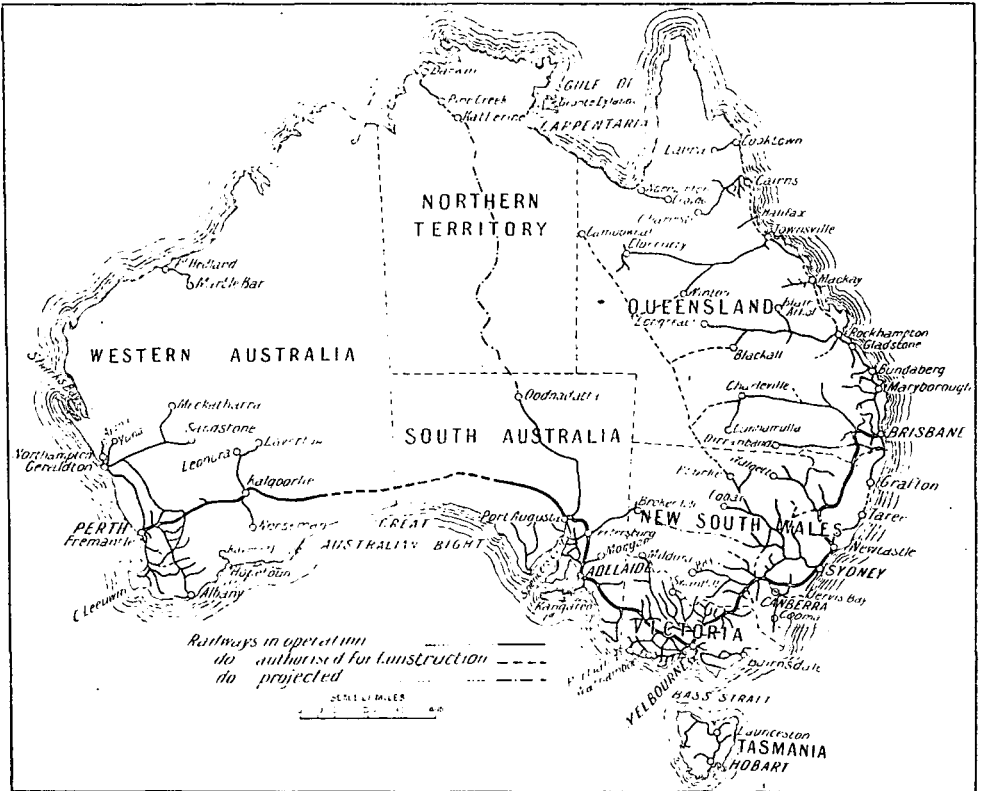
¹ Tasmanian figures for 1902 are for year ended the 31st December. ² Exclusive of Port Augusta-Oodnadatta line as from 1st January, 1911 (see page 631). ³ For six months only. ⁴ See Commonwealth Government railways for total gross revenue (page 631).

(i.) *New South Wales.* The total earnings for the past year amounted to £7,616,511, a decrease of £125,730 as compared with the previous year. An increase of £78,782 took place in the coaching traffic, but a decrease of £204,512 occurred in the receipts from goods and live stock and miscellaneous.

(ii.) *Victoria.* In Victoria, traffic receipts shew a decrease of £399,885 as compared with the previous year. This was due to a drop of £73,032 and £335,040 in the receipts from coaching and goods and live stock traffic respectively, though there was an increase of £8187 in miscellaneous receipts.

(iii.) *Queensland.* In Queensland, the increase in 1914-15 in gross earnings, £171,981 above 1913-14, is to some extent accounted for by the opening of new lines. The increases in earnings were in respect of passengers £27,495 and general merchandise £156,594, miscellaneous receipts shewing a drop of £12,108.

THE GOVERNMENT RAILWAY SYSTEMS OF THE COMMONWEALTH.



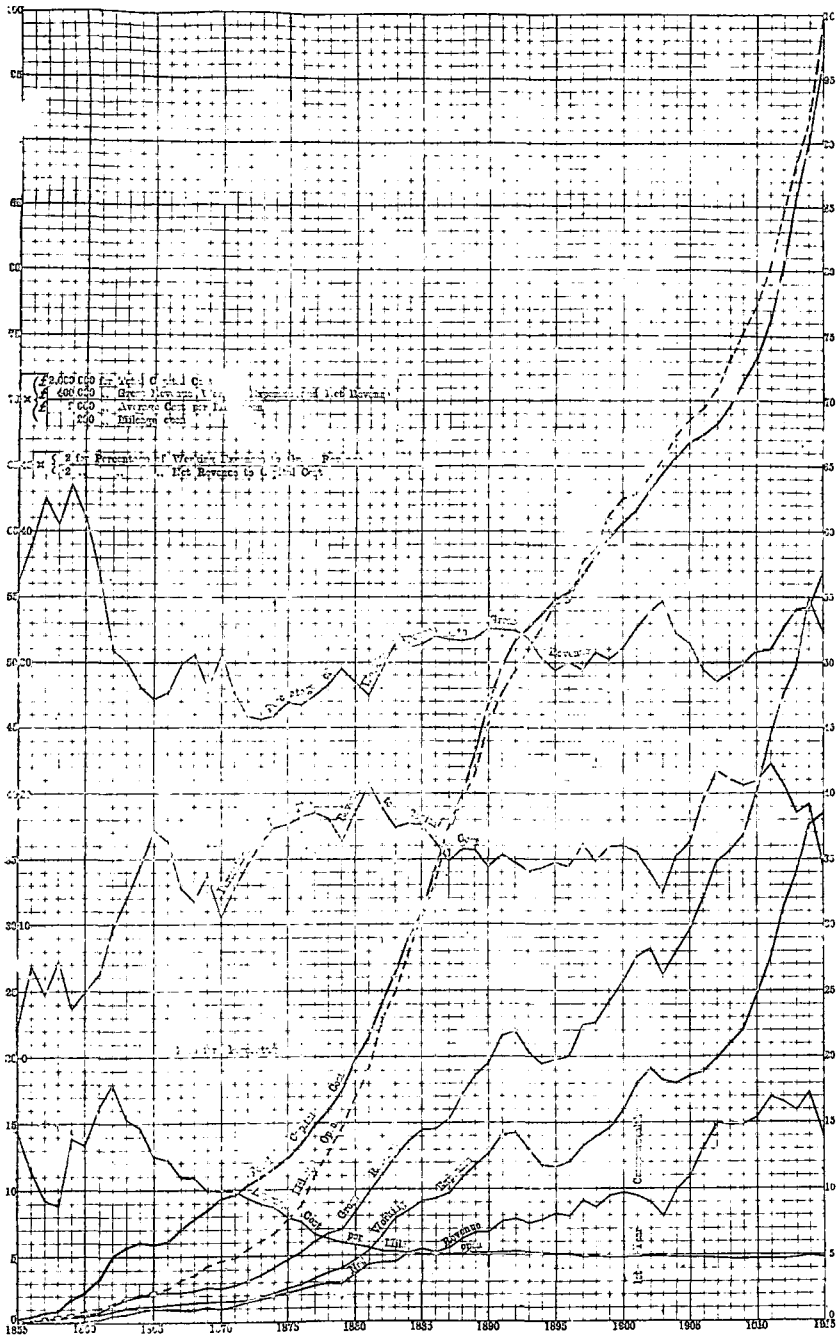
EXPLANATION OF MAP.—The continuous lines denote the existing railway lines of Australia, the heavier lines being the main routes.

Of the two transcontinental lines, viz., one joining the railways of South and Western Australia—and thus connecting continuously by railway Queensland, New South Wales, Victoria, South Australia, and Western Australia, and one connecting Oodnadatta in South Australia with Pine Creek in the Northern Territory, the former has been commenced, 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 Hay ...	460	Adelaide to Broken Hill ...	335
Townsville to Selwyn ...	552	" Nimmitabel ...	291	" Oodnadatta ...	688
Rockhampton to Longreach	425	" Melb'rne (17 hrs.)	582½	Perth to Laverton ...	586
Brisbane to Cunnamulla ...	604	Adelaide to Melb. (17 hrs.)	482½	" Meekatharra ...	597
Brisbane to Sydney (25½ hrs.)	725	Melbourne to Merbein ...	358	" Albany ...	340
Newcastle to Inverell ...	405	" Swan Hill ...	215	Hobart to Launceston ...	133
Sydney to Bourke ...	508	" Murrayville ...	357		

GRAPHS SHEWING THE FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF
THE COMMONWEALTH, 1855 TO 1915.



EXPLANATION OF GRAPHS.—In the preceding 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 £2,000,000.

In the three lighter curves, representing (i.) gross revenue, (ii.) working expenses, and (iii.) net revenue, the vertical height of each small square denotes £100,000. For the curve of average cost per mile open, the vertical side of the small square denotes £2000. The mileage open is shown by a dotted curve, the vertical side of each square representing 200 miles.

For the percentages a new zero is taken at "20" on the scale for the general diagram. The vertical height of each square represents 2 per cent. in the curves shewing the percentage of working expenses to gross revenue. For the curve of percentage of net revenue to capital cost, the vertical height of each square represents only 0.2, that is to say, the vertical scale is ten times that of the preceding curve.

GRAPHS SHEWING PERCENTAGES OF WORKING EXPENSES TO GROSS REVENUE FOR GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1915.

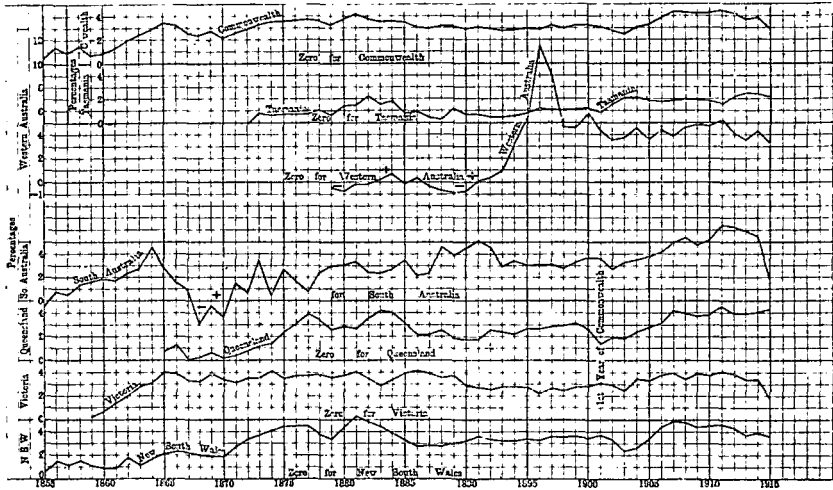


(See page 651.)

EXPLANATION OF GRAPHS.—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 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.

GRAPHS SHEWING PERCENTAGES OF NET REVENUE TO CAPITAL COST OF GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 to 1915.



(See page 654.)

EXPLANATION OF GRAPHS.—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 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.

(iv.) *South Australia.* In this State every item of traffic with the exception of mails, parcels, etc., and live stock gave a decreased return on the figures of the previous year; the principal decreases being in minerals (£335,418), wheat (£78,146), and general goods (£76,473).

(v.) *Western Australia.* In this State the earnings in 1914-15 shewed a decrease of £198,767 as compared with 1913-14. Of this sum, £138,009 was in respect of goods, and £46,539 for passenger traffic, the live stock receipts shewing an increase of £13,853.

(vi.) *Tasmania.* The gross revenue in 1914-15 shews a decrease of £6903 as compared with the previous year. The decrease is confined to passenger traffic, the earnings from goods and live stock traffic being the same as in the previous year.

The following table shews for the year 1914-15 the percentage which each class of receipts bears to the total gross revenue:—

**PERCENTAGE OF REVENUES FROM VARIOUS SOURCES ON TOTAL REVENUE,
1914-15.**

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	All States.
	%	%	%	%	%	%	%
Coaching traffic receipts ...	43.53	54.17	33.52	38.30	30.00	48.79	42.63
Goods and live stock traffic receipts ...	55.22	43.95	65.67	60.10	65.63	47.59	55.67
Miscellaneous receipts ...	1.25	1.88	0.81	1.60	4.37	3.62	1.70

9. Coaching Traffic Receipts per Average Mile Worked, per Passenger-train Mile, and per Passenger Journey.—The subjoined table shews the receipts from coaching traffic per average mile of line worked, per passenger-train mile, and per passenger journey in each State and for all States for the year ended the 30th June, 1915:—

**STATE RAILWAYS.—COACHING TRAFFIC RECEIPTS PER MILE WORKED, PER
PASSENGER-TRAIN MILE, AND PER PASSENGER JOURNEY, 1914-15.**

State.	Number of Passenger-Train Miles. ¹	Number of Passenger Journeys.	Coaching Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Passenger-Train Mile.	Per Passenger Journey.
	No.	No.	£	£	d.	d.
New South Wales ...	10,098,959	88,774,451	3,315,294	817	78.79	8.96
Victoria ...	8,270,901	117,259,926	2,795,673	727	81.12	5.72
Queensland ...	3,387,064	24,257,552	1,284,595	272	91.02	12.71
South Australia ...	2,814,983	18,831,273	668,403	330	56.99	8.52
Western Australia ...	2,236,740	18,635,327	617,553	199	66.26	7.95
Tasmania ...	454,353	1,750,905	157,726	294	83.31	21.62
Total ...	27,263,000	269,509,434	8,839,244	483	77.81	7.87

1. 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 ...	1,353,920	Western Australia ...	1,198,146
Victoria ...	2,590,960	Tasmania ...	654,899

The preceding table shews that, in all the States, there is a considerable difference in the amount of the average receipts per passenger journey. This amount ranges from 5.72 pence in Victoria, where there is a large metropolitan suburban traffic, to 21.62 pence in Tasmania. The difference in these amounts cannot be accounted for by the amounts of rates charged, which are fairly uniform in the several States (see paragraph 17), but is largely due to the different traffic conditions which prevail on various lines in the Commonwealth (see paragraph 14). In order to analyse these figures adequately it would be necessary to have particulars regarding the number of passenger-miles, *i.e.*, the total distance travelled by passengers, in each State, which particulars are not generally available (see paragraph 15.)

The preponderance in the number of passenger journeys 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, 108,721,181 were metropolitan suburban passengers, *i.e.*, were carried between stations within twenty miles of Melbourne, while in New South Wales the number of suburban passengers between stations within thirty-four miles of Sydney, including the Richmond line, and of Newcastle, including Branxton, was 79,914,452. 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 1914-15 being 272,659,500. In Melbourne, on the other hand, the number of passengers carried on the cable tramways systems during the same period was 87,707,934; the number carried on the St. Kilda-Brighton, Prahran-Malvern and the North Melbourne tramways 24,216,892, and the number carried by motor-bus services 6,796,404, making a total of 118,721,230. This is exclusive of 352,189 passengers carried by the omnibuses of the Melbourne Tramway and Omnibus Company. This matter is referred to hereinafter. (See paragraph 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, 1915:—

STATE RAILWAYS.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS PER MILE WORKED, PER GOODS-TRAIN MILE, AND PER TON CARRIED, 1915.

State.	Number of Goods-Train Miles. 1	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 ...	10,321,064	11,920,881	4,206,234	1,037	97.81	84.68
Victoria ...	7,032,308	5,410,045	2,268,375	589	77.42	100.63
Queensland ...	8,601,457	4,970,873	2,516,380	532	70.21	121.49
South Australia ...	2,765,696	2,076,280	1,049,074	518	91.04	121.26
Western Australia ...	3,168,074	2,523,859	1,350,740	436	102.33	128.45
Tasmania...	550,792	408,069	153,845	287	67.04	90.48
Total...	32,439,391	27,310,007	11,544,648	631	85.41	101.45

1. 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 ...	1,353,920	Western Australia ...	1,198,146
Victoria ...	2,590,960	Tasmania ...	654,899

From the preceding table it may be seen that the average cost of freight per ton ranges from 84.68 pence in New South Wales to 128.45 pence in Western Australia. The remarks made in the preceding paragraph (9) hereof with regard to the average fare paid per passenger and to passenger-miles, apply equally to the average amount of freight paid per ton and to ton-miles.

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 also the percentage of these expenditures upon the corresponding gross revenues in each State for 1901-2 and for each year 1910-15:—

STATE RAILWAYS.—TOTAL WORKING EXPENSES AND PERCENTAGES OF WORKING EXPENSES UPON GROSS REVENUES, 1901-2 and 1910-15.

Year.	N.S.W.	Victoria. ¹	Q'land.	S. Aust. ⁴	W. Aust.	Tas.	N. Ter.	All States.
TOTAL WORKING EXPENSES.								
1901-2	£ 2,342,369	£ 2,166,119	£ 992,751	£ 689,517	£ 1,256,370	£ 173,292 ²	£ 34,649	£ 7,655,067
1910-11	3,691,061	3,099,504	1,563,119	1,322,439	1,216,477 ⁵	215,530	6,396 ⁶	11,014,526
1911-12	4,169,591	3,441,903	1,917,366	1,393,987	1,343,977	221,172	...	12,387,796
1912-13	4,644,881	3,589,194	2,150,991	1,393,775	1,506,500	217,357	...	13,502,798
1913-14	5,409,920	3,865,498	2,371,261	1,505,765	1,572,008	222,713	...	14,947,065
1914-15	5,311,162	4,238,411	2,401,679	1,448,495	1,497,826	225,995	...	15,123,568

PERCENTAGE OF WORKING EXPENSES ON GROSS EARNINGS.

	%	%	%	%	%	%	%	%
1901-2	63.85	64.32	71.83	63.54	82.58	74.31 ²	276.70	67.92
1910-11	61.09	63.30	57.25	60.66	65.95	77.55	108.28 ⁵	61.84
1911-12	64.23	65.95	63.22	61.90	71.31	70.71	...	65.33
1912-13	68.82	68.95	64.76	62.71	73.93	66.45	...	68.11
1913-14	69.87	69.51	64.79	64.43	69.65	67.45	...	68.29
1914-15	69.73	82.12	62.67	62.99	72.77	69.91	...	72.93

1. Including amounts paid for pensions and gratuities, and also special expenditures and charges for belated repairs and in reduction of deficiencies. 2. For the calendar year 1902. 3. See Commonwealth Government railways, page 632. 4. Exclusive of the Port Augusta-Oodnadatta line as from 1st January, 1911. 5. Including the cost of the replacement of rolling stock destroyed by fire (£12,657). 6. For six months only.

(i.) *New South Wales.* In this State the total working expenses in 1914-15 amounted to £5,311,162, a decrease of £98,658 as compared with the previous year. This decrease was mainly owing to the reduction of train mileage to meet the loss of traffic in grain and minerals.

(ii.) *Victoria.* In Victoria the increase in working expenses, £372,913, was mainly due to the additional train mileage and to special and abnormal expenses owing to drought, the war, etc.

(iii.) *Queensland.* In this State the working expenses increased from £2,371,261 in 1913-14 to £2,401,679 in 1914-15. The increase is mainly due to the additions to the train mileage owing to the opening of new lines.

(iv.) *South Australia.* In South Australia the working expenses in 1913-14 shewed a decrease of £57,270, viz., from £1,505,765 to £1,448,495. This was due to a heavy drop in train mileage owing to the drought and consequent loss of traffic.

(v.) *Western Australia.* In this case the expenditure was £74,182 lower than in the previous year, caused by a reduction in the train mileage to meet the shortage of traffic caused by the adverse season.

(vi.) *Tasmania.* The working expenses in 1913-14 were £225,995, as compared with £222,713 in the previous year, being an increase of £3282.

In the preceding table it will be observed that there has been an annual increase during the last five financial years in the percentages of the total working expenses to the total gross earnings of the States' railways.

(vii.) *Working Expenses per Average Mile Worked and per Train Mile Run.* The following table shews the working expenses per average mile worked and per train mile run in each State for the years 1901-2 and 1910-15:—

**STATE RAILWAYS.—WORKING EXPENSES PER AVERAGE MILE WORKED AND
PER TRAIN MILE RUN, 1901-2 and 1910-15.**

Year.	N.S.W.	¹ Victoria.	Q'land.	⁴ S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
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WORKING EXPENSES PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£	£
1901-2 ...	793	663	354	397	927	² 370	238	602
1910-11 ...	995	884	412	729	532	451	³ 88	710
1911-12 ...	1,098	971	463	885	544	440	...	778
1912-13 ...	1,200	986	494	908	541	428	...	809
1913-14 ...	1,367	1,032	526	830	540	424	...	856
1914-15 ...	1,309	1,101	508	715	484	422	...	827

WORKING EXPENSES PER TRAIN MILE RUN.

	d.	d.	d.	d.	d.	d.	d.	d.
1901-2 ...	48.26	46.07	42.05	39.44	66.89	² 46.06	274.67	48.05
1910-11 ...	52.09	57.34	40.05	50.10	58.82	49.68	³ 99.09	51.61
1911-12 ...	54.08	59.70	44.55	51.51	61.71	50.72	...	54.07
1912-13 ...	58.11	60.52	45.03	52.74	64.30	51.83	...	56.01
1913-14 ...	63.18	61.73	50.16	53.69	67.80	53.41	...	59.57
1914-15 ...	62.42	66.47	48.08	62.29	66.51	53.96	...	60.80

¹ Including special expenditure and charges referred to in paragraph 11 hereof. ² For the calendar year 1902. ³ For 6 months only. ⁴ Excluding the Port Augusta-Oodnadatta line as from the 1st of January, 1911 (see page 630).

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 1910-15:—

STATE RAILWAYS.—DISTRIBUTION OF WORKING EXPENSES, 1901-2 and 1910-15.

Year.	N.S.W.	Victoria. ¹	Q'land.	S. Aust. ⁴	W. Aust.	Tas.	N. Ter.	All States.
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MAINTENANCE.

	£	£	£	£	£	£	£	£
1901-2 ...	554,483	490,438	355,615	166,691	246,931	² 58,612	29,001	1,901,771
1910-11 ...	810,196	753,312	499,891	324,616	271,862	65,774	³ 3,796	2,729,447
1911-12 ...	906,001	840,141	562,097	308,479	291,490	63,669	...	2,971,877
1912-13 ...	1,024,215	876,631	601,866	291,361	322,267	58,534	...	3,174,874
1913-14 ...	1,109,749	928,702	649,925	308,244	362,517	57,685	...	3,416,822
1914-15 ...	918,790	838,014	626,798	283,387	346,771	58,253	...	3,072,013

LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.

	£	£	£	£	£	£	£	£
1901-2 ...	1,102,314	845,464	389,766	343,572	670,485	² 63,732	3,210	3,418,603
1910-11 ...	1,770,487	1,263,858	603,976	575,744	593,507	84,787	³ 1,634	4,893,993
1911-12 ...	1,984,997	1,390,378	793,840	631,939	655,795	88,254	...	5,545,203
1912-13 ...	2,162,217	1,465,732	814,827	729,675	747,240	96,300	...	6,105,981
1913-14 ...	2,687,079	1,636,480	1,015,522	803,421	746,822	96,676	...	6,986,060
1914-15 ...	2,755,669	1,716,795	1,051,683	790,672	714,173	99,829	...	7,126,821

TRAFFIC EXPENSES.

	£	£	£	£	£	£	£	£
1901-2 ...	588,938	671,588	226,237	162,626	306,409	² 42,416	2,108	2,000,322
1910-11 ...	968,064	766,784	428,790	296,925	317,068	54,254	³ 778	2,832,663
1911-12 ...	1,133,539	901,024	516,838	325,259	359,025	57,570	...	3,293,255
1912-13 ...	1,343,707	947,868	585,681	346,705	397,274	60,820	...	3,682,055
1913-14 ...	1,491,423	1,066,738	656,406	365,954	415,836	57,731	...	4,054,088
1914-15 ...	1,502,945	1,081,816	671,622	347,427	392,628	57,814	...	4,054,262

OTHER CHARGES.

	£	£	£	£	£	£	£	£
1901-2 ...	96,634	158,629	21,133	16,628	32,545	² 8,472	330	334,371
1910-11 ...	142,314	315,550	30,462	25,154	34,040	10,715	³ 188	558,423
1911-12 ...	145,054	310,260	44,491	25,310	37,667	11,679	...	577,461
1912-13 ...	114,742	298,863	46,617	26,034	39,819	11,703	...	539,878
1913-14 ...	121,569	233,578	49,408	28,146	46,773	10,621	...	490,095
1914-15 ...	133,758	601,786	51,576	26,999	44,254	10,099	...	868,472

1. Including special expenditure and charges referred to in paragraph 11 hereof. 2. For the calendar year 1902. 3. For six months only. 4. Excluding the Port Augusta-Oodnadatta line as from the 1st of January, 1911 (see page 632).

13. **Net Revenue, Total and per Cent. on Capital Cost.**—The following table shews the net sums available to meet interest charges, and 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 1910-15:—

**STATE RAILWAYS.—NET REVENUE AND PERCENTAGE OF NET REVENUE
UPON CAPITAL COST OF LINES OPEN, 1901-2 and 1910-15.**

Year.	N.S.W.	¹ Victoria.	Q'land.	⁴ S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
NET REVENUE.								
	£	£	£	£	£	£	£	£
1901-2	1,326,317	1,201,724	389,428	395,658	265,059	² 59,919	—22,127	3,615,978
1910-11	2,351,144	1,796,706	1,167,311	792,743	627,942	62,386	³ —489	6,797,743
1911-12	2,321,882	1,777,164	1,115,592	796,573	540,627	91,614	...	6,643,455
1912-13	2,104,104	1,616,248	1,170,681	828,661	531,253	109,756	...	6,360,703
1913-14	2,332,421	1,695,460	1,288,761	831,486	685,003	107,455	...	6,940,586
1914-15	2,305,349	922,662	1,430,324	296,883	560,418	97,270	...	5,612,906

PERCENTAGE OF NET REVENUE ON CAPITAL EXPENDITURE.

	%	%	%	%	%	%	%	%
1901-2	3.27	2.96	1.94	2.98	3.58	² 1.56	—1.91	2.86
1910-11	4.62	4.07	4.51	6.47	5.22	1.53	³ —0.05	4.56
1911-12	4.37	3.88	3.95	6.22	4.09	2.15	...	4.23
1912-13	3.69	3.40	3.93	5.90	3.56	2.49	...	3.80
1913-14	3.88	3.44	4.05	5.46	4.32	2.39	...	3.93
1914-15	3.60	1.79	4.28	1.79	3.30	2.10	...	3.00

¹ In addition to ordinary working expenses, special expenditures and charges paid out of each year's gross revenue have been deducted; see paragraph 11 above. ² For the calendar year 1902.

³ For 6 months only. ⁴ Exclusive of Port Augusta-Oodnadatta line as from the 1st of January, 1911 (see page 632).

Note.—The minus sign (—) denotes net loss.

(i.) *Net Revenue per Average Mile Worked and per Train Mile Run.* Tables shewing 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 shewn in the following tables:—

**STATE RAILWAYS.—NET REVENUE PER AVERAGE MILE WORKED AND PER
TRAIN MILE RUN, 1901-2 and 1910-15.**

Year.	N.S.W.	¹ Victoria.	Q'land.	⁴ S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
NET REVENUE PER AVERAGE MILE WORKED.								
	£	£	£	£	£	£	£	£
1901-2	449	368	199	228	195	² 128	—153	284
1910-11	634	513	308	473	275	131	³ —7	438
1911-12	611	502	269	545	219	182	...	417
1912-13	543	444	269	540	191	216	...	381
1913-14	589	452	286	458	235	205	...	397
1914-15	568	240	302	147	181	181	...	307

NET REVENUE PER TRAIN MILE RUN.

	d.	d.	d.	d.	d.	d.	d.	d.
1901-2	28.87	25.56	16.50	22.53	14.11	² 15.93	—175.40	23.16
1910-11	33.18	33.24	29.91	32.49	30.37	14.38	³ —7.58	31.85
1911-12	30.09	30.83	25.93	31.71	24.82	21.01	...	29.00
1912-13	26.32	27.25	24.51	31.35	22.67	26.17	...	26.39
1913-14	27.24	27.07	27.26	29.64	29.54	25.77	...	27.66
1914-15	27.10	14.47	28.63	12.77	24.89	23.23	...	22.56

1. In addition to ordinary working expenses, special expenditure and charges paid out of each year's gross revenue have been deducted; see paragraph 11 above. ² For the calendar year 1902.

³ For six months only. ⁴ Exclusive of Port Augusta-Oodnadatta line as from the 1st of January, 1911 (see p. 630).

Note.—The minus sign (—) denotes net loss.

14. **Traffic Conditions.**—Reference has already been made to the difference in the traffic conditions on many of the lines of the Commonwealth (see paragraphs 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; 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 1914-15:—

PASSENGER JOURNEYS AND TONNAGE OF GOODS AND LIVE STOCK, 1914-15.

Particulars.				N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
(a) PER 100 OF MEAN POPULATION.										
Passenger journeys	...	...	No.	4,769	8,196	3,585	4,263	5,769	869	5,461
Goods and live stock	...	...	Tons	640	378	735	470	781	203	553
(b) PER AVERAGE MILE OF LINE WORKED.										
Passenger journeys	...	...	No.	21,882	30,473	5,128	9,235	6,019	3,267	14,733
Goods and live stock	...	...	Tons	2,938	1,406	1,051	1,025	815	761	1,493

¹ Exclusive of the returns of the Federal lines.

Particulars of the actual numbers of passengers and tons of goods and live stock carried have already been given (see paragraph 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 shews the number of metropolitan and country passengers carried in each of the States mentioned and the revenue derived therefrom during the year 1914-15:—

METROPOLITAN, SUBURBAN, AND COUNTRY PASSENGER TRAFFIC, 1914-15.

Particulars.	Number of Passenger Journeys.			Revenue.		
	Metropolitan.	Country.	Total.	Metropolitan.	Country.	Total.
N.S.W. ...	¹ 79,914,452	8,859,900	88,774,352	¹ 1,021,195	1,889,489	2,910,684
Victoria ...	² 108,721,181	8,538,745	117,259,926	² 1,123,100	1,335,958	2,459,058

¹ Within 34 miles of Sydney and Newcastle, and including the Richmond line.

² Within 20 miles of Melbourne, but exclusive of St. Kilda-Brighton tramway.

From this table it may be seen that the number of passenger-journeys in country districts in Victoria was slightly less than the corresponding number in New South Wales, while the number of metropolitan passenger-journeys in Victoria was far 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.

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 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 at once proceed 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 has been postponed. In Sydney, a Metropolitan Railway Construction Branch of the Railway Department has been created to deal specially with this matter. The Minister has approved of the construction of an underground city railway, and the plans have been prepared, and a commencement has been made with the preliminary works. The preliminary work in the location of a system of electric railways for the eastern, western and northern suburbs is also in hand.

(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 sub-divisions of tonnage carried and revenue in each State shall be those which best suit local conditions."

The following table shews the number of tons of various representative commodities carried, and the percentage of each class on the total tonnage carried during the financial year 1914-15:—

CLASSIFICATION OF COMMODITIES CARRIED, 1914-15.

State.	Minerals.	Fire-wood.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Commodities.	Total.
TONS CARRIED.								
New South Wales ...	17,344,823	190,432	248,876	429,228	132,895	849,604	2,230,248	11,660,106
Victoria ...	1,238,067	451,556	313,143	474,013	58,395	715,521	2,159,350	5,410,045
Queensland ...	1,506,678	250,798	39,532	320,390	76,754	570,222	2,206,499	4,970,873
South Australia ...	896,079	121,727	91,578	142,874	19,954	133,439	670,629	2,076,290
Western Australia ...	520,283	647,287	150,654	102,254	6,200	69,838	1,027,343	2,523,859
Tasmania ...	102,192	25,208	"	61,733	4,512	20,345	194,079	406,069
⁷ Total ...	11,608,122	1,687,008	1,077,783	1,530,492	298,710	2,358,969	8,488,148	27,049,232
PERCENTAGE ON TOTAL TONNAGE CARRIED.								
New South Wales ...	42.99	6.13	4.14	3.68	1.14	7.29	19.13	100.00
Victoria ...	32.88	9.35	5.79	8.76	1.08	13.23	39.91	100.00
Queensland ...	30.31	5.05	0.79	6.45	1.54	11.47	44.39	100.00
South Australia ...	43.16	5.86	4.41	6.88	0.96	6.43	32.30	100.00
Western Australia ...	20.61	25.65	5.97	4.05	0.25	2.76	40.71	100.00
Tasmania ...	25.04	6.18	"	15.13	1.10	4.99	47.56	100.00
⁷ Total ...	42.91	6.24	3.98	5.66	1.11	8.72	31.38	100.00

1. Exclusive of 260,775 tons of coal, on which only shunting and haulage were collected. 2. Up journey only. 3. Coal, stone, gravel, and sand. 4. Flour only. 5. Sugar cane. 6. Included in all other commodities. 7. Exclusive of Federal lines.

15. **Passenger-Mileage and Ton-Mileage.**—The useful comparisons and analyses which can be made with regard to the operations of the Government railways in the Commonwealth are to some extent limited by the absence in the annual reports of the Railway Departments of some of the States of particulars relating to “passenger-mileage” (*i.e.*, the total distance travelled by passengers) and “ton-mileage” (*i.e.*, the total distance for which goods and live stock are carried), and it is not possible to furnish totals for the Commonwealth in respect of these important particulars. The following resolution in regard thereto was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May, 1909:—“That, in view of the differing conditions in each State, and of the expense involved, it is undesirable to include passenger-mile and ton-mile statistics in the annual reports.” The general question as to the desirability of collecting and publishing “passenger-mile” and “ton-mile” statistics by railway companies in the United Kingdom has been made the subject of inquiry by a departmental committee appointed by the President of the Board of Trade. The report of this committee has been published in England as a parliamentary paper.¹

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 is the only one which furnishes the information in a classified form according to class of passengers and nature of commodities carried. The other two States supply particulars for all classes of passengers and goods together respectively. Western Australia furnished particulars as to ton-miles for the years 1907-12, but has since discontinued to record them. The mere record of the total number of passenger-miles and ton-miles for all classes of passengers and for all classes of goods respectively, although of considerable value, would appear to be insufficient to enable the whole field of railway operations to be adequately analysed, or the extent to which efficiency has been secured and improvements in working have been effected to be accurately gauged.

(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 only available for suburban and extended-suburban traffic—*i.e.*, including all stations within 34 miles of Sydney (including the Richmond line), and of Newcastle (including Branxton), 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,” etc., is obtained by dividing the number of “passenger-miles” by the number of “passenger-train-miles.” The averages given for New South Wales prior to 1911 are naturally smaller than those for the other States, since the figures for that State refer to suburban and extended-suburban traffic only.

¹ See Cd. 4697. This report is also published at length in “The Statist,” London, 19th June, 1909, Vol. LXII., No. 1634. In this report it is stated that ton-mile statistics have been used in India for forty years, and for a longer period in America. They are now compiled by the railways of nearly all foreign countries; in England, however, they are not generally compiled. Among the more important statistics deduced from ton-miles and passenger-miles the following are mentioned:—(a) The average Train Load of goods and of passengers, obtained by dividing the ton-mileage and the passenger-mileage respectively by the train-mileage. (b) The average Wagon Load and Carriage Load, obtained by dividing the ton-mileage by the wagon-mileage and the passenger-mileage by the carriage-mileage. (c) Ton-miles per Engine Hour. (d) The average Length of Haul for goods and passengers respectively, obtained by dividing the ton-mileage and the passenger-mileage by the tonnage and the total number of passengers conveyed. (e) The average Receipts per Ton per Mile and per Passenger per Mile, obtained by dividing the goods receipts by the ton-mileage and the passenger receipts by the passenger-mileage. (f) The average Density of Traffic per mile of road or per mile of track, obtained by dividing the ton-mileage and passenger-mileage by the length of road or by the length of track.

SUMMARY OF "PASSENGER MILES," 1901-2 and 1911-15.

Year ended the 30th June.	Pass'nger 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.¹

1902 ¹	... ²	27,999	184,064	361,849	... ²	6.57	0.47	2.92	... ²
1911	8,094	60,920	906,217	2,074,860	112	14.88	0.55	8.17	244,066
1912	8,978	70,707	1,091,088	2,349,279	121	15.43	0.51	7.97	287,204
1913	9,667	79,490	1,192,584	2,571,446	123	15.00	0.54	7.76	308,002
1914	10,081	86,328	1,235,025	2,832,450	123	14.37	0.55	7.87	312,804
1915	10,099	88,774	1,230,901	2,910,684	122	13.87	0.57	7.87	303,402

SOUTH AUSTRALIA.³

1911	2,405	16,620	195,216	535,527	81	11.75	0.65	7.73	101,940
1912	2,614	18,353	213,262	589,045	81	11.62	0.67	7.70	110,042
1913	2,804	19,382	228,707	619,094	81	11.80	0.64	7.66	135,321
1914	2,951	19,809	236,717	635,967	80	11.95	0.64	7.70	128,301
1915	2,815	18,881	215,489	560,012	77	11.44	0.62	7.14	106,362

TASMANIA.

1902 ⁴	336	761	19,444	88,541	58	25.60	1.09	27.91	42,086
1911	381	1,682	34,758	119,454	91	20.66	0.82	17.04	72,716
1912	396	1,715	34,292	126,886	86	19.99	0.87	17.75	68,174
1913	438	1,650	35,607	135,545	81	21.58	0.91	19.71	70,092
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

¹ Suburban lines only for year 1902; includes distances within 34 miles of Sydney and Newcastle, and including the Richmond line. ² Not available. ³ Exclusive of the returns of the Port Augusta to Oodnadatta line on and after 1st January, 1911. ⁴ 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; figures for subsequent years are not available. 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 they include terminals, while in Western Australia they exclude wharfage and jetty dues, but include all other charges.

SUMMARY OF "TON MILES," 1901-2 and 1911-15.

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.	No. .

NEW SOUTH WALES.

1902	6,586	6,164	436,814	1,947,305	66.32	70.87	1.07	148,464
1911	8,913	10,055	810,949	3,079,783	90.98	80.65	0.91	218,408
1912	9,543	10,632	862,016	3,181,771	90.32	81.08	0.89	226,906
1913	9,518	11,402	861,940	3,153,626	90.57	75.60	0.88	222,608
1914	10,469	12,901	1,037,911	3,760,384	99.09	80.45	0.87	262,053
1915	10,321	11,660	916,923	3,633,613	89.84	78.64	0.95	225,996

SOUTH AUSTRALIA.¹

1902	2,468	1,392	170,523	681,045	69.09	122.48	0.96	98,803
1911	3,451	2,731	328,181	1,322,339	95.09	120.15	0.97	171,374
1912	3,415	2,782	334,146	1,345,879	97.87	120.11	0.97	172,418
1913	3,539	3,016	355,405	1,441,859	100.42	117.84	0.97	176,642
1914	3,780	3,103	400,387	1,534,187	105.93	129.65	0.92	217,012
1915	2,766	2,076	237,014	1,049,074	85.70	114.15	1.06	116,972

WESTERN AUSTRALIA.²

1907	1,940	2,091	144,856	964,653	74.67	69.26	1.60	86,429
1908	1,976	2,059	142,719	948,373	72.22	69.32	1.59	77,989
1909	2,011	1,997	143,629	945,956	71.41	71.92	1.58	72,871
1910	2,281	2,242	163,651	1,042,789	71.75	73.00	1.53	77,855
1911	2,548	2,489	182,738	1,154,662	71.71	73.42	1.52	79,938
1912	2,747	2,542	184,748	1,154,087	67.25	72.67	1.49	77,767

TASMANIA.³

1902 ⁴	567	407	14,331	109,266	25.26	35.30	1.82	31,019
1911	660	346	16,382	115,008	24.83	47.32	1.68	34,271
1912	651	452	17,672	138,184	27.16	39.09	1.87	35,133
1913	569	447	17,747	144,073	31.17	39.67	1.94	34,104
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

¹ Inclusive of the returns of the Port Augusta to Oodnadatta line to 31st December, 1910.

² Particulars for 1913, 1914, and 1915 and for years prior to 1907 not available. ³ Exclusive of live stock. ⁴ To 31st December.

(iii.) *Classification of Commodity Ton Mileage.* New South Wales is the only State for which particulars, specifying the ton-mileage and the earnings per ton-mile for various classes of commodities, are available. It is hoped that in future years it will be possible to give corresponding particulars for the other States.

The subjoined statement gives particulars for the last financial year. Miscellaneous traffic consists of timber, bark, firewood, bricks, drain-pipes, coal, road-metal in eight-ton lots, 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, cement, 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 260,775 tons of coal on which only shunting and haulage charges were collected, nor does it include £60,722 for haulage, tonnage dues, etc.

**NEW SOUTH WALES.—SUMMARY OF TON-MILEAGE FOR THE YEAR ENDED 30th
JUNE, 1915.**

Particulars.	Total Tons Carried.	Total Miles Carried.	Average Miles per Ton.	Earnings (exclusive of Ter- minals).	Earnings per Ton- Mile.	Percentage on Total Tonnage.
	1000 Tons.	1000 Miles.	Miles.	£	d.	per cent.
Coal, coke, and shale ...	6,389	160,074	25.05	361,520	0.54	54.79
Other minerals ...	732	37,014	50.55	82,258	0.53	6.28
Crude ores ...	224	21,073	94.19	42,874	0.49	1.92
Miscellaneous ...	799	78,624	98.33	194,970	0.60	6.86
Firewood ...	190	6,580	34.55	19,907	0.73	1.63
Fruit ...	85	9,435	111.40	41,954	1.07	0.73
Grain, flour, etc. (Up Journey) ...	483	112,399	232.77	170,995	0.37	4.14
Hay, straw, and chaff ...	429	94,721	220.68	142,022	0.36	3.68
Frozen meat ...	52	6,626	127.61	27,160	0.98	0.45
General goods ...	2	613	356.25	6,620	2.59	0.01
A Class ...	498	46,740	93.83	216,244	1.11	4.27
B „ ...	413	36,870	89.31	263,234	1.71	3.54
C „ ...	32	1,426	44.12	18,133	3.05	0.28
1st Class ...	131	15,977	122.25	210,769	3.17	1.12
2nd „ ...	218	31,345	143.54	550,326	4.21	1.87
Wool ...	133	39,368	296.23	321,132	1.96	1.14
Live stock ...	850	218,038	256.64	963,495	1.06	7.29
Total ...	11,660	916,923	78.64	3,633,613	0.95	100.00

16. Interest Returned on Capital Expenditure.—It may be seen from the figures given in the table in paragraph 13 hereof, that the State Government railways in Australia have, on the whole, made a substantial profit during each year since the inception of the Commonwealth, but, unfortunately, the community does not get the full benefit of this profit, owing to the high rates of interest at which money for railways was borrowed in the early days. Though the average rate of interest for the year ended the 30th June, 1915, was 3.7 per cent., an average does not accurately express the position. At an early period the need of constructing railways for the sole purpose of opening 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 Commonwealth, forming, in fact, 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 up to a recent period is represented to a large extent by public works which pay 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 paragraph 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. Railways owned by the Commonwealth Government are not included in this return.

It will be seen that during the four years ended 30th June, 1914, all the States, with the exception of Queensland and 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, all the other States a loss, for reasons which have been referred to already.

STATE RAILWAYS.—INTEREST ON LOAN EXPENDITURE, PROFIT OR LOSS, AND PERCENTAGE OF PROFIT OR LOSS ON TOTAL COST, 1901-2 and 1914-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE.								
	£	£	£	£	£	£	£	£
1901-2 ...	1,434,638	1,492,635	837,205	469,787	234,932	140,550	47,012	4,656,819
1910-11 ...	1,797,146	1,514,657	952,818	477,632	403,551	155,819	^a 23,373	5,324,946
1911-12 ...	1,901,326	1,511,024	1,069,840	456,733	439,153	159,123	...	5,537,199
1912-13 ...	1,903,660	1,591,927	1,170,961	492,907	505,925	164,412	...	5,829,792
1913-14 ...	2,089,495	1,674,036	1,250,598	566,497	556,843	169,268	...	6,306,737
1914-15 ...	2,279,070	1,764,379	1,312,196	584,812	586,069	172,349	...	6,698,875

PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.²

	£	£	£	£	£	£	£	£
1901-2 ...	-108,321	-290,971	-447,777	-74,129	+30,127	-80,631	-69,139	-1,040,841
1910-11 ...	+553,998	+282,049	+214,493	+315,111	+224,441	-93,433	^a -23,862	+1,472,797
1911-12 ...	+420,556	+266,140	+45,752	+339,844	+101,474	-67,509	...	+1,106,257
1912-13 ...	+200,444	+24,321	-280	+335,754	+25,328	-54,656	...	+530,911
1913-14 ...	+242,926	+21,424	-38,163	+264,989	+128,160	-61,813	...	+633,849
1914-15 ...	+26,279	-841,717	+118,128	-287,929	-25,651	-75,079	...	-1,085,969

PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.²

	%	%	%	%	%	%	%	%
1901-2 ...	-0.27	-0.72	-2.22	-0.58	+0.41	-2.10	-6.71	-0.82
1910-11 ...	+1.09	+0.64	+0.83	^a +2.19	+1.87	-2.29	^a -2.29	+0.98
1911-12 ...	+0.79	+0.58	+0.16	+2.65	+0.77	-1.59	...	+0.71
1912-13 ...	+0.35	+0.05	-0.00	+2.39	+0.17	-1.24	...	+0.32
1913-14 ...	+0.40	+0.04	+0.12	+1.74	+0.81	-1.37	...	+0.36
1914-15 ...	+0.04	-1.63	+0.35	-1.73	-0.15	-1.62	...	-0.85

¹ Inclusive of Port Augusta-Oodnadatta line to 31st December, 1910. ² The positive sign indicates a profit, the negative a loss. ³ Allowing for payment of special expenditure and charges (see paragraph 11 above). ⁴ Calculated on £14,409,483, the capital cost of the South Australian Railways, including the Port Augusta-Oodnadatta line. ⁵ For 6 months only

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, season, and excursion fares. (d) Special fares for working-men, 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). Generally, it may be said that mileage-rate fares are computed on the basis of about twopence per mile for first-class and about $1\frac{1}{2}$ pence per mile for second-class single tickets. In Tasmania, however, the fares are computed on the general basis of $1\frac{1}{2}$ pence per mile first-class, one penny per mile second-class, with a terminal charge of one penny, with one-sixth added to total. 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, South Australia, and Western Australia, first-class 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, and Tasmania the issue of ordinary return tickets has 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, 1915.

State.	For a journey of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.

FIRST-CLASS SINGLE FARES.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales ¹ ...	4	7	11	2	24	3	37	5	50	6	60	9
Victoria ...	7	6	15	0	30	0	44	6	58	2	72	0
Queensland ...	8	2	15	4	29	1	43	4	56	0	68	8
South Australia ...	8	4	16	8	33	4	50	0	66	8	83	4
Western Australia ...	8	4	16	8	33	4	50	0	66	8	83	4
Tasmania ...	7	5	14	8	29	3	...	...	...	...	...	...
Average ² ...	7	5	14	11	29	11	45	1	59	7	73	6
Average per passenger-mile ² d.	1.78		1.79		1.80		1.80		1.78		1.76	

SECOND-CLASS SINGLE FARES.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales ¹ ...	3	0	7	4	15	5	23	1	30	0	35	1
Victoria ...	5	0	10	0	20	0	29	8	38	10	47	10
Queensland ...	5	5	9	11	19	0	27	1	34	3	41	6
South Australia ...	5	3	10	5	20	10	31	3	41	8	52	1
Western Australia ...	5	3	10	5	20	10	31	3	41	8	52	1
Tasmania ...	5	0	9	10	19	7	...	...	...	...	...	...
Average ² ...	4	10	9	8	19	3	28	6	37	3	45	9
Average per passenger-mile ² d.	1.16		1.16		1.16		1.14		1.12		1.10	

1. Inclusive of suburban rates up to 34 miles. 2. Exclusive of Tasmania for hauls of 300 miles and upwards.

(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 75 miles, to eleven shillings and threepence for a parcel weighing from 84 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. 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 twelve shillings and threepence; in Western Australia thirteen shillings; and in Tasmania for a distance of 250 miles the rate is five shillings and sixpence.

(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 8 in Victoria to 15 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, excepting in Western Australia, where the terms refer to a special toll of 1s. per ton on goods travelling over certain "district" railways as part payment of the extra cost of working lines laid for developmental purposes through sparsely settled districts. In addition to the ordinary classification of freights under class (a), certain commodities, such as wool, grain, agricultural produce, and crude ores, are given special rates, lower than the mileage rates, under class (c).

Space will not permit of anything like a complete analysis of goods rates in the several States being here given. As an indication of the range and amount of such rates the subjoined tables are given. The first table shews 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, 1915.

State.	Charge per Ton in Truck-loads for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ...	5 0	7 6	9 6	10 6	11 4	12 0
Victoria ...	5 6	8 6	10 6	12 4	14 0	15 8
Queensland ...	4 10	9 2	11 0	12 0	13 0	14 0
South Australia ¹ ...	6 2	8 9	12 11	17 1	21 3	25 5
Western Australia ...	6 3	8 11	12 1	17 0	22 0	24 0
Tasmania ...	6 9	9 8	13 0	...	...	...
Average ² ...	5 9	8 9	11 6	13 9	16 3	18 3
Average per ton-mile ² d.	1.38	1.05	0.69	0.55	0.48	0.43

1. Wheat is carried at a lower rate than that specified above for agricultural produce.
2. Exclusive of Tasmania for hauls of 300 miles and upwards.

The next tables shew 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 GOVERNMENT RAILWAYS, 1915.

State.	Charge per Ton for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles

HIGHEST-CLASS FREIGHT.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales ...	25	4	49	5	86	1	109	0	118	2	127	4
Victoria ...	21	3	42	0	79	6	108	9	133	9	158	9
Queensland ...	44	2	80	7	145	2	209	9	242	0	255	7
South Australia ...	27	1	52	1	97	11	134	7	166	8	194	2
Western Australia ...	37	4	64	7	114	5	156	2	190	4	218	9
Tasmania ...	33	9	54	0	100	0	...	...	...	...	...	...
Average ¹ ...	31	6	57	1	103	10	143	8	170	2	190	11
Average per ton-mile ² d.	7.56		6.85		6.23		5.75		5.11		4.58	

LOWEST-CLASS FREIGHT.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales ...	2	6	3	7	5	8	7	9	9	10	11	11
Victoria ...	4	3	6	8	10	0	11	10	13	6	15	2
Queensland ...	4	10	9	2	15	9	20	1	24	6	28	10
South Australia ...	3	4	6	3	10	0	12	4	14	0	15	8
Western Australia ...	5	0	8	4	14	2	19	2	23	4	27	6
Tasmania ...	5	0	6	9	8	6	...	...	...	...	...	...
Average ² ...	4	2	6	10	10	8	14	3	17	0	19	10
Average per ton-mile ² d.	1.00		0.82		0.64		0.57		0.51		0.48	

1. Maximum freight on highest class goods to Western stations is 200 shillings per ton.

2. Exclusive of Tasmania for hauls of 300 miles and upwards.

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 in logs, and posts and rails.

18. **Numbers and Description of Rolling Stock, 1915.**—The following table shews the number of locomotives and rolling stock in use on the State Government railways in each State, classified according to gauge:—

CLASSIFICATION OF LOCOMOTIVES AND ROLLING STOCK ON STATE GOVERNMENT RAILWAYS IN EACH STATE, 1914-15.

STATE.	GAUGE.					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft. 0 in.	
LOCOMOTIVES.						
New South Wales ... ..	...	1,162	...	...	...	1,162
Victoria... ..	1775	...	...	16	...	791
Queensland ... ..	...	...	3628	...	2	630
South Australia	2230	...	4226	...	...	456
West Australia ... ..	...	...	421	...	...	421
Tasmania ... ..	...	...	73	...	7	80
Total	1,005	1,162	1,348	16	9	3,540

PASSENGER VEHICLES.						
New South Wales ... ..	...	1,567	...	...	...	1,567
Victoria	1,454	...	...	34	...	1,488
Queensland ... ..	...	...	713	...	2	715
South Australia	370	...	134	...	...	504
West Australia ... ..	...	...	368	...	...	368
Tasmania ... ..	...	...	167	...	6	173
Total	1,824	1,567	1,382	34	8	4,815

ALL OTHER VEHICLES.						
New South Wales ... ..	...	21,497	...	...	...	21,497
Victoria	18,891	...	...	248	...	19,139
Queensland ... ..	...	...	13,164	...	59	13,223
South Australia	3,881	...	5,402	...	...	9,283
West Australia ... ..	...	...	10,064	...	...	10,064
Tasmania ... ..	...	...	1,660	...	77	1,737
Total	22,772	21,497	30,290	248	136	74,943

¹ Including three motor coaches, one steam and two gasoline. ² Including one gasoline motor coach. ³ Including five rail motors. ⁴ Including three motor coaches, two steam and one gasoline.

19. Number of Railway Employees.—The following table shows the number of employees in the Railway Departments of each State in the year 1901 and in each year from 1910 to 1915 inclusive, classified according to (a) salaried staff, and (b) wages staff.

From these figures it will be seen that there has been a steady increase in the number of persons engaged in the Railway Departments of the several States. During the period from 1901 to 1915, the total for the Commonwealth has increased from 42,321 to 94,233—an increase of 51,912, or about 123 per cent. The largest numerical increase for the individual States was that of New South Wales, viz., 23,626.

Separate returns for salaried and wages staff are not available for South Australia; the number of salaried staff is therefore included in the wages staff.

**STATE RAILWAYS.—NUMBER OF EMPLOYEES IN RAILWAY DEPARTMENTS,
1901 and 1910-15.**

State.	1900-1.		1910-11.		1911-12.		1912-13.		1913-14.		1914-15.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales ¹ ...	1,372	11,747	2,799	21,388	2,977	25,984	3,180	28,566	3,422	31,810	3,649	33,096
Victoria ...	1,432	10,524	2,111	17,622	2,243	19,910	2,471	21,115	2,598	22,169	2,661	24,314
Queensland ...	994	4,633	1,664	6,364	1,877	7,131	2,136	8,114	2,301	8,502	2,403	8,286
South Australia ² ...	...	3,855	...	7,552	...	8,569	...	8,754	...	8,995	...	10,182
Western Australia ...	876	5,407	872	6,079	935	6,627	1,016	6,734	1,079	6,913	1,054	7,093
Tasmania ...	178	1,252	203	1,232	200	1,147	204	1,131	224	1,180	218	1,277
All States ...	4,852	37,418	7,649	60,237	8,232	69,368	9,007	74,414	9,624	79,569	9,985	84,248

1. Exclusive of gate-keepers with free house only. 2. Separate returns for salaried and wages staffs are not available; the number of salaried staff 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 1910-11 to 1914-15 inclusive:—

**STATE RAILWAYS.—TOTAL NUMBER OF PERSONS KILLED AND INJURED,
1901 and 1910-15.**

State.	1900-1.		1910-11.		1911-12.		1912-13.		1913-14.		1914-15.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	1	1	46	368	68	513	84	582	112	570	78	645
Victoria ...	45	371	49	829	67	362	36	723	45	473	48	409
Queensland ...	13	100	16	104	25	235	27	349	32	454	30	102
South Australia ...	8	50	12	214	16	185	18	224	19	202	20	172
Western Australia ...	25	205	13	114	20	121	15	139	25	154	14	131
Tasmania ...	1	8	1	34	...	37	...	43	1	42	...	39
All States ...	...	...	137	1,663	196	1,453	180	2,060	234	1,895	190	1,498

1. Not available. 2. 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.**—Its 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 their beginning, viz., from 1855 onwards. To this end the graphs shewn on pages 646 to 648 have been prepared. The distribution of the railways is shewn on the map on page 645.

2. **Capital Cost and Mileage Open** (page 646).—The graph shews that the ratio between these elements was, naturally enough, very variable from 1855 to 1870, consequent upon progressive decrease in cost of construction. It then became subject to a more regular change, implying reduction of average cost.

3. Cost per Mile Open.—The fluctuations in cost per mile open are clearly indicated by the graph on page 646. 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, £9468, in 1911. In 1912, 1913, and 1914 it rose to £9545, £9666, and £9820 respectively, but fell in 1915-6 to £9632.

4. Gross Revenue.—This graph (page 646) exhibits considerable irregularities, the most striking of which are the maxima at 1892, 1902 and 1914. 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, for reasons already referred to, there was a fall amounting to £1,016,421.

5. Working Expenses and Net Revenue.—The characteristics of these graphs (page 646), are similar to those of "Gross Revenue," and the same remarks apply. It may be noted, however, that the working expenses are increasing at a faster rate than gross and net revenue.

6. Percentage of Working Expenses on Gross Revenue.—This is shewn for each State and for the Commonwealth on page 647, and for the Commonwealth only, on a larger scale, on page 646. The curve shews considerable fluctuations, but points also to the fact that, although a slight rise occurred in 1908, there was from 1903 to 1907 a rapid, and therefore very satisfactory, decline in the percentage of working expenses to gross revenue; since 1907, however, there has been a steady increase. The fluctuations of this percentage, for the individual States, call for no special comment beyond stating that the percentages for Victoria and South Australia are higher than those for the rest of the States.

7. Percentage of Net Revenue on Capital Cost.—For the Commonwealth this graph is shewn on a large scale on page 646, and on page 648 both for Commonwealth and States. 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 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, 4.37 and 4.43 per cent. Since 1911 there has been, with one exception, a continuous fall.

For the individual States the results are in general very satisfactory up to the year 1914, every State being able to record an increase over the previous year, with the exception of Tasmania, the figures for that State, however, having only once been exceeded, viz., in 1913. In 1914-15 the rates have fallen in each State with the exception of Queensland. This is mainly due to the effects of the drought experienced during this period.

The remarkable maximum for Western Australia in 1896 is consequent upon the large use made of the western railways at the time of the development of the Western Australian goldfields.

8. General Indications of Graphs.—Reviewing the cost of railways, as a whole, it may be noted that for the periods indicated the average cost per mile open is as follows:—

**STATE RAILWAYS.—AVERAGE COST PER MILE OF LINE OPEN, COMMONWEALTH,
1855 to 1912.**

Period	1855-1872.	1873-1882.	1883-1892.	1893-1902.	1903-1912.
Cost per mile	£ 24,561	£ 13,700	£ 10,286	£ 10,010	£ 9,614

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 goes to indicate the great elasticity of the economic condition of the Commonwealth. Although the percentage of net revenue on capital cost during the year 1914-15 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 £187,139,867 for construction and equipment up to the 30th June, 1915, should yield a return of no less than 3.00 per cent.

(E.)—Private Railways.

1. **Total Mileage Open, 1915.**—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, 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 up to the end of 1914. A classification of these lines according to their gauge has already been given (see page 629).

MILEAGE OF PRIVATE RAILWAYS OPEN, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth
For general traffic ...	181	24½	1497½	...	277	163½	1,143½
For special purposes ...	124	37	114	34	666	83	1,058
Total ...	305	61½	611½	34	943	246½	2,201½

1. Exclusive of Mount Garnet line, 33 miles, included in Queensland Government Railway mileage at 30th June, 1915.

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 1914. In this statement the lines inset are sub-branches from the main branches specified.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1914.

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
NEW SOUTH WALES.			
1. BRANCHES FROM NORTHERN LINE, N.S.W. GOVT. RLYS.—	ft. in.	Miles.	
Aberdare Junction to Cessnock	4 8½	12.	Coal and passengers
" " " E. Greta and Stanford-Merthyr	4 8½	4½	Coal
Hexham-Minni	4 8½	8	Coal and passengers
Brown's line to Richmond Vale	4 8½	6	" " "
Three other sub-branches	4 8½	11½	Coal
Newcastle-Wallsend Co.'s lines	4 8½	5	"
Five sub-branches... ..	4 8½	4½	"
Waratah Coal Co.'s line	4 8½	4	"
Old Burwood Pit	4 8½	4½	"
Gunnedah Coal Co.'s line	4 8½	7½	"
Other branches	4 8½	4½	"
Total	4 8½	27	Coal, coke, ores & stone
2. BRANCHES FROM NORTH-COAST LINE GOVT. RAILWAYS—			
New Redhead Coal Co.'s lines, Adamstown to Burwood	4 8½	9	Coal and passengers
Extended, and Dudley lines	4 8½	6	" " "
Seaham Coal Co.'s lines, Cockle Creek to West Wall-	4 8½	9	Coal
send and Seaham collieries	4 8½		
Nine other branches	4 8½		
Total	4 8½	24	
3. BRANCHES FROM SOUTHERN LINE, N.S.W. GOVT. RLYS.— ¹			
Liverpool-Warwick Farm	4 8½	2	Racecourse traffic
Goondah-Burrinjuck ²	2 0	26	General & materials for construction of dam
4. BRANCHES FROM S. COAST LINE, N.S.W. GOVT. RLYS.— ³			
Mount Kembla Coal Co.	4 8½	7½	Coal
Corrimal and Balgownie	4 8½	3½	"
Australian Smelting Co., Dapto	4 8½	2½	Ores
Mount Keira Coal Co., Belmore Basin	4 8½	3	Coal
Nine other branches	4 8½	14	"
Mount Pleasant Coal Co.	3 6	3½	"
Total	4 8½	31½	
5. BRANCHES FROM WESTERN LINE, N.S.W. GOVT. RLYS.—			
Commonwealth Oil Corporation's line from Newnes	4 8½	33	General
Junction	4 8½	6½	Coal, metal, and ores
Eleven other branches	4 8½		
Total	4 8½	39½	
6. SILVERTON TRAMWAY—			
Broken Hill and Cockburn	3 6	36	General
7. DENILIKUIN-MOAMA LINE	5 3	45	"
Total for State	5 3	45	
	4 8½	194½	
	3 6	39½	
	2 0	26	

1. Three other branch private lines having a total length of 24 miles have been constructed for the conveyance of minerals, but are now closed. 2. Owned and worked by the Public Works Department. 3. The Illawarra Harbour and Land Corporation's line, 6½ miles long, constructed for general traffic is not now working.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1914 (Continued).

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
VICTORIA. ¹			
1. KERANG TO KOONDROOK TRAMWAY	ft. in. 5 3	Miles. 14	General
2. ALTONA BAY RAILWAY— Williamstown racecourse and pit at Altona	5 3	2½	Sand and stone
3. TOOBORAC INTO BUSH	5 3	24	Firewood
4. TRAWALLA TO WATERLOO	5 3	8	" and gravel
5. CARISBROOK TO NEW HAVILAH MINE	5 3	2½	" & mining timber
6. YARRA JUNCTION TO POWELLTOWN	3 0	10½	General
Total for State... ..	5 3 3 0	51 10½	

1. The Rosstown railway, running between Elsternwick and Oakleigh railway stations, about 5 miles in length, is not in use.

QUEENSLAND.

	ft. in.	Miles.	
1. BRANCHES FROM GREAT NORTHERN LINE, GOVT. RLYS.— Three branch lines	3 6	2½	Mineral traffic
Wee McGregor Tramway	3 6	22	"
2. BRANCHES FROM NORTH-COAST LINE, GOVT. RAILWAYS Bundaberg to Millaquin	3 6	2	Sugar
Avondale to Invicta Mill	3 6	8½	General (chiefly sugar)
Woongarra Tramway	3 6	14½	General
Mount Bauple	3 6	17½	Sugar
Plane Creek	2 0	44½	"
3. BRANCH FROM WESTERN LINE, GOVT. RAILWAYS— Munro's tramway to Perseverance	3 6	10	Timber & farm produce
Gulland's lines to coal mines	3 6	1½	Coal
Stafford's lines to coal mines	3 6	3	"
Mount Crosby	3 6	5	Water Conservation
4. BRANCHES FROM CAIRNS LINE, GOVT. RAILWAYS— Greenhill branch	2 0	4½	Sugar
Chillagoe railway, Mareeba to Mungana	3 6	103	General (chiefly coal and
1 Mount Garnet tramways, Lappa Jn'tn to Mt. Garnet	2 0	33	" " [minerals]
Stannary Hills tramway, Boonmoo to Rocky Bluffs	3 6	20	" " "
Mount Molloy tramway	3 6	21	" " "
2 Etheridge Railway, Alma-den to Forsayth	3 6	143	General
5. BRANCH FROM SOUTH-COAST LINE, GOVT. RAILWAYS— Beaudesert tramway to Rathdowney, Tabooba Junction to Lamington	3 6	33	" (chiefly timber
6. INGHAM TRAMWAY— Lucinda Point to Stone River and Long Pocket	2 0	53½	" [and dairy produce]
7. MOSSMAN TRAMWAY— Port Douglas to S. Mossman and Mowbray Rivers	2 0	17	General (chiefly sugar)
8. BRANCH FROM BOWEN LINE— Bowen to Proserpine	3 6	38½	"
9. BRANCH FROM CENTRAL LINE GOVT. RAILWAYS— Bacaldine to Arainac	3 6	41	" (chiefly stock)
10. BRANCH FROM CLEVELAND LINE GOVT. RAILWAYS— Norman Park to Belmont	3 6	4½	"
11. BRANCH FROM SOUTH WESTERN LINE, GOVT. RLYS.— Tannymorel Tramway	3 6	4	Coal
Total for State... ..	3 6 2 0	3471 140½	

1. Taken over by Queensland Government, 23rd December, 1914. 2. Worked by Queensland Government. 3. Exclusive of 33 miles Mount Garnet line included in mileage of Queensland Government Railways on 30th June, 1915.

SOUTH AUSTRALIA.

	ft. in.	Miles.	
BROKEN HILL PROPRIETARY CO.'S LINE— Iron Knob to Hammock Hill, Spencer's Gulf	3 6	34	Carriage of ironst'ne flux

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1914 (Continued).

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
WESTERN AUSTRALIA. ¹			
1. MIDLAND RAILWAY— Joining Govt. lines at Midland Junction & Walkaway	ft. in. 3 6	Miles. 277	General
2. W.A. GOLDFIELDS FIREWOOD SUPPLY Co.'s LINE— From Kurrawang into bush ...	3 6	87	Firewood
3. KALGOORLIE AND BOULDER FIREWOOD Co.'s LINE— Goodwood railway, from Lake Side into bush ...	3 6	24	"
Lancefield railway into bush ...	2 0	26	"
Laverton to junction Lancefield railway ...	2 0	6½	"
4. W.A. TIMBER AND FIREWOOD Co. LTD. LINE— Kurramia railway, from Kalgoorlie-Kanowna railway to bush ...	3 6	60	"
5. SONS OF GWALIA GOLD MINING Co.'s LINE— Railway into bush ...	1 8	21	"
6. MURCHISON FIREWOOD Co.'s LINE— Nallan wood railway, from Nallan siding to bush ...	3 6	27½	"
7. W.A. JARRAH SAWMILLS LINE— From Kirup to mills and into bush ...	3 6	32	Timber
8. TIMBER CORPORATION Co.'s LINE— From Greenbushes to mills and into bush ...	3 6	18½	"
9. S.-WEST TIMBER HEWERS' Co-OP. SOCIETY'S LINE— From Holyoake and Lucknow into bush ...	3 6	17½	"
10. MILLAR'S TIMBER TRADING Co.'s LINES— Upper Darling Range railway, from Pickering Brook to Canning mills and bush ...	3 6	9	"
Jarrahdale and Rockingham railway, from Mundijong to Rockingham and bush ...	3 6	50½	"
Yarloop railway to mills and bush ...	3 6	58½	"
Mornington mills rly., from Wokalup to mills & bush	3 6	41½	"
Ferguson River railway, from Dardanup to mills and into bush ...	3 6	39½	"
Collie Mills railway, from Worsley into bush	3 6	18½	"
Kirup saw mills into bush ...	3 6	27	"
Marrinup saw mills into bush ...	3 6	7½	"
Jarrahdale saw mills into bush ...	3 6	11½	"
11. BUNNING BROS. LTD. LINES— From Lion Mill, Argyle, Cardiff & Preston Valley to bush	3 6	35½	"
12. NORTH DANDALUP S.M. RAILWAY— To mill and bush ...	3 6	11	"
13. SWAN SAW MILL RAILWAY— From Lowden to mill and bush ...	3 6	12	"
14. BUCKINGHAM BROS. S.M. RAILWAY— From Muja to bush ...	3 6	4½	"
15. WILGARRUP KARRI AND JARRAH Co.'s LINE— Railway into bush ...	3 6	5	"
16. WHIM CREEK RAILWAY TO BALLA BALLA ...	2 0	14	Copper ore
Total for State...	{ 3 6 2 0 1 8	875½ 46½ 21	

1. To the 31st December, 1913.

TASMANIA.

Railway Lines.	ft. in.	Miles.	Nature of Traffic Carried, etc.
1. EMU BAY RAILWAY Co.'s LINES— Burnie to Waratah ...	3 6	103½	General
Guildford to Zeehan ...	3 6		
Rayna to Dundas ...	3 6		
2. MOUNT LYELL MINING AND RAILWAY Co.'s LINES— Strahan to Queenstown ...	3 6	22	"
Gormanston to Kelly Basin ...	3 6	28	"
3. SANDFLY COLLIERY Co.'s LINE— North-west Bay Co.'s jetty to mine ...	2 0	12	Minerals
4. HUON TIMBER Co.'s LINE ...	3 6	30½	Timber
5. TASMANIAN GOLD MINING Co.'s LINE— Beaconsfield to Beauty Point ² ...	3 6	3½	Minerals and occasionally passengers
6. ZEEHAN TRAM Co.'s LINE— Emu Bay railway to British Queen ...	2 0	2½	Minerals and occasionally passengers
7. DUCK RIVER RAILWAY— Leesville to Parish of Williams ³ ...	3 6	8	Chiefly timber
8. MAGNET SILVER MINING Co.'s LINES— Magnet Junction to Magnet ...	2 0	10	Minerals and passengers
9. SMITHTON TO PELICAN POINT ...	3 6	2	Produce
10. MARRAWAH TRAM ...	3 6	25	" & occasionally passengers
Total for State...	{ 3 6 2 0	222 24½	

1. Approximate. 2. Also branch lines as follows:—Electric railway, 1½ miles long, to reduction works, 2 ft. gauge; surface railways, horse, ½ mile long, 2 ft. gauge. 3. Extension under construction.

3. **New South Wales.**—In this State the mileage of private railways open to the public for general traffic at the end of 1914 was 181, and of lines used for special purposes, 124 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 1914 of the operations of lines open for general traffic are given, so far as available, in the table on page 674.

(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 a private 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 Silverton Tramway Company. It was opened in 1888, and connects Broken Hill with the South Australian railway system, having a total length of 36 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 8 miles, and from Aberdare Junction to Cessnock, 12 miles—a total of 20 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, and from Adamstown to Dudley Colliery, a total distance of 9 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 Railways.* This line runs from Cockle Creek to West Wallsend and Seaham Collieries, and has a total length of 6 miles. (f) *Hexham-Minmi Railway.* This line branches from the Northern line of the Government railways and has a length of 6 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, three-quarters 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 built and worked by the Public Works department in connection with the dam in course of construction 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 miles. The line was purchased by the Government in 1901, and is operated by the Silverton 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.

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, 1915, was £39,229, paid out of a loan advanced by the Victorian Government. The total length is $14\frac{1}{2}$ miles. The line is at present controlled by the Kerang Shire Council, but proposals have recently been made for its transfer to the Railway Department. (b) Yarra Junction to Powelltown. This line has a length of $10\frac{1}{2}$ miles, and is worked mainly for timber purposes.

A line running from Elsternwick to Oakleigh, a distance of about 5 miles, has been constructed by a private company, but is, as already stated, not in use.

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 103 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 $1\frac{1}{2}$ chains. An additional length of 8 miles has been surveyed with a view to extending the line. (c) *The Mount Garnet Railway*. This line also branches from the Chillagoe railway, at Lappa Junction, and runs for a distance of 33 miles, as far as Mount Garnet. It was purchased by the Queensland Government Railways on the 23rd December, 1914.

(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 £3000 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 are no private railways open for general traffic. The only private line is 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 34 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.

7. *Western Australia*.—Owing to the Government's past difficulty 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 277 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, with 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 nine 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 260 miles. (iv.) *Other Lines*. There are also a number of 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 671.

8. *Tasmania*.—In this State there are three private lines open for general traffic. They are all 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 $103\frac{1}{2}$ 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 miles in length, was constructed in 1895-6, while the latter line, 28 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 run 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 10 miles.

9. **Operations of Private Railways, 1914.**—The tabular statement given below shews particulars, so far as returns are available, for the year 1914, of all private railways open to the public for general traffic in the Commonwealth:—

PARTICULARS OF PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC, 1914.

Line.	Miles Open.	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. '000.	Tons '000.	No.	No.	No.	No.
NEW SOUTH WALES.												
Deniliquin-Moama	45	162,672	22,495	11,982	153	42,317	12	52	51	4	6	63
Silverton Tramway	36	464,115	180,741	74,475	2...	151,999	58	921	195	18	1	680
East Greta Railway	20	180,538	62,748	45,909	9,027	381,487	855	59	210	17	28	40
Seaham Colliery Co.	6	16,000	1,004	700	2...	7,728	17	10	10	2	2	2
New Redhead Co. ⁶	9	90,000	4,584	2,121	1,882	2...	2...	2...	12	3...	3...	3...
Hexham-Minmi	6	...	881	915	...	4,600	11	1	6	1	4	1
C'wlth. Oil Corp'r'n	33	194,590	594	2,154	17,248	12,903	...	2	9	46	2	95
Goond'h-Burrinj'ck	26	85,876	2,266	7,666	2...	2...	2	9	2	4	3	28
Total ¹	181	1,193,791	275,314	145,922	28,310	601,034	955	1,054	493	52	46	909
VICTORIA.												
Kerang-Koondrook	14	39,229	3,977	2,693	1,800	18,928	11	2...	12	2	2	8
YarraJ.-Powelltown	10½	44,000	3,780	2,573	2...	21,840	21	2...	2...	3	1	56
Total ¹	24½	83,229	7,757	5,266	1,800	40,768	32	2...	12	5	3	64
QUEENSLAND.												
Chillagoe Railway	103	420,276	42,663	20,833	2...	66,484	20	40	69	8	2	162
Stannary Hills	21	65,320	3,296	3,764	2...	15,209	3	12	7	1	2	76
Mount Garnet	33	2...	1,758	2,922	2...	11,018	2	1	12	1	1	3
Invicta Mill	8½	19,446	1,276	1,022	5,1929	2,256	2	...	3...	3...	3...	3...
Beaudesert	33	91,800	10,036	6,256	4,989	30,940	17	18	34	2	3	2
Douglas-Mossman	17	40,618	6,934	3,480	2,774	9,920	8	10	13	2	3	22
Lucinda Pt. to Stone B. and Lg. Pocket	53½	2...	2...	2...	2...	2...	2...	2...	2...	3	4	20
Bowen-Proserpine	38½	104,649	6,153	3,008	2,630	10,140	2...	2...	10	3...	3...	3...
Wongarra	14½	34,139	3,419	5,042	2...	5,102	25	49	6	3...	3...	3...
Mt. Molloy Tr'mw'y ⁶	20	745,813	2,022	2...	2...	9,187	2	1	6	1	1	7
Belmont Tramway	4½	21,458	1,308	1,882	862	9,074	12	22	3...	3...	3...	3...
Aramac-Barcaldine	41	82,800	8,390	9,681	2,466	27,696	7	7	19	2	1	1
Etheridge ³	143	457,175	11,109	11,465	11,250	23,275	3	3	3...	3...	3...	3...
Total ¹	497½	1,383,494	98,364	69,355	26,900	220,301	101	163	176	20	17	293
WESTERN AUSTRALIA.												
Midland-Railway	277	1,287,252	98,704	67,716	2...	359,585	63	70	255	17	20	400
TASMANIA.												
Emu Bay Railway...	103½	611,360	47,748	28,910	19,923	103,779	28	31	96	10	10	151
Mt. Lyell Railway...	22	216,086	30,780	22,198	2...	57,063	25	119	138	7	7	129
Nth. Mt. Lyell Rly.	28	316,638	4,675	5,936	2...	10,309	5	15	18	4	3	56
Magnet Railway	10	18,750	333	2,109	2...	7,280	1	...	9	3	1	8
Total ¹	163½	1,162,834	83,536	59,153	19,923	178,451	59	165	261	24	21	344
Total for C'wlth. ¹	1,143½	5,110,600	563,675	347,412	76,933	1,400,139	1,210	1,452	1,197	118	107	2,010

1. Incomplete. 2. Not available. 3. Worked by Government railways. 4. Including one motor car. 5. Including depreciation. 6. Exclusive of 33 miles Mount Garnet line included in mileage of Queensland Government railways at 30th June, 1915. 7. For year 1911. 8. For year 1913.

§ 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.

There are also in many parts of Australia private tramway lines which are used for special purposes, usually in connection with the timber, mining, or milling industries. Though efforts have been made to collect particulars of these lines, the returns are generally too incomplete for publication.

(i.) *Total Mileage Open and Classification of Lines.* The following table shews the total mileage of tramway lines open for general passenger traffic in each State and in the Commonwealth at the end of the year 1914-15, 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, 1914-15.

Nature of Motive Power and Controlling Authority.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tas.	C'wealth.
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ACCORDING TO MOTIVE POWER.

	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	150	70½	38½	57	50½	20	386½
Steam	73½	1	7	...	...	2½	83½
Cable ... ..	...	46	...	...	...	...	46
Horse ... ..	...	6	...	120½	29	...	55½
Total	223½	123½	45½	77½	79½	22½	572

ACCORDING TO CONTROLLING AUTHORITY.

Government	219½	5½	...	117½	54	...	296½
Municipal ... ..	...	32	7	60½	11	20	130½
Private	3½	86½	38½	...	14½	2½	145½
Total	223½	123½	45½	77½	79½	22½	572

1. 16½ miles included in South Australian Government railway mileage.

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, 1915, seven such systems in operation within the metropolitan area, the most important being the city and suburban lines, 110½ miles in length (199½ miles single track); the North Shore line, 19½ miles in length

(33½ miles single track); the Ashfield to Mortlake line, 8½ miles in length (12½ miles single track); Manly to the Spit, 10½ miles; and Rockdale to Brighton-le-Sands, 1½ miles. 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, 5½ miles in length, and (b) from Arncliffe to Bexley, 2½ miles long.

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 feet 8½ inches.

(a) *Sydney Tramways.* In the early sixties a horse tramway, 1½ miles long, was constructed in Sydney. Owing to the rails being laid higher than the road surface, the inconvenience thus caused to other traffic necessitated its removal, and it was not until September, 1879, that the first steam tramway was opened, running from Bridge-street to Hay-street via Elizabeth-street. In the following few years these steam tramways were considerably extended. The electric system was not introduced into the city until the close of the year 1899, though it had at that time been in operation for some years in North Sydney. 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. The whole of the steam tramways in Sydney and suburbs, with the exception of the Kogarah-Sans Souci, and the Arncliffe-Bexley, 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 in 1887; the total length open on the 30th June, 1915, was 32½ miles. At Broken Hill and Parramatta the first sections of the tramways were opened in 1902. On the 30th June, 1915, the mileage open at Broken Hill amounted to 10, and at Parramatta to 6½ miles. The line from East to West Maitland, 4½ miles long, was opened in February, 1909. 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 1910-15:—

**NEW SOUTH WALES.—PARTICULARS OF WORKING OF GOVERNMENT
TRAMWAYS, 1901-2 and 1910-15.**

Year ended the 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.	£	£	£	£	per cent.	per cent.
1901-2	104	2,829,363	631,757	541,984	89,773	85.79	3.19
1910-11	190	5,121,586 ¹	1,365,631	1,143,949	221,682	83.77	4.33
1911-12	195½	5,664,324 ¹	1,581,393	1,331,413	249,980	84.19	4.41
1912-13	208	6,699,305 ¹	1,754,566	1,572,190	182,376	89.61	2.94
1913-14	212½	7,628,653 ¹	1,934,164	1,669,033	265,131	86.29	3.66
1914-15	219½	7,970,293 ¹	1,986,060	1,611,287	374,773	81.13	4.70

¹ £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 £284,638 for interest on the capital invested, was a surplus of £90,135 in 1914-15, as compared with a surplus of £1680 in the preceding year. During the year 1914-15, 289,282,845 passengers were carried, a decrease of 21,309,853 as compared with the previous year.

(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.

**NEW SOUTH WALES.—PARTICULARS OF THE WORKING OF THE VARIOUS
GOVERNMENT TRAMWAYS, 1914-15.**

Line.	Length.		Total Cost.	Gross Revenue.	Working Expenses.	Interest.	Profit or Loss. ¹
	Route.	Track.					
	Miles.	Miles.	£	£	£	£	£
Sydney and Suburban—							
Electric ...	150	261	7,349,866	1,834,022	1,469,227	262,538	+ 102,257
Steam ...	8½	8½	46,069	11,048	14,529	1,638	— 5,119
Total...	158½	269½	7,395,935	1,845,070	1,483,756	264,176	+ 97,138
Parramatta Steam	6½	6½	38,282	7,382	7,663	1,402	— 1,683
Sutherland to Cronulla,,	7½	7½	49,520	11,812	8,568	1,814	+ 1,430
Newcastle ,,	32½	42½	360,313	101,542	85,326	12,632	+ 3,584
East to West Maitland,,	4½	4½	38,819	5,217	6,190	1,421	— 2,394
Broken Hill ,,	10	11½	87,424	15,037	19,784	3,193	— 7,940
Total...	219½	342	7,970,293	1,986,060	1,611,287	284,638	+ 90,135

1. The positive sign indicates a profit, the negative 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, 1915.**

Permanent Way.	Rolling Stock.	Power-house, Sub-stations, and Plant.	Machinery.	Workshops.	Furniture.	Total.
£3,933,572	£1,812,730	£1,717,806	£124,461	£211,332	£2,392	£7,970,293 ¹

¹ Includes £168,000 for Store Advance Account.

The average cost per mile open was £17,896 for permanent way and £18,365 for all other charges, making a total of £36,261 per mile.

During the year 1914-15, six new extensions, amounting in all to a length of 8 miles, were opened for traffic. On the 30th June, 1915, three extensions, having a total length of two and three-quarter miles, were under construction.

(e) *Sydney Electric Tramways.* The current for the operation of the city and suburban tramways is generated at the power-house at Ultimo, which has been erected at a total cost of £1,717,806, including the cost of the sub-stations and plant. The total output of the power-house, for both lighting and traction purposes, during the year 1914-15, was

93,554,559 kilowatt-hours, of which the direct-current supply was 1,054,035, and the alternating current 92,500,524 kilowatt-hours. The following table gives particulars of the working of the electric tramways for the financial years 1910-11 to 1914-15 :—

**NEW SOUTH WALES.—PARTICULARS OF SYDNEY ELECTRIC TRAMWAYS,
1910-11 to 1914-15.**

Year ended 30th June.	Mileage Open for Traffic.		Total Cost of Construction and Equipment.	Output of Power-house for Traction Purposes.	Tram Miles Run.	Passengers Carried.
	Route.	Track.				
	Miles.	Miles.	£	Kilowatt-hours '000	No. '000.	No. '000.
1911 ...	114	201½	4,585,240	61,163	21,120	214,975
1912 ...	131½	223	5,153,321	70,920	23,016	250,786
1913 ...	141½	242½	6,162,063	79,840	25,480	275,977
1914 ...	145½	252½	7,054,833	86,187	26,974	290,547
1915 ...	150	261	7,349,866	81,591	25,407	269,634

Year ended 30th June.	Gross Revenue.	Working Expenses.	Net Revenue.	Number of Cars in Use.	Number of Persons Employed.
	£	£	£		
1911 ...	1,256,672	1,033,229	223,443	985	6,667
1912 ...	1,460,625	1,209,321	251,304	1,048	8,138
1913 ...	1,616,686	1,433,972	182,714	1,220	9,048
1914 ...	1,781,063	1,520,185	260,878	1,396	9,195
1915 ...	1,834,022	1,469,227	364,795	1,430	8,743

(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 1914 the number of tram miles run was about 18,100, and the number of passengers conveyed 144,724.

Particulars regarding private tramways used for special purposes are not available.

(iii.) *Sydney Harbour Ferries.* As the ferry services on the waters of Port Jackson are mainly subsidiary to the suburban railway and tramway systems, it has been thought advisable to include them here rather than under Shipping. Returns for the year 1914 were received from four companies, and shew that these companies had 71 boats in commission, which were licensed to carry a total of 47,396 passengers, or an average of 667 per boat and per trip. The total number of passengers carried during the year is stated as 36,547,178, an average of 100,129 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 four companies employed during the year a total of 986 persons. The gross revenue during 1914 amounted to £336,435, and the expenditure to £253,519, thus giving a net revenue of £82,916. 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 is a number of 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. There are also four lines of electric tramways, one running from St. Kilda to Brighton, a distance of five and one-eighth miles, belonging to the Government, and under the control of the Railway Commissioners; one from Flemington Bridge to the Saltwater River and Keilor Road, a distance of seven and a-half miles, owned by a private company; a system of lines embracing routes connecting Prahran, Windsor, St. Kilda, and Elsternwick with Glen Huntly, Caulfield, Malvern, Glenferrie, and Kew having a route mileage of 30.65 miles and a track mileage of 58.01 miles and controlled by the Prahran and Malvern Tramway Trust, and a line from Princes Bridge, Melbourne, to Burwood, a distance of eight miles, under the control of the Hawthorn Tramways Trust. The first section of this line, from Princes Bridge to Bowen street, Camberwell, was opened for traffic on April 8th, 1916, and the final section to Burwood on June 10th, 1916. There is also a private cable tramway, two and a-quarter miles in length, between Clifton Hill and Preston. There is also a tramway one and a-half miles long, worked by horses, from Brunswick to Coburg, and owned by the Coburg municipality, while a similar service is worked by the Melbourne Tramway and Omnibus Company, viz., the Zoological Gardens line. It is intended to electrify the Brunswick-Coburg line at an early date. There is a short steam tramway, about one 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.

(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 Book No. 7, page 652.) 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 company is required to find sufficient capital to build the rolling-stock and to equip the lines and engine-houses with all necessary working requisites. The company pays to the Trust annually the interest due upon the loans raised, and also a sufficient sum as a sinking or redemption fund, to repay by its accumulation the principal of the loans raised by the Trust, and at the expiration of the lease must hand back the lines in good working order to the Trust. The expenses of the Trust were paid out of the loan up to the end of the year 1903, but since that date have been paid by the company to an amount not exceeding £1000 per annum, the municipalities being liable for the remainder. The total amount the Trust was empowered to borrow was £1,650,000, which has been 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. The first line—that to Richmond—was opened to traffic in November, 1885, and the work being rapidly pushed on, the others were opened at short intervals, and the whole system was completed in 1891. The complete system consists of forty-three and a half miles of double-track cable lines, using constantly over ninety miles of wire rope, and four and a half miles of double-track horse lines. The gauge of track is 4 feet 8½ inches.

(a) *Particulars of Working.* The subjoined statement shews the tram mileage, the number of passengers carried, and the revenue and expenditure for the years 1901-2 and 1911 to 1915:—

**MELBOURNE CABLE TRAMWAYS.—PARTICULARS OF WORKING, 1901-2
and 1911 to 1915.**

Year ended the 30th June.	Tram Mileage.	Number of Passengers Carried.	Revenue.	Working Expenses.	Percentage of Working Expenses to Revenue.
	No.	No.	£	£	%
1902	9,226,883	47,261,572	474,835	269,554	56.7
1911	10,636,440	76,235,825	684,327	320,784	46.8
1912	11,313,212	84,926,712	760,792	343,919	45.2
1913	11,839,473	89,359,248	795,091	386,603	48.6
1914	12,056,510	91,438,777	823,567	400,202	48.5
1915	11,887,462	87,707,934	736,154	404,056	54.9

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.

(ii.) *Electric Tramways.* There are in Melbourne four electric tramway systems, namely (a) the St. Kilda-Brighton line, (b) the North Melbourne tramways, (c) the Prahran-Malvern system, and (d) the Hawthorn Tramway Trust system.

(a) *The St. Kilda-Brighton Line.* Under the St. Kilda and Brighton Electric Street Railways 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 in May, 1906, and the extension to Brighton Beach was opened in the following year. A proposal has been made to extend the line along the foreshore as far as Mordialloc. The capital cost to the 30th June, 1915 exclusive of rolling-stock, was £75,103, and of rolling-stock was £26,623, making a total of £101,726. 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, 1910 to 1915:—

ST. KILDA-BRIGHTON ELECTRIC STREET TRAMWAY, 1910-15.

Year ended 30th June.	Mileage Open (Route).	Capital Cost.	Car Mileage.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit or Loss.
		£			£	£	£	£
1910	5.13	58,612	340,254	1,361,925	11,885	9,860	2,092	— 67
1911	5.13	59,007	346,849	1,410,907	12,852	9,819	2,107	+ 926
1912	5.13	60,590	367,306	1,674,918	15,012	13,283	2,078	— 349
1913	5.13	88,133	413,939	1,916,618	16,829	15,808	3,093	—2,072
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

1. Profit is indicated by +, loss by —.

The average fare paid per passenger was 2.00 pence in 1914-15 as against 2.05 pence in 1913-14. The gross revenue in 1914-15 was 9.40 pence per passenger car mile and £4383 per route mile open.

(b) *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 towards the end of the year 1906. The track mileage for year ended 30th September, 1915, was $11\frac{1}{2}$ miles (route mileage, $7\frac{1}{2}$ miles), the gauge of line being 4 feet $8\frac{1}{2}$ inches. The number of passengers carried during the same period was 3,138,327. The current used during the year for traction purposes was 689,926 kilowatt hours, while the number of persons employed was 120.

(c) *The Prahran-Malvern Tramway.* This line has been constructed under the control of a trust, which consists of five members appointed from the councils of Prahran, Malvern, St. Kilda, and Caulfield. The municipalities of Hawthorn and Kew have now been included in the scheme and have equal representation on the trust. At the 30th September, 1915, the total route mileage open was 30.65 miles, the total track mileage being 58.01 miles, and the total capital cost £674,357. The gauge of the track is 4 ft. 8½ in. The horse tramway from Victoria Bridge to Kew has been taken over from the Melbourne Tramway and Omnibus Company, and 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 lines were opened for traffic on 31st May, 1910. During the year ended 30th September, 1915, the current used for traction purposes was 4,481,528 kilowatt hours, and the number of tram miles run was approximately 2,068,264, the number of passengers carried 18,359,593, the gross revenue £121,016, and the working expenses (including interest and renewals reserve) £110,493. The number of cars in use was 72, and the number of persons employed 411.

(d) *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 21½ miles, the gauge being 4 ft. 8½ in. During 1914, 5,366,923 passengers were carried, the gross revenue being £48,686, and the working expenses £35,868.

(e) *The Geelong Electric Tramways.* This line, which is privately owned, was opened for traffic in January, 1912, and up to the 31st August, 1915, the cost of construction and equipment, exclusive of generating plant, was £58,976. The system has a length of 5½ miles of single track, the gauge being 4 ft. 8½ in. The car mileage was for the year ending on that date 225,745 miles, and the number of passengers carried 1,092,353. For the same period the revenue was £12,355, and the expenditure £9193.

(f) *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 1910 to 1915 inclusive:—

VICTORIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS, 1910-15.

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Generated for Traction Purposes at Central Stations.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Employees.
	Miles.	£	Kilowatt-hrs. (000 omitted.)	No. (000 omitted.)	No. (000 omitted.)	£	£	No.	No.
1910 ¹	34½	¹ 275,458	2,314	1,930	7,889	¹ 54,727	¹ 40,087	97	317
1911	39½	² 406,815	2,998	2,376	12,198	² 84,545	² 56,562	117	408
1912	46½	² 497,100	3,504	2,703	15,343	² 106,478	² 73,436	119	501
1913	52½	² 771,204	4,569	3,210	20,305	² 140,566	² 101,098	167	625
1914	62	² 846,759	6,617	4,166	28,318	² 193,306	² 144,308	153	730
1915	70½	² 1,061,067	7,500	4,436	30,673	² 204,671	² 151,543	193	837

1. Incomplete. 2. Exclusive of North Melbourne Tramway. 3. Exclusive of Prahran-Malvern Tramway, which was opened for traffic on 31st May, 1910.

(iii.) *Private Tramways for Special Purposes.* There is in Victoria a number of tramways used for special purposes, chiefly in connection with the timber, mining, and milling industries. These lines have been constructed either under authority of the Department of Public Works, pursuant to Section 36 of the Tramway Act 1890, or under leases or licenses issued by the Department of Lands and Survey, pursuant to Sections 144 and 145 of the Land Act 1901. Particulars of these lines are too incomplete for publication.

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 thirty-eight and one-quarter route miles at the end of the year 1914. Particulars of Shire tramways have been given in the part of this section dealing with private railways (see p. 668).

(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 1914 was £1,437,550, the gauge of line being 4 ft. 8½ in. The following table gives particulars of these tramways for the calendar years 1901 and 1910-14.

**QUEENSLAND.—BRISBANE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING,
1901 and 1910-14.**

Year.	Mileage Open for Traffic (Route).	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	Number of Persons Employed
	Miles.	Kilowatt-hrs.	No.	No.	£	£	No.	No.
1901...	21	3,192,955	2,756,443	16,183,801	111,483	64,710	79	375
1910...	30½	5,441,032	3,524,036	32,419,276	214,265	... ¹	119	654
1911...	34½	... ¹	3,671,963	36,443,222	243,344	... ¹	128	736
1912...	34½	5,798,622	3,508,410	36,375,652	243,668	... ¹	128	762
1913...	34½	7,013,962	3,979,443	44,690,950	300,195	... ¹	149	803
1914...	38½	10,002,034	4,111,908	48,162,065	347,437	193,367	154	825

1. Not available.

(ii.) *Rockhampton Municipal Tramways.* These tramways were opened for traffic in 1909, the motive power being steam. The length of track is 7½ miles, and the gauge 3 ft. 6 in. The capital cost to 31st December, 1914, was £41,730. During the year 1,335,407 passengers were carried, the revenue being £9763, and working expenses £7844.

(iii.) *Sugar-Mill Tramways.* There is a number of tramways in various parts of Queensland 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 there was a number of horse tramways in the principal streets of Adelaide and suburbs run by various private companies. Power to acquire part of these lines, with a view to their electrification, was given to the Adelaide Corporation 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, was formed in 1907, and a length of forty-nine route miles of horse traction tramways was purchased from the private companies at a cost of £283,357. On the 9th March, 1909, the electric car system was inaugurated on the Kensington route. At the end of July, 1915, a length of 57 route miles had been electrified and opened for traffic, the corresponding length of track opened being 99.4 miles. The cost of construction and equipment on the 31st July, 1915, was £1,517,148. The following table gives particulars of the tramways for the year ended 31st July, 1915:—

SOUTH AUSTRALIA.—ADELAIDE ELECTRIC TRAMWAYS.—PARTICULARS OF WORKING, 1914-15.

Year.	Mileage Open for Traffic (Route)	Capital Cost.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Employ'd
	Miles.	£	Kil'w'tt-hrs.	No.	No.	£	£	No.	No.
1915	57.0	1,517,148	11,583,610	4,914,357	42,287,503	309,915	191,070	170	1,045

1. Inclusive of price of current, but exclusive of interest charges (£61,029).

There are also in South Australia nineteen and three-quarter miles of Government horse tramways in country districts, worked in connection with the railway system, and six and one-quarter miles of private tramways used for passenger service. The subjoined statement gives various particulars of these lines:—

SOUTH AUSTRALIA.—PARTICULARS OF HORSE TRAMWAYS, 1914-15.

Particulars.	Length.	Gauge.	Nature of Traffic.
GOVERNMENT TRAMWAYS.			
Moonta, Moonta Bay, and Hamley Flat	Miles. 15½	ft. in. 5 3	Passengers and goods.
Gawler	11½	5 3	" "
Victor Harbour and Breakwater	1	5 3	" "
Dry Creek and Magazine	1	2 0	Explosives.
Magazine and Broad Creek	1½	2 0	" "
Port Broughton and Mundoorra	110	3 6	Passengers and goods.
PRIVATE TRAMWAYS.			
Port Adelaide and Alberton	3½	5 3	Passengers.
Glenelg and Brighton ^a	4	4 8½	"

1. Included in mileage of Government Railways. 2. Not in operation at present.

6. **Western Australia.**—In this State there are a number of horse tramways, amounting in all to a length of 26½ miles, which are the property of the Government. Of these the most important is the line between Roeburne and Cossack, constructed on a 2 ft. gauge and under the control of the Colonial Secretary's Department. The length of this line is 12½ miles. The remaining 14½ miles belonging to the Government are made up of ten short lengths, varying from two and a half chains to four and a quarter miles, worked in connection with the jetties at various ports for the purpose of providing the necessary communication between such jetties and the goods sheds or warehouses. Most of these short 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, Kalgoorlie and Boulder City, carried on by private companies, and at Fremantle and Leonora, under municipal control.

(i.) *Government Tramways.* Particulars as to the working of the Government horse-tramways or as to the rents received therefrom are not generally available. The returns of the Roeburne-Cossack line for the year ended 30th June, 1914, shew that the capital cost of the line to that date was £49,308, the gross revenue for the year being £2874, and the working expenses £2199.

(ii.) *Electric Tramways.* There are now five towns in Western Australia which enjoy the benefits of electric tramway systems, namely, Perth, Fremantle, Kalgoorlie, Boulder City, and Leonora.

(a) *The Perth Electric Tramways* were opened for traffic by a private company in 1899, and the system has since been extended to many of the outlying 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, 1915, there were 25 route miles of line open, the total cost of construction and equipment to that date being £529,052. During the year, 10,779,065 passengers were carried, the gross revenue being £114,021 and the working expenses £78,346. Sixty-three motors were in use, and the number of employees was 286. The gauge of line is 3 ft. 6 in.

(b) *The Kalgoorlie and Boulder City 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 City and suburbs, and in November, 1904, the last section of the Boulder system was completed. At the end of the year 1914 the total mileage of the whole system—in Kalgoorlie and Boulder City—amounted to 14½ route or 20½ track miles, the total cost of construction and equipment being £451,984. During the year, 2,125,094 passengers were carried, the gross revenue being £31,825 and the working expenses £23,000. Twenty-five motors and seven trailers were in use, and the number of employees was 69. The gauge of this line is 3 ft. 6 in.

(c) *The Fremantle Tramways* were opened in November, 1905, under the control of the municipality. On the 31st August, 1915, there were 8½ miles of line open for traffic, the cost of construction and equipment at that date being £105,449. This line has a gauge of 3 ft. 6 in. During the year 4,510,619 passengers were carried, the gross revenue being £34,253 and the working expenses £26,324.

(d) *The Leonora-Gwalia Tramway*, two and a quarter miles in length, formerly a steam tramway, was opened for traffic by electrification on 5th October, 1908. This tramway is under municipal control, and has a gauge of 3 ft. 6 in. The cost of construction is approximately £5800, and during the year ended 31st October, 1915, 66,342 passengers were carried. Revenue for the year amounted to £1241 and expenditure to £1752.

(e) *Particulars of Working of all Electric Tramways.* The subjoined table shews, so far as returns are available, particulars of the working of all electric tramway systems in the State for the years 1901 and 1910-14.

**WESTERN AUSTRALIA.—PARTICULARS OF ELECTRIC TRAMWAYS,
1901 and 1910-14.**

Year.	Mileage Open for Traffic. ¹	Total Cost of Construction and Equip- ment.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Em- ployed.
	Miles.	£	Kilowatt-hrs.	No.	No. ... ²	£	£	No.	No. ... ²
1901	16½	367,037	....³	721,056	...	46,270	26,673	30	...
1910	52	1,035,357	3,741,628	2,139,524	12,420,830	139,824	88,110	106	381
1911	52	1,039,421	4,395,044	2,360,341	14,399,558	158,657	93,003	104	359
1912	52	1,042,474	4,535,424	2,527,155	16,947,301	172,474	103,927	107	431
1913	49	1,065,312	4,902,247	2,703,093	17,473,246	186,757	127,049	119	449
1914	51	1,092,285	4,984,393	2,782,199	17,501,120	181,340	129,422	121	471

1. For the years 1910 to 1914 inclusive, miles of route are given; for 1901 the figures represent miles of single track. 2. Not available. 3. Exclusive of Leonora Tramway.

(iii.) *Perth Ferries.* As the Perth ferry services are mainly subsidiary to the suburban railway and tramway systems, they are referred to in this section rather than under *Shipping*. Of the ten boats in service, four are under the control of the Western Australian Government, the other six belonging to a private company. The number of passengers carried during the year 1914 was 982,414, and the revenue and expenditure for the same period were £9264 and £6814 respectively.

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.)

In previous issues of the Year Book will be found 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 on the mainland and Tasmania totalled 4463, of which 1384 were situated in New South Wales, 1729 in Victoria, 307 in Queensland, 629 in South Australia, 86 in Western Australia, and 328 in Tasmania.

On the 31st December, 1914, the postal business had increased to such an extent that 5991 post offices were open for business, of which number 2049 were situated in New South Wales, 1815 in Victoria, 629 in Queensland, 680 in South Australia, 418 in Western Australia, and 400 in Tasmania.

3. **State, Interstate, and Oversea Postages for whole Commonwealth.**—In the following table the matter dealt with 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 from 1910 to 1914, but excluding interstate excess.

**STATE, INTERSTATE, AND OVERSEA POSTAGES FOR WHOLE COMMONWEALTH,
1910 to 1914.**

Year.	Letters and Postcards.	Newspapers.	Packets.	Parcels.
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POSTED FOR DELIVERY WITHIN THE COMMONWEALTH (,000 OMITTED).

1910	...	363,893	118,674	76,991	2,956
1911	...	416,353	122,020	70,975	3,205
1912	...	431,996	122,373	60,439	3,583
1913	...	449,928	115,662	62,731	3,976
1914	...	467,114	122,534	59,989	4,163

OVERSEA RECEIVED (,000 OMITTED).

1910	...	15,729	10,042	3,852	119
1911	...	19,445	11,691	4,568	142
1912	...	24,266	13,565	5,275	196
1913	...	37,986	13,043	4,424	213
1914	...	30,952	11,068	2,316	191

OVERSEA DESPATCHED (,000 OMITTED).

1910	...	13,039	6,003	3,076	79
1911	...	17,265	7,926	3,120	83
1912	...	24,146	9,364	3,357	89
1913	...	30,569	10,658	4,131	108
1914	...	26,724	7,517	2,227	86

**TOTAL POSTAL MATTER DEALT WITH BY THE COMMONWEALTH POSTAL
DEPARTMENT, BUT EXCLUDING INTERSTATE EXCESS (,000 OMITTED).**

1910	...	392,351	132,415	83,599	3,155
1911	...	453,975	139,603	79,017	3,419
1912	...	479,677	138,170	70,609	3,764
1913	...	520,518	136,195	69,771	4,286
1914	...	524,483	136,670	62,634	4,436

4. **State, Interstate, and Oversea Postages for each State.**—The following table shews separately for each State the postage matter dealt with in 1914 under the same classification adopted in the preceding paragraph :—

STATE, INTERSTATE, AND OVERSEA POSTAGES FOR EACH STATE, 1914.

State.	Letters and Postcards.	Newspapers.	Packets.	Parcels.
POSTED FOR DELIVERY, WITHIN COMMONWEALTH (,000 OMITTED).				
New South Wales ...	172,209	54,150	30,876	2,114
Victoria ...	154,240	29,490	13,835	788
Queensland ...	52,145	21,352	7,790	780
South Australia ...	39,475	5,967	4,126	223
Western Australia ...	29,077	4,613	2,105	192
Tasmania ...	19,968	6,962	1,257	66
Commonwealth...	467,114	122,534	59,989	4,163

OVERSEA RECEIVED (,000 OMITTED).

New South Wales ...	12,646	4,130	844	56
Victoria ...	10,057	3,243	648	49
Queensland ...	3,046	1,241	189	45
South Australia ...	1,922	695	135	15
Western Australia ...	2,666	1,450	342	20
Tasmania ...	615	309	158	6
Commonwealth...	30,952	11,068	2,316	191

OVERSEA DESPATCHED (,000 OMITTED).

New South Wales ...	13,625	3,633	1,185	48
Victoria ...	6,677	2,794	750	18
Queensland ...	2,145	453	150	9
South Australia ...	1,177	225	47	3
Western Australia ...	2,039	303	70	6
Tasmania ...	1,061	109	25	2
Commonwealth...	26,724	7,517	2,227	86

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 1914. It will be observed that the most sparsely populated States have the greatest number of offices in comparison with their population, but in order to judge the relative extension of postal facilities the area of country to each office must also be taken into account. 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.

**SQUARE MILES OF TERRITORY AND NUMBER OF INHABITANTS TO EACH POST
AND RECEIVING OFFICE, 1914.**

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of post and receiving offices...	2,623	2,686	1,357	811	576	463	8,516
Number of square miles of territory to each post office in State ...	118	33	494	1,114	1,694	57	349
Number of inhabitants to each office...	713	528	501	548	553	434	579
Number of inhabitants per 100 sq. miles	604	1,613	101	49	33	767	166

* Including Federal Territory.

† 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 inland letters, 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.

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 :—

**POSTAL RATES OF CERTAIN ARTICLES POSTED IN THE COMMONWEALTH FOR
DELIVERY THEREIN ON AND AFTER 1st MAY, 1911.**

Postal Articles.	Rates of 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.
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 newspaper proprietors, or by newsvendors, or returned by an agent or newsvendor to the publishing office	1d. per 20 ounces on the aggregate weight of newspapers.
NEWSPAPERS.—Printed outside Australia ...	Magazine rates.
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 (see section XIX., § 1, hereinafter) 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 is now uniformly one penny per half-ounce throughout the Commonwealth; 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.

(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 rates on all newspapers posted for delivery in the Commonwealth (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 per twenty ounces on the aggregate weight. On all other registered newspapers posted within the Commonwealth for delivery therein, the charge is a halfpenny per ten ounces for each newspaper. At the end of the year 1915 there were in all 1943 publications registered in the Commonwealth under section 29 of the Post and Telegraph Act 1901 for transmission by post as newspapers. The charge on postage of registered newspapers for transmission to the United Kingdom is one penny for each newspaper not exceeding eight ounces in weight by the ordinary route, and one penny for each newspaper not exceeding sixteen ounces in weight by the All-Sea route. To other parts of the world the rate is one penny up to four ounces, and a halfpenny for every additional two ounces. 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 ft. 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.

(iv.) *Packets.* The ordinary rate for the conveyance of packets is one penny for each two ounces. Packets must not as a rule exceed 2 ft. in length, 1 ft. in breadth or depth; or, if in a roll, 2 ft. 6 in. in length. Special rates are allowed for the conveyance of commercial papers, patterns, samples, etc.

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.

Number of Registered Articles Posted. The subjoined table shews the number of registered articles posted in each State during the year 1914, classified according to the places to which they were despatched for delivery:—

NUMBER OF REGISTERED ARTICLES POSTED DURING 1914.

(,000 OMITTED.)

State.	Posted in each State for Delivery with-in that State.	Posted in each State for Delivery in other States.	Posted in each State for Delivery in Places outside the C'wealth.	Total.
New South Wales ...	1,273	170	112	1,555
Victoria ...	914	124	84	1,122
Queensland ...	528	69	39	636
South Australia ...	224	48	15	287
Western Australia ...	308	39	43	390
Tasmania ...	132	26	8	166
Commonwealth ...	3,379	476	301	4,156

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 that time 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. Each of these companies carries Australian mails at poundage rates.

(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. The Peninsular and Oriental Company, and, at a little later date, the Orient-Pacific Company, have carried mails to and from Australia almost since the inception of ocean steam services. 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. Mails are still carried from Australia by the Peninsular and Oriental Company, but are carried 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-Pacific Companies' steamers sail, as far as possible, alternately every week, both from London and Australia, conveying the outward and homeward mails. This service has to some extent been disorganised since the outbreak of war in August, 1914.

(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 have been specially built, and which are 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 latter vessel to the mail fleet. The vessels are to call at Fremantle, Adelaide, Melbourne, Sydney, and Brisbane, and at least six of them at Hobart, during the months of February to May inclusive. The voyage from Taranto to Adelaide is to be completed within twenty-six days fourteen hours, and from Adelaide to Taranto within twenty-seven days two hours; but the latter period may be exceeded by thirty-six hours during the prevalence of the south-west monsoon. The amount of the subsidy is fixed at £170,000 per annum: but, if the earnings of the company be 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 £5000 a year, the contractors have the right to terminate the agreement unless the subsidy is increased. Insulated space of not less than 2000 tons of forty cubic feet is to be provided in each of the new vessels, and the freights are not to exceed one halfpenny per lb. for butter and sixty shillings per ton for fruit. White labour only is to be employed, and no discrimination is to be made between unionists and non-unionists. If before or during the sixth year of the period of the contract an accelerated service is provided by any competing line of mail ships, the contractors must, if so required by the Postmaster-General, provide a service equal to the

competing service, at an increased subsidy, to be determined by agreement or arbitration. The Commonwealth flag must be flown on the mail ships, which the Commonwealth has 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 must 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, interrupted by 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 MAIL SERVICES, COMMONWEALTH OF AUSTRALIA, AT BEGINNING OF YEAR 1916.

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) Peninsular and Oriental* ...	Fortnightly	Adelaide, Fremantle and London, <i>via</i> Brindisi and Marseilles	Subsidised by Imperial Govt. Mails from Aust. at Postal Union rates.
(b) Orient Steam Navigation Co.* ...	..	Adelaide, Fremantle & London, <i>via</i> Taranto	Subsidised. Date of agreement, 15th Nov., 1907. Term, from Feb., 1910. Amt. of subsidy £170,000.

* Mails carried also to India *via* Colombo.

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> — Union Steamship Co. ...	Every four weeks	Sydney and Vancouver, B.C., <i>via</i> Auckland, Fiji, Honolulu, and once every eight 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 Poundage 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, Melbourne, Hobart, Bluff, Dunedin, Christchurch and Wellington	Poundage rates.
(b) Conjointly by Shaw, Savill and Albion Co. & N.Z. Shipping Co.	Fortnightly	Hobart, Bluff, Dunedin, and Wellington	" "
(c) Conjointly by Union S.S. Co. and Huddart, Parker Ltd.	Bi-weekly	Sydney and Wellington	" "
(d) Other Steamers ...	Irregularly, when convenient	Sydney, Wellington, Auckland, and Lyttelton	" "
5. <i>To and from ports in N.S. Wales</i> — (i.) NORTHERN PORTS— (a) North Coast S.N. Co. ...	Weekly	Sydney, Manning River, Macleay, Nambucca, Bellinger Rivers.	" "
	Twice weekly	Coffs Harbour, Clarence River, Byron Bay, and Richmond River	" "
(b) Cain's Co-Operative S.S. Co....	Six times a month	Sydney & Port Macquarie	" "
(ii.) SOUTH COAST PORTS— Illawarra and S. Coast S.N. Co....	Twice weekly	Sydney, Eden, Bega and Tathra	" "
6. <i>To and from Northern Ports of Qld.</i> — (a) Australian Steamships Limited	Weekly	Gladstone, Mackay, Bowen, Townsville, Cairns, Cardwell, Mourilyan, Innisfail, Pt. Douglas & Cooktown	Subsidised by agreement dated 5th Dec., 1914, for three years. Amount of subsidy, £17,950.
(b) Australian United Steam Navigation Co. Ltd.	Once every three weeks	Brisbane, Normanton & Burketown, <i>via</i> Townsville, Cooktown, and Thursday Island	Subsidised by agreement dated 16th Jan., 1915, for five years. Amount of subsidy, £6500. Subsidies under 5 (a) and (b) paid by Queensland.
(c) Other steamers ...	Irregularly	Various...	Poundage rates.
7. <i>To and from Ports in S. Australia</i> — (a) Coast Steamship Co. ...	Weekly	Pt. Adelaide & Kingscote	Subsidised to 31st December, 1916. Amount of subsidy, (a) £650; (b) £250; (c) £350; (d) £300. Subsidised for three years from 1st January, 1914. Amount of subsidy, £2100. Subsidised without agreement. Amount of subsidy, £36. Subsidies under 7 (a), (b), (c), (d), (e), (f), paid by South Australia.
(b) " " " " ...	Twice a wk.	" Edithburgh	
(c) " " " " ...	"	" Stansbury	
(d) " " " " ...	"	" Pt. Vincent	
(e) Adelaide Steamship Co. ...	Weekly	" Pt. Lincoln	
(f) Adelaide Steam Tug Co. ...	As required	Port Pirie & Hummocks Hill	
8. <i>Western Australia</i> — (i) INTERSTATE— (a) By P. & O. and Orient Lines	Weekly	Fremantle and Adelaide	P. and O. at Postal Union rates. Orient line subsidised. See above 1 (a) and (b).
(b) Adelaide Steamship, the Australian United S. Navigation, Huddart Parker, Howard Smith, Melb. S.S. Co., and Mellwraith, McEacharn lines	Conjointly, six times monthly	Fremantle, Albany, and Adelaide	Poundage rates.

† 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.
<i>Western Australia—continued—</i>			
(c) White Star line	Monthly	Albany and Adelaide	Poundage rates.
(ii.) To & FROM PORTS ON N.W. COAST			
(a) State Steamship Service	"	Fremantle and Derby	Subsidised by agreement dated 28th February, 1913, for three years. Amount of subsidy, £5500. Subsidy paid by Western Australia. Poundage rates. " "
(b) " " " "	Once each sixty days	Fremantle & Darwin	
(c) West Aust. & Ocean S. Co.'s	Fortnightly	Fremantle and Broome	
(d) Ausn. United S. Navigation and Adelaide S. Co.'s	Irregularly, during the cattle season	Fremantle, Derby, and Wyndham	
(iii.) To AND FROM PORTS ON S. COAST			
(a) State Steamship Service	Fortnightly	Albany and Esperance	Subsidised by agreement dated 26th August, 1912, for three years. Amount of subsidy, £3250.
(b) " " " "	Every four weeks	Albany & Israelite Bay	
(c) " " " "	Quarterly	Albany and Eucla	
<i>9. Tasmania—</i>			
(a) Union S.S. Co. and Huddart, Parker Proprietary	Three times a week	Melb'rne & Launceston	Subsidised by agreement dated 27th October, 1913, for five years. Amount of subsidy, £15,000, provided new steamer similar to t.s. <i>Loongana</i> is run on Launceston-Melbourne service. £13,000 only to be paid prior to running of new steamer. Poundage rates.
(b) Do. do. do.	Twice a wk.	" Burnie	
(c) Do. do. do.	Weekly	Sydney, Hobart, and Wellington	
(d) Union Steamship Co.	Fortnightly	Sydney, Eden, Launceston, and Devonport	
(e) New Zealand mail services (see previous page)	Twice a wk.	Sydney, Melb'ne, Hobart, Bluff, Dunedin, Christchurch, Wellington and Auckland	" "
(f) To and from ports in Western districts	Weekly	Hobart and Strahan	" "
(g) Ellerker and Co.	"	Melbourne, Burnie, etc.	" "
(h) Holyman and Sons Ltd.	Twice a wk.	Hobart & Maria Island	Subsidised by agreement dated 1st January, 1916, for three years. Amount of subsidy £25 per annum
(i) " " " "	Every three weeks	Launceston and Furneaux group of Islands	
(j) King Island Steamers Ltd.	Fortnightly	Launceston and King Island	Subsidised by agreement dated 1st January, 1916, for three years. Amount of subsidy £300 per annum.
<i>10. To and from Northern Territory—</i>			
(a) The Eastern and Ausn., and the China Navigation Co.	Irregularly	(To and from Adelaide, Melb'rne, and Sydney, via North Queensland ports, extending to China and Japan	Poundage rates.
(b) Burns, Philp and Co.	Monthly	Melbourne to Darwin, via North Queensland ports en route to Java	
(c) Royal Dutch Packet S.N. Co.	Every two months	Fremantle and Darwin	Poundage rates
(d) State Steamship Service of Western Australia	Every two months		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>			
(a) Burns, Philp & Co. ...	Monthly	Sydney, Sourabaya, Samarang, Batavia, and Singapore	Subsidised by N.S.W. Govt. Mails at poundage rates.
(b) China Navigation, Eastern & Ausn., and Burns, Philp Co.'s	About three times a month	Sydney, to Hong Kong, Manila, etc., via North Queensland ports	Poundage rates.
(c) Nippon Yusen Kaisha ...	Monthly	Sydney to Manila, China, and Japan, via N. Queensland ports	Postal Union rates.
(d) Royal Dutch Packet S. N. Co.	Monthly	Melbourne to Java, via 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. & Ocean S.S. Co.	Fortnightly	W.A. Ports, Java, and Singapore	" "
12. <i>South Africa—</i> White Star, P. & O. Branch Service, and other Companies	Irregularly	Various ...	" "
13. <i>North America—</i>			
(a) Various steamers ...	"	Sydney or Newcastle to San Francisco	Poundage rates.
(b) Various steamers ...	"	Sydney to Guaymas (Mexico)	" "
(c) Union S.S. Co. ...	13 voyages yearly	Syd., Wellington, Tahiti and San Francisco	" "
(d) " " ...	Every four weeks	Sydney, Auckland, Fiji and Vancouver	" "
14. <i>South America—</i> Various steamers ...	About weekly	Sydney or Newcastle via N. Zealand to ports in Chile, Brazil, Peru, Uruguay, and Argentine	Poundage rates.
15. <i>Pacific Islands—</i>			
(a) Burns, Philp and Co. ...	Monthly	Sydney to Lord Howe & Norfolk Islands, N. Hebrides	Subsidised by Commonwealth at £19,850 per annum.
(b) " " ...	Every two months	Sydney to Gilbert and Marshall Islands	
(c) " " ...	Every six weeks	Papua	
(d) " " ...	"	Solomon Islands	
(e) Royal Dutch Packet S. N. Co.	Monthly	Melbourne to Papua via Sydney and Queensland ports	Poundage rates.
(f) Pacific Phosphate Co. Ltd. ...	Four times a year	Rabaul and Nauru	Contract with Defence Department.
16. <i>Noumea—</i>			
(a) Messageries Maritimes ...	Monthly	Sydney and Noumea and to Vila (New Hebrides) once a month	Postal Union rates.
(b) Other steamers ...	About fortnightly	Sydney and Noumea	Poundage rates.
17. <i>Fiji—</i>			
(a) Union S.S. Co. ...	Monthly	Sydney and Suva	" "
(b) " " ...	"	Sydney, Auckland, Suva, Tonga, and Samoa	" "
18. <i>Fiji and Noumea—</i> Burns, Philp and Co. ...	"	Sydney and Suva	" "
19. <i>Ocean and Pleasant Islands—</i> Various steamships ...	"	Sydney, Ocean and Pleasant Islands	" "

9. **Amount of Mail Subsidies Paid.**—The following table shews the amounts of subsidies for ocean and coastal mail services during the year 1914, which are paid by the Commonwealth Postal Department:—

MAIL SUBSIDIES.—OCEAN AND POSTAL SUBSIDIES DURING THE YEAR 1914.

Service...	Orient Pacific.	Queensl'd Ports.	South Australian Ports.	Western Australian Ports.	Tasmanian Ports.
Annual Subsidy	£ 170,000	£ 24,450	£ 3,650	£ 8,946	£ 14,175

During the year 1914 the amount paid by the Commonwealth for conveyance of mails at poundage rates by non-contract vessels was £37,620; by road services, £424,157; and by railway services, £362,262.

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 four lines of modern ocean steamships, which brought the mails in about twenty-nine days to Adelaide, in addition to services by way of New Zealand, *via* San Francisco and Vancouver. After leaving Fremantle, where the Western Australian mails are landed, the outward mail steamers *via* the Suez Canal all call at Adelaide, where the remaining mails are landed and conveyed to their ultimate destination by rail. 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 1914:—

AVERAGE AND FASTEST TIME OCCUPIED IN CONVEYANCE OF MAILS VIA SUEZ CANAL BETWEEN LONDON AND ADELAIDE, AND VICE VERSA, DURING 1914.

Service.	London to Adelaide.				Adelaide to London.			
	Average Time.		Fastest Time.		Average Time.		Fastest Time.	
	Days.	Hours.	Days.	Hours.	Days.	Hours.	Days.	Hours.
Orient Pacific S. N. Co., <i>via</i> Naples ...	30	17	28	11	32	10	29	4
Peninsular and Oriental S.N. Co., <i>via</i> Brindisi ...	32	3	28	9	32	23	23	19

The journey by rail from Adelaide, where the mails for the eastern States are landed, to Melbourne takes 17½ hours; from Adelaide to Sydney, 42 hours, including a stop of about seven hours at Melbourne; while the through journey from Adelaide to Brisbane takes just over three days. 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 shewing the average and fastest times of this service was given in previous 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 desirable.

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, which may be issued for payment either within the Commonwealth or abroad, may not be granted for a larger sum than £20, nor a postal note, which

is payable only within the Commonwealth, 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 three-pence for every £5, or part thereof. In order that the full amount of the original order may be forwarded to the payee, this extra commission must be paid by the remitter. Money order conventions with the following countries are under consideration:—France, Japan, and the Philippine Islands.

(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 1914, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department:—

VALUE OF MONEY ORDERS ISSUED AND PAID AND OF POSTAL NOTES SOLD, TOGETHER WITH THE TOTAL AMOUNTS OF COMMISSION AND POUNDAGE RECEIVED IN EACH STATE DURING 1914.

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 ...	3,854,703	3,715,679	26,448	1,536,505	29,453
Victoria ...	1,714,513	1,928,550	10,816	1,064,255	20,979
Queensland ...	1,279,927	1,037,335	10,789	402,726	7,881
South Australia ...	527,441	483,961	4,172	244,454	4,858
Western Australia ...	1,088,607	828,759	8,076	298,706	5,379
Tasmania ...	392,383	332,166	2,746	132,858	2,565
Commonwealth ...	8,857,574	8,326,450	63,047	3,679,504	71,115

(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.	
The Commonwealth...	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	
U. Kingdom & 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. The remitter must also send a telegram to the payee advising the transmission of the money, which telegram must be produced by the payee when applying for payment.

(iii.) *Rates of Pounding 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. Broken amounts not exceeding fivepence (but not fractions of a penny) may be added by affixing postage stamps. 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 ...	$\frac{1}{2}$ d.	1d.	$1\frac{1}{2}$ d.	2d.	3d.

12. **Number and Value of Money Orders and Postal Notes Issued and Paid.**—The following table shews the total number and face value of money orders and postal notes issued and paid in the Commonwealth during 1901 and from 1909 to 1914:—

NUMBER AND VALUE OF MONEY ORDERS AND POSTAL NOTES ISSUED AND PAID, 1901 and 1909-14.

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
1909 ...	1,460	6,093	1,425	6,041	6,872	2,598	6,867	2,595
1910 ...	1,500	6,368	1,424	6,254	7,447	2,796	7,446	2,796
1911 ...	1,583	6,584	1,448	6,455	8,042	3,017	8,042	3,017
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

13. **Classification of Money Orders Issued and Paid.**—The following table shews the number and value of money orders issued in each State during the year 1914 and classified according to the country where payable:—

MONEY ORDERS ISSUED IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY WHERE PAYABLE, 1914.

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	719,532	14,570	130,860	14,865	879,827
Victoria ...	296,706	7,016	67,316	10,633	381,671
Queensland ...	260,747	2,227	47,069	7,887	317,930
South Australia ...	105,952	1,115	25,236	4,563	136,866
Western Australia	201,584	1,245	42,100	5,275	250,204
Tasmania ...	83,172	2,257	8,133	1,457	95,019
Commonwealth	1,667,693	28,430	320,714	44,680	2,061,517

MONEY ORDERS ISSUED IN EACH STATE, Etc.—(Continued).

State in which Issued.	Where Payable.				Total.
	In the Commonwealth.	In New Zealand.	In the United Kingdom.	In Other Countries.	
VALUE.					
New South Wales	£ 3,449,751	£ 42,807	£ 292,100	£ 70,045	£ 3,854,703
Victoria ...	1,526,444	21,069	126,820	40,180	1,714,513
Queensland ...	1,114,940	7,450	110,403	47,134	1,279,927
South Australia ...	456,012	3,638	50,593	17,198	527,441
Western Australia	952,983	5,022	93,654	36,948	1,088,607
Tasmania ...	362,162	8,690	18,021	3,510	392,383
Commonwealth	7,862,292	88,676	691,591	215,015	8,857,574

The following table shews the number and value of money orders paid in each State during the year 1914, and classified according to the country where issued :—

MONEY ORDERS PAID IN EACH STATE, CLASSIFIED ACCORDING TO THE COUNTRY OF ISSUE, 1914.

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	729,017	32,169	21,728	13,947	796,861
Victoria ...	362,674	21,340	13,802	8,025	405,841
Queensland ...	239,482	2,389	6,646	2,719	251,236
South Australia ...	105,206	1,628	3,829	1,370	112,033
Western Australia	168,569	1,670	6,221	1,639	178,099
Tasmania ...	70,984	4,264	1,935	1,662	78,845
Commonwealth	1,675,932	63,460	54,161	29,362	1,822,915

VALUE.					
New South Wales	£ 3,494,597	£ 90,849	£ 68,607	£ 61,626	£ 3,715,679
Victoria...	1,804,836	53,533	41,646	28,535	1,928,550
Queensland ...	997,318	8,676	21,088	10,252	1,037,335
South Australia ...	462,834	5,391	10,700	5,036	483,961
Western Australia	797,663	4,982	18,816	7,298	828,759
Tasmania ...	311,604	10,527	5,509	4,526	332,166
Commonwealth	7,863,852	173,958	166,366	117,274	8,326,450

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 1914 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 previous years since the inauguration of the Commonwealth have already been given in paragraph 12 hereof.

NUMBER AND VALUE OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO STATE OF ISSUE, 1914.

State in which Paid.	Postal Notes Issued in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.

NUMBER.

New South Wales	3,172,121	122,645	146,746	40,195	23,343	25,109	3,530,159
Victoria ...	209,483	2,296,098	40,976	59,726	40,568	58,733	2,705,584
Queensland ...	55,771	9,801	854,659	2,292	1,439	1,059	925,021
South Australia ...	39,606	26,901	2,693	507,458	12,459	1,534	590,651
Western Australia	7,791	13,245	1,190	5,121	574,604	829	602,780
Tasmania ...	583,065	496,872	41,385	80,249	11,619	275,222	1,468,412
Commonwealth	4,067,837	2,965,562	1,087,649	695,041	664,032	362,486	9,842,607

VALUE.

	£	£	£	£	£	£	£
New South Wales	1,208,476	51,182	57,283	15,179	11,357	8,915	1,352,392
Victoria ...	89,063	849,889	15,128	22,998	21,250	22,974	1,021,302
Queensland ...	24,170	4,308	312,598	914	792	471	343,253
South Australia ...	19,112	11,539	1,140	175,401	6,979	657	214,828
Western Australia	3,484	5,988	502	2,253	255,560	336	268,123
Tasmania ...	174,287	151,657	16,001	25,880	5,383	97,554	470,762
Commonwealth	1,518,592	1,074,563	402,652	242,625	301,321	130,907	3,670,660

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 1909

to 1914. From these figures it will be seen that the business in Queensland is greatly 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. Western Australia is the only other State to make use of this system to any extent, the business transacted by that State and Queensland amounting to 84 per cent. of the total for the Commonwealth.

VALUE PAYABLE PARCELS POST.—NUMBER POSTED, VALUE COLLECTED, AND REVENUE, 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
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NUMBER OF PARCELS POSTED.

	No.	No.	No.	No.	No.	No.	No.
1909	7,585	1,051	31,765	149	19,250	42	59,842
1910	7,901	894	34,917	214	21,940	110	65,976
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

VALUE COLLECTED.

	£	£	£	£	£	£	£
1909	10,926	1,697	39,351	234	30,712	93	83,013
1910	14,736	1,656	43,478	288	34,697	344	95,199
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

REVENUE, INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND MONEY ORDER COMMISSION.

	£	£	£	£	£	£	£
1909	937	164	4,112	22	2,603	6	7,844
1910	1,201	162	4,634	19	3,178	18	9,212
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

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, etc., 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 the results have not been encouraging, it is not proposed, at present, to extend the system to other States.

17. **Transactions of the Dead Letter Office.**—Under sections 45 to 53 of the Post and Telegraph Act 1901 the Postmaster-General may cause all unclaimed and undelivered postal articles originally posted within the Commonwealth which have been returned from the place to which they were forwarded to be treated as unclaimed articles and opened. 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 another State, are returned to the General

Post Office of that State; 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 opened letters and packets 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 shews the total number of letters, postcards, and packets dealt with by the Dead Letter Offices in the Commonwealth during the year 1914, together with the number of inland, interstate, and international letters either returned to writers, delivered, etc., destroyed, or returned as unclaimed :—

TRANSACTIONS OF DEAD LETTER OFFICES IN THE COMMONWEALTH, 1914.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
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LETTERS (,000 OMITTED).

Returned to writers, delivered, etc. ...	493	505	191	102	169	52	1,512
Destroyed in accordance with Act ...	113	113	21	23	19	7	296
Returned to other States or Countries as unclaimed ...	161	77	55	30	56	16	395
Total ...	767	695	267	155	244	75	2,203

POSTCARDS (,000 OMITTED).

Returned to writers, delivered, etc. ...	5	5	23	12	21	1	67
Destroyed in accordance with Act ...	17	8	2	1	2	1	31
Returned to other States or Countries as unclaimed ...	4	3	2	1	2	...	12
Total ...	26	16	27	14	25	2	110

PACKETS (,000 OMITTED).

Returned to writers, delivered, etc. ...	566	149	109	21	86	7	938
Destroyed in accordance with Act ...	71	512	15	50	6	1	655
Returned to other States or Countries as unclaimed ...	2	17	53	29	35	14	150
Total ...	639	678	177	100	127	22	1,743
Grand total (letters, postcards, & packets)	1,432	1,389	471	269	396	99	4,056

18. *Post Offices and Receiving Offices and Employees.*—The following tables shew 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 1910 to 1914 inclusive :—

NUMBER OF POST OFFICES AND RECEIVING OFFICES, 1901 and 1910-14.

State.	1901.		1910.		1911.		1912.		1913.		1914.	
	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	1,911	526	1,948	542	2,000	559	2,025	571	2,049	574
Victoria ...	1,637	18	1,655	765	1,720	824	1,730	844	1,749	883	1,815	871
Queensland* ...	411	823	558	822	576	785	593	770	614	772	629	728
South Australia ...	699	...	648	90	662	84	668	95	672	124	680	131
Western Australia ...	187	28	343	87	372	107	390	150	398	148	418	158
Tasmania† ...	376	...	391	38	386	47	391	55	395	60	400	63
Commonwealth ...	4,994	1,393	5,506	2,328	5,664	2,390	5,772	2,453	5,853	2,556	5,991	2,525

* 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. † The return for 1901 includes both post offices and receiving offices.

NUMBER OF EMPLOYEES AND NUMBER OF MAIL CONTRACTORS, 1901 and 1910-14.

State.	1901.		1910.		1911.		1912.		1913.		1914.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
New South Wales ...	5,636	984	8,622	1,602	10,844	1,733	12,614	1,798	10,823	2,976	11,131	2,512
Victoria ...	3,962	890	7,043	848	8,533	866	7,845	1,060	6,437	1,123	8,614	1,132
Queensland* ...	2,616	—	3,247	720	4,455	747	3,942	768	4,134	812	4,343	613
South Australia ...	1,945	—	1,905	268	2,298	361	2,173	364	2,964	382	2,432	307
Western Australia ...	1,303	140	1,894	233	2,621	251	2,246	251	2,444	355	2,327	351
Tasmania† ...	865	—	969	189	1,178	260	1,094	217	1,141	294	1,176	281
Commonwealth ...	16,327	2,014	23,680	3,860	29,929	4,218	29,914	4,458	29,343	5,342	30,023	5,396

* Country postmasters and receiving officers included in employees. † Non-official postmasters are included in employees. ‡ The return for 1901 includes all persons in the pay of the Postal Department.

19. **Postal Routes.**—The following table shews the length of postal routes and the number of miles travelled by mail conveyances during the year 1914:—

POSTAL ROUTES, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
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MILES OF ROUTE.

Railway ...	4,072	3,673	4,892	2,361	3,512	702	19,212
Water ...	2,820	63	2,267	1,236	3,272	914	10,572
Other ...	44,140	11,483	28,040	9,531	18,520	2,289	114,003
Total... ...	51,032	15,219	35,199	13,128	25,304	3,905	143,787

MILES TRAVELLED BY MAIL CONVEYANCES (,000 omitted.)

Railway ...	5,616	4,402	2,839	1,818	2,001	863	17,539
Water ...	2,252	23	180	70	325	212	3,062
Other ...	9,954	4,414	4,283	1,638	1,058	925	22,272
Total	17,822	8,839	7,302	3,526	3,384	2,000	42,873

20. Gross Revenue of Postal Department.—The following table shews the gross revenue of the Postal Department for the years ended 30th June, 1901 and 1910 to 1915 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. It was the practice, prior to the year 1912-13, to use the figures supplied by the Treasury relating to revenue and expenditure, but as the Postal Department have, since that date, furnished a balance sheet of the working of the department, prepared on a commercial basis, the latter figures have accordingly been adopted herein, with the exception of the tables of expenditure on the following page, for the purpose of which it has been necessary to refer to the figures compiled on the Treasury basis.

GROSS REVENUE OF POSTAL DEPARTMENT, 1901 and 1910-15.

Year ended 30th June.	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1901*	516,181	224,484†	†	740,665
1910	2,541,080	681,038	509,623	3,731,741
1911	2,646,730	740,428	518,857	3,906,015
1912	2,375,390	788,441	752,423	3,916,254
1913	2,564,270	816,450	862,572	4,243,292
1914	2,691,812	836,668	994,888	4,523,368
1915	2,623,652	886,517	1,109,893	4,620,062

* Period from 1st March to 30th June, 1901. † Including telephone revenue. ‡ Included in telegraph revenue.

The following table gives an analysis of the gross earnings of the Postal Department in each State and in the Commonwealth during the year ended 30th June, 1915:—

ANALYSIS OF GROSS REVENUE OF POSTAL DEPARTMENT, 1914-15.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
	£	£	£	£	£	£	£
Postage	924,444	662,336	333,128	187,375	142,905	89,435	2,339,623
Telegraphs	314,094	180,779	143,173	144,359	78,958	25,154	886,517
Telephones	432,391	321,170	157,461	95,498	70,439	32,934	1,109,893
Money order commission ...	25,683	11,971	9,601	4,038	7,064	2,568	60,925
Poundage on postal notes ...	28,845	19,788	7,554	4,456	5,117	2,504	68,264
Private boxes and bags ...	11,844	5,650	6,359	3,377	2,221	1,186	30,637
Miscellaneous	43,994	30,826	19,608	12,787	10,897	6,091	124,203
Total	1,781,295	1,232,520	676,384	451,890	317,601	159,872	4,620,062

21. Expenditure in respect of the Postal Department.—The subjoined table shews the total expenditure in respect of the Postal Department in the Commonwealth for each of the years ended 30th June, 1903 and 1910 to 1915 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,
1902-3 and 1909-10 to 1914-15.**

Year.	1902-3.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Expenditure	£ 2,568,846	3,786,756	4,343,231	5,344,421	6,435,039	6,599,104	6,320,904

The following table shews, as far as possible, the distribution of expenditure on various items in each State during the year ended 30th June, 1915. 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, 1914-15.

Particulars.	Central Office.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with
	£	£	£	£	£	£	£	£
Salaries and Contingencies—								
Salaries ...	18,985	1,061,249	670,241	332,700	217,248	242,296	83,102	2,625,821
Conveyance of mails ...	...	343,447	159,240	185,443	86,307	79,197	44,087	897,721
Contingencies ...	4,845	409,552	304,584	193,666	99,624	134,248	50,699	1,196,218
Cables ...	9,790	...	...	...	...	...	...	9,790
Ocean mails ...	85,000	...	...	...	...	...	...	85,000
Miscellaneous ...	5,886	3,887	4,477	1,967	6,527	823	207	23,774
Pensions & retiring allowecs.	...	19,484	22,296	2,098	...	4,195	...	48,073
Rent, repairs, maintenance	289	35,680	18,727	12,585	7,513	7,463	1,763	84,020
Supervision of works ...	...	...	...	...	...	...	...	5,578
Proport'n of Audit Office exs.	...	1,492	1,144	542	358	258	161	3,955
Unforeseen expenditure ...	...	...	...	...	...	...	...	*709
New Works—								
Telegraph and telephone	2,541	359,800	207,012	140,665	49,722	48,246	19,597	827,583
New buildings, etc. ...	...	...	...	...	...	...	...	*182,575
Interest on transferred properties ...	...	81,780	46,713	32,336	29,334	19,974	7,503	217,640
Purchase of sites* ...	...	...	...	...	...	...	...	*84,501
Other ...	...	...	...	...	...	...	...	27,946
Total ...								6,320,904

* Particulars of apportionment to each State not available.

22. 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 1914-15 has now become available, and discloses the fact that the working of the Postmaster-General's Department for that year resulted in a deficit of £129,049, to which must be added £500,673 for interest on capital, pensions and retiring allowances, making a total deficit of £629,722.

Tables shewing the results of the working of the Department for the years 1912-13, 1913-14 and 1914-15 are appended :—

GENERAL PROFIT AND LOSS ACCOUNT (POSTMASTER-GENERAL'S DEPARTMENT), 1912-13 to 1914-15.

Items.	1912-13.	1913-14.	1914-15.
	£	£	£
Total earnings ...	4,243,292	4,523,368	4,620,061
Total working expenses ...	4,263,373	4,576,915	4,749,110
Deficit ...	20,081	53,547	129,049
Interest on capital ...	376,409	435,223	488,069
Pensions and retiring allowances...	10,612	12,686	12,604
	387,021	447,909	500,673
Total deficit ...	407,102	501,456	629,722

It will be seen from the above that, despite the increasing revenue of the Department, the total deficit has grown from £407,102 in 1912-13 to £629,722 in 1914-15. In its annual report for the year 1913-14, the increased deficit of that year over 1912-13

was attributed by the Department to be "due to several factors, chief amongst which are higher rates of salaries and wages resulting from statutory increments, and large increases under Arbitration awards affecting postal electricians and linesmen, increased cost of contracts for the conveyance of inland mails, and increased prices for stores, fodder, horse-hire, printing, and increased debits for interest on additional capital expenditure." Effects of the drought and the war upon earnings, combined with increased charges to working expenses under the heading of depreciation (on account of assets dismantled during the year), are stated by the Department to have been responsible for the deficit of £629,722 on the working for 1914-15.

The following tables show the yearly results of the working of the various branches, and the Department as a whole, in each State from 1912-13 to 1914-15:—

**PROFIT OR LOSS OF THE VARIOUS BRANCHES OF THE DEPARTMENT,
1912-13 to 1914-15.**

Branch.	1912-13.		1913-14.		1914-15.
	Loss.	Profit.	Loss.	Profit.	Loss.
	£	£	£	£	£
Postal ... ..	...	23,132	...	24,155	71,721
Telegraph	164,108	...	151,446	...	106,462
Telephone	221,757	...	296,424	...	364,109
Wireless Telegraph	11,599	...	35,656	...	43,167
Pensions and retiring allowances and interest on general assets...	32,770	...	42,086	...	44,263
	430,234	23,132	525,612	24,155	629,722

**PROFIT OR LOSS OF THE DEPARTMENT IN THE VARIOUS STATES,
1912-13 to 1914-15.**

State.	1912-13.		1913-14.		1914-15.
	Loss.	Profit.	Loss.	Profit.	Loss.
	£	£	£	£	£
New South Wales	190,332	...	228,949	...	238,612
Victoria ... ..	...	8,426	...	13,683	32,555
Queensland	100,480	...	110,221	...	97,480
South Australia ... ..	...	4,687	...	327	7,226
Western Australia	104,132	...	148,244	...	224,065
Tasmania	25,271	...	28,053	...	29,784
	420,215	13,113	515,467	14,010	629,722

23. **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 previous 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, twenty-two miles in length, was opened. In Tasmania the first telegraphic line was completed in 1857, while in the following year communication was established between Sydney, Melbourne, and Adelaide. The first line to be constructed in Queensland was that between Brisbane and Rockhampton, a distance of 396 miles, which was opened in 1864. In Western Australia the first telegraph constructed was from Perth to Fremantle, a distance of twelve 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 during the period mentioned, 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 which place communication is made to Singapore by the Eastern Extension Company's cable. 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 telegraphic lines and of telegraph wire, exclusive of railway telegraphs, available for use in the Commonwealth from 1909 to 1914 inclusive:—

NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE, AVAILABLE FOR USE, 1909-14.

Particulars.			1909.	1910.	1911.	1912.	1913.	1914.
No. of Offices	...	No.	3,597	3,883	4,041	4,180	4,624	5,160
Length of Line	...	miles	43,849	44,100	44,013*	47,923	46,218†	47,758‡
„ Wire	...	„	92,909	96,825	97,053†	101,218	108,931	114,979

* Prior to 1911 the railway pole mileage over which the Department's wire runs was included in Tasmania. † Prior to 1911 the mileage of wire erected for railways was included in New South Wales. ‡ Prior to 1913 mileage of telephone lines was included in New South Wales.

The following table gives corresponding particulars for each State for the year 1914. The figures are exclusive of railway telegraphs:—

NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE, IN EACH STATE, 1914.

Particulars.		N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
No. of Offices	No.	1,937	1,292	740	462	424	305	5,160
Length of Line	miles	16,865	4,456	10,802	5,795	7,677	2,163	47,758
„ Wire	„	37,236	20,507	23,835	14,911	14,116	4,374	114,979

4. **Revenue and Expenditure.**—Particulars as to the revenue from the telegraph systems for the years 1910 and 1909-15 are given on page 705, while particulars as to the expenditure on telegraph works for the year 1914-15 are given on page 706.

5. **Number of Telegrams Despatched.**—The following table shews the total number of telegrams despatched in the Commonwealth in 1901 and in each of the years 1909 to 1914 inclusive:—

NUMBER OF TELEGRAMS DESPATCHED (,000 OMITTED), 1901 and 1909-14.

Year	...	...	1901.	1909.	1910.	1911.	1912.	1913.	1914.
Number*	...	...	8,003	11,345	12,238	12,821	13,343	13,556	13,918

* Including interstate cablegrams.

The following table shews the number of telegrams despatched in each State in 1914 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—despatched in each State:—

NUMBER OF TELEGRAMS DESPATCHED IN EACH STATE, 1914 (,000 OMITTED).

State, etc.	...	...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Inland (counted once)			3,753	2,218	1,888	871	1,406	353	10,489
Interstate*	...	...	1,040	948	537	393	339	172	3,429
Total	...	...	4,793	3,166	2,425	1,264	1,745	525	13,918

* 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.	
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 of telegrams sent on "urgent" forms.

SCALE OF CHARGES FOR PRESS TELEGRAMS.

Particulars.		Within any State.	Interstate.	Relating to Parlia- mentary, Executive, Departmental, and other Common- wealth Proceedings as may be prescribed.*
		s. d.	s. d.	s. d.
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

*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 half-penny for each additional word, double these rates being charged on Sundays. At present the service extends to 104 offices in the Commonwealth.

8. **Wireless Telegraphy.**—Previous to September, 1915, the Postmaster-General was, under the Wireless Telegraphy Act 1905, given the exclusive privilege of establishing and using stations and appliances for receiving and transmitting messages by wireless telegraphy within Australia. Licenses for experimental work were granted by the Postmaster-General under the authority of the Act, but were withdrawn on the outbreak of hostilities. In September, 1915, the administration of the Act was transferred to the Minister for the Navy.

In preparing the initial scheme for the construction of wireless stations in the Commonwealth it was evident, viewing the insular position of Australia, that, for an effective system of radio-telegraphic communication to be given, not only must the service offered be continuous, but the distances separating the stations must to a great extent be governed by the normal working range of the vessels with which communication would have to be established. With this object in view, the Commonwealth Government have constructed and erected twenty stations at or near the following localities:—Port Moresby, Thursday Island, Cooktown, Townsville, Rockhampton, Brisbane, Sydney, Flinders Island, Melbourne, Hobart, King Island, Mount Gambier, Adelaide, Esperance, Perth, Geraldton, Broome, Roeburne, Wyndham, and Darwin. To these must be added the station installed at Macquarie Island (which has been used chiefly for meteorological purposes, but is not at present in use), also the lighthouses at Tasman Island and Cape Don, which have small installations. In the Pacific, the Commonwealth controls stations at Woodlark Island, Rabaul, Wilhelmshaven, Nauru, and Bougainville; all these, with the exception of Woodlark Island, being on former German territory now occupied by Australia. The rates for messages forwarded between the foregoing stations in the Pacific and the Commonwealth are 3d. per word, plus the ordinary land line charges of the Commonwealth. The stations at Sydney, Perth, and Woodlark Island are of a high-power type, the first-named being capable of communication with New Zealand and the radio-telegraphic stations in the Pacific, and the Perth station with Cocos Island. A fourth high-power station is to be erected at Darwin, and

will operate with Singapore and the islands of the Pacific. All the other stations are of a lower power, and constitute the internal scheme of inter and ship-to-shore communication.

The working range by day—and under unfavourable conditions—of the low-power stations is 500 miles; that of the high-power stations being 1250 miles, though the proposed installation at Darwin will have a day range of over 2000 miles. Under more favourable conditions, however, messages can be transmitted over much greater distances, extending in the case of low-power stations to over 1500 miles.

The ordinary ship-to-shore communication rates for ships registered by the Commonwealth or New Zealand are 5d. per word, allocated as follows:—3d. for land station and 2d. for ship station charge, while for vessels registered by other administrations the rates are 10d. per word, allocated as follows:—6d. for land station, and 4d. for the ship station charge. In all cases must be added the inland forwarding charge of 1d. per word. Between the Commonwealth and Port Moresby and Thursday Island the rate is 2d. per word, and between the mainland and Flinders Island, King Island, or Macquarie Island, one penny per word, plus ordinary land line charges.

In December, 1909, a conference of representatives of the Commonwealth, New Zealand, the High Commissioner for the Western Pacific, Fiji, the Admiralty, and the Pacific Cable Board was convened at Melbourne to report upon the establishment of wireless telegraphy in the Pacific. The chief recommendations of this Conference were:—(a) That high-power stations be established at Sydney, Doubtless Bay (New Zealand), Suva (Fiji), and Ocean Island, and (b) that medium-power stations be established at Tulagi (Solomon Islands), and Vila (New Hebrides). The total cost of construction of the scheme covered by these recommendations was £42,000, while the total annual cost was estimated at £13,820 for a continuous service, and £9970 for a restricted service. It was proposed to apportion the cost between Great Britain, New Zealand, Fiji, and Australia. These recommendations were adopted by the Commonwealth Government, but the British Government would not agree to the erection of high-power stations at Suva and Ocean Island. Up to the present no further concerted action has taken place, but radio-telegraphic stations have been erected at Suva, Ocean Island, and Tulagi, under the control of the High Commissioner of the Pacific, and another at Vila is under construction, while the New Zealand Government has erected high-power stations at Awanui (Auckland), and Awarua (Bluff), and low-power stations at Auckland, Chatham Island and Wellington, and is also considering the erection of stations at Gisborne, New Plymouth, and Christchurch.

§ 3. Submarine Cables.

1. **First Cable Communication with the Old World.**—In previous issues of the Year Book (No. 6, p. 770) will be found a detailed account dealing with the connection of Australia with the old world by means of submarine cables.

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; from Broome there is direct telegraphic communication with Perth, from which place communication is made with the Eastern States by the interstate line *via* Albany, Eucla, and Port Augusta. (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 following table shews particulars of the revenue, expenditure, total loss, and the proportion of the loss payable by the Commonwealth for each financial year since the opening of the cable :—

**REVENUE, EXPENDITURE, AND LOSS ON WORKING OF PACIFIC CABLE,
1903 to 1915.**

Year ended the 31st March.	Revenue.	Expenditure (in- cluding Annuities and Renewal Fund).	Loss.	Commonwealth Proportion of Loss.
	£	£	£	£
1903 ...	...	...	90,518	30,514
1904 ...	80,118	167,869	87,751	29,250
1905 ...	87,446	163,296	75,850	25,283
1906 ...	91,952	164,508	72,556	24,185
1907 ...	113,516	167,439	53,923	18,307
1908 ...	110,160	172,523	62,363	20,787
1909 ...	113,093	173,981	60,888	20,295
1910 ...	111,724	171,312	59,588	19,862
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	237,961	12,916	2,638

* 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 1191 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 £8000, and by the Governments of New South Wales and Queensland to the amount of £2000 each annually for a period of thirty years. The cable was opened for use in October, 1893, the Australian shore-end being at 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 1912 to 1914:—

CABLEGRAMS RECEIVED AND DESPATCHED, COMMONWEALTH, 1914.

Particulars.	Cablegrams Received.			Cablegrams Despatched.			Total Cablegrams Received and Despatched.		
	1912.	1913.	1914.	1912.	1913.	1914.	1912.	1913.	1914.
Number... ..	288,678	301,621	305,384	297,806	309,140	325,841	586,484	610,761	631,225

The following table shows the total number of cablegrams received and despatched in each State during the year 1914. 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, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.*	C'wealth. *
Number received ...	153,395	95,489	14,279	20,494	15,890	5,837	305,384
„ despatched...	162,114	101,337	18,203	15,593	21,610	6,984	325,841
Total ...	315,509	196,826	32,482	36,087	37,500	12,821	631,225

* 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.

Via Roebuck Bay		Via Darwin.		Via South Africa.	
	Miles		Miles		Miles.
Perth to Roebuck Bay ...	145	Adelaide to Darwin ...	2,134	Perth to Mauritius ...	4,417
Roebuck Bay to Banjoewangie ...	1	Darwin to Banjoewangie ...	1,150	Mauritius to Durban ...	1,786
Banjoewangie to London ...	8,411	Banjoewangie 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 ...	12,296	Total ...	13,125	Total ...	14,319

Via Vancouver.		Via Russia.	
	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 ...	17,992

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 rates for ordinary messages were increased to four shillings and ninepence per word, and at the same time New Zealand joined 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 by all routes for cablegrams to Great Britain has since remained. The scale of reductions is governed by a revenue standard, and when the latter averages £330,000 per annum a further reduction to two shillings and sixpence will be made. 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 twenty-four 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% 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 twenty-four 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 sixty countries, and became very popular. The number of deferred ordinary words transmitted to and received from all countries with which the system is in operation, in 1914, was 1,380,798, the resulting Commonwealth revenue being £14,383. A comparison with the previous year's results discloses an increase in the number of words of 615,928, and in the revenue of £6372. This service, together with that of the week-end cable letters, has to some extent affected the ordinary cable business. Deferred press cablegrams, subject to a delay of 18 hours, may be exchanged between the Commonwealth and the United Kingdom at the rate of 4½d. per word, and between the Commonwealth and Vancouver at the rate of 1½d. 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 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, Canada, Portugal, and Newfoundland. A further benefit has been conferred on users, and 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 ½d. for those lodged in Tasmania)	11/8
India, Ceylon, and Burma ...	7½d.	12/6
Canada (ordinary rate 2s. 4d.)	7d.	11/8
Other parts of Canada ...	8d. to 10d.	12/11 to 16/8
Newfoundland ...	8½d.	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 £6000, extending over a period of three years, to the Independent Press Cable Service, on the conditions that at least 6000 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 £2000 per annum, providing that not less than 26,000 words are sent each month. This agreement will expire on the 30th September, 1916.

11. Cable Subsidies paid by each State.—The agreement between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. Since the year 1895 the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—have been met by the receipts, and the contracting States have, therefore, not been called upon to contribute.

(i.) *Total Subsidies Paid.* The following table shews the total amounts paid by way of cable subsidies for the years 1908-9 to 1914-15:—

TOTAL AMOUNT OF CABLE SUBSIDIES PAID, 1908-15.

Year.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Amount ... £	28,495	23,862	20,093	17,522	14,779	10,650	6,633

(ii.) *Subsidies Paid by each State.* The total amount of cable subsidies paid prior to the year 1908-9 included the subsidy paid in respect of the Tasmania-Victoria cable service.

As the agreement in connection with the Tasmanian cable expired in 1909, and as new cables have been laid by the Commonwealth Government (see page 711 *ante*), 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 1914-15 was £4000 in respect of the New Caledonian cable guarantee, and £2638 in respect of the loss on the Pacific cable.

§ 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 in each State for the years 1901 and 1910-15 are given on page 705 *ante*, while particulars of the expenditure on telephone works in each State for the year 1914-15 are given in a table on page 706.

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 2000 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, 1st JANUARY, 1916.

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, 1915, there were in the Commonwealth 125,108 telephone lines connected to 1673 exchanges, as compared with 115,689 lines connected to 1451 exchanges a year previously. The following tables show the mileage of lines, etc., for telephone purposes, shewing trunk lines separately, on 30th June, 1914 and 1915:—

MILEAGE OF LINES, Etc., FOR TELEPHONE PURPOSES (EXCLUSIVE OF TRUNK LINES), 1914 and 1915.

Particulars.	1914.	1915.
Conduits ... duct miles	1,584	1,853
Conductors in Aerial Cables ... loop mileage	30,002	34,437
„ Underground Cables ... „	143,570	160,115
„ Cables for Junction Circuits ... „	13,986	18,331
Open Conductors ... single wire mileage	*	161,133

* Not available.

MILEAGE OF WIRE, TELEPHONE TRUNK LINES, 1914 and 1915.

Particulars.	1914.	1915.
	Miles.	Miles.
Telephone Trunk Lines only ...	22,671	24,883
Telegraph and Telephone purposes ...	52,288	60,061

Particulars relating to the telephone service in each State will be found in the following table:—

PARTICULARS OF TELEPHONE SERVICE, 1905, 1914, and 1915.

Particulars.	Year.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Total C'wth.
No. of Exchanges ...	1905	64	23	19	11	16	16	149
	1914	484	498	194	115	87	73	1,451
	1915	608	536	223	128	95	83	1,673
No. of Lines Connected ...	1905	14,338	9,269	3,864	2,335	*3,462	1,523	*34,791
	1914	46,736	33,137	14,992	8,887	8,270	3,667	115,689
	1915	50,765	35,592	16,747	9,608	8,437	3,959	125,108
No. of Instruments Connected ...	1905	18,616	14,299	4,235	3,246	*4,857	1,751	*47,004
	1914	56,602	42,342	17,552	11,625	10,410	4,195	142,726
	1915	63,422	45,939	20,175	12,615	10,627	4,535	157,313
No. of Subscriber's Instruments ...	1915	63,318	44,815	19,236	12,312	10,061	4,496	154,238
No. of Public Telephones ...	1915	1,074	1,125	546	428	272	292	3,737
No. of other Local Instruments ...	1915	104	1,124	939	303	566	39	3,075
Instruments per 100 of Population ...	1905	1.25	1.18	.8	.88	1.94	.94	1.17
	1914	3.0	2.98	2.6	2.65	3.2	2.08	2.83
	1915	3.2	3.2	2.9	2.76	3.2	2.24	3.11
Earnings ...		£	£	£	£	£	£	£
	1914	389,018	281,274	135,942	85,776	71,133	31,745	994,888
	1915	432,891	321,170	157,461	95,498	70,438	32,934	1,109,892
Working Expenses ...		£	£	£	£	£	£	£
	1914	481,117	273,356	132,608	71,698	85,306	35,376	1,079,461
	1915	508,190	326,959	132,266	81,834	136,214	38,437	1,223,900
Percentage of Working Expenses to Earnings ...		£	£	£	£	£	£	£
	1914	123.67	97.19	97.55	83.59	119.92	111.44	108.50
	1915	117.53	101.80	84.00	85.69	193.38	116.71	110.27

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).

* Approximate.

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 Constitution.—In section 69 it is 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 has been assumed by the Commonwealth.

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 External Affairs, Home Affairs, Treasury, Trade and Customs, Defence, Attorney-General and Postmaster-General, as well as such general departments as Public Service Commissioner's Office, Treasury, 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 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.

6. Special Assistance.—By the same 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 £5000 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 £5000 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 have been 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 all previous issues of the Year Book, up to and including No. 6.

§ 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 1914-15, reached a total of £22,419,798, an increase in the period of £11,122,813.

Particulars concerning the total amount of revenue collected by the Commonwealth Government from 1st July, 1910, to 30th June, 1915, are contained in the following table:—

CONSOLIDATED REVENUE OF THE COMMONWEALTH, 1910-11 to 1914-15.

	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Commonwealth ...	£ 18,806,237	£ 20,548,520	£ 21,907,084	£ 21,741,775	£ 22,419,798

Since 1910-11 the revenue has increased steadily every year, except that 1913-14 shows a slight decline from 1912-13. In 1914-15 the revenue 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.

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, 1910-11 to 1914-15.

	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Commonwealth ...	£ s. d. 4 5 0	£ s. d. 4 9 11	£ s. d. 4 12 7	£ s. d. 4 9 3	£ s. d. 4 10 9

3. **Sources of Revenue.**—The following table furnishes particulars concerning the Commonwealth revenue derived from each source during the years 1910-11 to 1914-15 :—

SOURCES OF COMMONWEALTH REVENUE, 1910-11 to 1914-15.

Sources of Revenue.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Customs	£ 10,507,080	£ 12,071,434	£ 13,055,925	£ 12,652,737	£ 12,105,698
Excise	2,473,364	2,638,702	2,497,109	2,325,333	2,771,556
Postal	3,906,015	3,916,254	4,226,313	4,511,307	4,594,542
Defence	57,520	74,298	39,193	28,936	219,152
Patents	21,295	19,081	18,355	22,393	17,165
Trade Marks, Copyrights, and Designs	5,265	5,639	5,637	5,932	4,741
Quarantine	7,068	9,875	13,162	15,173	13,769
Coinage	198,893	156,489	122,647	208,948	208,515
Public Service Pension Funds, Repayments and Transfers	61,405	39,027	42,006	36,824	44,817
Land Tax	1,370,344	1,366,457	1,564,794	1,609,836	1,953,696
Probate and succession duties...	...	...	...	...	39,646
Northern Territory ...	10,521	31,225	40,084	54,777	53,026
Credit Balance Northern Territory Funds	151,513	...	24,456	...	...
Miscellaneous	35,954	220,039	257,403	270,179	393,476
Total	18,806,237	20,548,520	21,907,084	21,741,775	22,419,798

The only feature of this table calling for remark is the rapid annual rise of the Customs revenue between 1910-11 and 1912-13. The Excise and Postal revenues have only shewn a comparatively small upward tendency during the period under review.

4. **Customs Revenue for Past Five Years.**—Particulars for the Commonwealth as a whole, for the five years 1910-11 to 1914-15, are furnished in the following table:—

COMMONWEALTH CUSTOMS REVENUE, 1910-11 to 1914-15.

Classes.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Stimulants ...	2,564,101	2,706,058	2,777,492	2,810,222	2,899,540
Narcotics ...	1,039,932	1,150,990	1,906,782	1,175,404	1,257,223
Sugar ...	170,822	275,077	691,568	209,375	60,403
Agricultural products ...	869,708	996,953	1,072,203	1,002,363	1,087,133
Apparel and textiles ...	2,068,922	2,385,786	2,367,945	2,514,170	2,302,764
Metals and machinery ...	1,264,986	1,554,983	1,639,749	1,672,125	1,638,416
Oils, paints, etc. ...	239,229	285,737	313,348	310,847	311,545
Earthenware, etc. ...	334,834	375,403	490,983	426,134	338,095
Drugs and chemicals ...	92,857	104,341	109,619	122,960	131,764
Wood, wicker, and cane ...	463,289	501,278	535,576	555,843	455,860
Jewellery, etc. ...	263,818	309,309	281,631	272,214	253,290
Leather, etc. ...	303,988	386,824	435,801	470,382	428,106
Paper and stationery ...	204,009	230,212	237,943	234,504	269,443
Vehicles ...	170,940	279,828	328,001	343,633	303,868
Musical instruments ...	109,423	176,009	165,839	166,059	83,570
Miscellaneous articles ...	258,953	313,505	361,350	330,548	248,977
Other receipts ...	37,269	39,141	40,095	35,954	35,701
Total Customs ...	10,507,080	12,071,434	13,055,925	12,652,737	12,105,698

It will be seen that throughout the period here dealt with, the Customs revenue from stimulants and narcotics has represented, approximately, one third of the total Customs revenue. The other principal articles from which Customs revenue was derived were "apparel and textiles," and "metals and machinery."

5. **Excise Collections, 1910-11 to 1914-15.**—Particulars concerning the amount of Excise collected under each head during each of the years ending 30th June, 1911 to 1915, are given hereunder:—

COMMONWEALTH EXCISE REVENUE, 1910-11 to 1914-15.

Particulars.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Beer ...	617,178	694,001	718,869	792,243	1,205,001
Spirits ...	331,024	376,440	411,192	421,506	514,794
Starch ...	507	...	...	...	...
Sugar ...	794,645	748,670	518,508	179,149	1,508
Tobacco ...	720,305	810,242	840,012	927,293	1,043,885
Licenses ...	9,705	9,349	8,528	5,142	6,368
Total Excise ...	2,473,364	2,638,702	2,497,109	2,325,333	2,771,556

Comparing the Excise collections for 1914-15 with those for 1910-11, it will be seen that the increase in the revenue from tobacco was about 45 per cent., the yield from beer was nearly doubled, and that from spirits increased about 60 per cent., while the revenue from sugar has almost vanished, owing to the abolition of the excise duties, and decreases were also experienced in the return from starch and licenses.

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 cases 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.

(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 £5000 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 now becomes 9d. in the £, on estates whose taxable value is 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 are 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 has, for the first time, introduced succession duties on estates of deceased persons, in addition to those already imposed by the State Governments. The new Commonwealth scale of succession duty, after starting by the exemption of all estates of less than £1000, 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 $\frac{3}{5}$ per cent. in the case of an exact thousand, and $\frac{2}{5}$ per cent. in every other case. Thus for an estate of £43,000 the duty would be $9\frac{1}{5}$ per cent. (i.e. $\frac{43}{5} + \frac{3}{5}$), but for an estate of £43,001 the duty would be $9\frac{3}{5}$ per cent. (i.e. $\frac{43}{5} + \frac{4}{5}$). The succession duties thus outlined yielded £39,646 up to 30th June, 1915, an amount very much less than the estimate. It is possible, 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. The total of £39,646 was obtained from the different States as follows:—New South Wales, £18,474; Victoria, £9216; Queensland, £4774; South Australia, £1900; Western Australia, £1912; and Tasmania, £3870.

(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 Act No. 47 of 1915, whilst the prescribed schedule of rates was contained in Act No. 41 of 1915, as amended by Act No. 48 of 1915. Various estimates as to the probable yield 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. On 10th June, 1916—by which date nearly all the assessments were completed—the position was as follows:—

INCOME TAX ASSESSMENTS, 1916.

States.	Number of Assessments.	Tax Assessed.	Average Tax Payable.
		£	£
Central	8,317	1,393,220	167.5
New South Wales	87,113	1,180,534	13.6
Victoria	66,006	696,980	10.6
Queensland	29,609	505,646	17.1
South Australia	15,988	162,657	10.1
Western Australia	19,012	190,740	10.0
Tasmania	6,233	62,076	9.9
	232,278	4,191,853	18.0

The "Central" returns relate to those taxpayers with income in more than one State.

(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 the War Loan Act (No. 1) 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 £20 each to public charitable institutions, and contributions exceeding £5 to a public fund connected with the present war.
- (e) The sum of £13 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: Income derived from personal exertion.*

- (a) If the income does not exceed £500—the sum of £156.
- (b) If the income exceeds £500—the sum of £156 less £3 for every £10 by which the income exceeds £500.

Special deduction : Income derived from property.

- (c) The sum of £156 less £2 for every £5 by which the income exceeds £156.

Provided that where the total of the sums so calculated under paragraphs (a) or (b) and paragraph (c) of this section exceeds £156, each of those sums shall be reduced by one-half of the excess.

- (v.) *Rates : Income derived from personal exertion.*

For every pound sterling in excess of £7600 the rate of the tax is five shillings. The rate of tax for so much of the taxable income as does not exceed £7600 can be calculated from the following formula:— R is rate of tax in pence per pound, I is taxable income in pounds sterling.

$$R = (3 + \frac{3}{800} \cdot I) \text{ pence.}$$

Income derived from property.

- (a) For a taxable income not exceeding £546 the rate of tax can be calculated from the following formula:— R is rate of tax in pence per pound, I is taxable income in pounds sterling.

$$R = (3 + \frac{1}{181.07} \cdot I) \text{ pence.}$$

- (b) For incomes of a taxable value between £546 and £2000 the rate of tax is calculated from the following formulæ:— R_l is rate of tax on last pound, R_a is average or flat rate of tax over the entire taxable income, I is taxable income in pounds sterling.

$$R_l = \frac{23.2}{10^3} \cdot I - \frac{3.2}{10} \cdot I^2$$

$$R_a = \frac{11.6}{10^3} \cdot I - \frac{1.06}{10^6} \cdot I^2$$

- (c) For incomes of a taxable value between £2000 and £6500 the rate of tax is calculated from the following formulæ:—

$$R_l = -5 + \frac{25.16}{10^3} \cdot I - \frac{3.2}{10^6} \cdot I^2 + \frac{.13}{10^9} \cdot I^3$$

$$R_a = \frac{5533.3}{I} - 5 + \frac{12.583}{10^3} \cdot I - \frac{1.06}{10^6} \cdot I^2 + \frac{.03}{10^9} \cdot I^3$$

Where R_l , R_a , and I have the same meaning as before.

- (d) For every pound sterling of taxable income in excess of £6500 the rate of tax is five shillings.
(e) For every pound sterling of the taxable income of a company the rate of tax is one shilling and sixpence.

(vi.) 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, shareholders, or debenture-holders.

7. Commonwealth Land Tax.—Particulars as to the Land Tax assessment for each State for the year ending 30th June, 1914, 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 No. 5 and 6.

**PARTICULARS OF LAND TAX ASSESSMENT FOR EACH STATE OF THE
COMMONWEALTH FOR THE YEAR ENDING 30th JUNE, 1914.**

State.	Number of Taxable Returns.	Unimproved Value as ascer- tained by Department.	Tax Assessed.		
			Town.	Country.	Total.
		£	£	£	£
Central—					
Resident ...	1,288	22,812,765	188,912	241,498	430,410
Absentee ...	221	388,615	4,510	2,290	6,800
	1,509	33,221,380	193,422	243,788	437,210
New South Wales—					
Resident ...	4,325	69,697,347	186,774	308,567	495,341
Absentee ...	587	1,621,304	14,330	6,309	20,639
	4,912	71,318,651	201,104	314,876	515,980
Victoria—					
Resident ...	4,178	48,979,291	87,496	159,281	246,777
Absentee ...	768	1,328,945	12,962	3,827	16,789
	4,946	50,308,236	100,458	163,108	263,566
Queensland—					
Resident ...	947	11,674,265	19,225	43,260	62,485
Absentee ...	245	420,284	1,952	1,889	3,841
	1,192	12,094,549	21,177	45,149	66,326
South Australia—					
Resident ...	1,523	17,081,443	33,300	59,157	92,457
Absentee ...	312	324,073	3,234	509	3,743
	1,835	17,405,516	36,534	59,666	96,200
Western Australia—					
Resident ...	484	6,367,368	22,346	16,618	38,964
Absentee ...	1,083	385,600	1,888	699	2,587
	1,567	6,752,968	24,234	17,317	41,551
Tasmania—					
Resident ...	528	5,516,269	6,127	23,424	29,551
Absentee ...	244	224,286	473	916	1,389
	772	5,740,555	6,600	24,340	30,940
Grand Total—					
Resident ...	13,273	192,128,748	544,180	851,805	1,395,985
Absentee ...	3,460	4,693,107	39,349	16,439	55,788
	16,733	196,821,855	583,529	868,244	1,451,773

8. **Details of Postal Revenue, 1910-11 to 1914-15.**—Particulars concerning the postal revenue of the Commonwealth for each of the financial years from 1910-11 to 1914-15 are contained in the following table :—

COMMONWEALTH POSTAL REVENUE, 1910-11 to 1914-15.

Particulars.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Private boxes and bags ...	20,993	23,383	25,618	27,744	29,995
Commission—					
Money orders & postal notes	112,568	121,432	129,653	134,834	129,760
Telegraphs ...	740,428	788,441	811,592	834,316	878,238
Telephones ...	518,857	752,423	860,726	996,047	1,099,417
Postage ...	2,363,385	2,088,866	2,260,000	2,391,424	2,338,489
Miscellaneous ...	149,784	141,709	138,724	126,942	118,643
Total ...	3,906,015	3,916,254	4,226,313	4,511,307	4,594,542

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 1910-11 is shewn in the following table :—

COMMONWEALTH PATENTS REVENUE, 1910-11 to 1914-15.

	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Revenue ...	21,295	19,081	18,355	22,393	17,165

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 since this item first appeared in the Commonwealth accounts :—

**COMMONWEALTH TRADE MARKS, COPYRIGHTS AND DESIGNS REVENUE,
1910-11 to 1914-15:**

	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Revenue ...	5,265	5,639	5,637	5,932	4,741

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 1914-15 amounted to £219,152.

12. **Coinage.**—The revenue for the Commonwealth under this head is derived from the profit on coin issued, and is made up of £198,629 from silver coin and £9886 from bronze coin.

(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 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 total expenditure by the Commonwealth Government during the period 1910-11 to 1914-15 is shewn in the following table:—

COMMONWEALTH EXPENDITURE, 1910-11 to 1914-15.

	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Commonwealth ...	13,158,529	14,724,097	15,787,154	15,458,776	30,527,141

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 Transcontinental Railway, Federal Capital, etc. The abnormal figures of 1914-15 are due, of course, to the exceptional demands on the Defence Department.

3. Expenditure per Head.—Particulars concerning the Commonwealth expenditure per head are furnished hereunder:—

COMMONWEALTH EXPENDITURE PER HEAD, 1910-11 to 1914-15.

	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Commonwealth ...	2 19 6	3 4 6	3 6 8	3 3 5	6 3 7

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 has been treated as “other” expenditure, and debited to the States *per capita*. Particulars of the expenditure on new works, etc., during the last five years are given in the following table:—

* For an exposition of the “book-keeping system” see Commonwealth Year Book, No. 6, p. 780.

COMMONWEALTH EXPENDITURE ON NEW WORKS, Etc., 1910-11 to 1914-15.

Departments,	1910-11.	1911-12.	1912-13. (a)	1913-14. (b)	1914-15.
	£	£	£	£	£
Sundry departments ...	2,452,960	3,566,367	2,653,282	2,576,000	2,673,939

(a) In addition, the following amounts were spent from Trust Funds:—£475,342 for Fleet construction, and £413,097 for Telegraphs and Telephones. (b) In addition, the following amounts were spent from Trust Funds: £121,487 for Fleet construction, and £16,493 for Telegraphs and Telephones.

It will be seen that the Commonwealth expenditure under this head has become very considerable in recent years. The main cause of this great amount is the large expenditure on fleet construction.

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 1910-11 to 1914-15 was as follows:—

COST OF COMMONWEALTH DEPARTMENTS, Etc., 1910-11 to 1914-15.

Departments, etc.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Governor-General ...	20,884	23,842	21,648	17,815	24,750
Parliament ...	211,558	189,550	281,261	243,163	340,605
Prime Minister ...	...	14,863	57,559	82,847	56,642
External Affairs ...	454,128	494,010	539,722	678,974	595,178
Attorney-General ...	35,329	62,899	66,517	82,442	78,466
Home Affairs ...	179,097	155,628	129,972	152,299	440,932
Treasury ...	1,960,318	2,368,506	2,910,224	2,787,034	2,527,833
Trade and Customs ...	1,051,497	1,024,389	875,784	730,458	551,318
Defence ...	1,395,798	2,128,649	2,612,687	2,950,722	18,016,204
Postmaster-General ...	3,559,785	4,330,896	4,781,524	5,157,022	5,221,274
All other Expenditure ...	4,290,135	3,990,865	3,510,256	2,576,000	2,673,939
Total ...	13,158,529	14,724,097	15,787,154	15,458,776	30,527,141

The largeness of the expenditure under the head of Parliament in the year 1912-13 was in great measure due to the fact that the general elections were held in that year, while 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 large expenditure on Parliament for 1914-15 is due mainly to increases in the staff of the electoral office. The amount paid in Old-Age and Invalid Pensions is included in Treasury expenditure for the first time in 1910-11. 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 his establishment for the five years 1910-11 to 1914-15 is as follows:—

EXPENDITURE, GOVERNOR-GENERAL AND ESTABLISHMENT, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Salary	10,000	9,973	10,000	10,000	10,000
Governor-General's Establishment	6,848	10,113	6,983	5,118	5,573
Contingencies	4,036	3,756	4,665	2,697	9,177
Total	20,884	23,842	21,648	17,815	24,750

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 1910-11 to 1914-15 are furnished in the table given hereunder:—

EXPENDITURE, COMMONWEALTH PARLIAMENT, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Salaries of Ministers	12,000	12,000	12,000	12,000	12,000
Allowances to Senators	21,519	20,997	20,950	21,004	18,979
Allowances to Members of House of Representatives	43,205	43,257	39,198	43,745	39,556
Officers, staff, contingencies, etc.	30,938	30,985	32,873	36,703	36,347
Repairs, maintenance, etc.	1,939	1,814	3,172	2,808	4,411
Printing	16,507	16,829	19,341	20,078	21,429
Travelling expenses of Members and others	9,153	10,029	9,252	10,627	10,173
Insurance	342	342	342	342	342
Electoral Office	5,288	5,578	6,764	11,716	49,815
Election expenses	5,364	1,435	82,370	28,252	84,600
Referendum	47,487	4,183	...	...	...
Administration of Electoral Act	17,437	39,863	54,441	54,541	57,691
Miscellaneous	379	2,238	558	1,347	5,262
Total	211,558	189,550	281,261	243,163	340,605

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 provision is still in force. 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.

8. Prime Minister's Department.—This is 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. The expenditure for the four years of its existence is shewn in the following table :—

EXPENDITURE, PRIME MINISTER'S DEPARTMENT, 1911-12 to 1914-15.

Details.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£
Salaries, Contingencies, etc. ...	4,447	21,685	8,961	11,087
Executive Council	109	128	152	164
Audit Office	9,454	10,663	12,167	10,943
Rent, Repairs, etc.	761	3,381	2,552	2,829
Public Service Commissioner's Office ...	...	20,683	22,303	17,555
Miscellaneous	92	1,019	36,712	14,064
Total	14,863	57,559	82,847	56,642

9. **External Affairs.**—Under the control of the Department of External Affairs is placed the expenditure in connection with the London Office, Papua and the Northern Territory. The expenditure in connection with the Northern Territory is exclusive of the Customs and Postal expenditure. Particulars for the five years 1910-11 to 1914-15 are as follows :—

EXPENDITURE, EXTERNAL AFFAIRS DEPARTMENT, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
High Commissioner	3,000	3,000	3,000	3,000	3,000
Chief Office	13,862	15,684	16,486	18,320	17,547
Executive Council	737	...	...	...	...
London Office	17,286	14,282	21,351	24,606	38,064
Papua	30,615	30,280	64,987	60,640	44,126
Rents, repairs, etc.	655	1,298	1,500	1,466	1,261
Northern Territory	326,347	248,758	281,140	335,850	} 413,436
Port Augusta Railway ... ..	...	119,426	85,965	102,394	
Miscellaneous	61,626	61,282	65,293	132,698	77,744
Total	454,128	494,010	539,722	678,974	595,178

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, 1915, were the Customs and Excise, amounting to £13,466, and railways £21,082. The Postal revenue amounted to £8922, whilst the total revenue was £83,065. The chief items of expenditure were as follows :—Postal Department, £20,226 ; goldfields and mining, £20,360 ; and railways, £28,705. The total expenditure was £228,485. In addition to this expenditure the Commonwealth is liable for interest on loans and redemption, which for this financial year totalled £246,442. The deficiency for the year was £391,862.

REVENUE, NORTHERN TERRITORY, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Customs and Excise	12,366	12,562	12,337	12,628	13,466
Credit Balance paid by South Aust.	151,513	...	24,456	...	...
Miscellaneous	(a)13,212	34,120	44,158	61,029	69,599
Deficiency for year	166,856	364,368	388,658	458,878	391,862
Total	343,947	411,050	469,609	532,535	474,927

(a) For six months.

EXPENDITURE, NORTHERN TERRITORY, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Interest and Redemption	(a)291,843	284,755	227,561	246,271	246,442
Miscellaneous	52,104	126,295	242,048	286,264	228,485
Total	343,947	411,050	469,609	532,535	474,927

(a) For six months.

11. **Papua.**—The sums shewn in the above table 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 1910-11 to 1914-15 are as follows :—

PAPUAN REVENUE, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Customs dues	32,554	37,751	33,453	37,341	32,244
Other collections	13,418	13,284	18,882	17,363	19,717
Commonwealth grant	30,000	30,000	(a)48,000	30,000	30,000
Total	75,972	81,035	100,335	84,704	81,961

(a) Including £18,000 for special purposes.

The expenditure for 1914-15 totalled £82,535, out of which £35,889 was spent on the Government Secretary's Department, and £16,848 on the Departments of Agriculture, Lands, Survey, and Mines. The total expenditure for each of the five years 1910-11 to 1914-15 was as follows :—

PAPUAN EXPENDITURE, 1910-11 to 1914-15.

Particulars.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Total expenditure	70,699	85,636	89,170	81,095	82,535

12. **Attorney-General's Department.**—The extra expenditure connected with this Department from 1907-8 was 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. The expenditure on Patents, Trade Marks, Copyrights, and Designs was included for the first time in 1911-12. Details for the five years 1910-11 to 1914-15 are furnished hereunder:—

EXPENDITURE, ATTORNEY-GENERAL'S DEPARTMENT, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Attorney-General's Office ...	3,805	4,449	5,279	6,302	5,852
Crown Solicitor's Office ...	4,472	4,829	6,046	7,565	8,371
Salaries of Justices of High Court ...	15,500	15,500	16,495	21,500	21,175
High Court expenses ...	7,459	6,772	6,839	11,209	9,862
Court of Conciliation and Arbitration ...	2,891	4,047	4,690	6,450	3,586
Rent, repairs, etc. ...	1,202	3,411	3,745	3,733	4,755
Patents, Trade Marks, etc. ...	...	23,291	22,768	24,439	23,485
Miscellaneous ...	...	600	655	1,244	1,380
Total ...	35,329	62,899	66,517	82,442	78,466

13. **Home Affairs Department.**—The creation of new departments such as the Bureau of Census and Statistics, and the Meteorological Bureau, and the extension of the field of operations of the Public Works branch, all of which are grouped for general administrative purposes under the Department of Home Affairs, have led to a considerable increase in the expenditure. The heaviness of the expenditure of this department for 1910-11 was mainly due to the appropriation for the census. The large increase in "Miscellaneous" for 1913-14 was due to an item of £32,916, representing interest on that portion of the Commonwealth Inscribed Stock which was allocated to the expenditure of this department. In 1914-15 the "Miscellaneous" had increased to £347,242, and included £215,966 for Railways, and £87,019 for interest on Commonwealth Inscribed Stock. The expenditure on this department is likely to increase materially owing to the extension of Public Works. Particulars for the five years 1910-11 to 1914-15 are as follows:—

EXPENDITURE, HOME AFFAIRS DEPARTMENT, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Chief Office ...	14,178	15,684	22,606	26,337	27,381
Public Service Commissioner ...	16,989	17,881	(a)	(a)	(a)
Public Works ...	11,505	17,192	26,054	11,546	8,885
Census and Statistics ...	106,567	68,857	29,886	21,662	15,936
Meteorological Bureau ...	17,389	22,389	22,729	23,639	25,614
Rents, repairs, etc. ...	4,845	6,111	7,796	12,070	15,874
Miscellaneous ...	7,624	7,514	20,901	57,045	347,242
Total ...	179,097	155,628	129,972	152,299	440,932

(a) Now included in Prime Minister's Department.

14. **Treasurer's Department.**—The sub-departments under the control of the Commonwealth Treasurer are the Treasury, the Old Age Pensions Department, and the Taxation Office. The Audit Office was transferred to the Prime Minister's Department in 1911-12. During the financial year 1909-10 the expenditure under this

department was swelled by the increased expenditure on salaries, etc., in the Old Age Pensions Department. The statements in previous Year Books, up to No. 5 inclusive, have been rearranged so as to include expenditure on Invalid and Old Age Pensions from 1908-9. 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 1910-11 to 1914-15 are furnished hereunder :—

EXPENDITURE, TREASURER'S DEPARTMENT, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Treasury	12,273	13,708	17,052	22,696	26,291
Old-age pensions—Salaries, etc.	37,492	39,810	42,543	44,942	46,421
Audit	8,819	...	...	...	...
Rents, repairs, etc. ...	5,293	7,206	7,101	6,294	6,654
Invalid and Old-age pensions ...	1,874,568	2,143,212	2,288,388	1,881,794a	1,479,963b
Taxation ... ..	...	60,686	73,452	79,525	78,787
Maternity Allowance... ..	...	...	412,375	674,990	694,275
Miscellaneous	21,873	43,884	69,313	76,793	195,492
Total	1,960,318	2,308,506	2,910,224	2,787,034	2,527,833

(a) In addition, £697,471 was spent from Trust Funds.

(b) In addition, £1,224,347 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 1910-11 to 1914-15 are given in the following table :—

EXPENDITURE, TRADE AND CUSTOMS DEPARTMENT, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Chief Office	13,260	12,698	13,582	14,429	16,240
Customs (ordinary)	286,410	301,278	347,657	341,116	354,205
Patents	20,140	...	...	...	...
Trade Marks and Copyrights ...	...	...	...	...	...
Fisheries	5,354	6,688	6,754	7,443	4,447
Analyst	2,511	3,235	2,523	3,441	3,441
Audit (proportion)	7,281	7,057	7,763	8,144	7,427
Quarantine	21,246	22,973	23,371	44,063	32,057
Pensions and retiring allowances	10,308	12,049	14,099	13,318	16,041
Rents, repairs, etc.	12,068	17,969	13,371	14,872	15,448
Sugar bounties and expenses ...	630,762	543,503	370,125	149,244	4
Bounties	11,740	22,941	18,171	14,304	28,286
Iron Bonus	29,427	23,048	18,098	51,810	15,072
Miscellaneous	990	50,950	40,270	68,274	58,650
Total	1,051,497	1,024,389	875,784	730,458	551,318

16. **Defence.**—The Commonwealth expenditure in connection with Defence, which in 1901-2 amounted to £861,218, had by 1910-11 grown to £1,395,798. The largeness of the expenditure for recent years has been in the main the consequence of the new defence system. The abnormal expenditure of 1914-15 was, of course, due to the war. Particulars for the five years 1910-11 to 1914-15 are as follows:—

EXPENDITURE, DEFENCE, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Chief Office	32,609	54,004	74,480	86,191	88,233
Military	1,040,981	1,409,398	1,557,443	1,547,921	15,159,965
Naval	273,076	449,701	790,750	979,554	2,289,056
Audit (proportion)	1,142	1,180	1,298	1,362	2,398
Pensions and retiring allowances	965	2,269	1,121	1,103	1,427
Rents, repairs, etc.	42,863	46,257	58,746	70,471	79,665
Miscellaneous	4,162	165,840	128,849	264,120	395,460
Total	1,395,798	2,128,649	2,612,687	2,950,722	18,016,204

17. **Postal.**—From a total of £3,559,785 in 1910-11 the cost of the department under the control of the Postmaster-General advanced to £5,221,274 in 1914-15, an increase of £1,661,489. The large increase in "Miscellaneous" since 1910-11 is due, in the main, to the payment of interest on transferred properties, which is discussed in detail later on. Details for the five years 1910-11 to 1914-15 are furnished hereunder:—

EXPENDITURE, POSTAL DEPARTMENT, 1910-11 to 1914-15.

Details.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Chief Office	14,208	18,515	20,154	22,506	23,606
Postal Department (ordinary)	3,441,720	3,796,157	4,145,803	4,567,895	4,809,672
Audit (proportion)	2,704	2,894	3,184	3,340	3,955
Pensions and retiring allowances	31,209	36,812	42,757	48,400	48,073
Rents, repairs, etc.	62,454	72,222	84,883	88,884	84,044
Miscellaneous	7,490	404,296	484,743	425,997	251,924
Total	3,559,785	4,330,896	4,781,524	5,157,022	5,221,274

18. **Miscellaneous.**—In addition to the foregoing there are certain items which do not come under any of the heads enumerated. For 1914-15 the total expenditure under this heading was £2,673,939, made up entirely of expenditure on new works. The entire expenditure for new works now appears as a separate item instead of being debited to the different departments, and has already been discussed on page 729.

(D) Subsidy Paid to States.

1. **Net Revenue.**—As mentioned in sub-section 1 of this section, the Constitution provided under sections 87, 93 and 95 for the payment to the States of all surplus revenue of the Commonwealth, such payment to amount in the aggregate during the continuation of the

Braddon clause to not less than three-fourths of the net revenue from Customs and Excise. The expression "net revenue" used in section 87 has been taken to mean the gross revenue less drawbacks and refunds, and less also cost of collection. This view, adopted by the Commonwealth Government, was that indicated by Quick and Garran in their "Annotated Constitution of the Australian Commonwealth," in which they say: "The net revenue from duties of Customs and Excise is the total receipts from these sources after deducting the cost of collection. No attempt was made in the Constitution to define the deductions which may be made in order to arrive at the net revenue; this is a matter of book-keeping, which is left wholly to the Executive Government." In actual practice the statutory three-fourths of net Customs and Excise revenue was ascertained by the Commonwealth Treasury by deducting from the total Customs and Excise revenue (less drawbacks and refunds) the "transferred" expenditure of the Department of Trade and Customs and the expenditure on new works for that department, and taking three-fourths of the result.

2. **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 1910-11 to 1914-15:—

COMMONWEALTH SUBSIDY PAID TO STATES, 1910-11 to 1914-15.

State.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
New South Wales ...	1,954,986	2,046,993	2,178,683	2,248,241	2,287,295
Victoria ...	1,617,572	1,667,657	1,692,121	1,733,229	1,757,894
Queensland ...	691,625	761,302	780,051	810,274	831,486
South Australia ...	514,622	511,719	527,151	540,113	542,715
Western Australia ...	591,243	599,991	605,215	613,606	606,900
Tasmania ...	233,143	236,761	(a) 241,709	(b) 247,536	(b) 247,485
Total ...	5,603,191	5,824,423	(a) 6,024,930	(b) 6,192,999	(b) 6,273,775

(a) Not including special grant of £95,000 to Tasmania.

(b) " " £90,000 " "

In 1910-11, owing to the new system of allotting the Commonwealth subsidy, the amounts received by each State, except South Australia, were the smallest for the period under review, and they all rose, with the exception of South Australia, in 1911-12, and again, without exception, in 1912-13 and 1913-14. The rate of increase was checked in 1914-15 owing to the departure of the troops. The amounts allotted to Tasmania in the last three years are exclusive of the first instalments of the special payment to which reference has already been made (see page 721).

3. **Commonwealth Subsidy per head of Population.**—The following table furnishes particulars concerning the amount of surplus Commonwealth revenue per head of population which the several States received during the financial years 1905-6 to 1909-10, and is of interest in connection with the present financial agreement, under which the Commonwealth pays 25s. per head of population, to all the States, for a period of ten years, subject to a special arrangement in favour of Western Australia (see page 721).

**COMMONWEALTH SUBSIDY PER HEAD OF POPULATION PAID TO STATES,
1905-6 to 1909-10.**

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New South Wales ...	1 16 10	1 19 9	2 6 4	2 2 0	2 3 1
Victoria ...	1 14 7	1 16 1	1 18 7	1 11 9	1 13 0
Queensland ...	1 12 3	1 14 10	1 18 1	1 16 10	1 18 1
South Australia ...	1 10 8	1 14 10	2 1 11	1 16 10	2 2 6
Western Australia ...	3 9 9	3 0 9	2 19 1	2 8 4	2 13 3
Tasmania ...	1 7 5	1 8 2	1 9 6	1 5 6	1 6 3
Commonwealth ...	1 16 8	1 18 4	2 2 7	1 17 6	1 19 3

4. **Proportion Actually Paid.**—For the period of nine and a-half years from the 1st January, 1901, to 30th June, 1910, the percentage of net revenue from Customs and Excise duties paid to the several States was as follows:—New South Wales, 84 per cent.; Victoria, 80 per cent.; Queensland, 74 per cent.; South Australia, 84 per cent.; Western Australia, 86 per cent.; Tasmania, 78 per cent.

§ 3. Trust Fund.

1. **Trust Accounts.**—The Trust Fund credit balance on 30th June, 1915, amounted to £36,781,606, as compared with £13,116,293 for the corresponding date in the year ending 30th June, 1914. These enormous amounts are due mainly to the Australian Notes Account referred to in detail in paragraph 3. Details concerning the various trust accounts contributing to this amount are as follows:—

COMMONWEALTH TRUST FUND, 30th JUNE, 1915.

Trust Accounts.	Balance at 30th June, 1915.	Trust Accounts.	Balance at 30th June, 1915.
	£		£
Small Arms Ammunition ...	209,440	Officers' Assurance... ..	2,118
Defence Clothing Material ...	111,429	Defalcations	51
Small Arms... ..	8,751	Guarantee Fund	2,243
Unclaimed Militia Pay—Military	6,213	Naval Defence	12,332
" " Naval	127	Repatriation Pacific Islanders	40
Military Expenses	1,503	London Liabilities	2,872,200
Deferred Pay—Naval	183,242	Quarantine	38
Customs Officers' Overtime ...	765	Other Trust Monies	130,719
Money Order	51,600	Minerals Account	2,870
International Postal & Money		Australian Notes Account ...	32,878,891
Order	19,034	Miscellaneous	185,000
Invalid and Old Age Pensions...	103,000		
		Total	36,781,606

2. **Distribution.**—The amounts to credit of Trust Fund in the several States on 30th June, 1915, were as follows:—New South Wales, £198,360; Victoria, £36,456,679; Queensland, £44,144; South Australia, £51,010; Western Australia, £19,156; and Tasmania, £12,257.

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, 1915, the notes issued and unredeemed amounted to £32,067,302. Against this there was a reserve in gold coin of £11,034,703, or 34.35 per cent., and other assets, of which the most important were investments in Government Stock and fixed deposits, totalling £19,705,649, and returning an annual income of £774,373.

The position, according to a Treasury return issued at the end of May, 1916, was as follows:—

COMMONWEALTH NOTES ISSUED AND UNREDEEMED AT 31st MAY, 1916.

						£
10s.	...	...	...	...	...	1,442,907
£1	...	...	...	...	...	10,300,930
£5	...	...	...	...	...	5,670,705
£10	...	...	...	...	...	2,315,060
£20	...	...	...	...	...	474,740
£50	...	...	...	...	...	1,084,200
£100	...	...	...	...	...	1,195,900
£1000	...	...	...	...	...	21,365,000
-						<hr/> 43,849,442

The amount of the gold reserve was £15,800,254, representing 36.03 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 a novel and interesting departure in Australian Public Finance, and in view of the new financial relations thus brought about between the Commonwealth and State Governments, the following table is appended, giving full particulars of the investments of £19,705,649, to which reference has already been made:—

**AUSTRALIAN NOTES ACCOUNT.—PARTICULARS OF INVESTMENT AS AT
30th JUNE, 1915.**

Investment.	Amount.	Rate of Interest.	Date of Maturity.	Annual Amount of Interest.
	£	%		£
Commonwealth Inscribed Stock ...	3,830,000	3½	1962-1972	134,050
" Treasury Bills ...	1,928,899	4	(a)	77,156
STATE GOVERNMENT SECURITIES				
New South Wales Stock ...	800,000	3½	1919	30,000
" " Treasury Bills	4,316,669	4½	(b)	178,063
Victorian Debentures (face value, £800,000)	784,000	3½	1921	28,000
" " 	243,000	4	1915	9,720
" " 	2,300,000	4½	(b)	94,875
South Australian Treasury Bills...	1,616,669	4½	(b)	66,687
Western Australian Stock ...	590,000	3½	1926	22,125
" " Treasury Bills	243,750	4	1915	9,750
" " " " "	1,808,331	4½	(b)	74,594
Tasmanian Stock	460,000	3½	1921	17,250
" Treasury Bills ...	583,331	4½	(b)	24,063
FIXED DEPOSITS—				
Sundry Banks	201,000	4	1915	8,040
Total	19,705,649	—	—	774,373

(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 further 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.

§ 4. Commonwealth Public Debt.

Although it was not until 1915 that the Federal Government appeared before the public as a direct borrower, there has been a Commonwealth Public Debt for many years. It 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 Loan Fund, the loan from the Imperial Government for military purposes, etc. In view of the recent 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, 1915, stood at £5,280,245, of which £3,359,891 was on account of the Northern Territory, and £1,920,354 on account of the railway.

2. Loan Fund.—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 started. 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 practically 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 four years in the following table:—

**SECURITIES CONSTITUTING LOAN FUND AND EXPENDITURE THEREFROM,
1912 to 1915.**

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	1,183,027	1,843,502	151,498
1914 ...	4,100,000	...	4,100,000	2,155,261	4,003,763	96,237
1915 ...	4,580,000	1,949,319	6,529,319	2,525,556	6,529,319	...

The preceding table gives the total expenditure for four years. The details of the expenditure are as follows:—

DETAILED STATEMENT OF LOAN EXPENDITURE.

Particulars.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£
Railways Construction—Kalgoorlie to Port Augusta ...	...	595,614	1,346,040	1,670,459
Pine Creek ...	...	...	126,529	94,392
Loan Redemption—Port Augusta Railway ...	...	168,954	135,627	15,077
Northern Territory ...	226,000	71,945	...	...
Payment to South Australia on account of Port Augusta Railway ...	34,475	...	...	...
Papua—Railways and wharves ...	...	...	685	13,042
Post and Telegraph—Purchase of land ...	...	...	42,598	84,500
Construction of conduits ...	...	...	258,407	178,142
Acquisition of Land—London (a) ...	400,000	19,784	64,887	19,274
Perth, Western Australia ...	...	152,205	...	...
Federal Territory ...	...	179,525	180,488	36,770
Defence machinery, etc.; Dockyards, Cockatoo Island ...	...	...	...	42,782
In aid of revenue ...	...	...	...	371,118
Total ...	660,475	1,188,027	2,155,261	2,525,556

(a) Including cost of erection of buildings.

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 great deal 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 four 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 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
Commonwealth ...	6,253,868	2,721,666	661,160	11,735	9,648,449

Since the valuation a few 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.

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. At 30th June, 1915, the Commonwealth Government had received seven monthly instalments, or £10,500,000, of the first loan, and three monthly instalments, or £3,600,000, of the second loan. This constitutes an apparent debt of £14,100,000, but as the Commonwealth was given the advance on the same terms as those given to the investors in the first British War Loan, and as these terms included an issue price of 95, while providing for a repayment at par, the real Commonwealth liability is $£14,100,000 \times \frac{100}{95}$, or £14,842,105 at 30th June, 1915. The full amount of £24,500,000 was received by the Commonwealth Government at the end of 1915.

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 $4\frac{1}{2}$ per cent., and are redeemable on 15th December, 1925. The expenses included a commission of two shillings per cent. to the Commonwealth Bank, commission to brokers at $\frac{1}{4}$ per cent., and miscellaneous items such as printing. The total cost of flotation, however, was most moderate, amounting only to £85,097, or less than five shillings per cent. of the amount subscribed. Particulars as to the two loans are found in the following table:—

PARTICULARS OF LOCAL AUSTRALIAN WAR LOAN, 1915-16.

	First Issue.	Second Issue.	Total.
	No.	No.	No.
Number of subscribers—			
For Inscribed Stock	8,603	12,450	21,053
For Treasury Bonds	10,145	16,494	26,639
Total	18,748	28,944	47,692
	£	£	£
Amount subscribed—			
For Inscribed Stock	9,581,120	16,271,610	25,852,730
For Treasury Bonds	3,808,320	5,383,970	9,192,290
Total	13,389,440	21,655,580	35,045,020
Accrued interest	221,502	324,168	545,670
Expenses of flotation	34,736	50,361	85,097
Total deductions	256,238	374,529	630,767
Net proceeds of loan	13,133,202	21,281,051	34,414,253

A third issue is now on the market, which only differs from the other two in the fact that no definite amount has been stated. The subscription list closed on the 1st August, 1916, but was afterwards extended to 1st September.

6. Australian Notes.—It is impossible to leave the subject of the Public Debt without a further short reference to the issue of Australian notes. 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. This 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. On 30th June, 1915, the value of the notes issued and unredeemed was £32,128,302, against which there was a gold reserve of £11,034,703, leaving an uncovered amount of £21,093,599. In this connection reference may be made to the table on page 739.

7. Total Commonwealth Public Debt.—Having given separate consideration to the items composing the Public Debt, it now remains to treat it as a whole. The table appended to this sub-section shows the entire debt of the Commonwealth (apart from the States) at yearly intervals since its inception in 1911. 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 do not take cognizance of this item until 1913, but as the debt was incurred, and interest paid for some time previous, it has been inserted in the earlier years for the sake of uniformity.

PUBLIC DEBT OF THE COMMONWEALTH AS AT 30th JUNE, 1911 to 1915.

Details.	1911.	1912.	1913.	1914.	1915.
	£	£	£	£	£
Balance of loans taken over from South Australia—					
(a) On account of Northern Territory ...	3,657,836	3,431,836	3,359,891	3,359,891	3,359,891
(b) On account of Port Augusta railway ...	2,274,486	2,240,011	2,071,058	1,935,431	1,920,354
Value of properties transferred by States ...	9,648,449	9,648,449	9,648,449	9,787,011	10,777,161
Amount of Commonwealth Loan Fund—					
(a) Inscribed Stock ...	...	700,000	2,000,000	4,100,000	4,580,000
(b) Treasury Bills ...	...	...	...	...	1,949,819
War Loan from British Government ...	...	...	...	...	14,842,105
Total ...	15,580,771	16,020,296	17,079,398	19,182,333	37,428,830
Commonwealth Debt per capita	£3 9 5	£3 8 7	£3 11 2	£3 17 11	£7 11 6

The debt has increased most rapidly since 30th June, 1915, on account of the further monthly instalments of the British War Loan, and the first two issues of the Australian War Loan, to which reference has already been made. On 31st March, 1916, it stood at £89,361,350.

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 $3\frac{1}{2}$ 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. Appended is a table shewing particulars of the loans of the Commonwealth for five financial years which have been floated in London and Australia respectively. A separate column is reserved for the transferred properties, which, for obvious reasons, it is impossible to allocate:—

COMMONWEALTH PUBLIC DEBT.—LONDON AND AUSTRALIAN FLOTATIONS.

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 ...	3,646,548	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

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 $3\frac{1}{2}$ 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 will in future be checked, since there is not likely to be any further borrowing for some time to come at a rate of less than $4\frac{1}{2}$ per cent. It is notoriously difficult to forecast the future of the rate of interest, but the influence of the large Imperial War Loan of 1915 on gilt-edged securities has been so far-reaching, that there is every likelihood that for the next decade the average rate of interest on the Federal Public Debt will rise.

The accompanying table gives full particulars concerning the interest for the five financial years ended 30th June, 1915.

RATES OF INTEREST ON COMMONWEALTH PUBLIC DEBT, 1911 to 1915.

Rates of Interest.	Year ended 30th June—				
	1911.	1912.	1913.	1914.	1915.
%	£	£	£	£	£
Not bearing interest ...	34,475	...	...	...	...
3 ...	35,612	35,612	35,612	35,612	35,612
$3\frac{1}{2}$...	9,820,206	10,520,206	11,820,206	14,058,768	30,371,023
£3/12/3 ...	1,124,929	1,124,929	884,031	748,404	748,404
$3\frac{3}{4}$...	1,798,383	1,798,383	1,798,383	1,798,383	1,798,383
4 ...	2,767,166	2,541,166	2,541,166	2,541,166	4,475,408
Total ...	15,580,771	16,020,296	17,079,398	19,182,333	37,428,830
Average rate of interest	£3 12 4	£3 12 3	£3 12 1	£3 11 10	£3 11 6

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 bank 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 the payment of the subsidy by the Commonwealth, followed in order by Taxation 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 1905-6 to 1914-15:—

STATE REVENUE, 1905-6 to 1914-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1905-6 ...	12,283,082	7,811,475	3,853,523	2,866,308	3,558,939	900,657	31,273,984
1906-7 ...	13,392,435	8,345,534	4,307,912	3,252,705	3,401,354	970,843	33,670,783
1907-8 ...	13,960,763	8,314,480	4,488,398	3,722,090	3,376,641	1,005,274	34,867,646
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

The figures given in this table relate in each instance to the financial year ended 30th June.

During the nine years from 30th June, 1906, to 30th June, 1915, the aggregate revenues of the States increased by no less a sum than £15,744,372, or about 50 per cent. Increases were in evidence in all the States, the largest being that of £6,645,469 in New South Wales. This general advance is the more notable since, in the last five years, a much smaller amount has been received from the Commonwealth than was the case up to 1910.

It will be noticed that in all the States, except Queensland, the revenue for 1908-9 was lower than that of the preceding year, largely owing to the fact that the revenue for 1907-8 was swelled by the payment of Customs duties in anticipation of, or in consequence of, the new tariff imposed on 8th August, 1907.

3. Revenue per Head.—Details concerning the revenue per head of population, collected in the several States of the Commonwealth during the ten years 1905-6 to 1914-15, 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, 1905-6 to 1914-15.

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.
1905-6 ...	8 5 1	6 9 1	7 5 0	7 16 4	14 4 7	4 16 8	7 15 1
1906-7 ...	8 16 0	6 16 10	7 19 10	8 15 7	13 16 7	5 4 8	8 4 7
1907-8 ...	8 18 10	6 14 11	8 4 6	9 17 3	13 5 9	5 6 0	8 7 7
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

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 7s. 10d. in the case of Queensland. The Western Australian decline was continuous until 1908-9, though recovering in 1909-10, and for 1914-15 the revenue per head in that State exceeded the Commonwealth average by about 67 per cent. South Australia shews a marked decline in 1914-15, due largely to a diminished revenue from public works and services.

4. **Details for 1914-15.**—Classifying the revenue of the several States in the manner indicated in § 2 (A) 1 above, particulars for the year 1914-15 are as follows:—

DETAILS OF STATE REVENUE, 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	All States.
	£	£	£	£	£	£	£
Taxation ...	2,955,670	1,762,041	954,457	588,690	371,960	367,577	7,000,395
Public Works & Services ...	11,427,514	5,745,511	3,933,854	2,311,102	3,418,888	364,962	27,201,831
Land ...	1,698,081	283,588	986,760	175,727	396,544	89,209	3,629,909
Commonwealth Subsidy ...	2,287,295	1,757,894	827,841	542,715	606,899	(a)337,485	6,360,129
Miscellaneous ...	559,991	979,983	499,746	355,076	346,434	84,862	2,826,092
Total ...	18,928,551	10,529,017	7,202,658	3,973,310	5,140,725	1,244,095	47,018,356

(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 737. This arises from the fact that the State figures shew the amount for which credit was taken by the State during the financial year 1914-15, whilst the Commonwealth figures shew the amounts paid to State Treasurers on account of that financial year.

5. **Revenue per Head, 1914-15.**—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 PER HEAD, 1914-15.

Particulars.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation ...	1 11 8	1 4 8	1 8 2	1 6 8	1 3 0	1 16 6	1 8 4
Public Works & Services ...	6 2 7	4 0 4	5 16 3	5 4 8	10 11 8	1 16 3	5 10 1
Land ...	0 18 3	0 3 11	1 9 2	0 7 11	1 4 7	0 8 10	0 14 8
Commonwealth Subsidy ...	1 4 7	1 4 7	1 4 6	1 4 7	1 17 7	1 13 6	1 5 9
Miscellaneous ...	0 6 0	0 13 8	0 14 9	0 16 1	1 1 5	0 8 5	0 11 5
Total ...	10 3 1	7 7 2	10 12 10	8 19 11	15 18 3	6 3 6	9 10 3

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, and that 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 1914-15:—

PERCENTAGE OF TOTAL STATE REVENUE, 1914-15.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
	%	%	%	%	%	%	%
Taxation	15.62	16.73	13.25	14.82	7.23	29.55	14.90
Public Works and Services ...	60.37	54.57	54.62	58.17	66.51	29.34	57.85
Land	8.97	2.69	13.70	4.42	7.71	7.17	7.72
Commonwealth Subsidy ...	12.08	16.70	11.49	13.66	11.81	27.12	13.52
Miscellaneous	2.96	9.31	6.94	8.93	6.74	6.82	6.01
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

One of the most noticeable features of the figures here given is the comparatively low percentage for "public works and services" and the high percentage for "taxation" in the case of Tasmania. In New South Wales and Queensland land revenue is an important item, while in Queensland the revenue from "public works and services" falls considerably below the Commonwealth average.

7. State Taxation.—(a) *Details, 1914-15.* 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 probate and succession duties. For 1914-15 stamp duties occupied third place. In addition to these a State land tax is now collected in all the States except Queensland, and license fees of various kinds are collected in all the States, while a dividend tax is collected in Western Australia. The total revenue from taxation collected by the States during the year 1914-15 was £7,000,395, details of which are set forth in the table given hereunder:—

STATE REVENUE FROM TAXATION, 1914-15.

Taxation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	All States
	£	£	£	£	£	£	£
Probate and succession duties	551,629	536,869	112,740	113,734	40,156	38,252	1,393,380
Other stamp duties	552,762	289,384	208,664	81,007	64,398	73,754	1,259,969
Land tax	3,346	303,550	...	131,896	36,433	80,863	556,088
Income tax	1,653,923	506,214	517,273	236,270	(a) 174,561	157,595	3,245,836
Licenses	148,955	113,953	88,359	25,783	44,287	14,044	434,381
Other taxation	45,055	13,071	27,421	...	12,125	3,069	100,741
Total	2,955,670	1,762,041	954,457	588,690	371,960	367,577	7,000,395

(a) Includes £93,916 dividend tax.

The most productive form of taxation in the several States during the year 1914-15 was income tax, with probate and succession duties, and other stamp duties furnishing most of the balance.

(b) *Summary, 1905-6 to 1914-15.* The total amount raised by means of taxation by the several State Governments during the ten years 1905-6 to 1914-15 is given in the following table:—

STATE REVENUE FROM TAXATION, 1905-6 to 1914-15.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1905-6	1,297,776	990,735	494,165	369,756	260,609	248,799	3,661,840
1906-7	1,381,305	1,110,411	540,737	411,867	266,152	276,450	3,986,922
1907-8	1,077,534	977,620	525,540	477,637	277,463	265,656	3,601,450
1908-9	907,249	1,072,228	535,194	450,250	296,599	250,835	3,512,355
1909-10	1,223,521	1,088,353	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	7,000,895

During the period between 30th June, 1905-6, and 30th June, 1914-15, the aggregate State revenue from taxation increased by about 91 per cent., the increase varying considerably in the several States. The remarkable increase of the last two 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. The total increase in State taxation for the year amounted to £695,559.

The revenue from State taxation per head of population, collected in the several States during each of the years 1905-6 to 1914-15, was as follows:—

STATE TAXATION PER HEAD, 1905-6 to 1914-15.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1905-6	0 17 5	0 16 4	0 18 7	1 0 2	1 0 10	1 6 8	0 18 2
1906-7	0 18 2	0 18 2	1 0 1	1 2 3	1 0 10	1 9 10	0 19 6
1907-8	0 13 9	0 15 10	0 19 3	1 5 3	1 1 10	1 8 0	0 17 3
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

Taking the States as a whole the State taxation increased by ten shillings and two pence per head during the period from 1905-6 to 1914-15, the most marked increase being that of fourteen shillings and threepence per head in the case of New South Wales. State taxation per head is at present highest in Tasmania and lowest in Western Australia.

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 1910-11 to 1914-15, as well as the amount per head of population:—

COMMONWEALTH AND STATE TAXATION, 1910-11 to 1914-15.

Particulars.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Commonwealth taxation ...	14,350,788	16,076,593	17,117,828	16,587,906	16,870,596
State taxation ...	4,195,485	5,419,668	5,065,213	6,304,836	7,000,395
Total ...	18,546,273	21,496,261	22,183,041	22,892,742	23,870,991
Taxation per head ...	£4 3 10	£4 14 1	£4 13 9	£4 14 0	£4 16 7

Whilst the Commonwealth taxation increased during the period by £2,519,808, the State taxation advanced by £2,804,910, the aggregate increase being £5,324,718. The amount per capita of total taxation, after rising from 1910-11 to 1911-12, has remained fairly constant since then at an average of about £4 15s. It is likely to rise sharply in the immediate future owing to the imposition of further direct taxation by the Commonwealth, since the first collections of Commonwealth income tax are not, of course, credited to the financial year 1914-15, and the first collections of Commonwealth probate and succession duties are a mere fractional amount of what they will ultimately become. The large increase in Commonwealth taxation in recent years is mainly due to the appearance of the Federal Land Tax.

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 1914-15 the aggregate revenue from this source totalled £27,201,831, or nearly 58 per cent. of the revenue from all sources. Details of revenue from public works and services for the year 1914-15 are as follows:—

STATE REVENUE FROM PUBLIC WORKS AND SERVICES, 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and Tramways ...	9,660,822	5,170,020	3,792,070	1,778,074	2,163,790	320,035	22,884,811
Harbour Services ...	569,505	105,517	45,110	99,039	138,969	...	958,140
Public Batteries ...	...	544	...	...	39,562	...	40,106
Water Supply and Sewerage ...	882,161	(a)172,037	...	(a)196,330	404,501	...	1,655,029
Other Public Services ...	315,026	297,393	96,674	237,659	672,066	44,927	1,663,745
Total ...	11,427,514	5,745,511	3,933,854	2,311,102	3,418,888	364,962	27,201,831

(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. As a matter of financial procedure such a course is open to criticism. In the following table particulars of revenue derived from sales and rental of Crown lands are given for the year 1914-15:—

STATE LAND REVENUE, 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Sales ...	913,162	133,808	300,674	83,237	252,253	57,801	1,740,935
Rentals ...	784,919	149,780	686,086	92,490	144,291	31,408	1,888,974
Total ...	1,698,081	283,588	986,760	175,727	396,544	89,209	3,629,909

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 1914-15 aggregated £6,360,129. 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 1914-15 was of the total revenue of that State is shewn in the following table:—

COMMONWEALTH SUBSIDY PAID TO STATES DURING 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Commonwealth subsidy ...	2,287,295	1,757,894	827,841	542,715	606,899	(a) 337,485	6,360,129
Total revenue ...	18,928,551	10,529,017	7,202,658	3,973,310	5,140,725	1,244,095	47,018,356
Percentage of subsidy on revenue ...	%	%	%	%	%	%	%
	12.08	16.70	11.49	13.66	11.81	27.13	13.52

(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 1914-15. (See also page 747.)

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, etc., which for the year 1914-15 aggregated £2,826,092.

(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 1914-15 represented about 34 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, police, other public works, and lands and surveys in the order named.

2. Total Expenditure.—The total expenditure from Consolidated Revenue Funds in the several States during each of the years 1905-6 to 1914-15 is furnished in the table given hereunder:—

STATE EXPENDITURE, CONSOLIDATED REVENUE FUNDS, 1905-6 to 1914-15.

Year.	N.S. Wales.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1905-6 ...	11,386,864	7,261,475	3,725,712	3,004,974	3,632,318	853,147	29,864,490
1906-7 ...	11,876,657	7,679,143	3,911,797	3,394,999	3,490,182	913,762	31,266,540
1907-8 ...	12,095,593	7,862,246	4,373,097	3,862,336	3,379,006	929,885	32,502,163
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

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 1905-6 to 1914-15 is as follows:—

STATE EXPENDITURE PER HEAD, 1905-6 to 1914-15.

Year.	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.
1905-6 ...	7 13 1	6 0 0	7 0 2	8 3 11	14 10 5	4 11 6	7 8 1
1906-7 ...	7 16 1	6 5 11	7 5 2	9 3 4	13 13 7	4 18 6	7 12 10
1907-8 ...	7 14 11	6 7 6	8 0 3	10 4 8	13 5 6	4 18 1	7 16 2
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

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 1914-15.—The following table furnishes for the year 1914-15 particulars as to the expenditure of the several States under each of the principal heads:—

DETAILS OF STATE EXPENDITURE, 1914-15.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Public debt (int. sink'g fund, &c.)	4,154,174	2,650,297	1,975,581	1,308,319	1,550,262	522,633	12,151,326
Rlws. & tramways (work'g exps.)	6,928,379	4,144,959	2,410,465	1,439,810	1,585,554	225,945	16,735,112
Justice	364,300	206,016	92,003	41,385	84,316	12,466	500,486
Police	560,997	388,484	269,931	130,041	130,428	45,822	1,525,703
Penal establishments	92,285	58,864	29,103	22,130	21,658	7,070	231,110
Education	1,635,453	1,202,748	565,133	318,405	336,929	123,967	4,162,635
Medical and charitable	769,311	589,451	426,157	200,476	242,736	79,432	2,307,563
All other expenditure	3,430,849	2,466,149	1,431,026	1,201,829	1,754,659	366,755	10,651,267
Total	17,935,748	11,706,968	7,199,399	4,662,395	5,706,542	1,384,150	48,595,202

5. **Expenditure per Head, 1914-15.**—The expenditure per head of population of the several States for the year 1914-15, under each of the principal items, is given hereunder :—

STATE EXPENDITURE PER HEAD, 1914-15.

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, &c.)	2 4 8	1 17 0	2 18 4	2 19 3	4 16 0	2 11 11	2 9 3
Railways and tramways (working expenses)	3 14 5	2 18 0	3 11 3	3 5 2	4 18 2	1 2 5	3 7 9
Justice	0 3 11	0 2 11	0 2 8	0 1 10	0 5 3	0 1 3	0 3 3
Police	0 6 0	0 5 5	0 7 11	0 5 11	0 8 1	0 4 6	0 6 2
Penal establishments	0 1 0	0 0 10	0 0 10	0 1 0	0 1 4	0 0 8	0 0 11
Education	0 17 7	0 16 10	0 16 8	0 14 5	1 0 10	0 12 4	0 16 11
Medical and charitable	0 8 3	0 8 2	0 12 8	0 9 1	0 15 0	0 7 11	0 9 4
All other expenditure	1 16 10	1 14 6	2 2 3	2 14 5	5 8 8	1 16 5	2 3 1
Total	9 12 8	8 3 8	10 12 7	10 11 1	17 13 4	6 17 5	9 16 8

In three of the States, viz., Western Australia, South Australia, and Queensland, the average State expenditure per head exceeded that for the Commonwealth as a whole, falling short of it in the other three States.

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 TOTAL STATE EXPENDITURE, 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
Public debt (interest, sinking fund, &c.)	23.16	22.64	27.44	28.06	27.17	37.76	25.03
Railways and tramways (working expenses)	38.63	35.41	33.48	30.88	27.79	16.32	34.44
Justice	2.03	1.76	1.28	0.88	1.48	0.90	1.64
Police	3.13	3.32	3.75	2.79	2.28	3.31	3.14
Penal establishments	0.51	0.50	0.40	0.47	0.38	0.51	0.47
Education	9.12	10.27	7.85	6.83	5.90	8.96	8.61
Medical and charitable	4.29	5.04	5.92	4.31	4.25	5.74	4.75
All other expenditure	19.13	21.06	19.88	25.78	30.75	26.50	21.92
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 1914-15 nearly 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, 1915.**—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 changed for the worse in the year 1914-15. The position of the balances of the several Consolidated Revenue Funds on 30th June, 1915, was as follows:—

STATE CONSOLIDATED REVENUE FUND BALANCES, 30th JUNE, 1915.

State.	Cash Credit Balances.	Debit Balance.		Net Result.
		Cash Overdraft.	Overdraft liquidated by Treasury Bills	
	£	£	£	£
New South Wales ... ..	...	363,931	...	Dr. 363,931
Victoria ... ..	...	234,133	(a) 1,195,470	Dr. 1,429,603
Queensland	3,259	...	...	Cr. 3,259
South Australia ... ..	...	470,448	...	Dr. 470,448
Western Australia ... ..	...	1,012,742	...	Dr. 1,012,742
Tasmania ... ..	...	...	...	Dr. 104,749
		104,749		
Total	3,259	3,381,473		Dr. 3,378,214

(a) Including £295,470 charged to Public Account, pending issue of Treasury bonds.

(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 1910 to 1914:—

VALUE OF ESTATES OF DECEASED PERSONS, 1909-10 to 1913-14.

State.	1910.	1911.	1912.	1913.	1914.
	£	£	£	£	£
New South Wales	8,834,934	13,138,068	13,389,806	8,443,068	(b) 9,997,615
Victoria	7,430,949	8,469,163	8,533,502	8,367,862	(b) 8,481,720
Queensland	1,652,691	2,409,495	2,730,039	2,640,017	2,101,558
South Australia	2,422,519	2,855,089	(a) 2,383,238	2,214,241	2,907,561
Western Australia	868,638	844,151	(a) 841,800	607,972	739,956
Tasmania	797,439	596,870	983,618	680,477	620,108
Total	22,007,170	28,312,836	28,862,003	22,953,637	24,848,518

(a) Gross values.

(b) Including Letters of Administration.

The duty collected in the several States for the financial years 1910-11 to 1914-15 is as follows:—

AMOUNT OF PROBATE AND SUCCESSION DUTIES COLLECTED, 1910-11 to 1914-15.

State.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
New South Wales ...	357,750	849,405	365,250	512,529	551,629
Victoria ...	433,104	448,233	443,682	457,042	536,869
Queensland ...	71,637	144,309	108,367	89,835	112,740
South Australia ...	109,698	95,667	58,811	226,367	113,734
Western Australia ...	23,124	22,276	47,929	30,662	40,156
Tasmania ...	27,459	35,012	25,980	29,094	38,252
Total ...	1,022,772	1,594,952	1,050,019	1,345,529	1,393,380

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 the imposition of stamp duties for the years 1910-11 to 1914-15 is shewn in the accompanying table:—

**STAMP REVENUE (EXCLUSIVE OF PROBATE AND SUCCESSION DUTIES),
1910-11 to 1914-15.**

State.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
New South Wales ...	268,091	255,085	233,940	377,707	552,762
Victoria ...	275,314	285,212	252,407	278,240	289,384
Queensland ...	174,051	187,533	186,083	205,635	208,664
South Australia ...	109,274	106,910	101,498	101,094	81,007
Western Australia ...	79,404	74,828	70,652	77,051	64,398
Tasmania ...	61,118	64,236	75,171	83,202	73,754
Total ...	967,252	973,804	919,751	1,122,929	1,269,969

2. **Bank Notes.**—Promissory notes issued by any bank are not required to bear a duty stamp either impressed or adhesive, and may 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 has been prohibited by the Federal Bank Note Tax Act, and they have now almost 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 enough to say here that it imposes 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.**—Queensland is the only State in the Commonwealth in which a State land tax is not levied, although it was as recently as 1907 that the first tax on land was imposed in Western Australia. In all of the other States the tax dates back to a much earlier period.

The following table shews the amount collected by means of such taxes during the financial years 1910-11 to 1914-15 in the States in which a land tax was imposed:—

LAND TAX COLLECTIONS, 1910-11 to 1914-15.

State.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
New South Wales ...	7,438	6,479	5,738	4,692	3,346
Victoria ...	210,640	293,823	308,275	302,224	303,550
South Australia ...	135,614	118,725	141,807	136,602	131,896
Western Australia ...	37,871	45,166	46,519	46,201	36,433
Tasmania ...	64,932	81,234	79,276	79,085	80,863
Total ...	456,495	545,427	581,615	568,804	556,088

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 resorted to.

In the following table particulars are furnished concerning the total amount collected in the several States during the years 1910-11 to 1914-15. 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.

INCOME AND DIVIDEND TAXES, 1910-11 to 1914-15.

State.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
New South Wales ...	269,142	644,571	662,625	1,290,370	1,653,923
Victoria ...	395,998	443,248	542,236	527,705	506,214
Queensland ...	348,513	372,497	421,507	472,918	517,273
South Australia ...	168,707	207,416	210,034	240,996	236,270
Western Australia ...	134,075	154,442	171,239	174,558	174,561
Tasmania ...	115,836	143,875	148,413	162,458	157,595
Total ...	1,432,271	1,966,049	2,156,054	2,869,005	3,245,836

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, 1915, was as follows:—

TRUST FUNDS ON 30th JUNE, 1915.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Amount of trust funds	5,259,710	8,768,134	7,684,213	2,029,271	10,483,991	849,229	35,074,548

§ 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 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 debt of Australia, on the other hand, consists in the main of moneys raised and expended with the object of assisting the development of the resources of the Commonwealth, and is, to a very large extent, represented by tangible assets such as railways, tramways, waterworks, etc.

2. **Loan Expenditure, 1914-15.**—During the year ended 30th June, 1915, the actual expenditure of the Australian States from loan funds amounted to £20,825,839, New South Wales with a total of £6,996,107 being the principal contributor to this amount, while Victoria, whose expenditure amounted to £5,351,830, ranked second. The chief item of expenditure for the year was that of railways and tramways, which represented a total of £11,446,824, water supply and sewerage works contributing the amount of £2,412,272; the expenditure on harbours, rivers, etc., and roads and bridges totalling £1,874,196, 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, 1914-15.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ...	4,690,908	2,809,926	1,739,156	1,285,431	693,118	228,285	11,446,824
Water supply and sewerage ...	1,368,260	304,766	546	490,558	248,142	...	2,412,272
Harbours, rivers, etc. ...	693,840	367,268	3,980	181,988	202,536	424,584	1,874,196
Roads and bridges ...	395,136	200,951	73,353	95,395	81,004	59,596	905,435
Public buildings ...	...	20,764	...	...	107,263	...	128,027
Development of mines, etc. ...	6,026	419,556	...	338,186	873,722	...	1,637,490
Advances to settlers ...	a 300,000	173,752	...	79,030	(b) 68,748	458	21,988
Land purchases for settlement ...	17,310	...	563,507	...	...	72,346	653,163
Loans to local bodies ...	a 174	...	25,962	(a) 3,867	1,082	...	23,003
Rabbit-proof fences ...	124,801	1,054,847	231,762	66,038	245,993	...	1,723,441
Other public works and purposes ...	...	...	...	...	...	...	...
Total ...	6,996,107	5,351,830	2,638,266	2,532,759	2,521,608	785,269	20,825,839

(a) Repayment.

(b) Development of agriculture.

3. **Aggregate Loan Expenditure.**—The total loan expenditure of the Australian States from the initiation of the borrowing system to the 30th June, 1915, has amounted to no less a sum than £337,291,735. 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, 1915.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ...	77,044,241	50,152,663	35,306,560	18,803,862	17,187,086	5,044,382	203,538,794
Telegraphs & telephones ...	1,761,844	...	996,587	991,773	269,308	142,410	4,161,922
Water supply & sewerage ...	20,804,474	11,438,455	364,003	7,880,037	4,574,952	...	45,061,921
Harbours, rivers, etc. ...	12,746,205	731,011	2,443,822	2,785,571	3,325,366	4,639,286	31,799,924
Roads and bridges ...	1,861,738	469,261	932,103	1,520,488	345,073	...	2,389,782
Defence ...	1,457,536	149,323	363,084	291,615	...	128,224	14,045,609
Public buildings ...	6,994,489	2,197,766	1,652,825	1,342,577	715,515	1,112,437	3,953,346
Immigration ...	569,930	...	2,763,070	...	385,346	235,000	1,972,401
Development of mines, &c. ...	...	372,420	...	...	1,599,981	...	4,154,448
Advances to settlers ...	6,026	771,623	...	1,736,626	1,640,168	...	9,035,333
Land purchases for settlement ...	489,000	4,867,631	...	1,909,155	1,591,608	177,939	5,199,673
Loans to local bodies ...	17,310	...	4,121,109	...	64,491	996,763	762,060
Rabbit-proof fences ...	57,559	...	(a)	375,854	328,647	...	...
Other public works & purposes ...	529,006	4,788,391	1,798,299	2,408,184	1,193,949	498,693	11,216,522
Total ...	124,339,358	75,938,549	50,771,462	40,045,742	33,221,490	12,975,134	337,291,735

(a) 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 39 per cent. in the case of Tasmania and 70 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, 1915:—

**PERCENTAGE OF EACH ITEM ON TOTAL LOAN EXPENDITURE OF THE STATES
TO 30th JUNE, 1915.**

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust	Tas.	All States.
	%	%	%	%	%	%	%
Railways and tramways ...	61.96	66.04	69.54	46.95	51.74	38.87	60.35
Telegraphs and telephones ...	1.42	...	1.97	2.48	0.81	1.10	1.23
Water supply and sewerage ...	16.73	15.06	0.72	19.68	13.77	...	13.36
Harbours, rivers, etc. ...	10.25	0.96	4.81	6.96	10.01	35.76	9.43
Roads and bridges ...	1.50	0.62	1.84	3.79	1.04		
Defence ...	1.17	0.20	0.72	0.73	...	0.99	0.71
Public buildings ...	5.63	2.89	3.31	3.35	2.15	8.58	4.15
Immigration ...	0.46	...	5.44	...	1.16	1.81	1.17
Development of mines, etc. ...	...	0.49	...	...	4.82	...	0.59
Advances to settlers ...	...	1.02	...	4.34	4.94	...	1.23
Land purchases for settlement	0.39	6.41	...	4.77	4.79	1.37	2.68
Loans to local bodies ...	0.01	...	8.11	...	0.19	7.68	1.54
Rabbit-proof fences ...	0.05	...	(a)	0.94	0.99	...	0.23
Other public works & purposes	0.43	6.31	3.54	6.01	3.59	3.84	3.33
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 1905-6 to 1914-15:—

STATE LOAN EXPENDITURE, 1905-6 to 1914-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1905-6 ...	1,367,022	932,966	297,624	449,930	372,442	136,971	3,556,955
1906-7 ...	1,058,553	595,658	683,570	499,132	900,964	156,945	3,894,822
1907-8 ...	1,965,329	783,538	1,033,676	495,928	733,745	224,954	5,237,170
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	3,524,248	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

Throughout the ten years under review the loan expenditure of New South Wales exceeded that of any other of the States, and for the year 1905-6 represented nearly 40 % 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 fore-shores and adjoining properties of Darling Harbour. In Victoria the large expenditure of 1905-6 resulted in large measure from the purchase of lands for closer settlement, while 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 1906-7, 1908-9, 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.

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 1906-7 with 9s. 9d. per head. Particulars concerning the loan expenditure per head for the ten years 1905-6 to 1914-15 are given hereunder:—

LOAN EXPENDITURE PER HEAD, 1905-6 to 1914-15.

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.
1905-6	... 0 18 4	0 15 5	0 11 2	1 4 6	1 9 9	0 14 8	0 17 8
1906-7	... 0 13 10	0 9 9	1 5 4	1 7 0	3 10 7	0 16 11	0 19 0
1907-8	... 1 5 2	0 12 9	1 17 11	1 6 3	2 17 8	1 3 9	1 5 2
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

§ 5. Public Debt.

1. The 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, 1915.

State.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
New South Wales ...	11,932,650	105,776,249	10,026,506	...	127,735,405
Victoria ...	17,654,017	48,222,600	6,307,310	900,000	73,083,927
Queensland ...	16,111,449	39,632,247	...	1,125,350	56,869,046
South Australia ...	259,866	30,232,454	4,589,303	...	35,081,623
Western Australia ...	364,400	33,923,071	2,735,151	...	37,022,622
Tasmania ...	1,227,733	11,900,313	...	5,000	13,133,046
Total ...	47,550,115	269,686,934	23,658,270	2,030,350	342,925,669

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, 1905-6 to 1914-15.

Date.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
30th June, 1906 ...	39,587,224	181,279,045	12,194,464	5,367,087	238,427,820
" 1907 ...	38,061,799	184,157,771	13,571,985	4,358,172	240,149,727
" 1908 ...	37,665,279	190,377,823	12,131,871	3,660,516	243,835,489
" 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	(a) 267,127,233
" 1912 ...	31,576,656	230,170,271	13,962,002	1,265,166	(b) 277,124,095
" 1913 ...	39,044,995	241,819,896	12,345,935	1,161,660	(c) 294,472,486
" 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

(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, 1906, and 30th June, 1915, the public debt of the States increased by £104,497,849, or at the rate of about £11,600,000 per annum. The amount of debentures comprised in the total debt increased by £7,962,891 during the period, while the amount held as inscribed stock increased by £88,407,889, and that held as Treasury bills increased by £8,127,069.

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, 1906 to 1915.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
30th June, 1906	85,641,734	53,079,800	41,764,467	30,082,635	18,053,553	9,800,631	238,427,920
" 1907	85,607,832	53,104,989	41,764,467	30,526,715	19,222,638	9,923,083	240,149,727
" 1908	87,635,826	53,905,487	42,264,467	29,085,858	20,493,618	10,150,233	243,835,489
" 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	23,703,853	11,077,790	267,127,283
" 1912	100,052,635	60,737,216	47,068,186	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

The State in which the greatest increase in indebtedness was experienced during the period is New South Wales, which added £42,093,671 during the ten years under review. On the other hand, the public debt of Tasmania increased by little more than £3,000,000.

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, 1906, to 30th June, 1915, are as follows:—

PUBLIC DEBT OF AUSTRALIAN STATES PER HEAD, 30th JUNE, 1906 to 1915.

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, 1906	56 18 3	43 14 8	77 17 9	82 16 11	70 19 11	53 3 8	58 14 5
" 1907	55 9 2	43 6 8	76 19 0	83 0 4	75 4 8	53 14 0	58 4 9
" 1908	55 14 0	42 19 5	76 6 10	79 6 7	79 9 9	54 2 9	58 2 8
" 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	73 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	86 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	76 12 0	106 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

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, 1915, which had been floated in London and Australia respectively:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1915.

State.	Floated in London		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
New South Wales	86,167,288	67.46	41,568,117	32.54	127,735,405
Victoria...	41,333,738	56.56	31,750,189	43.44	73,083,927
Queensland	46,393,147	81.58	10,475,899	18.42	56,869,046
South Australia	19,886,465	56.69	15,195,158	43.31	35,081,623
Western Australia	26,587,653	71.81	10,434,969	28.19	37,022,622
Tasmania	8,844,250	67.35	4,288,796	32.65	13,133,046
Total	229,212,541	66.84	113,713,128	33.16	342,925,669

The following table, giving corresponding particulars for the aggregate indebtedness of the Australian States at the end of each of the financial years 1905-6 to 1914-15, 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, 1906 to 1915.

Date.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
30th June, 1906 ...	190,887,001	80.06	47,540,819	19.94	238,427,820
" 1907 ...	185,579,389	77.28	54,570,338	22.72	240,149,727
" 1908 ...	183,321,256	75.18	60,514,233	24.82	243,835,489
" 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

It will be seen that in the course of nine years the London indebtedness of the States has increased by £38,325,540, while the local indebtedness has increased by no less than £66,172,309. In other words, whilst on 30th June, 1906, the Australian portion of the debt represented only about one-fifth of the total, the proportion had on 30th June, 1915, grown to nearly one-third.

It will be noticed in the foregoing table that the Australian indebtedness of the States increased during the year 1914-15 to a figure both relatively and 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 $4\frac{1}{2}$ 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 739.

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 $4\frac{1}{2}$ per cent., $4\frac{1}{2}$ per cent., 4 per cent., $3\frac{3}{4}$ per cent., $3\frac{1}{2}$ per cent., and 3 per cent. The average rate payable on the aggregate indebtedness of the Australian States is about $3\frac{7}{17}$ per cent. For the separate States

the average rate payable varies considerably, being lowest in the case of Victoria and highest in that of Queensland; the difference between these two average rates is $\frac{1}{16}$ 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, 1915:—

RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE, 1915.

Rate of Interest.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
%	£	£	£	£	£	£	£
6 ... ..	...	...	...	49,900	...	...	49,900
5	2,014,700	...	...	130,000	2,100	...	2,146,800
4 $\frac{1}{2}$	10,107,837	2,974,760	11,829,100	...	367,950	...	25,279,647
4 $\frac{1}{4}$ ... ..	...	300,000	...	...	...	...	300,000
4 $\frac{1}{8}$ ... ..	...	150,000	...	...	...	140,750	290,750
4	4,316,669	2,300,000	...	1,616,669	1,808,331	583,331	10,625,000
3 $\frac{1}{2}$	30,408,134	19,500,706	18,103,560	13,632,016	12,953,681	5,953,791	100,551,888
3 $\frac{1}{4}$	13,514,098	267,683	2,550,050	7,301,509	1,912,070	826,674	26,372,084
3 $\frac{1}{8}$	50,306,320	37,314,973	18,569,053	6,424,289	12,628,490	5,149,714	130,392,839
3	17,047,072	10,274,805	5,489,383	5,927,240	7,350,000	a 478,786	a 46,567,286
Not bearing interest	20,575	1,000	327,900	...	...	...	349,475
Total public debt ...	127,735,405	73,083,927	56,869,046	35,081,623	37,022,622	13,133,046	342,925,669
Average rate per cent. payable	£ s. d. 3 14 0	£ s. d. 3 12 5	£ s. d. 3 16 2	£ s. d. 3 14 0	£ s. d. 3 12 7	£ s. d. 3 15 2	£ s. d. 3 13 11

(a) Includes £24,718 at 3 $\frac{1}{4}$ 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 1911 to 1915:—

RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE, 1911 TO 1915.

Rate of Interest.	30th June, 1911.	30th June, 1912.	30th June, 1913.	30th June, 1914.	30th June, 1915.
%	£	£	£	£	£
6	191,200	156,200	109,900	74,900	49,900
5	192,700	142,700	142,700	142,700	2,146,800
4 $\frac{1}{2}$	49,700	46,400	42,900	39,300	25,279,647
4 $\frac{1}{4}$ ... ..	...	...	...	...	300,000
4 $\frac{1}{8}$ ... ..	...	...	100,000	...	290,750
4 ... ..	...	...	...	...	10,625,000
3 $\frac{1}{2}$	71,433,697	70,204,992	87,511,852	111,771,586	100,551,888
3 $\frac{1}{4}$	21,587,696	26,251,486	27,855,439	27,679,770	26,372,084
3 $\frac{1}{8}$	126,678,118	133,631,321	132,108,659	131,292,054	130,392,839
3	46,984,527	46,686,446	46,585,516	46,592,430	(a) 46,567,286
Not bearing interest	9,575	4,550	15,520	6,048	349,475
Total public debt ...	267,127,283	277,124,095	294,472,486	317,598,788	342,925,669
Average rate % payable ...	£3 11 4	£3 11 4	£3 11 11	£3 12 6	£3 13 11

(a) Including £24,718 at 3 $\frac{1}{4}$ 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 $4\frac{1}{2}$ per cent. the present standard rate of interest for gilt-edged securities. The average rate is likely to rise for some considerable time.

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, 1915, the amount of interest paid during the financial year ending at that date, and also the corresponding amount per head of population :—

ANNUAL INTEREST PAID DURING FINANCIAL YEAR ENDING 30th JUNE, 1915.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Total annual interest payable ...	4,125,600	2,382,904	1,975,581	1,207,937	1,287,860	455,099	11,435,981
Annual interest payable per head	£2 4 4	£1 13 4	£2 18 5	£2 14 8	£3 10 2	£2 5 3	£2 6 3

(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, the exceptions being the State of New South Wales, which includes in its public debt an amount representing interminable securities totalling on 30th June, 1913, £532,889; and also £7,395,208 redeemable by Government on giving 12 months' notice; the State of Victoria, which includes £4,899,657 due in 1917 and £365,619 due in 1931, payable at the option of the Government at any time after 29th September, 1917; and the State of South Australia, which includes £5,089,034 similarly repayable. 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, 1915, are given in the following table :—

**DUE DATES OF THE PUBLIC DEBTS OF THE SEVERAL STATES OF THE
COMMONWEALTH OUTSTANDING ON 30th JUNE, 1915.**

Due Dates.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Overdue ...	20,575	1,000	327,900	...	...	...	349,475
1915 ...	2,800,000	761,500	...	45,771	...	151,607	3,733,878
1916 ...	828,667	3,295,450	...	2,789,329	262,070	538,983	7,714,499
1917 ...	4,970,352	4,920,060	...	3,448,164	2,723,081	944,793	17,006,450
1918 ...	12,826,200	368,050	...	2,487,529	...	347,421	16,029,200
1919 ...	11,113,945	5,548,490	...	1,029,744	...	303,499	17,995,678
1920 ...	5,077,837	6,141,900	...	874,623	...	378,575	12,472,935
1921 ...	4,872,843	2,816,000	...	1,438,040	...	637,396	9,764,279
1922 ...	4,500,000	5,247,350	1,124,750	817,203	...	17,726	11,707,029
1923 ...	5,850,725	8,585,838	...	287,681	556,550	68,495	15,352,289
1924 ...	16,698,065	455,740	12,973,834	979,710	568,570	51,665	31,727,584
1925 ...	311,799	2,089,800	11,829,100	11,624	...	41,803	14,284,126
1926 ...	...	5,103,000	...	1,024,764	1,922,305	39,600	8,089,669
1927 ...	5,000,000	632,800	...	570,651	2,500,000	...	8,701,451
1928 ...	...	897,500	...	846,308	...	...	1,743,808
1929 ...	...	747,500	...	221,418	...	300,000	1,268,918
1930 ...	...	1,794,850	3,704,800	302,175	...	100	5,801,925
1931 ...	...	1,061,648	...	450	...	...	1,062,098
1932 ...	...	966,350	...	1,225	1,380,540	...	2,348,115
1933 ...	9,686,300	...	...	368,912	716,708	39,207	10,811,127
1934 ...	...	...	...	1,043,421	1,813,313	39,207	2,895,941
1935 ...	12,500,000	...	...	1,478,499	8,358,185	179,957	22,516,641
1936 ...	...	300,000	...	4,250,380	1,100,000	39,207	5,689,587
1937 ...	...	...	...	15,586	...	39,207	54,793
1938 ...	...	...	...	92,383	...	39,207	131,590
1939 ...	...	...	...	2,560,999	...	39,207	2,600,206
1940 ...	...	3,215,400	...	6,000	...	5,645,707	8,870,107
1941 ...	...	324,380	...	...	...	39,207	363,587
1942 ...	...	455,100	...	...	...	39,207	524,307
1943 ...	...	3,600	...	...	...	39,207	12,807
1944 ...	...	400	...	...	...	39,207	39,607
1945 ...	...	...	7,515,960	...	...	39,207	7,555,167
1946 ...	...	217,400	...	...	...	39,207	256,607
1947 ...	...	...	4,498,693	...	2,000,000	39,207	6,537,900
1948 ...	...	...	...	...	...	39,207	39,207
1949 ...	...	11,699,471	...	...	...	39,207	11,738,678
1950 ...	12,250,000	...	6,946,600	...	...	2,839,207	22,035,807
1951 ...	...	...	999,600	...	...	39,207	1,038,807
1952 ...	...	...	...	...	...	39,200	39,200
1953 ...	...	...	2,147,809	...	...	...	2,147,809
1954 ...	...	123,874	...	...	...	...	123,874
1955 ...	...	...	...	...	4,437,000	...	4,437,000
1960 ...	...	10,200	2,000,000	3,000,000	1,000,000	...	6,010,200
1962 ...	10,500,000	...	...	...	6,000,000	...	16,500,000
1964 ...	...	...	...	...	1,566,000	...	1,566,000
1965 ...	...	...	800,000	...	...	...	800,000
1970 ...	...	...	2,000,000	...	...	...	2,000,000
Interminable ...	532,889	...	...	...	...	...	532,889
Annual drawings ...	...	...	...	...	118,300	...	118,300
Indefinite ...	7,395,208	5,265,276	...	5,089,034	...	...	17,749,518
Total ...	127,735,405	73,083,927	56,869,046	35,081,623	37,022,622	13,133,046	342,925,669

In the above 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.

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, 1915 :—

STATES SINKING FUNDS AND NET INDEBTEDNESS, 30th JUNE, 1915.

State.	Gross Indebtedness.	Sinking Fund.	Net Indebtedness.	Net Indebted- ness per head.
	£	£	£	£ s. d.
New South Wales ...	127,735,405	414,264	127,321,141	68 2 7
Victoria ...	73,083,927	1,535,821	71,548,106	50 3 2
Queensland ...	56,869,046	170,246	56,698,800	82 4 0
South Australia ...	35,081,623	1,591,444	33,490,179	76 8 6
Western Australia ...	37,022,622	4,068,888	32,953,734	102 3 7
Tasmania ...	13,133,046	611,519	12,521,527	63 2 2
Total... ..	342,925,669	8,392,182	334,533,487	67 11 4

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," where it has remained up to the present. It is proposed, however, to erect more suitable buildings for its accommodation in some other part of the city. 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 1914.**—(i.) *Assay of Deposits Received.* The number of deposits received during 1914 at the Sydney Mint was 951, of a gross weight of 521,356 ozs.; at the Melbourne Mint, 2548, of a gross weight of 523,841 ozs.; and at the Perth Mint, 4357, of a gross weight of 1,461,181 ozs. The average composition of these deposits in Sydney was, gold 880.1, silver 85.2, base 34.7 in every 1000 parts; Melbourne, gold 916.3, silver 43.7, base 40.0 in every 1000 parts; and Perth, gold 814.3, silver 118.6, base 67.1 in every 1000 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.) *Receipts.* Practically all the gold coined at the Australian mints is the produce of either the Commonwealth or of the Dominion of New Zealand. The following table shews the origin of the gold received at the three mints during 1914:—

ORIGIN OF GOLD RECEIVED AT MINTS DURING 1914.

Origin of Gold.	Sydney Mint.	Melbourne Mint.	Perth Mint.
	ozs.	ozs.	ozs.
New South Wales	107,917.53	9,515.27	...
Victoria ... ..	...	433,680.61	...
Queensland... ..	259,358.48	2,801.10	...
South Australia ... ..	...	8,802.44	...
Western Australia	188.33	6,226.65	1,460,298
Tasmania	1,664.11	17,490.23	...
Northern Territory	123.83	...	13
New Zealand	151,828.58	36,463.78	...
Other countries, origin not stated, and light gold coin	275.34	8,861.78	870
Total	521,356.20	523,841.86	1,461,181

It will be seen that practically all gold produced in New South Wales and Queensland, and about four-fifths of that produced in New Zealand, found its way to the Sydney Mint, while the Melbourne Mint received all Victorian and South Australian gold, together with nearly all of the Tasmanian and about one-fifth of the New Zealand production, and the Perth Mint treated practically all Western Australian gold with the exception of a small portion sent to Sydney and Melbourne.

(iii.) *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. The issues during 1914 are shewn in the table below:—

ISSUES OF GOLD FROM MINTS DURING 1914.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ...	1,774,000	161,000	1,935,000	32,806	1,967,806
Melbourne ...	2,012,029	...	2,012,029	27,458	2,039,487
Perth ...	4,815,996	...	4,815,996	235,802	5,051,798
Total ...	8,602,025	161,000	8,763,025	296,066	9,059,091

In addition to the issue of gold the Mints are also charged with the issue of silver and bronze coin struck in London. There was, however, no issue of either Imperial silver or bronze coin in 1914. (See page 771, par. 5 (iii).)

(iv.) *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 1914 amounted to £827, viz.:—Sydney, £713; Melbourne, £114; and Perth, *nil*. The value of worn silver coins received during 1914 was £177,730, viz.:—Sydney, £89,435; Melbourne, £70,149; and Perth, £18,146.

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, 36,867,542.82 ozs.; Melbourne, 36,151,029.69 ozs.; and Perth, 20,700,714 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, £136,011,570; Melbourne, £142,274,863; Perth, £72,775,272; corresponding to—Sydney, 32,019,845 ozs. fine; Melbourne, 33,494,350 ozs. fine; and Perth, 17,132,755 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 one shilling and sixpence 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 one shilling per oz.

(ii.) *Issues.* The total values of gold coin and bullion issued by the three mints were as shewn in the table on page 770. 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 1914 being valued at £564,183,431, and that of New Zealand at £82,953,910, or a total of £647,137,341.

TOTAL ISSUES OF GOLD FROM MINTS TO END OF 1914.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ...	125,380,500	4,111,000	129,491,500	6,540,219	136,031,719
Melbourne ...	130,967,549	883,948	131,851,497	10,427,705	142,279,202
Perth ...	65,808,449	189,235	65,997,684	6,758,483	72,756,167
Total ...	322,156,498	5,184,183	327,340,681	23,726,407	351,067,088

The total issues of silver coins to the end of 1914 were £2,415,200, viz.:—Crowns, £3500; double florins, £4585; half-crowns, £722,600; florins, £528,215; shillings, £606,200; sixpences, £253,220; and threepences, £296,880.

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 can be given for the Sydney Mint, where they amounted to £1,083,664; at the Melbourne Mint the coins withdrawn since 1890 were worth £514,825. In the case of Perth the withdrawal of worn gold coin since the opening of the Mint amounted to £422.

Withdrawals of worn silver coin amounted to £502,388 in Sydney, to £516,791 in Melbourne, and to £47,505 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—		
Sovereign ...	123.27447	} Eleven-twelfths fine gold, viz.:— Gold ... 0.91667 } 1.00000 Alloy ... 0.08333 }
Half-sovereign ...	61.63723	
SILVER—		
Crown ...	436.36363	} Thirty-seven-fortieths fine silver, viz.:— Silver ... 0.925 } 1.000 Alloy ... 0.075 }
Double florin ...	349.09090	
Half-crown ...	218.18181	
Florin ...	174.54545	
Shilling ...	87.27272	
Sixpence ...	43.63636	
Threepence ...	21.81818	
BRONZE—		
Penny ...	145.83333	} Mixed metal, viz.:— Copper ... 0.95 } 1.00 Tin ... 0.04 Zinc ... 0.01 }
Half-penny ...	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. Its average price in the London market in recent years is shewn in the subjoined table:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1876 to 1914.

Year.	Price per Standard Oz.	Year.	Price per Standard Oz.	Year.	Price per Standard Oz.
	d.		d.		d.
1876 ...	53.0000	1889 ...	42.6875	1902 ...	24.1250
1877 ...	54.7500	1890 ...	47.7500	1903 ...	24.7500
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

The monthly fluctuations during the year 1914 were as follows :—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1914.

Month.	Price per Standard Oz.	Month.	Price per Standard Oz.	Month.	Price per Standard Oz.
	d.		d.		d.
January ...	26.5625	May ...	25.9375	September ...	24.2500
February ...	26.5625	June ...	25.9375	October ...	23.1875
March ...	26.8125	July ...	24.5625	November ...	22.6875
April ...	26.9375	August ...	26.0000	December ...	22.8750

(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 5s. 4d. during 1914; the difference of £2 0s. 8d. represents, therefore, the gross profit or seignorage made on the coinage of every £3 6s. This represents a rate of seignorage of 162.03 per cent., but the expenses of coining (including interest on cost of machinery) and of withdrawals of worn coin must be deducted. Still, given a large annual demand for new silver coin, even the net profit amounts to a considerable sum. Negotiations, therefore, 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 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 $\frac{1}{2}$ d. 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 half-pennies, 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 of Australian coin in 1914 was as follows:—Sydney, £111,300 silver, and £6000 bronze; Melbourne, £164,950 silver, and £5360 bronze; and Perth, £39,000 silver, and £680 bronze. In Melbourne, the coin is distributed from the Federal Treasury.

6. Gold in Circulation.—This question has been touched upon in previous issues of the Year Book (see for example Year Book No. 6, page 844), and the difficulties attendant on making a satisfactory estimate have been pointed out. Recent publications by the Commonwealth Treasury, however, give some direct evidence on the subject. According to these, the amount of notes held by the public of Australia, immediately prior to the outbreak of war, was approximately £4,800,000, whilst the monthly averages held by the public during March, April, and May, 1916, were respectively £12,441,000, £13,289,000, and £12,998,000. The average of these three amounts is about £12,910,000, but owing to the season of the year, this may be regarded as a little in excess of the normal requirements of the public, which can be put down at about £12,600,000. If the original amount of £4,800,000 be deducted from this, there remains the sum of £7,800,000, which would represent the amount of gold withdrawn from circulation, provided nothing had happened in the meantime to affect the amount of currency required by the public. Unfortunately, in this connection, there is a very disturbing factor. If the first quarters of 1914 and 1916 are compared, it will be found that the index-number representing the cost of living rose no less than 20 per cent. in the interval. When it is remembered that most of the articles composing the ordinary household budget are bought and paid for in small amounts, it will be seen that this rise in the cost of living must, in all likelihood, have been accompanied by an increase in the currency requirements of the public, though not necessarily to the full extent of 20 per cent. If the currency had increased by the full amount of 20 per cent., then £12,600,000 now would only be doing the work of £10,500,000 before the war, and thus the amount of gold withdrawn would be £10,500,000 less £4,800,000, or £5,700,000. The question is still further complicated by the fact that increased currency requirements may to some extent be met, not by increased currency, but by increased velocity of circulation. While, therefore, it is impossible to be entirely confident as to the amount of gold in circulation before the war, it is probable that it lay somewhere between the limits of £5,700,000 and £7,800,000.

7. For information concerning the imports into the Commonwealth and exports from the Commonwealth of coin and bullion during the year 1914, the enquirer is referred to the tables on pages 569, 570.

§ 2. Banking.

1. Banking Facilities.—*Head Offices of Banks.* Of the twenty-four banks trading in the Commonwealth, 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 five banks are in Sydney—The Commonwealth Bank of Australia, The Bank of New South Wales, the Commercial Banking Company of Sydney Limited, the Australian Joint Stock Bank Limited (now the Australian Bank of Commerce Limited), and the City Bank of Sydney. 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 three banks, viz., the Queensland National Bank Limited, the Royal Bank of Queensland Limited, and the Bank of North Queensland Limited. Only one bank has at present its head office in Adelaide, viz., the Bank of Adelaide; and one in Perth, viz., the Western Australian Bank. Of the two

Tasmanian banks, the Commercial Bank of Tasmania Limited has its head office in Hobart, and the National Bank of Tasmania Limited in Launceston. The Bank of New Zealand has its headquarters in Wellington. Of the two remaining banks, the Comptoir National d'Escompte de Paris has its head office in Paris, and the Ballarat Banking Company in Ballarat. 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.

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." Until recently 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 of 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 are 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 has been 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, as yet, been any great alteration in the proportionate gold reserve, which on 31st May, 1916, stood at about 36 per cent.

The Australian Notes Act prohibits the circulation of notes issued by a State six months after the commencement of the Act, and such notes will then cease to be legal tender. In addition the Bank Notes Act imposes 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 bank thus authorised has no power to issue notes, but in every other respect it has the functions of an ordinary bank of issue. It is managed by a governor and a deputy-governor, who are appointed by the Governor-General and will hold office during good behaviour for a period of seven years, after which they will be eligible for reappointment. A novel feature is the establishment of a department dealing with savings bank business only. No further reference need be made here to this department, which is dealt with in detail in § 5. The framers of the Act have largely followed the lines laid down by the respective

State Savings Bank Acts, particularly the Western Australian Act No. 9 of 1906. The capital of the bank was originally one million pounds, to be raised by the issue and sale of debentures. During the session of 1914 authority was obtained from Parliament to increase the capital of the bank to ten million pounds, with the object, it was understood, of acquiring the entire business of another bank. No such acquisition has, as yet, taken place, and no capital has, so far, been actually advanced by the Commonwealth Government to the bank. The debentures previously referred to were to be for ten pounds or some multiple of ten pounds and redeemable at par, the Commonwealth guaranteeing interest and principal. All expenses incidental to the establishment of the bank were met by an advance from the Consolidated Revenue Fund, such advance to be ultimately repaid with interest at the rate of three-and-a-half per cent.

The first step in the organisation of the bank was the appointment as Governor, from 1st June, 1912, of Mr. Denison Miller, of the Bank of New South Wales. Mr. James Kell, of the Bank of Australasia, was subsequently appointed Deputy-Governor, and the bank was formally opened on 20th January, 1913, for the transaction of all general banking business. The result of the first day's operations was the deposit of £2,341,720, the bulk of which consisted of funds belonging to various departments of the Commonwealth Government. The opening of branches simultaneously at Sydney, Melbourne, Brisbane, Adelaide, Perth, Hobart, Townsville, Canberra, and London, marked the accomplishment of the provisions of the Commonwealth Bank Act of 1911. The Savings Bank Department, which came into existence six months previously, is dealt with in detail in the section on Savings Banks.

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 has been 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, 1912-15.

Period.	General Bank.	Savings Bank.	Net Total.
	£	£	£
Period ended 31st Dec., 1912 ...	Dr. 7,261	Dr. 7,300	Dr. 14,561
Half-year ended 30th June, 1913	Dr. 17,068	Dr. 15,008	Dr. 32,076
Net result at 30th June, 1913 ...	Dr. 24,329	Dr. 22,308	Dr. 46,637
Half-year ended 31st Dec., 1913	Cr. 17,709	Dr. 16,161	Cr. 1,548
Half-year ended 30th June, 1914	Cr. 18,381	Dr. 10,288	Cr. 8,093
Net result at 30th June, 1914 ...	Cr. 11,761	Dr. 48,757	Dr. 36,996
Half-year ended 31st Dec., 1914	Cr. 21,023	Dr. 7,594	Cr. 13,429
Half-year ended 30th June, 1915	Cr. 24,121	Cr. 1,667	Cr. 25,788
Net result at 30th June, 1915 ...	Cr. 56,905	Dr. 54,684	Cr. 2,221

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 £2221 disclosed at 30th June, 1915, was divided equally between a bank reserve fund and a redemption fund.

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, a few of the banks have found it impossible up to the present to give all the particulars required, while promising to do so in future, 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 shown in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1915. 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, 1914-15.

Bank.	Paid-up Capital.	Rate per cent. per annum of last Dividend and Bonus.	Amount of last ½-yrly. Dividend & Bonus.	Amount of Reserved Profits.
	£	%	£	£
Commonwealth Bank of Australia ...	2,000,000	14 & 12/- bonus ps.	170,000	2,824,500
Bank of Australasia ...	2,000,000	14	140,000	2,081,460
Union Bank of Australia Limited ...	539,438	8	43,155 ²	436,168
English, Scottish and Australian Bank Limited ...	669,785 ¹	7	23,170 ²	328,318
London Bank of Australia Limited ...	3,500,000	10	87,500 ²	2,655,135
Bank of New South Wales ...	2,000,000	10	100,000	1,852,734
Commercial Banking Company of Sydney Limited ...	1,195,592	3	17,934	61,492
Australian Bank of Commerce Limited ...	400,000	6	12,000	42,914
City Bank of Sydney ...	1,498,220 ²	7	52,437	572,894
National Bank of Australasia Limited ...	2,213,009 ³	4	42,347	15,299
Commercial Bank of Australia Limited ...	1,478,010 ⁴	5	36,950	447,294
Bank of Victoria Limited ...	439,280	7	15,375	248,277
Colonial Bank of Australasia Limited ...	300,000	8	12,000	247,661
Royal Bank of Australia Limited ...	480,000	3	12,000	36,934
Queensland National Bank Limited ...	545,659	5½	15,004	82,723
Royal Bank of Queensland Limited ...	162,500	6	4,875	41,349
Bank of North Queensland Limited ...	500,000	8	20,000	543,191
Bank of Adelaide ...	250,000	20	25,000	723,756
Western Australian Bank ...	200,000	14	14,000	264,953
Commercial Bank of Tasmania Limited ...	195,250	7	6,802	10,270
National Bank of Tasmania Limited ...				
Bank of New Zealand ...	2,263,749	{ 12 & 3 bonus Ordinary 10 Preferen. 4 Guarant'd }	229,459	2,057,170
Comptoir National d'Escompte de Paris ...	8,000,000	5	400,000 ²	1,636,108
Ballarat Banking Company Limited ...	85,000	8	3,400	87,570
Total ...	30,915,492	...	...	17,250,391

1. Including calls in arrear, £252. 2. £305,780 preferential, £1,192,440 ordinary. 3. Subject to estimated deficiency of £760,663 in connection with Special Assets Trust Co. Ltd. 4. £416,760 preferential, £1,061,250 ordinary. 5. For 12 months. 6. Dividend for quarter.

4. **Liabilities and Assets of Banks.**—(i.) *Liabilities of Banks for Quarter ended 30th June, 1915.* 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 1908-15, 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, 1915, it seems advisable to give the banking figures for the quarter ended on that date, and, where they are shewn 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, 1915.

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	95,505	419,229	1,236,574	33,139,219	35,031,169	68,170,388	69,921,696
Victoria	106,458	117,143	872,938	20,280,710	33,878,997	54,159,707	55,256,246
Queensland	(a)	504,467	437,232	11,539,535	15,330,190	27,369,725	28,311,424
South Australia	32,677	14,137	394,359	4,086,076	7,770,927	11,857,003	12,298,176
West. Australia	28,294	66,847	295,215	3,847,127	3,692,341	7,539,468	7,923,824
Tasmania	12,655	18,612	107,123	2,401,638	3,308,468	5,710,106	5,848,496
North. Territory	...	157	4,235	86,611	86,328	172,939	177,301
Total	275,589	1,140,592	3,347,646	75,380,916	99,598,420	174,979,336	179,743,163

(a) In Queensland, Treasury notes were used instead of bank notes.

(ii.) *Assets of Banks for Quarter ended 30th June, 1915.* 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, 1915.

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.	14,710,678	117,900	5,985,956	2,108,635	484,435	1,315,925	45,305,098	7,273,322	77,301,949
Victoria	8,409,651	236,295	2,365,749	1,510,237	437,648	718,445	35,233,268	5,447,553	54,358,846
Q'land	3,400,741	119,435	523,902	758,032	411,860	670,895	17,304,016	3,844,713	27,033,594
S. Aust.	2,950,134	687	283,420	327,889	167,136	378,491	8,078,242	1,789,071	13,975,070
W. Aust.	3,560,145	536,737	549,519	218,561	108,560	516,225	8,503,033	1,297,943	15,290,723
Tas. ...	852,998	404	1,108,761	140,021	35,703	466,039	2,880,489	809,930	6,294,345
Nor.Ter.	3,759	3,559	...	1,200	25,763	4,209	8,332	10,697	57,519
Total	33,888,106	1,015,017	10,817,307	5,064,575	1,671,105	4,070,229	117,312,478	20,473,229	194,312,046

(iii.) *Liabilities of Banks for June Quarter, 1906 to 1915.* In the subjoined table, which shews the average liabilities of the banks for the quarters ended 30th June, 1906 to 1915, 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 shared in that increase very equally:—

**AVERAGE LIABILITIES OF BANKS IN THE COMMONWEALTH FOR THE QUARTER
ENDED 30th JUNE IN THE YEARS 1906 to 1915.**

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.	
	£	£	£	£	£	£	£
1906	3,244,256	563,670	577,094	41,036,116	65,479,150	106,515,266	110,905,286
1907	3,563,181	801,878	444,460	46,781,234	65,916,735	112,697,969	117,507,488
1908	3,536,227	707,903	796,447	46,015,448	67,678,940	113,694,388	118,734,965
1909	3,510,629	720,853	555,506	46,812,632	70,945,623	117,758,255	122,545,543
1910	3,748,482	921,758	570,115	55,293,862	74,657,274	129,951,136	135,031,491
1911	3,718,458	928,663	741,188	62,236,597	81,220,013	143,446,610	148,835,219
1912	536,984	1,002,062	872,946	55,406,541	84,397,756	140,806,597	152,218,569
1913	368,975	894,095	2,492,229	62,012,773	87,814,795	149,827,568	153,562,667
1914	306,809	1,089,548	2,750,788	70,195,462	93,659,093	163,854,555	166,001,700
1915	275,539	1,140,592	3,347,646	75,380,916	99,598,420	174,979,336	179,743,163

(iv.) *Assets of Banks for June Quarter, 1906 to 1915.* A similar table shewing the average assets of the banks for the June quarters of each of the years 1906 to 1915 is shewn below. Bullion, in the case of the Tasmanian banks, is included with coin in the years 1906 and 1907.

**AVERAGE ASSETS OF BANKS IN THE COMMONWEALTH FOR THE QUARTER
ENDED 30th JUNE IN THE YEARS 1906 to 1915.**

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.
	£	£	£	£	£	£	£
1906	21,268,679	1,412,763	5,160,875	802,225	1,234,921	87,889,121	117,768,584
1907	22,420,395	1,291,033	5,028,379	840,217	1,170,276	94,990,435	125,740,735
1908	23,578,293	1,353,267	4,938,212	889,377	1,131,612	101,647,044	133,537,805
1909	24,943,910	1,353,933	4,852,471	932,354	1,153,611	98,481,421	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	175,449,806
1915	33,888,106	1,015,017	5,064,575	1,671,105	4,070,229	148,603,014	194,312,046

(a) Including Government and Municipal securities, and Australian notes.

As the table shews, the increase in the total amount of assets is partly due to an increase in the amount of specie held by the banks against liabilities at call, partly to advances, and, to a lesser extent, to an increase in the "balances due." 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 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 will tend to become negligible.

PERCENTAGE OF COIN, BULLION, AND AUSTRALIAN NOTES TO LIABILITIES AT CALL, COMMONWEALTH BANKS, 1906 to 1915.

Year.				Liabilities at Call.	Coin, Bullion, and Australian Notes.	Percentage to Liabilities at Call.
				£	£	%
1906	...	...	...	44,280,372	22,681,442	51.22
1907	...	...	...	50,344,415	23,711,428	47.10
1908	...	...	...	49,551,675	24,931,560	50.31
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

It would appear from the figures just given that the banks generally consider it advisable to hold about 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 drop to 47.10 per cent. in 1907 was due to the very large increase in the amount of deposits during the year, and to the fact that the increase in the coin and bullion held, considerable though it was, did not keep pace therewith. 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 is abnormal, and is due to the rise in the holdings of Australian notes, which are being held in excess of requirements.

(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, 1915, was £30,549, partly in circulation, and the balance held by the banks. 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 is generally highest in Western Australia, and lowest in Queensland and Tasmania. A table is appended shewing the percentage for each State for the quarter ended 30th June in each of the years 1906 to 1915:—

PERCENTAGE OF COIN, BULLION, AND AUSTRALIAN NOTES TO LIABILITIES AT CALL, COMMONWEALTH BANKS, 1906 to 1915.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
	%	%	%	%	%	%	%	%
1906	48.49	53.55	40.43	51.25	73.98	42.39	...	51.22
1907	44.81	49.17	37.20	46.73	71.14	39.84	...	47.10
1908	47.70	54.68	41.09	45.63	76.09	40.06	...	50.31
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	57.06	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

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 advance during 1913.

TOTAL DEPOSITS IN COMMONWEALTH BANKS, 1906 to 1915.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£	£	£	£	£	£	£	£
1906 ...	39,099,630	36,764,392	13,665,110	7,513,802	5,645,701	3,826,631	...	106,515,266
1907 ...	41,967,265	38,393,179	14,852,584	8,247,366	5,500,112	3,737,463	...	112,697,969
1908 ...	43,616,984	37,538,722	15,328,056	8,644,346	4,894,639	3,671,641	...	113,694,388
1909 ...	44,626,194	38,611,731	16,138,931	9,727,879	4,987,894	3,665,626	...	117,758,255
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	11,128,300	7,280,392	3,759,488	59,350	143,446,910
1912 ...	58,229,571	48,453,808	20,311,907	11,600,180	6,900,753	4,286,207	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	12,243,015	6,868,956	5,415,462	132,382	163,854,555
1915 ...	68,170,388	54,159,707	27,369,725	11,857,023	7,539,468	5,710,106	172,939	174,979,336

(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 1906 to 1915. 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, 1906 to 1915.

Year.	N.S.W.			Victoria.			Q'land.			S. Aust.			W. Aust.			Tasmania.			Northern Territory.			All States.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1906	26	1	4	30	6	8	25	10	10	20	10	1	22	5	0	20	15	8	...	...	...	26	5	10
1907	27	5	8	31	7	2	27	9	1	22	5	0	21	10	8	20	6	6	...	...	...	27	7	11
1908	27	15	6	30	6	8	27	15	0	22	14	11	19	0	8	19	12	10	...	...	...	27	3	5
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	11	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	15	10
1913	31	14	9	34	6	10	33	1	3	27	1	8	20	6	11	26	15	0	26	17	10	31	6	1
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

(iii.) *Total Advances.* In the quarterly statements furnished by the banks the column headed "all other debts due to the banks," which usually average about 75 per cent. of the total assets, 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 1906 to 1915. It will be noted that between the consecutive years 1908-9 and 1912-13 there was a marked decrease in the advances. In each case this was roughly concurrent with a slackening in the increase of deposits, and was due partly to this slackening, and partly to international causes.

ADVANCES BY COMMONWEALTH BANKS, 1906 to 1915.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Northern Territory.	All States.
	£	£	£	£	£	£	£	£
1906 ...	32,057,192	29,699,683	13,850,921	5,053,184	4,635,624	2,592,517	...	87,889,121
1907 ...	34,460,963	31,894,070	15,076,455	5,545,346	5,140,911	2,872,660	...	94,990,435
1908 ...	37,948,889	33,254,780	15,245,537	5,805,575	5,581,001	3,008,237	...	100,844,019
1909 ...	34,853,220	31,455,141	14,499,669	5,699,546	5,384,518	2,715,648	...	94,607,743
1910 ...	34,809,345	33,064,881	14,167,480	6,426,809	5,889,061	2,732,645	...	97,080,231
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	37,843,369	17,765,880	8,565,340	8,360,993	2,857,565	3,755	118,972,677
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	3,132,968	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

(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 1901, 1902, and 1903, 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 practically self-contained during the period under review :—

**PERCENTAGE OF ADVANCES TO TOTAL DEPOSITS, COMMONWEALTH BANKS,
1906 TO 1915.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
	%	%	%	%	%	%	%	%
1906	81.99	80.78	101.36	67.25	82.11	67.75	...	82.51
1907	82.11	83.07	101.51	67.24	93.47	76.86	...	84.29
1908	87.00	88.59	99.46	67.16	114.00	81.93	...	88.70
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

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 1915 the total clearances in Sydney amounted to £357,803,000, and in Melbourne to £299,295,000. These figures represent an increase for Sydney of £4,735,000 on those for 1914, and a decrease for Melbourne of £373,000. 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 1915 totalled £60,950,000, a decrease for the year of £9,081,000.

§ 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 £528,702; reserve funds and undivided profits to £476,802; other liabilities, £157,178; total liabilities, £1,162,682. Among the assets are included :—Deposits with Governments, £218,214; other investments in public securities, fixed deposits, etc., £190,353; loans on mortgage, £138,465; property owned, £411,923; other assets, £203,727. The net profits for the year were £82,325, and the amount of dividends and bonuses £49,391. Returns as to the amount at credit of estates represented by assets are available for only twelve companies, the total shewn being £42,456,927.

Probably about £20,000,000 would have to be added to this amount for the remaining seven companies, so that the total amount would not be far short of £63,000,000. 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 £81,119.

3. **Registered Building and Investment Societies.**—Returns have been received of a total of 203 societies, viz., 116 in New South Wales, 32 in Victoria, 13 in Queensland, 26 in South Australia, 12 in Western Australia, and 4 in Tasmania. The balance-sheets cover various periods ended during the second half of 1914 and the first half of 1915, so that the returns may be assumed to correspond roughly to the financial year 1914-15. The liabilities of the societies are stated as follows:—

LIABILITIES OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1914-15.

State.	Paid-up Capital or Subscriptions.	Reserve Funds.	Deposits.	Bank Over-drafts and other Liabilities.	Total Liabilities.
	£	£	£	£	£
New South Wales	1,286,866	(a)	480,592	152,197	1,919,655
Victoria ...	1,315,620	295,111	931,756	157,855	2,700,342
Queensland ...	480,779	36,583	116,759	32,753	666,874
South Australia ...	459,766	10,356	2,126	15,341	487,589
Western Australia	129,199	...	28,983	12,213	170,395
Tasmania ...	111,180	48,607	162,923	8,212	330,922
Total ...	3,783,410	390,657	1,723,139	378,571	6,275,777

(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, 1914-5.

State.	Advances on Mortgage.	Landed and House Property, Furniture, etc.	Cash in Hand and on Deposit and other Assets.	Total Assets.
	£	£	£	£
New South Wales ...	1,621,150	(a)	298,505	1,919,655
Victoria ...	2,228,449	477,661	56,553	2,762,663
Queensland ...	634,685	14,457	28,113	677,255
South Australia ...	480,704	3,362	17,384	501,450
Western Australia ...	167,793	63	6,996	174,852
Tasmania ...	296,249	7,990	26,683	330,922
Total ...	5,429,030	503,533	434,234	6,366,797

(a) Included with other assets.

Statistical information, so far as is available, is furnished in the following table:—

REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1914-15.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of societies ...	116	32	13	26	12	4	203
Number of shareholders ...	(a)	8,187	4,722	11,597	3,451	1,755	(b)29,712
Number of shares ...	(a)	(a)	800,724	28,190	10,009	11,704	(c)850,627
Number of borrowers ...	(a)	10,498	4,510	2,547	1,132	1,517	(b)20,204
Income for year from interest ...	100,354	168,541	43,364	24,522	(d)	18,672	355,453
Working expenses for year ...	87,004	69,553	10,375	7,802	3,281	3,542	181,557
Amount of deposits during year ...	(a)	826,784	14,692	3,449	57,448	36,308	938,681
Repayment of loans during year ...	(a)	585,570	105,193	81,405	(e)43,038	66,643	881,849
Loans granted during year ...	(a)	653,877	139,508	100,977	43,053	47,940	985,355

(a) Not available. (b) Exclusive of New South Wales. (c) Exclusive of New South Wales and Victoria. (d) Included in repayment of loans. (e) Including income from interest.

4. **Registered Co-operative Societies.**—Returns are available of 109 societies, of which 45 were in New South Wales, 43 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 do the balance-sheets cover various periods ended during the financial year 1914-15. The liabilities of the 109 societies are shewn in the following table:—

LIABILITIES OF REGISTERED CO-OPERATIVE SOCIETIES, 1914-15.

State.	Paid-up Capital.	Reserve Funds.	Bank Over-drafts and Sundry Creditors.	Other Liabilities, Profit and Loss Account, &c	Total Liabilities.
	£	£	£	£	£
New South Wales ...	389,751	(a)	101,972	...	491,723
Victoria ...	136,894	28,062	140,932	70,087	375,975
Queensland ...	(c)	(c)	(c)	(c)	8,459
South Australia ...	137,833	14,102	16,903	24,977	193,865
Western Australia ...	10,979	1,519	22,614	6,296	41,408
Total(b) ...	(c)	(c)	(c)	(c)	1,111,430

(a) Included in paid-up capital. (b) Exclusive of Tasmania. (c) Not available.

The assets of the societies are shewn hereunder:—

ASSETS OF REGISTERED CO-OPERATIVE SOCIETIES, 1914-15.

State.	Stock and Fittings.	Cash in Hand and Sundry Debtors.	Freehold and other Property and other Assets.	Total Assets.
	£	£	£	£
New South Wales ...	352,388	125,160	12,584	490,132
Victoria ...	156,866	128,930	99,493	385,289
Queensland ...	7,352	5,666	4,203	17,221
South Australia ...	150,540	36,514	15,656	202,710
Western Australia ...	75,574	18,129	301	94,004
Total(a) ...	742,720	314,399	132,237	1,189,356

(a) Exclusive of Tasmania.

The following table gives statistical information, so far as available:—

REGISTERED CO-OPERATIVE SOCIETIES, 1914.

Details.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	C'wlth. (a)
Number of societies on 31st December, 1914 ...	45	43	5	7	9	109
Total No. of members on 31st December, 1914 ...	33,854	19,876	17,159	13,001	1,874	85,764
Total income for year 1914 ...	£ 1,621,509	843,536	18,298	396,659	263,451	3,143,453
Working expenses for year ended 31st December, 1914 ...	£ 1,462,617	146,020	10,679	68,758	233,741	1,921,815

(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 1915 numbered 2209, distributed as follows:—New South Wales, 628; Victoria, 462; Queensland, 482; South Australia, 296 (exclusive of school penny savings banks); Western Australia, 192 (exclusive of school penny savings banks); and Tasmania, 149. These figures are exclusive of the recently-established Commonwealth Savings Bank, except in the State of Tasmania, in which the Commonwealth Savings Bank absorbed the State Savings Bank.

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, 1915.

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, 1905-6 to 1914-15.

Year.	N.S.W.	Victoria. (a)	Q'land.	S. Aust. (a)	W. Aust. (a)	Tasmania.	All States.
1905-6	364,039	466,752	88,026	152,487	63,573	50,731	1,185,608
1906-7	392,050	491,318	92,912	161,855	66,737	53,817	1,258,689
1907-8	421,928	511,581	100,324	174,289	72,178	55,620	1,335,920
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	163,438	251,963	121,201	70,402	1,934,312
1913-14(b)	693,618	735,400	201,163	267,805	134,510	76,000	2,108,496
1914-15(b)	755,835	781,490	229,023	282,169	144,777	80,446	2,273,740

(a) Inclusive of depositors in penny savings banks.
Commonwealth Savings Bank.

(b) Inclusive of

The subjoined table shews 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 six-thirteenths, and rising in Victoria to six-elevenths, and in South Australia to more than seven-elevenths.

DEPOSITORS IN SAVINGS BANKS PER 1000 OF POPULATION, 1905-6 to 1914-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
1905-6	245	386	166	416	254	272	294
1906-7	258	403	172	437	262	290	308
1907-8	270	415	184	462	284	293	321
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	506	257	581	386	362	403
1913-14(a)	373	517	296	607	415	386	428
1914-15(a)	404	548	332	637	449	405	459

(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 ninety-one 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 him 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, $3\frac{1}{2}$ per cent. up to £300, and 3 per cent. on the excess to £500; Victoria, $3\frac{1}{2}$ per cent. on first £350, and on deposit stock up to £1000; Queensland, $3\frac{1}{2}$ per cent. up to £500; South Australia, $2\frac{1}{2}$ per cent. on accounts closed during the year, and $3\frac{1}{2}$ per cent. up to £350 on accounts remaining open; Western Australia, 3 per cent. up to £1000; Hobart Trustees' Savings Bank, 4 per cent. up to £50, $3\frac{1}{2}$ per cent. on the excess from £50 to £150; Launceston Trustees' Savings Bank, $3\frac{1}{2}$ 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, and 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 are to receive a preferential rate of interest of $\frac{1}{2}$ per cent. Otherwise their accounts will never receive less than $3\frac{1}{2}$ per cent.

The table below shews the total amounts at credit of depositors in each of the last ten years:—

DEPOSITS IN SAVINGS BANKS, 1905-6 to 1914-15.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1905-6 ...	13,963,635	11,764,179	4,142,791	4,766,907	2,316,161	1,332,546	38,286,219
1906-7 ...	15,320,532	12,792,590	4,543,104	5,320,872	2,633,135	1,488,056	42,098,269
1907-8 ...	17,530,157	13,428,676	4,921,881	5,820,344	2,885,463	1,560,951	46,147,472
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	75,248,203
1913-14(a) ...	32,363,069	24,533,519	10,166,946	9,366,490	4,932,895	2,178,305	83,541,224
1914-15(a) ...	35,562,649	26,996,025	11,972,965	9,595,156	5,149,536	2,301,336	91,577,667

(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.

AVERAGE AMOUNT PER DEPOSITOR IN SAVINGS BANKS, 1905-6 to 1914-15.

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.
1905-6 ...	38 7 2	25 4 1	47 1 3	31 5 3	36 8 8	26 5 4	32 5 10
1906-7 ...	39 1 7	26 0 9	48 17 11	32 17 6	39 9 1	27 13 0	33 8 11
1907-8 ...	41 10 11	26 5 0	49 1 2	33 7 11	39 19 6	28 1 4	34 10 10
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 16 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	38 18 0
1913-14(a) ...	46 13 2	33 7 2	50 10 10	34 18 10	36 13 6	28 13 3	39 12 4
1914-15(a) ...	47 1 0	34 10 11	52 5 7	34 0 1	35 11 5	28 12 2	40 5 7

(a) Inclusive of Commonwealth Savings Bank.

The average amount deposited per head of population shows a satisfactory increase during the period under review. In 1905-6 it ranged from £13 in South Australia to £7 3s. in Tasmania, while in 1914-15 the amount in South Australia had risen to £21 13s. 6d., and in Tasmania to £11 12s. The following table gives the figures for each year:—

SAVINGS BANKS DEPOSITS PER HEAD OF POPULATION, 1905-6 to 1914-15.

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.
1905-6 ...	9 7 8	9 14 5	7 15 11	13 0 0	9 5 2	7 3 0	9 9 10
1906-7 ...	10 1 4	10 9 9	8 8 7	14 7 3	10 6 5	8 0 6	10 5 9
1907-8 ...	11 4 6	10 17 10	9 0 4	15 8 5	11 6 9	8 4 8	11 1 9
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	15 13 4
1913-14 ...	17 8 7	17 5 1	14 19 6	21 4 0	15 4 6	11 1 5	16 19 6
1914-15 ...	19 0 1	18 18 6	17 7 2	21 13 6	15 19 4	11 12 0	18 10 0

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 155 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 10 per cent. during the same year. The following table shows the business transacted during the year 1914-15:—

SAVINGS BANKS TRANSACTIONS DURING THE YEAR 1914-15.

State.	Total Deposits at End of Year 1913-14.	Amounts Deposited during Year 1914-15.	Interest Added during Year 1914-15.	Total.	Amounts Withdrawn during Year 1914-15.	Total Deposits at End of Year 1914-15.
	£	£	£	£	£	£
N.S. Wales ...	32,368,069	27,118,340	1,064,944	61,350,747	25,788,098	35,562,649
Victoria ...	24,533,519	20,566,252	765,827	45,865,598	18,869,573	26,996,025
Queensland ...	10,166,946	8,195,192	310,042	18,672,180	6,699,215	11,972,965
South Australia ...	9,366,490	5,494,453	324,848	15,185,791	5,590,635	9,595,156
West. Australia ...	4,932,895	4,326,302	140,161	9,399,358	4,249,822	5,149,536
Tasmania ...	2,178,305	1,449,629	70,165	3,698,099	1,396,763	2,301,336
Total ...	83,541,224	67,150,168	2,675,987	154,171,773	62,594,106	91,577,667

(a) Including £804,394, the amount by which the deposits increased between 1st January and 30th June, 1914.

5. Commonwealth Savings Bank.—A most important recent event has been the opening of the Savings Bank department of the Commonwealth Bank. This 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 carried on

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. Victoria and Queensland withdrew at a very early stage.

At the conference of State Premiers, held at Melbourne on 19th January, 1912, and following days, the Commonwealth Prime Minister submitted certain proposals as the basis upon which the States might become partners in the Commonwealth Bank. One of the proposals was that the Commonwealth should take over the Savings Banks of each State, whether Government or trustee. After this had happened the State Government was to have first call on any loan which the Commonwealth Bank should repay to the State Bank in redemption of loans existing when it was taken over; and also first call on three-fourths of the amount of deposits in the State available for investment. The Premiers, feeling unwilling to agree to this, submitted a counter proposal [the Victorian Treasurer dissenting], that the Commonwealth Bank should refrain from embarking on Savings Bank business, and that the States, in consideration thereof, should lend to the Bank an amount equal to one-fourth of the excess of deposits over withdrawals. This arrangement was to come into force on 1st June, 1913, and last for five years. The Prime Minister, in reply, intimated that his original proposals were still open for acceptance. On 23rd January the Premiers' Conference passed the following resolution [the representatives from Victoria and Queensland dissenting]: "That this conference expresses its readiness to accept the proposals submitted by the Prime Minister, subject to a satisfactory arrangement being arrived at for giving the States an equitable share in the management of the Commonwealth Bank." The matter then remained for some months in abeyance.

Almost from the time of the opening of the Savings Banks department the Governor of the Bank made proposals to the various State Governments which might form a basis for the transfer of the various State Savings Banks to the Commonwealth. The Government of Tasmania ultimately accepted the offer, and the State Savings Bank of Tasmania was formally transferred to the Commonwealth as from the 1st January, 1913, and opened for business under the new régime on 3rd January. The remaining States' Governments announced their intention of retaining their Savings Banks as separate institutions, and their example was followed by the Savings Bank of New South Wales, and the two trustee Savings Banks of Tasmania. The Savings Bank of New South Wales, however, amalgamated with the Government Savings Bank of that State as from 1st May, 1914. It will be of interest to give a summary of the agreement between the Commonwealth Bank and the State Savings Bank of Tasmania. The following is condensed from a statement by the Governor of the Commonwealth Bank :—

"The Commonwealth Bank is to take over all the liabilities to depositors, etc., amounting to £788,031, leaving the profit and loss balance, amounting to £5659, in the hands of the State. The assets, amounting to £793,690, are dealt with as follows: the securities to be retained by the State Government, and debentures to be issued to the Commonwealth Bank, Savings Bank Department, in lieu of same. Three per cent. stock totalling £19,000, and 3½ per cent. stock totalling £420,961, to be exchanged for 3½ per cent. debentures at 95, and 3½ per cent. stock amounting to £204,000, and 4 per cent. stock amounting to £146,700 to be exchanged for 4 per cent. debentures. The total debentures, amounting to £784,133, will mature in 20 yearly instalments of £39,207 per annum (except the last one, which will be £39,200), the first payment to be made on 30th June, 1932. The Government will provide a sinking fund of 1 per cent., to be a charge on the consolidated revenue of the State, and to be deposited in the Commonwealth Bank in reduction of debentures in even thousands, in the proportion of 3½ per cent. and 4 per cent. debentures issued. The remaining items on the balance sheet, amounting to £31,229, will be handed over to the Commonwealth Bank as cash.

"The State is to have first call for State requirements on 75 per cent. of the increased deposits at current rates, and should the State at any time not require the amount, the Governor of the Commonwealth Bank will be at liberty to invest the same, either in the business of the Bank, or in the Commonwealth or in municipal securities. The whole of the staff at present exclusively engaged in savings bank business will be retained."

The following table shews for each State the number of depositors, and the amount at credit on 30th June, 1915, of the Commonwealth Savings Bank :—

COMMONWEALTH SAVINGS BANK AS AT 30th JUNE, 1915

Locality.				Number of Depositors.	Amount at Credit.
					£
New South Wales	...	...	...	61,023	2,026,392
Victoria	...	...	...	45,583	1,951,996
Queensland	...	...	...	36,621	1,309,109
South Australia	...	...	...	12,773	544,342
Western Australia	...	...	...	16,889	497,714
Tasmania	...	...	...	35,959	990,720
Northern Territory	...	...	...	716	42,643
Papua	...	...	...	151	9,041
London	...	...	...	646	48,690
Total	...	...	...	210,361	7,420,647

§ 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, Esquire, 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 December 20th, 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 1913 have been directly collected from life assurance societies by the Commonwealth Statistician, with results which are in the main satisfactory. Figures for 1913 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 policyholders 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 Insurance 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' (£88,864), Metropolitan (£11,740), Prudential (£10,000), Life Insurance Company (£44,000), Assurance and Thrift (£17,678), Co-operative Assurance (£51,897), and Australian Provincial Association (£7,777). 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, £15,000, and £20,550 respectively.

3. Ordinary and Industrial Business.—Of the societies enumerated in the preceding paragraph, the following seven in 1913 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, 1914.**—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, 1914.

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	246,509	67,178,145	2,124,542
Mutual Life and Citizens' Assurance Company Limited ...	99,250	17,715,148	611,215
City Mutual Life Assurance Society	23,387	3,491,006	134,687
Australian Metropolitan Life Assurance Company	3,489	367,894	15,542
Australian Alliance Assurance Company	366	125,613	3,047
National Mutual Life Association of Australasia	78,621	17,555,183	631,660
Victoria Life and General Insurance Company	80	52,043	986
Colonial Mutual Life Assurance Society	30,041	5,486,617	174,073
People's Prudential Assurance Company	3,393	230,319	(a) 23,390
Australasian Temperance & General Mutual Life Assurance Society	41,485	4,391,405	170,737
Liverpool and London and Globe Insurance Company (Life Branch)	288	117,491	3,490
Provident Life Assurance Company	371	41,678	1,509
Life Insurance Company	1,904	403,420	(a) 30,271
Assurance and Thrift Association Limited	745	146,278	6,009
Co-operative Assurance Company	639	176,741	(a) 7,233
Australian Provincial Assurance Association Limited ...	1,895	394,175	15,708
Equitable Life Assurance Society of United States ...	5,194	1,725,310	67,619
Mutual Life Insurance Society of New York	3,689	1,417,462	43,763
New York Life Insurance Society	5,309	2,092,375	77,686

(a) Including industrial.

5. **Industrial Business: Australian Business in Force, 1914.**—Similar information in regard to the industrial business of the nine societies transacting that kind of business is given in the following table:—

INDUSTRIAL ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1914.

Society.	Policies in Force.	Amount Assured.	Annual Premium Income.
	No.	£	£
Australian Mutual Provident Society	98,317	3,373,999	200,235
Mutual Life and Citizens' Assurance Company	237,934	4,347,376	235,184
Australian Metropolitan Life Assurance Company	26,255	655,932	34,972
Colonial Mutual Life Assurance Society	55,552	1,335,128	78,761
People's Prudential Assurance Company	5,110	105,868	(a)
Aust. Temperance and General Mutual Life Ass. Society	161,018	3,353,456	220,917
Provident Life Assurance Company	7,652	208,419	9,555
Life Insurance Company	2,947	75,336	(a)
Co-operative Assurance Company	3,283	107,235	(a)

(a) Included in ordinary.

6. **Receipts and Expenditure of Insurance Societies, 1914.**—(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, 1914.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society ...	3,379,463	2,154,033	1,225,430
Mutual Life and Citizens' Assurance Company ...	874,540	664,507	210,033
City Mutual Life Assurance Society ...	209,578	128,363	81,215
Australian Metropolitan Life Assurance Company ...	17,964	9,558	8,406
Australian Alliance Assurance Company ...	7,730	10,790	(a)3,060
National Mutual Life Association of Australasia ...	963,590	513,035	450,555
Victoria Life and General Insurance Company ...	6,040	24,049	(a)18,009
Colonial Mutual Life Assurance Society ...	290,092	184,583	105,509
Aust. Temperance & General Mutual Life Ass. Socy.	214,751	98,001	116,750
Liverpool and London and Globe (Life Branch) ...	3,480	11,827	(a)8,347
Provident Life Assurance Company ...	1,510	421	1,089
Life Insurance Company(b) ...	33,412	31,607	1,805
Assurance and Thrift Association Limited ...	9,943	5,642	4,301
Co-operative Assurance Company(b) ...	14,368	18,953	(a)4,585
Australian Provincial Assurance ...	17,189	30,852	(a)13,663
Equitable Life Assurance Society ...	94,937	126,855	(a)31,918
Mutual Life Insurance Society of New York ...	56,756	86,949	(a)30,193
New York Life Insurance Society ...	84,274	77,430	6,844

(a) Decrease. (b) Including Industrial.

(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, 1914.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds)
	£	£	£
Australian Mutual Provident Society ...	225,769	81,289	144,480
Mutual Life and Citizens' Assurance Company ...	291,815	170,288	121,527
Australian Metropolitan Life Assurance Company ...	35,914	35,081	833
Colonial Mutual Life Assurance Society ...	79,231	60,439	18,792
People's Prudential Assurance Company ...	25,252	20,593	4,659
Aust. Temperance & General Mutual Life Ass. Soc.	244,190	190,200	53,990
Provident Life Assurance Company ...	10,052	8,776	1,276

7. Liabilities and Assets of Assurance Societies, 1914.—The liabilities of the Australasian societies consist mainly of their assurance funds; as already mentioned, only nine of the societies are partly proprietary, viz., the Mutual Life and Citizens', with a paid-up capital of £108,225; the Metropolitan, with a paid-up capital of £11,740; 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 £56,267; and the Australian Provincial with £57,777. 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 792, which sets out the total assets. Loans on personal security are granted by only 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, 1914.

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) ...	27,856,916	335,221	28,192,137	13,481,450	11,162,261	24,643,711
Mutual Life and Citizens' Assurance Co. ...	(b)	(b)	(b)	3,011,450	3,162,921	6,174,371
City Mutual Life Assurance Society ...	739,214	32,137	771,351	463,645	307,706	771,351
Australian Metropolitan Life Assurance Co.	58,017	18,196	76,213	13,249	62,964	76,213
National Alliance Assurance Company ...	119,931	7,377	127,308	94,389	32,919	127,308
National Mut. Life Assoc. of Australasia ...	6,951,208	106,343	7,057,551	4,774,557	2,282,994	7,057,551
Victoria Life and General Insurance Co. ...	127,083	8,453	135,536	13,498	122,033	135,531
Colonial Mutual Life Assurance Society ...	2,749,186	28,267	2,777,453	1,175,231	1,526,038	2,701,269
Aust. Temp. & Gen. Mut. Life Assur. Soc.(a)	1,541,283	35,616	1,576,899	612,615	964,284	1,576,899
Liverpool & London & Globe (Life Branch)	(b)	4,423	4,423	(b)	(b)	(b)
Provident Life Assurance Company ...	2,890	69	2,959	10	315	325
Commonwealth Life Insurance Co. ...	44,000	674	44,674	3,206	28,322	31,528
Assurance and Thrift Association Limited	29,788	2,874	32,662	26,131	9,057	35,188
Co-operative Assurance Co. (a) ...	56,267	1,490	57,757	19,645	13,036	32,681
Australian Provincial Assur. Assocn. Ltd.	57,777	1,105	58,882	...	30,469	30,469
Equitable Life Assurance Society ...	218,701	739	219,440	180,808	394,628	575,636
Mutual Life Insurance Society of New York	(b)	(b)	(b)	169,149	81,772	250,921
New York Life Insurance Society ...	773,000	8,759	781,759	117,551	29,418	146,969

(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 page 792).

(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, 1914.

Society.	Liabilities.			Assets.		
	Total Funds, including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£	£	£	£	£	£
Mutual Life & Citizens' Assurance Company	(b)	(b)	(b)	904,435	341,691	1,246,326
Australian Metropolitan Life Assurance Co.	45,463	15,191	60,654	1,442	59,212	60,654
Colonial Mutual Life Assurance Society ...	108,776	334	109,110	1,965	104,958	106,923
People's Prudential Assurance Company (a)	47,169	399	47,568	24,713	22,855	47,568
Provident Life Assurance Company ...	3,150	2,676	5,826	...	5,826	5,826

(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. 9," and a short table only is inserted here, shewing the total assets of the various companies, so that the deficiencies in the Australian assets shewn in the previous tables for those companies doing business elsewhere may not be misunderstood:—

TOTAL ASSETS OF ASSURANCE COMPANIES, 1914.

Society.	Assets.	Society.	Assets.
ORDINARY BUSINESS.			
	£		£
(a) Australian Mutual Provident Soc.	33,736,908	Assurance & Thrift Association Ltd.	36,638
Mutual Life and Citizens' Assur. Co.	8,081,231	(a) Co-operative Assurance Co. ...	32,681
City Mutual Life Assurance Society...	771,351	Australian Provincial Ass. Assoc. ...	30,489
Aust. Metropolitan Life Assur. Co. ...	76,213	Equitable Life Assurance Society ...	110,404,389
Australian Alliance Assurance Co. ...	127,308	Mutual Life Ins. Society of New York	125,468,952
National Mutual Life Association ...	8,913,968	New York Life Insurance Society ...	162,533,240
Victoria Life and General Insur. Co.	135,531	INDUSTRIAL BUSINESS.	
Colonial Mutual Life Assurance Soc.	3,857,835	Mutual Life and Citizens' Assur. Co.	1,295,139
(c) Aust. Temp. & Gen. Mut. Life A. Soc.	1,781,423	Aust. Metropolitan Life Assur. Co. ...	60,654
Liverpool & London & Globe (Life) ...	14,146,852	Colonial Mutual Life Assurance Soc.	106,923
Provident Life Assurance Company	32,657	(b) People's Prudential Assurance Co.	47,568
Commonwealth Life Insurance Co.	31,528	Provident Life Assurance Company	83,825

(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 at an early date. Legislation concerning fire insurance was, in fact, contained in the bill to which reference has already been made. [§ 6, paragraph 1.]

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 divides 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 £415,000 per annum, while

* See also Section XXVI., § 5, Fire Brigades.

the contributions paid by the companies averaged about £21,000, 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 £6,954,000, 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 $\frac{1}{3}$ 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 $1\frac{1}{3}$ 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 £1,765,000. The premium income of the insurance companies from country business in protected areas during the year 1914 was about £197,000, and the contributions of the companies £5750, equal to rather more than $2\frac{3}{4}$ 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 £18,000 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 1914 were as follows:—The Government, £7663; the companies, £10,217; the municipalities, £5109.

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, however, did not apply to Perth or the other districts in which the Fire Brigades Act 1898 was still operative. According to the provisions of the latter Act the expenditure was allocated as follows:—One-ninth to the Government; four-ninths to the insurance companies; and four-ninths to the municipalities. It was provided that the Governor might, at any time, on the petition of the council of any municipality, declare by proclamation that the provisions of the Act of 1898 should cease to be in force in that municipal district. The whole of the State, however, has now come under the operation of the Act of 1909.

8. Australian Fire Insurance Business.—Returns are available shewing the revenue and expenditure, assets and liabilities, and investments of twenty-two 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, and the Federal Mutual Insurance Company of Australia; (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, and the Commonwealth Insurance Company; (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; (h) with head office in Christchurch—the Farmers' Co-operative Insurance Association of New Zealand; and (i) with head office in Perth—the Western Australian Insurance Company. As their names imply, the majority 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, 1913, to 31st March, 1915. The figures for the first year are in brackets.

The premiums, less reinsurances and returns, amounted to £2,623,462 (£2,500,903); losses were £1,409,329 (£1,281,900). Expenses and commission came to £911,507 (£856,345), and there was, therefore, a profit on trade operations of £302,626 (£362,658). As, however, interest, rent, fees, etc., amounted to £214,466 (£203,795), the total profit was £517,092 (£566,453). Dividends and bonuses came to £257,570 (£274,799). The ratio to premium income of losses was, therefore, 53.72 per cent. (51.26 per cent.), and of expenses and commissions, 34.74 per cent. (34.24 per cent.). The resulting ratio of trade surplus to premium income was 11.54 per cent. (14.50 per cent.).

The paid-up capital of the twenty-two companies was £2,142,393 (£2,112,894); reserve and reinsurance funds, £2,678,711 (£2,478,085); undivided profits, £239,149 (£187,963). The total paid-up capital and reserves were, therefore, £5,060,253 (£4,778,942). In addition to these liabilities there were others, viz.:—Unsettled losses, £313,461 (£265,541); sundry creditors, £308,021 (£261,867); dividend to pay, £181,170 (£178,286); and, in the case of one company, a life assurance fund, £117,278 (£120,339); thus bringing the total liabilities to shareholders and to the general public up to £5,980,183 (£5,604,975).

The corresponding amount of assets is made up of investments, £5,158,022 (£4,917,445), viz.:—Loans on mortgage, £1,498,900 (£1,402,400); Government securities, debentures, shares, etc., £1,437,222 (£1,290,026); landed and other property, including furniture, £995,874 (£974,006); fixed deposits, £1,089,973 (£1,215,796); in the case of one company doing a mixed business—loans on its own life policies, etc., £7760 (£9054); other investments, £128,293 (£26,163). The balance of assets consisted of cash in bank, on hand, and bills receivable, £239,782 (£229,460); and sundry debtors, etc., £532,379 (£458,070).

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 450,000, but as certain benefits, such as medical attendance and free medicine, 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 four at the least 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 1914, except those for South Australia, which refer to the year 1909, the latest for which particulars are available.

2. **Number of Societies, Lodges, and Members.**—The total number of societies registered in New South Wales is 68; in Victoria, 46; in Queensland, 20; in South Australia, 16; in Western Australia, 15; and in Tasmania, 12. 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, 1914. (a)

State.				Number of Lodges.	Benefit Members at End of Year.	Average No. of Benefit Mem- bers during Year.
New South Wales	...	...	...	1,927	161,475	165,456
Victoria	...	...	...	1,524	159,741	158,511
Queensland	...	...	...	550	52,247	51,350
South Australia	...	...	...	529	58,292	(b)
Western Australia	...	...	...	302	19,900	19,746
Tasmania	...	...	...	209	23,399	(b)
Commonwealth	...	...	...	5,041	475,054	(b)

(a) See paragraph 1, above. (b) Not available.

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 shews 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, 1914. (a)

State.	Number of Members who received Sick Pay.	Total Number of weeks Sick Pay granted.	Average No. of weeks per Member sick.	Deaths of Benefit Members and Wives.	Proportion of Deaths to 1000 average Benefit Members.
New South Wales	(b)	(b)	(b)	(b)	(b)
Victoria ...	29,014	230,979	7.96	1,843	11.63
Queensland ...	8,219	50,627	6.16	339	6.60
South Australia ...	8,971	86,768	9.67	497	(b)
Western Australia	3,074	17,157	5.58	94	4.76
Tasmania ...	3,852	25,147	6.53	161	(b)
Commonwealth	(b)	(b)	(b)	(b)	(b)

(a) See paragraph 1. (b) Not available.

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.—REVENUES, 1914. (a)

State.	Entrance Fees, Members' Contributions, and Levies.	Interest, Dividends, and Rents.	All other Income.	Total Revenue.
	£	£	£	£
New South Wales ...	496,961	80,707	34,915	612,583
Victoria ...	464,008	108,224	48,533	620,765
Queensland ...	170,002	30,861	...	200,863
South Australia ...	(b) 130,096	31,167	(c) 65,293	226,556
Western Australia ...	57,416	13,280	19,598	90,294
Tasmania ...	64,360	8,692	11,901	84,953
Commonwealth ...	1,382,843	272,931	180,240	1,836,014

(a) See paragraph 1. (b) Excluding levies. (c) Including levies.

The returns relating to expenditure are more complete than those relating to revenue, and can be shewn in full for every State. The figures shew that the excess of revenue, amounting in the aggregate to £363,363, was divided amongst the six States as follows :— New South Wales, £79,016; Victoria, £153,259; Queensland, £60,767; South Australia, £37,588; Western Australia, £17,730; and Tasmania, £15,003. The revenue exceeded the expenditure by about fifteen shillings per average benefit member, a margin which cannot be called very large.

FRIENDLY SOCIETIES.—EXPENDITURE, 1914. (a)

State.	Sick Pay.	Medical Attendance and Medicine.	Sums Paid at Death of Members & Members' Wives.	Administration.	All other Expenditure.	Total Expenditure.
	£	£	£	£	£	£
New South Wales	172,796	182,308	44,446	87,358	46,659	533,567
Victoria ...	155,015	162,211	31,160	78,773	40,347	467,506
Queensland ...	37,800	59,014	15,206	28,076	(b)	140,096
South Australia ...	50,979	28,305	22,998	24,526	62,160	188,968
Western Australia	14,374	20,241	2,600	14,709	20,640	72,564
Tasmania ...	18,787	19,732	10,850	11,880	8,701	69,950
Commonwealth	449,751	471,811	127,260	245,322	178,507	1,472,651

(a) See paragraph 1. (b) Included in "Administration."

It appears from the above figures that sick pay averaged about fourteen 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, or to about £5 per member who received sick pay during the year.

5. **Funds.**—The two foregoing tables shew that the surplus of revenue over expenditure amounted to £363,363 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, 1914. (a)

State.	Invested Funds.	Uninvested Funds.	Total Funds.
	£	£	£
New South Wales ...	1,713,697	71,234	1,784,931
Victoria ...	2,552,713	91,503	2,644,216
Queensland ...	728,629	19,215	747,844
South Australia ...	887,318	35,287	922,605
Western Australia ...	217,341	12,538	229,879
Tasmania ...	228,395	12,992	241,387
Commonwealth ...	6,328,093	242,769	6,570,862

(a) See paragraph 1.

The total funds amounted, therefore, to about £13 16s. Od. 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 1914 the deaths of 35,710 adult persons, while the total number of probates and letters of administration granted

during the same period was 12,035. It would therefore appear that about one in every three adults who died during the year was possessed of sufficient property to necessitate the taking out of probate. The details for each State are shown in the table hereunder:—

PROBATES AND LETTERS OF ADMINISTRATION, 1914.

State.	Number of Estates.			Net Value of Estates.		
	Probates.	Letters of Administration.	Total.	Probates.	Letters of Administration.	Total.
				£	£	£
New South Wales	4,438	(a)	4,438	9,997,615	(a)	9,997,615
Victoria ...	4,451	(a)	4,451	8,481,720	(a)	8,481,720
Queensland ...	536	229	765	2,101,558	229,666	2,331,224
South Australia ...	992	426	1,418	2,907,561	117,919	3,025,480
Western Australia	359	218	577	739,956	164,894	904,850
Tasmania ...	312	74	386	620,108	107,018	727,126
Commonwealth	11,088	947	12,035	24,848,518	619,497	25,468,015

(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, 1914.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wth.
Intestate estates placed under control of Curator during 1914							
Number ...	(a)	408	646	181	333	103	(a)
Value ... £	(a)	28,499	49,749	24,595	(a)	15,255	(a)
Unclaimed money paid into Consolidated Revenue by Curator during 1914	£ 15,627	4,691	4,811	1,052	807	...	26,988

(a) Not available.

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 certificated examinations in 1911 called 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.

(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. 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. A Council of Public Education has been appointed to advise on educational matters generally, and particularly in regard to co-ordination. Amongst the features recently introduced were the recasting of the scheme of study for Primary Schools and the inauguration of a uniform school year. Consequent on this it was found necessary to arrange for a general

examination 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 1914 a considerable amount of attention was devoted to the organisation of the elementary schools, especially in connection with the question of retardation. 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 present retardation percentage. A reference to the changes in the organisation and classification of the Training College will be found in § 2, 10.

(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 being paid 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. 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 provision has been made for the appointment of a medical officer, a dental officer, and two trained nurses. 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. 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.

(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 towards 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 increased attention in all departments, and encouragement is given to original or research work of an elementary character. The three special courses—commercial, industrial, and domestic—were continued in the central schools, and it is proposed to provide a fourth course for pupils

who desire to qualify for entrance to the University but have not succeeded in gaining admission to the High Schools. The scheme of bringing about a closer correlation between primary and secondary education was further advanced during the year. The Modern School, opened in 1911, was strengthened. In June, 1914, a Goldfields High School was opened at Kalgoorlie, and it is proposed to establish additional schools at the larger country centres. Continuation classes were held at fifteen centres in 1914, with an average attendance of 1697. Certificates granted to successful students entitle the holder to advanced tuition at the Technical College.

(vi.) *Tasmania.* The most important features in the development of education in Tasmania during 1912 were the establishment of subsidised schools, the taking of preliminary steps towards the establishment of State High Schools, and the adoption of more effective measures to secure regular attendance. In 1913, High Schools were established at Hobart and Launceston. During that year a remodelled set of rules in regard to the planning of new schools was put into operation. All new schools will now be erected in accordance with improved designs, and the older buildings will, as far as possible, be reconstructed, so as to ensure the maximum of comfort in lighting and ventilation. A conference of teachers and inspectors met under the presidency of the Director in 1914, and remodelled the primary curriculum issued five years previously. Amplifications and improvements were effected, and a revised syllabus prepared.

(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, and also 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, 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 the last few 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 and 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, par. 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 pupils. Moreover, as will be seen from the above, and from § 2, par. 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.

§ 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, though privately managed, nevertheless cater for all classes of the community.

2. **Enrolment and Attendance.**—The following table shews the number of State Schools, together with the teachers employed and the enrolment and “average attendance” in each State during the year 1914:—

STATE SCHOOLS, TEACHERS, AND SCHOLARS, 1914.
(COMMONWEALTH.)

State or Territory.	Schools.	Teachers.*	Scholars Enrolled.	Average Attendance.
New South Wales†	3,258	7,297	258,562	190,194
Victoria	2,263	5,882	220,008	163,235
Queensland	1,346	3,444	101,769	83,314
South Australia	839	1,736	60,730	46,289
Western Australia	584	1,423	44,086	38,518
Tasmania	437	938	27,913	22,581
Northern Territory	5	8	164	99
Commonwealth	8,732	20,728	713,232	544,230

* 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. In the case of Victoria, returns were not available in regard to enrolments at District High Schools and Higher Elementary Schools, and these totals were estimated.

The enrolment and average attendance at the State Schools in the Commonwealth are given below for the years 1891, 1901, and for each year of the period 1910 to 1914:—

ENROLMENT AND ATTENDANCE AT STATE SCHOOLS, 1891 to 1914.
(COMMONWEALTH.)

Year.	Total Population. ¹	Enrolment.	Average Attendance.	Year.	Total Population. ¹	Enrolment.	Average Attendance.
1891	3,240	561,153	350,773	1912	4,733	662,576	496,252
1901	3,825	638,478	450,246	1913	4,872	685,406	515,948
1910	4,425	627,910	455,870	1914	4,941	713,232	544,230
1911	4,569	638,850	463,799				

1. In thousands.

3. **Schools in the Federal Capital Area.**—During the year 1914 fourteen State Schools were in operation in the Federal Territory (Yass-Canberra). The pupils enrolled numbered 318 and the average attendance 261. Cost of upkeep in 1914 amounted to £2239. 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 twelve schools.

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. In still more sparsely-peopled districts, an itinerant teacher goes from house to house within a certain radius. Thus, in Queensland during 1914 the seventeen itinerant teachers covered 515,000 square miles of country and travelled 56,048 miles. 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 1914 the Education Department in Western Australia disbursed £5783 in "driving grants," *i.e.*, sums of money granted to parents whose homes are over three miles from the nearest school, and who arrange to have their children driven in. In New South Wales and Western Australia 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 1914 subsidy was paid to 664 schools in New South Wales. (iii.) 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. (iv.) 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 1914 numbered 51, with an enrolment of 680 scholars. During the year the department also paid for the conveyance of 198 children to schools by boat, vehicle, or train.

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 51 Evening Continuation Schools had an enrolment of 3141 and an average attendance of 2256. 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; and Western Australia has continuation classes in the chief centres. 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 had 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. At the close of 1913 there were thirty-two schools in the Commercial group, twenty in the Junior Technical, and fifty-two in the Domestic group, with an enrolment of 2749, and average attendance of 2370 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 twenty-two District Schools. These schools are specially staffed, and undertake the work of preparing students for admission to the training colleges. There are also sixteen *High Schools* in the State. These had an enrolment in 1914 of 2380 boys and 1599 girls, with an average attendance of 2018 boys and 1313 girls. 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. Five "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 1914 was 906. In connection with the development of secondary education in New South Wales, the Bursary Board allotted 320 High School bursaries, and 29 University bursaries, while 2000 scholarships were awarded by the Department as a result of the certificate examinations. Under the provisions of the University Amendment Act of 1912, 165 exhibitions were awarded to successful students at the leaving certificate examination, and 109 of these were given to pupils attending the State Schools.

The Sydney Grammar School (not a "State" School in the ordinary acceptation of the term), which receives a State endowment of £1500 a year, had, in 1914, a quarterly enrolment of 571 pupils, and an average attendance of 537.

(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. Nineteen Higher Elementary Schools have been established, while the number of District High Schools was increased to 24. With the exception of the Melbourne High School and the University School, the whole of the institutions are in country centres. The average attendance at the Higher Elementary Schools in 1914 was 1132, of whom 550 were girls, and at the District High Schools 3890, of whom 1801 were girls. The qualifications for admission to the High Schools and Higher Elementary Schools are that pupils shall not be 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) commercial course; (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 senior technical, giving three years' free tuition 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. Ten specially trained Nature Study teachers have been appointed to the High Schools and to Teachers' Training Colleges.

(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. 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 Herberton, Childers, Gatton, Dalby, Pittsworth, and Roma. The enrolment at High Schools in 1914 was 754, and the daily attendance 579. 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. In order to conserve the interests of children of poor parents, it is proposed to make all scholarships available at any State High School, Technical School, Grammar School, or approved Secondary School, and to grant allowances up to £30 per annum to students who must live away from home, and £12 to those who live at home. The scholarships to Secondary Schools awarded in 1914 numbered 515. Of these, 140 boys and 74 girls were granted the allowance at £12 per annum, and 38 boys and 27 girls received £30 per annum. There are also 20 University scholarships tenable for three years, and carrying an allowance of £52 per annum where the holder has to live away from home, and £26 per annum in cases where the holder can reside at home while taking the University lectures. The enrolment at the Grammar Schools in 1914 was 1411, and the average attendance 1285. Since the year 1909 these schools have been regularly examined by the Inspector-General of the Education Department.

(iv.) *South Australia*. Including the Adelaide High School, there were altogether twenty-seven District High Schools open in South Australia in 1914, with an enrolment of 2605 students, and a teaching staff of 97. 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 *bonâ fide* 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 a High School, 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, and are open to pupils of any High School under State control. (iv.) 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. (v.) 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*. A Modern School, designed to give a four years' course to pupils admitted at about the age of 13 years, was opened in Perth early in 1911. The first two years of the course are to a large extent common to all, but in the final two years specialisation is aimed at, in order to meet the needs of future University students, teachers, agriculturists, scientific and business men; and, in the case of girls, to give tuition in domestic economy to those desirous of it. Parents are required to undertake that their children will remain at the school for the full course. At the end of 1914 there were 344 students. No fees are charged at the Modern School. A High School organised on similar lines was opened with 128 pupils in May, 1914, at Kalgoorlie. During 1909 the upper classes of schools in the largest centres of population were brought together into

central schools, in order to secure more economical and effective teaching, and it is intended that these central institutions shall form the nucleus of future High Schools. Continuation classes were inaugurated in 1911, and were attended at 15 centres in 1914 by about 1700 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. Exhibitions and scholarships at present in force comprise ten University exhibitions valued at £50 each, tenable for three years at the University of Western Australia, seven senior exhibitions valued at £25 each tenable for one year, and 12 junior exhibitions, valued at £20 each, also tenable for two 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, with an enrolment of 150 and 110 pupils respectively, and in 1914 of 222 and 186. These will cater for five classes of pupils—(i.) Those who desire to become teachers; (ii.) University students; (iii.) Commercial; (iv.) Mechanics; (v.) Home duties (girls). It is proposed to grant a leaving certificate at the end of a four years' course. At the present time the State provides free High School instruction for pupils capable of passing the necessary entrance examination, and under the Scholarship Act of 1907 grants scholarships of the annual value of £15, tenable for three years, an additional payment of £25 being made in cases where the pupil does not reside at home. These scholarships are not tenable at the High Schools. There are also five exhibitions awarded by the University on the result of the junior examination. These are valued at £20 each, and are tenable for three years at approved schools. It is proposed to replace the scholarships by a liberal scheme of bursaries.

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 the 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. An autumn session only was held in 1914, at Morpeth, and was attended by 593 boys and 47 teachers.

The subject of Agricultural Colleges and Experimental Farms is dealt with in the section relating to Agriculture. (See page 364.)

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 now taught in about 700 State Schools. A Horticultural Society has been established in connection with State Schools, and has now 650 schools in affiliation. The Society has a nursery and distributing centre for plants and seeds at Oakleigh.

Although *Queensland* possesses an Agricultural College and several experimental farms, there is no agricultural institution directly connected with the Education Department. The Government, however, 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. Suitable land has been acquired for the establishment of a Farm School near Brisbane. At Nambour, it is proposed to establish a school with a practical trend, the boys to be taught agricultural science, farm carpentry, etc., and the girls cookery, dressmaking, and millinery.

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.

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.

9. Teachers in State Schools.—The distribution of the teaching staff in the State Schools during the year 1914, including teachers of needlework, was as follows:—

TEACHING STAFF IN STATE SCHOOLS, 1914.

(COMMONWEALTH.)

State.	Principal Teachers.		Assistants.		Pupil or Junior Teachers.		Sewing Mistresses.	Total.		
	Males.	Fem.	Males.	Fem.	Males.	Fem.		Males.	Fem.	Total.
New South Wales	2,337	1,022	1,219	2,606	...	111	107	3,556	3,848	7,404
Victoria ...	1,745	797	353	1,340	276	1,362	425	2,374	3,933	6,307
Queensland ...	785	574	372	871	344	498	...	1,501	1,943	3,444
South Australia ...	372	434	129	522	64	215	139	565	1,310	1,875
Western Australia	330	256	132	528	24	153	66	486	1,003	1,489
Tasmania	185	270	36	148	60	239	2	281	659	940
Northern Territory	2	4	...	2	...	...	...	2	6	8
Commonwealth	5,756	3,357	2,241	6,028	768	2,578	739	8,765	12,702	21,467

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 1914, the total number of students in the Blackfriars Training College was 633, women students numbering 418. 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 1914 by 88 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 recently 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. Towards the close of the year a commencement was made with the erection of new Teachers' College within the University grounds. 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 were conducted in 1914 by inspectors in several districts.

(ii.) *Victoria.* Candidate teachers in this State are trained in the District High Schools or Agricultural High Schools, the period of probation being supplemented by a course of training for one year in the Senior Training College at Melbourne. A "short course" of training was introduced in 1913 for students who have passed the junior public or an equivalent examination. The course lasts for six months, about half the time being spent at lectures and the rest at practice in teaching. 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. By the 30th June, 1914, the number had increased to 299, exclusive of country correspondence students. The College lectures are also attended by considerable numbers of private students qualifying for certificates as Infant, Kindergarten or Primary teachers. A Training College Hostel has been established and a Correspondence class formed for country teachers desirous of qualifying for the Infant Teachers' Certificate. The students at the Hostel receive training in domestic economy. Three city and five country practising schools are attached to the Training College. The University High School gave teaching practice to 67 student teachers in 1914, of whom 56 were non-departmental. 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 in three groups, i.e., those training for secondary teacher's certificate, for sub-primary teachers, and for primary teachers.

(iii.) *Queensland.* In connection with the newly-established Teachers' Training College in Brisbane, 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. 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.

(iv.) *South Australia.* During the year 1910 the system of training in force in South Australia was remodelled and improved. Prior to this 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 76 students in the Training College in 1914. At the Adelaide High School there were 160 students training for teachers at the end of 1914. 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.

(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 1914 was 114. 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. At the Claremont Infants' School a room has been set apart for work on Montessori lines.

(vi.) *Tasmania.* In this State the scheme for training teachers has recently been remodelled with a view to increased efficiency, and the new provisions came into operation in 1914. Prior to entering the Training College, students will be required to attend a High School for four years. After obtaining the leaving certificate, the candidates will be drafted to selected schools to serve as junior teachers for a year, in order to gain such knowledge as will enable them to more fully appreciate the professional training at the College in the following year. Trainees will attend at the University for instruction in the higher branches of certain subjects, and in some cases will be given a second and third year to enable them to qualify for Arts or Science degrees. During the year 1914 there were 114 students in attendance at the Training College. There is a

Practising School attached to the College, and a Model Small School has been established for the purpose of training students who wish to take charge of small country schools. Periodic meetings of teachers and inspectors have proved helpful in fostering a spirit of activity. The principal of the Training College is also Lecturer in Education at the University. During the year 1914 two Summer Schools were held, one at Hobart and one at Launceston, in order to give teachers of small schools in the country instruction in the best methods of management. These were attended by 80 country school teachers.

11. **School Savings Banks.**—Returns shew that these institutions are in existence in three States. In New South Wales, there were 737 banks at the end of 1914, the deposits amounting to £32,985, and withdrawals to £31,886. Since the establishment of the banks in 1887, deposits totalled £498,216, and withdrawals £485,252. Of the latter sum £114,545 was placed to the children's accounts in Savings Banks. In South Australia, 360 schools had 16,274 depositors, with £6915 to their credit; and in Western Australia, there were 331 school banks, with 19,458 depositors and £24,992 to their credit.

12. **Expenditure on State Schools.**—The net expenditure on State education during 1901 and for the five years ended 1914 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 1910-14.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1901 ...	623,734	656,907	256,245	152,006	89,694	37,710	...	1,816,296
1910 ...	979,775	788,246	323,372	177,827	172,470	74,907	...	2,516,597
1911 ...	1,048,584	834,276	351,942	198,979	187,301	84,317	629	2,706,028
1912 ...	1,285,410	893,649	393,543	217,874	220,780	86,500	674	3,098,430
1913 ...	1,318,326	975,977	432,751	243,094	258,171	91,513	1,942	3,321,774
1914 ...	1,699,521	995,120	458,466	254,485	290,929	105,147	1,830	3,805,498

The expenditure per head of average attendance for each of the years given above will be found in the succeeding table. As the figures shew, New South Wales has the highest average, followed by Western Australia and Victoria, the lowest rate being in Tasmania. The increase in the number of small schools was chiefly responsible for the growth of expenditure in the western state in 1912, the expenditure on primary education alone shewing an increase of £23,000 as compared with the preceding year.

COST PER HEAD OF AVERAGE ATTENDANCE, STATE SCHOOLS, 1901 and 1910-14.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wth.
	£ 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
1910	6 4 5	5 8 0	4 13 2	4 4 9	6 5 8	4 3 4	...	5 10 5
1911	6 10 5	5 13 11	5 0 5	5 12 10	6 7 2	4 13 0	10 9 7	5 16 8
1912	7 10 4	5 12 1	5 1 9	5 6 8	6 14 0	4 8 5	9 9 10	6 4 11
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	8 18 9	5 17 0	5 10 1	5 9 11	7 11 1	4 13 2	18 9 8	6 19 10

Expenditure on school buildings in each of the years quoted was as follows:—

EXPENDITURE ON STATE SCHOOL BUILDINGS, 1901 and 1910-14.
(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	Northern Territory.	C'wealth.
	£	£	£	£	£	£	£	£
1901 ...	57,663	36,040	33,421	13,656	49,073	7,762	...	197,615
1910 ...	191,188	118,556	50,668	44,025	47,637	16,957	...	469,031
1911 ...	176,194	117,048	53,953	35,581	58,406	16,548	...	457,730
1912 ...	287,522	167,657	67,637	40,855	73,920	9,423	2,117	649,131
1913 ...	347,183	158,028	77,715	59,385	61,464	16,456	791	721,022
1914 ...	221,348	198,377	107,113	56,840	36,513	20,233	...	640,424

The net total cost and the net cost per scholar in average attendance during the year 1914 were as follows:—

NET TOTAL COST, STATE SCHOOL EDUCATION, 1914.
(COMMONWEALTH.)

Item.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	N. T.	C'wealth.
	£	£	£	£	£	£	£	£
Net cost of education, including buildings ...	1,920,869	1,193,497	565,579	311,325	327,442	125,380	1,830	4,445,922
Per scholar in average attendance ...	£10 1/2	£7 6/3	£6 15/9	£6 14/6	£8 10/0	£5 11/1	£18 9/8	£8 3/3

The average for the Commonwealth in 1901 was £4 9s. 3d. per scholar in average attendance.

§ 3. Private Schools.*

1. **School Teachers, etc., in 1914.**—The following table shews the number of Private Schools, together with the teachers engaged therein, and the enrolment and average attendance in 1914:—

PRIVATE SCHOOLS, 1914.
(COMMONWEALTH.)

State.	Schools.	Teachers.	Enrolment.	Average Attendance.
New South Wales ...	717	3,674	64,577	55,431
Victoria ...	512	1,844	50,480	40,000
Queensland ...	163	833	18,755	15,996
South Australia ...	166	658	12,077	9,661
Western Australia ...	123	446	10,709	9,454
Tasmania ...	87	322	6,153	4,557
Northern Territory ...	1	2	62	42
Commonwealth ...	1,769	7,779	162,813	135,141

The totals for New South Wales include returns from the Sydney Grammar School, which receives a yearly State subsidy of £1500, and which, in 1914, had an enrolment of 571, and an average attendance of 537.

It is stated that the decrease in the Victorian figures is due to the closing of certain of the smaller inefficient schools. Some of the Secondary Schools in the country towns have also closed, and their pupils and a portion of the teaching staff have been absorbed by the State Higher Elementary or District Schools.

* Private Schools include all schools not wholly under State control. The term "private" though popularly applied, is, of course, a misnomer.

The figures for Queensland include the returns from Grammar Schools, of which there are ten—six for boys and four for 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 an additional £250 to provide district scholarships, of which five were allotted to each school from 1st January, 1911. During the year all the grammar schools were inspected 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 1907 to 1914 are as follows:—

ENROLMENT AND ATTENDANCE AT PRIVATE SCHOOLS, 1891 to 1914.

(COMMONWEALTH.)

Year.	Enrolment.	Average Attendance.	Year.	Enrolment.	Average Attendance.
1891. ...	124,485	99,588	1910 ...	158,694	129,872
1901 ...	148,659	120,742	1911 ...	160,794	132,588
1907 ...	152,037	122,878	1912 ...	164,085	133,940
1908 ...	152,399	125,530	1913 ...	161,204	132,679
1909 ...	164,428	127,069	1914 ...	162,813	135,141

In view of the growth in population during the period covered by the table, the increase in enrolment and attendance does not afford room for much satisfaction. The returns will no doubt in future be to some extent adversely affected by the development of the Higher State Schools alluded to in a preceding paragraph.

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, 13 non-State Schools were inspected by the Departmental Inspector of Secondary Education, making a total of 50 registered schools. It is pointed out by the inspector that the schools obtaining registration under this Act will gain an advantage over non-registered schools which will tend to increase their yearly capital value.

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, nevertheless 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. 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, 1914.

State.	No. of Schools.	Average Attendance.	Permanent Instructors.	Student Teachers.	Voluntary Assistants.
New South Wales (Sydney) ...	8	400	3	45	8
(Newcastle) ...	3	95	4	6	6
Victoria (Melbourne) ...	19	950	39	31	300
(Ballarat) ...	1	45	2	10	1
Queensland (Brisbane) ...	4	500	5	14	6
(Clermont) ...	1	17	1	1	1
South Australia (Adelaide) ...	6	350	8	24	1
Western Australia (Perth) ...	2	90	2	12	...
Tasmania (Hobart) ...	2	74	5	3	8
(Launceston) ...	1	35	1	2	3
Total ...	47	2,556	70	148	334

There is no separate training institution in Perth, but at each of the two Kindergartens the students receive instruction from the teacher in charge. The Ballarat institution is also visited by State School teachers with a view to gaining practical acquaintance with Kindergarten methods. In Tasmania practical and theoretical instruction is given to student teachers in the Hobart Free Kindergarten.

The institutions at Newcastle were closed in June, 1915.

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 twenty-four 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. For the year 1914 Government aid to the University was £41,533. At the inception of the University there were only three professorships. The present staff consists of twenty-three professors, including the Director of Military Science, nine assistant professors, and 103 lecturers and demonstrators. There are, in addition, 14 honorary lecturers, various honorary demonstrators, as well as various 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 eighteen professors, seventy lecturers and demonstrators, as well as sixty-five miscellaneous assistants. The Conservatorium of Music has a staff numbering thirty-six.

(iii.) *University of Adelaide.* This University was established by Act of Parliament in 1874. Its origin and progress was 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, thirty lecturers and eight assistant lecturers, exclusive of the staff at the Conservatorium, which numbers thirteen.

(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 five professors, one assistant professor, seven independent lecturers, and three demonstrators. Under Statute dated 13th April, 1905, the Zeehan School of Mines and Metallurgy was affiliated to the University.

(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 for mathematics and physics, with a liberal complement of lecturers and demonstrators. University extension lectures were delivered in 1914 at 10 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, as well as 13 lectureships. 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 1914:—

UNIVERSITIES.—TEACHERS AND STUDENTS, 1914.

University.	Professors.	Lecturers.	Students attending Lectures.		
			Matriculated.	Non-matriculated.	Total.
Sydney	32	103	1,283	413	1,696
Melbourne	18	70	...	...	1,310*
Adelaide	11	38	425	291	716†
Tasmania (Hobart) ...	6	7	97	10	107
Queensland (Brisbane)	4	20	231	32	263
West. Australia (Perth)	8	13	118	64	182

* Exclusive of 65 music students. † Exclusive of 324 music students.

3. **University Revenues.**—The income of the Universities from all sources during the year 1914 was as follows:—

UNIVERSITIES.—REVENUE, 1914.

University.	Government Grants.	Fees.	Other.	Total.
	£	£	£	£
Sydney	41,533	20,151	28,999	90,683
Melbourne	31,842	36,690	8,361	76,893
Adelaide	12,007	9,879	5,788	27,674
Tasmania (Hobart) ...	6,000	1,555	1,154	8,709
Queensland (Brisbane) ...	13,500	4,050	1,636	19,186
Western Australia (Perth) ...	13,500	...	1,677	15,177

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 ...	17,000
Hon. Sir W. Macleay	6,000	John Dixon Wy-			
Mrs. Hovell	6,000	selaskie	8,400		
Thos. Walker	6,200	David Kay	5,764		
Other donations ...	53,714	Henry Dwight ...	5,000		
		Wm. Thos. Mollison	5,000		
		Other donations ...	49,889		
Total	£ 467,714	Total	£ 179,654	Total	£ 155,910

In addition to the sum of £6000 shewn above, the Hon. Sir W. Macleay also presented the Museum of Natural History to the University.

The credit balances of some of the above endowments now amount to very considerable sums. For example, on the 31st December, 1914, the Challis Fund amounted to over £310,000, and the Fisher bequest to over £40,000. The cash balance at the end of 1914 on account of all private foundations to Sydney University stood at £550,710. In the case of Melbourne University the Stewart fund on the 31st December, 1913, stood at £30,401, the Hastie at £19,266, the Dixon fund at £12,638, etc.

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 184 acres of land with a fine mansion. Private benefactions to the University of Tasmania and the newly-established University of Queensland amount to £3075 and £9928 respectively.

4. **University Extension.**—These 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 arranged for courses of lectures in Queensland, Victoria, and Western Australia. In 1914 the average attendance at extension lectures in New South Wales was 135.

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 4200 in 1914.

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. For 1914 a course of nine lectures was provided, at which the attendance numbered 500. The University of Tasmania provides for courses of lectures at Launceston, which are delivered weekly by members of the University teaching staff. Attendance at extension lectures in 1914 numbered 55.

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. University extension lectures were delivered at 10 important country centres in 1914.

In Western Australia twenty-seven lectures were delivered during the year at various centres. The professor of agriculture also gave lectures in some of the chief farming districts.

5. **Workmen's Tutorial Classes.**—Chiefly as the result of a visit to Australia in 1913 by Mr. Mansbridge, 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. In New South Wales a Workers' Educational Association was at once formed, and similar action has since been taken in all the States of the Commonwealth. The Government of New South Wales granted the University of Sydney the sum of £1000 to initiate the scheme for tutorial classes. Under a director of tutorial classes the movement has grown in that State until the number of classes in 1916 was 30, and the number of students about 700, while the Government grant was increased to £3000. In addition to the tutorial classes, the W.E.A. arranges for public lectures, public conferences, and correspondence courses for country students. The Government of Victoria has granted to the Melbourne University an annual sum of £300 for tutorial classes. Four classes and several study circles have been at work during the past two years. The Council of the University has formulated a large scheme, and it is proposed to ask the State for a grant of £2500, of which £1250 is to be expended on tutorial classes. In 1914 the Government granted a sum of £500 to the University of Tasmania for tutorial classes, and it is proposed to increase this amount. Four classes have been organised in addition to preparatory classes. The Queensland Government in 1916 granted a sum of £1500 to the University in aid of tutorial classes, of which two were already in existence. Similar activities have been

undertaken in South Australia and Western Australia, but without financial aid. The great majority of the students are artisans, and the principal subject chosen in all States is Economics, though occasionally Sociology, Literature, Philosophy, Psychology and Biology are selected.

§ 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 Australasia is comparatively insignificant. The question of apprenticeship is dealt with 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 Trades 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 two, one at Sydney and one at Newcastle. 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 :—

TECHNICAL EDUCATION, NEW SOUTH WALES, 1910-14.

Year.	Number of Classes.	Number of Enrolments.	Average Weekly Attendance.	Number of Lecturers and Teachers.	Fees Received.
					£
1910	886	22,822	13,255	334	15,873
1911	875	23,621	15,074	329	16,395
1912	793	28,082	17,749	320	15,846
1913	582	16,193	12,214	286	13,760
1914	513	13,687	11,523	289	10,779

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. Prior to the passing of the Education Act of 1910, the Technical Schools were managed by local Councils, receiving grants from the Education Department. It is now proposed to place them directly under the control of the Department, and some of the smaller institutions have been transferred already, while the larger schools will be taken over as soon as the necessary arrangements can be made. 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 at Melbourne, Ballarat, Bendigo, and Geelong. At present there are 24 Technical Schools receiving State aid, and of these 11 afford instruction in Science, Art, and Trade subjects; 4 in Art and Science; 2 in Art and Trade; 1 in Science and Trade, while 4 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 eight Junior Technical Schools in existence, giving a two years' course of instruction to boys between the ages of 12½ and 15 years.

Provision has been made for the establishment of Technical Schools at Brunswick, Footscray, South Melbourne, and Ballarat. The Committee of the Mechanics' Institute at Prahran is erecting a building to cost £18,000, on the understanding that the Department will lease portion of it to establish a Technical School.

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, 1910-14.

Year.					No. of Subjects Taught.	No. of Enrolments.	Fees Received.
							£
1910	...	...	...	...	88	7,107	13,631
1911	...	...	...	...	90	7,008	12,991
1912	...	...	...	...	101	7,923	11,664
1913	...	...	...	...	92	9,036	13,054
1914	...	...	...	...	103	10,249	12,968

The average attendance in 1914 was 6,487.

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 1914 there were 15 colleges in operation—Bowen, Bundaberg, Cairns, 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 1910 is shewn in the following table:—

TECHNICAL EDUCATION, QUEENSLAND, 1910-14.

Year.				Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
								£
1910	...	...	...	312	5,744	3,250	195	8,884
1911	...	...	...	381	7,089	5,567	219	10,349
1912	...	...	...	363	7,851	5,589	238	9,794
1913	...	...	...	353	7,958	6,009	247	11,069
1914	...	...	...	355	7,820	6,481	255	11,326

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. The Department now pays about £2000 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 14 years, coupled with the establishment of High Schools, will result in a more effective co-ordination between ordinary and technical education in the State.

5. **South Australia.**—A considerable amount of attention has been given to technical education in South Australia, particularly in connection with the mining industry. The School of Mines and Industries in Adelaide was founded in 1889. Individual students enrolled in 1913 numbered 1878. The number of distinct subjects taught was 53. There are in addition Schools of Mines at Moonta, Port Pirie, Kapunda, and Gawler. A School of Design, Painting, and Technical Arts has been established in Adelaide, with branches at Port Adelaide and Gawler. The conditions connected with

the country Technical Schools, viewed from the standpoint of the Department of Education, are not considered satisfactory. While the Government bears the bulk of the cost of maintenance, the Minister for Education is not consulted in regard to the organisation, curriculum, or staffing of the schools. Although good work has been accomplished, the system of control of Technical Schools by independent councils is declared by the Director of Education to be no longer suitable, and stress is laid on the necessity for co-ordinating technical effort under one central authority. The development since 1910 is shewn in the table hereunder :—

TECHNICAL EDUCATION, SOUTH AUSTRALIA, 1910-14.

Year.			Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
							£
1910	...	...	199	4,646	*	83	3,537
1911	...	...	185	4,456	*	91	3,547
1912	...	...	201	4,760	3,445	95	3,526
1913	...	...	218	4,885	3,473	115	3,459
1914	...	...	229	4,947	3,508	127	3,365

* Not available.

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. There are branch institutions at Midland Junction, Fremantle, Claremont, Kalgoorlie, Boulder, and Geraldton. In addition, Continuation Classes are held at Perth, Fremantle, Midland Junction, Claremont, Kalgoorlie, Coolgardie, Boulder, Day Dawn, Northam, Albany, Bunbury, Geraldton, Pingelly, Gwalia, and Collie, while it is proposed to open classes at other centres as occasion demands. The schools are all under the control of the Education Department, the officer entrusted with their supervision being styled Director of Technical Education. The Continuation Classes remained a charge on the Technical Education vote to the end of June, 1913. 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. Up to 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. Returns for the last five years are embodied in the table hereunder :—

TECHNICAL EDUCATION, WESTERN AUSTRALIA, 1910-14.

Year.			No. of Classes.	Enrolments.	No. of Teachers.	Fees Received.
						£
1910	...	...	142	2,007	122	3,683
1911	...	...	230	4,595	157	3,332
1912	...	...	304	5,090	163	3,144
1913	...	...	230	2,346	77	1,941
1914	...	...	306	3,353	89	969

The figures for the last two years include Technical Classes only, and not Evening Continuation Classes as in previous years. From the beginning of 1914 no fees were charged.

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 three other schools under the control of the Education Department, each managed by a committee appointed by the Governor in Council. Tasmanian Technical Schools naturally devote their chief attention to mining and mineralogy. Statistics for the last five years are given as follows:—

TECHNICAL EDUCATION, TASMANIA, 1910-14.

Year.	No. of Classes.	Enrolments.	Average weekly Attendance.	No. of Teachers.	Fees Received.
					£
1910 ...	49	614	267	33	681
1911 ...	54	833	295*	32	667
1912 ...	62	993	300*	36	768
1913 ...	76	1,013	787	41	918
1914 ...	78	900	700	40	936

* Estimated.

8. **Attendance at Commonwealth Technical Schools.**—The table hereunder shews the enrolment and attendance at Technical Schools and classes in the Commonwealth during 1914:—

ENROLMENT AND ATTENDANCE AT TECHNICAL SCHOOLS, 1914. (COMMONWEALTH.)

State.	Enrolment.	Average Attendance.
New South Wales ...	13,687	11,523
Victoria ...	10,249	6,487
Queensland ...	7,820	6,481
South Australia ...	4,947	3,508
Western Australia ...	3,355	*
Tasmania ...	900	700

* Not available.

9. **Expenditure on Technical Education.**—The expenditure on technical education in each State during the period 1910 to 1914 is shewn below:—

EXPENDITURE ON TECHNICAL EDUCATION, 1910-14. (COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1910 ...	71,002	32,217	20,612	13,476	9,987	3,055	150,349
1911 ...	77,160	41,030	34,611	13,017	14,590	3,726	184,134
1912 ...	99,265	42,541	44,073	13,906	27,536	3,318	230,639
1913 ...	132,305	49,139	63,589	10,532	26,886	3,529	285,980
1914 ...	72,718	73,654	83,722	12,889	13,552	3,493	260,028

The figures in the preceding table represent an expenditure of about 1s. 1d. per head of the population of the Commonwealth, as compared with 15s. 6d. 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 £7788 in New South Wales, £8090 in Victoria; £54,177 in Queensland, and £4,083 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 table hereunder:—

BUSINESS COLLEGES AND SHORTHAND SCHOOLS, Etc., 1914.

State.	Schools.	Teachers.	Students Enrolled.		Aver. Attendances.		Fees Recd. £
			Males.	Females.	Males.	Females.	
New South Wales ...	18	98	2,511	4,068	1,152	1,423	25,389
Victoria ...	15	171	3,764	1,695	2,667	1,331	...
Queensland*	...	...	...	...	...	...	...
South Australia ...	4	37	781	595	533	351	8,214
Western Australia ...	7	41	762	639	512	474	5,602
Tasmania ...	3	7	70	143	29	88	1,133

* Included in Private Schools. † Not available.

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. (a)	Read & write	188,543	296,741	507,067	835,562	1,071,935
	Read only...	46,024	56,391	49,372	43,539	29,728
	Cannot read	116,293	149,866	193,386	244,853	253,183
Vic. ...	Read & write	328,362	473,464	653,346	908,490	998,010
	Read only...	57,351	70,953	47,950	32,794	21,852
	Cannot read	152,915	180,781	160,270	198,556	181,208
Q'nsland	Read & write	17,152	74,940	136,436	276,381	376,294
	Read only...	3,680	12,080	13,657	14,618	11,737
	Cannot read	9,227	33,084	63,432	102,719	110,098
S.A. (b)	Read & write	72,190	117,349	200,057	236,514	290,748
	Read only...	18,535	21,509	15,267	9,571	8,283
	Cannot read	36,105	46,768	64,541	74,346	64,126
W. Aus.	Read & write	7,683	14,166	19,684	34,254	150,099
	Read only...	1,301	2,717	2,430	2,061	3,107
	Cannot read	5,853	7,902	7,594	13,467	30,918
Tas. ...	Read & write	48,282	55,941	74,966	103,138	133,579
	Read only...	13,136	13,946	9,606	6,287	3,907
	Cannot read	28,559	29,441	31,133	37,242	34,989
North'rn T'rt'y (c)	Read & write	...	...	...	...	...
Federal T'rt'y (d)	Read only...	...	...	...	...	...
	Cannot read	...	...	...	...	...
	Read & write	...	...	...	...	...
C'wealth	Read only...	...	...	...	...	...
	Cannot read	...	...	...	...	...
	Read & write	662,212	1,037,601	1,591,556	2,394,339	3,020,665
	Read only...	140,027	177,596	138,282	108,870	78,614
	Cannot read	348,952	447,842	520,356	671,183	674,522
						671,386

(a) Including Federal Territory prior to 1911.

(c) Included in South Australia prior to 1911.

(b) Including Northern Territory prior to 1911.

(d) 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
(a)	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.A. (b)	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. Aus.	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
Tas. ...	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
N. T. (c)	Read & write ...	...	...	...	...	195
	Read only ...	...	...	...	...	...
	Cannot read ...	...	...	...	...	118
Federal	Read & write ...	...	...	...	...	322
Ter. (d)	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

(a) Including Federal Territory prior to 1911. (b) Including Northern Territory prior to 1911. (c) Included in South Australia prior to 1911. (d) 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 will 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. (a)	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
Queensl'd	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. Aus. (b)	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. Aus. ...	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
Tasmania	Read & write	6,160	6,160	6,160	6,704	7,620	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 Territ'y (c)	Read & write	...	...	...	...	...	6,230
	Read only...	...	...	...	...	...	...
	Cannot read	...	...	...	...	...	3,770
Federal Territ'y (d)	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

(a), (b), (c), (d), see notes to preceding table.

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 seven years, was as follows. The figures refer to marriages in the Commonwealth in respect of which information was obtainable.

ILLITERACY AS SHEWN BY MARRIAGE SIGNATURES, 1861 to 1914.

(COMMONWEALTH.)

Year.	Proportion Signing with Marks of Total Persons Married.						
	Males.	Females.	Total.	Year.	Males.	Females.	Total.
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
1861 ...	18.50	30.69	24.60	1909 ...	0.65	0.62	0.64
1871 ...	10.55	16.40	13.49	1910 ...	0.56	0.59	0.58
1881 ...	4.34	6.78	5.56	1911 ...	0.56	0.54	0.55
1891 ...	2.27	2.40	2.34	1912 ...	0.43	0.45	0.44
1901 ...	1.35	1.29	1.32	1913 ...	0.36	0.38	0.37
1906 ...	0.71	0.73	0.72	1914 ...	0.41	0.38	0.39

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 last seven 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 the origin of the Royal Society of New South Wales dates as far back as 1821, when it was founded 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 a society whose name varied as the years rolled on. It was called the Australian Philosophical Society in 1850. In 1856 the old Australian Society merged into a resuscitated Philosophical Society of New South Wales, and its papers were published up to 1859 in the Sydney Magazine of Science and Art (2 vols. 1858-9). Its present title dates from 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 the end of 1915 forty-eight volumes had been published. The exchange list comprises the names of 383 kindred societies. At the present time the library contains about 21,750 volumes and pamphlets, valued at about £7700. Income and expenditure for the year ended 31st March, 1915, were £1503 (Government grant £400) and £2004 respectively. The Society had on the same date 302 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 1915 fifty-two volumes of publications 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 10,000 volumes. Income for the year 1915 amounted to £462, and expenditure to £476.

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 latest date the members numbered 108; publications issued, 27 volumes; library, 5000 volumes; societies on exchange list, 166. Income and expenditure in 1915 amounted to £145 and £133 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 1915 the number of members was 94. The income for the year 1915 was £567, and expenditure £474. Up to 1915 the society had issued forty-one volumes of proceedings and six parts of memoirs, exclusive of several individual papers published in earlier years. The exchange list numbers about 195. The library contains 2,500 volumes.

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 the issue of reports of proceedings. It numbers at present 85 members, whose subscriptions form its main source of revenue. Income and expenditure in 1914-15 were respectively £61 and £78. Five volumes of proceedings have been issued as *Journal of the Natural History and Science Society of Western Australia*. Its publications are exchanged with 61 institutions at home and abroad. The library contains 285 bound volumes, besides unbound journals, pamphlets, etc.

The Royal Society of Tasmania (the first Royal Society outside the United Kingdom, was founded by Sir Eardley Wilmot, Lieutenant-Governor of Van Diemen's Land, on the 14th October, 1843. 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 55 annual volumes of proceedings, possesses 110 members, 15 corresponding members, exchanges with 214 kindred bodies, and has a library containing 12,000 volumes in addition to manuscripts, etc. Income for the year 1915 was £118, and expenditure £121.

(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 £4000. The library contains 4000 volumes, valued at £400. Up to date, fourteen 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 £6000. Up to date, forty 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 1915 was 161. Income for the year came to £1164, and expenditure to £912. The special revenue for research purposes only was £2549, and the expenditure £2134. The British Astronomical Association has a branch in Sydney, and in some of the States the British Medical Association has branches.

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 1700, 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 city :—

METROPOLITAN PUBLIC LIBRARIES.

City.	Number of Volumes in—			Total.
	Reference Branch.	Ordinary Lending Branch.	Country Lending Branch.	
Sydney ...	256,061	*	14,204	270,265
Melbourne ^o ...	230,370	32,977	...	263,347
Brisbane ...	38,563	...	...	38,563
Adelaide ...	92,804	30,550	...	123,354
Perth ...	96,136	10,997	...	107,133
Hobart ...	20,585	...	...	20,585

* 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, 1914, the books numbered 33,000.

The Mitchell Library in Sydney consisted of over 60,000 volumes and pamphlets, and 300 paintings, principally relating to Australasia, valued at £100,000, 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 81,678 volumes in the library.

The Launceston Mechanics' Institute in Tasmania possesses a library of 27,000 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. Terr.
Number of libraries ...	464	500	219	208	264	31	3
Estimated number of books ...	1,066,000	1,138,000	368,667	506,000	240,000	103,000	5,400

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 100,000 and 20,000 volumes respectively, and the Parliamentary Library with over 52,000 volumes. There are also 2733 libraries, with an estimated total of 367,000 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 1914 was 153,000, and the average attendance on week-days 404, and on Sundays 915. The expenditure for 1914 amounted to £10,363. A valuable library containing over 20,000 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 also accessible to the public. There is a fine Technological Museum in Sydney, with branches in six country centres, the combined institutions containing over 115,000 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 1914 was about 209,000.

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 expenditure for specimens, furniture, etc., in 1914 was £618, and salaries and wages £2610. The Industrial and Technological Museum, opened in 1870, contains upwards of 55,000 specimens. There is a fine Museum of Botany and Plant Products in the Melbourne Botanic Gardens. 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 £84,107, of which buildings absorbed £19,034, purchases £25,929, and salaries £39,144. The number of visitors during the year was 79,771, of whom 32,763 visited the institution on Sundays. The Queensland Geological Survey Museum has branches in Townsville, opened in 1886, and 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 77,000 visitors in 1914.

The latest available returns shew that the Western Australian Museum contains altogether 63,000 specimens, of an estimated value of £72,000. The Museum is housed in the same building as the Art Gallery, and the visitors to the combined institutions during the year reached 59,000 on week days and 17,000 on Sundays. The expenditure totalled £4075, of which salaries absorbed £2845.

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 £500.

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 £148,000, comprise 419 oil paintings, 396 water colours, 564 black and white, 165 statuary and bronzes, and 411 ceramics, works in metal and miscellaneous. During 1914 the average attendance on week days was 553, and on Sundays 2185.

The National Gallery at Melbourne at the end of 1914 contained 580 oil paintings, 4590 objects of statuary, bronzes and ceramics, and 14,098 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 £319,000. Several munificent bequests have been made to the institution. That of Mr. Alfred Felton, given in 1904, amounts to about £8000 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 1914 the Ballarat Art Gallery contained 218 oil paintings and 161 water colours, etc., while there are some valuable works of art in the smaller galleries at Bendigo, 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 87 oil paintings, 23 water colours, 99 black and white, and 27 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 £2000 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 a bequest of £16,500 in 1903 from the estate of Dr. Morgan Thomas, and of £3000 in 1907 from Mr. David Murray. At the latest available date there were in the Gallery 230 oil paintings, 72 water colours, and 23 statuary. Building and site are valued at upwards of £31,000. Visitors during the year 1914 numbered 111,000.

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 £5000, 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 £5000. The building is valued at £6000. The annual attendance is 36,000, and for Sundays 13,000.

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, 1910-11 to 1914-15.

State or Territory.		1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
		£	£	£	£	£
New South Wales	Total	£ 1,221,175	1,416,015	1,609,734	1,735,404	1,651,571
	Per head	14/10	16/8	18/1	18/11	17/9
Victoria ...	Total	£ 1,003,251	1,142,399	1,122,854	1,147,319	1,218,459
	Per head	15/5	17/1	16/3	16/3	17/0
Queensland ...	Total	£ 503,021	535,082	622,238	702,491	807,915
	Per head	16/9	17/2	19/6	21/6	23/10
South Australia...	Total	£ 275,671	298,610	323,787	342,209	342,464
	Per head	13/6	14/3	15/1	15/6	15/6
Western Australia	Total	£ 251,071	298,530	319,723	349,371	351,516
	Per head	18/1	20/3	20/10	21/9	21/9
Tasmania ...	Total	£ 92,036	95,352	101,008	112,364	124,791
	Per head	9/6	9/10	10/3	11/2	12/5
Northern Territ'y	Total	£ ...	1,477	2,516	3,916	2,073
	Per head	...	9/1	14/6	21/4	10/5
Commonwealth						
	Total	£ 3,346,225	3,787,465	4,101,860	4,393,074	4,498,789
	Per head	15/1	16/7	17/4	18/0	18/3

The comparatively heavy increase in Queensland during recent years is due to the inclusion of expenditure in connection with the University.

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 1914 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, 1910 to 1914.

State.	Area of State in Sq. Miles.	1910.	1911.	1912.	1913.	1914.
New South Wales ...	310,372	2,447	2,487	2,554	2,592	2,627
Victoria... ..	87,884	1,605	1,640	1,662	1,753	1,739
Queensland ...	670,500	957	1,011	1,084	1,108	1,112
South Australia ...	380,070	465	502	522	500	556
Western Australia ...	975,920	474	481	487	477	482
Tasmania ...	26,215	234	232	237	237	231
Northern Territory ...	523,620	...	22	25	26	25
Commonwealth ...	2,974,581	6,182	6,375	6,571	6,693	6,772

The figures for New South Wales for 1914 are exclusive of fifty "black trackers," i.e., natives employed in detection of offenders chiefly in outlying districts, and five female searchers. In Queensland there were one hundred native trackers. The South Australian returns for 1914 are exclusive of nine "black trackers" and one female searcher, and the Tasmanian returns are exclusive of a female searcher. The Northern Territory had twenty-four "black trackers" in 1914. There are also fifty-four "black trackers" in Western Australia and four matrons 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, 1910 to 1914.
(COMMONWEALTH.)

State.	No. of Persons per Sq. Mile, 1911 Census.	Inhabitants to each Police Officer.				
		1910.	1911.	1912.	1913.	1914.
New South Wales ...	5.31	667	664	680	698	705
Victoria ...	14.97	799	810	816	795	819
Queensland ...	0.90	622	608	582	589	607
South Australia ...	0.46	863	819	808	867	790
Western Australia ...	0.29	572	596	619	658	671
Tasmania ...	7.29	816	820	809	827	860
Northern Territory ...	...	...	151	134	141	150
Commonwealth ...	1.50	707	704	707	718	726

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 1914, no less than fifty-seven 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 1910 to 1914 is shewn in the following table. Cost of buildings has been excluded from the return:—

COST OF POLICE FORCES IN THE COMMONWEALTH, 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
	£	£	£	£	£
New South Wales ...	504,146	515,569	578,767	593,406	592,694
Victoria ...	337,670	345,889	348,227	354,264	380,724
Queensland ...	244,945	258,538	306,431	304,817	302,633
South Australia ...	96,769	107,872	116,847	129,834	132,445
Western Australia ...	120,420	127,458	129,556	126,532	133,452
Tasmania ...	40,408	41,535	43,236	45,237	45,972
Northern Territory ...	...	9,708	10,609	10,614	10,307
Commonwealth ...	1,344,358	1,406,569	1,533,673	1,564,704	1,598,227

The total for New South Wales includes £31,000 payment to Police Superannuation Fund. Similar payments in Victoria and Queensland amount to £22,000 and £28,000 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 1910 to 1914 was as follows:—

COST OF POLICE PER INHABITANT, 1910 to 1914.
(COMMONWEALTH.)

State.	1910.	1911.	1912.	1913.	1914.
	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ...	6 2	6 2	6 8	6 7	6 4
Victoria ...	5 2	5 1	5 2	5 1	5 4
Queensland ...	8 3	8 4	9 8	9 4	9 0
South Australia ...	4 10	5 2	5 6	6 0	6 0
Western Australia ...	8 11	8 8	8 7	8 1	8 3
Tasmania ...	4 3	4 4	4 6	4 7	4 7
Northern Territory ...	...	58 6	63 2	58 0	52 0
Commonwealth ...	6 2	6 2	6 7	6 6	6 6

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.

§ 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 31).

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 1910 to 1914 :—

**PERSONS CHARGED BEFORE MAGISTRATES IN THE COMMONWEALTH,
1910 to 1914.**

State.	1910.	1911.	1912.	1913.	1914.
New South Wales ...	73,960	75,114	89,951	92,107	94,766
Victoria ...	52,060	44,526	53,087	56,058	57,977
Queensland ...	22,104	25,482	27,323	29,166	29,635
South Australia ...	8,328	8,435	10,685	11,818	10,693
Western Australia ...	13,260	13,862	15,092	16,442	17,879
Tasmania ...	7,079	6,597	7,084	7,101	6,481
Northern Territory...	...	92	219	139	203
Commonwealth ...	176,791	174,108	203,441	212,831	217,634

As the table shews, the number of charges at Magistrates' Courts in New South Wales increased during 1912 by nearly 20 per cent. It would, however, be rash to conclude that crime is therefore on the increase in that State, for a scrutiny of the detailed returns shews that the bulk of the increase took place in offences against good order, and in the indefinite "not included" class, which comprises breaches of various enactments, such as the Local Government Act, Commonwealth Defence Act, etc. These offences hardly come within the category of ordinary crime.

The considerable falling-off in the returns for Victoria during 1911 was due in large measure to the decline in summons cases under the Education Act, the figures for 1911 being 4695, as compared with 12,317 in the preceding year. An increase in summons cases accounted for the rise in the total for 1912, to which summonses contributed 33,273 cases, as against 25,128 in the previous year. A scrutiny of the summons returns shews that the rise was due largely to an increase in breaches of the Education Act, for which the figures advanced from 4695 in 1911 to 7470 in 1912. Further, the summons cases for 1912 include in the column "other" 2936 breaches of the Defence Act, this entry appearing, of course, for the first time in the 1912 returns. The above considerations afford an excellent illustration of the necessity for analysis of the total returns prior to drawing therefrom any deductions in regard to the increase or otherwise of criminality. (See also in this connection § 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 great importance. The actual number of convictions in connection with the persons who appeared before the lower courts in each year of the period 1910 to 1914 is, therefore, given hereunder. A separate line is added shewing the committals to higher courts.

CONVICTIONS AND COMMITTALS AT MAGISTRATES' COURTS, 1910 to 1914.

(COMMONWEALTH.)

State.		1910.	1911.	1912.	1913.	1914.
New South Wales	{ Convictions	63,671	65,058	77,611	79,079	81,217
	{ Committals	1,176	1,178	1,490	1,529	1,648
Victoria	{ Convictions	38,555	31,564	38,646	39,786	41,033
	{ Committals	551	564	571	611	571
Queensland	{ Convictions	19,805	23,072	24,996	26,782	27,244
	{ Committals	455	529	425	417	458
South Australia...	{ Convictions	7,229	7,303	9,184	10,447	9,280
	{ Committals	117	99	121	141	135
Western Australia	{ Convictions	11,433	11,936	13,251	14,590	15,849
	{ Committals	192	204	162	150	147
Tasmania	{ Convictions	6,250	5,756	6,108	6,471	5,852
	{ Committals	48	57	60	58	67
Northern Territory	{ Convictions	...	75	183	134	187
	{ Committals	...	...	8	2	2
Commonwealth	{ Convictions	146,943	144,764	169,979	177,289	180,662
	{ Committals	2,539	2,631	2,837	2,908	3,028

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 Parliaments. 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, 1910 to 1914.
(COMMONWEALTH.)

State.	1910.	1911.	1912.	1913.	1914.
New South Wales ...	5,224	5,075	5,904	6,161	6,100
Victoria ...	2,673	2,362	2,655	2,405	2,705
Queensland ...	1,479	1,540	1,495	1,651	1,497
South Australia ...	487	488	554	571	665
Western Australia ...	996	1,025	1,053	1,111	1,237
Tasmania ...	609	557	566	657	612
Northern Territory ...	...	6	11	12	28
Commonwealth ...	11,468	11,053	12,238	12,568	12,844

Compared with the population the above figures give the following results per 10,000 inhabitants:—

CONVICTIONS FOR SERIOUS CRIME PER 10,000 INHABITANTS, 1910 to 1914.
(COMMONWEALTH.)

State	1910.	1911.	1912.	1913.	1914.
New South Wales ...	32.0	30.7	33.9	34.1	32.9
Victoria ...	20.8	17.8	19.6	17.3	19.0
Queensland ...	25.0	25.0	23.7	25.3	22.2
South Australia ...	12.1	11.9	13.1	13.2	15.1
Western Australia ...	36.7	35.7	34.9	35.4	38.2
Tasmania ...	31.9	29.3	29.5	33.5	30.9
Northern Territory ...	...	18.1	32.7	32.8	74.6
Commonwealth ...	26.2	24.6	26.3	26.2	26.1

5. Decrease in Crime.—The figures quoted in the preceding table show that during the last five years the rate of serious crime has remained practically constant, while if the comparison be carried back to 1881 the position is seen to be 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, 1911, and 1914. Only the more serious offences, particularised in the preceding paragraph, have been taken into consideration.

RATE OF CONVICTIONS FOR SERIOUS CRIME IN THE COMMONWEALTH.

Year.	Convictions per 10,000 Persons.					
1881	69.3
1891	44.8
1901	29.1
1911	24.6
1914	26.1

6. Need of Statistics of Distinct Persons.—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 drunkenness, petty larcenies, etc., in which the same offender appears before the court many times in the course of the year. In a few of the States it is possible to obtain the number of distinct persons arrested, but there are no means of arriving at the total distinct persons convicted before the magistrates in any State.

7. 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.

8. **Drunkenness.**—The number of cases of drunkenness and the convictions recorded in connection therewith during the period 1910 to 1914 will be found in the following table:—

CASES AND CONVICTIONS.—DRUNKENNESS, 1910 to 1914.

(COMMONWEALTH.)

State.	1910.		1911.		1912.		1913.		1914.	
	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.
New South Wales ...	27,542	27,380	29,398	29,299	33,915	32,720	32,676	32,467	33,393	33,208
Victoria ...	13,719	7,272	13,603	7,557	13,524	7,446	14,782	7,676	14,437	7,425
Queensland ...	10,870	10,849	12,824	12,767	14,225	14,213	14,852	14,840	16,510	16,443
South Australia ...	4,383	4,323	4,673	4,627	5,470	5,416	5,994	5,962	5,282	5,243
Western Australia ...	4,550	4,506	4,857	4,808	4,908	4,855	5,353	5,302	5,795	5,770
Tasmania ...	761	741	756	740	644	633	729	721	685	661
Northern Territory ...	...	...	34	34	80	80	61	61	64	64
Commonwealth ...	60,825	55,071	66,145	59,832	71,766	65,363	74,447	67,029	76,166	68,814

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 1910 to 1914 are given hereunder :—

CONVICTIONS FOR DRUNKENNESS PER 10,000, 1910 to 1914.

(COMMONWEALTH.)

State.	1910.	1911.	1912.	1913.	1914.
New South Wales ...	167.7	167.0	188.1	179.3	179.3
Victoria ...	56.7	56.8	54.9	55.1	52.2
Queensland ...	183.4	207.8	225.0	227.4	243.6
South Australia ...	107.7	112.5	128.4	137.5	119.1
Western Australia ...	166.2	167.7	161.1	168.9	178.4
Tasmania ...	38.8	38.9	33.0	36.8	33.3
Northern Territory...	...	102.4	238.1	166.6	170.6
Commonwealth ...	126.0	133.2	140.7	139.5	139.9

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.

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 habit 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 1914-15, 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 ...	0.82	0.5	13.15	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

9. 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. With regard to drunkards, however, the Comptroller of Prisons in New South Wales advocates the entire abandonment of the system of repeated fine or imprisonment in favour of a course of hospital treatment, and this has to some extent been accomplished by the Inebriates Acts of 1900 and 1909, under which habitual drunkards may be detained for long periods. The Comptroller-General of Prisons in Queensland states 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."

10. 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 1900; Victoria, Inebriates Act 1904; Queensland, Inebriate Institutions Act of 1896; South Australia, Inebriates Act of 1881 and 1913; Western Australia, Lunacy Act 1903, Pt. iv., Habitual Drunkards; Tasmania, Inebriates Act 1885, Inebriate Hospitals Act 1892. Curative work was first undertaken by the Government of New South Wales in 1907. The institutes are connected with the gaols, and, naturally, custodial measures are still a strong feature in their management; nevertheless the results so far 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 each State, but these are not officially subsidised or inspected.

11. 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 1914 there were nineteen persons in prison under this Act. Since the passing of the Act sixty males and one female have been declared to be habitual criminals. Nine habitual criminals were released during 1914. The Comptroller-General, in his report for the year, states that he has no doubt as to the suitability of the treatment, and speaks in hopeful terms as to its results. The Indeterminate Sentences Act came into force in Victoria in July, 1908, and up to the end of June, 1914, 215 prisoners had been admitted to the three reformatory prisons, and 108 had been released on probation on the recommendation of the Indeterminate Sentences Board. Somewhat similar Acts are in force in South Australia and Tasmania. The provisions of the Habitual Criminals Amendment Act of 1907 were put into force in South Australia in 1909, and sixteen criminals had been declared to be habitual offenders up to the end of 1914. At the close of that year there were six prisoners detained under the Act. 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. 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 seven years in which the Habitual Criminals and Offenders Act of 1907 has been in force in Tasmania, fifty-two men and one woman have been released under its provisions, and it is stated that, in view of the fact that only two out of the fifty-three persons have broken their parole, the working of the Act must be deemed eminently satisfactory.

12. 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.

13. 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.

14. 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 1910 to 1914, with the proportion of such committals per 10,000 of the population. The rates are shewn on a separate line.

COMMITTALS TO SUPERIOR COURTS (COMMONWEALTH) 1910 to 1914.

State.				1910.	1911.	1912.	1913.	1914.
New South Wales	...	...	No.	1,233	1,223	1,923	1,573	1,699
			Rate	7.6	7.4	11.1	8.7	9.2
Victoria	...	...	No.	551	564	571	611	571
			Rate	4.3	4.2	4.2	4.4	4.0
Queensland	...	...	No.	455	529	425	417	458
			Rate	7.7	8.6	6.7	6.4	6.8
South Australia	...	...	No.	117	99	121	141	135
			Rate	2.9	2.4	2.9	3.3	3.1
Western Australia	...	...	No.	192	204	162	150	147
			Rate	7.1	7.1	5.4	4.8	4.5
Tasmania	...	...	No.	48	57	60	58	67
			Rate	2.5	3.0	3.1	3.0	3.4
Northern Territory	...	...	No.	...	...	8	2	2
			Rate	...	...	23.8	5.5	5.3
Commonwealth	...	...	No.	2,596	2,676	3,270	2,952	3,079
			Rate	5.9	6.0	7.0	6.1	6.3

The above figures shew that the rate of committals for serious crime has increased slightly 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 1914.

Year	1861.	1871.	1881.	1891.	1901.	1914.
Committals per 10,000 inhabitants ...	22	14	12	11	8	6

The decline in proportion to population since 1861 has therefore been about 73 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 1910 to 1914:—

CONVICTIONS AT SUPERIOR COURTS (COMMONWEALTH), 1910 to 1914.

State.				1910	1911.	1912.	1913.	1914.
New South Wales ...	{	No.		546	538	620	772	810
		Rate		3.3	3.3	3.6	4.3	4.4
Victoria ...	{	No.		435	477	501	506	494
		Rate		3.4	3.6	3.7	3.6	3.5
Queensland ...	{	No.		376	328	384	343	382
		Rate		6.4	5.3	6.1	5.3	5.7
South Australia ...	{	No.		101	74	86	86	93
		Rate		2.5	1.8	2.0	2.0	2.1
Western Australia ...	{	No.		95	98	92	92	84
		Rate		3.5	3.4	3.1	2.9	2.6
Tasmania ...	{	No.		27	38	25	28	41
		Rate		1.4	2.0	1.3	1.4	2.1
Northern Territory ...	{	No.		...	4	3	1	1
		Rate		...	12.0	8.9	2.7	2.7
Commonwealth ...	{	No.		1,580	1,557	1,711	1,828	1,905
		Rate		3.6	3.5	3.7	3.8	3.9

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 1910 to 1914. 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, 1910 to 1914.

(COMMONWEALTH.)

Offences.	1910.	1911.	1912.	1913.	1914.
Murder and attempts at	31	18	33	38	42
Manslaughter	15	15	16	14	15
Rape and attempts at	77	97	88	71	67
Other offences against the person ...	250	235	221	298	300

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 2½ per cent.

3. Capital Punishment.—The table below gives the number of executions in each State during the period 1910 to 1914:—

EXECUTIONS (COMMONWEALTH), 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
New South Wales ... ..	...	...	1	...	...
Victoria ... ..	...	...	1	...	...
Queensland	1	...	...	2	...
South Australia	3	...	...	...	...
Western Australia	1	2	...	1	1
Tasmania ... ..	...	...	...	1	1
Commonwealth	5	2	2	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, while for the period 1901 to 1910 the figure stood at four.

§ 4. Prisons.

1. Prison Accommodation and Prisoners in Gaol.—The table below shews the number of prisons in each State and the accommodation therein at the end of 1914:—

PRISONS AND PRISON ACCOMMODATION (COMMONWEALTH), 1914.

State.	Number of Prisons.	Accommodation in—		Prisoners at End of Year.
		Separate Cells.	Wards.	
New South Wales	31	2,946	...	1,641
Victoria	18	1,483	731	898
Queensland	12	586	380	518
South Australia	13	756	396	341
Western Australia	24	623	771	277
Tasmania	2	194	278	60
Northern Territory	1	3	48	8
Commonwealth	101	6,591	2,604	3,743

The number of prisoners in gaol, exclusive of debtors, at the 31st December in each of the years 1910 to 1914, is given below. A separate line is added in each instance shewing the proportion per 10,000 of the population.

PRISONERS IN GAOL (COMMONWEALTH), 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
New South Wales ... { Number	1,235	1,173	1,257	1,456	1,641
... { Proportion	7.6	7.1	7.2	8.0	8.9
Victoria ... { Number	859	797	880	863	898
... { Proportion	6.7	6.0	6.5	6.2	6.3
Queensland ... { Number	527	514	529	450	518
... { Proportion	8.9	8.4	8.4	6.9	7.7
South Australia ... { Number	269	224	287	288	341
... { Proportion	6.7	5.4	6.8	6.6	7.7
Western Australia ... { Number	311	323	356	284	277
... { Proportion	11.5	11.3	11.8	9.0	8.6
Tasmania ... { Number	72	65	69	50	50
... { Proportion	3.8	3.4	3.6	2.6	2.6
Northern Territory ... { Number	...	...	12	7	8
... { Proportion	...	...	35.7	19.1	21.3
Commonwealth ... { Number	3,273	3,096	3,390	3,398	3,733
... { Proportion	7.5	6.9	7.3	7.1	7.6

From the preceding table it will be seen that the proportion to population of prisoners in gaol has varied only slightly 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. There are five principal gaols in which prisoners are classified according to history, etc. 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 to the number of 121,896 have been planted. A maximum of twenty prisoners in occupation is maintained, but provision is being made for ten more. 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 accommodation will be provided for fifty prisoners. 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.

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 to different gaols, while at the important penal establishment at Pentridge a careful segregation into no less than five distinct classes is carried out. It is proposed to make better provision at the Pentridge prison for the accommodation and classification of habitual offenders. In common with the other States the latest humane methods of accommodation and prison treatment have for some time been employed.

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 lawbreakers 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 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 Tuncurry 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.

§ 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 (COMMONWEALTH), 1910 to 1914.

State.				1910.	1911.	1912.	1913.	1914.
New South Wales	...	Cases	No.	30,059	29,570	32,531	40,265	37,472
		Amount	£	77,700	74,461	93,592	106,809	107,810
Victoria	...	Cases	No.	29,902	28,575	36,043	39,911	41,497
		Amount	£	146,284	129,172	190,485	204,175	207,863
Queensland	...	Cases	No.	11,951	12,511	14,962	15,716	16,015
		Amount	£	45,432	48,374	61,047	64,518	66,226
South Australia	...	Cases	No.	13,845	14,996	18,905	21,288	21,681
		Amount	£	45,380	51,282	60,813	74,623	74,627
Western Australia	...	Cases	No.	9,598	9,773	12,735	14,549	16,974
		Amount	£	42,636	43,413	60,774	67,470	66,864
Tasmania	...	Cases	No.	3,620	5,189	4,487	5,194	5,813
		Amount	£	29,199	33,601	28,571	34,425	81,610
Commonwealth	...	Cases	No.	98,975	100,614	119,663	136,923	139,452
		Amount	£	386,631	380,303	495,282	552,020	605,000

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 1910 to 1914.

The New South Wales returns are to some extent defective, as the figures quoted for amount of judgments include, up to 1914, 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 consists in the fact that it shews a decline in litigiousness in Australia.

SUPERIOR COURTS.—CIVIL CASES, 1910 to 1914.

COMMONWEALTH.

State.			1910.	1911.	1912.	1913.	1914.
New South Wales	...	{ Causes No.	519	729	847	926	864
		{ Amount £	269,518	369,145	528,384	568,761	*328,429
Victoria	...	{ Causes No.	711	561	637	617	710
		{ Amount £	53,180	54,552	75,886	91,428	91,903
Queensland	...	{ Causes No.	138	119	108	133	129
		{ Amount £	18,336	12,208	16,013	22,932	19,156
South Australia...	...	{ Causes No.	23	29	26	44	27
		{ Amount £	799	13,195	29,352	9,688	17,358
Western Australia	...	{ Causes No.	342	423	496	546	578
		{ Amount £	39,721	90,078	78,068	79,534	37,610
Tasmania	...	{ Causes No.	210	110	113	118	385
		{ Amount £	11,879	7,810	7,866	7,486	28,159
Commonwealth	...	{ Causes No.	1,943	1,971	2,227	2,384	2,693
		{ Amount £	393,433	545,988	735,569	779,829	522,615

* Exclusive of judgments signed, Supreme Court, the amount not being recorded.

3. **Divorces and Judicial Separations.**—The number of divorces and judicial separations in each State during the period 1910 to 1914 is shewn below :—

DIVORCES AND JUDICIAL SEPARATIONS, 1910 to 1914.

(COMMONWEALTH.)

State.	1910.		1911.		1912.		1913.		1914.	
	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations
New South Wales	260	9	210	12	349	12	317	9	297	5
Victoria	141	...	214	...	250	2	237	2	244	1
Queensland	21	...	27	1	17	1	31	1	29	1
South Australia	3	1	20	...	11	...	9	...	20	...
Western Australia	13	1	30	2	36	...	37	...	21	1
Tasmania	5	1	5	1	8	...	8	...	7	...
Northern Territory	...	...	...	...	...	...	...	...	1	...
Commonwealth	443	12	506	16	671	15	639	12	619	8

The average annual number of divorces and judicial separations in the Commonwealth at decennial periods from 1871 to 1910 is given hereunder :—

DIVORCES AND JUDICIAL SEPARATIONS, 1871 to 1910.

Commonwealth	1871-1880. 29	1881-90. 70	1891-1900. 358	1901-10. 401
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The bulk of the divorces and judicial separations refer, as the table shews, to New South Wales and Victoria, the Acts of 1892 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 1910 to 1914:—

PROBATES AND LETTERS OF ADMINISTRATION (COMMONWEALTH), 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
New South Wales	{ Number 3,336 Value £ 8,834,934	{ Number 3,589 Value £ 13,138,068	{ Number 3,648 Value £ 13,389,806	{ Number 3,679 Value £ 8,443,068	{ Number 4,438 Value £ 9,997,615
Victoria	{ Number 4,128 Value £ 7,430,949	{ Number 4,614 Value £ 8,469,163	{ Number 4,585 Value £ 8,533,502	{ Number 4,483 Value £ 8,367,862	{ Number 4,451 Value £ 8,481,720
Queensland	{ Number 704 Value £ 1,652,691	{ Number 729 Value £ 2,409,495	{ Number 755 Value £ 2,730,039	{ Number 765 Value £ 2,640,017	{ Number 765 Value £ 2,331,224
South Australia	{ Number 1,121 Value £ 2,422,519	{ Number 1,057 Value £ 2,855,089	{ Number 1,246 Value £ 2,353,238	{ Number 1,373 Value £ 2,214,241	{ Number 1,418 Value £ 3,025,490
Western Australia	{ Number 492 Value £ 868,638	{ Number 584 Value £ 844,151	{ Number 552 Value £ 841,800	{ Number 580 Value £ 607,972	{ Number 577 Value £ 904,850
Tasmania	{ Number 375 Value £ 797,439	{ Number 399 Value £ 596,870	{ Number 465 Value £ 983,618	{ Number 415 Value £ 680,477	{ Number 336 Value £ 727,126
Commonwealth	{ Number 10,156 Value £ 22,007,170	{ Number 10,972 Value £ 28,312,836	{ Number 11,251 Value £ 28,862,003	{ Number 11,295 Value £ 22,953,637	{ Number 13,035 Value £ 25,468,015

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 (COMMONWEALTH), 1910 to 1914.

State.		1910.	1911.	1912.	1913.	1914.
New South Wales ...	{ Number	352	331	395	351	405
	{ Liabilities £	176,088	109,359	210,504	208,755	323,111
	{ Assets £	119,377	49,390	153,633	144,038	141,068
Victoria ...	{ Number	359	306	404	455	450
	{ Liabilities £	132,841	112,748	265,046	440,318	272,582
	{ Assets £	54,381	55,374	159,723	237,868	171,295
Queensland ...	{ Number	214	227	246	232	210
	{ Liabilities £	44,475	41,261	45,508	60,385	53,947
	{ Assets £	12,691	9,286	17,020	21,720	36,293
South Australia ...	{ Number	76	106	154	185	187
	{ Liabilities £	77,471	75,347	188,483	169,516	184,320
	{ Assets £	44,195	47,314	135,771	104,622	115,621
Western Australia ...	{ Number	79	75	84	75	77
	{ Liabilities £	30,967	24,150	50,652	65,284	46,234
	{ Assets £	14,169	9,600	35,221	51,928	23,456
Tasmania ...	{ Number	27	19	38	46	30
	{ Liabilities £	97,551	7,066	7,013	16,673	13,476
	{ Assets £	41,654	5,654	2,635	9,831	4,251
Northern Territory ...	{ Number	...	1	3	4	1
	{ Liabilities £	...	348	1,123	724	119
	{ Assets £	...	66	44	18	...
Commonwealth ...	{ Number	1,107	1,065	1,324	1,348	1,360
	{ Liabilities £	559,393	370,279	768,329	961,655	893,689
	{ Assets £	286,467	176,684	504,047	570,025	491,984

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 1910-14:—

COMMONWEALTH HIGH COURT TRANSACTIONS, 1910 to 1914.

Items.	1910.	1911.	1912.	1913.	1914.
I. ORIGINAL JURISDICTION.					
Number of writs issued ...	28	39	63	83	75
Number of causes entered for trial ...	5	7	7	9	6
Verdicts for plaintiffs ...	1	4	6	5	5
Verdicts for defendants ...	2	3	...	2	1
Otherwise disposed of ...	23	20	20	16	31
Amount of judgments ...	£2,040	£133	£769	£6,556	£5,304
II. APPELLATE JURISDICTION.					
Number of appeals set down for hearing ...	51	64	89	66	71
Number allowed ...	34	32	43	33	25
Number dismissed ...	14	23	36	26	38
Otherwise disposed of ...	3	9	10	7	8

COMMONWEALTH HIGH COURT TRANSACTIONS, 1910 TO 1914—continued.

Items.	1910.	1911.	1912.	1913.	1914.
III. AMOUNT OF FEES COLLECTED.					
Amount in each year...	£437	£493	£590	£692	£656

During the year 1914 the Court dealt also with other matters as follows :—

Appeals from Assessments under the Land Tax Assessment Act...	11
Special cases stated for the opinion of the Full Court ...	9
Applications for Prohibition ...	2
Applications under the Trading with the Enemy Act ...	1

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 1904-11 will be found in Section xxvii.

§ 6. Cost of Administration of Justice.

The table below shows 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 (COMMONWEALTH), 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
	£	£	£	£	£
New South Wales ... { Police	504,146	515,569	578,767	593,406	592,694
... { Gaols	78,932	81,473	89,712	91,279	92,285
... { Other	241,510	260,217	262,174	276,043	282,716
Victoria ... { Police	337,670	345,889	348,227	354,264	380,724
... { Gaols	48,714	50,823	50,952	54,776	57,272
... { Other	160,627	162,453	165,078	165,091	192,222
Queensland ... { Police	244,945	258,538	306,431	304,817	302,633
... { Gaols	25,036	28,257	28,603	28,950	30,989
... { Other	104,739	109,507	100,156	101,011	101,687
South Australia ... { Police	96,771	107,872	116,847	129,834	132,445
... { Gaols	17,060	17,678	17,776	19,159	23,436
... { Other	34,412	37,433	41,392	48,203	33,277
Western Australia ... { Police	120,420	127,458	129,556	126,532	133,452
... { Gaols	27,228	23,755	22,291	21,403	22,339
... { Other	69,772	78,022	77,544	77,182	79,142
Tasmania ... { Police	40,331	41,535	43,236	45,287	45,972
... { Gaols	5,466	5,320	5,664	6,103	7,071
... { Other	11,513	14,688	19,524	20,877	21,763
Northern Territory ... { Police	...	9,708	10,609	10,614	10,307
... { Gaols	...	2,247	2,309	2,289	2,501
... { Other	...	555	2,513	2,136	1,941
Commonwealth ... { Police	1,344,283	1,406,569	1,533,673	1,564,704	1,598,227
... { Gaols	202,436	209,552	217,307	223,959	235,893
... { Other	622,573	662,875	668,381	690,543	712,748

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 1910-11 to 1914-15:—

EXPENDITURE OF FEDERAL HIGH COURT, 1910-11 to 1914-15.

Year.				Amount.	Year.				Amount.
				£					£
1910-11	...	...	...	25,850	1913-14	...	...	...	32,709
1911-12	...	...	...	26,320	1914-15	...	...	...	31,037
1912-13	...	...	...	23,334					

Other items of Federal legal expenditure also not included in the table are Arbitration Court £3586, Crown Solicitor £8371, and general £6602.

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 (COMMONWEALTH), 1910 to 1914.

State.				1910.	1911.	1912.	1913.	1914.
				s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	...	...	Police	6 2	6 3	6 8	6 7	6 4
			Gaols	1 0	0 11	1 0	1 0	1 0
			Other	2 11	3 2	3 0	3 0	3 0
Victoria	...	...	Police	5 3	5 2	5 2	5 1	5 4
			Gaols	0 9	0 9	0 9	0 9	0 10
			Other	2 6	2 5	2 4	2 4	2 8
Queensland	...	...	Police	8 3	8 2	9 8	9 4	9 0
			Gaols	0 10	0 11	0 11	0 11	0 11
			Other	3 6	3 7	3 2	3 1	3 0
South Australia	...	...	Police	4 10	5 3	5 7	6 0	6 0
			Gaols	0 10	0 10	0 10	0 11	1 1
			Other	1 9	1 9	1 11	2 3	1 6
Western Australia	...	...	Police	8 11	8 11	8 7	8 1	8 3
			Gaols	2 1	1 9	1 6	1 4	1 5
			Other	5 2	5 5	5 1	4 11	4 11
Tasmania	...	...	Police	4 3	4 4	4 6	4 7	4 7
			Gaols	0 7	0 7	0 7	0 7	0 8
			Other	1 2	1 6	2 0	2 2	2 2
Northern Territory	...	...	Police	...	58 6	63 2	58 0	52 0
			Gaols	...	13 6	13 9	12 6	12 7
			Other	...	3 4	15 0	11 8	9 9
Commonwealth	...	...	Police	6 2	6 3	6 7	6 6	6 6
			Gaols	0 11	1 0	0 11	0 11	0 11
			Other	2 10	2 11	3 0	3 0	3 0

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 has risen from ten shillings per inhabitant in 1901 to ten shillings and fivepence in 1914. Police expenditure has increased by about ninepence per head, the average for gaols is about threepence per head less, while the expenditure on courts and the remaining machinery of justice has slightly decreased 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 Melbourne and other large 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 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 the Old Age Pensions will be found in § 4, *Miscellaneous*, chap. xxxiv.

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 duties 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 the end of July, 1916, has been estimated at £5,758,000.

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 causes 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, Factories 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, 1910 to 1914.

Particulars.	1910.	1911.	1912.	1913.	1914.
Number of institutions ...	338	355	368	381	389
Number of beds ...	13,342	13,732	14,574	15,235	15,345
Admissions during year ...	119,091	125,822	139,378	145,908	155,531
Indoor patients treated ...	126,234	133,652	144,692	152,077	164,349
Deaths ...	8,946	9,642	11,235	11,362	11,468
Expenditure ...	£ 802,212	916,984	1,102,134	1,264,605	1,255,658

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 1914 places the total at about 300,000.

Fuller details of hospital statistics are given for 1914 in the table below, the States and Northern Territory of the Commonwealth being shewn separately :—

GENERAL HOSPITALS.—NUMBER, STAFFS, AND ACCOMMODATION OF HOSPITALS IN THE COMMONWEALTH, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	N.T.	C'wlth.
Number of Hospitals—								
Government ...	3	50	2	8	21	2	2	88
Other ...	148	5	87	17	31	13	...	301
Total ...	151	55	89	25	52	15	2	389
Medical Staff—								
Males ...	781	91	191	98	57	39	2	1,271
Females ...			6	6	...	...	...
Total ...	781	91	197	104	57	39	2	1,271
Nursing Staff and Attendants—								
Males ...	89	28	257	69	79	3	10	535
Females ...	1,698	753	870	420	426	143	1	4,311
Total ...	1,787	781	1,127	489	505	146	11	4,846
Accommodation—								
Number of dormitories, etc. ...	991	466	526	167	179	124	12	2,465
Capacity in cubic ft. ...	6,925,260	4,725,360	3,409,764	1,431,407	1,916,887	762,017	48,951	19,219,646
Number of beds ...	5,674	3,660	3,000	1,049	1,371	565	26	15,345
Cubic ft. to each bed	1,221	1,291	1,137	1,365	1,398	1,349	1,883	1,253

1. Inclusive, in Victoria, of 569 paid staff and 18 dispensing staff: sexes not stated.

**GENERAL HOSPITALS—PATIENTS TREATED IN HOSPITALS IN THE
COMMONWEALTH, 1914.**

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	C'w'lh.
Indoor Relief: Distinct Persons								
Treated—								
Males	37,938	19,084	20,769	5,772	7,774	3,828	232	95,397
Females	32,216	14,520	11,027	4,372	3,833	2,918	66	68,952
Total	70,154	33,604	31,796	10,144	11,607	6,746	298	164,349
Inmates at beginning of Year—								
Males	2,067	1,457	1,118	371	510	177	19	5,719
Females	1,660	1,040	659	253	215	159	...	3,966
Total	3,727	2,497	1,777	624	725	336	19	9,705
Admissions and Re-admissions during Year—								
Males	35,871	17,627	19,651	6,040	7,264	3,651	213	90,317
Females	30,556	13,480	10,368	4,367	3,618	2,759	66	65,214
Total	66,427	31,107	30,019	10,407	10,882	6,410	279	155,531
Discharges—Recovered:								
Males	25,187	15,049	17,617	3,564	3,225	3,314	157	68,113
Females	23,967	11,903	9,425	2,829	1,767	2,596	46	52,533
Total	49,154	¹26,952	¹27,042	6,393	4,992	¹5,910	203	¹120,646
Relieved:								
Males	6,798	...	...	1,389	3,127	...	38	11,352
Females	3,985	...	...	897	1,347	...	10	6,239
Total	10,783	²...	²...	2,286	4,474	²...	48	17,591
Unrelieved:								
Males	980	196	463	440	308	35	3	2,425
Females	842	154	229	303	124	22	...	1,674
Total	1,822	350	692	743	432	57	3	4,099
Not stated:								
Males ... ..	...	559	112	21	19	20	...	731
Females ... ..	...	340	56	10	48	10	...	464
Total ... ..	...	899	168	31	67	30	...	1,195
Deaths—								
Males	2,724	1,809	1,402	601	606	229	13	7,384
Females	1,586	1,045	658	321	332	134	8	4,084
Total	4,310	2,854	2,060	922	938	363	21	11,468
Inmates at End of Year—								
Males	2,249	1,471	1,175	396	489	230	21	6,031
Females	1,836	1,078	659	260	215	156	2	4,206
Total	4,085	2,549	1,834	656	704	386	23	10,237
Average Daily Number Resident—								
Males	2,219	2,521	1,857	{ 402 297	561 264	212 187	9 2	10,399
Females	1,863							
Total	4,087	2,521	1,857	699	825	399	11	10,399

1. Including relieved. 2. Included in recovered. 3. Cases relieved are included in those recovered, in Victoria, Queensland, and Tasmania.

The revenue and expenditure of the institutions were as follows:—

GENERAL HOSPITALS.—REVENUE AND EXPENDITURE, 1914.

Particulars	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	C'wth.
Revenue—	£	£	£	£	£	£	£	£
Fees of patients, etc.	66,457	30,599	24,634	8,779	14,160	7,466	149	152,244
Government grants	255,923	70,530	161,665	58,033	72,569	22,678	5,301	646,699
Other ...	152,817	120,465	80,652	15,847	33,948	6,854	30	410,613
Total ...	475,197	221,594	266,951	82,659	120,677	36,998	5,480	1,209,556
Expenditure—								
Buildings ...	105,448	69,402	31,122	8,824	...	1,380	1,545	217,721
Salaries ...	181,338	190,502	87,087 ¹	30,831	50,708	14,134	1,906	...
Maintenance ...	185,808	...	107,945	39,516	73,084 ²	16,334	1,850	1,037,937
Other ...	37,960	4,092	7,587	2,289	...	4,966	...	...
Total ...	510,554	263,996	233,741	81,460	123,792	36,814	5,301	1,255,658

1. Including rent.

2. Including buildings.

2. **Hospitals for General and Special Cases.**—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). In the earliest numbers of the Commonwealth Year Book, these were tabulated with general hospitals. Where the institutions carry on general hospital relief, they are still included with those establishments.

(i.) *New South Wales.* A Government hospital is established at Little Bay. There are four women’s and one children’s hospitals in the metropolis. Other leading institutions are the Thomas Walker Convalescent Hospital, Dental Hospital, Home for Incurables, Hospital for Infants and Asylum for Women and Children, Infants’ Home, etc. A feature of late years has been the establishment of general hospitals in many country towns of growing importance.

(ii.) *Victoria.* Special hospitals, not included in the above tabulation, comprise the Women’s Hospital, with infirmary and midwifery departments, the Children’s Hospital, the Hospital for Women and Children, a Government Consumptive Sanatorium, Inebriates’ Institute, Convalescent homes, etc.

(iii.) *Queensland.* There are six lying-in and two children’s hospitals in Queensland, and a sanatorium.

(iv.) *South Australia.* In connection with the leading general hospital in the metropolis, there is a consumptive home and infectious diseases block; there are also a children’s hospital, two lying-in homes, sanatorium, convalescent home, home for incurables, etc.

(v.) *Western Australia.* The leading general hospitals are Government establishments. There is a lying-in establishment in connection with the metropolitan women’s home. There are also homes for the dying and incurable, homes and rests for sailors, strangers, etc.

(vi.) *Tasmania.* In Tasmania there are several institutions which pay particular regard to “special cases”; these include two hospitals for contagious diseases; two

hospitals for women; a consumptive sanatorium; and a convalescent home. Other important institutions of a general nature are the New Town Charitable Establishment, and the Home for Invalids.

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, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Revenue—	£	£	£	£	£	£	£
Government aid ...	82,394	15,714	31,833	21,480	45,283	7,108	203,812
Municipal aid ...	...	891	...	...	...	...	891
Public subs., legacies, etc....	3,154	7,624	931	...	...	...	11,709
Fees ...	9,273	9,376	...	458	...	799	19,905
Other ...	317	1,981	3,247	192	...	217	5,954
Total...	95,137	35,586	36,011	22,130	45,283	8,124	242,271
Expenditure—							
Buildings ...	2,518	2,020	3,295	127	...	789	8,749
Maintenance ...	89,931	38,643	30,575	22,003	15,639	5,536	202,327
Other ...	2,910	199	2,221	...	29,644	1,799	36,773
Total...	95,359	40,862	36,091	22,130	45,283	8,124	247,849

(i.) *Government Asylums for the Infirm, New South Wales.* There are six of these institutions in New South Wales, with something over 4000 beds, usually in continuous use. Inmates at the end of 1914 numbered 3124; deaths numbered 894; and the expenditure amounted to £84,146 for the twelve months ended 30th December, 1914.

(ii.) *Benevolent Asylums, Victoria.* Besides the asylums attached to hospitals, there are eight institutions in Victoria. The daily average number indoors was 2025 for 1913-14, with 963 distinct cases of outdoor relief. Deaths numbered 450. The total expenditure was £40,862 (of which £2020 was spent on buildings), and receipts £35,586—£15,714 from Government and £19,872 from other sources.

(iii.) *Benevolent Asylums, Queensland.* There are four institutions in Queensland, with 936 beds. The total number in the asylums during 1914 was 1641, with a daily average of about 1030. Deaths numbered 144. Expenditure amounted to £36,091, and receipts to £36,011, of which £31,833 was Government aid.

(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. The institution includes lying-in and children's departments. In the asylum the average number of inmates in 1913-14 was 301. There were seventy deaths during the year. Expenditure totalled £8315. In addition, £14,012 was dispensed through the institution for outdoor relief of the destitute in both metropolitan and rural districts.

(v.) *Homes for the Destitute, Western Australia.* There are three of these homes in Western Australia supported by public funds. Attached to the Perth Women's Home is a lying-in department. Outdoor relief to the poor and aged is given, the amount expended being included in expenditure in the previous table. More than eighteen hundred indoor cases were dealt with during 1914. There were 99 deaths.

(vi.) *Charitable Establishments, Tasmania.* There are two principal Government charitable establishments in Tasmania. Beds numbered 251 in 1914-15. The total number of persons treated was 326, of whom 50 died. The daily average number resident was 191. Total expenditure was £8124, receipts amounting to the same sum, of which £7108 was contributed by the State.

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, 1910 to 1914.

Particulars.	1910.	1911.	1912.	1913.	1914.
Number of institutions	42	41	41	42	50
Admissions	1,626	1,760	1,563	1,514	2,340
Total number of inmates during year ...	5,331	5,465	5,057	4,720	4,344
Deaths	22	12	18	18	46
Expenditure ¹	£ 72,882	74,415	63,362	72,091	86,390

1. 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. Useful trades and profitable occupations are taught, and many of the children become useful members of society. The number of children under the board's supervision in 1914-15 was 11,492. The board's expenditure in that year was £128,252, or £11 3s. per child.

There are also fourteen orphanages, with 683 persons under care on 31st December, 1914.

In the year 1914, there were five deaths, and the expenditure was £13,296, exclusive of four institutions from which no particulars were received.

There are several reformatories and industrial schools maintained by the State. At the Parramatta Industrial School for Girls, to which a Training Home has lately been annexed, there was, during 1914, a gross enrolment of 186, with a daily average attendance of 129. At the Farm Home for boys, Gosford, the gross enrolment during 1914 was 122, the average attendance being 263.

(ii.) *Victoria.* There are ten orphanages in Victoria, with 1635 beds. The total number under care in 1913-14 was 2139, of whom 1654 were inmates on 30th June, 1914. In the year 1913-14 there were 486 admissions and five deaths. The annual expenditure in 1911-12 was £27,463, in 1912-13 £25,243, and in 1913-14 £29,780.

At the end of 1914 there were three industrial and nine reformatory schools in the State. Of these, one industrial and one reformatory school are wholly controlled by the Government, being used merely as receiving and distributing depots. 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, 1914, the wards of the State numbered 9339—classed mostly as neglected children. There were also some children free from legal control, who, being incapacitated, were maintained by the State. The total expenditure for 1914 was £129,600, of which £123,322 was borne by the Government.

(iii.) *Queensland.* There are eleven orphanages in Queensland. The number under care on 31st December, 1914, was 1031. In 1914 the expenditure was £17,225, and the number of deaths 32.

There are also six industrial and reformatory schools. The total number of children under State control at the end of 1914 was 5066. The gross cost was £65,025, of which £60,565 was borne by the Government.

(iv.) *South Australia.* The State Children's Department exercises a supervision over the probationary and industrial schools, the reformatories, and the Methodist Home. The total number of admissions into these institutions in 1913-14 was 233. The number of inmates on the 30th June, 1914, was 221, in addition to which 1388 were placed out, or had been adopted or apprenticed. There were no deaths of children in industrial schools, but of those placed out and in other institutions eighteen died. The number of children under State control on 30th June, 1914, was 1609. The expenditure for 1913-14 was £28,983 in gross, of which the Government aid was £25,718.

There are three orphan asylums. The number under care during 1914 was 226, of whom 215 were inmates on 31st December, 1914. There were no deaths in the year, and the expenditure amounted to £4389.

(v.) *Western Australia.* In Western Australia there were, at the 30th June, 1914, six orphanages, in which the number of inmates was 576 (324 boys and 252 girls), a decrease of 37 from the previous year. There were also four industrial schools, in which there were at the same date 95 inmates (60 boys and 35 girls), an increase of 17 from the previous year. There were also 23 boys and 28 girls at the Government Receiving Depot. The total number of children in charge of the State Children's Department at 30th June, 1914, was 1228. The cost of the above institutions for the year ended 30th June, 1914, was as follows:—Six orphanages, £12,000; four industrial schools and Government receiving depot, £3984; and maintenance of boarded-out children, salaries, and other expenses, £5749, making a total of £21,733. As a sum of £768 was received from parents for contributions, and also a sum of £99 for license fees, the net cost was £20,965.

(vi.) *Tasmania.* There were five admissions to the orphanage in 1914-15, and 39 inmates at 30th June, 1915. No deaths occurred. Expenditure amounted to £834.

There are three industrial schools under benevolent institutions in the State. Admissions in 1914-15 numbered twenty-eight, and total inmates during the year 122. No deaths occurred. The expenditure was £2547.

Under the boarding-out system upwards of 200 children are placed out. The total number of children under State control at the end of June, 1915, was 220, the gross cost to the State of children's relief being £3162, of which £194 represents parents' contributions.

(vii.) *Neglected Children.* The following table summarises the number of neglected children under State Departments. In New South Wales and Victoria a number of children are boarded out with their own mothers, the figures for the year in question being 6612 and 4144 respectively. Similar provisions are in force in some of the other States; the figures, however, are not available.

STATE RELIEF OF NEGLECTED CHILDREN.—TRANSACTIONS OF STATE DEPARTMENTS IN THE COMMONWEALTH, 1914.

Particulars.	N.S.W. ¹	Vict.	Qld.	S.A. ²	W.A.	Tas.	Cwth.
Number of Children under State control at end of year—							
Males	³ 6,867	4,823	2,636	861	674	130	15,991
Females	³ 4,625	4,516	2,430	748	554	90	12,963
Total	11,492	9,339	5,066	1,609	1,228	220	28,954
Gross cost to State of children's relief	£ 134,446	£ 129,600	£ 65,025	£ 28,983	£ 21,733	£ 3,162	£ 382,949
Receipts, from parents' contributions, etc.	6,194	6,278	4,460	3,265	768	194	21,159
Net cost	128,252	123,322	60,565	25,718	20,965	2,968	361,790

1. For year ended 5th April following. 2. For the year ended 30th June, 1914. 3. Estimated.

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 1911:—

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	¹ 27	...	...	...	...	...	1	...	1	1
Queensland	² 186	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 ³ ...	...	...	...	...	...	...	...	1	...	...
Total	¹ 2395	26	28	14	14	12	9	15	13	19

1. In addition, some Chinese.

2. In addition, many Kanakas.

3. 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,¹ COMMONWEALTH, 1910 to 1914.

Particulars.	1910.	1911.	1912.	1913.	1914.
Number of institutions	31	33	35	35	35
Number of beds	14,978	15,825	15,911	16,115	16,432
Admissions	2,936	3,079	3,017	3,153	3,339
Discharged as recovered, relieved, etc. ...	1,632	1,404	1,365	1,415	1,574
Deaths	1,177	1,246	1,311	1,292	1,270
Expenditure	£561,677	616,302	693,772	772,984	755,697

1. 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 1910-1914 was as follows:—

INSANE PERSONS IN THE COMMONWEALTH, 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
New South Wales	6,148	6,351	6,470	6,639	6,906
Victoria	5,241	5,340	5,470	5,631	5,729
Queensland	2,260	2,283	2,322	2,370	2,448
South Australia	1,055	1,084	1,082	1,082	1,080
Western Australia	793	842	876	933	981
Tasmania	505	521	534	526	537
Commonwealth	16,002	16,421	16,754	17,181	17,681

For the period embraced in the tables Victoria shews the highest rate of insanity, roughly one 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 one in 400, Tasmania following closely with an average of about one in 370.

PROPORTION OF INSANE, COMMONWEALTH, 1910 to 1914.

State.	1910.	1911.	1912.	1913.	1914.
PER 1000 OF THE POPULATION.					
New South Wales ...	3.74	3.79	3.64	3.62	3.71
Victoria ...	4.03	3.92	3.96	3.98	4.00
Queensland ...	3.77	3.67	3.65	3.60	3.62
South Australia ...	2.57	2.57	2.50	2.46	2.42
Western Australia ...	2.87	2.86	2.86	2.91	3.04
Tasmania ...	2.61	2.69	2.71	2.61	2.67
Commonwealth ...	3.62	3.59	3.54	3.53	3.58

Consequent upon the development of a more rational attitude towards the treatment of mental cases, a greater willingness is being shewn to submit necessary cases 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 1914:—

HOSPITALS FOR THE INSANE.—NUMBER, STAFFS, ACCOMMODATION,
COMMONWEALTH, 1914.

Particulars.	N.S.W.	Vic. ¹	Qld.	S.A.	W.A.	Tas.	C'with.
Number of Institutions—							
Government ...	9	9	3	1	2	1	25
Private ...	3	26	...	...	1	...	10
Total ...	12	15	3	1	3	1	35
Medical Staff—							
Males ...	20	19	7	2	3	3	54
Females ...	1	...	...	...	...	...	1
Total ...	21	19	7	2	3	3	55
Nursing Staff & Attendants—							
Males ...	560	532	173	71	121	79	1,536
Females ...	437	502	106	59	54	56	1,214
Total ...	997	1,034	279	130	175	135	2,750
Accommodation—							
No. of dormitories ...	346	1,420	430	7...	34	334	7...
Capacity in cubic feet ...	3,548,975	3,761,775	1,329,655	7...	672,157	706,704	7...
No. of beds ...	3,605	5,224	2,429	1,154	1,026	554	16,432
Cubic feet to each bed ...	3,400	720	547	7...	655	1,276	7...

1. Exclusive of Receiving House, Royal Park, and of the Receiving Wards at Bendigo and Geelong hospitals. 2. There are six private licensed houses in Victoria, in which there were 98 cases at end of 1914. Other figures for these private asylums are not available. 3. Government hospitals only. 4. Ordinary dormitory. 5. Hospital dormitory. 6. Also 26 on clerical staff (males). 7. Information not available.

HOSPITALS FOR THE INSANE.—PATIENTS TREATED, 1914.

Particulars.	N.S.W.	Vic. ¹	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Admissions & re-admissions during year—							
Males	878	445	324	150	165	34	1,996
Females	543	362	196	134	78	30	1,343
Total	1,421	807	520	284	243	64	3,339
Discharges—Recovered—							
Males	341	128	152	4	58	10	693
Females	222	92	94	3	40	9	460
Total	563	220	246	7	98	19	1,153
Relieved and unrelieved—							
Males	69	47	11	88	9	6	230
Females	48	45	4	61	4	10	172
Total	117	92	15	149	13	16	402
Absconders no retaken—							
Males	5	14	...	...	...	...	19
Females ... ..	...	...	...	...	...	...	...
Total	5	14	...	...	...	...	19
Deaths—							
Males	301	210	103	75	67	13	769
Females	168	174	78	55	17	9	501
Total	469	384	181	130	84	22	1,270
No. of patients on books at end of year—							
Males	4,080	2,886	1,530	598	700	274	10,068
Females	2,826	2,843	918	482	281	263	7,613
Total	6,906	5,729	2,448	1,080	981	537	17,681
Average daily number resident—							
Males	3,900	2,584	1,507	612	683	273	9,559
Females	2,608	2,462	900	477	286	260	6,973
Total	6,508	5,046	2,407	1,089	949	533	16,532
No. of patients on books at end of year per 1000 of population—							
Males	4.22	4.05	4.20	2.67	3.91	2.65	3.95
Females	3.15	3.96	2.94	2.17	1.95	2.69	3.19
Persons	3.71	4.00	3.62	2.42	3.04	2.67	3.58
Average number of patients resident in hospitals for insane per 1000 of mean population—							
Males	4.01	3.63	4.13	2.73	3.76	2.66	3.74
Females	2.95	3.46	2.90	2.17	1.87	2.72	2.95
Persons	3.51	3.54	3.57	2.45	2.93	2.69	3.36

1. 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 87 per cent.

HOSPITALS FOR THE INSANE (GOVERNMENT ONLY), REVENUE AND EXPENDITURE, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Revenue (exclusive of Government Grants)—	£	£	£	£	£	£	£
Fees of patients ...	44,147	23,184	9,367	6,744	4,371	4,978	92,791
Other ...	1,974	...	1,757	227	1,035	575	5,568
Total ...	46,121	23,184	11,124	6,971	5,406	5,553	98,359
Expenditure—							
Salaries ...	146,524	107,977	46,069	15,401	27,141	14,288	357,400
Maintenance ...	108,007	101,214	36,912	21,451	22,299	7,855	297,738
Buildings ...	...	54,817	...	1,296	1,815	3,065	60,993
Other ...	28,283	...	1,593	2,607	...	7,083	39,566
Total ...	282,814	264,008	84,574	40,755	51,255	32,291	755,697

(i.) *New South Wales.* The latest return available shows 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 5 months for males and 10 years 5 months for females; that of those discharged, 1 year 7 months for males and 2 years 1 month for females.

There are lunacy wards in two of the general hospitals; and 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 4 years 8 months for males and 5 years 10 months for females; and of those who were discharged, 8 months for males and 10 months 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, readily to be 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 6 years and 5 months for males and 7 years 5 months for females; of those discharged, 1 year and 1 month for males and 8 months for females.

(v.) *Western Australia.* The period of residence of those who died during the year averaged 2 years 10 months for males and 6 years 1 month for females; of those who were discharged, 9 months for males and females respectively.

(vi.) *Tasmania.* The period of residence of those who died was 8 years for males and 17 years 2 months for females; that of those discharged, 2 years 9 months for males and 1 year and 2 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 1910-1914 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, etc., have also been a fruitful source. About one case in six was due to intemperance in drink.

**PROPORTION OF ASCERTAINED CAUSES, Etc., OF INSANITY, COMMONWEALTH,
1910 TO 1914.**

Causes, Previous History, etc.	1910.	1911.	1912.	1913.	1914.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Domestic trouble, adverse circumstances, mental anxiety	12.0	10.6	11.8	7.6	10.1
Intemperance in drink	14.4	15.0	16.3	16.3	12.9
Hereditary influence, ascertained; congenital defect, ascertained	16.9	18.7	21.7	22.6	16.6
Pregnancy, lactation, parturition and puerperal state, uterine and ovarian disorders, puberty, change of life	5.4	5.9	6.6	6.0	4.9
Previous attacks	12.2	9.3	9.5	8.7	10.8
Accident, including sunstroke	2.1	3.0	2.3	2.6	2.2
Old age	10.8	9.9	9.2	10.2	8.4
Other causes ascertained	26.2	27.6	22.6	26.0	34.1
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 839.)

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, etc., for the last five years was—New South Wales, £20,000; Victoria, £4000; Queensland, £16,000; South Australia, including Northern Territory, £14,000; Western Australia, £24,000; total for Commonwealth, £78,000.

9. 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 ranges 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.

10. 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, 1910 to 1914.

State or Territory.	1910.	1911.	1912.	1913.	1914.
	£	£	£	£	£
New South Wales ...	528,289	518,484	576,886	683,102	711,453
Victoria ...	385,467	436,859	446,332	468,588	485,018
Queensland ...	205,577	237,224	262,171	261,237	321,597
South Australia ...	87,112	98,236	118,931	117,204	129,281
Western Australia ...	139,700	177,743	184,940	201,215	222,417
Tasmania ...	39,558	43,245	45,166	62,205	70,387
Northern Territory ...	...	...	5,328	5,602	5,301
Commonwealth ...	1,385,703	1,511,791	1,639,754	1,799,153	1,945,454

11. **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 £3,000,000 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 shews the number of members in each of the legislative chambers in the Commonwealth and in each State at 31st March, 1916:—

MEMBERS OF PARLIAMENTS OF AUSTRALIA, 1916.

Members in—	C'wealth.	N.S.W.	Victoria.	Q'land.	S. Aust.*	W. Aust.	Tas.	Total.
Upper House	36	54	34	38	20	30	18	230
Lower House	75	90	65	72	46	50	30	428
Total ...	111	144	99	110	66	80	48	658

* 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 15 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 are given on pages 28 and 29 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 October, 1915, have been previously specified (see page 40). 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 38 to 40 hereinbefore, and on pages 868 and 869 following.

(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 APRIL, 1916.

EXTERNAL AFFAIRS.			TRADE AND CUSTOMS.		
Name.	From	To	Name.	From	To
\$Rt. Hon. E. BARTON, P.C., K.C.*	1/1/01	23/9/03	Rt. Hon. C. C. KINGSTON, P.C., K.C.	1/1/01	24/7/03
Hon. A. DEAKIN* ...	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 ...	26/4/04	17/8/04	Hon. A. FISHER†† ...	26/4/04	17/8/04
Rt. Hon. G. H. REID, P.C., K.C.**	17/8/04	4/7/05	Hon. A. McLEAN ...	17/8/04	4/7/05
Hon. A. DEAKIN* ...	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	18/10/11	Hon. Sir R. W. BEST, K.C.M.G....	2/6/09	29/4/10
Hon. J. THOMAS ...	14/10/11	20/5/13	Hon. F. G. TUDOR ...	29/4/10	20/5/13
Hon. P. McM. GLYNN, K.C.	20/5/13	17/9/14	Hon. L. E. GROOM ...	20/5/13	17/9/14
Hon. J. A. ARTHUR ...	17/9/14	19/12/14	Hon. F. G. TUDOR ...	17/9/14	||
Hon. HUGH MAHON ...	14/12/14	||			
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* ...	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.	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* †† ...	12/11/08	2/6/09
Hon. W. M. HUGHES ...	12/11/08	2/6/09	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	2/6/09	29/4/10
Hon. P. M. GLYNN ...	2/6/09	29/4/10	Rt. Hon. A. FISHER, P.C.*	29/4/10	20/5/13
Hon. W. M. HUGHES ...	29/4/10	20/5/13	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	20/5/13	17/9/14
Hon. W. H. IRVINE, K.C.‡||	20/5/13	17/9/14	Rt. Hon. A. FISHER, P.C.*	17/9/14	27/10/15
Hon. W. M. HUGHES* ...	17/9/14	||	Hon. W. G. HIGGS ...	27/10/15	||
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	10/10/01
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	7/8/03	26/4/04	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	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 ...	11/10/06	23/1/07	Hon. J. W. McCAY ...	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	20/5/13	Hon. J. COOK§§ ...	2/6/09	29/4/10
Hon. JOSEPH COOK* §§	20/5/13	17/9/14	Hon. G. F. PEARCE ...	29/4/10	20/5/13
Hon. W. O. ARCHIBALD ...	17/9/14	27/10/15	Hon. E. D. MILLEN ...	20/5/13	17/9/14
Hon. K. O'MALLEY ...	27/10/15	||	Hon. G. F. PEARCE ...	17/9/14	||
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.	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 ...	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. Sir J. QUICK ...	2/6/09	29/4/10	Hon. E. D. MILLEN ...	2/6/09	29/4/10
Hon. J. THOMAS ...	29/4/10	14/10/11	Hon. G. McGREGOR ...	29/4/10	20/5/13
Hon. C. E. FRAZER ...	14/10/11	20/5/13	Hon. J. H. McCOLL ...	20/5/13	17/9/14
Hon. AGAR WYNNE ...	20/5/13	17/9/14	Hon. A. GARDINER ...	17/9/14	||
Hon. W. G. SPENCE ...	17/9/14	27/10/15			
Hon. W. WEBSTER ...	27/10/15	||			

* Prime Minister. † Afterwards the Rt. Hon. Sir E. Barton, P.C., G.C.M.G., etc. † Afterwards the Hon. Sir T. T. Ewing, K.C.M.G. ‡ Afterwards the Hon. Sir N. E. Lewis, K.C.M.G. § Still in office. ¶ Died while holding office. ** Prime Minister, afterwards the Rt. Hon. Sir G. H. Reid, P.C., K.C.M.G., etc. †† Afterwards the Rt. Hon. A. Fisher, P.C. §§ Afterwards the Rt. Hon. J. Cook, P.C. ||| Afterwards Sir W. H. Irvine, K.C.M.G., K.C.

MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM
1st JANUARY, 1901, TO APRIL, 1916—(Continued).

WITHOUT PORTFOLIO.

Name.	From	To	Name.	From	To
Hon. N. E. LEWIS† ...	1/1/01	23/4/01	Hon. E. A. ROBERTS ...	23/10/11	20/5/13
Hon. Sir P. O. FYSH, K.C.M.G. ...	23/4/01	7/8/03	Hon. J. S. CLEMONS ...	20/5/13	17/9/14
Hon. J. H. KEATING ...	5/7/05	11/10/06	Hon. W. H. KELLY ...	20/5/13	17/9/14
Hon. S. MAUGER ...	11/10/06	29/7/07	Hon. H. MAHON ...	17/9/14	14/12/14
Hon. J. H. COOK ...	28/1/08	12/11/08	Hon. J. A. JENSEN ...	17/9/14	12/7/15
Hon. J. HUTCHISON ...	12/11/08	2/6/09	Hon. E. J. RUSSELL ...	17/9/14	||
Hon. A. DEAKIN* ...	2/6/09	29/4/10	THE NAVY.		
Col. Hon. J. F. G. FOXTON, C.M.G. ...	2/6/09	29/4/10	Hon. J. A. JENSEN ...	12/7/15	||
Hon. E. FINDLEY ...	29/4/10	20/5/13			
Hon. C. E. FRAZER ...	29/4/10	14/10/11			

See notes on previous page.

(iii.) *Constitution of Ministries.* The subjoined table shews the constitution of the Ministries in the Commonwealth and the State Governments at 31st March, 1916:—

CONSTITUTION OF MINISTRIES, 1916.

Ministers with Seats in—	C'wealth.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
The Upper House ...	3	1	4	1	2	2	1	14
The Lower House ...	7	9	8	9	4	6	4	47
Total ...	10	10	12	10	6	8	5	61

The names of the members of the Ministries in each State in April, 1916, are shewn in the following statement:—

MEMBERS OF STATE GOVERNMENT MINISTRIES, 1916.

NEW SOUTH WALES—MINISTRY.

Premier, Treasurer, and Minister for Railways—

HON. W. A. HOLMAN.

Minister for Public Works—

HON. J. H. CANN.

Attorney-General and Minister for Justice—

HON. D. R. HALL.

Minister for Public Instruction—

HON. A. GRIFFITH.

Chief Secretary and Minister for Public Health—

HON. G. BLACK.

Minister for Lands—

HON. W. G. ASHFORD.

Minister for Labour and Industry, and Mines—

HON. J. ESTELL.

Minister for Agriculture—

HON. W. GRAHAME.

Vice-President of the Executive Council—

HON. J. D. FITZGERALD.

Minister without Portfolio—

HON. H. C. HOYLE.

VICTORIA—MINISTRY.

Premier, Treasurer, and Min. of Labour—

HON. SIR A. PEACOCK, K.C.M.G.

Chief Secretary and Minister of Public Health—

HON. D. MCLEOD.

Minister of Railways and Water Supply—

HON. H. MACKENZIE.

Commissioner of Crown Lands and Survey—

HON. W. HUTCHINSON.

Minister for Mines and Forests—

HON. T. LIVINGSTON.

Commissioner of Public Works—

HON. W. A. ADAMSON, M.L.C.

Attorney-General and Minister of Public Instruction—

HON. H. W. S. LAWSON.

Minister of Agriculture—

HON. F. W. HAGELTHORN, M.L.C.

Ministers without Portfolio—

HON. W. BAILLIEU, M.L.C.

HON. J. C. MEMBREY.

HON. R. G. MCCUTCHEON.

HON. A. ROBINSON, M.L.C.

QUEENSLAND—MINISTRY.

<i>Premier, Vice-Pres. of Ex. Council, Chief Sec., and Attorney-General—</i> HON. T. J. RYAN.	<i>Secretary for Public Instruction—</i> HON. H. F. HARDACRE.
<i>Home Secretary—</i> HON. D. BOWMAN.	<i>Secretary for Mines—</i> HON. W. HAMILTON, M.L.C.
<i>Secretary for Public Lands—</i> HON. J. MCE. HUNTER.	<i>Secretary for Agriculture and Stock—</i> HON. W. LENNON.
<i>Treasurer and Secretary for Public Works—</i> HON. E. G. THEODORE.	<i>Ministers without Portfolio—</i> HON. J. HUXHAM.
<i>Secretary for Railways—</i> HON. J. ADAMSON.	HON. J. A. FIDELLY.

SOUTH AUSTRALIA—MINISTRY.

<i>Premier and Treasurer—</i> HON. C. VAUGHAN.	<i>Attorney-General—</i> HON. J. H. VAUGHAN, M.L.C.
<i>Chief Secretary—</i> HON. A. W. STYLES, M.L.C.	<i>Commissioner of Public Works and Minister of Water Supply—</i> HON. H. JACKSON.
<i>Minister for Lands and Agriculture—</i> HON. C. GOODE.	<i>Minister for Industry, Mines and Marine—</i> HON. R. P. BLUNDELL.

WESTERN AUSTRALIA—MINISTRY.*

<i>Premier, Colonial Treasurer, and Minister for Railways—</i> HON. J. SCADDAN.	
<i>Minister for Lands and Agriculture—</i> HON. W. D. JOHNSON.	<i>Minister for Works and Industries—</i> HON. W. C. ANGWIN.
<i>Minister for Mines and Water Supply—</i> HON. P. COLLIER.	<i>Colonial Secretary—</i> HON. J. M. DREW, M.L.C.
<i>Attorney-General and Min. for Education—</i> HON. T. WALKER.	<i>Ministers without Portfolio—</i> HON. J. E. DODD, M.L.C. HON. R. H. UNDERWOOD.

TASMANIA—MINISTRY.*

<i>Premier and Attorney-General—</i> HON. J. EARLE.	
<i>Chief Secretary and Minister for Mines and Labour—</i> HON. J. E. OGDEN.	<i>Minister of Lands and Works and Agriculture—</i> HON. J. BELTON.
<i>Treasurer and Minister for Education and Railways—</i> HON. J. A. LYONS.	<i>Minister without Portfolio—</i> HON. P. MCCrackAN, M.L.C.

* See also Appendix.

4. **The Appointment of Ministers and of Executive Councillors.**¹—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. 25-28 hereinbefore). In the States, laws are

1. See Jenks' "Government of Victoria," pp. 269 *et seq.*

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.

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 19 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 of 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,* 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 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. 38 hereinbefore.

The following is a list of the Governors of the various States of the Commonwealth:—

<i>New South Wales</i> ...	SIR GERALD STRICKLAND, Count Della Catena, G.C.M.G.
<i>Victoria</i> ...	The Hon. SIR ARTHUR LYULPH STANLEY, K.C.M.G.
<i>Queensland</i> ...	Major SIR HAMILTON JOHN GOOLD-ADAMS, G.C.M.G.
<i>South Australia</i> ...	Lieutenant - Colonel SIR HENRY LIONEL GALWAY, K.C.M.G., D.S.O.
<i>Western Australia</i> ...	Major-General SIR HARRY BARRON, K.C.M.G., C.V.O.
<i>Tasmania</i> ...	The Rt. Hon. SIR WILLIAM GREY ELLISON-MACARTNEY, P.C., K.C.M.G.

* "Responsible Government in the Dominions," A. B. Keith, Oxford, Clarendon Press, 1912. Vol. I.

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, 1915 :—

COST OF PARLIAMENTARY GOVERNMENT, 1914-15.

Particulars.	C'wlth.	N. S. W.	Vict.	Q'ld.	S. A.	W. A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. Governor-General or Governor—								
Governor's salary ...	10,000	5,000	5,000	2,855	5,000	4,000	2,750	34,605
Official secretary's salary ...	650	400		268		350		
Governor's establishments ...	5,572	1,612	3,500	2,091		1,081	232	
Repairs and maintenance of Governor's residences ...		4,845		1,624	1,235	442	583	
Miscellaneous ...	8,528	1,053	854	537	258	627	192	
Total ...	24,750	12,910	9,354	7,375	6,493	6,500	3,757	71,139
2. Executive Council—								
Salaries of officers ...	142		600	240		350	(f)	1,332
Other expenses ...	22		17	80		50	(f)	169
Total ...	164		617	320		400		1,501
3. Ministry—								
Salaries of Ministers ...	12,000	11,038	8,400	8,217	5,000	6,200	3,200	54,055
Other expenses ...	50	1,219	(d)			1,430	1,410	4,109
Total ...	12,050	12,257	8,400	8,217	5,000	7,630	4,610	58,164
4. Parliament—								
A. The Upper House:								
Allowances to members ...	18,979			1,493	3,303	9,600	3,102	36,477
Railway passes ...	a 10,173	5,903	1,020	(e)	720	220	750	(g) 18,786
Other expenses of members (a) 829 ...					128		9	966
B. The Lower House:								
Allowances to members ...	39,556	40,541	16,056	20,647	6,750	15,397	4,785	133,732
Railway passes ...	(b)	10,723	1,950	(e)	1,600	310	1,250	(g) 15,833
Other expenses of members (b) 2,539 ...				1,451	380	135	25	4,530
C. Miscellaneous:								
Salaries of officers and staff ...	15,294	22,073	13,845	3,845	5,240	3,050	3,017	66,373
Printing ...	14,300	9,646	1,484	2,161	4,789	410	(h) 861	33,651
Hansard ...	15,690	6,540	6,395	5,740	4,614	4,546		43,525
Library ...	5,789	675	1,714	1,133	662	198		10,171
Refreshment rooms ...	1,206	329	1,480	1,742	1,172	1,700		7,629
Water, power, light and heat ...	863	740	766	381	603			
Postage and stationery ...	1,659	340		278	67			
Miscellaneous ...	8,093	(c) 9,650	1,197	302	197	2,048		27,184
Total ...	132,431	109,699	45,907	39,173	30,225	37,623	13,799	408,357
5. Electoral Office—								
Salaries of officers and staff ...	40,815	875	1,066	1,593	4,949	2,003	3,520	57,949
Other expenses ...	66,691	373	16,921	7,250	6,710	5,183		
Total ...	107,506	1,248	17,987	8,843	11,659	7,186	3,520	157,949
6. Cost of Elections ...	85,400	23,739	10,644	13,035	4,231	4,693	(f)	141,742
7. Royal Commissions and Select Committees ...	7,078	5,506	2,827	385	2,136	2,267	701	20,900
GRAND TOTAL ...	369,379	165,359	95,736	77,348	59,744	66,299	26,387	860,252
Cost per head of population ...	1s. 5.9d.	1s. 8.7d.	1s. 4.1d.	2s. 3.4d.	2s. 8.4d.	4s. 1.3d.	2s. 7.4d.	3s. 5.8d.

(a) Including Lower House. (b) Included in Upper House. (c) Including expenses of Standing Committee on Public Works. (d) Members are allowed £1 a day when travelling. (e) Not available. Each member of both Houses has a pass for the whole of the State Railways. (f) Included in Premier's Office. (g) Exclusive of Queensland. (h) Including small amounts for library, refreshment rooms, and postage, not available separately.

§ 2. Parliaments and Elections.

1. Qualifications for Membership and for Franchise.—The summary on pages 882-883 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 thirty-six 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 19 to 28 hereinbefore.

Particulars of Elections. There have been five complete Parliaments since the inauguration of Federation. The dates of the opening and dissolution of these Parliaments are given on page 37. 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 sixth Parliament opened on the 8th October, 1914. Particulars regarding the number of electors enrolled and the number of electors to whom ballot-papers were issued at the last five elections may be found in the tables given hereunder:—

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906,
13th APRIL, 1910, 31st MAY, 1913, and 5th SEPTEMBER, 1914.

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	390,393	834,662	301,167	211,635	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
Victoria ...	1903	302,069	310,403	612,472	171,839	141,648	313,487	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	222,869	468,535	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	335,057	309,841	644,898	83.54	74.90	79.15
Queensland	1903	127,914	99,166	227,080	79,938	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	120,595	279,031	104,570	66,064	170,634	66.00	54.78	61.15
	1913	206,727	156,355	363,082	163,380	117,145	280,525	79.03	74.92	77.26
	1914	207,587	160,620	368,207	163,709	112,695	276,404	78.86	70.16	75.07
South Australia ...	1903	85,947	81,828	167,775	35,736	19,049	54,785	41.58	23.28	32.65
	1906	97,454	95,664	193,118	43,318	27,199	70,517	44.45	28.43	36.51
	1910	105,301	102,354	207,655	63,384	47,119	110,503	60.19	46.03	53.22
	1913	124,222	119,804	244,026	103,739	91,721	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
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	15,532	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	62.15
	1913	106,264	73,520	179,784	80,011	52,138	132,149	75.29	70.92	73.50
	1914	107,005	75,102	182,107	79,150	50,984	130,134	73.97	67.89	71.46
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	29,164	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
Commonwealth	1903	994,484	899,102	1,893,586	527,997	359,315	887,312	53.09	39.96	46.86
	1906	1,114,187	995,375	2,109,562	628,135	431,033	1,059,168	56.38	43.30	50.21
	1910	1,186,783	1,071,699	2,258,482	802,030	601,946	1,403,976	67.56	56.17	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	1,478,468	1,333,047	2,811,515	1,139,933	902,403	2,042,336	77.10	67.69	72.64

THE HOUSE OF REPRESENTATIVES.*

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
Victoria ...	1903	241,134	247,089	488,223	142,460	120,329	262,789	59.08	48.70	53.83
	1906	335,886	336,168	672,054	209,266	171,999	381,265	62.30	51.16	56.73
	1910	346,050	357,649	703,699	245,663	222,869	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	321,655	326,781	648,436	272,622	256,757	529,379	84.76	76.24	80.10
Queensland	1903	114,550	88,375	202,925	74,042	41,680	115,731	64.64	47.17	57.03
	1906	150,037	121,072	271,109	79,540	44,942	124,482	53.01	37.12	45.92
	1910	158,436	120,595	279,031	104,570	66,064	170,634	66.00	54.78	61.15
	1913	206,727	156,355	363,082	163,380	117,145	280,525	79.03	74.92	77.26
	1914	163,836	138,534	302,370	132,782	98,074	230,856	81.05	70.79	76.35
South Australia ...	1903	23,856	25,789	49,645	12,394	7,728	20,122	51.95	29.97	40.53
	1906	42,065	38,578	80,643	19,850	12,669	32,519	47.19	32.84	40.32
	1910	59,581	61,594	121,175	37,189	29,852	67,041	62.42	48.47	55.33
	1913	90,009	85,301	175,313	74,316	65,704	140,020	82.67	77.02	79.87
	1914	116,594	111,372	227,966	97,182	84,956	182,138	83.35	76.28	79.90
Western Australia	1903	41,500	28,324	69,824	16,824	4,409	21,233	40.54	15.57	30.41
	1906	91,427	54,046	145,473	36,976	15,740	52,716	40.44	29.12	36.24
	1910	80,996	53,983	134,979	53,704	30,189	83,893	66.30	55.92	62.15
	1913	87,570	62,086	149,656	65,754	44,310	110,064	75.09	71.37	73.03
	1914	89,824	64,736	154,560	66,221	44,456	110,677	73.72	68.67	71.61
Tasmania	1903	43,515	38,753	82,268	23,729	13,292	37,021	54.53	34.28	44.99
	1906	37,779	34,859	72,618	23,753	16,441	40,194	62.87	47.19	55.35
	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	42,995	41,122	84,117	34,789	30,314	65,103	80.91	73.72	77.40
Commonwealth	1903	767,809	703,093	1,470,902	433,582	305,820	739,402	56.47	43.50	50.27
	1906	1,020,917	899,480	1,920,397	585,535	403,018	988,553	57.35	44.81	51.48
	1910	1,128,496	1,020,473	2,148,969	768,714	580,912	1,349,626	68.12	56.93	62.80
	1913	1,401,042	1,260,335	2,661,377	1,078,997	876,726	1,955,723	77.01	69.56	73.49
	1914	1,225,990	1,122,451	2,348,441	954,768	772,138	1,726,906	77.88	68.79	73.53

* For the House of Representatives the number of electors enrolled in contested divisions only is given.

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.

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 25).

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, and, 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.	
							Total Number of Votes given in favour of the Prop's'd Law.	Total Number of Votes given not in favour of the Prop's'd Law.	Total Number of Votes given in favour of the Prop's'd Law.	Total Number of Votes given not in favour of the Prop's'd Law.
N.S.W.	461,196	406,998	868,194	233,668	150,520	384,188	135,968	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	268,743
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
Tas.	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 25 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.	Fe-males.	Total.	Males.	Fe-males.	Total.	Males.	Fe-males.	Total.
New South Wales ...	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	74.92	77.26
South Australia ...	124,222	119,804	244,026	103,739	91,724	195,463	83.51	76.56	80.10
Western Australia ...	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 C'wealth	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 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	123,813	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	64,968	57,184
Tasmania ...	34,660	42,084	34,724	42,304	34,839	42,236	34,625	42,296	34,839	41,955	33,176	40,189
Totals ...	958,419	982,615	960,711	986,824	961,601	987,611	956,358	990,046	967,331	975,943	917,165	941,947

5. **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 fifty-four. 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 not held 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-two complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twenty-second opened on the 15th November, 1910, and closed on the 6th November, 1913. The average duration of the Parliaments was two years and five months. The first session of the twenty-third Parliament was opened on the 23rd December, 1913. Particulars of voting at the last eight elections are given below:—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES, 1894 to 1913.

Date of Opening of Parliament.	Electors upon the Roll.	Members Returned.	Members Unopposed.	Contested Electorates.			
				Electors upon the Roll.	Votes Recorded.	Percentage of Votes Recorded.	Percentage of Informal Votes.
7th August, 1894 ...	298,817	125	1	254,105	204,246	80.38	1.62
13th „ 1895 ...	267,458	125	8	238,233	153,034	64.24	0.88
16th „ 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	363,062	90	2 {	304,396	226,057	74.26	0.59
{ Females	326,428			262,433	174,538	66.51	
2nd October, 1907 { Males	392,845	90	5 {	370,715	267,301	72.10	2.87
{ Females	353,055			336,680	204,650	60.78	
15th Nov., 1910... { Males	458,626	90	3 {	444,242	322,129	72.53	1.78
{ Females	409,069			400,139	262,154	65.52	
23rd Dec., 1913... { Males	553,633	90	3 {	534,379	385,838	72.20	2.10
{ Females	484,366			468,437	302,389	64.55	

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.

6. 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, 1915, 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-three complete Parliaments, the first of which was opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twenty-third closed on the 4th November, 1914. The first session of the twenty-fourth Parliament opened on the 3rd December, 1914.

Statistics regarding the elections that have been held since 1901 will be found below:—

PARTICULARS OF VICTORIAN ELECTIONS, 1902 to 1914.

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 ...	184,087	*	*	*	290,241	216,063	141,471	65.47
1904 ...	172,526	104,865	66,182	68.11	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	*	*	*	263,876	164,919	88,461	53.64
1910 ...	240,520	136,479	40,053	35.21	487,661	*	*	*
1911 ...	249,481	*	*	*	701,451	619,644	394,189	63.61
1913 ...	270,175	99,646	47,719	47.89	670,775	*	*	*
1914 ...	284,089	*	*	*	810,026	593,334	319,950	53.92

* Not contested.

As the table shews, the proportion of voters for the Legislative Council is considerably less than that for the Legislative Assembly. The number of persons who voted by post at the elections for the Legislative Assembly in 1914 was 7266.

7. 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. 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 seven elections are given below:—

ELECTIONS FOR QUEENSLAND LEGISLATIVE ASSEMBLY, 1902 to 1915.

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.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	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	...	...	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	89,609	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	150,568	335,195	140,396	125,844	266,240	86.46	90.09	88.14

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.

8. 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-one complete Parliaments, the first of which was opened on the 22nd April, 1857, and dissolved on the 1st September, 1859, while the twenty-first was opened on the 19th March, 1912, and terminated on the 28th February, 1915. The present Ministry took office on the 3rd April, 1915, the opening of the first session of the new Parliament being postponed till the 8th July following. Particulars of voting at the different elections from the year 1900 are given below.

PARLIAMENTARY ELECTIONS IN SOUTH AUSTRALIA, 1900 to 1915.

Year.	Electors on Rolls.			*Electors Who Voted.			*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
LEGISLATIVE 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

* 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.

9. The Parliament of Western Australia.—In this State both chambers are elective. For the Legislative Council there are thirty members, each of the ten electorates returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral divisions. 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 eight complete Parliaments, the first of which was opened on the 30th December, 1890, while the first session of the ninth Parliament commenced on the 3rd December, 1914. 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 six Assembly and four Council elections are given in the tables below :—

PARLIAMENTARY ELECTIONS, WESTERN AUSTRALIA, 1901 to 1914.

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.
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	54,612	41,993	96,605	57	58	57

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	54,612	41,993	96,605	57	58	57

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

10. 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*. (See also page 884.)

PARLIAMENTS AND ELECTIONS—

Particulars.	Commonwealth.	New South Wales.	Victoria.
1. Senate and Legislative Councils.			
<i>Number of Members</i> ...	36	About 60. 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	(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 and in the State continuously for 3 months after naturalisation, and adult natural-born subjects who have resided in the Commonwealth for 6 months and in the State for a continuous period of 3 months	Adult natural-born or naturalised subjects of either sex who have resided in the State for a continuous period of 6 months. 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, 1916.

Queensland.	South Australia.	Western Australia.	Tasmania.
About 40	20	30	18
Male adult natural-born or naturalised British subjects	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	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	Male British subjects, either natural-born or for at least 5 yrs. 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
For life	6 years	6 years	6 years
None	£200 each per annum	£300 each per annum	£200 each per annum
(Nominated)	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.	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	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 to 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
72	46	50	30
All persons qualified and registered to vote at the election of members of the Legislative Assembly are eligible as members	Any person qualified for the franchise of the House of Assembly is eligible for membership	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	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.
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	Duration of Parliament, which is limited to 3 years
£300 each per annum and £2 per month for postage and telegrams	£200 each per annum	£300 each per annum	£200 each per annum
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.	Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months.	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	Adult natural-born or naturalised subjects of either sex who have resided in Tasmania for 6 months continuously.

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 Con- tested Districts.		Votes Recorded.		Percentage of Electors Voting.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1900 ...	39,002	...	29,022	...	18,872	...	65.02	...
*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

* Manhood suffrage, Act 64 Vic., No. 5. Universal adult suffrage, Act 3 Edward VII., No. 17. has been prescribed at 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 pages 719 and 720). In the States the number and functions of the administrative departments vary considerably. This matter has also been referred to hereinbefore (see page 745). 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, 1916.

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 (as from 1st July, 1912).	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.	Auditor-General and Staff, Officers of the Parliament, Public Service Commissioner and Staff, Royal Commissions, the Federal Executive Council, Historic Memorials.
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. Home Affairs— (a) Bureau of Census and Statistics. (b) Electoral Office. (c) Lands and Surveys. (d) Meteorological Office. (e) Public Works. (f) Public Service Commissioner (until 1st July, 1912).	Census and Statistics, Commonwealth Electoral, Commonwealth Franchise, Compulsory Voting, Constitution Alteration (Senate Elections), Governor-General's Residences, Jervis Bay Territory Acceptance, Lands Acquisition, Meteorology, Referendum (Constitution Alteration), Representation, Seat of Government, Commonwealth Railways, War Census.	Astronomy, Census and Statistics, Elections, Franchise, Lands, Meteorology, Public Works, Railways, Representation of the People, Rivers, Seat of Government, Surveys.
4. Treasury— (a) Land Tax and Assessment. (b) Old Age Pensions. (c) Maternity Bonus. (d) Government Printer.	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 Assurance (Companies), Loan Acts, Marine Insurance, Maternity Bonus, Supply, Tasmania Grant, Treasury Bills, War Loan, War Pensions.	Appropriation and Supply, Assistance to States, Banking, Currency, Government Printer, Insurance, Invalid and Old-Age Pensions, Maternity Bonus, Pensions and Retiring Allowances, Public Moneys, State Debts, Taxation (other than duties of Customs and of Excise), War Pensions, Workmen's Compensation.
5. Trade and Customs— (a) Customs and Excise. (b) Fisheries. (c) Navigation. (d) Quarantine.	Australian Industries Preservation, Bounties, Commerce (trade descriptions), Customs, Distillation, Excise, Interstate Commission, Iron Bounty, Light-house, Manufactures Encouragement, Quarantine, Sea-carriage 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.
6. External Affairs— (a) Advertising and Immigration. (b) High Commissioner's Office. (c) Northern Territory. (d) Papua. (e) Norfolk Island.	Contract Immigrants, Emigration, High Commissioner, Immigration Restriction, Naturalisation, Norfolk Island, Northern Territory, Pacific Island Labourers, Papua.	Consular Appointments, External Affairs, Pearl Shell and Trepang Fisheries in Australian waters beyond territorial limits, High Commissioner, Immigration and Emigration, Influx of Criminals, Naturalisation and Aliens, Passports, People of Races (other than the Aboriginal races in any State) for whom it is deemed necessary to make special laws, Relations with the Pacific Islands, Territories of the Commonwealth.
7. 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.
8. Postmaster-General's—	Pacific Cable, Post and Telegraph, Telephone.	Postal, Telegraph and other like services.
9. 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.

NEW SOUTH WALES.—ADMINISTRATIVE GOVERNMENT, 1916.

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
1. Premier's Office— (a) Governor's Establishment. (b) Agent-General. (c) Immigration & Tourist Bureau. (d) Immigration Department, London.	...	Is charged with—Departmental business connected with the Houses of Parliament, foreign correspondence, the Agent-General and Immigration matters, etc.
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 & Trade Unions. (h) Bureau of Statistics.	Electorates & Elections, Audit, Banks and Bank Holidays, Birds Protection, Bread, Building and Co-operative Societies, Sunday Closing, Constitution, Fire Brigades, Fisheries, Friendly Societies, Gaming and Betting, Metropolitan Traffic, Native Animals Protection, Native Dogs Destruction, Police Offences, Police Regulation, Printing, Sydney Corporation, Vagrancy, Weights and Measures, Motor Traffic, Aborigines Protection.	Is charged with—the public seal, execution of capital sentences, appointment of magistrates, the police, theatrical and racecourse licenses, general elections, franchise, statistics, & all matters of business not expressly assigned to any other department, Lord Howe Island, etc.
3. Minister of Public Health— (a) Inspector-General of Insane. (b) Director-General of Public Health. (c) Master in Lunacy. (d) Dental Board. (e) Medical Board. (f) Board of Official Visitors Hospitals for Insane. (g) Meat Industry & Abattoirs Board.	Lunacy, Dentists, Public Health, Diseased Animals and Meat, Inebriates, Medical Practitioners, Theatres and Public Halls, Public and Private Hospitals, Dairies Supervision, Pure Food, Cattle Slaughtering, Smoke Nuisance.	Licenses for public entertainments, private hospitals, treatment of insane and inebriates, public vaccinators, hospitals and charitable institutions, public health, etc.
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) Government Railways and Tramways. (b) Sydney Harbour Trust. (c) Government Savings Bank.	Stamp Duties, Land & Income Tax, Merchant Shipping, Wharfage and Tonnage Rates, Government Railways, Sydney Harbour Trust, Government Savings Bank, Pharmacy, Explosives.	Finance, public works, closer settlement, Treasury guarantee, public debt, resumed properties, payment of Imperial and State pensions, purchase and issue of stores, Govt. printing office, Govt. railways and tramways, Sydney Harbour Trust, shipping, storage and issue of explosives, State clothing factory, etc.
5. Dept. of Attorney-General and of Justice— (a) Prothonotary & 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.	Auctioneers, Bankruptcy, Companies, Contractors' Debts, Coroners, Crimes, Courts of Justice, Fines and Penalties, Hawkers, Interstate Debts, Liens on Crops, Liquor, Lotteries, Marriage, Money-lenders, Newspapers, Pawnbrokers, Prisons, Public Service, Public Trustee, Real Property, Registration of Births, Deaths, and Marriages, of Deeds of Firms, Sheriff, Wills, Probate and Administration, Poor Prisoners' Defence, Influx of Criminals.	Is charged with—business relating to the offices of the Chief Justice and Puisne 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 Govt. on all legal questions.

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.</p>	<p>Crown Lands, Newcastle Pasture Reserve, Public Roads, Public Parks, Public Gates, Public Trusts, Labour Settlements, Prickly Pear Destruction, Western Lands, Closer Settlement.</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.</p>
<p>7. Dept. of Public Works.— (a) Architects Branch. (b) Local Government and National Works. (c) Harbours and Drainage. (d) Railway and Tramway Construction. (e) Engineering Drafting. (f) Survey Drafting. (g) Survey. (h) Land Valuation. (i) Local Government. (j) Accounts. (k) Bonds and Contracts. (l) Industrial Undertakings. (m) Metropolitan Board of Water Supply and Sewerage. (n) Hunter District Water Supply and Sewerage Board, and (o) Country Towns Water Supply and Sewerage.</p>	<p>Public Watering Places, Water, Public Works, Country Towns Water and Sewerage, Metropolitan and Hunter District Water and Sewerage, Scaffolding and Lifts, Local Government, and various Auxiliary Acts, Impounding, and all Acts connected with authorised Public Works.</p>	<p>Erection, maintenance, and repair of public buildings and works; construction of harbour works, docks, water supply and sewerage works, tanks and wells, railways and tramways; "National" roads and bridges; surveys and valuations; administration of Local Government Acts; construction of dredges and punts, machinery, State Brick and Lime works, Quarries, Timber Yards, and Workshops, Joinery works, Pipe works; State motor garage, State power station.</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 Board. (j) Prospecting Board. (k) Mining Museum. (l) Sludge Abatement Board. (m) Coalfields (n) Correspondence. (o) Records.</p>	<p>Mining, Miners' Accident Relief, Mines Inspection, Coal Mines Regulation, State Coal Mines.</p>	<p>All matters relating to mining generally; geological and mining surveys; assays, inspection of mines, miners' accident relief, advances to prospectors.</p>
<p>9. Dept. of Agriculture— (a) Administrative. (b) Accounts. (c) Stock. (d) Forestry. (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, Stock Diseases, Forestry, Trustees of Show Grounds Enabling, Fruit Cases.</p>	<p>Matters relating to agriculture, forestry, stock, including experiment and demonstration farms, viticultural stations and nurseries, experiment plots, Agricultural College, Farm Schools, Botanic Gardens, Centennial Park and Sydney Domain, Nursery Gardens, Campbelltown; irrigation farms; diseases of fruit and stock; publication of Agricultural Gazette and Bulletins; Agricultural Bureau.</p>

NEW SOUTH WALES—(continued).°

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Other Matters dealt with or under Control.
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. (f) Technological Museums. (g) State Children's Relief. (h) Industrial Schools and Reformatories. (i) National Art Gallery. (j) Conservatorium of Music. (k) Public Library. (l) Australian Museum. (m) Observatory. (n) Schools of Arts, Literary Institutions, etc.	Public Instruction, 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.	Education; high schools, districts schools, continuation (junior, technical, commercial and domestic) schools, kindergarten and subsidised teaching, 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.
11. Department of Labour and Industry—	Early Closing, Factories and Shops, Shearers' Accommodation, Truck, Minimum Wage, Saturday Half Holiday, Industrial Arbitration, Gas, Clerical Workers, Workmen's Compensation Act.	Working conditions in factories and shops, early closing, industrial boards, industrial matters generally, and State Labour Branch, Women's Employment Agency, supply and quality of gas.

VICTORIA.—ADMINISTRATIVE GOVERNMENT, 1916.

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) Training Ships. (t) Fisheries and Game.	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 & Measures, Dentists, Infant Life Protection, Statistics, Opium (part), Motor-car, Electoral, Preferential Voting, Workers' Compensation, Fisheries, Game.	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.
2. Attorney-General and Minister of Justice— (a) Supreme Court. (b) County Court. (c) Crown Law Offices. (d) Crown Solicitor. (e) Master in Equity and Lunacy. (f) Prothonotary. (g) Registrar of Titles. (h) Sheriffs.	Courts of Justice, Coroners, Licensing (part), Probate, Crimes, Children's Courts, Companies, Crown Remedies, Registration of Firms, Hawkers, Insolvency, Mines (part), Money-lenders, Pawnbrokers, Real Property, Transfer of Land, Stamps, Trusts, Book Debts,	Bankruptcy and insolvency, administration and probate, control of courthouses, etc., preparation of legal instruments, administration of justice generally, and advice to Government in all legal questions.
3. Treasury— (a) Land and Income Tax Office. (b) Printing Office. (c) Curator of Intestate Estates. (d) Charities. (e) Tender Board.	Auction Sales, Hospitals and Charities, Public Moneys, Savings Bank, Income Tax, Licensing (part), State Land Tax.	Conduct of finances, financial aid to charities, endowment to municipal institutions.

VICTORIA—(continued).

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
4. Public Instruction—	Education, Teachers, Registration of Teachers and Schools.	Education generally, supervision of the Training College, registration of teachers & schools.
5. Railways—	Railways and other Acts relating to specific railways and railway loans.	Management and maintenance of Government railways and electric trams.
6. Mines—	Mines, Gold Buyers, Boilers Inspection, Mines Development, Coal Mines Regulation.	Deals with applications for mining leases and licenses, water rights, prospecting.
7. Water Supply—	Water, Waterworks Construction, Water Supply, Loans Application.	Administration of various water works trusts, construction of water works and irrigation systems, boring for water.
8. Agricultural—	Agricultural Colleges, Vegetation Diseases, Stock Diseases, Milk and Dairy Supervision, Artificial Manures, Thistle, Vine Diseases, Sheep Dipping.	Agricultural colleges & experimental farms, lectures and demonstrations in practical and theoretical agriculture, etc.
9. Lands— (a) Survey. (b) Botanic Gardens and Domain. (c) Land Purchase & Management Board. (d) Advertising & Intelligence Department (Immigration).	Lands, Closer Settlement, Vermin Destruction, Local Government (part), Seed Wheat Advances, Bush Fires Loan, State Aid Abolition, Mines (part).	Survey, sale, and administration of Crown lands, including occupation for industrial, agricultural, and pastoral purposes. Immigration, assisted and nominated passages.
10. Public Works— (a) Roads and Bridges and Local Govt. Brch. (b) State Schools. (c) Dredges and Snagging. (d) Ports and Harbours.	Local Government, Electric Lighting and Power, Pounds, Dog, Unused Roads and Water Frontages, Tramways, Drainage Areas, Municipal Grounds, Country Roads.	Construction of public works, railway construction, light-houses, and signal stations, Alfred Graving Dock, Government steamer, immigration, Labour Bureau.
11. Labour—	Factories and Shops, Servants, Registry Office.	Inspection of factories, workshops and shops, wages boards, lifts.
12. Forests—	Forests.	
13. Public Health—	Health, Cemeteries, Pure Food.	Public health generally, inspection of food.

QUEENSLAND.—ADMINISTRATIVE GOVERNMENT, 1916.

1. Chief Secretary— (a) Auditor-General. (b) Agent-General. (c) Bureau of Exchange of International Publications. (d) Govt. Residency, Thursday Island. (e) Immigration Dept. (f) Intelligence & Tourist Bureau. (g) S.S. <i>Lucinda</i> . (h) Pub. Library, Art Gallery, and Museum.	Constitution, Extradition, Immigration, Officials in Parliament, Public Service, Standard Time.	Commissions, etc., under Public Seal of State, foreign correspondence, immigration, justices of the peace, legislation, public service, communications with Governor and with States, Commonwealth, British, colonial, and foreign Governments.
2. Public Instruction—	University, Grammar Schools, State Education, Central Technical College.	Primary education, schools of art and technical colleges, grammar schools, University of Queensland.
3. Railways—	Railways and Railway Construction.	Railways and tramways management and construction.

QUEENSLAND—(continued).

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
4. Home Secretary— (a) Government Advertising Board. (b) Electoral Department. (c) Board of Health. (d) Registrar-General. (e) Dental Board. (f) Local Auditors Board. (g) Medical and Pharmacy Board. (h) Aborigines. (i) Benevolent Asylum. (j) Police. (k) Prisons. (l) Orphanages. (m) Cemeteries. (n) Conciliation Boards. (o) Dalby Sanatorium. (p) Diamantina Hospital for Incurables. (q) State Children's Department, Government Statistician.	Aboriginals, Bank Holidays, Careless Use of Fire, Cemetery, Charitable Institutions, Children's Protection, Dental, Elections, Fencing, Fire Brigades, Hawkers, Health, Hospital, Industrial Schools, Inebriates, Influx of Criminals Prevention, Insanity, Legitimations, Liquor, Local Govt., Medical, Native Labourers, Pharmacy, Police, Prisons, Religious, etc., Institutions, Registration Births, etc., Poisons, State Children, Statistics, Traffic.	Is charged with business connected with—aboriginals, cemeteries, elections, fire brigades, holidays, hospitals and charitable institutions, industrial and reformatory schools, infant life protection, insanity, lazarets, local Government, police, prisons, public health, quarantine, remission and execution of sentences and penalties, State children, theatres, miscellaneous services, and all other matters of internal arrangement not confided to any other Minister.
5. Treasury— (a) Government Analyst. (b) Govt. Printing Office. (c) Government Savings Bank. (d) Government Stores. (e) Harbours and Rivers Department. (f) Income Tax Department. (g) Marine Department. (h) Marine Board. (i) Water Supply Department. (j) Compt. of Central Sugar Mills. (k) Workers' Dwellings Board.	Coast Survey, Explosive, Fisheries, Savings Banks, Annuities, Auctioneers, Harbours, Income 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.	Central sugar mills, dredges, fisheries, finance generally, harbour boards and improvements, navigation, ports and harbours, powder magazines, printing, public debt, savings banks, taxation generally, trade and commerce, water supply, water conservation, weights and measures, wharves and jetties.
6. Attorney-General— (a) Crown Solicitor. (b) Supreme & District Courts. (c) Curator in Intestacy and Insanity. (d) Trustees in Insolvency. (e) Registry of Friendly Societies. (f) Registry of Titles. (g) Com. of Stamps. (h) Police Magistrates. (i) Petty Sessions.	Justiciary, Building Societies, Companies, Friendly Societies, Inquests, Insolvency, Intestacy, Leases to Aliens, Printing, Real Property, Stamp, Succession and Probate, Totalisator, Trade Unions, Workers' Compensation.	Administration of justice generally, advising Government on all legal questions, judicial establishments, courts of petty sessions, preparation of all legal instruments and contracts.
7. Mines— (a) Geological Survey. (b) Mining Registries. (c) Mines Inspectrs. (d) Gold Wardens.	Gold Mining, Mineral Lands, School of Mines.	Geological survey, mineral fields, regulation of mines, Charters Towers School of Mines.
8. Public Lands— (a) District Land Offices. (b) District Survey Offices. (c) Survey Office.	Agric. Lands Purchase, Crown Lands, Pastl. Leases, Pub. Parks, Pub. Works Land Resumption, Rabbit, Marsupial-proof Fencing.	Destruction, etc., of rabbits and prickly pear, opening and closing roads, reserves, Crown lands, town commonages.
9. Agriculture— (a) Agricultural College. (b) Inspectors of Stock and Sheep & Registry of Brands. (c) Botanic Gardens. (d) State Farms and Nurseries. (e) Sugar Experiment Stations.	Agric. Bank, Brands, Dairy, Diseases in Plants, Sheep and Stock, Game & Fish Acclimatisation, Live Stock and Meat Export, Margarine, Marsupial Boards, Native Birds Protection, Slaughtering, Shearers' and Sugar-workers', State Forests, Sugar Cultivation.	Agric. College, Botanic Gardens, brands, diseases in animals and plants, loans in aid of co-operative agric. production, marsupial destruction, meat and dairy produce encouragement, slaughter of cattle for consumption, State farms and nurseries, stock and sugar experiment stations.
10. Public Works— (a) Government Architect. (b) Engineer for Bridges. (c) Director of Labour. (d) Factories etc. Inspectors. (e) Inspector of Machinery. (f) Industrial Court.	Metropolitan Water and Sewerage, Electric Light and Power, Factories and Shops, State Industrial Peace, Inspection of Machinery and Scaffolding.	Construction of public buildings, State-school buildings, technical colleges, bridges, hospitals, electric light and power stations.

SOUTH AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1916.

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
1. Chief Secretary— (a) Statistical Dept. (b) Audit. (c) Public Actuary. (d) Sheriff. (e) Registrar-General. (f) Government Printer. (g) Police. (h) Central Board of Health. (i) Hospitals. (j) Mental Hospital. (k) Destitute Persons. (l) State Children. (m) Government Shorthand Writer. (n) Gaols and Prisons.	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 Entertainments, Fire Brigades, Public Charities' Funds, etc.	Chamber of Manufactures, Civil Service exams., fire brigades, Government <i>Gazette</i> , public charities, Royal commissions, State printing, public houses, hospitals, public health, law and order, prisons.
2. Treasury— (a) Land and Income Tax Department. (b) Stamp Duty Department. (c) Agent General in London.	Seed Wheat, Unclaimed Moneys, Pawnbrokers, Appraisers, Auctioneers, Hawkers, Taxation, Stamp Duty.	Banking, finance and taxation generally, Imperial and other Government pensions, Public Service Superannuation Fund, licenses.
3. Attorney-General— (a) Law Officers. (b) Pub. Trustees. (c) Curator of Convicts' Estates. (d) Supreme Ct. (e) Registrars of Industrial Soc., etc., in Admiralty, of Probates, of Companies, and of Building Soc. (f) Insolvency Court. (g) Police and Local Courts. (h) Licensing Benches. (i) Registrar-General of Deeds. (j) Coroners. (k) Electoral Department. (l) Local option.	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 Acts in which magistrates have jurisdiction, Ancient Lights, Declarations, etc.	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.
4. Crown Lands and Immigration— (a) Crown Lands Office. (b) Roads Department. (c) Woods and Forests Department. (d) Tourist Bureau. (e) Intelligence Department. (f) Survey Department. (g) Photolithographic Department.	Corporations, District Councils, Manufacturing Districts, Blocker's Loan, Bird and Animal Protection, Game, National Park, Noxious Weeds, Roads, Woods and Forests, Pastoral, Vermin, Licensed Surveyors, Weights and Measures, Botanic Garden, Advances to Settlers, Immigration, Impounding, Travelling Stock, Waybills.	Matters affecting municipal corporations 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, forest reserves, surveys, botanic gardens, animals and birds.
5. Public Works— (a) Railways Department. (b) Engineer-in-Chief's Department. (c) Hydraulic Engineer's Department. (d) Works and Buildings. (e) Labour Exchange. (f) Supply and Tender Board Department. (g) Aborigines Department.	Railway Commissioners, Refreshment Rooms, South-eastern Drainage, Water Conservation, Sewers, Murray River Works, Adelaide Cemetery and Cremation, Renmark Irrigation Trust, Municipal Tramways Trust.	Railways, 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 and Adelaide cemetery, aborigines, etc.
6. Mines— (a) Department of Mines. (b) Government Geologist.	Mining, Gold Dredging, Mining on Private Property.	Mining, warden's courts, record of assays, geological surveys and reports.
7. 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.	Education, Adelaide University, Degrees in Surgery, University Site, Public Library, Museum and Art Gallery, School of Mines.	Education generally, including primary, secondary, technical, and university, institutes, astronomical (but not meteorological) work.

SOUTH AUSTRALIA—(continued).

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
8. Department of Industry—	Industrial Arbitration, Factories, Early Closing, Scaffolding, Lifts, Shearers' Accommodation, Workmen's Compensation.	Factories, shops, early closing, industrial disputes, etc.
9. 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) Fisheries. (i) Produce Department. (j) Irrigation. (k) Experimental Farms.	Bush Fires, Fertilisers, Fisheries, Vine, Fruit and Vegetable Protection, Commerce, Hay and Chaff, Insecticides, Phylloxera, Irrigation, Stock Diseases, Brands.	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, fish industry.
10. Marine— (a) Harbours Board. (b) Marine Board. (c) Explosives and Analytical Laboratory. (d) Inflammable Oils. (e) Life Saving Dept.	Harbour, Marine, and Navigation Acts, Inflammable Oils Act.	Wharves, harbours, jetties, lighthouses, dredging, explosives, inflammable oils, life saving.

WESTERN AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1916.

1. 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 and Factories. (j) Early Closing. (k) Observatory. (l) Police. (m) Public Charities, State Children, and Government Labour Bureau. (n) Registry and Statistical. (o) State Steamship Service. (p) Lithography. (q) Printing.	Aborigines, Adoption of Children, Bread, Bank Holidays, Protection of Property, Co-operative and Provident Societies, Dentists, Fire Brigades, Early Closing, Friendly Societies, Fisheries, Factories, Harbours and Rivers, Hospitals, Health, Industrial Arbitration, Lunacy, Inebriates, Marine Stores, Medical, Newspaper Libel, Prisons, Police, Pharmacy and Poisons, Registration of Births, Deaths and Marriages, 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.	Consuls, passports, fisheries, aborigines, actuarial, industrial arbitration, friendly and other societies, trades unions, prisons, Government gardens, lighthouses, harbours and rivers, immigration, and general information, immigration bureau, immigrants' home, 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.
2. Treasury— (a) London Agency. (b) Savings Bank. (c) Government Stores. (d) Tender Board. (e) Premier's Office. (f) Workers' Home Board. (g) Public Service Commissioner.	Taxation, Auctioneers, Stamp, Wines, Beer and Spirits Sale, Gun Licensing, Gov. Savings Bank, Dividend and Totalisator Duties, Workers' Homes, Pensions, Audit, Public Service, Sale of Government Properties.	Finance generally, general stores, stamp duties, savings bank, pensions, public accounts.
3. 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 Intestates' Estates. (h) Sheriff. (i) State Hotels and Inspection of Liquor.	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, Superannuation, Truck Act, Transfer of Land, Workers' Compensation, Workmen's Wages, Usury, etc.	Criminal and civil law, conveyancing, parliamentary drafting, sheriffs, bankruptcy, intestacy, licensing, petty debts, petty sessions and police courts, land titles and registration of deeds and leases, elections.

WESTERN AUSTRALIA—(continued).

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
4. Public Works— (a) Administrative and State Industries. (b) Engineering Division. (c) Architectural Division.	Public Works, Tramways, Railways (Special), Electric Light, Municipal Corporations and Roads.	Public buildings and works, railway and tramway construction, municipalities, and road boards, State saw mills and brick yards.
5. Water Supply, Sewerage and Drainage— (a) Goldfields Division. (b) Metropolitan .. (c) Agricultural .. (d) North-West ..	Goldfields Water Supply, Water Boards, Metropolitan Water Supply, Sewerage and Drainage, Land Drainage.	All State hydraulic, sewerage, land drainage and irrigation undertakings.
6. Agricultural— (a) Department of Agriculture. (b) Commissioner Wheat Belt. (c) Commissioner South - West. (d) Commissioner Fruit Industries. (e) Stock, Brands, Poultry, and Veterinary Inspection. (f) Rabbit and Vermin Board. (g) Markets, Refrigerating Works, Saleyards and Abattoirs. (h) Botanist, Pathologist, and Entomologist. (i) Traction Engine Clearing. (j) State Meat Stalls.	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, Agricultural Bank, Cattle Trespas, Fencing and Impounding, Live Stock and Frozen Meat.	Agricultural, horticultural, dairying and pastoral pursuits generally, abattoirs and refrigerating works, State markets, clearing by traction engines, advances to settlers, encouragement of secondary industries, Narrogin School of Agriculture, State orchards, orchards and insect pests, Federal quarantine in connection with fruit export, poultry and veterinary inspection.
7. Education— (a) Primary Education. (b) Secondary Education. (c) Training College for Teachers. (d) Technical Education.	Education.	Education generally, including primary, secondary, continuation and technical schools, inspection of schools, training of teachers.
8. Railways—	Government Railways and Tramways, Electric Light and Power Agreement.	Management, maintenance and control of Govt. railways and tramways, control of electric power scheme.
9. Mines— (a) Explosives and Analytical. (b) Inspection of Machinery. (c) Mining Engineers. (d) Geological Survey. (e) State Batteries. (f) Woods and Forests. (g) School of Mines.	Mining, Sluicing and Dredging for Gold, Explosives, Inspection of Machinery, Mines Regulation, Coal Mines, Mining Development, Timber Regulations.	Mining generally, State batteries and reduction plants, woods and forests.
10. Lands— Lands and Surveys.	Land, Cemeteries, Bush Fires, Parks, Reserves, Agricultural Lands Purchase, Opening and Closing of Roads under Lands Act.	All business in connection with holdings under the Land Acts, reserves, roads, land selection, district survey offices, land agencies.
11. Audit.	Audit.	Audits generally and as provided by special Acts.
12. Taxation. (a) Land Tax. (b) Income Tax. (c) Dividend Duty. (d) Totalisator Duty. (e) Totalisator Licenses.	Land and Income Tax Assessment, Land Tax and Income Tax, Dividend Duties, Totalisator Duty and Regulations.	Direct taxation generally (except stamp duties), totalisator licenses.

TASMANIA.—ADMINISTRATIVE GOVERNMENT, 1916.

Departments, Sub-Departments, Branches, etc.	Principal Acts Administered.	Matters dealt with or under Control.
1. Premier— (a) Governor's Establishment. (b) Premier's Dept. (c) Executive Council. (d) Agent-General.	...	Correspondence with State, Federal, Colonial, British, and Foreign Governments., with Agent-General and Governor, etc.
2. Chief Secretary— (a) Houses of Parliament. (b) Electoral. (c) Audit. (d) Statistical & Registration. (e) Inspection of Machinery, Magazines and Explosives. (f) Fisheries. (g) Public Buildings. (h) Charitable Institutions. (i) Boys' Training School. (j) Home for Invalids. (k) Neglected Children's Department. (l) Medical Institutions. (m) Hospitals. (n) Public Health. (o) Mines. (p) Public Service Board.	Audit, Bank Holidays, Cemeteries, Registration of Births and Deaths, Botanical Gardens, Charitable Institutions, Electoral, Fire Brigades, Factories, Fisheries, Hospitals, Inebriates, Museum & Art Gallery, Newspapers, Pensions, Pharmacy, Public Health, Public Service, Wages Boards, Midwifery, Shops Closing, Workers' Compensation.	Charitable institutions, cemeteries, public health, electoral, franchise, fisheries, machinery, statistics, training & industrial schools, public service, explosives, wages boards.
3. Treasury— (a) Taxes. (b) Printing. (c) State Savings Bank. (d) Agricultural Bank. (e) Merchant Ship's Officers' Exam. Board. (f) Railways. (g) Education.	Suppression of Public Betting, Licensing, Stamp Duties, Auction, Pawnbrokers, Public Debts, Taxation, Assessment, Savings Bank, State Advances, Merchant Ships' Officers' Examination, Railway Management, Education.	Finance generally, collection of internal revenue and of stamp duties, Government printing, railway and educational matters.
4. Mines—	Mining, Mining Companies, Mining Companies (Foreign).	All matters arising under Acts dealing with mining, registration of mining companies.
5. 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.
6. Public Works—	Railway Management, Public Works, Local Government.	Construction and control of public works, including railways.
7. Attorney-General— (a) Supreme Court. (b) Lands Titles. (c) Sheriff. (d) Magistracy. (e) Police.	Probate, Stamp Duties, Foreign Companies, Real Property, Prisons, Bankruptcy, Local Courts, Infant Life Protection, Motor Traffic, Police.	Courts of law, gaols, justices of the peace and coroners, lands titles, police, registration of deeds, Supreme Court & Judges.
8. Education—	Education.	Primary & technical education, University of Tasmania.

SECTION XXVI.

LOCAL GOVERNMENT.

§ 1. Introduction.

1. **Early History of Local Government.**—In the 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, and 1908. 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

Total area of State (exclusive of Lord Howe Island), 310,367 square miles.

The areas incorporated in 1906 in each of the three territorial divisions of the State were as follows:—

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	*310,367

* Total area of State, exclusive of Lord Howe Island, the area of which is 5 square miles.

The total area incorporated under the Local Government Act 1906, to the end of the year 1913, was 183,569 square miles, of which 180,656 square miles were comprised within shires and 2913 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.

(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 twelve 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 135 shires constituted under the new system is 180,656 square miles, and the population on the 31st December, 1914, was 649,040.

The shires vary in area from 36 square miles in the case of Ku-ring-gai, immediately north of the metropolis, to 5730 square miles in the case of Lachlan in the Condobolin district.

(a) *Valuation and Rates Levied*. The unimproved capital value of the shires in 1914 was £103,451,177, as against £99,452,191 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 £623,690.

(b) *Revenue*. The principal heads of revenue for the last five years are shewn in the following table:—

NEW SOUTH WALES.—INCOME OF SHIRES, 1910 to 1914.

Particulars.*	1910.	1911.	1912.	1913.	1914.
<i>General Fund—</i>	£	£	£	£	£
General rates ...	421,596	463,501	517,025	561,378	608,009
Government endowment...	277,731	319,593	372,952	134,635	146,077
Public works ...	59,527	45,331	45,152	62,453	197,754
Health administration ...	3,746	3,998	4,886	4,864	4,889
Public services ...	7,441	8,769	9,232	10,305	10,069
Shire property ...	4,229	6,731	8,768	10,159	13,738
Miscellaneous ...	5,008	8,594	5,648	6,814	6,742
<i>Special and Local Funds</i> ...	15,095	24,516	35,835	45,903	57,714
 Total revenue...	 794,373	 881,033	 999,498	 836,511	 1,044,992

* The receipts for Public Works, Health Administration, Public Service, etc., include Government aid grants, total endowments, and special grants during 1914 amounting to £183,867.

(c) *Expenditure*. The following statement shews the expenditure of shires during the years 1910 to 1914 inclusive:—

NEW SOUTH WALES.—EXPENDITURE OF SHIRES, 1910 to 1914.

Particulars.	1910.	1911.	1912.	1913.	1914.
<i>General Fund—</i>	£	£	£	£	£
Administrative expenses ...	125,669	128,126	*83,721	*91,450	*95,760
Public works ...	599,945	647,220	773,479	707,923	801,542
Health administration ...	4,840	5,724	7,199	7,699	8,064
Public services ...	13,012	15,410	15,809	14,751	14,757
Shire property ...	4,561	7,657	10,419	11,251	15,277
Miscellaneous ...	5,129	7,120	8,430	9,975	9,275
<i>Special and Local Funds</i> ...	11,976	20,949	34,268	43,041	51,796
 Total expenditure...	 765,132	 832,206	 933,325	 886,090	 996,471

* Exclusive of proportion of Administrative expenses payable from Special and Local Funds previously included under General Fund.

(d) *Assets and Liabilities.* The financial position of the shires at the end of the year 1914 was strong, as there was an excess of assets of £378,287. The following table gives particulars of assets and liabilities as at the 31st December, 1914 :—

NEW SOUTH WALES.—ASSETS AND LIABILITIES OF SHIRES, 1914.

Assets.			Liabilities.		
<i>General Fund—</i>			<i>General Fund—</i>		
Outstanding rates	...	£37,199	Temporary loans	...	£45,304
Stores and materials	...	12,377	Sundry creditors	...	38,389
Bank balance	...	104,414	Due on contracts	...	2,063
Sundry debtors	...	9,715	Due to trust fund	...	460
Land	...	15,271	Other	...	28
Buildings	...	72,916	<i>Special and Local Funds</i>	...	23,473
Plant and property*	...	174,021			
Furniture	...	15,513	Total	...	£109,717
Other	...	5,158	Excess of assets	...	378,287
<i>Special and Local Funds</i>	...	41,420			
Total	...	£488,004	Total	...	£488,004

* Including saleyards, pounds, baths, public watering-places, ferries, wharves, etc.

(iv.) *Municipalities.* Including the City of Sydney there were 186 municipalities in New South Wales at the end of 1914; of these, forty were in the suburbs of Sydney and twelve 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 are therefore no longer charged on the annual value except in the City of Sydney, where an additional rate is also levied on the unimproved capital value, and 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 1910 to 1914 :—

NEW SOUTH WALES.—MUNICIPALITIES, IMPROVED CAPITAL VALUE, AREA, POPULATION, NUMBER OF BUILDINGS AND TOTAL RATES LEVIED, 1901 and 1910-14.

Year ended 31st Dec.*	Sydney and Suburbs.					Country.				
	Improved Capital Value.	Area.	Population.	Number of Dwellings.	Total Rates Levied.	Improved Capital Value.	Area.	Population.	Number of Dwellings.	Total Rates Levied.
	£	Acres.	No.	No.	£	£	Acres.	No.	No.	£
1901 ...	88,118,600	91,220	1487,900	94,907	277,457	36,429,600	1,732,302	371,330	73,862	127,564
1910 ...	111,818,074	95,259	1,629,503	126,476	647,762	45,824,999	1,822,821	1,421,714	89,107	310,849
1911 ...	119,375,694	95,259	641,960	s	725,712	47,484,486	1,822,821	431,500	s	340,075
1912 ...	124,875,964	95,259	683,780	s	770,879	48,814,203	1,826,795	444,190	s	373,765
1913 ...	137,795,263	95,259	713,260	s	880,906	50,451,471	1,769,155	456,050	s	401,594
1914 ...	158,764,693	95,259	739,210	s	1,038,224	55,682,063	1,769,155	457,150	s	450,140

* Prior to 1908 the municipal year ended on the first Monday in February, since when the municipal year closes on 31st December. † Census, March, 1901. ‡ Census, April, 1911.

§ Not available.

The following table gives a comparison of the unimproved and improved values for the years 1910 to 1914 inclusive :—

NEW SOUTH WALES.—MUNICIPALITIES, UNIMPROVED AND IMPROVED CAPITAL VALUES, 1910 to 1914.

Year.	Sydney.	Suburbs.	Metropolis.	Country.	Total.
UNIMPROVED VALUE.					
	£	£	£	£	£
1910 ...	19,952,793	23,823,398	43,776,191	19,753,131	63,529,322
1911 ...	23,940,030	25,942,704	49,882,734	19,961,743	69,844,477
1912 ...	23,988,480	27,193,577	51,182,057	20,352,473	71,534,530
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
IMPROVED VALUE.					
1910 ...	52,142,200	59,175,874	111,318,074	45,824,999	157,143,073
1911 ...	55,520,640	63,855,054	119,375,694	47,484,486	166,860,180
1912 ...	57,395,288	67,480,676	124,875,964	48,814,203	173,690,167
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

(b) *Revenue.* The Local Government Act 1906 prescribed that there should be a general fund in each local government area (municipality and shire), and 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 1914 are given in the following table :—

NEW SOUTH WALES.—MUNICIPALITIES, REVENUE, 1914.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund ...	984,231†	681,911	469,295	1,151,206‡
Trading accounts ...		12	124,369	124,381‡
Special and local funds ...		52,402	269,006	321,408‡
Loan funds ...		58,706	66,853	125,559‡
Reserve and Renewals Account ...		6,101	22,066	28,167‡
Gross revenue ...	984,231†	799,132	951,589	2,734,952
Deduct transfers*	...	35,762	24,830	60,592
Net revenue ...	984,231†	763,370	926,759	2,674,360

* Transfers from various funds to loan funds for principal, interest, and capital expenditure.

† The city of Sydney accounts were formerly kept on a cash basis, i.e., the actual receipts and disbursements were shewn; but the figures for 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. ‡ 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 1914 :—

NEW SOUTH WALES.—MUNICIPALITIES, EXPENDITURE, 1914.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund	893,689†	658,585	436,207	1,094,792†
Trading accounts		66	91,443	91,509†
Special and local funds		51,205	248,719	299,924†
Loan funds		66,100	47,053	113,153†
Reserve and Renewals Account		1,223	849	2,072†
Gross expenditure	893,689†	777,179	824,271	2,495,139
Deduct transfers* ... ..	...	35,762	24,830	60,592
Net expenditure	893,689†	741,417	799,441	2,434,547

* Transfers from various funds for principal and interest on loans. † See note † to preceding table. ‡ See note ‡ to preceding table.

(d) *Assets and Liabilities.* The financial position of the municipalities as at the 31st December, 1914, is shown by the following statement of assets and liabilities of the various funds :—

NEW SOUTH WALES.—MUNICIPALITIES, ASSETS AND LIABILITIES, 1914.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£.	£
Assets—				
General fund	8,397,918†	363,096	487,820	850,916†
Trading accounts ... ..		...	122,656	122,656†
Special and local funds... ..		39,191	1,300,137	1,339,328†
Loan funds		174,978	568,976	743,954†
Reserves and renewals account		4,878	21,323	26,201†
Total	8,397,718†	582,143	2,500,912	11,480,773
Liabilities—				
General fund	8,142,616†	142,754	82,250	225,004†
Trading accounts ... ..		...	68,365	68,365†
Special and local funds... ..		11,164	1,171,658	1,182,822†
Loan funds		794,703	641,204	1,435,907†
Reserves and renewals account		4,878	21,323	26,201†
Total	8,142,616†	953,499	1,984,800	11,080,895

† See note † to last table on previous page. ‡ See note ‡ to last table on previous 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 1903 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 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 £75,000 (increased to £100,000 from the 1st July, 1907), the municipalities received from the Government during the financial year 1914-15 a sum of £77,170 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 1876. Under the Act of 1907 the endowment of £100,000 is payable in equal moieties 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:—

VICTORIA.—ENDOWMENT OF BOROUGHES AND SHIRES, 1914-15.

To every Borough or 1st Class Shire, 3s. in the £	To every 4th Class Shire, 8s. in the £
„ „ 2nd Class Shire 5s. „ „	„ 5th „ 10s. „ „
„ „ 3rd „ „ 6s. „ „	„ 6th „ 12s. „ „

For the three financial years commencing the 1st July, 1907, however, the amounts were definitely fixed by Act No. 2129, and for the five succeeding financial years by Acts No. 2267, 2334, 2404, 2475 and 2562 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 1911-15 inclusive:—

VICTORIA.—PARTICULARS OF MUNICIPALITIES, 1901 and 1911-15.

Year ending 30th June.	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	158,783	130,358	£ 67,302,423	£ 4,765,632
1911	60	*742,070	187,562	162,489	114,113,507	6,508,544
1912	61	*742,070	194,391	160,246*	119,400,893	6,804,697
1913	61	777,696	200,272	160,246*	127,743,501	7,270,972
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
SHIRES.						
1901	150	571,683	159,128	122,645	£ 106,839,331	£ 5,771,865
1911	146	*568,494	163,916	126,951	150,970,220	7,716,815
1912	146	*568,494	168,229	125,879*	155,677,624	7,969,963
1913	147	583,909	173,271	125,879*	160,128,933	8,152,473
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

* Census figures.

(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 shews the amount of municipal assets and liabilities for the years 1901 and 1910 to 1914:—

VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1901 and 1910-14.

Items.	1901.	1910.	1911.	1912.	1913.	1914.
ASSETS.						
MUNICIPAL FUND—	£	£	£	£	£	£
Uncollected rates	187,205	110,676	105,241	111,405	108,686	120,200
Other assets	122,581	350,092	473,054	522,911	582,451	652,530
LOAN FUND—						
(a) Sinking funds—						
Amount at credit	675,310	834,295	893,528	896,185	924,952	878,322
Arrears due	1,391	3,286	1,182	1,759	438	1,327
(b) Unexpended balances ...	394,136	345,287	264,048	237,202	167,952	351,923
PROPERTY—						
Buildings, markets, etc. ...	2,507,441	3,149,476	3,246,854	3,365,638	3,534,691	3,799,038
Waterworks	197,675	202,210	207,365	182,835	184,842	180,485
Gasworks	63,732	70,687	72,274	86,872	96,963	103,435
Total	4,149,471	5,066,009	5,263,546	5,404,807	5,600,975	6,087,260
LIABILITIES.						
MUNICIPAL FUND—	£	£	£	£	£	£
Arrears due sinking funds ...	1,021	3,286	1,182	1,759	438	1,327
Overdue interest	9,413	15,750	11,997	15,619	18,005	19,771
Bank overdrafts	157,046	133,237	165,275	234,154	201,142	206,694
Temporary Government advances ...	20,901	...	...	...	...	...
Other liabilities	91,396	194,902	257,371	288,368	364,287	356,884
LOAN FUNDS—						
Loans outstanding	4,253,304	4,767,138	4,831,984	5,011,950	5,259,138	5,617,056
Due on loan contracts	52,826	45,089	92,363	102,135	128,051	69,181
Due on current contracts	51,134	98,187	100,351	73,768	74,770	74,451
Total	4,637,041	5,257,589	5,460,523	5,727,753	6,045,331	6,345,364

(v.) *Revenue and Expenditure of Municipalities.* The following table shows the revenue from various sources, and the expenditure under various heads, of municipalities during the years 1901 and 1910 to 1914 :—

**VICTORIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES,
1901 and 1910-14.**

Items.	1901.	1910.	1911.	1912.	1913.	1914.
SOURCES OF REVENUE.						
	£	£	£	£	£	£
Taxation ... { Rates	722,346	999,799	1,046,943	1,103,210	1,199,874	1,251,649
... { Licenses	104,499	102,066	100,845	102,297	103,528	108,106
... { Dog fees	14,965	19,296	19,833	20,438	21,483	21,807
... { Market and weighbridge dues	49,623	65,739	63,071	74,029	71,937	70,620
Government endowments and grants...	175,972	187,323	157,141	161,513	160,949	144,374
Contributions for streets, etc.	24,999	47,532	47,342	64,646	59,172	63,260
Sanitary charges	48,253	62,720	66,389	74,058	80,194	83,982
Rents	54,117	77,958	79,263	81,725	78,016	76,803
Other sources	89,210	207,181	237,601	263,600	324,496	354,427
Total	1,283,984	1,769,614	1,818,428	1,945,516	2,099,649	2,175,028

HEADS OF EXPENDITURE.

	£	£	£	£	£	£
Salaries, etc.	139,270	163,435	168,303	176,489	187,180	192,066
Sanitary work, street cleaning, etc. ...	132,542	159,571	178,623	198,006	203,757	206,271
Lighting	86,059	83,972	87,341	84,410	87,395	89,926
Fire brigades' contributions	16,769	23,223	23,120	25,946	27,101	28,361
Public works { Construction	244,315	335,446	311,065	335,717	339,158	315,480
... { Maintenance	345,334	548,583	571,254	736,457	753,083	814,459
Formation of private streets, etc. ...	23,350	32,163	46,849	66,735	56,600	70,465
Redemption of loans	27,745	46,439	66,860	61,782	70,506	80,576
Interest on loans	197,810	206,355	213,752	217,933	224,479	239,737
Charities	13,407	15,589	15,785	18,441	16,429	18,026
Other expenditure	103,403	170,840	187,514	129,190	126,376	151,613
Total	1,330,004	1,785,616	1,870,466	2,051,106	2,092,064	2,206,980

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.

The 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.

(iii.) *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 1910 to 1914 :—

**QUEENSLAND.—PARTICULARS OF CITIES AND TOWNS, AND SHIRES,
1910 to 1914.**

Year.	Municipality.	Area.	Population.	Number of Inhabited Dwellings.	Capital Value.	Assets.	Liabilities.		
							Government Loans.	Other.	Total.
		Square Miles.	No.	No	£	£	£	£	£
1910	(Cities and Towns	364½	247,435	44,804	13,774,440	1,406,521	242,924	767,481	1,010,405
	Shires ...	669,890	358,085	76,803	36,023,390	331,382	116,456	50,882	167,338
	Total ...	670,254½	605,520	121,607	49,797,830	1,737,903	359,380	818,363	1,177,743
1911	(Cities and Towns	364½	232,083	46,310	14,305,268	1,425,403	214,903	794,733	1,009,636
	Shires ...	669,890½	368,292	77,731	38,482,811	367,078	127,079	58,741	185,820
	Total ...	670,255	600,375	124,041	52,788,079	1,792,481	341,982	853,474	1,195,456
1912	(Cities and Towns	366	250,743	48,932	14,626,306	1,439,226	218,948	850,031	1,068,979
	Shires ...	669,528	393,172	83,021	40,365,614	426,694	141,288	84,894	226,182
	Total ...	669,894	643,915	131,953	54,991,920	1,865,920	360,236	934,925	1,295,161
1913	(Cities and Towns	404	273,874	56,632	15,708,680	1,515,104	231,458	919,973	1,151,431
	Shires ...	669,490	399,305	84,805	41,272,641	467,182	203,109	93,410	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	418	279,794	59,398	16,075,729	1,635,685	240,319	1,047,739	1,288,058
	Shires ...	669,476	411,093	87,144	44,596,193	455,476	159,359	97,454	256,813
	Total ...	669,894	690,887	146,542	60,671,922	2,091,161	399,678	1,145,193	1,544,871

(iv.) *Receipts and Expenditure of Cities, Towns, and Shires.* The following table shews 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 1910 to 1914 :—

**QUEENSLAND.—REVENUE AND EXPENDITURE OF CITIES AND TOWNS, AND
SHIRES, 1910 to 1914.**

Year.	Municipality.	Receipts.				Expenditure.						
		From Govern- ment.	From Rates.	From other Sources.	Total.	On Public Works.	Loan Redemp- tion.	Office Expenses and Salaries.	Other Ex- penses.*	Total.		
1910	Cities and Towns	£ 16,775	£ 278,300	£ 68,296	£ 363,371	£ 222,203	£ 18,581	£ 25,891	£ 92,188	£ 358,863		
	Shires ...	23,285	253,398	37,295	313,978	209,466	12,147	39,092	44,405	305,110		
	Total ...	40,060	531,698	105,591	677,349	431,669	30,728	64,983	136,593	663,973		
1911	Cities and Towns	27,051	311,022	91,767	429,840	285,096	20,922	31,824	92,808	430,650		
	Shires ...	31,138	296,222	64,532	391,892	273,472	11,721	42,561	50,195	377,949		
	Total ...	58,189	607,244	156,299	821,732	558,568	32,643	74,385	143,003	808,599		
1912	Cities and Towns	32,891	341,469	83,827	458,187	365,439	22,388	50,542	74,447	492,816		
	Shires ...	30,969	322,049	54,201	407,219	311,580	12,020	51,612	56,771	431,983		
	Total ...	63,860	663,518	138,028	865,406	677,019	34,408	82,154	131,218	924,799		
1913	Cities and Towns	20,274	379,865	83,211	483,350	381,100	24,599	36,916	66,377	508,992		
	Shires ...	29,717	362,108	66,170	457,995	338,178	14,457	62,676	56,185	471,496		
	Total ...	49,991	741,973	149,381	941,345	719,278	39,056	99,592	122,562	980,488		
1914	Cities and Towns	31,725	421,329	92,203	545,257	495,067	21,210	38,766	89,707	644,750		
	Shires ...	41,413	394,373	64,760	500,546	387,021	16,496	64,789	48,876	512,183		
	Total ...	73,138	815,702	156,963	1,045,803	882,088	37,706	103,555	138,583	1,162,933		

* 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 1858, was amended in 1862, and was 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 Act which is now in force, namely, 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 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 1910 to 1914; 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 1910-14 (EXCLUSIVE OF MAIN ROADS FUNDS).

Year.*	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
1910	2,098,282	96,550	25,483	30,058	152,091	101,979	146,593
1911	2,146,530	106,963	28,017	29,195	164,175	120,369	161,125
1912	2,145,091	115,427	28,848	34,974	179,249	140,225	182,610
1913	2,295,546	123,317	29,539	36,000	188,906	150,997	196,190
1914	2,435,655	132,277	38,397	32,878	203,552	145,282	196,408
CORPORATIONS.							
	£	£	£	£	£	£	£
1901	1,177,850	87,289	9,733	49,342	146,364	55,533	146,091
1910	1,385,752	112,896	16,589	57,494	186,979	104,586	198,875
1911	1,499,012	133,550	16,420	62,536	212,506	105,738	217,313
1912	1,605,095	142,032	18,544	73,604	234,180	140,059	233,720
1913	1,777,623	157,014	19,948	64,701	241,663	186,246	264,528
1914	1,896,273	168,041	23,821	63,026	254,888	219,390	266,202

* 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 Acts 1902 and 1904. 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 of 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 1000 there are six councillors, if from 1000 to 5000 there are nine councillors, and if the population is over 5000 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 £3000, 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 shown in the table hereunder:—

**WESTERN AUSTRALIA.—NUMBER, AREA, POPULATION, NUMBER OF DWELLINGS,
AND VALUATION OF MUNICIPALITIES, 1901 and 1910-14.**

Year ended the 31st October.	Number of Muni- cipalities.	Area.	Population.	Dwellings.			Amount Payable in respect of Rates.
				Occupied	Unoc- cupied	Total.	
	No.	Acres.	No.	No.	No.	No.	£
1901	42	71,721	*96,807†	†20,989	†967	†21,956	†
1910	42	75,716	\$143,808	\$31,064	\$1,652	\$32,716	139,835
1911	42	75,430	\$143,808	\$31,064	\$1,652	\$32,716	144,745
1912	38	71,203	154,005	32,727	1,613	34,340	152,143
1913	33	76,290	153,673	32,082	1,609	33,691	156,537
1914	33	67,290	158,664	32,864	1,033	33,897	163,597

* Census figures, 1901. † Returns for thirty-nine municipalities only. ‡ Not available.
‡ Census figures, 1911.

Complete particulars of improved or unimproved capital values are not available. In the year 1914 the capital value of ratable property in municipalities was £24,382,980.

(iv.) *Revenue and Expenditure of Municipalities.* The following table gives particulars as to the revenue and expenditure of municipalities during the years 1901 and 1910 to 1914 :—

**WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES,
1901 and 1910-14.**

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*	78,021	66,860	82,228	227,109	111,241	23,809	79,365	214,415
1910 ...	138,719	13,337	230,407	382,463	87,998	67,168	244,650	399,816
1911 ...	144,993	27,944	252,743	425,680	75,697	69,896	283,402	428,995
1912 ...	148,538	25,902	†834,991	1,009,431	78,576	104,475	735,907	918,958
1913 ...	153,966	19,382	347,323	520,671	159,445	104,091	286,619	550,155
1914 ...	153,686	13,142	479,797	646,625	223,099	115,922	304,824	643,845

* Incomplete. † Including £525,000 loan, raised for purchase of electric light and gasworks.

(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 1910 to 1914 :—

**WESTERN AUSTRALIA.—ASSETS AND LIABILITIES OF MUNICIPALITIES, 1901
and 1910-14.**

Year ended the 31st October	Assets.					Liabilities.		
	Balance in Hand.*	Value of Property owned by Municipalities.	Accrued Sinking Funds for Redemption of Loans.	Other Assets.	Total.	Outstanding Debts and Bonds.	Other Liabilities.	Total.
	£	£	£	£	£	£	£	£
1901† ...	37,259	214,984	42,311	13,432	307,986	321,000	19,762	340,762
1910 ...	24,603	669,499	174,119	58,548	926,769	844,844	53,304	898,148
1911 ...	19,570	708,044	195,892	48,884	967,390	893,064	55,615	948,679
1912 ...	108,162	1,154,568	221,477	53,032	1,537,239	1,459,282	50,814	1,510,096
1913 ...	78,066	1,188,068	249,376	66,271	1,581,781	1,468,780	55,887	1,524,667
1914 ...	78,792	1,221,892	283,857	90,763	1,675,304	1,606,966	76,647	1,683,613

* Including bank balance, cash in hand, and fixed deposit. † 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 Tyres 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.

(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 1910 to 1914 :—

**WESTERN AUSTRALIA.—RECEIPTS AND EXPENDITURE OF LOCAL HEALTH
BOARDS, 1901 and 1910-14.**

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
1910 ¹	⁵ 38,741	⁶ 52,095	90,836	56,278	34,144	90,442
1911 ²	⁵ 38,398	⁶ 56,807	95,205	59,639	32,919	92,558
1912 ³	⁵ 47,354	⁶ 60,525	107,879	69,703	40,552	110,255
1913 ⁴	⁵ 55,637	⁶ 62,931	118,568	72,286	41,874	114,160
1914 ⁷	⁵ 53,472	⁶ 61,799	115,271	62,828	47,486	110,314

1. Exclusive of 10 boards which did not furnish returns, and 14 boards which were inactive.
2. Exclusive of 1 board which furnished no returns and 23 boards which were inactive. 3. Exclusive of 15 inactive boards and 1 that sent in no return. 4. Exclusive of 2 boards which did not furnish returns and 14 boards which were inactive. 5. Including sanitary rates. 6. Including sanitary fees and charges. 7. Exclusive of 12 inactive boards.

On the 31st October, 1914, there were thirty-three Local Boards of Health within municipalities, and on the 30th June, 1914, ninety 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 1869 a Roads Act was passed, and after being amended at various times was consolidated in 1884. 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 1909 to 1914 inclusive:—

**TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF MUNICIPALITIES,
1909 to 1914.**

Year.	Number of Muni- cipalities.	Annual Value of Ratable Property.	Revenue.				Expen- diture.†	
			From Rates.	From Govt.	From other Sources.*	Total.		
		£	£	£	£	£	£	
1909	...	51	1,404,328	173,453	44,293	92,244	309,990	318,501
1910	...	51	1,459,917	147,750	35,616	87,994	271,360	266,108
1911	...	51	1,492,533	150,233	35,215	88,365	273,813	307,334
1912	...	51	1,524,789	159,290	26,051	107,935	293,276	276,794
1913	...	51	1,583,739	178,749	17,510	114,046	310,305	336,509
1914	...	51	1,766,099	185,954	14,416	169,825	370,195	349,186

* Including sums derived from loans.

† Including repayments of loans.

According to the latest estimate made by the Commissioner of Taxes the capital value of ratable property in 1911 was £30,924,993.

(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 the 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 1911 to 1915 inclusive:—

TASMANIA.—REVENUE AND EXPENDITURE OF ALL LOCAL BODIES, EXCLUSIVE OF AMOUNTS CONTRIBUTED BY THE GENERAL GOVERNMENT, 1911 to 1915.

Particulars	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
*REVENUE.					
	£	£	£		£
Marine Boards and Lighthouses ...	72,507	72,676	72,671	73,805	77,732
Municipalities† ...	271,360	280,165	267,225	292,795	355,779
Cemetery Trusts ...	§894	918	1,147	1,149	1,391
Water Trusts ...	2,267	2,272	2,805	2,934	2,508
Total ...	347,028	356,031	343,848	370,683	437,410
†EXPENDITURE.					
	£	£	£		£
Marine Boards and Lighthouses ...	68,894	68,529	78,322	63,304	103,202
Municipalities‡ ...	266,108	307,334	270,743	318,999	334,770
Cemetery Trusts ...	§769	902	856	963	1,032
Water Trusts ...	4,138	1,834	2,065	2,228	2,228
Total ...	339,909	378,599	351,986	385,494	441,232

* Exclusive of amounts contributed by the general Government. † Exclusive of expenditure from Government contributions. ‡ Including Road and Bridge Trusts, and Town Boards. § Exclusive of a number of cemetery trusts incorporated in the newly organised municipalities.

§ 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 under the general supervision of the Minister for 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*

* Of which 5,527,000,000 gallons are available by gravitation.

(b) *Aqueducts and Mains.* The water is drawn off from the Prospect reservoir by a canal, five miles in length, to the Pipe Head Basin, situated 16½ miles from Sydney. It is then conveyed for a further distance of five miles to Potts' Hill reservoir, which has a capacity of 100,000,000 gallons, covers twenty-four and a half acres, and is designed to tide the city over any interruption of supply from Prospect, and to prevent fluctuation of pressure. Thence the water passes through a screening tank, and proceeds towards the city in two 48-inch cast-iron mains. A fuller description of the system of reticulation adopted will be found in previous issues.

(c) *Storage Reservoirs.* In connection with the water supply there are in all thirty-five service reservoirs, with a total maximum capacity of 55,693,000 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 1911-15.

SYDNEY WATERWORKS.—REVENUE, EXPENDITURE, AND CAPITAL COST,
1901 and 1911-15.

Year Ended 30th June.	Revenue.	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
1911 ...	299,442	99,355	5,420,813	33.18	5.52	192,486	7,601
1912 ...	329,605	112,958	5,606,268	34.27	5.87	198,443	18,204
1913 ...	361,187	126,795	5,907,125	35.11	6.11	200,918	33,474
1914 ...	410,823	145,948	6,257,976	35.52	6.56	223,144	41,730
1915 ...	441,966	159,687	6,644,289	36.13	6.65	235,949	46,329

* Rate reduced from 7d. to 6d. from 1/7/08, and meter rents abolished.

(e) *Quantity of Water, Number of Houses, and Population Supplied.* The following table gives various particulars for the years 1901 and 1911-15, shewing the increase in the supply of water in Sydney and suburbs:—

SYDNEY WATERWORKS.—NUMBER OF GALLONS, HOUSES, AND POPULATION
SUPPLIED, 1901 and 1911-15.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Aver. Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Population	
	No.	No.	1000 Gallons.	1000 Gallons.	Gallons.	Gallons.	Miles.
1901	98,298	491,000	21,583	7,877,677	219	43.95	40
1911	139,237	696,185	29,006	10,587,433	208	41.55	102
1912	146,236	731,180	30,522	11,141,700	208	41.74	74
1913	155,213	776,065	32,594	11,896,810	210	41.99	100
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

(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) The Wollongong waterworks are also unconnected with the Sydney supply. The source of supply is the Cordeaux River and the catchment area is 2400 acres in extent. The total capacity of the reservoir is 173,000,000 gallons and the total length of the main about nineteen miles, exclusive of the extension to Port Kembla and Unanderra. (c) The Manly waterworks are supplied by a special catchment area of about 1300 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, and Liverpool is not drawn from the main Sydney supply through Potts' Hill, but is received by gravitation from the upper canal at 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 1911-15:—

SYDNEY SEWERAGE SYSTEMS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 and 1911-15.

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
1911 ...	234,208	79,636	4,496,290	34.00	5.20	159,070	—4,498
1912 ...	250,826	82,246	4,769,449	32.78	5.25	166,771	1,809
1913 ...	266,292	91,094	5,083,263	33.95	5.27	171,957	3,241
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

NOTE.—The minus sign represents a loss.

(b) *Number of Houses Drained, Population, 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 1911 to 1915:—

SYDNEY SEWERAGE SYSTEMS.—NUMBER OF HOUSES DRAINED, POPULATION, AND LENGTH OF SEWERS, 1901 and 1911-15.

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
1911 ...	108,012	540,060	825.20	48.85	376,900	795
1912 ...	110,737	553,685	863.29	49.63	382,654	809
1913 ...	114,690	573,450	890.53	52.24	401,344	853
1914 ...	119,550	597,750	930.06	53.15	408,778	871
1915 ...	125,566	627,780	972.14	53.65	427,552	915

(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 supplies East and West Maitland, and Morpeth, while the other 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 these districts there are eleven service reservoirs, having a total capacity of nearly 4,852,000 gallons supplied by gravitation. On the hill at Newcastle there is also a high-level iron tank with a capacity of 20,000 gallons, which is supplied by a small pumping engine at Newcastle reservoir. The total length of water mains is 389 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 were to be paid in liquidation of the cost of renewable works to be fixed by the Government from year to year. The capital debt of the Board to the Government at 30th June, 1915, was in respect of water supply £561,447, and £347,100 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 1911 to 1915:—

PARTICULARS OF THE HUNTER DISTRICT WATER SUPPLY, 1901 and 1911 to 1915.

Year ended 30th June.	Revenue.	Working Expenses (including Interest).	Houses Supplied.	Estimated Population Served.	Supply.	
					Daily Average.	Total.
	£	£	No.	No.	1000 Gallons.	1000 Gallons.
1901	27,405	30,948	9,086	45,400	1,005	366,889
1911	45,711	45,420	17,164	85,820	1,850	675,214
1912	47,788	47,920	17,796	88,980	2,026	739,539
1913	53,673	49,043	18,405	92,025	2,366	863,692
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

The average daily consumption of water for all purposes per inhabitant was 27.61 gallons during the year 1915, as against 28.52 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, 1915, about 63 miles of sewers,

connecting with 6151 separate properties, were under the control of the Board. For the financial year 1914-15 the revenue was £17,211 and the expenditure £21,326, the latter amount including a £2212 instalment to the sinking fund for the reconstruction of renewable works, and £3572 interest on works not transferred to the Board at 30th June, 1915, and therefore not revenue producing at that date.

(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.)

(a) *Waterworks.* Up to the 30th June, 1915, fifty-one 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 £939,762, and the total of the sums payable annually for a period of 100 years was £35,382, including interest ranging from $3\frac{1}{2}$ 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 number of other municipalities have constructed works out of their own resources.

(b) *Sewerage Works.* Only fourteen 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, 1915, the capital debt of these systems was £240,298, the amount payable annually to the Government being £6665. 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. Nine members are elected by the Melbourne City Council, four by the South Melbourne Council, three by the Prahran, two each by the Fitzroy, Richmond, St. Kilda, and Collingwood, 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, two shires, and parts of three others, or twenty-five municipalities in all, comprising a total area of 109,009 acres. Control for water supply purposes is also exercised over 2949 acres in four municipalities. The Board further supplies water to the metropolitan farm at Werribee, and the outfall sewer area. Various other shires arrange for bulk supplies of water. The total estimated population on the 31st December, 1915, was 679,000. 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 was to supply the long called for and pressing want of a sewerage system for the metropolis. To carry out its work the board is authorised to borrow £9,750,000, 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, 1915, was £1,559,786, and for loans raised by the Board was £10,425,160. The Board is still empowered to borrow £154,988 before reaching the limit of its borrowing powers.

(a) *Total Cost of Water Supply and Sewerage.* The subjoined table shews the total cost of construction and maintenance of water supply and sewerage from 1853 to 1915:—

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—TOTAL COST OF CONSTRUCTION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE, 1853 to 1915.

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
Total ...	4,743,735	1,393,660	3,554,152	7,149,379	847,218	4,471,463	22,159,607

(b) *Revenue and Expenditure of Melbourne and Metropolitan Board of Works.* The following table shews the actual receipts and expenditure, and also the loan receipts and expenditure of the Board during 1901-2 and 1910 to 1915 :—

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—REVENUE AND EXPENDITURE DURING EACH YEAR, 1901-2 and 1910 to 1915.

Particulars.	1901-2.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
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ORDINARY RECEIPTS.

	£	£	£	£	£	£
Water supply	171,956	253,002	267,917	295,963	323,762	356,155
Sewerage, etc.	134,696	267,444	273,365	287,507	320,931	344,768
Live stock—Metropolitan farm	19,929	35,016	63,225	57,787	62,064	87,135
Interest { Water supply ... ..	...	630	953	2,277	1,890	1,576
{ Sewerage	17,448	8,995	8,885	8,695	9,125	8,296
Total	334,029	565,287	613,345	652,229	716,772	797,930

ORDINARY EXPENDITURE.

	£	£	£	£	£	£
General management	33,621	35,779	40,104	41,007	44,668	45,032
Live stock, etc.—Metropolitan farm	16,702	19,336	46,283	44,130	55,570	49,704
Maintenance { Water supply	22,205	25,016	30,234	34,508	34,125	41,521
{ Sewerage	24,396	45,665	47,797	50,438	49,198	53,465
Interest { Water supply	102,670	105,760	112,886	116,716	130,182	131,845
{ Sewerage	192,952	293,608	297,962	307,630	323,149	325,167
Patriotic and Belgian Relief Funds ... ..	...	...	...	...	...	2,000
Total	392,546	525,164	575,266	594,424	636,892	648,734

LOAN RECEIPTS.

	£	£	£	£	£	£
Water supply	1,636	4,788	5,982	12,315	10,803	10,138
Sewerage	88,425	56,313	59,907	61,315	46,620	42,950
Proceeds of loans	396,238	291,310	322,223	307,952	796,841	223,500
Miscellaneous ... ..	...	9,238	12,399	28,355	17,375	10,735
Total	486,299	361,649	400,511	409,937	871,639	287,323

LOAN EXPENDITURE.

	£	£	£	£	£	£
Water supply construction	17,058	98,145	133,149	339,753	160,107	140,102
Sewerage construction	410,760	286,035	245,911	259,461	242,849	288,582
Expenses in floating and redemption of loans	5,200	2,936	5,393	180,159	253,426	114
Miscellaneous	*4,293	26,288	35,638	47,474	30,004	25,882
Total	428,725	413,404	420,091	776,847	686,386	454,680

* Excess of stock distribution (£7020) over purchases (£2727).

(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 shews the development which has taken place in the water supply system of Melbourne during the fifty-eight years since its inception :—

MELBOURNE WATER SUPPLY SYSTEM.—1857 to 1915.

Year.	Population* Served.	Capital Cost.	Charge per 1000 Gallons.	Rate in £	Reticulation, Mains, &c., Mileage.	Supply in Gallons, Average daily.
1857 ...	95,442	£ 748,974	10/- and 6/-	1/-	104	2,250,000
1915 ...	679,000	4,743,735	1/1	7d.	1,606½	36,989,181

* On the 31st December.

(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 capable of enlargement to 60,000,000 gallons. The scheme was estimated to cost £450,000, and up to 30th June, 1915, the date of the practical completion of the scheme, £429,277 had been expended, including the cost of an additional service reservoir not allowed for in the original scheme, and other incidental works. The watershed of the O'Shanassy River, containing 33,000 acres, 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, 1915.

Silver and Wallaby Creeks.	Plenty River and Jack's Ck.	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 Reservoirs.* In connection with distribution there are 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 1911-15, shewing the increase in the supply of water in Melbourne and suburbs :—

MELBOURNE WATERWORKS.—NUMBER OF HOUSES, POPULATION, AND WATER SUPPLIED, 1901 and 1911-15.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year ended 30th June.	Average Daily Supply.		Rate Levied.	Assessments of Tenements Served by Metropolitan Water Supply.
					Per House.	Per Head of Estimated Population.		
	No.	No.	,000 Gallons.	,000 Gallons.	Gallons.	Gallons.		£
1901 ...	104,548	491,780	28,732	10,487,007	274.8	58.4	6d. in the £ 7d. in the £	3,479,721
1911 ...	128,036	581,500	32,840	11,986,503	256.5	56.5		5,045,848
1912 ...	133,122	594,250	36,507	14,093,509	289.3	64.8		5,382,101
1913 ...	140,351	614,300	39,380	14,373,761	280.6	64.1		5,670,801
1914 ...	147,442	639,700	43,644	15,930,104	296.0	68.2		6,217,841
1915 ...	150,825	662,500	36,989	13,501,051	245.2	55.8		6,577,338

(f) *Total Cost of Construction, Revenue, Expenditure and Net Profits, 1853 to 1915.* The following table shows the total cost of construction, the revenue, expenditure, and net profits for various periods up to 30th June, 1915 :—

MELBOURNE WATERWORKS.—CONSTRUCTION, COST, REVENUE, EXPENDITURE, AND NET PROFITS, 1853 to 1915.

Period.	Capital Cost.*	Revenue.†	Working Expenses.‡	Percentage of Working Expenses to Revenue.	Interest.§	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	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	850,549	60,547	17.27	130,268	159,734
Total ...	4,743,735	8,138,561	1,393,660	...	3,554,152	3,190,749

* Works commenced in 1853. † Revenue commenced in 1854. ‡ Returns for expenditure commenced in 1859. § First interest paid in 1856.

(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 main 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 8847 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 11½ miles long (168½ acres) on which the greater portion of the outfall sewer is constructed. Since 1911, 2306 acres have been purchased, making the total area of the farm 11,153 acres at 30th June, 1915, its total cost to that date being £542,659. About 29,521,144 gallons of sewage had to be disposed of every twenty-four hours during the year 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 1914-15, 26,322 sheep were bought, the profit from that source being £5954. Cattle to the number of 3553 were purchased, the profit for the year on cattle being £16,099.

(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 and 1910-15 :—

MELBOURNE SEWERAGE WORKS.—TENEMENTS CONNECTED, CAPITAL COST, REVENUE, MAINTENANCE AND WORKING EXPENSES, 1901-2 and 1910-15.

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
1910-11 ...	112,293	6,289,430	260,528	15,200	275,728	46,904
1911-12 ...	118,350	6,487,517	271,682	18,042	289,724	47,381
1912-13 ...	125,103	6,695,534	285,721	17,655	303,376	51,804
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

(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 1911-15 :—

VICTORIA.—COUNTRY WATERWORKS UNDER TRUSTS AND MUNICIPAL CORPORATIONS, 1901 and 1911-15.

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	*	24	*	470,041	*
1911 ...	87	1,017,396	819,698	15,047	21	651,489	421,273	2,662
1912 ...	88	1,046,394	843,506	15,970	22	653,510	418,673	9,349
1913 ...	89	1,083,390	866,594	12,461	22	655,702	415,678	6,635
1914 ...	90	1,114,727	889,905	10,858	22	656,200	417,937	1,213
1915 ...	94	1,144,095	911,786	14,071	22	689,925	447,347	2,005

* 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 sum 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 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 by Act No. 2486 to £425,000. 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. The borrowing power for sewerage purposes has since been increased by Act No. 2766 to £325,000. The available storage capacity of the reservoirs is 1655 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, 1915, was £620,000, the estimated population served is 33,500, and the number of assessments 11,117. The receipts for the year amounted to £34,397. The sewerage scheme provides for a main outfall sewer 4 ft. 3 in. x 3 ft. 3 in. to the ocean at Black Rock—a distance of about nine miles. The drainage area embraces an area of 8081 acres, including the city of Geelong, boroughs of Geelong West, Newton, 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, which divested the then existing Water Board of its powers and duties and vested them in an extended form in the new Board. The Act further empowers the Board to carry out a sewerage and drainage system, and relieves 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 (except division 3), Cocoparoo, 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.* The principal source of water supply is the Brisbane River, about 75 per cent. of the water used being taken from it. The catchment area above the pumping station is about 4000 square miles. The Mount Crosby service reservoir, into which the water is pumped from the river, is built in cement concrete, and is 267 feet long, 100 feet wide, and 15 feet deep from high-water line, which is 455 feet above high-water mark at Brisbane. The capacity is about 2,500,000 gallons. New reservoirs and sedimentation basins and purification works are now in course of construction.

- (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 2600 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 Moggil Creek, distant from Brisbane by road about thirteen miles. The supply is drawn from a catchment area adjoining that of Enoggera, and comprising 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) *Service Reservoirs.* Certain portions of the metropolitan area are supplied with water from service reservoirs, which are connected with one or other of the main reservoirs 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 fuller description of the Brisbane water supply scheme may be found in previous issues.

(b) *Brisbane Waterworks: Cost, Revenue, Expenditure, and Interest.* The sub-joined table gives particulars as to the cost, the revenue and expenditure, and the amount of interest and loan redemption during 1901 and each of the years 1911 to 1915:—

BRISBANE WATERWORKS.—COST, REVENUE, EXPENDITURE, INTEREST, AND REDEMPTION OF LOANS, 1901 and 1911-15.

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
1911 ...	1,015,276	67,730	30,105	147,438	20,670
1912 ...	1,134,815	64,367	39,124	119,539	26,780
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

(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 1911 to 1915:—

BRISBANE WATERWORKS.—PARTICULARS, 1901 and 1911-15.

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	55
1911 ...	333½	24,153	120,765	1,870,767	5,125,390	42.44
1912 ...	347	27,678	129,575	2,020,404	5,520,231	42.60
1913 ...	370½	28,301	139,925	2,099,590	7,752,302	41.05
1914 ...	389	29,612	148,060	2,293,920	6,284,712	42.44
1915 ...	405	31,442	157,210	2,655,440	6,541,430	41.60

The total length of the trunk mains is 97 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, six contracts, comprising 77,000 feet of sewer, being in progress. The survey of 16,239 houses has been completed.

(ii.) *Country Towns Water Supply.* In addition to the city of Brisbane there were at the end of the year 1914 twenty-eight towns in Queensland provided with water supply systems, constructed by municipalities chiefly from Government loans. The sub-joined statement gives particulars of all the water supply systems—exclusive of Brisbane—for the year 1914 :—

QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1914.

£				£			
Receipts	Cost of construction to 31/12/14 ...	809,532		Expenditure	Office and salaries ...	11,672	
	Rates and sales of water	85,480			Construction ...	39,528	
	Other ...	37,772*			Maintenance ...	28,042	
	Total Receipts ...	123,252			Interest & redemption	26,489	
Assets	...	647,120		Liabilities	...	447,219	

* Including £25,798 from Government loans and £10,000 from municipal debentures.

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, 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 3,895,000,000 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 is under course of construction at Millbrook, to be supplied from the River Torrens. The total capital cost up to the 30th June, 1915, was £1,973,226, the total revenue being £2,937,989 and the area served approximately 106,000 acres.

The following table gives various particulars relating to the water supply of Adelaide for the years 1910 to 1915 inclusive:—

ADELAIDE WATER SUPPLY.—LENGTH OF MAINS, REVENUE, EXPENDITURE, AND CONSUMPTION OF WATER, 1910 to 1915.

Year Ended 30th June.	Length of Mains.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Net Revenue on Capital Cost.	Total Consumption of Water.*
	Miles.	£	£	£	%	Million of Gals.
1910 ...	704	82,290	22,709	59,581	3.31	4,000
1911 ...	732	89,902	23,032	61,870	3.40	4,000
1912 ...	763½	94,280	26,384	67,896	3.68	4,600
1913 ...	802½	105,590	27,982	77,608	4.12	4,700
1914 ...	836	113,156	30,106	83,050	4.32	5,150
1915 ...	859	112,082	36,029	76,053	3.85	3,467

* In the Adelaide Water District there are no governing meters. The quantities shewn 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 341 miles of sewers had been laid in the city and suburbs up to the 30th June, 1915. 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 1910 to 1915 inclusive:—

ADELAIDE SEWERAGE SYSTEM.—REVENUE AND EXPENDITURE, 1910 to 1915.

Year Ended the 30th June.	Revenue.			Expenditure.			Net Revenue	
	Rates and Interest.	Sewage Farm. Sales of Produce, etc.	Total.	Maintenance.	Sewage Farm. Working Expenses.	Total.	Total.	Percentage on Capital Cost.
	£	£	£	£	£	£	£	%
1910 ...	36,322	7,213	43,535	7,184	6,088	13,272	30,263	4.41
1911 ...	37,938	7,189	45,127	8,462	7,681	16,143	28,984	4.26
1912 ...	41,449	6,984	48,383	9,376	5,039	14,415	33,968	4.88
1913 ...	45,373	8,392	53,765	9,803	6,392	16,195	37,570	5.01
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

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, 1915, was £1864, being 4.12 per cent. on the capital cost. Up to the same date 15 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 three large reservoirs at Barossa, Beetaloo, and Bundaleer, which supply fifty-four townships with water for domestic and stock purposes. The Warren Reservoir, situated on the South Para River, is in course of construction. The principal towns thus supplied are Gawler, Wallaroo, Moonta, Kadina, Port Pirie, Port Wakefield, and Balaklava. 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, 1915.

Reservoirs.	Townships Supplied.			Country Lands Reticulated.		Capacity in Million Gallons.	
	Number.	Square Miles.	Miles of Main.	Square Miles.	Miles of Main.	Head-works.	Service Reserv'rs.
Barossa ...	23	40	69	1,006	543	993	10
Beetaloo ...	19	44	148	1,775	877	800	100
Bundaleer ...	13	8	31	1,087	477	1,319	16

Fifteen township districts are supplied from smaller local reservoirs, the most important town served being Port Augusta. New water supply schemes are in course of construction for the supply of townships and farming lands on Eyre Peninsula (near Cowell, Arno Bay, and Cleve), and for the new agricultural area east of the River Murray.

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) The Mines Water Supplies, boring and well-sinking in mining districts, formerly a branch of the Mines Department. (d) Water supply, sewerage, 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, 1915, £7,109,050.

The Acts of Parliament administered by the new department are:—“The Metropolitan Water Supply, Sewerage and Drainage Act 1909”; “The Goldfields Water Supply Act 1902” and amendment; “The Water Boards Act 1904”; “The Lands Drainage Act 1900” and amendment; “The Water Supply Act 1893”; and “The Rights in Water and Irrigation Act 1914.”

(ii.) *The Perth Metropolitan Water Supply, Sewerage, and Drainage.* The Perth 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 have been 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 four sources—(i.) the Victoria reservoir, (ii.) Bickley Brook reservoir, (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, 1915, the total consumption of water was 1786 million gallons, an increase of 156 millions over the previous year. The number of services at that date was 29,803, and the length of mains was 571 miles.

(b) *Financial Operations of Water Supply Department.* The following table gives particulars of the financial operations of the Metropolitan Water Supply Branch for each year ending the 30th June from 1910 to 1915 inclusive:—

PERTH METROPOLITAN WATER SUPPLY BRANCH.*—PARTICULARS OF FINANCIAL OPERATIONS, 1910 to 1915.

Year ended the 30th June.	Capital Cost of Works.	Depre- ciation.	Net Capital Cost.	Gross Revenue.	Cost of Main- tenance and Manage- ment.	Ratio of Working Expenses to Revenue.
	£	£	£	£	£	Per cent.
1910	628,757	44,415	584,342	60,249	20,862	34.62
1911	645,023	92,351†	552,672	61,723	22,081	35.77
1912	701,852	107,388	594,464	66,892	25,082	37.49
1913	768,068	135,912	632,156	74,600	25,479	34.14
1914	892,434	167,326	725,108	89,115	31,483	35.33
1915	964,670	183,910	780,760	100,158	33,581	33.53

* Perth, Fremantle, and Claremont combined. † £39,724 transferred from reserve account to depreciation.

(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 1911 to 1915 inclusive:—

METROPOLITAN WATER SUPPLY BRANCH.—CONSUMPTION OF WATER, 1911 to 1915.

Year.	Average Daily Supply in ,000 Gallons.			Water Supply for Years in ,000 Gallons.			Number of Houses Supplied.	Esti- mated Popu- lation sup- plied.	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.
	Gals.	Gals.	Gals.	Gals.	Gals.	Gals.			Gals.	Gals.
CENTRAL DISTRICT (INCLUDES PERTH, FREMANTLE AND CLAREMONT).										
1911	1,136	2,058	3,194	414,512	752,546	1,167,058	21,267	87,000	150	37.8
1912	1,066	2,561	3,627	364,428	852,719	1,217,147	22,655	91,500	160	39.6
1913	1,285	2,482	3,767	469,211	905,960	1,375,171	24,150	100,000	156	39.7
1914	1,390	2,805	4,195	507,369	1,023,726	1,531,095	26,008	110,000	161	38.1
1915	575	3,721	4,296	209,693	1,358,199	1,567,892	27,232	115,500	158	37.2
GUILDFORD DISTRICT.										
1914	564	...	564	206,000	...	206,000	2,383	10,000	237	56.4
1915	597	...	597	217,905	...	217,905	2,499	11,500	240	51.9
ARMADALE DISTRICT.										
1915	28	...	28	10,220	...	10,220	82	300	340	93

(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, 1915, 10,347 houses had been connected to the sewers. The revenue of the Sewerage and Drainage undertaking for 1914-15 was £41,487, as against £29,512 for the preceding year. The maintenance expenditure amounted to £9191, and interest and sinking fund charges to £39,911. 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. From the impounding reservoir the water is pumped through a steel main of the locking-bar type, 30 inches in internal diameter, by a series of eight pumping stations located at intervals along the main. Each pumping station, except No. 1, which draws direct from the reservoir, is provided with a suction tank which receives the water pumped by the preceding station. The last pumping station delivers the water into a main service reservoir of 12,000,000 gallons capacity, situated at Bulla Bulling at a height of 1290 feet above the lowest offtake from the Helena Reservoir, and distant 307½ miles therefrom. From the main service reservoir the water flows by gravity to Kalgoorlie, a further distance of 44 miles; the total length of the 30 inch main being 351½ miles. The water is distributed to the various townships and to the mining centres from service reservoirs, and a considerable area of agricultural country is also supplied by branch pipe lines from the main conduit. 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 £512,787, making a total of £3,379,241. 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 1914-15 the total consumption amounted to 1,226,000,000 gallons, an increase on the previous year of 32,000,000 gallons. The gross revenue was £242,984, and the working expenses £84,358, leaving a surplus available towards interest and sinking fund of £158,626. The outlay for interest and sinking fund charges in respect of supplementary capital absorbed £32,094, leaving £126,531 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 £42,281. Other figures are interesting:—Towns reticulation, 238 miles; supply mains to towns, 80 miles; supply mains to mining centres, 72 miles; agricultural extensions, 474 miles; total mains, including main conduit, 1215 miles.

(iv.) *Water Supplies for Towns.* Under the Water Boards Act 1904, the following water undertakings are administered by the Department:—Albany, Cue-Day Dawn, Derby, Geraldton, Leonora, Meekatharra, Menzies, Ora Banda, and Pingelly. Water supplies for Broome, Bunbury, Busselton, Carnarvon, Port Hedland, Roeburne, Sandstone, and Wagin 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 1400, 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 4000 miles. (c) The sinking of wells and borewells, 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) Nearly 3000 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 2308 shallow bores put down, fresh water was obtained in 399, stock water in 206, the others being salt or dry. The number of tanks excavated to 30th June, 1915, was 294, with an approximate capacity of 100,800,000 gallons, and the number of wells 263, the estimated capacity of which is 49,000,000 gallons. The capital expenditure for the financial year ending June, 1915, was £18,060.

(vii.) *Land Drainage.* Under the Land Drainage Act 1900 the drainage undertakings administered by the department are those for the districts of East Jandakot and Torbay-Grassmere. Undertakings controlled by Boards under the same Act are Lennox, Koriyekup, Njookinbooroo, and Sterling.

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 45,000,000 gallons was constructed. The catchment area on Mount Wellington at present comprises an area of 4200 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 two storage reservoirs about $2\frac{1}{2}$ miles from the city. One contains 68,000,000 gallons and is 502 feet above sea-level, while the other contains 45,000,000 gallons and is 447 feet above sea-level. The whole of the supply is by gravitation. The water is brought from the various streams by means of stone aqueducts and cast-iron pipes to the 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.

(b) *Capital Cost, Tenements Connected, Length of Mains, Revenue and Expenditure.* The total capital cost to the end of 1915 was £288,000, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at the end of 1915 amounted to £257,445. At the same date the number of tenements supplied in the city and suburbs was 8585, the population 39,948, and the length of reticulation mains $92\frac{1}{2}$ miles. The revenue and expenditure for the last six years were as follows:—

HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1910 to 1915.

Particulars.	1910.	1911.	1912.	1913.	1914.	1915.
	£	£	£	£	£	£
Revenue	20,643	31,207	23,858	21,982	22,191	23,382
Expenditure	22,238	20,381	20,584	21,336	24,550	26,471

(c) *Proposed Extensions.* Parliamentary sanction to borrow £189,000 has been obtained for the purpose of improving the water supply of the city and suburbs of Hobart; £100,000 of this amount is to be spent on a new storage reservoir, and the construction of the dam is in hand.

(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 the end of the year 1915 about 72 miles of sewers had been laid at a cost of about £191,000, and 6926 tenements (out of a total of 7100) had been connected. The revenue for the year was £11,614. The scheme, which is intended to sewer over 2000 acres so as to serve an estimated population of about 80,000 people, is almost 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 survey having just been completed.

§ 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.**—The 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 shews 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 1911-15.

Year ended the 30th June—	Revenue.				Expenditure.	Total Capital Debt.	Interest.†	Balance.
	Wharfrage & Harbour Rates.	Tonnage Rates & Berthg. Charges	From Other Sources.	Total.				
	£	£	£	£	£	£	£	£
1901* ...	42,784	3,208	12,324	58,316	11,275	4,692,782	55,554	— 8,513
1911 ...	212,061	15,536	146,158	373,755	143,181†	5,697,756	200,845	29,729
1912 ...	234,731	18,163	158,755	411,649	143,170†	6,136,671	212,842	\$56,398
1913 ...	258,703	18,417	173,162	450,282	154,540†	6,535,853	221,049	74,692
1914 ...	260,761	19,867	188,901	469,529	161,479	6,992,932	248,088	59,962
1915 ...	255,217	15,046	194,418	464,681	161,358	7,367,922	263,478	39,845

* For the period from 11th February to the 30th June, 1901. † The rate of interest charged each year is the average rate on the total capital debt of the State, which varies. ‡ Including expenditure for the renewal, replacement or reconstruction of wharves or buildings. § Including £761 repaid to previous revenue votes. — 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 1911-15.

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
1911 ...	1,675,945	19,058	2.72	38,372	5,442	34.04
1912 ...	1,671,540	24,036	3.45	30,163	6,636	52.80
1913 ...	1,875,925	28,104	3.59	28,317	5,976	48.22
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

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 thirty-four 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 twelve 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 the Act of 1913 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 twenty-six feet at low water. Five and three-quarter miles of wharves carrying sheds which measure a total length of 14,515 feet, and cover an area of 705,780 square feet, have been constructed along the river and at the Victoria Dock, Melbourne.

(a) *The Coode Canal.* In 1886 the canal across the flats below Fishermen's Bend was completed at a cost of £96,000. The length of the canal is 2002 yards, the distance from Queen's Bridge to the river entrance being thereby reduced from seven miles to five and three-quarter 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, four miles up the river, and opened in 1892, has an area of ninety-one acres and a depth of twenty-six feet at low water. The entrance to the dock is 160 feet wide. There are 8750 feet of wharfage, and the total cost, including wharves, sheds, and approaches thereto, was, to 31st December, 1915, £523,336. The sheds have a total length of 4868 feet, and cover an area of 265,600 square feet. A new central pier, 1631 feet long and 250 feet wide, with a 57 feet roadway in the centre, is under construction. It is proposed to erect on this pier six cargo sheds, each 486 feet by 60 feet. The expenditure on this work to 31st December, 1915, amounted to £59,567.

(iii.) *Works in the Bay.* Prior to 1889 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 8000 feet long and 600 feet wide was constructed, running in a southerly direction from Port Melbourne Railway Pier and having a navigable depth of thirty feet o.l.w. The cost of this work was £218,379. A new railway pier has just been completed at Port Melbourne. Its length is 1902 feet, with a width of 186 feet, and the average depth of water is 35 feet. Two shelter sheds provide accommodation, and there are five 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 54 million cubic yards.

During the ten years ending 31st December, 1915, the average cost of dredging per cubic yard was 2.87 pence and the cost of towing and depositing 6.72 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 4,235,000 cubic yards.

(v.) *Financial Operations.* The revenue of the Trust is obtained from wharfages, and quayage rates, rents and license fees from lands and ferries, and other license fees. One-fifth* of the revenue of the Trust is paid to the consolidated revenue of Victoria. The following table gives particulars of the revenue and expenditure of the Trust from 1911 to 1915 inclusive:—

* Limited by Act 2449 to £60,000 per annum for five years from 1st January, 1913.

MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE, 1911 to 1915.

Particulars.	1911.	1912.	1913.	1914.	1915.
REVENUE.					
	£	£	£	£	£
Rates, rents, etc.	332,732	337,626	336,037	349,461	306,034
Interest	2,039	2,375	665	2,284	1,293
Other receipts	527	1,071	1,949	8,172	7,957
Total	335,298	341,072	338,651	359,917	315,284

EXPENDITURE.					
	£	£	£	£	£
Management and general expenses ...	20,841	27,453	35,753	42,460	46,257
Interest	69,366	69,264	71,081	83,620	86,491
Total	90,207	96,717	106,834	126,080	132,748
Less standing charges added to works ...	...	...	18,718	21,936	23,823
Total	90,207	96,717	88,116	104,144	108,925
Wharfage and other refunds ...	1,097	1,457	1,112	1,531	1,620
Charges remitted on troopships ...	...	...	...	4,532	3,166
Consolidated revenue of Victoria ...	65,413	68,344	60,960	60,000	60,000
Flotation of loan expenses ...	...	...	...	5,289	5,011
Redemption of loans expenses ...	...	...	...	...	925
Maintenance... ..	37,452	62,734	63,911	50,661	55,520
Total expenditure	194,169	229,252	214,099	226,157	235,167
Surplus on revenue account	141,129	111,820	124,552	133,760	80,117
Less depreciation and renewals account and sinking fund	35,000	17,500	29,188	30,058	30,415
Net surplus on revenue account	106,129	94,320	95,364	103,702	49,702

CAPITAL EXPENDITURE.					
	£	£	£	£	£
Land and property ... ..	...	1,119	46,007	5,534	2,060
Deepening waterways	31,531	21,845	49,620	96,198	93,615
Wharves construction... ..	14,202	85,227	115,244	87,885	120,627
Approaches construction	454	9,854	16,354	7,029	10,921
Other harbour improvements	787	2,735	2,713	1,376	4,275
Floating plant	16,721	72,078	9,744	33,452	3,112
General plant	5,214	102	2,910	3,364	4,107
Stock account	9,096	14,543	44,572	32,070	25,451
Total	78,005	207,503	287,164	266,908	264,168

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 on the river banks. Two ocean moles have been thrown out from the north and south heads, the former being 3450 feet and the latter 2040 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 1400 feet and a depth of 30 feet at low water, and wharves and goods-sheds have been constructed along the reclaimed foreshore on both sides of the harbour. 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. For the year ended 30th June, 1914, the total revenue of the Trust was £203,767, and the expenditure £82,895. The gross amount paid to the Treasury for the year was £120,872, being interest £54,844, sinking fund £15,669, and surplus revenue account £50,395.

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 1150 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 £94,000. The interest paid in 1915 amounted to £4867, and the contributions to Sinking fund, £1160. The receipts and expenditure of the Board for the last four years were as follows :—

HOBART MARINE BOARD.—RECEIPTS AND EXPENDITURE, 1912-15.

Year.	RECEIPTS.				EXPENDITURE.			
	General.	Harbour Improvements, Debentures, etc.	Lighthouse Fund.	Total.	General.	Harbour Improvements.	Lighthouse Fund.	Total.
	£	£	£	£	£	£	£	£
1912 ...	19,281	35,000	10,804	65,085	20,293	32,490	11,590	64,373
1913 ...	21,343	*38,000	10,634	69,977	†20,453	35,917	11,948	68,318
1914 ...	24,772	26,000	11,481	62,253	‡24,956	29,241	13,047	67,244
1915 ...	23,448	5,264	¶...	28,712	§23,096	6,983	¶...	30,079

* Including £8000 from General Account. † Including £4000 voluntary contribution to Sinking Fund. ‡ Including £8000 transferred from the General Account to the Harbour Improvements Account. § Including £1500 transferred from General Account to Harbour Improvements. ¶ The Commonwealth Government took over control of Ocean lights from 1st July, 1915.

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 6702 feet have been constructed, the depth at some of them being 40 feet S.L.W. The total capital debt on 31st December, 1915, was £188,660, of which £91,421 was incurred on the Tamar Improvements Scheme. The revenue for 1915 was £17,753 and the expenditure £20,798.

7. Geelong Harbour Trust.—This Trust was appointed in 1905, and consists of three Commissioners appointed by the Government of Victoria. To the 31st December, 1915, the Trust had borrowed £500,000. The sinking fund at the same date stood at £11,678. The revenue for the year 1915 was £30,835 and the expenditure £39,055.

8. Rockhampton Harbour Board.—Under an Amending Act of Parliament, which came into force in 1915, the Board now consists of eleven members elected by the municipalities and shires of the Central Division of Queensland. The principal items of export in 1915 were—wool, 111,422 bales; preserved and frozen meats, 9851 tons; blister copper, 9146 tons; and gold, £525,361 in value. For the year 1915, the receipts were £50,899, of which £18,603 represented Government loans. The expenditure was £50,468, including £19,881 for redemption and interest. The total of the net registered tonnage entering the port in 1915 was 837, 943.

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, 1915, amounted to 31,560 tons, as against 45,223 tons for the previous year, showing the heavy decrease of 13,663 tons, mainly caused by the unfavourable sugar season. The principal items of export were:—Refined sugars, 19,785 tons; raw sugars, 510 tons; syrups and molasses, 3998 tons; rum and spirit, 3679 tons; copper ores, 1615 tons. The revenue for 1915 amounted to £6699, as against £8145 for 1914; the expenditure for 1915 was £7266, as compared with £7578 for 1914. Dredging resulted in 152,700 tons being lifted at a cost of £1836, but only about five months of the year were fully occupied in this work.

10. Cairns Harbour Board.—The Cairns Harbour Board consists of thirteen members, three representing the town of Cairns and the other ten the surrounding shire councils. For the year ended 31st December, 1915, the gross revenue of the Board, exclusive of loan of £5000 from Insurance Fund Account, amounted to £26,334. Revenue expenditure and loan expenditure for the year 1915 amounted to £35,246 and £13,743 respectively. The principal items of export were:—Timber, 27,267 tons; raw sugar, 17,507 tons; maize, 7706 tons; and bananas, 4788 tons.

11. Bunbury (Western Australia) Harbour Board.—The Bunbury Harbour Board was constituted in 1909, and consists of five members appointed by the Government.

The capital expenditure for the year ending 30th June, 1915, was £10,658, making the total capital expenditure to that date £240,121. The revenue for the year was £21,600 and the expenditure £7705, the balance being paid into Consolidated Revenue. The timber trade is the principal industry of the port, the shipments of timber for the year ending 30th June, 1915, amounting to 162,444 loads. Other chief exports comprised coal, 7639 tons; and wool, 3502 bales. The total import tonnage was 12,826 tons, the total cargo tonnage dealt with during the year ended 30th June, 1915, amounting to 292,814 tons.

12. Burnie and Table Cape (Tasmania) Marine Board.—While the existing works accommodate steamers of 4000 to 5000 tons, which visit the port regularly, they are insufficient for the rapidly increasing traffic in produce and ores 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 shipping trade in the Commonwealth. A breakwater is being constructed 1200 feet in length and with a depth of 40 feet at low water. On 31st December, 1915, 650 feet of this breakwater had been constructed. It is intended later on to increase the length to 4000 feet and to enclose 300 acres of deep

water space, of which 100 acres will have a depth of nearly 45 feet. The expenditure on that portion of the scheme at present under construction will be £150,000. The revenue for the year 1915 was £8781, and the expenditure £8780.

§ 5. Fire Brigades.*

1. **New South Wales.**—Reference has been made in the section of this book dealing with the subject of *Private Finance* (see page 792) 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 :—

NEW SOUTH WALES BOARD OF FIRE COMMISSIONERS.—RECEIPTS AND DISBURSEMENTS FOR SYDNEY FIRE DISTRICT, 1911-15.

Year.	Receipts.						Disbursements.
	From Government.	From Municipalities.	From Fire Insurance Companies.	From Firms.	From other Sources.	Total.	
	£	£	£	£	£	£	£
1911 ...	21,643	21,643	21,198	444	1,145	66,073	60,667
1912 ...	20,100	20,100	19,896	204	1,874	62,174	65,713
1913 ...	25,586	25,586	25,404	182	2,270	79,028	76,853
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

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 220 square miles. On the 31st December, 1915, the Board had under its control 59 stations, 317 permanent men, 168 auxiliary firemen, 15 steam and 18 motor fire engines, 88 horses, 125,763 feet of hose, and 439 telephone fire-alarms. The length of wire used for telephones and fire alarms was 1471 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 ten miles from the Melbourne General Post Office, but this area has since being 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 31st December, 1915, the Board had under its control 45 stations, 241 permanent men, 130 auxiliary firemen, 35 special service firemen, 10

* See § 6, Fire Insurance, p 792.

steam fire engines, 4 gasolene engines, 3 petrol motor fire engines, 25 other petrol motor appliances, 46 horses, 105,700 feet of hose, and 278 fire-alarm circuits having 862 street fire alarms, of which 840 contained telephones. The total length of wire in use outside stations for fire alarms and telephones is about 689 miles. 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 1911 to 1915 inclusive:—

VICTORIA.—REVENUE AND EXPENDITURE OF METROPOLITAN FIRE BRIGADES BOARD, 1911 to 1915.

Particulars.	1911.	1912.	1913.	1914.	1915.
ORDINARY RECEIPTS.					
	£	£	£	£	£
Contributions ...	56,993	63,775	66,238	66,954	77,794
Receipts for services ...	3,719	6,011	5,941	8,241	6,634
Interest and sundries ...	3,420	6,965	3,669	3,234	9,957
Total ...	64,132	76,751	75,848	78,429	94,385
ORDINARY EXPENDITURE.					
Salaries ...	37,913	45,613	47,210	50,966	51,304
Interest and sinking fund ...	9,588	9,681	8,357	9,432	11,442
Other expenditure ...	16,631	21,457	20,281	18,031	31,639
Total ...	64,132	76,751	75,848	78,429	94,385

(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 1915 there were 108 municipal councils, and sixty-four insurance companies included in the operations of the Act. All the brigades are volunteer brigades, but in the large towns permanent station-keepers and watchmen are employed. There were 128 registered brigades and 2708 registered firemen at the end of the year 1915.

For the year 1915 the receipts of the Country Fire Brigades Board amounted to £16,073, and the expenditure to £16,639.

3. *Queensland.*—In the year 1914 there were twenty-seven 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 1914:—

QUEENSLAND.—FIRE BRIGADES, 1914.

Receipts.	Amount.	Expenditure.	Amount.
	£		£
From Government ...	7,279	Salaries and wages ...	11,678
„ Local authorities ...	7,368	Building, repairs, etc....	754
„ Insurance companies ...	7,205	Plant, stores, clothing, etc.	2,760
„ Other sources ...	917	Other ...	4,779
Total ...	22,769	Total ...	19,971

At the end of the year 1914 the fire brigades staffs comprised 88 permanent men, 270 partly paid, and 59 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 68 men. They have three steam engines, three motor turbines, one chemical motor, ten hose reels, and 18,849 feet of hose. There are 52 telephone fire alarms and 119 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 1915 amounting to £21,973. Brigades are established in the following municipalities, viz., Adelaide, Kensington and Norwood, including St. Peter's, Unley, Port Adelaide, Glenelg, Gawler, Kapunda, Moonta, Kadina, Port Pirie and Port Augusta. The strength of the brigades consists of 87 permanent firemen and 24 auxiliary firemen. The plant consists of five steam fire engines, one motor engine, three motor hose carriages, one floating fire engine, 13 hose reels, and 22 horses. The number of calls received during the year 1915 was 253, of which 11 were to fires of a serious nature. Of the total calls, 138 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 was passed in 1909 and came into operation on the 1st January, 1910. It is called the District Fire Brigades Act, and divides Western Australia into two fire districts under the control of the Western Australian Fire Brigades Board. The Board is constituted as follows:—Two members nominated by the Government; one member nominated by the Perth City Council; one member elected by the Municipalities of Kalgoorlie, Boulder, Coolgardie, and the Kalgoorlie Road Board; one member elected by the Municipalities and Road Boards other than those above-mentioned; three members elected by the Insurance Companies; and one member elected by the Volunteer Fire Brigades. The election of the Board takes place bi-annually, and its income is provided as follows:—Two-eighths by the Government, three-eighths by the Municipalities and Road Boards, and three-eighths by the Insurance Companies. The receipts for the year 1915 amounted to £31,522, and the expenditure to £30,691. The value of buildings and plant belonging to the Board is £72,742.

The whole of the Brigades throughout the State are now controlled by this Board, and number two purely permanent, fourteen permanent and partially paid, three partly permanent and partly volunteer, two purely partially paid, and twenty-one purely volunteer brigades; making a total of forty-two. The staff includes a chief officer, deputy-chief officer, third officer, 18 other officers, 87 permanent firemen, 65 partially-paid firemen, and 403 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. It is intended to increase the scope of operations so as to include in the metropolitan district the suburbs of Queenborough, New Town and Glenorchy. Under the new scheme, the estimated annual cost is £2700. There are volunteer brigades under the control of local boards in most of the larger centres of population.

§ 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 comparable 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 1914. Victoria: 30th September, 1914, except Melbourne, 31st December, and Geelong, 31st August, 1914. Queensland: Calendar year 1914. South Australia: Corporations, 30th November, and district councils, 30th June, 1914. Western Australia: 31st October, 1914, except road districts, 30th June, 1914. Tasmania: Calendar year 1914.

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 1914. It may 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, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
No. of local authorities (a)	321	208	182	180	145	51	1,087
RECEIPTS.							
Rates—	£	£	£	£	£	£	£
General ...	1,785,344	1,251,649	594,067	214,456	192,327	42,254	4,080,097
Other (b) ...	322,371	278,176	221,635	85,862	63,605	143,700	1,115,349
Government grants ...	385,660	144,374	73,138	62,218	76,813	14,416	756,619
Loans (c) & other sources	875,531	500,829	156,963	95,904	517,279	169,825	2,316,631
Total ...	3,369,206	2,175,028	1,045,803	458,440	850,024	370,195	8,268,696
EXPENDITURE.							
Works, services, etc. ...	2,294,406	1,496,601	882,088	322,234	523,614	202,602	5,721,545
Interest on loans and over-	314,216	239,737	15,690	13,295	69,263	55,150	885,154
drafts ...							
Redemptions, sinking							
funds, etc. ...	80,576	37,706	12,108	39,520	7,892		
Administration ...	254,717	192,066	103,555	46,927	50,562	39,321	687,148
Other ...	280,383	198,000	123,894	68,045	148,686	44,221	863,229
Total ...	3,143,722	2,206,980	1,162,933	462,610	831,645	349,186	8,157,076
VALUATIONS.							
Capital value of property	£185,400,027	(f)	60,671,922	88,394,081	24,382,980	32,508,360	(f)
Annual value of property	(d) 3,271,102	(f)	(f)	4,331,928	1,505,426	1,776,099	(f)

(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) City of Sydney only. (e) Unimproved capital value. (f) Not available.

3. **Local Government Loans, 1914.**—The following table gives particulars for each State of loans raised by local authorities during the year 1914, of loans current at the end of that year, of liability on account of interest and sinking fund, and of loans maturing during 1914 :—

PARTICULARS OF LOANS RAISED BY LOCAL AUTHORITIES, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Loans from general Government—							
Raised during year ...	...	1,000	63,079	...	2,500	26,057	92,636
Current at end of year ...	...	174,288	399,678	...	91,803	565,051	1,230,820
Loans from other sources—							
Raised during year ...	790,964	573,291	8,990	70,175	167,637	97,372	1,707,429
Current at end of year ...	7,750,552	5,442,768	864,604	302,346	1,559,518	710,023	16,629,811
Total—							
Raised during year ...	790,964	573,291	72,069	70,175	170,137	123,429	1,800,065
Current at end of year ...	7,750,552	5,617,056	1,264,282	302,346	1,651,321	1,275,074	17,860,631
Current loans, exclusive of those obtained from general Government, raised within the C'wealth	6,924,073	5,442,768	(a)	302,346	1,034,518	300,757	(a)
Annual liability on account interest	308,979	240,225	16,814	11,619	73,543	54,154	705,334
Total sinking fund at end of year	506,175	879,649	70,063	22,197	253,388	149,486	1,880,978
Amount loans maturing during year							
Redeemed ...	...	(a)	(b)	11,311	17,829	58,031	(a)
Renewed ...	173,236	(a)	(a)	1,400	...	550	(a)

(a) Not available. (b) In the early Government loans, the periodical payments include interest and sinking fund.

SECTION XXVII.

INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

§ 1. Development of Trade Unions in Australia.

1. **Historical Development of Trade Unionism in Australia.***—(i.) *The Beginning and Early Development of Trade Unionism, 1850 to 1875.*—The middle of last century marks practically the starting point of organised labour in Australia. Prior to the discovery of gold in 1851, the whole of the occupied parts of the continent were given over to pastoral purposes. There appeared to be but little prospect of any extensive development of manufactures in Australia, and, under the circumstances, it is not surprising that, although certain organisations in the nature of benefit societies as well as temporary combinations of workmen for special trade purposes existed as early as the second quarter of the nineteenth century, no trace of any permanent industrial union of workers for such purposes can be found before the middle of the century. Many of the new arrivals in Australia at the time of the gold discoveries came from European countries, which were at that time fermenting with discontent. Thus it was that the gold diggings brought together a mass of democratic opinion, just at the time when self-government was commencing in Australia, and only a few years before manhood suffrage was obtained in the older colonies. Many men, of various trades and occupations, who were drawn to the country by the prospect of rapidly making a fortune, either not meeting with the success they hoped for, or recognising their unfitness for the somewhat strenuous life on the goldfields, decided to settle down in the country and pursue less precarious callings, while at a later stage the depletion of the richer alluvial deposits, and the consequent decline in the activity of the goldfields, threw out of employment many men who had lived in English cities, and of whom a number had been members of English trade unions. This surplus of labour accumulated in a few of the larger towns of Australia, and intensified the early impulses towards industrial enterprise and the organisation of the workers.

One of the first effects of the influx of population was to give a great stimulus to the building trades, and it was in that industry that most of the earliest unions were formed. The first trade union in Australia was the Operative Masons' Society, established in Melbourne in 1850. This was followed by the organisation in Sydney of the Typographical Association in 1851, the Amalgamated Society of Engineers in 1852, the Operative Stonemasons' Society in 1853, and the Society of Progressive Carpenters and Joiners in 1854. In Victoria, the Operative Bricklayers' and the Progressive Carpenters' and Joiners' Unions were formed in 1856, and the Ballarat Typographical Association in 1857; while the Operative Plasterers' and the Operative Bricklayers' Unions were established in Sydney in 1857 and 1858 respectively. The main objective of the early unions in Australia was the limitation of the working week to 48 hours. In the early 'fifties, wage questions were not prominent, for the reason that the gold discoveries resulted in an immediate and rapid rise in rates of wages, while the practical tests by which workers measured their welfare were the standards of living and working conditions in Europe. In later years, however, there has been a growing disposition to fix rates of wages and conditions of labour in Australia independently of those observed

* See "Trade Unionism in Australia," edited by Professor Meredith Atkinson, M.A. (Oxon.). Burrows and Co., Sydney, 1916, pp. 49 to 72.

in other countries. The effort directed by trade unionists towards the question of hours resulted in the recognition of the eight hours' day in a number of trades at an early date.

In New South Wales, the operative masons succeeded in securing the recognition of the eight hours' day in all the building trades in 1855, but little development of the movement was noticeable in that colony until 1871, in which year four eight-hour trades—brickmakers, stonemasons, carpenters, and labourers—inaugurated the annual celebration. In Victoria, as in New South Wales, the eight hours' day was secured in the first place by the stonemasons, in 1856, and the first celebration was held during the same year. At the second celebration, in 1857, nine trades and about 700 men took part. The Stonemasons' Society of Queensland secured the eight hours' day in 1858. The eight hours' movement was inaugurated in Adelaide in 1873. In Tasmania, the recognition of the eight hours' day was first secured by the shipwrights of Hobart in 1874, while in Western Australia the eight hours' system was established in 1896. Generally, it may be said that trade-unionism in Australia originated primarily in the desire for an eight hours' day; with the Western Australian celebration of 1896, unionism, with its eight hours' charter, completed the circuit of the Commonwealth.

The 'sixties and early 'seventies may be regarded as a transition period in the industrial development of Australia. The country was recovering from the excitement and restlessness of the gold fever, and was settling down to a more prosaic period of sterner conditions, and slower but more stable growth. Steady progress was made in industrial development and in agricultural settlement, and, as the various industries grew, so trade-unionism developed. Between 1861 and 1871 there was a considerable decline in rates of wages, and it was during this decade that wages questions began to come into prominence in trade-union activity. The reductions in wages were naturally not accepted without active protest. But these protests were generally ineffective, owing to the large number of men who drifted from the gold diggings into Sydney and Melbourne. A second matter which began to assume considerable importance among trade unions during this period was the agitation against the admission of the Chinese, more especially in the mining and furniture industries. Several attempts to forcibly expel the Chinese from the diggings were repressed by the Governments. In 1872 a Miners' Association was first established in Victoria, its main objects being—(a) to secure an eight hours' shift, (b) to resist attempts to reduce wages, (c) to oppose the admission of Chinese, and (d) to forward legislation for the regulation of mining. In October, 1872, the gold miners of Victoria were successful in obtaining the eight hours' shift after a big strike at Stawell. In 1873 there was a protracted strike of gold miners at Clunes, in Victoria, against working with Chinese labourers. Unions were established at a number of mining centres, and in 1874 a conference was held at Bendigo, and the Amalgamated Miners' Association of Victoria formed, the rules being based on those of the National Miners' Association of Great Britain. This association soon turned its attention to the necessity for legislation for the better regulation of mining. A Bill was drafted providing for an eight hours' shift, improved ventilation, and inspection of machinery. This Bill was laid before the Government, and was substantially incorporated in the Regulation and Inspection of Mines and Machinery Act 1877. The Seamen's Union was established simultaneously in Sydney and Melbourne in 1874, and dissatisfaction soon arose owing to the number of Chinese employed on coastal steamers. It was not until several years later, however, that, after a strike, an agreement was arrived at with the shipowners to limit the number of Chinese employed. The growing sense of solidarity among unionists, and the recognition of community of interests, led to the establishment of central trade union delegate organisations. The formation at Sydney in 1871 of the first permanent Trades Council was an important step in trade-union consolidation. In Melbourne a Trades Hall had been established in 1856, but no permanent delegate committee came into existence until 1879. In the other States the formation of delegate councils did not take place until a somewhat later period, viz., in Queensland and Tasmania in 1883, in South Australia in the following year, and finally in Western Australia in 1892.

(ii.) *The Legalisation of Unionism, and Intercolonial Trade Union Congresses, 1872 to 1891.* From 1872 the expansion of trade and industry was greater than in any previous period. Manufacturing industries prospered, the agricultural and pastoral industries made great progress, mining for silver became an important industry in New South Wales, and valuable deposits of copper, tin, and other metals were discovered and worked. Moreover, the year 1873 marked the beginning of a long period of falling prices, lasting until 1895-6, not only in Australia, but practically throughout the world. Under the influences of expanding trade and industrial activity, wages began to rise in Victoria in 1872, and in New South Wales a year later. These increases in wages were not always reached by peaceful means, and a considerable number of industrial disputes occurred during this period, mainly in regard to claims for either higher wages or shorter hours. The tide of improvement reached its highest level in 1885, but in the following year signs of reaction were visible. During this period of prosperity, trade unionism developed, and by the year 1885 was established on a firm and extensive basis. There were about 100 unions in existence, with an estimated membership of over 50,000. There were 50 societies affiliated with the Melbourne Trades Hall. The Amalgamated Miners' Association of Victoria had 19 branches. The New South Wales Trades and Labour Council comprised 24, and the Adelaide Trades and Labour Council 11 societies. There were also a number of organisations in Queensland and Tasmania. The centres of unionism were naturally the metropolitan towns, where the labour organisations were composed of artisans, factory operatives, seamen, and wharf labourers. Then came the miners' organisations, which contributed the most important element to trade unionism outside the capital towns. It was not until 1886 that the workers in the pastoral industry were organised, though several unsuccessful attempts had previously been made to organise the shearers. In that year the pastoralists proposed to reduce the shearing rates, and to impose conditions to which the employees objected, and this resulted in the formation in Victoria of the Amalgamated Shearers' Union. Two years later the Queensland Shearers' and Labourers' Unions were established. These three organisations, which formed the foundation on which the Australian Workers' Union has been built, constituted the third of the three main geographical and industrial divisions into which trade-unionism in Australia falls.

In the meantime, a strong feeling had arisen for the legal recognition of trade-unionism in Australia, in order to acquire the legal status necessary alike to the security of funds, and to the recognition of trade-unionism as a constituent part of the social and industrial organisation. Until the Trade Unions Acts were passed in Australia, the unions were subject to the provisions of the English Acts of 1824 and 1825, which, while giving the workers freedom to combine, construed combinations in restraint of trade to be still unlawful associations, and their funds were accordingly unprotected. The first of the colonies to move in the direction of legislation was South Australia, where a Trade Union Act was passed in 1876, based on the English Act of 1871. In the other colonies, Acts, based on the English laws of 1871 and 1876, were passed in New South Wales in 1881, in Victoria in 1884, Queensland in 1886, Tasmania in 1889, and Western Australia in 1902. Under these Acts unions were recognised as lawful bodies, capable of holding property, and were placed on an equality with other organisations.

Various factors had combined to lead the unions to recognise the community of interests between the several colonies. Such matters as industrial legislation, the protection of seamen engaged in intercolonial trade, the growing intercourse between the colonies, and the objection to State-aided European immigration, and to the admission of Chinese, all tended to bring the workers in the several colonies together. The holding of the first Australian conference of trade unions at Sydney, in 1879, marks an epoch in trade-union history. For the first time a national meeting of delegates was convened by workmen's organisations, to discuss purely workmen's questions in the presence of workmen alone. At this first congress the number of delegates was 39, representing 24 societies, with a membership of 11,087. The subjects discussed, and upon which resolutions were passed, included factory and workshops' regulation, workmen's

compensation, inspection of boilers, and uniform colonial mercantile shipping laws. Upon questions of general policy the congress passed resolutions opposing Chinese and State-aided European immigration, and in favour of the extension of the eight-hours' system, the legalisation of trade unions, co-operation, and technical education. The second congress was held in Melbourne in 1884, and 69 delegates from New South Wales, Victoria, and South Australia took part in the proceedings. In addition to the questions considered at the former congress, two constitutional reforms were urged, viz.:—"One man one vote," and payment of members of Parliament wherever this had not been adopted. Perhaps the most significant outcome of this congress was the decision to form a Parliamentary Committee in each colony for the purpose of assisting in passing through Parliament measures for the benefit of labour, and to obtain direct representation in Parliament.

The next congress was held in Sydney in 1885, and was followed by the fourth congress in Adelaide in 1886, and the fifth in Brisbane in 1888. The most important feature of the third congress (1885), was the adoption of a scheme for the federation of trade unions throughout Australia. The proceedings of the fifth congress at Brisbane, in 1888, revealed the presence of a certain amount of socialistic sentiment among the delegates. Inter-colonial organisation, which had been advocated at previous congresses, but which had not eventuated, was the principal subject of discussion. The Queensland Trades and Labour Council was deputed to draft a federal constitution, to be laid before the Trades and Labour Councils for their acceptance, and to report to the next congress. The Council presented its report at the sixth congress, held at Hobart in 1889, but it was ruled out of order. In Queensland, however, the scheme was adopted, and a provincial branch of an Australian Labour Federation was established in 1889, and remained in force until 1914, when it was displaced by the Brisbane Trades and Labour Council. New South Wales adopted the scheme in 1890, but in 1900 the unions affiliated to the Sydney Labour Council seceded from the Federation, and enrolled in a new organisation known as the Sydney Labour Council, which was later extended into the existing Trades and Labour Council of New South Wales. Western Australia adopted a scheme of federation in 1908, and is now the only State which works on that system.

The efforts of the trade unionists in supporting candidates for Parliament met with considerable success, and as early as 1875 a representative was elected to the New South Wales Parliament, mainly on the votes of the trade unionists. At the Brisbane congress, it was reported that the Labour Council of South Australia had supported nine candidates at the last general elections, and that seven of these had been returned. In the same year four men stood as workers' candidates in Queensland, while in the following year the Victorian Parliament contained two members who could be classed as labour representatives. None of these candidates were, of course, elected on any labour platform, but at the congress of 1888, a motion was unanimously adopted, to the effect that it was desirable that the several trades and labour councils should formulate an electoral programme, and that any candidate who did not adhere to that programme should not receive the support of the labour party. This congress, then, marks the turning point where organised labour definitely diverged from the old traditional trade-union lines to enter the political field of new unionism.

(iii.) *The Maritime Strike and the New Unionism, 1890 to 1900.*—Prior to the advent of the new unionism, the workers in Australia had supported the progressive elements of the existing political parties. During the latter part of the 'eighties, however, the hitherto accepted economic individualism of their opponents was thrown aside; the doctrines of collectivism emerged, and distinctive policies were formulated. The early extension of the franchise had done much to create interest in social and political reforms, and henceforth the expectation of progress was based on political organisation. It was, however, an important trade union crisis that gave the final impetus to new unionism—the maritime strike of 1890. In this struggle, which evolved into a general strike practically throughout Australia, the men were defeated, and for some years many of the unions were prostrate. During the hard times of the 'nineties they found it uphill work

to regain their former positions and prestige. The action of the public authorities at the time of this strike, and during the shearers' strikes of 1891 and 1894, was strongly resented by labour, and led to the attempt to make its power felt in the Government itself. Trade union political organisations were formed, and the movement grew rapidly in each colony. As opportunity offered, candidates from the new party were put in the field, with a considerable measure of success. Political labour leagues were established, conferences held, and platforms drafted. In 1891, 29 members were returned on the party's platform in New South Wales. An attempt was made to adopt a pledge to vote as a majority of the party should determine, but a number of Labour members refused to sign the pledge, and finally the party divided itself into almost equal numbers between the Ministerialists and the Opposition. At the 1894 elections there were two factions. The Official Labour Party, or "Solidarity" faction, as opposed to the "Independent" faction, insisted on the acceptance of a pledge, which had been drawn up in accordance with a resolution adopted at a Labour Electoral League Conference. The "Independent" section was not opposed to the principle of the pledge, but objected to the particular form of pledge adopted. Finally, however, a pledge was adopted which secured the general approval of the party, and at the elections of 1895 the official organisation men became the sole direct representatives in Parliament of the new unionism.

In 1904, 1908-9, 1910-13, and 1914-16, Labour Governments occupied the Commonwealth Treasury benches. The present Governments in New South Wales, South Australia, and Queensland are Labour. In Victoria, Western Australia, and Tasmania the Labour party is an important element in Parliament.

From 1891 to 1895 only about ten new unions were established in Australia, but as the result of increasing activity and prosperity experienced from 1896 to 1900, no fewer than 57 new unions were organised. In 1898 the eighth and last of the old intercolonial congresses was held at Adelaide. The most important matter dealt with was the question of national organisations of unions, and in accordance with resolutions passed at the congress, a conference was held at Brisbane in the following year of three delegates from each Trades and Labour Council for the purpose of preparing a scheme of organisation. The scheme adopted, however, like its predecessors, never came into force, owing mainly to the antipathy of the unions.

(iv.) *Recent Developments.*—The reports of the proceedings of the first and second Commonwealth Trade Union Congresses, held respectively in Sydney in 1902 and in Melbourne in 1907, shew that there had been a great change in the whole character of the trade union movement. The contrasts revealed between the programme, opinions, methods of propaganda, and economic theories of the delegates at these conferences and at the old intercolonial congresses are striking. Resolutions were carried in favour of nationalisation of industries, of uniform land value taxation, the abolition of the State Governors, of legislation for the eight hours' day, of the introduction of a trade union label, and of a Federal Arbitration Act. A scheme for an Australian Labour Federation was drafted and adopted at the 1902 congress for the approval of the State Labour Councils and their constituent unions, and a Federal Executive Committee was appointed. Though this scheme was again adopted by the congress held in Melbourne in 1907, it was not on either occasion taken up by the unions. To these two congresses delegates were sent from the central and large amalgamated or federated organisations only, and not from the individual unions. The Trades and Labour Councils, being deliberative bodies only, had no direct power to bring about the adoption by the affiliated unions of the approved scheme. In 1913 an Interstate Congress, composed of delegates from the Trades and Labour Councils only, was held in Adelaide, and a simple scheme of national organisation was adopted. This scheme was approved by the Councils in Sydney, Melbourne, and Adelaide, and meetings of the Grand Council have since been held. The establishment of a national organisation was thus realised in 1913, no less than 29 years after it was first proposed at the second Intercolonial Congress of 1884.

2. Registration under Trade Union Acts.—The benefits conferred by registering Trade Unions are not, in some of the States, 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. It will be seen that 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. In some States considerable activity has been displayed in the formation of new unions. In others the benefits sought are obtained by other means. 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. The following table shews the number of trade unions registered under Trade Union Acts at the end of 1914, where available, together with their financial condition:—

TRADE UNIONS REGISTERED UNDER TRADE UNION ACTS.—NUMBER, MEMBERSHIP, AND FINANCIAL POSITION, 1914.

State.	Number of Unions.			Membership of Unions.			Receipts, 1914.	Expenditure, 1914	Funds at end of 1914.
	Employ-ers.	Employ-ees.	Total.	Employ-ers.	Employ-ees.	Total.			
							£	£	£
New South Wales ...	14	205	219	3,084	237,714	240,798	297,314	271,570	186,568
Victoria ...	3	8	11	125	1,428	1,553	282	323	360
Queensland ...	7	36*	43	303	8,069	8,372	19,696	17,428	13,811
South Australia ...	2	16	18	74	5,095	5,169	9,669	8,136	21,221
Western Australia†	1	73	74	18	23,464	23,482	43,361	34,634	29,173
Tasmania‡	...	...	...	...	...	...	...	...	...

* Information regarding eleven of these Unions not available. † 1912. ‡ Not available.

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 3165 members, and 119 unions of employees, with 88,075 members. Under the Industrial Disputes Act, which succeeded the Arbitration Act of 1901, the information is not required to be furnished. Since the Act of 1908 has operated, industrial organisation has proceeded rapidly, owing to a very evident 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. 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; and 49, with 749 members in 1912. 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; and in 1912, 158 unions, with 30,453 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 3760 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 1st August, 1915, there were six organisations of employers with 1631 members, and 121 organisations of employees with 357,465 members on the register.

4. **Types of Trade Unions in Australia.**—The types of 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 *inter-State*, 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 were briefly outlined in Labour Report No. 2 (pp. 7 to 9).

5. **Total Number of Unions, 1915.**—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 1915 :—

TRADE UNIONS, BRANCH UNIONS, AND MEMBERS, STATES, NORTHERN TERRITORY AND COMMONWEALTH, 1915.

State or Territory.	Number of Separate Unions.	No. of Branches.	No. of Members.
New South Wales	203	721	241,979
Victoria	161	312	141,993
Queensland	89	246	58,310
South Australia	87	94	39,264
Western Australia	104	203	35,980
Tasmania	66	63	9,346
Northern Territory	3	...	1,159
Total	713	1,639	528,031
Commonwealth*	415†	1,937	528,031

* 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 page 944.)

In the preceding table the number of separate unions in each State furnishes 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 with 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 415 distinct organisations and interstate groups of organisations in the Commonwealth, having 1937 State branches and sub-branches, and a total of 528,031 members.

6. Number of Unions and Membership in Industrial Groups, 1915.—The following table shews the number of unions and members thereof in each State at the end of the year 1915. 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 AND NORTHERN TERRITORY, DECEMBER, 1915.

Industrial Groups.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	Nth'n Ter.	Total.
NUMBER OF UNIONS.								
I. Wood, Furniture, etc.	3	5	2	3	4	3	...	20
II. Engineering, Metal Works, etc.	18	23	12	11	8	5	1	77
III. Food, Drink, Tobacco, etc.	21	16	5	9	12	9	...	72
IV. Clothing, Hats, Boots, etc.	10	8	2	3	3	5	...	31
V. Books, Printing, etc.	9	10	2	2	5	2	...	30
VI. Other Manufacturing	25	21	6	12	9	5	...	78
VII. Building	17	14	9	8	10	4	1	63
VIII. Mining, Quarries, etc.	16	3	1	2	3	2	...	27
IX. Railway and Tramway Services	6	4	6	4	7	4	...	31
X. Other Land Transport	8	6	4	2	2	2	...	24
XI. Shipping, etc.	17	7	17	9	8	8	...	66
XII. Pastoral, Agricultural, etc.	4	3	1	1	2	1	...	12
XIII. Domestic, Hotels, etc.	7	5	1	3	5	...	...	20
XIV. Miscellaneous	42	37	21	19	26	16	1	162
Total	203	161	89	87	104	66	3	713

NUMBER OF UNIONS AND MEMBERS IN INDUSTRIAL GROUPS IN EACH
STATE AND NORTHERN TERRITORY, 1915—Continued.

Industrial Groups.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	Nth'n Ter.	Total.
NUMBER OF MEMBERS.								
I. Wood, Furniture, etc.	5,107	4,912	*	959	3,121	563	...	†14,663
II. Engineering, Metal Works, etc.	22,179	13,434	4,005	4,228	2,759	490	...	47,104
III. Food, Drink, Tobacco, etc.	17,660	10,506	5,962	2,039	1,183	1,154	...	38,504
IV. Clothing, Hats, Boots, etc.	7,605	11,325	*	990	263	525	...	†20,708
V. Books, Printing, etc.	5,111	3,563	*	*	400	*	...	10,784
VI. Other Manufacturing	15,203	10,975	829	1,671	1,776	194	...	30,648
VII. Building	16,441	12,400	3,344	3,337	1,805	412	*	37,739
VIII. Mines, Quarries, etc.	19,493	4,416	*	*	4,746	*	...	33,024
IX. Railway & Tramway Services	41,864	16,132	6,432	4,008	7,046	1,000	...	76,482
X. Other Land Transport	5,963	6,742	2,175	*	*	*	...	17,208
XI. Shipping, etc.	20,420	11,331	4,823	4,387	1,179	763	...	42,903
XII. Pastoral, Agricultural, etc.	14,360	10,108	*	*	*	...	...	40,384
XIII. Domestic, Hotels, etc.	4,556	2,357	*	*	1,556	...	...	9,269
XIV. Miscellaneous	46,017	23,792	18,133	10,225	†10,146	1,303	*	107,975
Total	241,979	141,993	58,310	39,264	35,980	9,346	†1,159	528,031

* Not available for publication separately; included in State and Commonwealth totals.
† Incomplete, see footnote. * † Includes membership of Industrial Groups X. and XII. in Western Australia. § Membership of Groups II., VII., and XIV. included in South Australian members.

It will be seen that, with the exception of Group XIV., Miscellaneous, the membership is greatest in Group IX., Railway and Tramway Services (76,482 members), followed by Group II., Engineering, Metal Works, etc., with 47,104 members. The least important group from the point of view of membership is Group XIII., Domestic, Hotels, etc., with only 9269 members. Particulars are given in Labour Report No. 6 (pp. 8-11) of the number of male and female members of unions and the percentage of such members on the total number of adult wage earners. Information is also given below as to the development of trade unionism since 1891. Other tables show the classification of unions according to number of members and the number of central labour organisations.

7. Development of Trade Unions in Australia, 1891 to 1915.—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,
1891 to 1915.

Particulars.	1891.	1901.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Total number of unions	124	198	378	419	482	573	621	710	712	713
No. of unions for which membership available	72	139	334	375	442	542	621	710	712	713
Membership of these unions	31,871	68,215	212,483	244,747	277,047	344,999	433,224	497,925	523,271	528,031
Estimated total membership of all unions	54,888	97,174	240,475	273,464	302,119	364,732	...	...	...	...

Note.—Particulars for 1896, 1906, and 1907 are given in Labour Report No. 2, p. 13.

These figures shew that while the number of unions in 1915 was nearly six times the number in 1891, the estimated membership during the same period increased over nine times. 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 4760.

8. **Interstate or Federated Unions, 1915.**—The following table gives particulars as to the number and membership of interstate or federated unions in 1915 :—

NUMBER AND MEMBERSHIP OF INTERSTATE OR FEDERATED UNIONS IN THE COMMONWEALTH, 1915.

Particulars.	Unions Operating in—					Total.
	2 States.	3 States.	4 States.	5 States.	6 States.*	
Number of Unions ...	17	11	14	16	23	81
Number of Members ...	21,709	10,425	73,760	76,633	197,810	379,837

* 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 81 out of the 415 separate associations and groups of associations in the Commonwealth are organised on an interstate basis. The membership of these 81 unions amounts to 379,837, or no less than 71.9 per cent. on the total membership (528,031) 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 a 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 1915 :—

CENTRAL LABOUR ORGANISATIONS.—NUMBER, AND UNIONS AFFILIATED, 1915.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'th.
No. of Councils ...	3	5	1	4	10	1	24
No. of Unions and Branch Unions Affiliated ...	150	198	26	69	183	22	668

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 beginning of 1915 in the several States of the Commonwealth, which, more or less directly, affect the general conditions of labour, are shewn in the table below. Where merely an incidental reference to labour conditions is made in a statute, as is the case with, *e.g.*, the Hawkers and Pedlars Act 1892 of Western Australia, or the Firms Registration Act 1899 of South Australia, or the Health Acts generally, the statute is not included in the table.

LABOUR LAWS—TABLE OF STATUTES IN FORCE IN AUSTRALIAN STATES, 1915.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.
<i>1. General—</i>					
Factories & Shops Act 1912	Factories and Shops 1915	Factories and Shops 1900.	Factories 1907, 1908, 1910 and 1915	Factories 1904 (2) and 1911	Factories 1910 and 1911
Early Closing 1899, 1900, 1906, 1910 and 1915	Apprentices Act 1915	1908 and 1914	Early Closing 1911 and 1912	Early Closing 1902, 1904 (2), 1911 and 1913 (Consolidated)	Wages Boards 1910, 1911 and 1913
Saturday Half Holiday 1910					Chimney Sweepers 1882
Clerical Workers 1910					Shops Closing 1911 and 1913
Eight Hours Act 1916					
<i>2. Prevention of Strikes and Regulation of Rates of Wages—</i>					
Industrial Arbitration Act 1912	Factories and Shops (as above)	Industrial Peace Act 1912	Factories Acts 1907-15 Industrial Arbitration Act 1912	Industrial Arbitration Act 1912	—
<i>3. Mining Industry—</i>					
Mines Inspection 1901	Mines 1897	Mining 1898, 1901	Mining 1893	Mines Regulation 1906 and 1911	Mining 1905, 1908 and 1911
Coal Mines Regulation 1902, 1905, and 1910	Coal Mines Regulation 1909	1902, and 1912 (2)		Coal Mines Regulation 1902	
Miners' Accident Relief 1900, 1901 and 1910		Mines Regulation 1910 and 1912		Mining 1904	
<i>4. Security of Wages to Wage Earners—</i>					
Contractors' Debts 1897	Employers and Employees 1890, 1891 and 1901	Contractors' & Workmen's Lien 1906	Workmen's Liens 1893-6	Workmen's Wages 1898	—
		Wages 1870 and 1884			
Attachment of Wages Limitation 1900	—	Wages (as above)	Wages Attachment 1898	—	Wages Attachment 1900

LABOUR LAWS—TABLE OF STATUTES.—Continued.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.
*Truck 1900 " 1901	—	Factories and Shops (as above)	Factories (as above)	*Truck 1899 * " 1900 * " 1904	—
Bankruptcy 1898 (preference to wages)	Insolvency 1897	Insolvency 1874 Insolvency 1876	Insolvency 1886 " 1887 " 1896 " 1915	Bankruptcy 1892 " 1898	Bankruptcy 1870 Bankruptcy 1899
5. Accommodation, Homes, etc.—					
Shearers' Accommodation 1901	—	Shearers' and Sugarworkers' Accommodation 1905 Do. 1906	Shearers' Accommodation 1905	Shearers' Accommodation 1912	—
—	Closer Settlement (Workers' Homes) 1904	—	—	—	—
—	—	Workers' Dwelling 1909 and 1912.	—	Workers' Homes 1911 & 1912 (2) Navigation 1904 " 1907 Merchant Shipping Act Application 1903	—
6. Inspection of Machinery, etc.—					
Scaffolding and Lifts Act 1912	Boilers' Inspection 1915	Inspection of Machinery 1915, and Inspection of Scaffolding 1915	Steam Boilers and Engine Drivers 1911 and 1913 Lifts Regulation 1908 Scaffolding Inspection 1907 and 1908 White Phosphorus Matches Prohibition Act 1915	Inspection of Machinery 1904 and 1911	Inspection of Machinery 1903 " " 1909 " " 1913 White Phos. Matches Prohibition 1911
Boiler Inspection Regulations (under Factories and Shops Act 1912)	Lifts Regulation 1915				
7. Trade Unions—					
Trade Unions 1881	Trade Unions 1890	Trade Unions 1915	Trade Unions 1876	Trade Unions 1902	Trade Unions 1889
8. Relations of Masters and Servants—					
Masters & Servants 1902 Apprentices 1901 Apprentices (Amendment) Act 1915	Employers and Employees 1890, 1891 and 1901 Masters and Apprentices 1890	*Apprentices 1828 " 1844 Master and Servants 1861	Masters & Servants 1878 Apprentices (War Service) Relief Act 1915	Masters and Apprentices 1873 Masters & Servants 1892	Masters & Servants 1856 " " 1882 " " 1884 " " 1887
—	Servants' Registry Offices 1915	—	Employees' Registry Office Act 1915	Employment Brokers 1909 and 1912 (Consolidation)	—
9. Liability in case of Accidents—					
Employers' Liability 1897	Employers and Employees 1890 (Employers' Liability) and 1901	Employers' Liability 1886-8	Employers' Liability 1884-9	Employers' Liability 1894	Employers' Liability 1895, 1898 and 1903
Workmen's Compensation 1910	Workers' Compensation 1914	Workers' Compensation	Workmen's Compensation 1911	Workers' Compensation 1909 and 1912	Workers' Compensation 1910

* The "Truck" system, as applied to labour, was one by which the master obtained the labour of his servants in exchange for goods or commodities on which it is stated he generally secured a profit. The system is now almost entirely suppressed by the various statutes enacted. * New South Wales Acts unrepealed in Queensland after Separation in 1859.

2. Benefits sought to be Conferred by the Acts.—(i.) *General Provisions.* The legislation enacted has generally had for its object the shortening of hours, improving and fixing standard rates of wages, provision of sanitary accommodation, ventilation and cleansing of premises, safeguarding from accident, and general amelioration of the conditions of labour, particularly that of females and children, in factories. The principal provisions of these statutes are set out in the table hereinafter.

(ii.) *Historical.* The first Australian Factories Act was passed in 1873 in Victoria, and became law on 1st January, 1874. It was entitled "The Supervision of Workrooms and Factories Statute," and contained only six sections. Its principal provisions were (a) that any place in which not less than ten persons were engaged for hire in manufacturing goods should be constituted a factory; (b) that such factories, as to buildings, sanitation, etc., should be subject to regulations made by the Central Board of Health; and (c) that no female should be employed for more than eight hours in any one day without the permission of the Chief Secretary. The administration of the Act was entrusted entirely to the local Boards of Health, and the system was found to be less effective than was hoped. The conditions which have given rise to trouble in the old world tended to reproduce themselves in the young and growing industries of the States. Factory workers had to contend with the absence of security for a living wage, unsatisfactory sanitary surroundings, and unchecked and unscrupulous competition of Chinese in certain trades. The advocacy of legislation to control the conditions of employment became pronounced in Victoria in 1880, and a strike of tailoresses in Melbourne in 1882 led to a recognition of the real state of affairs. As a result of unsatisfactory working under the local governing bodies, and on account of agitation of the operatives, a commission was appointed in 1883, and reported the necessity of legislation for the regulation of factories, and in particular pointed out the fact that men were compelled to toil for as many as eighteen hours and women sixteen hours a day. It also shewed that the condition of out-workers was very undesirable, and that the apprenticeship system was frequently used to obtain labour without remuneration, apprentices being dismissed upon asking for payment at the end of their time. The Factories and Shops Act 1884, while providing for the suppression of many evils in respect of accommodation and lengthy hours, did not touch the two last mentioned. It provided for Government inspection, and also that six persons should constitute a factory if the premises were situated in a city, town or borough. In 1887 a short amending Act was brought in to remedy some defects that were found to exist. Its principal provision was that any place in which two or more Chinese were engaged should be deemed a factory. In 1893 a further enactment reduced the number of persons constituting a factory to four. Another Royal Commission sat in 1895, resulting in the Act of 1896, which dealt with matters previously untouched, and the system of regulation was carried on by the Act of 1900 and the complete codification of the law in 1905, in 1912, and again in 1915.

Similar conditions to those which existed in Victoria were found to prevail in other States. New South Wales and Queensland first adopted regulative measures in 1896, South Australia in 1894, and Western Australia in 1902. Tasmania adopted the Victorian Act of 1873 in 1884.

The same remarks apply in a general way to the condition of employees in shops.

3. Limitation of Hours.—(i.) *Factories.* As already remarked, the adoption of the eight hours' system for adult males has generally been the outcome of the representations made by the trade unions. Except in New Zealand, there is no general legislation to enforce the principle, although there is now a general recognition of it. During the year 1916, however, the New South Wales Parliament passed an Act which provides for the maximum of eight hours per day in all industries. A week of forty-eight hours is the usual working week. The larger unions, however, have lately moved for a *net* day of eight hours, with Saturday half-holiday, no loading of other week days being permitted by way of compensating for the Saturday afternoon. Under this scheme there are, for five days, equal divisions for periods of labour, recreation, and rest, and

four hours' work on Saturday, making a working week of forty-four hours. In the majority of occupations, forty-eight hours weekly is the recognised limit of work. On the establishment of Wages Boards and Arbitration Courts, in the States where those institutions exist, the authorities thus created adopted the rule as part of their determinations and awards wherever it seemed reasonably practicable. In some of the larger classes of building trades, the hours have been reduced to forty-four a week, and in some technical and specialist trades, a lower maximum has been fixed, such, for example, as the type-setting machine operators in Victoria, for whom the maximum has been fixed by the Wages Board at forty-two hours weekly. Reasonable provision is made by statute or award for work performed outside the scheduled hours. Organisations of employees, however, oppose overtime in any industry until all the operatives in that industry are working full time.

In the case of women and children there has been very general enactment in the States of the forty-eight hours' limit, and in addition, the maximum periods of continuous labour, and the intervals of cessation therefrom, have been prescribed in all the States. New Zealand has fixed a weekly maximum of forty-five hours for females and boys under 16. The first enactment of the forty-eight hours' limit in Australia was in 1873, when the Parliament of Victoria fixed that period for women and girls in factories.

(ii.) *Shops.* All the States have statutes containing provisions respecting the hours during which shops in large centres may be kept open for business. These provisions, in effect, not only limit the hours during which shop-hands may be employed, but apply also where the shops are tended by the proprietor alone, or by himself and family, with, however, certain exceptions. In Victoria, for example, shops wherein not more than one assistant, whether paid or not, was employed, were permitted to remain open for two hours a day longer than other shops of the same class. The object of this was to relieve the hardship which existed for such persons as, for example, widows who were wholly dependent for a livelihood upon the casual trade of small shops. It is, however, reported that little or no benefit accrued from the permission. In each of the States the closing time of shops, except those specially exempted, is 6 p.m. on four days of the week, 10 p.m. on one day (except 9 p.m. in Queensland, South Australia, and Western Australia), and 1 p.m. on one day—thus establishing a weekly half-holiday. In Western Australia the opening hour is fixed at 8 a.m. In addition to fixing the closing hour, the total daily and weekly working hours are delimited in the case of women and children. In some States, butchers' shops must be closed an hour earlier than other retail establishments, the reason being the early hour at which assistants must start to attend to the markets and early morning trade.

(iii.) *Hotels, etc.* Establishments, the opening of which in the evening is presumably necessary for public convenience—such as hotels, restaurants, chemists' shops, etc.—are required to remain open for longer hours or are permitted to do business during hours prohibited in other establishments.

(iv.) *Half-holidays.* The provisions of the early closing laws differ somewhat in each State, but the main objects, namely, the restriction of long hours of labour, are identical throughout. Formerly, in some of the States, there were, and there are still in others, provisions making the early closing of a business, or the selection of a day for a half-holiday, dependent upon the option of the majority of the business people concerned, or upon the local authority. The anomalous results of the system whereby shops on one side of the street bounding two municipalities were open, when those upon the other side were closed, led to the introduction of the compulsory system, whereby the hours of business are absolutely fixed by statute. In Queensland, the day of the weekly half-holiday is fixed for Saturday. In Victoria, also, the Saturday half-holiday became compulsory in 1909, and in New South Wales in the following year, and there is a strong movement throughout the Commonwealth in favour of closing on the afternoon of that day.

(v.) *Exempted Trades.* The hours for shops exempted from the general provisions of the Acts are also prescribed, and special holidays are provided for carriers.

4. Other General Conditions of Labour.—Measures for the protection of life, health, and general well-being of the worker, tabulated hereunder, exist in most of the States. Though in some instances founded upon English legislation, many of the provisions are peculiar to Australia. Despite experience and continued amendment they have not even yet attained to a settled form. Of the Australian States, Victoria originally had the most complete system of industrial legislation. Other States gradually adopted the Victorian statutes, either *en bloc* or with amendments suggested by local conditions. Western Australia followed very closely the legislation of New Zealand, where also the measures for the amelioration of the industrial conditions are enforced by law.

5. Administration of Factories and Shops Acts.—The provisions of Factories and Shops Acts and the Early Closing Acts in some of the States are consolidated under a single Act, but in others are separate enactments. The chief provisions of the principal Acts for registration, administration, record-keeping, etc., and of regulations under those Acts, are set out in the following summary:—

- (a) Factories are defined to be places where a certain number of persons are employed in making or preparing goods for trade or sale, or in which steam or other power is employed, or where special classes of industry are carried on. In some States the employment of a Chinese, in some of any Asiatic, constitutes the place a factory.
- (b) A Minister of the Crown administers the Act in conjunction with a Chief Inspector of Factories. Inspectors visit the factories with full powers of entry, examination, and enquiry; these are of both sexes, females being employed in that portion of the work where a woman is particularly necessary. Broadly speaking, these powers confer upon the inspector the right to enter, inspect, and examine, at all reasonable hours by day and night, any factory where he has reason to think anyone is employed; to take a police constable, if necessary, to assist him in the execution of his duty; to require the production of all certificates, documents, and records kept by the occupier, in accordance with the terms of the enactments; to examine, either alone or in the presence of any other person, every person whom he finds in a factory; to make whatever examination he deems necessary to ascertain whether the provisions of the Act are complied with.
- (c) Registration of factories before occupation is obligatory. Description of premises and statement of the work to be done must be supplied, and a certificate of suitability of premises obtained.
- (d) A record of all employees, giving the names, ages, wages, and work of each employee under a certain age (18, 20, 21, etc.) must be kept and filed in the Chief Inspector's office.
- (e) Names and addresses of district inspectors and certifying medical practitioners must be posted; also the working hours, the holidays, and the name, etc., of the employer.
- (f) Records of out-work must be kept, containing the names and remuneration of workers, and stating the places where the work is done. Out-workers are required to register.
- (g) Places in which only the near kin of the occupier are employed are generally exempt from registration.
- (h) Meals may be prohibited in workrooms, etc. In some States occupiers are required to furnish suitable mealrooms.
- (i) The employment in factories of young children is forbidden, and medical certificates of fitness are required in the case of young persons under a certain age. Special permits, based on educational or other qualifications, may be issued for young persons of certain ages.

- (j) Guarantees of an employee's good behaviour are void unless made with the consent of the Minister.
- (k) Persons in charge of steam engines or boilers must hold certificates of service or competency.
- (l) Provision (safeguarding against accident) is made for the fencing off and proper care of machinery, vats, and other dangerous structures. Women and young persons are forbidden to clean machinery in motion or work between fixed and traversing parts of self-acting machinery while in motion; and dangerous trades are specified in which a minimum age is fixed. Notice of accidents must be sent to the district inspector. (Dangerous trades are generally under the administration of Boards of Health.)
- (m) Provision is made for the stamping of furniture, the object being to disclose whether it is made by European or Chinese labour.
- (n) Minimum wage provisions are inserted. Premiums to employers are forbidden.
- (o) Sanitation and ventilation must be attended to, and fresh drinking water supplied. Separate and adequate sanitary conveniences for each sex are required.
- (p) Shopkeepers are required to provide proper seating accommodation for female employees. (In some States this is the subject of special legislation.)
- (q) A dressing-room for females must be provided in factories the manufacturing process of which requires a change of dress.
- (r) Adequate protection must be made against fire, and efficient fire-escapes provided.
- (s) Wide powers of regulation are granted to the Executive, and heavy penalties imposed, including a penalty by way of compensation to any person injured or the family of any person killed through failure to fence machinery and other dangerous structures.

6. **Registered Factories.**—The number of establishments registered under Factories Acts is shewn below:—

FACTORIES REGISTERED UNDER ACTS, 31st DECEMBER, 1915.

State.	No. of Registered Factories.	Numbers Employed.		
		Males.	Females.	Total.
New South Wales ...	7,425	70,517	28,706	99,223
Victoria ...	7,486	53,362	34,598	87,960
Queensland*	2,832	22,261	8,407	30,668
South Australia†	2,070	15,847	5,448	21,295
Western Australia ...	1,117	7,919	2,865	10,784
Tasmania ...	906	7,385	1,773	9,158
Commonwealth ...	21,836	177,291	81,797	259,088

* At 30th June, 1915.

† At 31st December, 1914.

7. **Comparative Statement of Factories Law in Australia.**—The tables on pp. 954-9 shew at a glance the chief provisions of the Factories and Shops Acts in the Commonwealth:—

8. **Mining Acts.**—Mining Acts regulate the working of mines. Generally 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 bracman at

plats and landing places; no lander, bracedman, 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.

9. Employers' Liability and Workmen's Compensation Acts.—In each of the States the main provisions of the British *Employers' Liability Acts* have been enacted. Generally, they apply to all manual workers, though in Victoria, miners, as coming under the Mines Acts, are excepted, and in South Australia and Western Australia domestic and menial workers are specifically included. The employers' liability exists in cases of defect of plant, etc., owing to negligence of employer or person in his service. Compensation is not allowed to exceed three years' earnings, and action against the employer is to be commenced within a reasonable time, notice of injury having previously been served. The provisions of the British *Workmen's Compensation Act* 1897 have also been copied in all the States. The Victorian Act makes insurance obligatory. This legislation marks a distinct advance upon the Employers' Liability Acts. Its application is generally to manual workers, though restriction is made in South Australia to those receiving less than £5 weekly, and in Tasmania the limit is £3, while miners are exempted from the operation of the Act in New South Wales, being provided for in the *Miners' Accident Relief Act* 1900. In Victoria non-manual workers earning more than £250 per annum are excluded. The liability of employers covers all cases of injury by accident during employment, and in South Australia and Victoria it extends also to disablement by industrial diseases. In certain circumstances persons employed casually otherwise than for the purposes of the employer's trade or business are excluded. Misconduct of employee exonerates the employer. Notice of accident is to be sent to the employer without delay, and proceedings for compensation must be begun within a reasonable time. In New South Wales, Queensland, and Western Australia the matter is settled by a police magistrate, in Victoria by a Judge of County Courts or Police Magistrate, and in South Australia the Arbitration Court makes the award. The minimum amount of compensation in case of death is three years' earnings, or £200 (except in Tasmania, where the amount is £100, and South Australia, where it is £150), whichever is greater, up to a maximum of £300 in South Australia, £200 in Tasmania, £500 in Victoria, and £400 in the other three States. In case of incapacity the minimum compensation is half wages up to £1 a week in New South Wales, Queensland, and South Australia, up to £1 10s. in Tasmania and Victoria, and up to £2 in Western Australia; the maximum total payment is £500 in Victoria, £400 in Queensland, £300 in South Australia and Western Australia; and £200 in New South Wales and Tasmania. Agreements made by consent, may, under the authority of an official prescribed in the Act, vary its provisions. A lump sum may be accepted in lieu of weekly compensation, and compensation cannot be assigned. The main difference in the provisions of the two sets of enactments is that under the Liability Acts the employee had to show neglect or defect; under the Compensation Acts the employer has to shew misconduct of worker. In Victoria, a penalty of £2 per uninsured worker and £1 per week thereafter is imposed for non-insurance. Insurance is to be effected in a recognised insurance office, or in the State Insurance Office, and any employer whose wage-roll for the previous twelve months did not exceed £160, shall be deemed to be insured with the Government Department, if the employer notifies the Commissioner within 14 days and obtains from him a policy of insurance as soon as practicable.

A.—EMPLOYMENT IN FACTORIES.—COMPARATIVE VIEW OF

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>Principal Acts</i>	Factories and Shops 1912.	Factories and Shops 1915.	Factories and Shops 1900. " " 1908. " " 1914†
<i>Application of Acts—Limitations</i>	Whole State proclaimed factories district. Not applicable where all the workers are members of the same family. Not applicable to woolsheds, dairies, or ships. Governor may exempt any factory or class of factory.	Whole State. Not applicable to dairying, agricultural, horticultural, viticultural and pastoral occupations. Not applicable to laundries attached to prisons or religious and charitable institutions.	Only in areas proclaimed. Not applicable to prisons, reformatories, dairies, mines, agricultural buildings, and domestic workshops. Governor may exempt partially or wholly any factory or class of factories in a given district.
<i>Definition of Factory—By Nos. Employed</i>	Four or more.	Four or more.	Two or more (including occupier).
" Asiatics "	One or more Chinese.	One or more Chinese.	One Asiatic.
" Power used "	Steam or mechanical.	Steam or mechanical.	Steam or mechanical.
" Special classes included "	Bakehouses. Laundries and dyeworks.	Bakehouses, laundries, dyeworks, quarries, clay-pits, furniture. Gas and electric light, etc., works.	Bakehouses, laundries.
<i>Administration</i>	Minister of Labour.	Minister of Labour.	Minister for Public Works.
<i>Inspectorate</i>	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.
<i>Registration</i>	Seven days' prior notice.	Fourteen days' notice after occupation. Annual re-registration.	Seven days' prior notice.
<i>Outwork</i>	Occupier of factory to keep record, shewing places where work done and rates of payment.	Occupier to keep record of description, quantity, remuneration, names and addresses. Out-workers must register in clothing, wearing-apparel, or boot trades.	Sub-contractors' premises subject to factory regulations. Occupier to keep records shewing places, description, and quality of work; nature and amount of remuneration paid. Out-workers must register. Sub-letting forbidden.
<i>Meals in Workroom</i>	Minister may forbid while work is going on; he may require provision of a suitable eating-room.	Forbidden while work going on, unless Chief Inspector permits. Forbidden if dangerous trade conducted.	Inspector may forbid meals being taken in factories; he may require provision of suitable eating room.
<i>Sanitary Health and Safety Provisions</i>	Factories to be clean, wholesome, and well ventilated. Over-crowding forbidden. Unhealthy persons under sixteen may be suspended from daily work. Avoidance of infection prescribed. Factories to be thoroughly cleaned once in fourteen months. Bakehouses and furniture factories not to be used as sleeping places. Seats to be provided for females. Proper necessary precautions to be taken against fire, and efficient fire escapes to be provided.	Factories to be clean, wholesome, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months. Bakehouses to be washed once every six months. Factories and bakehouses not to be used as sleeping places. Wet spinners must be protected. Efficient fire escapes to be provided, and fire appliances kept ready. Doors, etc., to be kept free from obstruction.	Factories to be clean, wholesome, and well ventilated. Over-crowding forbidden. Suspension of work by unhealthy persons may be enforced. Avoidance of infection prescribed. Fresh drinking water to be provided. Factories to be thoroughly cleaned once in twelve months. Bakehouses not to be used as sleeping places. Seats to be provided for females. Proper necessary precautions to be taken against fire.
<i>Dangerous Machinery</i>	Must be fenced. Employment of women and boys forbidden at certain machines.	Must be fenced. Employment of women and boys restricted. First-aid ambulance-chest to be kept on premises.	Must be fenced.*
<i>Minimum Wage per week</i>	4s. No premiums or bonus on behalf of apprentices in the making of wearing apparel is permitted.	2s. 6d. No premium is to be demanded from female apprentices and improvers in clothing trades, or any apprentice or improver employed in a shop.	5s. No premium is permitted from apprentices without permission of Inspector.

* See Machinery and Scaffolding Act 1915.

† Hairdressers' shops only.

LEADING FEATURES OF ACTS IN FORCE IN AUSTRALIA, 1915.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
Factories 1907, 1908, 1910, and 1915.	Factories 1904. .. 1904 (2).	Factories 1910 and 1911.
In metropolitan area and such other places as determined by Parliament. Not applicable to domestic servants and agricultural and pastoral pursuits.	In districts proclaimed. Not applicable to mines, dairies, ships, prisons, reformatories, domestic (other than Asiatic) work-shops. Governor may exempt any factory or class of factories.	Whole State. Not applicable to mines, ships, prisons, reformatories, rural industries, charitable institutions. Governor may exempt any factory.
Any one person. Laundries, dyeworks.	Six or more. One Asiatic. Steam or mechanical. Bakehouses, laundries.	Four or more. One Asiatic. Steam or mechanical over 1 h.p. Bakehouses, quarries.
Minister of Industry.	Honorary Minister.	Chief Secretary.
Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.
Twenty - one days' after occupation.	Prior notice. Annual re-registration if Asiatics employed	Twenty-one days' prior notice and annual re-registration.
Occupier to keep record. Out - workers to register names and addresses.	Occupier to keep record of names and addresses, and quantity and description of work done. Sub-letting forbidden.	Occupier to keep record of names and addresses, and quantity and description of work done, also of hours worked and wages paid.
Minister may forbid meals in factories carrying on noxious trades; he may require provision of suitable eating-room.	Forbidden for women and boys, except with Inspector's written permission.	Forbidden where employees working. In certain factories meal room to be provided.
Factories to be kept wholesome, clean, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months. Adequate protection to be made against fire.	Factories and connected yards to be clean, wholesome, and well-ventilated. Over-crowding forbidden. Unhealthy persons may be forced to suspend work. Goods, clothing, etc., to be disinfected where necessary. Fresh drinking water to be provided. Thorough cleaning to be regularly done. Bakehouses not to be used as sleeping places. Efficient fire escapes to be provided and other necessary protection to be made against fire.	Factories to be clean, wholesome, and well ventilated. Overcrowding forbidden. Interior walls and ceiling surfaces in factories may be required to be cleaned once in fourteen months. Factories not to be used as sleeping places. Doors, etc., to be kept clear of obstructions, and fire-prevention appliances kept ready for use. Doors to open outwards. Alternate means of escape to be provided.
Must be fenced. Employment of children under sixteen may be forbidden.	Must be fenced.* Inspector may prohibit as dangerous machine.* Employment of females and boys forbidden.	...
4s. No premium is to be paid by female apprentices in clothing trades.	...	4s. for first year at trade. No premium in respect to employment is permitted.

* See Inspection of Machinery Act 1904.

B.—RESTRICTIONS AS TO EMPLOYMENT OF WOMEN

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>* Ordinary Age of Admission to Factory</i>	14	Boys 14 years Girls 15 years	14
<i>Maximum Working Hours of Women and Young Persons</i> { Per week „ day Maximum hours of continuous labour Interval	Boys under 16 and all females 48 hours ... Boys under 18 and all females 5 hours Do., $\frac{1}{2}$ hour	Boys under 16 and all females, 48 hours Do., 10 hours. Females under 18 or males under 16 as type- setters, 8 hours Boys under 18 and all females, 5 hours. Do., $\frac{1}{2}$ hour	Boys under 16 and all females, 48 hours ... Do., 5 hours Do., $\frac{1}{2}$ hour
<i>Prohibited Hours of Work</i>	Boys under 16 and all females 6 p.m. to 6 a.m.	Girls under 16, 6 p.m. to 6 a.m. Males under 16 and all fe- males, after 9 p.m.	Girls under 18, 6 p.m. to 6 a.m. Boys under 16, 6 p.m. to 6 a.m. (Except by special ex- empt'n from Minister.)
<i>Overtime—</i> <i>Limitation—Per day</i> „ week „ year Continuous	Three hours Three consecutive days Thirty days	Ten hours per day not to be exceeded Fifty-seven hours per week not to be exceeded in more than eight weeks	Three hours } { Two consec'tive dys Fifty-six hrs per wk. not to be exceeded. Forty days
<i>Overtime Pay</i>	Time and a-half	Wage workers, time & a-half Piece workers, additional 3d. per hour	Time and a-half, but not below 6d. per hr.
<i>Prohibition of Employment after Childbirth</i>	4 weeks	...	...
<i>Restrictions and Prohibitions of Employment affecting Women and Young Persons in Dangerous Trades</i> { Type-setting Dry grinding and match dipping Manufacture of bricks and tiles Making and finishing of salt Melting or annealing of glass Silvering of mirrors by mercurial process; manufacture of white lead Cleaning of machinery in motion, mill gear- ing, etc. Charge of lift	... Persons under 16+ Girls under 18 Girls under 18 Boys under 16; girls under 18 Persons under 18 All females; boys under 18+ All females; boys under 16 $\frac{1}{2}$	Boys under 14; girls under 15 Persons under 16 Girls under 16 Girls under 16 Girls under 18 Persons under 18 All females; boys under 18 Persons under 18	........................

* The ages given are those at which admission to factory labour is unrestricted. In some States younger children are admitted if having passed school standards, or by special permit from the Minister or inspector.

AND YOUNG PERSONS IN FACTORIES IN AUSTRALIA, 1915.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
13	14	14
Boys under 16 and all females, 48 hours Do., 10 hours	Boys under 14 and all female- 48 hours Do., 8½ hours	Boys under 16 and all females, 48 hours Females, 10 hours
Do., 5 hours	Do., 5 hours	Boys under 18 and all females, 5 hours
Do., ½ hour	Do., ¾ hour	Females & young persons, 1 hour
Females, after 9 p.m. Boys under 16, after 9 p.m.	Females, 6 p.m. to 8 a.m., and after 1 p.m. on one day wkly. Boys under 14, 6 p.m. to 7.45 a.m., and after 1 p.m. on one day weekly.	Boys under 16 and all females, after 9 p.m. ...
...	Three hours	55 hours per week not to be ex- ceeded. (Suspended in perishable material trades from December to April inclusive)
Seven hours per week	Two consecutive days	...
100 hours	Thirty days	200 hours
Time and a-quarter	Time and a-quarter	Time and a-quarter
...	4 weeks	...
Boys under 16 and all females not more than 8 hours per day, and not after 6 p.m. or before 6 a.m.	Girls under 15	Boys under 16 and all females not more than 8 hours per day, nor between 9 p.m. and 6 a.m.
Persons under 16	...	Persons under 16
Girls under 16	Girls under 16	Girls under 16
Girls under 16	Girls under 16	Girls under 16
Boys under 14; girls under 18	...	Females under 18
Persons under 18	All females; boys under 18	All females; boys under 18
All females; boys under 18	All females; boys under 18	...
All females; boys under 18	Females under 21; boys under 16	...

† In N.S.W. this restriction applies also to casting from molten lead. ‡ In N.S.W. this restriction applies also to persons in charge of or attending to any engine or boiler.
§ In N.S.W. this restriction applies also to any machinery classed as dangerous.

C.—EMPLOYMENT IN SHOPS.—COMPARATIVE VIEW OF LEADING

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>Acts</i>	As for factories Early Closing Act Minimum Wage Act	As for factories	As for factories
<i>Statutory Maximum Hours of Employment.</i> (a) Male, adults (b) Females and Boys { per week per day Maximum continuously Interval	... Girls under 18, boys under 16, 52 hours Girls under 18, boys under 16, 9½ hours (except 1 day, 11½ hours) All females : 5 hours All females : ½ hour	52 hours per week (Fourth Schedule Shops 58 hours) 52 hours (Fourth Schedule Shops 56 hours) 9 hours (except 1 day, 12 hours) All persons : 5 hours All persons : ½ hour	53 hours per week do. Females and boys under 16, 9½ hours (except 1 day, 11½ hours) All persons : 5 hours All persons : ½ hour
<i>Maximum Overtime</i> { per day per year	... ...	3 hours 25 days	3 hours 40 days
<i>General closing time</i>	4 days, 6 p.m. : 1 day, 10 p.m. ; 1 day, 1 p.m.	4 days, 6 p.m. (outside Metropolitan district 4 days 7 p.m.) ; Saturdays, 1 p.m. ; Fridays, 10 p.m.	4 days, 6 p.m. ; 1 day, 9 p.m. ; Saturdays (or other prescribed weekly holiday), 1 p.m.
<i>Exemption from closing time</i>	Certain shops	Businesses concerned with tobacco, books, stationery, confectionery, drugs and edibles, also pawnbrokers	Certain exempted shops
<i>Seats in Shops</i>	1 to 3 females	1 to 3 assistants	1 to 3 females

10. **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.

11. **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.

FEATURES OF ACTS IN FORCE IN AUSTRALIA, 1915.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
Early Closing, 1911 and 1912	Early Closing, 1902, 1904 (2), and 1911	Factories, 1910, 1911, with amendments Shops Closing 1911, with amendments
...	56 hours per week	...
Boys and girls under 16, 52 hours	Boys under 16 & all females, 52 hours	Females and boys under 16, 52 hours
Boys and girls under 16, 9 hours (except 11 hours on 1 day)	Boys under 16 & all females, 9 hours (except 10½ hours on 1 day)	Females and boys under 16, 9 hours (except 12 hours on 1 day)
...	One hour interval between noon and 3 p.m. If open after 6.30 p.m., 1 hour for tea	Females and boys under 16, 5 hours
...		Females and boys under 16, ¾ hour
3 hours 40 days	3 hours 12 days per half-year	3 hours | With consent of Chief 40 days | Inspector of Factories
4 days, 6 p.m.; 1 day, 9 p.m.; 1 day, 1 p.m.	4 days, 6 p.m.; 1 day, 9 p.m.; 1 day, 1 p.m. (Opening hour not earlier than 8 a.m.)	4 days, 6 p.m.; 1 day, 10 p.m.; 1 day, 1 p.m.
Certain classes of shops	Shops such as hairdressers, newsagents, tobacconists, and those selling drugs and edibles	Shops registered as small shops, and certain shops such as tobacconists, newsagents and those selling edibles
...	...	1 to 3 females

§ 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. 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.

2. Wages Boards.—(i.) *Historical.* This system was introduced in Victoria by the Factories and Shops Act of 1896. The original Bill made provision only for the regulation of the wages of women and children, but was afterwards amended in Parliament to extend the system to adult operatives of both sexes.

The Act of 1896 made provision for the regulation of wages only in the clothing and furniture trades and the bread-making and butchering trades. By an Act of 1900 the operations of the Act were extended to include all persons employed either inside or outside a "factory" or "workroom"—see sec. 4, i. (a)—in any trade usually carried on therein. This section is now in the Act of 1915. The Act of 1907 extended the system to trades and businesses not connected in any way with factories, making provision for the appointment of Wages Boards for metropolitan shop employees, carters and drivers, persons employed in connection with buildings or quarrying, or the preparation of fire-wood for sale or the distribution of wood, coke, or coal. The Act of 1909 extended the system to the mining industry, and the Acts of 1910 extended its operation to shires. The Act of 1912 was amended by the Act of 1914, one of the principal provisions of which was the compulsory registration of shops. All existing Acts have been consolidated and are now known as the Factories and Shops Acts 1915.

The regulation is effected by a Board, called a Special Board, to distinguish it from the Board of Health. Boards for the regulation of wages in the trades specified in the Act of 1896 are appointed as a matter of course, and by the Executive other Boards are appointed only if a resolution for appointment be passed by both Houses of Parliament. Originally the Board was elected in the first instance, but the difficulty of compiling electoral rolls led to the adoption of the system of nomination, which has proved satisfactory. Beneficial results have followed from the institution of the system, conditions of female labour especially being improved. It is also claimed that sweating has been abolished.

The Board fixes the wages and hours of work and must limit the number of "apprentices or improvers" to be employed (usually by prescribing so many to each journeyman employed). Power is now given to fix travelling allowances, also the hours and rates for different shifts. The Board fixes the wages of apprentices and improvers according to age, sex, and experience, and may fix a graduated scale of rates calculated on the same basis. Apprentices bound for less than three years are improvers, unless the Minister sanctions the shorter period of apprenticeship on account of previous experience in the trade, and the Board has power to prescribe the form of indenture to be used in any particular trade. The Minister may sanction the employment of an improver over twenty-one years of age at a rate proportionate to his experience. Improvers must be provided with, and must when seeking work produce to an employer a certificate shewing the duration and nature of their employment. Outworkers in the clothing trade must be paid piece rates. Manufacturers may, by leave of the Board, fix their own piece rates, if calculated upon the average wages of time workers as fixed by the Board. Casual labour is defined by the Act of 1915, so as to mean work or labour during any week for not more than half the maximum number of hours fixed by the Board for such work.

Licenses for twelve months to work at a fixed rate lower than the minimum rate may be granted by the Chief Inspector of Factories to persons unable to obtain employment by reason of age, slowness, or infirmity. Licenses are renewable.

Penalties are fixed for the direct or indirect contravention of determinations, the obedience to which is ascertained by examination of the records of wages, etc.

A Court of Appeal has power to review determinations of the Boards.

The Acts fix an absolute weekly minimum wage, and the evasion of this provision (such as had occurred regarding females employed in the clothing trade), by charging an apprenticeship premium, is prevented by the prohibition of all such premiums.

South Australia enacted the Wages Board system in 1900, 1904, and 1906, but the first-mentioned Act was rendered inoperative owing to the disallowance by Parliament of the regulations necessary for carrying it into effect. The Act of 1904 revived the Wages Board system respecting women and children employed in clothing and white-work trades. The action of this statute was paralysed by a decision, the effect of which was to prevent the fixing of a graduated scale of wages as is done by the Victorian Boards. The necessity for some protection to the persons intended to be benefited by these statutes was urged in the annual reports of the Chief Inspector of Factories, but, until 1906, without effect. Many employers, however, voluntarily complied with the Board's determinations, though these were without legal force. The system was brought into full operation by the Act of 1906, which preceded the Victorian Act of 1907, in extending the system to other than factory trades, and was of a wider scope than the Victorian Act.

The system has also been in operation in New South Wales and Queensland, and came into operation in Tasmania during 1911. In Western Australia the object is attained under the Arbitration Court system.

In Queensland, the Wages Boards Acts were repealed in 1912, and replaced by the Industrial Peace Act, which, while embodying the principal provisions of the Wages Boards Acts, contains provisions for the establishment of an Industrial Court for appeals, and also provides against lockouts and strikes. Under this Act all Boards established under the repealed Acts continue in existence, and their determinations are recognised as awards under the new Act.

It is claimed that the introduction of the Wages Board system affording protection from unfair competition to employers, and the assurance of fair wages to employees, has led to improvement in working conditions, and that the appreciation of the workers is evidenced by the number of applications for the granting of Boards.

(ii.) *Mode of Constitution.* The following system is that in vogue in Victoria, and has been adopted, in the main, by the other States :—

Before a Special Board is constituted, it is necessary that a resolution in favour of such a course should be carried in both Houses of the Legislature. It is usual for the Minister administering the Factories Act to move that such a resolution should be passed. He may be induced to adopt such a course by representations made either by employers or employees, or both, or by the reports of the officers of the Department. The reason alleged by employers for desiring a Board is usually unfair competition; those alleged by employees are low wages and the excessive employment of juvenile labour. If the Minister is satisfied that a case has been made out, he moves the necessary resolution in Parliament, and when such resolution has been carried, an Order-in-Council is passed constituting the Board. Once a resolution has been passed or a Board appointed, the Minister, through the Governor-in-Council, has full power to group or divide trades, to adjust the powers of different Boards by taking from one and adding to another, to define the parts of the State over which any determination shall operate, and generally to administer so as to secure the greatest measure of benefit. The Order constituting the Board indicates the number of members. The number of members must not be less than four nor more than ten. The Minister then invites, in the daily press, nominations for the requisite number of representatives of employers and employees. These representatives must be, or have been, employers or employees, as the case may be, actually engaged in the trade to be affected, and under the Act passed in 1914 must reside in the area or locality to which the determination is to be applied. If in any case one-fifth of the employers or employees are engaged in the particular calling outside the Metropolitan District, one at least of the representatives of each side must come from outside that district. The full names and addresses of persons willing to act should

be sent in with particulars as to their connection with the trade during the three years last past. Where there are associations of employers or employees, more than the necessary number of nominations are often received. In such case, the Minister selects from the persons whose names are sent in, the necessary number to make up a full Board. The names of persons so nominated by the Minister are published in the *Government Gazette*, and unless within twenty-one days, one-fifth of the employers, or one-fifth of the employees, as the case may be, forward a notice in writing to the Minister that they object to such nominations, the persons so nominated are appointed members of the Board by the Governor-in-Council. If one-fifth of the employers or employees object to the persons nominated by the Minister—and they must object to all the nominations, and not to individuals—an election is held. The Chief Inspector conducts such elections, the voting is by post, the ballot papers being forwarded to each elector. If, after the expiration of three months from the appointment of any Board, sufficient representatives are not nominated, the Governor-in-Council may appoint to the position any person who has been engaged in the trade concerned. Within a few days of their appointment, the members are invited to meet in a room at the office of the Chief Inspector of Factories, and a person (always a Government officer, and usually an officer of the Chief Inspector's department) is appointed to act as secretary. The members must nominate a chairman within fourteen days of the date of their appointment, but if they cannot agree to a chairman, he is appointed by the Governor-in-Council. The times of meeting, the mode of carrying on business, and all procedure, are entirely in the hands of the Board, whose powers are defined in the Factories Acts. Vacancies in Special Boards are filled on the nomination of the Minister without any possibility of either employer or employee objecting. The result of the labours of a Board is called a Determination, and each item of such determination must be carried by a majority of the Board. The chairman is a member of the Board. His function is usually confined to conducting the proceedings. He does not exercise his vote except in cases where the Board is equally divided, when his casting vote determines the question at issue. When a determination has been finally made, it must be signed by the chairman, and forwarded to the Minister of Labour. The Board fixes a date on which the determination should come into force, but this date cannot be within thirty days of the last fixing of a price or rate of pay. If the Minister is satisfied that the determination is in form, and can be enforced, it is duly gazetted. In the event of the Minister considering that any determination may cause injury to trade, or injustice in any way whatever, he may suspend same for any period, not exceeding six months, and the Board is then required to reconsider the determination. If the Board does not make any alteration, and is satisfied that the fears are groundless, the suspension may be removed by notice in the *Gazette*. Provision is made by which either employers or employees may appeal to the Court of Industrial Appeals against any determination of a Board. This Court consists of a Judge of the Supreme Court, appointed by the Governor-in-Council for a fixed period, and assisted by one representative of the employers and one representative of the employees, who are appointed only for the case under consideration. A majority of the Court, will, subject to the Act, decide every appeal. An appeal may be lodged (a) by a majority of the representatives of the employers on the Special Board; (b) a majority of the representatives of employees on the Special Board; (c) any employer or group of employers, who employ not less than 25 per cent. of the total number of workers in the trade to be affected; or, (d) 25 per cent. of the workers in any trade. The Court has all the powers of a Special Board, and may alter or amend the determination in any way it thinks fit. The decision of the Court is final, and cannot be altered by the Board, except with the permission of the Court, but the Court may, at any time, review its own decision. The Minister has power to refer any determination of a Board to the Court for its consideration, if he thinks fit, without appeal by either employer or employee. The decision of the Court is gazetted in the same way as the determination of the Board, and comes into force at any date the Court may fix. The determinations of the Board and the Court are enforced by the Factories and Shops Department, severe penalties are provided for breaches of determinations, and

the Court is empowered to order arrears to be paid. No prosecution for any offence against any of the Factories Acts, or for any breach of any determination can be brought except through the Department. Employees have the independent right to recover arrears up to twelve months, provided they have demanded same in writing within two months from the date such arrears became due.

(iii.) *Special Minimum Wage Provisions.* At the end of 1908 the Minimum Wage Act was passed in New South Wales. Its provisions are now incorporated in the Factories and Shops Act 1912. A summary of the provisions of the enactment, and a statement of some of the ills it was intended to meet, as set out in the departmental reports, serve as an indication of the general trend of public feeling throughout the Commonwealth in regard to the payment of a satisfactory wage to employees. The Act provided for a weekly wage of not less than four shillings to all persons coming within the definition of "workman" or "shop assistant." That such a measure was necessary was evidenced by the fact that in the workrooms in the Sydney district no less than 514 girls, whose ages ranged from 13 to 21 years, were, at the end of 1908, in receipt of less than four shillings per week, and in the Newcastle district there were 272 girls employed in the dressmaking and millinery workrooms receiving less than four shillings a week, the majority being paid no wages at all for their services. The Act provided that for "workmen" or "shop assistants" a minimum rate of threepence per hour or portion of an hour was to be paid when overtime was worked, such payment to be made at intervals of not more than one month, and a sum of not less than sixpence as tea-money was to be paid on the day the overtime was worked. The payment by employees, or on their behalf, of a premium or bonus was prohibited in the clothing and wearing apparel trades. The system of so-called apprenticeship without payment originally carried with it the recognition of an obligation to teach the trade, especially in the dressmaking and millinery industry. This aspect of the case had, to a very great extent, been forgotten in the large workrooms, the training received for some time being more that of general discipline than of a technical character. With a minimum wage of four shillings, an employer would find it worth while to teach the employees, so as to bring in a return for the outlay as speedily as possible, and discharges of partially-trained workers would be less frequent. The trades would be improved by the weeding out of those who failed to show reasonable aptitude for their work.

3. The Arbitration Court System.—(i.) *Acts in Force.* The following is a general account of the main features of the Compulsory Arbitration laws of Australia. A few important divergencies between the Acts are noted.

The Acts in force in the States at the close of the year 1914 are set out on page 947 *supra*. In addition, the Commonwealth Statute Book contains the Commonwealth Conciliation and Arbitration Acts 1904-14, and the Arbitration (Public Service) Act 1911.

(ii.) *Significance of Acts.* In Victoria in 1891, and in New South Wales in 1892, Acts were passed providing for the appointment of Boards of Conciliation, to which application might be made voluntarily by the contending parties. The awards of the Boards had not any binding force. Boards were applied for on but few occasions, their lack of power to enforce awards rendering them useless for the settlement of disputes.

The first Australian Act whereby one party could be summoned before, and, presumably made subject, as in proceedings of an ordinary court of law, to the order of a court, was the South Australian Act of 1894. Its principles have been largely followed in other States, but it proved abortive in operation in its own State, and in many respects was superseded by the Wages Board system. Western Australia passed an Act in 1900, repealed and re-enacted with amendments in 1902 and 1909, the whole being

consolidated in the Industrial Arbitration Act of 1912. The Court system was adopted in New South Wales in 1901, and various changes having been subsequently introduced, a consolidation was made in 1912. Queensland introduced the system under the Industrial Peace Act of 1912. The Commonwealth principal Act, passed in 1904, applies only to industrial disputes extending beyond the limits of a single State. The Arbitration (Public Service) Act, as the title indicates, applies to public servants in all States.

(iii.) *Industrial Unions.* The Arbitration Act, framed to encourage a system of collective bargaining, to facilitate applications to the court, and to assure to the worker such benefits as may be derived from organisation, virtually creates the Industrial Union. This, except in New South Wales and Western Australia, has been quite distinct from the trade union; it is not a voluntary association, but rather an organisation necessary for the administration of the law. The New South Wales Act of 1901 required all trade associations to register as "industrial unions," prescribing the separation of industrial and benefit funds, and enforcing strict and proper management, the industrial funds being available in payment of penalties incurred for breaches of the Arbitration Act. Industrial unions (or "organisations" as they are styled in the Commonwealth Act) may be formed by employers or employees. They must be registered, and must file annual returns of membership and funds. Before unions of employers are registered, there must be in their employment a minimum number of employees. In New South Wales and Western Australia the minimum is 50; under the Commonwealth Act, 100. Unions of employees must, in Western Australia, have a membership of 15; in South Australia, 20; and by the Commonwealth Act a membership of 100 is required. The union rules must contain provisions for the direction of business, and, in particular, for regulating the method of making applications or agreements authorised by the Acts. In Western Australia rules must be inserted prohibiting the election to the union of men who are not employers or workers in the trade, and the use of union funds for the support of strikes and lockouts; a rule must also be inserted requiring unions to make use of the Act.

(iv.) *Industrial Agreements.* Employers and employees may settle disputes and conditions of labour by industrial agreements, which are registered and have the force of awards. They are enforceable against the parties and such other organisations and persons as signify their intention to be bound by an agreement.

(v.) *Powers of Court.* Failing agreement, disputes are settled by reference to the court. In the Commonwealth this consists of a Judge of the High Court. The court may (and on the application of an original party to the dispute must) appoint two assessors at any stage of the dispute. In the States the president of the tribunal (usually a Judge of the Supreme Court) is assisted by members (the number varying under the various Acts) chosen by and appointed to represent the employers and employees respectively.

Cases are brought before the court either by employers or employees. The consent of a majority of a union voting at a specially summoned meeting is necessary to the institution of a case: the Commonwealth Act requires the certificate of the registrar that it is a proper case for consideration.

The powers of the court are both numerous and varied; it hears and makes awards upon all matters concerning employers and employees. The breadth of its jurisdiction may be gathered from the Commonwealth definition of "industrial matters," viz., "all matters relating to work, pay, wages, reward, hours, privileges, rights, or duties of employers or employees, or the mode, terms, and conditions of employment or non-employment; and in particular, but without limiting the general scope of this definition, the term includes all matters pertaining to the relations of employers and employees, and the employment, preferential employment, dismissal or non-employment of any particular

persons, or of persons of any particular sex or age, or being or not being members of any organisation, association, or body; and any claim arising under an industrial agreement; and all questions of what is fair and right in relation to any industrial matter having regard to the interests of persons immediately concerned, and of society as a whole."

The object of the court is to endeavour to prevent or settle industrial disputes; and when they have occurred to reconcile the parties. The court may fix and enforce penalties for breaches of awards, restrain contraventions of the Acts, and exercise all the usual powers of a court of law.

The Commonwealth court may prescribe a minimum rate of wage; it may also, as regards employment, direct that preference of employment or service shall be given to members of unions. An opportunity is offered for objection to a preference order, and the court must be satisfied that preference is desired by a majority of the persons affected by the award who have interests in common with the applicants.

In industrial disputes the Commonwealth Court is, if possible, to bring about a settlement by means of an amicable agreement, and such agreement may be made an award. In order to prevent an industrial dispute the president of the Commonwealth Arbitration Court may convene a compulsory conference under his own presidency. Attendance of persons summoned to attend is compulsory. Provision is made, whereby, if no settlement is reached at the conference, the president may refer the matter to the court and then arbitrate on it.

There are four ways in which a matter may be brought before the court—

- (a) By the registrar certifying that it is a dispute proper to be dealt with by the court in the public interest.
- (b) By the parties, or one of them, submitting the dispute to the court by plaint in the prescribed manner.
- (c) By a State Industrial Authority, or the Governor-in-Council of a State in which there is no such authority, requesting the court to adjudicate.
- (d) By the president referring to the court a dispute as to which he has held a conference without an agreement being reached.

All parties represented are bound by the award, and also all parties within the ambit of a common rule.* The court possesses full powers for enforcement of awards.

In New South Wales and Western Australia railway and tramway employees, and also the employees of certain other public bodies are brought under the respective Acts; the section of the Commonwealth Act giving the Commonwealth Court power over State employees has been declared unconstitutional by the High Court.†

(vi.) *Repression of Strikes and Lockouts.* The first instance of a strike on a large scale in Australia occurred in 1890 and 1891, when the industrial upheavals assumed far-reaching proportions. As a result of differences between pastoralists and shearers, the labour unions called out the maritime workers. Industry was paralysed by the cessation of the sea-borne coal trade. Communications were held up, and commercial activity suspended. The chief results of the strike were indirect. It was seen that peaceful methods of adjusting disputes were more conducive to the welfare of the community generally, than the methods of strike and lockout. The unions therefore turned to legislation as an effectual means of improving labour conditions. It was hoped that open hostility to the economic system might be prevented by State regulation. A general desire was shewn for recognition of conciliation and arbitration, voluntary where possible, but compulsory, through national tribunals and under legal authority, where necessary.

* The High Court has declared that the power of the Commonwealth Arbitration Court to make a common rule, i.e., an extension of award in a particular case to cover the whole industry affected by the proceedings, is *ultra vires* of the Constitution. *The King v. The Commonwealth Court ex parte Whybrow.* (2 C.L.R., vol. 2, p. 1.)

† *Federated Amalgamated Railway, etc., Employees v. N.S.W. Railway, etc., Employees.* (4 C.L.R. 488).

Accordingly, industrial legislation aims at preventing strikes and lockouts in relation to industrial disputes, other means of settlement being provided. Such is the declared object of the Commonwealth Acts. It is decreed that no person or organisation shall, on account of any industrial dispute, do anything in the nature of a strike or lockout, or continue any strike or lockout, under a penalty of £1000.

Strikes, however, have not altogether ceased, even in those States where legislation, by stringent enactment, forbids them. It has been noted that strikes of late have occurred chiefly amongst coal miners and certain unions representing unskilled labourers. The prohibiting clauses have not always been enforced by the Executive. But in several instances indictment has followed attempts to bring about or to prolong a strike, and fines and imprisonment have been awarded. A decision of the Arbitration Court, ordering the Newcastle coal trimmers to return to work, was upset by the Supreme Court of New South Wales, on the ground that the Arbitration Court had no power to make men work if they did not wish to do so.

(vii.) *Miscellaneous.* Protection is afforded to officers and members of unions against dismissal merely on account of such officership or membership, or on account of their being entitled to the benefit of an award.

It has been settled by the High Court that an Arbitration Court cannot direct—

- (a) That non-unionists seeking employment shall, as a condition of obtaining it, agree to join a union within a specified time after engagement;
- (b) That an employer requiring labour shall, *ceteris paribus*, notify the secretary of the employees' union of the labour required.*

4. **Comparative Statement of Tribunals for Regulating Wages in Australia.**—The table on pages 968 and 969 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 tribunals' decisions. It will be seen that in all the States there is machinery for the regulation of wages.

5. **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 of 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.

6. **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 pp. 25 and 26 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.

* *Trolley, etc., Union of Sydney and Suburbs v. Master Carriers' Association of New South Wales.* (2 C.L.R. 509.)

Neither of the proposals was approved by the people. Fuller particulars are given on page 25 of this book. At the general elections, held on 31st May, 1913, these and other matters were again submitted by referendum and again rejected.

7. The "New Protection."—The opinion has been expressed that a manufacturer who benefits by the Commonwealth protective tariff should charge a reasonable price for the goods which he manufactures, and should institute a fair and reasonable rate of wage and conditions of labour for his workmen.

The above view is known as the "New Protection," a phrase which, though novel, is already firmly established in Australian economic discussions. The outcome has been the enactment of new laws, designed for the benefit of the workers, and for controlling monopolies and trusts which would otherwise exploit the necessities of life.

By the Customs Tariff 1906, increased duties were imposed upon certain classes of agricultural machinery, notably the "stripper-harvester," a machine invented in Australia, which has, to a great extent, replaced the "reaper and binder and thrashing machine" in the harvesting of wheat. By the same Act it was enacted that the machines scheduled should not be sold at a higher cash price than was thereby fixed, and that if that price should be exceeded, the Commonwealth Executive should have power, by reducing the Customs duties imposed by the Act, to withdraw the tariff protection.

By the Excise Tariff Act 1906 (No. 16 of 1906), an excise of one-half the duty payable upon imported agricultural machinery was imposed upon similar machinery manufactured in Australia. But it was provided that the latter should be exempt from excise if the manufacturer thereof complied with the following condition, namely, that the goods be manufactured under conditions as to the remuneration of labour, which—

- (a) Are declared by resolution of both Houses of the Commonwealth Parliament to be fair and reasonable ;
- (b) Are in accordance with the terms of an industrial award under the Commonwealth Conciliation and Arbitration Act 1904 ;
- (c) Are in accordance with the terms of an industrial agreement filed under the last-mentioned Act ;
- (d) Are, on an application made for the purpose to the President of the Court, declared to be fair and reasonable by him or by a judge of a State Court or a State industrial authority to whom he may refer the matter.

By the Excise Tariff Act 1906 (No. 20 of 1906), excise duties are imposed in respect of spirits, and it is provided that if any distiller (i.) does not, after the Act has been passed a year, pay his employees a fair and reasonable rate of wages per week of forty-eight hours or (ii.) employs more than a due proportion of boys to men engaged in the industry, the Executive may on the advice of Parliament impose an additional duty of one shilling per gallon on spirits distilled by that distiller.

Exemptions have been claimed by the manufacturers of agricultural machinery in South Australia, New South Wales, Victoria, and Tasmania. These were granted in the two first-mentioned States in consequence of an agreement entered into between the employers and employees. In Victoria, "this whole controversial problem with its grave social and economic bearings" (to quote the words of the President of the Court) was discussed in a lengthy case upon the application for exemption by Victorian manufacturers, now widely known as the "Harvester Case," and in the report of that case may be found the legal interpretation of the Acts under consideration. The exemptions claimed were refused, and the court after discussing the meaning of the words "fair and reasonable," defined them by laying down what it considered to be a scale of fair and reasonable wages.

The High Court has pronounced that the legislation under these Excise Acts is unconstitutional as being an extension of Federal action beyond the powers granted, and a usurpation of the ground reserved to the States. It may be noted that the rejected measures were enacted with the consent of all parties in Parliament, having been placed upon the Statute Book whilst the Liberal party was in power, the Labour representatives strongly supporting the proposals.

TRIBUNALS FOR THE REGULATION OF

Particulars.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>Name of Acts</i>	Industrial Arbitration Act 1912	Factories and Shops Act 1915	Industrial Peace Act 1912
<i>Nature of Tribunals</i>	Court of Industrial Arbitration. Industrial Boards	Court of Industrial Appeals. Wages Boards	Industrial Court. Industrial Boards
<i>How Tribunals are brought into existence</i>	Industrial Court (Judge) constituted by Act. Industrial Boards by the Minister on recommendation of Industrial Court.	Court constituted by Acts. Wages Boards by Governor-in-Council on resolution of Parliament	Industrial Court constituted by the Act. Industrial Boards, by Governor-in-Council 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	To any process, trade, business, or occupation specified in a resolution. Government servants are not included	To callings specified in Schedule to Act, and to those added by Governor-in-Council
<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	By submission to the Court by (1) the Minister or the Registrar; (2) an employer employing not less than 20 employees in any calling; and (3) not less than 20 employees in any calling
<i>President or Chairman of Tribunal</i>	Appointed by Minister on recommendation of Court.	Appointed by Governor-in-Council on nomination of Board, or failing that on nomination by Minister	Any person elected by Board. If none elected, appointment is by the Governor-in-Council on recommendation of Court
<i>No. of Members of Tribunal</i>	Chairman, and 2 or 4 other members	Not exceeding 11 (including chairman)	Not less than 5 nor more than 13 (including chairman)
<i>How ordinary members are appointed</i>	Appointed by Minister on recommendation of Industrial Court	Nominated by Minister. But if one-fifth of employers or employees object, representatives are elected by them	By employers and employees respectively
<i>Decisions — how enforced</i>	By Registrar and Industrial Magistrate	By Factories Department in Courts of Petty Sessions before Police Magistrates.	By Inspectors of Factories and Shops, Department of Labour
<i>Duration of decision</i>	For period fixed by Tribunal, but not more than 3 years.	Until altered by Board or Court of Industrial Appeals	12 months and thereafter, until altered by Board or Court
<i>Appeal against decision</i>	To Industrial Court against decision of Boards	To the Court of Industrial Appeals	To Industrial Court
<i>If 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; for not more than 3 months
<i>Can Preference to Unionists be declared?</i>	Yes	No	No
<i>Provision against strikes and lockouts</i>	Strikes, penalty £50, registration as industrial union, and preference to unionists cancelled. Lockouts, penalty £1000, and registration as industrial union cancelled	Determination may be suspended by Governor-in-Council for any period not exceeding 12 months.	Strikes £50, lockouts £1000, unless notice of intention given to Registrar and secret ballot taken in favor. In the case of public utilities, compulsory conference also must have proved abortive
<i>Special provisions for Conciliation</i>	Special Commissioner.* Conciliation Committees for colliery and other districts. Registered agreements	None	Compulsory Conference. Registered agreements

* Functions not now in operation.

WAGES IN TRADES IN AUSTRALIA, 1915.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH.
The Factories Acts 1907, 1908, 1910 and 1915. Industrial Arbitration Act 1912. Industrial Arbitration Act Amendment Act 1915.	Industrial Arbitration Act 1912	Wages Boards Acts 1910, 1911 and 1913.	Conciliation and Arbitration Act 1904-14. 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
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	Any person elected by the Board. If none elected, appointment of a Justice of the Peace by the Governor-in-Council	President
Court, President only. Wages Board, not less than 5 nor more than 11 (inclusive of chairman)	Three, including president	Chairman, and not less than four nor more than ten	President only
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.
By Factories Department	By Arbitration Court on complaint of any party to the award or Registrar or an Industrial Inspector	By Industrial Department.	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, £1000.
Compulsory Conference. Industrial Court. Registered agreements	Compulsory Conference. Registered agreements	None	Compulsory Conference. Court may temporarily refer to Conciliation Committee, Registered agreements

§ 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 and hours and conditions of labour, shewing the number of boards authorised, constituted, and in existence, 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, 1913.¹

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 31st December, 1915. Information has also been compiled and included in the later issues of the Labour Bulletin, respecting the estimated number of workpeople 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 1914 and 1915 respectively:—

AWARDS AND DETERMINATIONS MADE AND INDUSTRIAL AGREEMENTS FILED IN EACH QUARTER OF 1914 AND 1915.

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.
1914.										
N. S. Wales ...	15	8	32	28	38	10	12	4	97	50
Victoria ...	15	...	14	...	15	...	3	...	47	...
Queensland ...	9	...	11	3	16	1	5	...	41	4
S. Australia ...	1	3	1	...	...	...	...	6	2	9
W. Australia ...	2	10	2	5	3	7	2	3	9	25
Tasmania ...	...	...	2	...	4	...	...	...	6	...
Commonwealth ...	...	5	4	10	2	6	...	21*	66	42*
Total ...	42	26	66	46	78	24	22	34	208	130
1915.										
N. S. Wales ...	28	9	40	6	38	6	39	4	145	25
Victoria ...	3	...	2	...	17	...	31	...	53	...
Queensland ...	1	1	7	...	13	2	14	7	35	10
S. Australia ...	...	...	...	1	2	...	6	4	8	5
W. Australia ...	1	7	4	6	2	5	11	3	18	21
Tasmania ...	1	...	...	...	7	...	...	...	8	...
Commonwealth ...	1	...	2	113†	2	18	2	51‡	7	180
Total ...	35	17	55	126	81	31	103	69	274	241

* Of this number, 18 agreements were made between the Federated Engine Drivers' and Firemen's Association and various employers, in terms of an Award of the Commonwealth Court.
† Of this number, 103 agreements were made between the Federated Engine Drivers' and Firemen's Association and various employers, in terms of an Award of the Commonwealth Court. ‡ Including 90 agreements made between the Federated Engine Drivers' and Firemen's Association and various employers, in terms of an Award of the Commonwealth Court.

1. Information as to the main provisions of the various Acts in force was given in "Labour Bulletin," No. 1; pages 57 to 60.

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. It will be seen from the records for the fourth quarter of 1914 and the first quarter of 1915, that those restrictions were apparently most effective in New South Wales, Victoria, and Queensland. New South Wales is the only State in which rates of wages, etc., are fixed, for a specified period, by industrial tribunals, and lapse by effluxion of time. In order, therefore, to assist in maintaining the legal minimum wage in New South Wales, a number of awards, extending for varying short periods the operation of expired awards, were made by Industrial Boards during the last quarter of 1914 and the first quarter of 1915. Notwithstanding these awards there were, during that period, at different times, upwards of 50 industries for which awards had expired and in which no legal wage was in force. During the second quarter of 1915 the restrictions referred to 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 the number of awards and determinations made by industrial tribunals exceeded those made during any similar period of the two years under review.

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, constituted, and in existence, and including operations under the 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 at approximately quarterly intervals during the succeeding two years.

PARTICULARS OF BOARDS AND OF AWARDS, DETERMINATIONS AND INDUSTRIAL AGREEMENTS IN FORCE AT 31st DECEMBER, 1913, AND AT APPROXIMATELY QUARTERLY INTERVALS TO 31st DECEMBER, 1915.

Dates.	Boards Author- ised.	Boards Con- stituted.	Boards in Existence.	Boards which had made Awards or Deter- minations.	Awards or Deter- minations in Force.†	Industrial Agree- ments in Force.
31st December, 1913* ...	504	501	484	387||	575§	401
30th April, 1914* ...	525	509	492	422||	575	415
30th June, 1914 ...	537	523	504	457||	584	429
30th September, 1914 ...	549	539	517	474	599	409
31st December, 1914* ...	553	544	522	478	609‡	369
31st March, 1915* ...	560	551	526	486	622‡	371
30th June, 1915* ...	568	557	532	495	638	481
30th September, 1915* ...	582	570	536	495	644	498
31st December, 1915* ...	573¶	554¶	546	498	663	548

* Details have already been published as follows:—To 31st December, 1913 (Year Book No. 7, pp. 931-3); to 30th April, 1914 (Labour Bulletin No. 5, pp. 66-8); to 31st December, 1914 (Labour Bulletin No. 8, pp. 266-9); to 31st March, 1915 (Labour Bulletin No. 9, pp. 73-8); to 30th June, 1915 (Labour Bulletin No. 10, pp. 176-180); to 30th September, 1915 (Labour Bulletin No. 11, pp. 267-271); and to 31st December, 1915 (Labour Bulletin No. 12, pp. 416-7). † Including awards made by Arbitration Courts as well as Boards. ‡ Figures adjusted to include those awards under the Western Australian Arbitration Act 1912, which had expired, but which had not been formally retired from, in terms of Sec. 83 (2). § 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 N.S.W. 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. ¶ Reduction due to the elimination of the number of dissolutions previously recorded for New South Wales consequent upon a general dissolution of all boards, and the constitution and re-arrangement of 226 new boards for that State.

From the particulars set out in the above table it will be observed that considerable expansion of the principle of the fixation of a legal minimum wage and working conditions was recorded during the two years subsequent to 31st December, 1913.

972 OPERATIONS UNDER WAGES BOARD AND INDUSTRIAL ARBITRATION ACTS.

In the following table, particulars are given for each State and the Commonwealth of the number of Boards authorised, etc., etc., at the 31st December, 1915 :—

BOARDS AUTHORISED AND CONSTITUTED, AWARDS, DETERMINATIONS AND AGREEMENTS IN FORCE, 31st DECEMBER, 1915.

Particulars.	C'wlth.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	Total.
1. Boards Authorised, Constituted, and in Force—								
Number of Boards authorised ...	...	226*	147	112	56	...	32	573
" " constituted ...	...	226*	142	104	51	...	31	554
" " dissolved or superseded†	...	...	1	6	...	...	1	8
" " in existence ...	...	226*	141	98	51	...	30	546
2. Boards Constituted which have made Awards or Determinations—								
Number of Boards which had made or varied awards or determinations ...	...	196	133	96	47	...	26	498
" " which had not made any award or determination ...	...	30	8	2	4	...	4	48
3. Number of Awards and Determinations in Force ‡ ...	20	261	137	103§	56||	57¶	29	663
4. Scope of State Awards and Determinations								
Number applying to the whole State ...	...	26	12	7	...	...	20	65
" " Metropolitan area only ...	...	75	...	30	54	32	1	192
" " Metropolitan and Country towns ...	...	38	111	17	...	7	8	181
" " Country areas ...	...	122	14	49	2	18	...	205
5. Number of Commonwealth Awards in Force in each State ...	...	17	19	15	16	10	14	91
6. Industrial Agreements in Force ...	359	73	...	15	16	83	...	546
7. Number of Commonwealth Agreements in Force in each State ...	...	119	227	29	36	30	33	...
8. Number of Persons working under State Awards, Determinations and Industrial Agreements (estimated) ††	**	260,000	150,000	90,000	25,000	32,000	12,000	**

* Excluding Special Demarcation Boards. † Boards constituted and subsequently dissolved or superseded. In New South Wales the whole of the Boards were dissolved. For particulars see Labour Bulletin No. 12, p. 417. In Victoria one Board was superseded by three Boards. In Queensland authorisation for two Boards was subsequently rescinded and four other boards were superseded for the purpose of varying the jurisdiction. ‡ In addition, 24 determinations had been made, but had not come into operation. Of these, 14 were in Victoria, eight in Queensland, and one each in South Australia and Western Australia. Nearly the whole of these, on coming into force, replace awards and determinations in force at 31st December, 1915. The figures are exclusive of awards and determinations which had expired by effluxion of time, and had not been renewed on the 31st December, 1915, and with respect to Western Australia, including awards made and expired under the Act of 1902, but which were revived by Sec. 83 (1) of the Act of 1913, and such other awards made under the Act of 1912, to which notice of retirement therefrom has not been filed in terms of Sec. 83 (2) of the Act of 1912. § Including five awards made by the Industrial Court under Sec. 7 of the Industrial Peace Act 1912, for industries not under an Industrial Board, and one owing to the failure of a Board (Sawmilling, Northern Division) to complete its award. || Including eleven awards made by the Industrial Court, and excluding two awards which were suspended on 26th August, 1915. ¶ Including seven industrial agreements, declared by the Industrial Court, under Section 40 of the Industrial Arbitration Act 1912, to be common rules respectively for the industries affected, and within the area specified therein. ** Not available. †† Not including any allowance for persons who enlisted in the Defence Forces.

The total number of Boards authorised up to the 31st December, 1915, in the five States in which the Board system is in force was 573; the total number constituted being 554, of which 8 had been dissolved or superseded. The number of Boards in existence at that date was accordingly 546, of which 498 had either made original awards or determinations or varied existing awards or determinations, and 48 had not made any award or determination. The difference between the number of Boards in existence and the number which had made awards or determinations, is accounted for mainly by the fact that in New South Wales a number of Boards constituted under the Act of 1912 had

not made awards, owing to awards made for the particular industries, under the Act of 1908, being still in force or only recently expired. In the following line (Number of Awards and Determinations in force) it may be seen that the total number in force (including awards made by the Commonwealth and Western Australian Arbitration Courts) was 663. In New South Wales, the number of awards in force includes 4 awards under the Act of 1908. This leaves 257 awards in force made by 196 Boards under the new Act. In explanation of the fact that the number of awards in force in New South Wales, Victoria, and Tasmania exceeds the number of Boards which had made such awards or determinations, it may be mentioned that several of the Boards have made separate awards for different branches of an industry, or for the same industry, operative in different districts.

The succeeding four lines in the table shew the territorial scope of the State awards and determinations in force at the end of December, 1915. It will be seen that 65 apply to the whole of a State, 192 to one of the metropolitan areas, 181 to metropolitan and country towns, while the remaining 205 apply to country areas only.

Of the Commonwealth awards there are three in connection with the shipping industry, two in connection with waterside workers, and one each affecting postal electricians and the telegraph and telephone (construction) linemen, letter carriers, postmasters, and postal sorters, which apply to each of the six States. There are three awards which apply to five States, two which apply to four States, and three to two States, one to the small arms factory, Lithgow, New South Wales, and one for saddlery and leather-workers employed in Victoria by the Defence Department.

The total number of industrial agreements in force was 546. Of this number, 359 were made under section 24 and part VI. of the Commonwealth Conciliation and Arbitration Act, and include 234 made on behalf of the Federated Enginedrivers' and Firemen's Association in terms of the award of the Commonwealth Court; 29 covering various shipping companies, and 26 relating to typographical employees in newspaper offices. The second last line of the table shews the number of Commonwealth agreements operating in each State. The total number of awards, determinations and agreements in force under the various Acts at the 31st December, 1915, was 1209, comprising 663 awards and determinations and 546 agreements.

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 drove the colonists to measures of 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 colonial defence being settled. Small detachments of permanent soldiery were established to act generally as a nucleus about which the citizen soldiery should be shaped, and, generally, to look after the forts and defence works, which had then begun to be erected. 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 necessities 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, 9338; Victoria, 6335; Queensland, 4028; South Australia, 2932; Western Australia, 2696; Tasmania, 2024; total for Commonwealth, 27,353. Cadets, reservists, and rifle club members are excluded.

2. **Development of Commonwealth System from 1901 to 1915.**—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, 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 coterminous 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, an administrative and instructional staff of professional soldiers, numbering 1120, exists. 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 1903-15 of the Federal Parliament. The provisions of the Acts of 1903 and 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, and 1915. 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, enrolment, and exemption. Statutes were passed subsequently, extending or modifying the legislative provisions, removing obstacles and difficulties, and, where necessary, providing machinery.

(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.

(iv.) *Compulsory Training.* By the Defence Acts of 1903 and 1904 all male inhabitants of Australia between the ages of 18 and 60 years were made liable to serve in 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 universality to be trained was made law for the first time in any English-speaking community. It prescribed Junior Cadet training for lads 12 and 13 years of age, followed by Senior Cadet training for lads from 14 to 18 years of age; and thereafter adult training for two years in the citizen forces, to equal 16 days annually, followed by registration (or a muster parade) each year for 6 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. 978), 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, 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 the 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 12 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 14 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 15 minutes on each schoolday, 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) mariners' 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 on behalf of the Defence Department. The instructors of physical training 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 14 years. It consists of 40 drills each year, of which four are classed as whole days of not less than four hours, 12 as half-days of not less than two hours, the remainder being night 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. 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 five 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 drill, first aid, guards and sentries, tactical training as a company in elementary field work, and elementary battalion drill. Discipline is strongly inculcated. 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 18 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 17 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 16 days per annum for other corps, the main body of whom are light horse and infantry (see table on p. 980 *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 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 police 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 five 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 14 years of age, but the 1915 Act requires only those to register who reside within five 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 of 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; but the employer is not compelled to pay the trainee's wages for the time he is away from work.

A heavy penalty is enacted for evasion of service as required under the Act by those liable to serve. Penalties take the form of a money fine, or detention in military custody under enforced training and discipline. Non-efficient 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 16 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, 16 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 12 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 colored 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. Except in the case of the younger cadets, rifles and free ammunition are provided. Citizen soldiers have their rifles on issue, but arms for senior cadets are stored in local depôts, 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 two woollen shirts, two pair breeches, hat, sleeping 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, and harness and saddlery.

(xv.) *Reserves.—Rifle Clubs.* No new reserves are created under the recent Acts. The present reserves consist of (a) certain officers; (b) members of rifle clubs. The reserve of officers numbered 658 on 30th June, 1915. It consists of officers who have been fully trained, and are still capable of serving, but who, being unable to continue on the active list through business engagements, removal to rural districts and such like causes, have joined the reserve. On 31st May, 1916, there were 1542 rifle clubs in the Commonwealth with a membership of 103,723. An annual course of musketry is fired by these members, but they do not undergo any systematic drill. It is estimated that 60 per cent. of the members are fit for active service, and are available for allotment to units on mobilisation to make these units up to war strength. Rifle clubs have been established in connection with many of the citizen units, thus encouraging the citizen soldiery to enhance its shooting efficiency by practice outside the compulsory drill and musketry. These clubs are well supported. Commonwealth teams competing at the British Rifle Association's meetings have been very successful.

(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 are approximately equal in number of males of citizen soldier age (about 1300), 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 he recruits (18-19 year), but not the 25-26 year men.

ULTIMATE ALLOTMENT OF UNITS TO BRIGADE, BATTALION, AND TRAINING AREAS.

State.	Brigade Areas.	Battalion Areas.							Training Areas.
	No.	No. of Battalions.	Providing the undermentioned units.					Total Nos. in Training in Areas.	No.
			Infantry and Proportion of Engineers, A.S.C. and A.M.C.	Light Horse.		Field Artillery.			
				Squadrons.	Nos.	Batteries.	Nos.		
Nos.									
I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	
N. S. Wales ...	8	33	32,901	40	4,490	20	3,220	40,611*	75
Victoria ...	7	29	28,913	36	4,041	19	3,059	36,013†	65
Queensland ...	3	11	10,967	16	1,796	7	1,127	13,890‡	28
S. Australia ...	2	9	8,973	12	1,347	5	805	11,125§	24
W. Australia ...	2	6	6,979	4	449	3	483	7,911||	20
Tasmania ...	1	4	3,988	4	449	2	322	4,759¶	12
Totals ...	23	92	92,721	112 28 Rgts.	12,572	56	9,016	114,309**	224

* Also 766 for forts. † Also 327 artillery and 227 engineers at Geelong and Queenscliff for forts. ‡ Also 79 garrison artillery and 13 engineers for Lytton. § Also 86 artillery for forts. || Also 156 artillery and 32 engineers for forts. ¶ Also 86 artillery and 32 engineers for forts. ** Also 1804 for forts.

(xvii.) *Instructional Staff.* The instructors provided for training consist of 170 officers and 756 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, and a military magazine is published.

(xix.) *The Royal Military College, Duntroon, Federal Territory*, is established for the purpose of providing trained junior 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 £200 per annum for each. The age for admission is between 16 and 19 years, though there is a provision in the regulations by which members of the citizen forces over 19 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 113 staff-cadets have already (June, 1916) been specially graduated, and appointed to units serving at the front with the Australian and New Zealand forces. Schools for the training of junior citizen officers for service with the Australian Imperial Force are also being held at the college as a special measure.

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 March, 1916) is at present 125.

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 May, 1916, the staff numbered—military, 12; civil, 10.

(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 transhipment 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 55 officers on 1st April, 1916. 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 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 (18-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 occurs 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 certified as fit.

(d) *Summary of the Working of the System in 1913-14-15 (Third, Fourth and Fifth Stages).* The numbers up to 31st December, 1915, include the 1894, 1895, 1896 and 1897 quotas, who, on 1st July, 1912, 1st July, 1913, 1st July, 1914, and 1st July, 1915, passed to the citizen forces. They are shewn hereinafter.

(xxii.) *Success of the System.* A slight amount of opposition has been manifested to the system. 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 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 16 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 service 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 quite lately 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." In regard to opposition to the system, the figures for prosecutions are interesting:—Percentage of prosecutions to number liable for training was 5.38 in 1914; the average percentage for previous years was 6.90. Thus a marked improvement is shewn. It must be remembered that the figures include persons prosecuted more than once, and that all prosecutions are not against those actually liable for service, but include cases against employers (for penalising in employment, contrary to section 134 of the Act) and parents and guardians (failing to register sons, etc.). The percentages would be substantially reduced if only those liable for training were shewn (parents, employers, and those prosecuted more than once being deducted). Further, a prosecution follows shortage of drills, which, in many cases, is not the result of active opposition.

4. **Strength of Military Forces.**—(i.) *Strength in each District, 1901 to 1915.* 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 will be considerable. The following table shews the development:—

STRENGTH OF MILITARY FORCES, 1901 to 1915.

*District.	1901. †1/3/01.	1909. 30/6/09.	1910. 30/6/10.	1911. 30/6/11.	1912. 30/6/12.	1913. 30/6/13.	1914. 30/6/14.	1915. 30/6/15.
Headquarters ...	...	30	37	†141	†140	†277	†330	†416
1st Queensland ...	4,310	3,224	3,202	3,371	3,357	4,625	5,844	7,734
2nd New South Wales	9,772	7,902	7,899	8,206	8,163	12,105	16,365	21,661
3rd Victoria ...	7,011	6,669	6,876	6,905	6,896	10,840	14,326	18,823
4th South Australia	2,956	2,004	2,019	1,990	1,869	3,228	4,708	6,527
5th Western Australia	2,283	1,662	1,608	1,600	1,451	1,635	2,046	3,004
6th Tasmania ...	2,554	1,870	1,868	1,986	1,820	1,777	2,026	2,807
Total ...	...	28,886	23,361	23,509	24,199	23,696	34,537	45,645
								60,972

* Approximately coterminous with boundaries of States. † Date of Commonwealth taking over the military forces from States. ‡ 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, 1915, were as follows:—

ARMS OF THE COMMONWEALTH DEFENCE, 1915.

Light Horse ...	8,880	Aust. Flying Corps	3	Administrative and	
Field Artillery ...	3,378	Automobile Corps...	14	Instructional Staff	1,072
Garrison Artillery ...	1,830	Army Nurs'g Service	131	Pay Department,	
Engineers ...	3,041	Army Vet'ry. Corps	39	Rifle Ranges, Rifle	
Infantry ...	38,039	Ordnance Departm't		Clubs, Officers, etc.	125*
Intelligence Corps	17	(including Arma-	319	Royal Military College	161*
Army Service Corps	1,497	ment Artificers) ...			
Army Medical Corps	2,158	Area Officers ...	213	Grand Total ...	60,917†

* Includes civilians. † Excluding Engineer and Railway Staff Corps.

(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, 1915:—

CLASSIFICATION OF LAND FORCES, 1915.

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 ...	410*	401	941	839	205	234	146	3,176
Citizen Soldiers ...	...	7,257	20,604	17,902	6,278	2,732	2,610	57,383
Engineers and Railway Staff Corps ...	6	10	9	10	5	10	5	55
Army Nursing Service ...	...	32	26	8	16	14	35	131
Automobile Corps ...	...	5	9	...	...	...	...	14
Area Officers ...	...	29	73	64	23	14	11	213
Rifle Clubs ...	...	14,822	30,460	20,497	7,134	6,757	4,892	84,562
Senior Cadets ...	...	11,865	32,729	27,671	8,810	4,811	3,069	88,955
Unattached List of Officers ...	...	44	69	69	21	10	20	233
Reserve of Officers ...	...	151	208	153	80	38	28	658
Chaplains ...	...	50	77	38	30	17	14	226
Grand Total ...	416	34,666	85,204	67,251	22,602	14,637	10,830	235,606

* 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, 1915 (1894, 1895, 1896 and 1897 QUOTAS).

Military Dist.	Total Registrations.	Total Medically Exam'd.	Number Medically Fit.	P'centage Medically Exam'd who are Fit.	Number Unfit and Temporarily Unfit	P'centage Medically Exam'd who are Unfit and Temporarily Unfit	Total Ex-emptions Granted in Training Areas.	Total No. Liable for Training	Total Number Actually in Training.†
1897 QUOTA.									
1st ...	6,256	3,105	2,102	67.7	1,003	32.3	4,112	2,102	...
2nd ...	13,489	7,825	6,111	78.1	1,714	21.9	6,891	6,111	...
3rd ...	11,087	6,906	4,988	72.2	1,918	27.8	5,746	4,988	...
4th ...	3,412	2,129	1,625	76.3	504	23.7	1,727	1,625	...
5th ...	1,678	912	781	85.6	131	14.4	890	781	...
6th ...	1,499	765	586	76.6	179	23.4	862	586	...
Total	37,421	21,642	16,193	74.8	5,449	25.2	20,228	16,193	...

1894, 1895, AND 1896 QUOTAS.

Military Dist.	Total Registrations in Training Areas.				Exemptions Granted.				Number Liable for Training.
	Quota 1894.	Quota 1895.	Quota 1896.	Total.	Quota 1894.	Quota 1895.	Quota 1896.	Total.	
1st ...	5,709	6,340	6,114	18,163	3,444	3,889	3,946	11,279	6,884
2nd ...	12,577	13,439	13,401	39,417	5,834	6,830	7,034	19,698	19,719
3rd ...	10,779	11,444	11,629	33,852	5,424	6,051	6,047	17,522	16,330
4th ...	3,370	3,723	3,702	10,795	1,479	1,535	1,519	4,533	6,262
5th ...	1,508	1,602	1,682	4,792	802	800	944	2,546	2,346
6th ...	1,517	1,630	1,662	4,809	753	805	869	2,427	2,382
Total	35,460	38,178	38,190	111,828	17,736	19,910	20,359	58,005	53,823

† Training temporarily suspended at this time.

**UNIVERSAL TRAINING.—REGISTRATIONS, MEDICAL EXAMINATIONS, AND
EXEMPTIONS TO THE 31st DECEMBER, 1915.**

SENIOR CADETS.

Military District.	Total Registrations in Training Areas.	Total Medical Exams	No. Medically Fit.	Percentage Medically Exam'd who are Fit.	Number Unfit and Temporarily Unfit	Percentage Medically Exam'd who are Unfit and Temporarily Unfit	Total Exemptions Granted in Training Areas.	Total No. Liable for Training.	Total No. Actually in Training.
1st ...	22,139	14,218	12,054	84.8	2,164	15.2	9,999	12,054	12,028
2nd ...	46,902	35,803	32,233	90.0	3,570	10.0	14,493	32,233	31,235
3rd ...	40,962	31,587	27,993	88.6	3,594	11.4	12,745	27,993	27,704
4th ...	12,822	10,045	8,934	88.9	1,111	11.1	3,824	8,934	8,930
5th ...	8,167	5,833	5,385	92.3	448	7.7	2,777	5,385	5,254
6th ...	5,576	3,678	3,140	85.4	538	14.6	2,410	3,140	3,094
Total ...	136,568	101,164	89,739	88.7	11,435	11.3	46,248	89,739	88,245

UNIVERSAL TRAINING.—MEDICAL EXAMINATIONS TO THE 31st DECEMBER, 1915.

JUNIOR CADETS.

Military District.	Total No. Medically Examined.	Number Medically Fit.	Percentage Medically Examined who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Examined who are Unfit & Temporarily Unfit.
1st ...	6,210	6,033	97.1	177	2.9
2nd ...	18,846	18,355	97.4	491	2.6
3rd ...	15,775	15,528	98.4	247	1.6
4th ...	4,356	4,254	97.7	102	2.3
5th ...	2,844	2,781	97.8	63	2.2
6th ...	1,741	1,610	92.5	131	7.5
Total ...	49,772	48,561	97.6	1,211	2.4

(v.) *Total Number in Training under Compulsory System.* From these tables it will be seen that there are now more than 70,000 citizen soldiers and 88,000 senior cadets undergoing compulsory training, and that nearly 50,000 junior cadets are certified for physical training.

§ 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 the 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, £4816; Tasmania, £4776.

(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.¹ 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

1. Since modified; see page 989, *infra*.

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. Three other destroyers (to be named *Torrens*, *Swan*, *Dervent*) were to be built at the Commonwealth dockyard in Sydney.

The battle cruiser *Australia* was commissioned in June, 1913, and arrived in Australian waters in the following September. Two smaller cruisers, the *Melbourne* and *Sydney*, arrived in Australian waters in 1913. The third cruiser, the *Brisbane*, is being built at the Commonwealth dockyard, Sydney. The two submarines arrived in Australian waters in May, 1914. Pending completion of the *Brisbane*, the *Encounter* was lent from the Royal Navy for service in the Royal Australian Navy. The Admiralty also presented the Commonwealth Government with the cruiser *Pioneer*. This vessel was taken over by the Naval Board on 1st March, 1913, and recommissioned with the crew of the *Protector* (augmented as necessary) for service as a naval reserve training ship, the *Protector* being used for service as a tender to the Gunnery School. A tabulated statement of the ships of the Australian Navy, in being and building on 1st April, 1915, is given on page 990.

The vessels of the Australian Navy are participating in the European war. Both submarines have been lost.

(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 Armoured 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 Armoured 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>

* Now called "battle cruiser."

† Since altered to two submarines of "E" class.

LATER ESTIMATED COST.

1 Armoured cruiser	...	...	...	£1,705,000
*3 Protected cruisers	...	...	...	1,400,000
*6 Destroyers	...	...	...	653,000
2 Submarines.	...	...	...	233,500
Auxiliaries—				
1 Submarine dépôt ship	...	...	£160,000	
1 Oil tank vessel	...	...	120,000	
4 Oil fuel storage vessels (building in Australia)...	...	...	75,766	
4 Hulks	...	...	25,000	
				390,766
Total	...	...	...	£4,372,266
The following additional amount has been approved for new construction outside the original fleet unit				
	...			420,000
Total	...	...	...	£4,792,266

(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 OUT OF SUMS APPROPRIATED FOR CONSTRUCTION OF FLEET.

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. ...	400,000
Total appropriated		4,582,110
Total estimated cost of construction of fleet approved		4,792,266
Amount still to be appropriated		210,156

* Estimate.

(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 dépôt 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 1913-4, rising to £1,226,000 in 1933-4. Annual expenditure on construction and maintenance of ships would increase from £2,349,000 in 1913-4 to £4,824,000 in 1932-3.

* Extra cost of building certain of these vessels in Australia is responsible for increase.

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. 986. 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, so far as they relate to the work of the next few years. 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 April, 1915, there were 87 cadet midshipmen under training. Thirty will be entered next year, bringing the college to its full complement. There are 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 14½ to 16 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 then they are drafted to a sea-going warship of the Australian fleet. Recruiting has been good, and in February, 1915, there were 260 boys on board, the utmost capacity of the ship being 300.

(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 on 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.

4. **Vessels and Personnel of the Australian Navy.**—(i.) *Ships.* The following table shews the vessels of the Royal Australian Navy, completed and building on 1st April, 1915. No later information may be published:—

LIST OF SHIPS OF THE ROYAL AUSTRALIAN NAVY, APRIL, 1915.

Vessel.	Description.	Displacement.	Power.	Position.
		Tons.		
<i>Australia</i> ...	Battle cruiser ...	19,200	44,000 h.p.	Commissioned
<i>Brisbane</i> ...	Light cruiser ...	5,600	22,000 h.p.	Building, Sydney
<i>Childers</i> ...	1st class torpedo boat ...	...	...	Commissioned
<i>C'nless of Hopetoun</i> ...	"	...	...	"
<i>Derwent</i> ...	Torpedo boat destroyer ...	700	12,000 h.p.	Building, Sydney
<i>Encounter</i> ...	Light cruiser ...	5,880	12,500 h.p.	Commissioned
<i>Gayundah</i> ...	Gunboat ...	360	400 h.p.	"
<i>Karumba</i> ...	Oil supply ship ...	3,000	...	Building, Eng.
<i>Melbourne</i> ...	Light cruiser ...	5,600	22,000 h.p.	Commissioned
<i>Parramatta</i> ...	Torpedo boat destroyer ...	700	12,000 h.p.	"
<i>Pioneer</i> ...	Light cruiser ...	2,200	7,000 h.p.	"
<i>Platypus</i> ...	Submarine depôt ship ...	3,100	...	Building, Scotl'd
<i>Protector</i> ...	Gunboat ...	920	1,641 h.p.	Commissioned
<i>Swan</i> ...	Torpedo boat destroyer ...	700	12,000 h.p.	Building, Sydney
<i>Sydney</i> ...	Light cruiser ...	5,600	22,000 h.p.	Commissioned
<i>Tingira</i> ...	Boys' training ship ...	1,800	...	"
<i>Torrens</i> ...	Torpedo boat destroyer ...	700	12,000 h.p.	Building, Sydney
<i>Una (late Comet)</i> ...	Gunboat ...	980	1,350 h.p.	Commissioned
<i>Warrego</i> ...	Torpedo boat destroyer ...	700	12,000 h.p.	"
<i>Yarra</i> ...	"	700	12,000 h.p.	"
<i>A E 2</i> ...	Submarine ...	800	1,750 h.p.	"

(ii.) *Personnel.* The fleet is manned, as far as possible, by Australians, supplemented by Imperial officers and men. It is intended that there shall be interchangeability with the Royal Navy of officers and men, and also of ships. Recruiting centres have been established in the Commonwealth with excellent results. The naval reserves comprise (a) members of the Australian branch of the Royal Naval Reserve, (b) members of the Citizen naval forces, and (c) Senior naval cadets. The navy has first choice from amongst the trainees under the compulsory system. The following table shews the strength of the naval forces in April, 1915, the latest date for which the information is available:—

STRENGTH OF THE NAVAL FORCES (PERMANENT AND RESERVES), APRIL, 1915.

Classification.	Officers.	Ratings.	Total.
Permanent Forces (Sea-going) ...	440	3,290	3,730
Administrative and Instructional Staff ...	35	113	148
Reserve (M)* ...	27	437	464
Reserve (O) Adult section† ...	34	1,540	1,574
Senior Cadets† ...	...	3,332	3,322
R.N. Reserve (Sea-going) ...	18	157	175
Total ...	554	8,869	9,423

* Late militia. † Under universal training regulations.

Little more than five years ago the total personnel of the Commonwealth naval forces was but 240. Last year the total was nearly 10,000, the sea-going forces alone numbering 3700.

§ 3. Expenditure on Defence.

1. **Expenditure, 1910-11 to 1915-16.**—The following table gives the expenditure of the Department of Defence from 1910-11 to 1914-15, and the estimate for 1915-16:—

EXPENDITURE ON DEFENCE, 1910-11 to 1915-16.

Branch or Department.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.	1915-16. Estimate
	£	£	£	£	£	£
Administrative—Central Administration ...	*104,740	*289,558	*245,918	*217,804	*221,127	*366,130
Naval Forces ...	96,291	248,738	608,955	1,005,649	5,813,357	8,475,375
Military Forces ...	945,718	1,174,912	1,401,246	1,538,544	11,502,771	35,720,534
Rent, Repairs, and Maintenance ...	42,862	46,257	58,746	70,453	79,665	114,486
Additions, New Works, Lands, etc. ...	177,274	244,736	396,294	507,458	356,859	805,813
Defence Arms, Equipment, etc. ...	273,224	561,596	551,895	416,842	265,252	461,800
Audit Office ...	1,142	1,180	1,298	1,362	2,397	4,704
Pensions and Retiring Allowances ...	965	2,269	1,121	1,103	1,427	1,380
Supervision of Public Works by State Officers ...	3,798	2,965	4,935	7,776	6,119	7,000
Naval Agreement† ...	200,000	200,000	166,600	...	...	...
Miscellaneous "Other" ...	282	...	...	...	...	...
Fleet Unit ...	1,135,000	1,108,171	585,342	753,537	568,204	400,000
Naval Works Armament ...	24,730	38,696	200,087	123,590	264,004	672,160
Interest and Sinking Fund on Transferred Properties ...	...	162,132	122,561	94,858	177,741	128,450
Miscellaneous ...	...	638	1,307	851	80,062	§ 335,768
Sites for Defence purposes { payable	...	...	...	300,000	66,364	97,138
Machinery, etc., Cockatoo Is. { from loan	...	...	...	...	42,782	132,000
Proportion Public Works Staff Salaries	...	...	...	12,908	13,881	23,000
Interest and Insurance ...	...	...	...	...	117,167	†1,937,069
War pensions ...	...	...	...	...	437	179,168
Total ...	3,006,026	4,081,848	4,346,305	5,052,735	19,579,616	49,861,975

* Includes establishments under the control of the Central Administration. † Ceased on 30th June, 1913. ‡ The items are:—Premiums on Life Assurance policies of Commonwealth public servants who are members of Expeditionary Forces, £8000; Interest on Commonwealth Inscribed Stock, £1,030,028; Interest on Treasury Bills for loan purposes, £19,041; Interest on loan from British Government for war purposes, £820,000. § Includes grants to Australian Soldiers' Repatriation Fund £250,000, War Census £60,000.

2. **Appropriation for Defence Purposes, 1901-2 to 1915-16.**—In the following table the Defence expenditure for the whole Commonwealth period, 1901-2 to 1915-16, is given:—

ANNUAL DEFENCE EXPENDITURE, 1915-16.

Year.	Naval.				Military.			Total Defence Expendi- ture.
	Under Ordinary Votes and Appropriations.	Works, Arms, Equip'm't &c. (provided under Estimates for New Works and Buildings).	Loan Expendi- ture.	Total Naval.	Under Ordinary Votes and Appropriations.	Works, Arms, Equip'm't &c. (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	302,550	1,161,541	...	1,464,091	1,093,248	448,687	1,541,935	3,006,026
1911-12	460,521	1,172,920	...	1,533,441	1,668,128	780,279	2,448,407	4,081,848
1912-13	805,819	853,735	...	1,659,554	1,806,868	879,883	2,686,751	4,346,305
1913-14	1,027,360	972,405	...	1,999,765	1,923,948	829,022	2,752,970	4,752,735
1914-15	5,991,820	936,081	42,782	6,970,683	12,024,331	584,602	12,608,933	19,579,616
1915-16*	8,600,348	1,303,067	132,000	10,035,415	38,692,716	1,133,844	39,826,560	49,861,975

* Estimate.

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, 1915-16.**—The special war expenditure during 1915-16, as originally estimated, will be found on page 998.

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, are as follows:—

ESTIMATED EXPENDITURE ON DEFENCE.—VARIOUS COUNTRIES.

Country.	Year.	Army.	Navy.	Total.	Per Inhabitant.	
		£	£	£	s.	d.
Great Britain ...	1913-14	28,220,000	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* ...	1913-14	7,815,000	4,224,000	12,039,000	3	6
Australia† ...	1914-15	2,062,396	2,505,885	4,568,000	18	6

* Excluding extraordinary expenditure. † Total excluding special war expenditure.

§ 4. Industrial Establishments and Remount Depot.

1. **Commonwealth Factories.**—There are five 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 31st March, 1916, there were 445 persons employed, including 109 females. A large quantity of harness and saddlery, and 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 31st March, 1916, the employees numbered 144. 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 31st March, 1916, was 714, of whom 612 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, N.S.W., was opened on 1st June, 1912. The first instalment of Australian arms was delivered in May, 1913. Employees numbered 1100 on 31st March, 1916. A fifth Commonwealth factory has been established at Geelong, Victoria, for uniform materials and woollen fabrics, and commenced operations the latter part of 1915. Eighty persons were employed on 30th March, 1916.

2. **Expenditure.**—The value on 30th June, 1915, of land, machinery and plant, factory fittings, and furniture in connection with the factories now in operation, was approximately as follows:—

Small Arms Factory...	...	...	...	£159,000
Cordite Factory	...	...	...	98,000
Clothing Factory	...	...	...	20,000
Harness Factory	...	...	...	14,000
Woollen Cloth Factory	...	...	...	135,000

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 2000 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.

§ 5. Australian Contingents.

1. **New Zealand and Sudan Campaigns.**—Many colonists 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 colonies 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 shows 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.**—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. The transfer is to continue in force until proclamation is issued that war no longer exists. 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 2000), first reinforcements (about 3000), two additional light-horse brigades (about 4000), an additional infantry brigade (about 4500), 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 had been 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. Further units and reinforcements have been despatched since.

(i.) *Australian Imperial Force.* Up to 30th June, 1916, the total number of troops despatched from Australia for active service abroad was 212,620. These troops have been organised into :—

(a) *Army Corps Troops*—

- 2 Corps Cavalry Regiments (less 1 Squadron).
- 2 Corps Cyclist Battalions.

(b) *A Mounted Division*—

- 3 Light Horse Brigades (9 Regiments).
- 3 Light Horse Regiments, attached (less 2 Squadrons).
- 1 Field Squadron Engineers.
- 1 Signal Squadron Engineers.
- 1 Mounted Divisional Train (Army Service Corps).
- 3 Light Horse Field Ambulances.

(c) *5 Infantry Divisions*—

- 15 Infantry Brigades (60 Battalions).
- 5 Pioneer Battalions.
- 15 Machine Gun Companies.
- 15 Field Artillery Brigades (60 Batteries).
- 5 Howitzer Brigades (15 Batteries).
- 2 Ammunition Echelons.
- 10 Trench Mortar Batteries.
- 15 Field Companies Engineers.
- 5 Divisional Signal Companies Engineers.

- 5 Divisional Trains (Army Service Corps)—
 - 20 Army Service Corps Companies.
 - 5 Field Bakeries.
 - 5 Field Butcheries.
 - 25 Depot Units of Supply.
- 1 Motor Ambulance Workshop.
- 5 Mobile Veterinary Sections.
- 15 Field Ambulances.
- 5 Sanitary Sections.
- 5 Infantry Base Depots.

(d) *Miscellaneous Units—*

- An Australian Naval and Military Expeditionary Force.
- A Siege Artillery Brigade (2 Batteries).
- A Flying Unit (1 Squadron).
- An Aeroplane Squadron ($\frac{1}{2}$ Flight).
- A Mining Corps (3 Companies).
- 3 Tunnelling Companies.
- A Naval Bridging Train.
- A Divisional Ammunition Park.
- 3 Divisional Supply Columns.
- An Armoured Motor Car Section.
- A Railway Supply Detachment.
- 3 Casualty Clearing Stations.
- 2 Stationary Hospitals.
- A Contagious Diseases Hospital.
- 3 General Hospitals.
- 2 Remount Squadrons (8 Companies).
- An Intermediate Base Depot.
- A Pay Corps.
- A Post Office Corps.
- A Printing Section.
- A Pack Wireless Squadron (2 Troops).
- A Camel Corps.
- Dental Services.
- Army Nursing Service.

Recruiting has continued since the above table was prepared. The latest available total is given below.

(ii.) *Total Commonwealth Expeditionary Forces.* The following table shows the total Commonwealth forces, serving and training, and including casualties, from the commencement of the war to 30th June, 1916.

**STRENGTH OF COMMONWEALTH FORCES, DESPATCHED AND IN TRAINING,
TO 30th JUNE, 1916.**

Officers.	Other Ranks.	Total.
5,949	256,671	262,620

(iii.) 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 positions on the Gallipoli Peninsula (Dardanelles). The operation is regarded as having been exceedingly difficult, but the allied troops effected a landing in the face of determined resistance. Towards the end of December, 1915, it was decided to evacuate the Gallipoli Peninsula. This difficult operation was successfully carried out, and the main portion of the Australian Imperial Force has since been transferred to other spheres of activity. The number of casualties announced by the Defence Department to 17th June, 1916, are as follows :—

Particulars.				Officers, Chaplains and Nurses.	Other Ranks.	Total.
Died*	...	...	...	387	7,656	8,043
Wounded	...	...	...	245	9,320	9,565
Missing	...	...	...	2	1,015	1,017
Sick	...	...	...	731	22,514	23,245
Prisoners of War	...	...	...	9	53	62
Nature of casualty unknown...	...	...	...	47	247	294
Total	...	...	...	1,421	40,805	42,226

* Killed in action, died of wounds, illness, etc.

(iv.) Upon 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.

On 11th August, the battle cruiser *Australia*, accompanied by the light cruiser *Sydney* and the destroyers *Parramatta*, *Yarra*, and *Warrego*, reached Simpsonhafen, in New Britain, but failed to find the enemy's navy there. The *Australia* immediately left to convoy the New Zealand military expedition, organised for the capture and occupation of Samoa. In this task, the *Melbourne*, the British cruisers *Psyche*, *Philomel*, and *Pyramus*, and the French schooner *Montcalm* assisted. The British flag was hoisted at Apia on 31st August. The *Australia* returned towards New Britain, and, after being joined by the light cruisers *Sydney* and *Encounter*, the gunboat *Protector*, the three destroyers, and the two submarines, co-operated with the Australian Pacific expeditionary force in occupying Herbertshöhe (11th September) and Rabaul (12th September—the latter the headquarters of German administration in the Pacific. In an advance (11th September) towards the wireless station at Bitapaka, some miles inland from Herbertshöhe, the attacking naval detachment was fired upon by native troops under German officers, two officers and four men being killed and one officer and three men wounded. The *Australia* and *Encounter* occupied Friedrich Wilhelmshafen, on the mainland of New Guinea, on 24th September. In all these operations the French cruiser *Montcalm* continued to assist the Australian ships.

The submarine AE 1 was lost on 14th September, off Cape Gazelle, whilst engaged on patrol work during the New Britain expedition. The cause of the disaster is unknown, but it is believed that the submarine struck a submerged rock.

Other German Pacific wireless stations were attacked—the cruiser *Melbourne* destroying that at Nauru (Pleasant Island) on 9th September, whilst the cruiser *Sydney* on the 26th put the station at Angaur out of action. On 21st September the German governor and his forces surrendered at Herbertshöhe.

As the result of information indicating that the enemy's Pacific vessels intended to concentrate at a rendezvous to the north-east of Fiji, the *Australia*, with Suva as a base, patrolled an extensive sector of the Pacific. The retirement of the German fleet to South American waters was the outcome of the tightening of the tactical net of operations in which the speed and armament of the Commonwealth battle cruiser were the essential factors. Further use was made of the *Australia* in driving the enemy's Pacific fleet into the trap set by the Admiralty, that vessel thus helping to make possible the annihilation of the squadron by Admiral Sturdee.

The Australian Pacific force accomplished its mission successfully, and the territories are now garrisoned by Australian troops, under an administrator appointed by the Commonwealth Government. Most of the military forces engaged in the expedition returned to Australia, and many of them have since enlisted for service in Europe.

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 Deutsche Südsee Schutzgebiete*) was terminated. It comprised German New Guinea, the Bismarck Archipelago, the two northernmost islands of the Solomon group (Bougainville and Buka), 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, Squally Islands, and others.

It is stated that good progress was made in the islands under German rule. Large sums of money have been expended in the establishment of rubber, coffee, and cotton plantations. Cocoanut plantations are profitably worked. The capital, Rabaul, apparently intended for a naval station, is well laid out, and contains fine government and private buildings, with excellent roads. In 1914 the white population was estimated at 1640, of whom 1150 were Germans. The soil is wonderfully productive, and what little native labour is required is procurable at a very low figure.

The Australian Navy also successfully accomplished the task of escorting the successive Australasian contingents of forces for service in Europe over the Indian Ocean.

It was whilst engaged in escort duty with the first transport fleet that signals were received by wireless of the presence of the German cruiser *Emden* at Cocos Island, whither that vessel had gone on 8th November, with the intention of raiding the station there and destroying the wireless. The *Emden*, it is estimated, had wrought havoc to 21 British merchantmen, and to an amount of two and a half million pounds. The Island's distress signals, which the *Emden's* wireless failed to drown, were received by the Australian squadron, and the cruiser *Sydney* set out to relieve the station. On the following morning (9th November), the *Sydney* came up with the enemy, which, after a short but decisive action, and much damaged by the *Sydney's* accurate gunfire, and with many casualties (7 officers and 108 men being killed), was put to flight, ultimately becoming a total wreck at North Keeling Island, one of the Cocos group. The *Sydney's* losses were 4 killed and 12 wounded.

To cope with special demands arising from the state of war, the following vessels were chartered to serve as fleet auxiliaries during the Pacific expedition:—s.s. *Aorangi*,

fleet supply ship; s.s. *Berrima*, armed transport; s.s. *Grantala*, hospital ship. Two other hospital ships—the *Karoola* and *Kanowna*—have since been equipped and are on active service.

For the various actions in which the Australian Navy was thus employed, and in order to make possible the efficient patrolling of the vast sea-area involved, it was necessary that ample supplies of coal and oil should be available at the various advanced bases. It is stated that the large chartered fleet of colliers and oilers conducted their operations without any delay. From 30th July, 1914, to 31st December, 1914, the ships of the Australian Navy steamed in the aggregate upwards of 100,000 miles. It was necessary, to enable them to do so, to convey, over great distances of ocean, 76,000 tons of coal, and 12,000 tons of oil.

Further, not a single British merchant vessel was captured by the enemy in Australian waters. No Australian port was attacked, nor were coastal towns terrorised. But 19 German steamers, aggregating 89,000 tons; one Austrian steamer of 3530 tons; and five German sailing vessels, aggregating 12,200 tons—in all 25 vessels, aggregating 104,730 tons—were interned. Also, 11 vessels, aggregating 12,000 tons, and including the German Government's vessels *Komet*, *Nusa*, &c., were captured.

During 1915 the battle cruiser *Australia* joined the Grand Fleet in the North Sea, and was made flagship of a battle cruiser division. The other ships of the Australian Navy, with the exception of Submarine AE2, which was lost during the operations at the Dardanelles, are taking their part in the war as and where the Imperial authorities find them most useful.

(v.) *War Expenditure, 1915-16.* The special war expenditure shewn in the annual estimates, 1915-16, is shewn below. Reference to War Finance will be found in Section XIX., Commonwealth Finance, p. 742, and also in the Appendix to this book.

SPECIAL WAR EXPENDITURE, 1915-16, ESTIMATED.

Special expenditure on Australian forces—					£
Naval	...	...	...	...	916,450
Military	...	...	...	...	432,311
Expeditionary force—Military	...	...	...	...	34,000,000
Naval	...	...	...	...	6,000,000
Interest on loan from British Government for war purposes	...	...	...	...	820,000
Interest on Commonwealth War Loan	...	...	...	...	1,090,000
Interest on Treasury Bills in aid of Revenue	...	...	...	...	14,850
Grant to Australian Soldiers' Repatriation Fund	...	...	...	...	250,000
War Pensions	...	...	...	...	179,168
War Census	...	...	...	...	60,000
Miscellaneous	...	...	...	...	19,408
Premiums on Life Assurance policies of Commonwealth public servants who are members of Expeditionary forces	...	...	...	...	8,000
Total	...	...	...	...	43,790,187

The special war expenditure for the year 1914-15 amounted to £14,931,531.

(vi.) *War Pensions.* Provision is made by the *War Pensions Act 1914* in the case of death or incapacity sustained by members of the defence force as a result of employment in connection with warlike operations. Determinations and assessments are made by a Pensions Board of three persons, constituted under the Act. Pensions are inalienable, and are on the following scale :—

SCALE OF PENSIONS PAYABLE.

(i.) 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.
s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.
6 0	2 0 0	3 0 0	13 0	2 19 6	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		

(ii.) 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.

(iii.) 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.

(iv.) To wife of member of forces upon his total incapacity :—50 per cent. of rate payable to husband.

(v.) To each child of member upon his total incapacity :—Same as (ii.) above.

(vi.) 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 Act 1914.**—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.

2. **War Precautions Acts 1914-16 and War Precautions Regulations 1915.**—The *War Precautions Act 1914* abovementioned, as amended by the *War Precautions Act 1915*, the *War Precautions Act No. 2 1915*, and the *War Precautions Act 1916*, empower the Governor-General to make regulations and orders for securing the public safety and the defences of the Commonwealth. Any person who contravenes or fails to comply with any provision of any regulation or order is guilty of an offence, the

punishment for which is, if prosecuted summarily, a fine not exceeding £100, or imprisonment for a term not exceeding six months, or both; if the offence is prosecuted by indictment, a fine of any amount or imprisonment for any term, or both; or if the offence is prosecuted by Court Martial, the same punishment as if the person had been subject to military law, and had on active service committed an offence under section 5 of the Army Act.

Under the powers conferred by the above Acts, the *War Precautions Regulations 1915* have been made. These regulations provide for the appointment of competent naval or military authorities to exercise certain powers under the regulations. The principal provisions of the regulations are as follows:—

Regulation 3. The ordinary avocations of life and the enjoyment of property are to be interfered with as little as may be permitted by the exigencies of the measures required to be taken for securing the public safety and the defence of the Commonwealth, and ordinary civil offences are to be dealt with by the civil tribunals in the ordinary course of law.

4. The competent authorities are authorised to take possession of land, buildings, equipment, and warlike stores, to construct works, to destroy buildings, and to do any act involving interference with private rights of property which may be necessary for securing the public safety, or defence of the Commonwealth.

5. Competent authorities are given the right of access to any land or buildings.

6. Land may be used for training the forces.

7. Roads may be stopped up.

8. The removal of vehicles, boats, vessels, aircraft, animals, foodstuffs, equipment, and warlike stores from any area may be ordered.

9. A census may be taken of all goods, animals, and other commodities.

10 and 11. The Minister may requisition the output of factories manufacturing arms, ammunition, etc., and may take possession of such factories.

12 and 12a. Premises licensed for the sale of intoxicating liquor may be closed.

13 and 14. The extinguishment or obscuring of lights in any area may be ordered.

15. Inhabitants may be ordered to remove from any area if necessary for naval or military reasons.

15a. Persons may be removed from the vicinity of military camps, forts, hospitals, or posts if their presence is prejudicial to the maintenance of discipline or to the health, training, or administration of the troops.

16. Inhabitants may be required to remain indoors.

17. Ships may be removed from specified areas.

17a. Entrance to British merchant ships in harbours or alongside wharves without permission is forbidden.

17b. Entrance to enclosed wharves without permission is forbidden.

17c. Passports of any persons entering the Commonwealth may be detained.

17d. Members of the forces may be prevented from entering any premises specified in an order of the competent authority.

18. Harbour authorities may be required to prepare schemes for destruction of harbour works.

19. The obtaining and communicating of naval and military information without permission is prohibited.

19a. Communication with spies is prohibited.

20. The photographing of naval or military works without permission is prohibited.

21. Tampering with telegraphic apparatus is prohibited.

21a. Telephone conversations not in the English language are prohibited.

22. The possession of carrier pigeons in any area prescribed by order of the competent authority is prohibited.

23. The possession of wireless telegraphic apparatus without the permission of the Minister for the Navy is prohibited.

23a. The possession of ciphers, codes, or other means of secretly communicating naval or military information is prohibited, unless intended and used solely for commercial or other legitimate purpose.

24. The embarkation of persons suspected of communicating with the enemy may be prohibited.

25. The transmission of letters to or from the Commonwealth otherwise than through the post is prohibited.

25a. The conveyance of letters to or from interned persons without the authority of the officer commanding the place of internment is prohibited.

25b. Persons carrying on the business of receiving for reward letters or postal packets for delivery to other persons are required to register with the censor.

26. The use of searchlights, semaphores, or other apparatus intended for signalling is prohibited.

27. The display of fireworks or the lighting of fires in such a manner as would serve as a signal, guide, or landmark is prohibited.

28. The spreading of false reports, or the making of false statements, or reports or statements likely to cause disaffection to His Majesty, or public alarm, or to interfere with the success of His Majesty's forces by land or sea, or to prejudice His Majesty's relations with foreign powers, and the spreading of reports or making of statements likely to prejudice the recruiting, training, discipline, or administration of His Majesty's forces, is prohibited.

28a. Power is given to require newspapers to submit matter relating to the war before printing or publication.

28b. Newspapers and other publications published in foreign languages may be suppressed.

28c. Alterations made by the censorship in matters submitted to it are not to be shewn in print without permission.

28d. The submission of cinematograph films relating to the war may be required before they are exhibited.

29. Trespassing on or loitering in the vicinity of tunnels, viaducts, or culverts, and injuring or being upon railways, or on, under, or near railway works with intent to injure them, is prohibited.

30. Approaching military works in respect of which orders prohibiting approach have been issued is an offence.

31. The manufacture or sale of firearms, ammunition, or explosives within any specified area may be prohibited.

32. The importation of firearms, ammunition, or explosives without permission is prohibited.

33. Any person who, by discharging firearms or otherwise, endangers the safety of any member of the forces, is guilty of an offence.

34. Any person who, without permission, is in possession of firearms, explosives, or inflammable liquids in the vicinity of any railway, dock, or harbour, or in the vicinity of any specified area, is guilty of an offence.

35. Restrictions are placed on the storage of inflammable liquids in any area specified in an order of the competent authorities.

36. The possession of celluloid or cinematograph films in any prescribed area without permission is prohibited.

37. Masters of vessels are required to comply with any directions given for navigation in harbours.

38. Vessels are required to comply with any directions as to navigation issued by the Naval Board.

39. Vessels may be prohibited from entering dangerous areas.

40. The Naval Board may issue orders as to pilotage.

40a. Any person who by act or default endangers the safety of any vessel is guilty of an offence.

41. The supplying of intoxicants to members of His Majesty's forces, when on duty or when not on duty, with intent to elicit information, is prohibited.

- 41*a*. Intoxicating liquors in camps, forts, hospitals, or military posts are prohibited.
42. The unauthorised use of naval or military uniforms is prohibited.
- 42*a*. The sale of uniforms or parts of uniforms without permission is prohibited.
43. Persons attempting to cause mutiny, sedition, or disaffection among the forces or the civil population are guilty of an offence.
44. Persons obstructing, misleading, or interfering with or withholding information from officers or persons carrying out the orders of the competent authorities, are guilty of any offence.
45. Falsifying reports, etc., is an offence.
46. The forging of certain official documents, and personating persons to whom such documents have been issued, is an offence.
- 46*a*. Assisting the escape of prisoners of war is an offence.
47. Persons in possession of false passports or letters of safe conduct, and alien enemies passing under assumed names, are guilty of an offence.
- 47*a*. Chattels used by any female dependent of a soldier to support or assist in supporting herself or any of the family of the soldier, and furniture or wearing apparel belonging to any such member, or female dependent, not exceeding £50 in value, are protected from distress or seizure under a Bill of Sale, Writ of Execution or other process of a Court, or by way of distress, or under the provisions of a hire-purchase agreement.
- 47*b*. The right of any relative or dependent of a soldier to receive allotments of his pay or separation allowance is made incapable of assignment.
48. All persons affected by any orders issued under the Regulations are required to comply therewith.
49. Attempting to commit an offence, aiding or abetting an offence, or harbouring any person who has committed an offence is forbidden.
- 49*e*. The sale of sugar at a price exceeding 3½*d*. per lb., plus such sum as represents the cost of delivery to the seller, is forbidden.
- 49*f*. The defacing or destruction of any British gold coins is forbidden.
- 50, 50*a*, and 50*b*. Powers are given to search premises and persons, and to seize articles found thereon.
51. Power is given to stop and search vehicles.
52. Power is given to require answers to questions relative to any matter affecting the public safety or the defence of the Commonwealth, and to require the production of documents, books, and papers relative to any such matter.
53. Powers are given for preventing the conveyance of letters into or out of the Commonwealth otherwise than through the post.
54. Powers of arrest are given.
- 54*a*. The embarkation of suspected persons may be prohibited.
55. The Minister is authorised to direct the detention, in military custody, of any naturalised person who is disaffected or disloyal.
56. The Minister is authorised to direct the detention, in military custody, of any natural-born British subject, one at least of whose parents was, or is, a subject of a State which is at war with the King.
- 56*a*. The Minister is authorised to direct the detention, in military custody, of any person if, in his opinion, for securing the public safety and the defence of the Commonwealth, it is expedient, in view of the hostile origin or association of such person, that he should be so detained.
- 56*b*. Male British subjects between the ages of 17 and 45 years are prohibited from leaving the Commonwealth, unless in possession of a passport issued by the Department of External Affairs.
- 56*c*. Persons detained in military custody, under the warrant of the Minister, are declared to be subject to the rules of discipline applicable to prisoners of war.
- 57 and 58. Provision is made for trial of offences.
59. Provision is made for forfeiture of goods in respect of which an offence has been committed.
- 59*a*. The burden of proof of lawful authority for any act, which, if done without such authority is an offence, is placed upon the accused.

59b. Provision is made for giving in evidence orders or instruments issued by competent authorities under the regulations.

60. The powers conferred by the regulations are declared to be in addition to, and not in derogation of, any other powers exercisable for securing the public safety and the defence of the Commonwealth.

61. Provision is made for the giving of notices pursuant to the regulations.

62. Persons claiming to act under any permit granted under the regulations are required to produce such permit when directed.

63. The Naval Board and the Military Board are authorised to appoint competent authorities to carry out the regulations.

63a. Competent authorities and senior officers of police are authorised to extend to any natural-born subject, whose father or whose father's father was a subject of a sovereign or State at war with His Majesty, all or any of the restrictions imposed on aliens or on alien enemies by any order made under the Act.

63b. The provisions of the Aliens Restriction Order 1915, with reference to alien enemies, are declared to apply to any British subject who is also a subject of a sovereign or State which is at war with His Majesty.

64. Persons born in the British dominions, who, by birth, became by the law of any State which is at war with the King subjects of that State, are declared to be subject to the same restrictions with reference to departure from Australia as are imposed on naturalised persons by any order made under the Act.

64a. The payment of moneys to persons interned on the warrant of the Minister is prohibited, except with the permission of the Minister, or of the Secretary or Acting-Secretary of the Department of Defence.

64b. The remitting of money from the Commonwealth without the written permission of the Minister, or of the Secretary or Acting-Secretary of the Department of Defence, to any enemy subject, or to any naturalised British subject who has at any time been the subject of a State at war with the King, is prohibited.

The Aliens Restriction Order 1915, made under the authority of the *War Precautions Act*, contains restrictions as to aliens entering and leaving the Commonwealth, and as to alien enemies resident in the Commonwealth. The principal provisions are as follows:—

Aliens are permitted to enter and leave the Commonwealth only at Darwin, Thursday Island, Brisbane, Newcastle, Sydney, Melbourne, Port Adelaide, Albany, Fremantle, Broome, and Hobart.

The deportation of any alien may be ordered by the Minister.

Masters of ships about to sail from a Commonwealth port may be required to give passages to aliens.

Alien enemies and naturalised subjects of enemy origin are forbidden to leave the Commonwealth without permission.

Aliens entering and leaving the Commonwealth are required to have passports.

Alien enemies may be required to reside in any specified area, and may be forbidden to enter prohibited areas.

Alien enemies are required to register with the police, and to report at such intervals as may be required. They are forbidden to change their places of residence or travel without permission, and are required to report on arrival at a new place of residence.

Naturalised subjects of enemy origin may be required to report themselves to the police, and may be forbidden to change their place of residence or travel unless they first give notice to the police.

Alien enemies and naturalised subjects of enemy origin are forbidden to enter British ships, or wharves, or docks.

Alien enemies are forbidden to be in possession of firearms or other weapons, ammunition, or explosives suitable for use in war.

They are also forbidden, without permission of the police, to be in possession of other firearms, ammunition, or explosives, of inflammable liquids in quantities exceeding three gallons, of signalling apparatus, carrier or homing pigeons, motor vehicles or boats, ciphers or codes, telephones, photographic apparatus, or military or naval maps, charts, or handbooks.

Naturalised subjects of enemy origin are forbidden, without permission of the police, to be in possession of firearms, ammunition, or explosives.

The circulation among alien enemies of any newspaper published in Australia wholly or mainly in the language of a State at war with His Majesty is prohibited, unless permission has been obtained.

Alien enemies are prohibited from carrying arms.

Alien enemies and naturalised subjects of enemy origin are prohibited from changing their names without permission.

Provision is made for exempting from certain provisions of the Order subjects of enemy powers who belong to races opposed to the rule of such powers.

The competent authorities may direct that any of the provisions of this Order as to alien enemies or naturalised subjects of enemy origin shall, in particular cases, be applicable to other aliens or naturalised subjects.

The competent authorities may also direct that any restrictions imposed on aliens or on alien enemies by the Order shall apply to any naturalised subject of enemy origin.

The following regulations have also been made under the Act:—

The War Precautions (Land Transfer) Regulations 1916, which restrict the transfer of land to persons of enemy descent.

The War Precautions (Enemy Shareholders) Regulations 1916, which restrict the holding of shares in companies by persons of enemy descent.

The War Precautions (Price Adjustment) Regulations 1916, which provide for the fixing of the prices of food stuffs and other commodities.

The War Precautions (Companies) Regulations 1916, which restrict the issue of new capital by companies and associations.

The War Precautions (Shipping) Regulations 1916, which restrict the departure of shipping from the Commonwealth without the permission of the Comptroller-General of Customs.

§ 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.

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-east 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 1490 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 longitude, 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 has 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 from 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 till 4th 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 301 on 30th June, 1915), under a European officer, was instituted for the maintenance of order. There were also, on the same date, 691 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. 35 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 3664 miles—1728 on the mainland, and 1936 on the islands. The total area is about 90,540 square miles, of which 87,786 are on the mainland and 2754 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, 8000 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 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, 1915, was 1037, made up of 716 adult males and 203 adult females (adults being persons over 16 years of age), and 56 male and 62 female children. The following table gives the population of Papua for the last five years :—

WHITE POPULATION OF PAPUA, 1911 to 1915.

YEAR ENDED 30TH JUNE.

1911.	1912.	1913.	1914.	1915.
1,032	1,064	1,219	1,186	1,037

The chief occupations of whites are :—Government officials and employees, 122 (including 5 females) ; planters (including managers and assistants), 110 ; and miners, 113. The number of missionaries is stated as 112.

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 400,000 and 500,000. These speak many languages and dialects. The coloured population, other than Papuans, numbered on 30th June, 1915, 328. On the same date, half-castes, including Papuan half-castes, totalled 343. 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. In some districts, however, the natives manifest a marked unwillingness to work. Actual ill-treatment of native employees may be said to be non-existent.

The number engaged under contract of service during the year ended 30th June, 1915, was 6769. In addition, there were 1972 natives employed who were not under contract of service, and 1530 employed as boat crews, on public works, plantations, etc., making a total employed of 10,271 for the year, as against 12,775 in the preceding year.

§ 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 6000 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 nineteen 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 31st March, 1915, there were 231 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 44,447 acres, or an average of 192 acres for each plantation. The principal plantation industries entered upon up to the present are cocoanuts, rubber, sisal hemp, and cotton. Secondary agricultural industries are the cultivation of bowstring hemp, coffee, vanilla, kapok, cocoa, tapioca, cinnamon, tea, maize, and tobacco. The natives are compelled by an ordinance to plant cocoanuts for food supply. It is estimated that the total area so planted amounts to over 350,000 acres. The following table shews the areas under the different cultures on 31st March, 1915:—

							Acres.
Cocoanuts	...	...	...	...	...	...	32,722
Rubber	...	...	...	...	...	...	6,203
Hemp	...	...	...	...	...	...	4,244
Cotton	...	...	...	...	...	...	108
Tobacco	...	...	...	...	...	...	13
Maize	...	...	...	...	...	...	328
Other cultures (including fruit trees)	...	...	...	...	...	...	829
Total	...	...	...	...	...	...	44,447

It is estimated that over £1,000,000 has been expended in plantations, and, with the exception of two large British companies, practically the whole of the capital has been subscribed in Australia and locally.

(iii.) *Government Plantations and Experimental Stations.* There are six Government plantations of cocoanuts and rubber, with a total area under cultivation of 1515 acres. The actual cost of these to the 30th June, 1915, was £18,323.

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 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 experimental 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.

3. *Live Stock.*—On 31st March, 1915, the live stock in the territory consisted of 427 horses, 6 donkeys, 1568 head of cattle, 127 mules, 110 sheep, 936 goats, 454 pigs, and 11,438 fowls. A Government stud farm has been established for the breeding of horses, and the stock at the end of March, 1915, numbered 75, including 2 stallions and 22 mares. The introduction of rabbits, foxes, hares, and monkeys is prohibited.

4. *Forest Products.*—There is a large variety 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 Pará rubber. Guttapercha is obtained from species of *palaquium*, which grow on the hills. Drugs, dyewoods, and spices are also obtained from indigenous plants. 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 1915 covered 159,000 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 is found along the shores and reefs. There is a dugong fishery on the coast of the Western Division. The value of fisheries exports in 1914-15 was over £14,000.

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, silver, tin, lead, zinc, cinnabar, iron, osmiridium, gypsum, manganese, sulphur, graphite, and petroleum. With regard to the last-mentioned mineral it may be noted that petroleum of good quality has been secured at Vailala, and a small quantity was raised in 1915. Boring operations are still in progress. 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 132 white miners and 1,297 indentured labourers; the majority of the whites are working the Murua goldfield. The quantity and value of the gold yield for five years are given below:—

GOLD YIELD, PAPUA, 1910-11 to 1914-15.

1910-11.		1911-12.		1912-13.		1913-14.		1914-15.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
ozs.	£	ozs.	£	ozs.	£	ozs.	£	ozs.	£
18,497	68,603	17,047	60,608	18,247	64,115	14,666	50,110	15,290	51,221

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 quantity of gold won to 30th June, 1915, was 387,787 ounces, valued at £1,393,001.

(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 Astrolabe, Dubuna, and Mount Diamond were the principal mines exporting during 1914-15. Only 695 tons, valued at £5600, were exported, as compared with 1150 tons, valued at £19,700 in the preceding year. The total amount shipped to date is 4579 tons, valued at £75,759.

(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, 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 1914-15, 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 £51,960, £30,000 was granted by the Commonwealth Government.

REVENUE AND EXPENDITURE OF PAPUA, 1914-15.

REVENUE.				EXPENDITURE.			
Customs receipts	...	...	£92,244	Lieutenant-Governor and Civil list	£3,064		
Post Office	...	...	1,238	Government Secretary	...	35,889	
Native labour fees	...	...	2,256	Treasury	...	16,709	
Hospital fees	...	...	715	Lands and Agriculture	...	7,422	
Mining receipts	...	...	1,754	Public Works	...	9,426	
Land leases	...	...	849	Medical	...	6,524	
Harbour dues	...	...	1,689	Department of Native Affairs	...	1,671	
Miscellaneous receipts	...	...	11,215	Central Court	...	1,559	
				Legislative Council	...	271	
Total	...	...	£51,960	Total	...	£82,535	

REVENUE AND EXPENDITURE OF PAPUA, 1910-11 to 1914-15.

Item.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Revenue	45,972	51,035	52,335	54,704	51,960
Expenditure	70,699	85,636	85,170	81,095	82,535

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, 1910-11 to 1914-15.

Particulars.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Imports	202,910	235,369	218,323	212,134	202,055
Exports	117,410	99,990	128,016	123,140	94,354
Total trade	320,320	335,359	346,339	335,274	296,409

The principal articles of import are foodstuffs, which in 1914-15 reached a total value of £70,419. The chief other imports in that year were:—Drapery and clothing, £21,144; hardware and ironmongery, £20,162; building material, £11,258; tobacco and cigars, £14,628; machinery, £11,963; wine, spirits, and beer, £6588; live stock, £3346; oils and kerosene, £6522. In the years under review gold has formed considerably more than half the value of the total export, except in 1912-13 and 1913-14, when it was less than half. In 1914-15 the value of this metal exported reached £50,889. Other principal exports were:—Copra, £12,693; copper ore, £5607; pearl and turtle shell, £4292; pearls, £6113; hemp, £1269; bêche-de-mer, £3853; rubber, £1501; cotton, £3400; sandalwood, £1363.

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 1910-11 to 1914-15.

Year.	Letters.		Packets.		Newspapers.		Parcels.	
	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.
1910-11 ...	84,274	83,617	13,712	8,011	63,170	25,520	2,279	542
1911-12 ...	124,603	97,783	23,433	5,336	88,873	36,107	2,769	949
1912-13 ...	136,585	111,574	23,088	5,338	112,931	37,030	2,935	1,049
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

The value of money orders issued in 1910-11 was £8662; of those paid, £1029. In 1914-15, the respective values were £6891 and £975.

The following table shows the number, tonnage, and nationality of vessels entered and cleared at ports during the years 1910-11 to 1914-15 :—

SHIPPING—FOREIGN-GOING VESSELS ENTERED AND CLEARED AT PORTS OF PAPUA, 1910-11 to 1914-15.

Nationality.	Vessels.									
	Number.					Tonnage.				
	1910-11	1911-12	1912-13.	1913-14	1914-15	1910-11.	1911-12.	1912-13.	1913-14	1914-15
British...	246	291	1,721	863	610	123,461	135,015	182,676	159,776	262,897
Foreign	55	64	56	66	33	129,661	140,788	123,802	198,730	99,729
Total...	301	355	1,777	929	643	253,122	275,803	306,478	358,506	362,626

The preponderance in number of British vessels in 1912-13 was caused by the inclusion in the returns, for that year only, of small fishing and recruiting vessels. 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 2089 acres to 363,425 acres; about 140 plantations were started, and nearly 1000 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 5000 acres in extent, and that rent at the rate of 3d. per acre must be paid from the commencement on all leases exceeding 1000 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, 1915, the lands of the territory were held as follows :—

	Acres.			
Area of land held by the natives	56,479,109
Area of Crown land...	1,208,334
Area of freehold land	23,085
Area of leasehold land	235,072
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 development in leasehold tenures may be seen from the following table:—

AREA HELD UNDER LEASE IN PAPUA, 1910-11 to 1914-15.

Year ended 30th June.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Land held under lease ... acres (as recorded).	364,088	332,422	290,936	230,879	235,072

In 1914-15, the area of leases granted was 6697 acres; that of leases expired, revoked, and forfeited was 2504 acres. While the war prejudicially affected the opening up of new plantations, it is satisfactory to note that there has been no abandonment of areas already acquired. During 1914-15, the area of land acquired by the Crown from the natives was 4108 acres, as compared with nearly 60,000 acres in the preceding year.

The total area surveyed in the Territory is 22,524 acres of freehold, and 231,918 acres of leasehold.

§ 8. Progress of the Territory.

1. Statistical View of Nine Years' Progress.—As already stated (§ 2, *supra*) the territory was placed under Commonwealth control on 1st September, 1906. The following table indicates the progress that has been made since that date:—

STATISTICAL SUMMARY, PAPUA, 1907-1915.

Items.	Year ended 30th June.	
	1907.	1915.
White population	690	1,037
Native labourers employed (exclusive of Crown servants) ...	2,000	8,741
Number of white civil servants	65	122
Armed constabulary	185	301
Village constables	401	691
Territorial revenue	£ 21,813	51,960
Territorial expenditure	£ 45,335	82,535
Value of imports	£ 87,776	202,055
Value of exports	£ 63,756	94,354
Area under lease acres	70,512	235,072
Tonnage of ocean-going vessels entered and cleared at ports ...	159,177	362,626
Area of plantations acres	1,467	44,447
Meteorological stations established	3	19
Gold yield ounces	16,103	15,290
Copper ore shipped tons	137	695
Live stock in territory—		
Horses	173	427
Cattle	648	1,568
Mules	40	127

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 recently received an increased amount of attention 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 these 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 1908-1912, 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, contagious diseases, 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 also 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. Generally 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) two assistant medical inspectors, (c) two engineering inspectors, (d) three building inspectors, and (e) nine 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 inspections 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 Acts, the Cremation Act 1903, the Adulteration of Wine Act 1905, the Meat Supervision Acts, and the Pure Food Act 1905. The Consolidated Health Act 1915 includes the Adulteration of Wine Act and also the Pure Food Act. The Cremation Act is now included under the Cemeteries Act 1915. The Department administers the Midwives Act also.

4. Queensland.—The Public Health Acts 1900 to 1911 are administered by the Commissioner of Public Health under the Home Secretary. The executive staff of the

Department includes a health officer, an assistant health officer, a secretary and five clerks, nine sanitary inspectors, and six food inspectors, in addition to rat squads in Brisbane. Northern offices, in charge of inspectors, are located at Rockhampton, Townsville, and Cairns. 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 to 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.

A scheme for the limitation of venereal disease in the metropolitan area has been recently put into operation in Brisbane under statutory powers. It includes compulsory notification, free treatment, and the free supply of salvarsan and allied remedies to all public hospitals. Compulsory segregation of venereally infective persons of either sex may be effected on occasion.

5. **South Australia.**—The Central Board of Health in South Australia consists of five members, three of whom (including the chairman) 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 182 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. The Education Department has a medical officer and two female inspectors, who deal with all cases of infectious disease occurring in schools, while their appointments under the Health Act enable them to trace cases of such disease, and deal, if necessary, with the sanitary state of the children's homes.

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 the local health authorities throughout 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.

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 (smallpox, 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 requirement 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 four 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.

§ 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. 539, 540), 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 are 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, when it was determined to introduce uniform legislation or regulation with respect to the preparation and distribution of food and drugs.

§ 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 registrations must be applied for before commencing to trade; in other States they 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 the number of dairy premises registered and the number of cattle thereon in four of the States during the year 1914-15.

NUMBER OF DAIRY PREMISES REGISTERED AND CATTLE THEREON, 1914-15.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.
Premises registered ...	†	†	11,844	928	400	2,500†
Cattle thereon ...	†	†	322,391	6,421	6,086	50,000†

† Not available. ‡ Estimated.

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 14 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 Milk and Dairy Supervision Act 1905, administered by the Minister of Agriculture. Under the Health Act 1890 and the Pure Food Act 1905, 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 1914, 110 municipal districts, comprising about one-fourth of the area of the State, had been brought under the operation of the Milk and 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 all sanitary conditions of the premises, the examination of herds being carried out by officers of the Department of Agriculture for the Health Department. This inspection of herds is regularly done, and in the case of such animals as arouse suspicion, the tuberculin test is applied. Regular inspection of premises from a sanitary point of view is also maintained.

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.**¹—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. As far as is at present practicable, 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

1. From information furnished by the Federal Director of Quarantine.

Adelaide). (e) *Western Australia*. Woodman's Point (near Fremantle), Albany, and Broome. Animal quarantine stations in each of the States have also been transferred, and steps are being taken for the taking over by the Commonwealth of other stations. New buildings and improvements are in course of construction at several of the transferred stations.

(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 payment is made to the State for his services. The administration of the Act in 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 also 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; and fix the quarantine lines 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 quarantine animals; the conditions of importation 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.(e)	Tas.		
Anthrax	+	...	+		
Ankylostomiasis	+		
Beri-beri	+	...		
Bubonic plague	+	+	+	+	+		
Cerebro-spinal fever	+	...	+		
Cerebro-spinal meningitis	+	+	+	+	+		
Chancroid (soft chancre)	+	(f)		
Cholera	+	+	+	+	+		
Continued fever	+	...	+	...		
Diphtheria	+	+	+	+	+		
Dysentery	+	(b)	...	...
Enteric fever	+	+	+	+		
Erysipelas	+	+	+	...		
Gonorrhœa	+	(c)	...	+	(f)	
Infantile paralysis	+	...	+	+	+		
Infective granuloma of the pudenda	+	(f)	...	
Leprosy	+	+	+	+	+		
Malarial fever	+	+	+	+	...		
Measles	+		
Membranous croup	+	+	+	+	...		
Ophthalmia neonatorum	+	+		
Poliomyelitis anterior acuta	+	...	+	...	+		
Puerperal fever	+	+	+	+		
Pulmonary tuberculosis(phthisis)	+	(a)	+	+	+	(d)	
Relapsing fever	+	+	+	...		
Scarlet fever	+	+	+	+	+		
Scarlatina	+	+	+	+	+		
Septicæmia	+	+	...	
Small-pox	+	+	+	+	+	g)	
Syphilis	+	(c)	...	+	(f)
Trichinosis	+	...	+	
Typhoid	+	+	+	+	+		
Typhus fever	+	+	+	+		
Whooping cough	+	...	+	...		
Yellow fever...	+	+	+	...		

(a) In metropolitan and certain proclaimed districts. (b) Thursday Island area only.
 (c) Metropolitan area of Brisbane only. (d) Tuberculosis in animals is also notifiable.
 (e) Other diseases enumerated as notifiable under "The Health Act 1911" of this State are bilharzia hæmatobia, pyæmia, and Malta, dengue, low and Colonial fevers. (f) Under Health Act Amendment Act 1915, see p. 1016. (g) Chicken-pox has been declared a notifiable disease to render certain its differential diagnosis from small-pox.

(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 smallpox have been published.

(iv.) *Victoria.* Under Part VIII. of the Public Health Act 1890, the notification of small-pox, cholera, plague, yellow fever, and other prescribed malignant, infectious, or contagious diseases is compulsory. An amending 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, all cases of infectious diseases must be notified; special provision is made for notification of small-pox. A report on plague in Queensland for a period covering eight successive years—1900 to 1907—has been published by the Commissioner of Public Health. Apart from the statistical data collected and collated, the report deals exhaustively with the medical, preventive, administrative, and epidemiological aspects of the plague, as observed in Queensland. Plague hospitals are provided at Maryborough, Bundaberg, Gladstone, Mackay, Townsville, and Cairns. Provision is also 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.* Regulations made under the Health Act 1911 provide for the compulsory notification to local Boards of infectious diseases. The local Board must report to the central authority. The necessity for providing hospital treatment for infectious cases has been recognised by the Boards of Health, and in several instances wards for the treatment of these cases have been erected. See also § 2.6 *ante*.

(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 such exists in all the other States of the Commonwealth. With the exception of Victoria, the Vaccination Acts are, however, not generally enforced. The Calf Lymph Dépôt of the State of Victoria was transferred to the Commonwealth in October, 1911. It is now designated "The Commonwealth Vaccine Dépôt," and is under the control of the Director of Quarantine. Lymph is prepared in this dépôt to meet the requirements of the Quarantine Service and of all the States. A considerable demand exists for lymph 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 lymph in doses from the dépôt 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 shews, so far as particulars are available, the number of persons vaccinated in each State from 1910 to 1915 inclusive:—

NUMBER OF PERSONS VACCINATED IN EACH STATE, 1910 to 1915.

Year.	N.S.W.*	Victoria.†	Q'land.	S. Aust.	W. Aust.	Tasmania.*
1910 ...	280	21,575	†	1,800	†	†
1911 ...	20	20,562	†	1,431	†	†
1912 ...	...	21,548	†	†	†	†
1913 ...	520,000	24,562	33,500	†	12,000	3,204
1914 ...	6,629§	23,536	30,000	940	3,017	†
1915 ...	4,080§	24,186	58||	854	†	†

* By officers of the Health Department and at public depots. † Children only, who were vaccinated under the Act, see (ii.) below. ‡ Returns not available. § Exclusive of the military. || At Health Department, Brisbane.

(i.) *New South Wales.* Although there is no provision for compulsory vaccination in this State, public vaccinators have been appointed. The large number of vaccinations in 1913 was due to the epidemic of small-pox in New South Wales, 1073 cases of the disease being recorded. 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. As a result of the small-pox epidemic in New South Wales in 1913, it is estimated that, exclusive of the vaccinations of children given in the above table, about 40 per cent. of the adult population were vaccinated or re-vaccinated in 1913.

(iii.) *Queensland.* Although compulsory vaccination is provided for in this State, under Part VII. of the Health Act 1900, only one remote district has been proclaimed under the Act. In the early part of 1912, the Queensland Government sent a medical expedition to the islands in Torres Straits. Over 1200 natives were vaccinated with a view to reducing the risk of the introduction of small-pox from New Guinea. As a result of the small-pox epidemic in Sydney, approximately 33,500 people were vaccinated in Queensland during 1913.

(iv.) *South Australia.* The Vaccination Act 1882, which applies to South Australia and the Northern Territory, is enforced by the vaccination officer of the State and by the Police Department. Under this Act vaccination was compulsory, but in 1901 an Act to abolish compulsory vaccination was passed. This latter Act was subsequently amended, and the present law is that no parent is liable to any penalty if, within 12 months from the birth of the child, he makes a declaration that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers the declaration to the vaccination officer. It is estimated that about 15 per cent. of the children born are vaccinated.

(v.) *Western Australia.* In this State vaccination is compulsory under the Vaccination Act 1878, which, however, remains almost a dead letter. Under the Health Act 1911, however, a "conscientious objection" clause was inserted, which is availed of by the majority of parents, so that the number of children vaccinated is very small. All district medical officers are public vaccinators, but they receive no fee for vaccinations.

Owing to the outbreak of small-pox in Sydney during 1913, it is estimated that not less than 12,000 children and adults were vaccinated in that year, while nearly 3000 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. The Act has not been enforced, and up to June, 1913, practically no vaccination of infants had been performed since the small-pox outbreak in Launceston in 1903, when 66 cases occurred with 19 deaths. During that year 24,857 were vaccinated in Tasmania. In 1913, owing to the outbreak of small-pox in New South Wales, there were 3204 cases of vaccination by public vaccinators.

§ 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 shown 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 some thirty-three 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 several efforts were made to deal with the mosquito question in the larger centres, but, owing to the absence of the 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 2000 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.

(ii.) *Institute of Tropical Medicine, Townsville.* In January, 1910, the Australian Institute of Tropical Medicine was inaugurated by the Commonwealth Government at Townsville. A special staff was appointed to carry out both the hospital and research work necessary. Owing to the scarcity of suitable laboratory animals for experimental purposes, and also to the absence of any systematic scheme of collaboration with other medical men throughout the tropical parts of Queensland, the initial difficulties confronting the director were considerable. These difficulties are, however, being overcome, and much valuable research has been made, particularly on the bacteriology of mosquitoes. At the present time an important examination is being carried out of the blood conditions of children born and reared in North Queensland, with a view of proving whether the blood of the children was normal as far as the formed elements are concerned, or whether deterioration had taken place, effecting an anæmia which could be attributed to climatic conditions only. It is hoped that the result of the work of the institute on these lines will decide the question of the climatic influence on the white man in the tropics, and will indicate whether the great experiment of populating tropical Australia with a white working community can be accomplished.

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 not been discovered at all. No mosquito-borne diseases are known to exist 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*¹ in Europe, with the object of reducing the number of deaths of infants from milk poisoning in the summer months. Reference has been made in a previous part of this book (see page 175) to the number of infantile deaths and the rates of infantile mortality in each State, and it will be convenient to here shew corresponding particulars for the year 1915, classified according to metropolitan and other districts in each State:—

1. 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.

INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY FOR METROPOLITAN AND OTHER DISTRICTS, 1915.

Districts.	N.S.W.	Victoria.	Queensland.	S.A.	W.A.	Tasmania.	C'wealth.
NUMBER OF INFANTILE DEATHS.							
Metropolitan	1,530	1,427	407	452	315	120	4,251
Other ...	2,052	981	890	339	285	303	4,856*
RATE OF INFANTILE MORTALITY.†							
Metropolitan	71.26	80.19	69.56	74.69	78.11	86.33	75.12
Other ...	67.67	68.78	64.33	67.04	66.54	72.37	67.52

* Including 6 in Commonwealth territories.
 one year of age per thousand births.

† i.e., the number of deaths of infants under

It may 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 857 to 859) of this book regarding Orphanages, and Industrial and Reformatory Schools in Australia. In previous issues of this book 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. 1101.)

§ 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 since the outbreak of 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 inquiry 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, and now possesses records of over 100,000 children, the results being detailed in the Department's annual reports. 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.

2. Co-ordination of Effort.—So far as it has been carried out, the medical inspection of school children goes 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. With a view to 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 making the results immediately comparable with those of Europe.

The Australian Anthropometric Committee has drawn 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 the section dealing with "Defence."

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 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. It was decided to extend the medical inspection of school children to such non-State schools as were agreeable. To cope with this extra work, six additional Medical Officers have been added to the staff. Attached to the staff are also five school nurses and six 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 (except about 10,000), 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 those children with sufficient drugs to carry on the treatment; (9) Visiting the parents of defective children by nurses to better secure the treatment of those children.

During the year 1914, 94,918 children were medically examined, exclusive of the number examined by the Travelling Hospital referred to hereafter.

Of this number, 76,323 were children attending public schools, and 15,662 attending private schools. Of the former children, 46,187, or 60 per cent., were found suffering from physical defects, and of these, 14,096, or 30 per cent., were treated, while of those attending non-State schools, 10,173, or 65 per cent., were found to be suffering from physical defects, and of these, 1700, or 16 per cent., were treated.

The most notable extension in the work during 1914 was the provision made for treating physically defective children in those parts of the State where it is difficult or impossible for them to obtain treatment otherwise. During the year 1914 a Travelling Hospital and a Travelling Ophthalmic Clinic were inaugurated, and arrangements were completed whereby the Metropolitan Dental Clinic and the Travelling Dental Clinic would start at the beginning of 1915. The Travelling Hospital, which is staffed by two medical officers, a dentist, and a nurse, works in those parts of the State where there are no resident doctors or dentists. After the school children have been medically examined, the treatment of defectives is undertaken. Minor operations are performed, such as the removal of adenoids and enlarged tonsils; eye defects are treated, while dental hygiene is attended to. The number of children treated by the Travelling Hospital and Ophthalmic Clinic during the four months they have been in operation, amounted to 2558.

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 have been appointed by the Education Department, and a commencement was made towards the end of 1909 by the examination of the pupils attending the Melbourne Continuation School. During the year 1909-10 the chief work of the inspectors consisted in carrying out a preliminary investigation of the health of the pupils in various schools in town and country. During the year ending 30th June, 1911, many of the ideas and intentions outlined in the previous Annual Education Report were initiated, and the foundation laid for a proper and systematic scheme of medical school instruction in future. In the year 1914-15, 9688 children attending elementary schools were examined, of whom 4434 were attending metropolitan schools. In addition, 2264 high school pupils were examined, making a total of 11,952 children. The following table shews the defects and their percentage amongst Victorian boys and girls in the elementary schools examined:—

**VICTORIA—NUMBER AND PERCENTAGE OF DEFECTS IN CHILDREN ATTENDING
ELEMENTARY SCHOOLS, 1914-15.**

Number of Children Examined.	PARTICULARS OF DEFECTS.										
	Vision.	Hearing.	Nose and Throat.	Dental.	Hair.	Lateral Curvature.	Lungs.	Heart.	Anæmia.	Skin.	Hernia.
NUMBER SUFFERING FROM DEFECTS.											
Boys 4867	500	470	757	2,591	58	8	...	23	129	51	41
Girls 4736	413	307	520	2,520	847	4	...	27	119	27	4
Total 9603	913	777	1,277	5,111	905	12	...	50	248	78	45
PERCENTAGE ON TOTAL NUMBER EXAMINED, SUFFERING FROM DEFECTS.											
Boys 4867	10.3	9.6	15.3	53.2	1.2	0.2	...	0.5	2.6	1.1	0.9
Girls 4736	8.7	6.5	10.2	53.2	17.6	0.1	...	0.6	2.5	0.6	0.1
Total 9603	9.5	8.1	13.3	53.2	9.4	0.1	...	0.5	2.6	0.8	0.5

5. **Queensland.**—In this State a systematic scheme for the inspection of State school children has recently been prepared and 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 have been added an Ophthalmic Inspector and two assistant Dental Inspectors. There are in addition three part-time Medical Inspectors. Under the present scheme the children are examined, and, if found defective, notices are sent to the parents. The children are treated either by their own doctors, or if they cannot afford private treatment, at the hospital. During the year 1914, 4247 in the Brisbane and surrounding districts were examined, and 6404 in the Cairns and Northern districts, besides a considerable number in Townsville. More than 19,000 dental examinations were made by the dental inspectors.

While adenoids appear to be the principal defect 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. In Cairns and Townsville several cases of ankylostomiasis and anæmia (probably due to the same disease) were found. The report of the Dental Inspector, 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 1000 school-going children in different parts of the State. No children under seven years nor over 15 years of age were 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 vol. 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 1914, 4940 children were examined; of these 3656 were attending metropolitan and 1284 country schools.

Of the total children examined (4940), there were 1182, or 23.9 per cent., with defects of sight, hearing, and adenoids, or with teeth so bad as to affect their general health, and the parents of these children were notified. 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 hilly 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 3300 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, and during 1912, taking Government and Private schools together, 135 out of 668 schools were medically inspected, while out of 48,423 children, 11,369 were examined, or about 23.5 per cent. From the figures at present available it appears that about 71.5 per cent. of the children examined were reported as in some way defective, most of the defects being connected with the teeth. Excluding dental defects and uncleanness, the number reported as defective is about 9 per cent.

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 1200 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 1914 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. During 1914, 5719 children were examined in the Southern Country districts; of these, those suffering from adenoid growths numbered 1088; enlarged tonsils, 198; defective vision, 177; and defective hearing, 129. In the Northern districts, of the 5229 children examined, there were 210 cases of neglected post-nasal growths and 310 cases of enlarged tonsils. Eye defects numbered 167, and cases of marked defective hearing 53. With regard to dental condition, all the Medical Inspectors agree that the teeth of the children of Tasmania seem to be uniformly bad, and steps are being taken to establish dental clinics in Hobart and Launceston.

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, survey of the main points is being pushed forward. Good progress has been made with the erection of the dam at the Cotter River, and the pipehead reservoir at Mt. Stromlo has been completed. The power plant is running continuously and satisfactorily, and is supplying current to all the important points. The hospital is now fully equipped and staffed. Considerable progress has been made with the nursery in connection with the afforestation scheme, and the small experimental orchard is looking most promising. A brick-making plant has been completed, while the construction of the main outfall sewer is proceeding satisfactorily.

The following figures indicate the actual work done in road development since the roads were taken over:—

Forming and finishing ...	...	...	...	90½ miles
Gravelling and metalling ...	...	...	...	87½ miles
Clearing out, repairing culverts, etc.	...	...	...	161 miles
General road repairs ...	...	...	...	154 miles
Cutting water tables, drains, etc.	...	...	...	121 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. Two thousand six hundred sheep and 130 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 279 to the area of alienated, acquired and leased land within the Territory. The valuation of lands within the Territory is being proceeded with. All areas valued are classified into three classes of agricultural and three classes of grazing lands.

4. **Lands at Jervis Bay.**—A Bill to provide for the transfer to the Commonwealth of 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, has been passed by the New South Wales Legislature.

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 Railway Commissioner. 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, 1915, when a total of 1829 was enumerated. It is estimated that 613 persons were absent from the Territory on the date in question. The live stock in the Territory, according to the latest returns, comprises:—horses, 1606; cattle, 4961; sheep, 134,679; and pigs, 226.

7. **Educational Facilities.**—As the result of a conference between the Administrator of the Territory and the New South Wales Education Department, it is proposed that the latter shall, for the time being, continue the administration of education in the Territory, the expenditure involved to be refunded annually by the Commonwealth to the State. Schools have been opened at the Cotter River works and at the Royal Military College, Duntroon. (See also paragraph 3, page 802.)

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, 1915, was for 1910-11 £20,216, 1911-12 £68,026, 1912-13 £137,497, 1913-14 £252,204, and 1914-15 £213,258, making a total of £691,201.

The following table shows the particulars of expenditure for the year ended 30th June, 1915, and also the total expenditure on each item since 30th June, 1910:—

Item.	Expenditure, 1914-15.	Total Expenditure to 30th June, 1915.
	£	£
Buildings	7,637	73,557
Power Plant and Power House	31,530	66,036
Electric Supply	11,357	22,160
Roads and Transport	12,839	94,630
Water Supply	78,012	196,614
Sewerage	11,646	13,738
Materials and Stores	6,156	41,904
Running Expenses and Miscellaneous	6,444	20,237
Health, Administration, Education, etc.	18,061	78,140
Afforestation	5,941	9,896
Surveys	9,453	29,502
Queanbeyan-Canberra Railway	4,465	35,070
Brickworks	9,717	9,717
Total	213,258	691,201

The revenue of the Federal Territory for the year ended 30th June, 1915, was as follows:—

From lands in process of alienation	£963
„ Crown lands held under State laws (leases) ...	404
„ leases of acquired lands	8,600
„ agistment	932
„ rates	1,057
„ leases of acquired lands north of the Molonglo ...	5,025
Total revenue ...	£16,981

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 981).

10. **Naval College at Jervis Bay.**—See section of this book dealing with Defence, page 989.

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 1040 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 2143. The Chinese population, at its maximum during the years of railway construction, 1887 and 1888, has gradually dwindled, the estimate for 1914 being 1033. Japanese, first recorded in 1884, increased up to the year 1898, falling again after five years. The highest recorded population, excluding aborigines, was 7533 in 1888; the estimate for 1915 was 4563. 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 1915.

Year ended 31st December.	Male.	Female.	Total.	Year ended 31st December.	Male.	Female.	Total.
1901 ...	3,999	674	4,673	1909 ...	2,927	576	3,503
1902 ...	3,847	627	4,474	1910 ...	2,738	563	3,301
1903 ...	3,582	652	4,234	1911 ...	2,662	586	3,248
1904 ...	3,514	692	4,206	1912 ...	2,854	621	3,475
1905 ...	3,368	678	4,046	1913 ...	2,995	677	3,672
1906 ...	3,248	656	3,904	1914 ...	3,252	721	3,973
1907 ...	3,095	642	3,737	1915 ...	3,687	876	4,563
1908 ...	2,963	609	3,572				

The census population (3rd April, 1911) was 2734 males, 576 females; total, 3310. The estimate for 31st December, 1915, gives 3687 males, 876 females, a total of 4563.

(ii.) *Movement of Population.* The following is a summary of movement of population in 1914 (excluding overland migration):—

MOVEMENT OF POPULATION, NORTHERN TERRITORY, 1914.

Europeans—		Europeans—		Excess—	
Inwards, oversea	922	Outwards, oversea	598	Immigration over	
Births ...	28	Deaths ...	43	emigration ...	152
Others—		Others—		Births over deaths	—20
Inwards, oversea	97	Outwards, oversea	269		
Births ...	30	Deaths ...	35		
Increase ...	1,077	Decrease ...	945	Net gain ...	132

The immigration and emigration of the Territory in five-year periods from 1881 to 1910, and for the four years 1911 to 1914, are shewn in the following table:—

MIGRATION, NORTHERN TERRITORY, 1881 to 1914.

Year.	Immigra- tion.	Emigra- tion.	Year.	Immigra- tion.	Emigra- tion.	Year.	Immigra- tion.	Emigra- tion.
1881-5	3,683	3,787	1896- 1900	2,538	2,259	1912	840	625
1886-90	9,208	7,250	1901-5	2,211	2,932	1913	982	855
1891-5	1,958	2,353	1906-10	2,559	3,125	1914	1,019	867
			1911	412	440			

(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 were living in a civilised or semi-civilised condition in the vicinity of European settlements, were enumerated—the males being 743, females 480; total, 1223. 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 Council of Advice is provided for, not to exceed six in number, to whom the Administrator may submit questions for consideration and advice. The Administrator may, if he think fit, act in opposition to the advice given, but in such case must report to the Minister. 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. District Councils are authorised to assess land values and levy rates on unimproved value. 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. 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. 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 Ordinance of 1915, 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.

(vii.) *Schedule of Ordinances.* A schedule of the ordinances promulgated up to the end of 1915 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.

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.

§ 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 1000 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 season. 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 tropical, many of the forms belonging 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*, *Urticææ*.

Fuller particulars regarding fauna and flora are given in Year Book No. 6, pp. 1116-7.

§ 5. Production.

There is no great home consumption of the articles produced in the Territory, the greater part being exported oversea and to the States of the Commonwealth.

1. **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 1800 merino sheep. The estimated number of stock on 31st December, 1914, is given in the appended statement:—

LIVE STOCK, NORTHERN TERRITORY, 31st DECEMBER, 1914.

Horses.		Cattle.		Sheep.		Pigs.
21,985	...	414,558	...	70,200	...	1,240

The dairying industry has not been developed, although it has been shewn that it is possible to make butter of good quality. 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.) *Freezing Works.* Extensive freezing 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 reasonable terms under which the proprietors have agreed to treat with stock owners. It is hoped that the works will be in operation in 1916, and will materially assist in the development of the Territory.

2. *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.

(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, 1910 to 1914.

Year.		Gold.	Tin Ore.	Wolfram.	Silver Lead Ore.	Copper Ore.	Total Value.
		£	£	£	£	£	£
1910	...	21,711	31,113	6,686	...	1,196	60,706
1911	...	30,910	22,900	4,048	...	1,470	59,353*
1912	...	22,671	27,001	3,330	820	3,998	57,820
1913	...	13,250	25,526	3,140	2,228	482	44,626
1914	...	10,757	15,200	4,025	545	4,860	35,807†

* Includes bismuth valued at £25.

† Includes mica valued at £420.

(ii.) *Employment of Miners, 1910 to 1914.* The following table shews average number employed in mining annually for five years, distinguishing Chinese:—

MINERS, NORTHERN TERRITORY, 1910 to 1914.

Year.		Europeans.	Chinese.	Total.
1910	...	140	602	742
1911	...	101	575	676
1912	...	84	542	626
1913	...	90	530	620
1914	...	136	462	598

(iii.) *Mining Accidents, 1900 to 1914.* 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. 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.

3. **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 has led to a revival. In 1914, 42 boats were engaged, valued, with their equipment, at about £6500; 250 men were employed. Twenty-five tons of pearl shell were obtained, valued at £6110. The value of pearls produced was not stated in 1914, but was given as £1415 in the preceding year. 312 lbs. of tortoise-shell, valued at £265, and bêche-de-mer, valued at £2969, were also raised. The above figures give only a partial view of the value of the fishing industry, as large quantities of pearlshell and bêche-de-mer are sent away unrecorded.

§ 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	235,650	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 1911 to 1914-15 is given hereunder:—

VALUE OF DIRECT OVERSEA TRADE, NORTHERN TERRITORY, 1901, and 1911 to 1914-15.

Items.	1901.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£
Imports ...	37,539	14,284	18,130	20,977	83,708
Exports ...	29,191	44,662	59,106	67,911	13,319
Total ...	66,730	58,946	77,236	88,888	97,027

The principal items of oversea export were tin, £5830; wolfram, £1030; buffalo hides, £2050.

From 1881 to 1910, the annual average trade in five-year periods was:—

VALUE OF TOTAL IMPORTS AND EXPORTS, NORTHERN TERRITORY, 1881 to 1910.

Period.	Average Annual Imports.	Average Annual Exports.	Period.	Average Annual Imports.	Average Annual Exports.
	£	£		£	£
1881-1885	125,600	92,727	1896-1900	127,489	158,978
1886-1890	236,099	113,156	1901-1905	108,337	224,937
1891-1895	109,704	177,463	1906-1910	66,590	277,718

2. **Shipping.**—The Territory's oversea commerce is carried chiefly in British bottoms. One of the lines maintains a monthly service, others are irregular. Coastal shipping is chiefly in Australian vessels. The following table shews the shipping of the Territory:—

SHIPPING, NORTHERN TERRITORY, 1881 to 1914.

Period.	Arrivals.		Departures.	
	No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage.
1881—1885 (Annual)	72	71,814	72	71,692
1886—1890 (Average)	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	138,052
1913 ...	83	171,504	84	171,594
1914 ...	82	173,943	81	172,482

§ 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 Pine Creek, a length of $145\frac{1}{2}$ miles, of 3 ft. 6 in. gauge; and Pine Creek is distant about 1100 miles from Oodnadatta. The extension of this line southwards from Pine Creek to Katherine River ($54\frac{1}{2}$ miles) is being proceeded with. In November, 1913, the field survey work, begun in December, 1912, was completed, and the line is now under construction; while the line to connect Katherine River with Oodnadatta (about 1030 miles) is in course of survey. 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. The service extends to China and Japan. There is also a quarterly contract service between Darwin and Boroloola, calling half-yearly at Roper River; and a service every two months between Darwin and Wyndham, on the estuary of Ord River, in the north-east of Western Australia. These are subsidised according to agreement for three years, the amount for the first service being £350, and for the second, £125 per voyage.

(ii.) *Inland.* Posts are also despatched into the interior of the Continent. One route is from the Katherine Telegraph Station southwards as far as Renner Springs, and then eastwards to Anthony Lagoon, where the Queensland mailman is met. The service is maintained with difficulty, on account of the many hardships caused by the alternations of extreme drought and flood.

Other inland routes are served, and there is a frequent service in Darwin.

3. **Telegraphs.**—The transcontinental telegraph line, covering a length of 2230 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, 1914-15.**—In the Commonwealth finance statement for 1914-15, 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, 1914-15.

REVENUE.		£	EXPENDITURE (CHIEF ITEMS.—cont.		£
Customs and Excise...	...	13,466	Administrator's Office	...	76,441
Postal, Telegraph & Telephone	...	8,922	Port Augusta Railway Loans	...	73,958
Railways	...	21,082	(Interest)	...	30,232
Territorial	...	12,210	New Works	...	28,705
Land and Income Tax	...	5,522	Railways and Transport—	...	20,360
Miscellaneous	...	14,211	Salaries, etc.	...	19,319
Quarantine	...	11	Gold Fields and Mining—	...	16,009
Port Augusta - Oodnadatta	...		Salaries, etc.	...	20,226
Railway	...	7,641	Land and Surveys—Salaries,	...	61,540
Deficiency on year's transactions	...	391,862	etc.	...	
		474,927	Loss on Railway Working	...	
EXPENDITURE (CHIEF ITEMS).		£	Postal Department...	...	
Northern Territory Loans (ex-	...		Miscellaneous	...	
-cluding Port Augusta Rail-	...				
way)	...	128,137	Total	...	474,927

In addition, the following expenditure was made from the Loan Fund during the year:—

Railway—Pine Creek to Katherine River	...	£94,392
Redemption of Port Augusta Railway Loans	...	15,077
Total	...	£109,469

The Commonwealth received £151,513 from South Australia, being the credit balance of Northern Territory funds, but assumed responsibility for interest on loans and redemptions.

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, 1915, was £3,359,891. The following is a summary:—

PUBLIC DEBT, NORTHERN TERRITORY, 30th JUNE, 1915.

Principal.		Rate.		Annual Interest.
£		%		£
27,216	...	3	...	817
154,992	...	3½	...	5,425
1,798,383	...	3¾	...	67,439
1,379,300	...	4	...	55,172
Total	...	—	...	128,853

§ 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 246, 247 *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, 1913, and 1914. 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 1280 acres of first class agricultural land. The terms of 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. 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.

2. **Number of Holdings.**—The table on page 243 *supra* shews the total area under lease, license, and permit in 1901 and in each year from 1910 to 1914. At the end of 1915 there were in existence, under South Australian Acts, 231 pastoral leases covering over 64,000,000 acres, and 94 pastoral permits covering 14,000,000 acres. Under the Crown Lands Ordinance of 1912, there were 142 grazing licenses covering nearly 29,000,000 acres, and 25 pastoral leases covering nearly 5,000,000 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, that 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 1915.**—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, 1914 and 1915, 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. And 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

* Some description of the various methods of testing the state of the labour market may be found in the Board of Trade Memorandum on Industrial Conditions (Second Series). Cd. 2337, 1904, pp. 79 to 125.

See also "Rapport Préliminaire sur la Statistique Internationale du Chômage" M. Louis, Varlez, Gand, 1912.

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 1915 (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

* 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.

It will be seen that the extent of unemployment was greatest in 1914 and least in 1911. The general trend of the figures shews a decline in unemployment since 1896. In 1912, however, there was an increase of about 0.8 per cent., while the percentage at the end of 1913 shews a slight decrease compared with the previous year. The high percentage for 1891 was largely due, no doubt, to the dislocation of industry following the maritime strike, while the still higher percentage for 1896 may be traced to the prevalent industrial depression, especially in Victoria, caused by the bank failures and the severe droughts. The high percentage during the last half of 1914 was due to the drought and the war. It may be noticed that, though the number of unions reporting in 1896 is the same as in 1891, the number of members shews a large reduction. This indicates that, in time of severe industrial depression, when employment is bad, the members tend to drift away from the unions. Many probably leave their ordinary places of residence in search of work elsewhere.

The accuracy of the above results as an index to the general state of employment among *all* wage-earners in Australia is confirmed by the results obtained from the censuses of 1891, 1901 and 1911, the closeness of the percentages obtained from these two independent sources for the two latter years being remarkable. A comparative table is given in Report No. 2 (p. 18) of the Labour and Industrial Branch of this Bureau.

3. **Unemployment in Different Industries, 1915.**—The following table shews the percentages unemployed in several of the fourteen industrial groups. It may be observed that for those industries in which unemployment 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 1915.

Industrial Group.	Number Reporting.		Unemployed	
	Unions.	Members.	Number.	Percentage.
I. Wood, Furniture, etc. ...	17	11,480	728	6.4
II. Engineering, Metal Works, etc. ...	56	39,409	1,714	4.3
III. Food, Drink, Tobacco, etc. ...	59	22,924	3,474	15.2
IV. Clothing, Hats, Boots, etc. ...	29	20,756	776	3.7
V. Books, Printing, etc. ...	27	8,916	216	2.4
VI. Other Manufacturing ...	63	25,141	1,054	4.2
VII. Building ...	55	33,032	3,131	9.5
VIII. Mining, Quarrying, etc. ...	24	28,627	2,406	8.4
X. Other Land Transport ...	14	9,805	283	2.9
IX., XI., XII., XIII. and XIV., Other and Miscellaneous ...	121	73,109	4,707	6.4
All Groups ...	465	273,149	18,489	6.8

From the above figures it may be seen that the degree of unemployment varies considerably in different industries, ranging from 2.4 per cent. in Group V. (Books, Printing, etc.) to 15.2 per cent. in Group III. (Food, Drink, Tobacco, etc.):

4. **Unemployment in each State, 1915.**—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 1045), 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 1915.

State.	Number Reporting.		Unemployed.	
	Unions.	Members.	Number.	Percentage.
New South Wales ...	139	119,759	6,594	5.5
Victoria ...	101	79,696	6,270	7.9
Queensland ...	47	27,747	2,782	10.0
South Australia ...	62	20,979	1,144	5.4
Western Australia ...	74	19,523	1,230	6.3
Tasmania ...	42	5,445	469	8.6
Commonwealth...	465	273,149	18,489	6.8

The above figures shew that, at the time indicated, the degree of unemployment was greatest in Queensland, followed, in the order named, by Tasmania, Victoria, Western Australia, New South Wales, and South Australia.

§ 3. Variations in Nominal and Effective Wages.

1. **Variations in Wage Index-Numbers in Various Industries, 1901 to 1915.**—The total number of different occupations for which particulars as to wages are available back to 1891 is 652. In 1913 the number of occupations was increased to 3948. These wages relate generally to union rates, but in a few cases, more especially for the earlier years, when there were no union 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. 5, page 45). 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 (= 1000). 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 1915. (WEIGHTED AVERAGE WAGE FOR ALL GROUPS IN 1911 = 1000).

Particulars.	No. of Occupations included.		1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
	1901 to 1912.	1913-15.											
I. Wood, Furniture, etc.	27	270	1,019	1,024	1,049	1,051	1,055	1,097	1,125	1,144	1,142 [†]	1,161	1,174
II. Engineering, Metal Works, etc.	101	636	945	957	971	989	995	1,006	1,064	1,104	1,113	1,127	1,174
III. Food, Drink, etc.	34	576	871	887	903	905	914	928	991	1,038	1,074	1,085	1,127
IV. Cloth'g, Hats, Boots, etc.	13	124	708	841	856	867	935	976	981	990	1,019	1,034	1,037
V. Books, Printing, etc.	25	205	996	1,002	1,010	1,021	1,070	1,102	1,149	1,188	1,234	1,246	1,259
VI. Other Manufactur'g	102	875	907	906	905	915	923	947	1,013	1,037	1,076	1,093	1,25
VII. Building	67	190	1,050	1,070	1,105	1,114	1,130	1,163	1,213	1,245	1,270	1,276	1,285
VIII. Mining, Quarries, etc.	71	161	1,067	1,093	1,117	1,116	1,120	1,168	1,194	1,216	1,270	1,272	1,299
IX. Rail & Tram Services	68	224	1,021	1,024	1,027	1,031	1,064	1,074	1,113	1,164	1,165	1,165	1,187
X. Other Land Transp't	9	70	795	795	813	836	836	889	910	993	996	1,026	1,041
XI. Shipping, etc.	74	198	751	778	787	787	856	857	871	942	953	972	1,026
XII. Agriculture, Pastoral, etc.	8	72	627	671	730	736	787	798	839	944	965	965	969
XIII. Domestic, Hotels, etc.	17	114	598	606	608	626	727	743	887	894	918	935	948
XIV. Miscellaneous	36	233	759	771	812	820	843	889	929	1,015	1,045	1,054	1,065
All Groups*	652	3,948	848	866	893	900	923	955	1,000	1,051	1,076	1,085	1,102

NOTE.—The figures in the above table are comparable both horizontally and vertically. * Weighted average; see graph on page 1065 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 increase during the whole period under review. The wage index-number increased from 848 in 1901 to 1000 in 1911, 1051 in

1912, and to 1102 in 1915. It will be observed that the increase from 1901 to 1915 was relatively greatest in Class XIII. (Domestic, Hotels, etc.), and least in Classes I. (Wood, Furniture, etc.), and VIII. (Mining, Quarries, etc.).

It was pointed out in 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 1915.—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 (= 1000). 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.

It will be seen that the relative increase from 1901 to 1915 was greatest in Tasmania and least in Queensland.

These index-numbers are, of course, also reversible, and an illustration was given in Report No. 2 (see page 27).

**VARIATIONS IN NOMINAL WAGE INDEX-NUMBERS IN DIFFERENT STATES,
1901 to 1915.**

(WEIGHTED AVERAGE WAGE FOR COMMONWEALTH IN 1911=1000.)

States.	No. of Occupations included.		1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
	1901 to 1912.	1913-15.											
New South Wales	158	874	858	886	910	913	942	968	1,003	1,058	1,088	1,096	1,124
Victoria ...	150	909	796	807	857	871	887	924	985	1,038	1,058	1,065	1,078
Queensland ...	87	627	901	909	914	925	946	960	997	1,010	1,027	1,042	1,060
South Australia ...	134	567	819	832	858	868	905	951	1,013	1,048	1,061	1,062	1,067
Western Australia	69	489	1,052	1,053	1,053	1,061	1,068	1,116	1,152	1,191	1,214	1,226	1,236
Tasmania ...	54	482	719	749	725	725	732	772	799	934	1,025	1,028	1,039
Commonwealth*	652	3,948	848	866	893	900	923	955	1,000	1,051	1,076	1,085	1,102

* 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 1066, 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 during 1914 at a higher rate than in any other State, and though the general level in that State is now only a little higher than in Tasmania, it is gradually approaching South Australia, where the rate of increase in 1914 was slower than in any other State. 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. In 1912 and 1913 wages in that State increased very rapidly, and their general level is now not far below those of the other States, except Western Australia.

Between 1906 and 1915 the increase in wages was greatest in Tasmania (38.7 per cent.), followed in the order named by Victoria (33.6 per cent.), South Australia (28.2 per cent.), New South Wales (26.9 per cent.), Western Australia (17.4 per cent.), and Queensland (16.6 per cent.)

Comparing 1915 with 1901, the increase was greatest in Tasmania (44.5 per cent.), followed in the order named by Victoria (35.4 per cent.), New South Wales (31.0 per cent.), South Australia (30.3 per cent.), Queensland (17.6 per cent.), and Western Australia (17.5 per cent.). As the index-numbers are comparable throughout, it may be seen from the last vertical column that nominal wages are highest in Western Australia, followed in the order named by New South Wales, Victoria, South Australia, Queensland, and Tasmania.

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 correction, inasmuch as they take no account of variations in purchasing-power of money. In computing these effective wage index-numbers, the nominal wage index-numbers given in paragraph 2 hereof have been divided by the purchasing-power-of-money index-numbers in Section IV., paragraph 6 of Report No. 6, p. 26. The resulting index-numbers shew for each State and for the Commonwealth for the years specified the variations in *effective wages*.

The following table shows the effective wage index-numbers for each State for each of the years indicated from 1901 to 1915.

**VARIATIONS IN EFFECTIVE WAGES IN EACH STATE AND COMMONWEALTH,
1901 to 1915.***

Particulars.	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
New South Wales ...	961	949	983	926	952	973	973	922	924	909	850
Victoria ...	915	919	979	941	980	981	1,037	981	1,007	964	844
Queensland ...	1,172	1,165	1,151	1,081	1,112	1,095	1,090	1,032	1,060	1,045	912
South Australia ...	948	934	960	911	914	943	957	906	947	929	847
Western Australia ...	1,024	1,029	1,068	1,060	1,081	1,091	1,023	1,032	1,076	1,073	1,011
Tasmania ...	827	833	818	788	769	812	838	896	976	943	843
Commonwealth ...	964	960	996	946	974	985	1,000	955	975	952	862

* 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 1906 onwards are shewn in the graph on page 1066. A comparison between this graph and that shewing nominal wages, 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 shewing 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, and 1913 were marked by increases in effective wages, but that in each of the years 1908, 1912, 1914 and 1915 there were rapid decreases. Each of these years in which effective wages declined were years of severe drought, when there was a rapid increase in cost of living. In 1914 wages increased 0.9 per cent., but cost of food, groceries, and housing accommodation went up 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 cost of food, groceries, and house rent combined increased 12.1 per cent., resulting in a decrease of 9.5 per cent. in the effective wage.

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 cost of living, it appears probable that this tendency will continue in the future.

The relative positions of the States shewn in the two graphs is also of interest. Queensland is lowest but one in regard to nominal wages, but is higher than any other

State except Western Australia in regard to effective wages. New South Wales, which comes second in nominal wages, is third in effective wages. South Australia occupies the fourth place in each graph. Victoria changes from the third to the fifth place, and Tasmania is the lowest in each case. Western Australia is first in regard to both nominal and effective wages, but its level above the other States is much less with respect to effective than nominal wages.

4. **Variations in Effective Wages and Standard of Comfort, 1901 to 1915.**—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. 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 following 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 is 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."¹

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 increased cost of living, but also for the relative extent of unemployment.

UNEMPLOYMENT, PURCHASING-POWER-OF-MONEY AND NOMINAL AND EFFECTIVE WAGE INDEX-NUMBERS, 1901 to 1915.†

Year.	I. Nominal Wages Index- Numbers.	II. Percentage Unem- ployed.	Rate of Wages Index- Numbers, allowing for Lost Time.		V. Purchas- ing-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

† As to the effect in abnormal periods, see Labour Report No. 6, Section iv., par. 3, pp. 20-2.

1. 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."

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 1907 there was a large decrease in unemployment, which is reflected in the effective wage index-number for that year. The rise in the cost of commodities in 1908, which was a drought year, caused a considerable fall in effective wages. From that year, however, until the year 1911, the effective wage index-number steadily increased from 934 to 1000, but this increase was almost counterbalanced by the fall in 1912, which was due to the large increase in cost of commodities and the smaller increase in unemployment. In 1913 the purchasing power of money index-number was practically the same as that for 1912, while nominal wages increased and unemployment decreased, with the result that the effective wage index-numbers, both for full work and allowing for unemployment, shew an increase. The effective wage index-numbers for 1914 both shew a decrease since the preceding year. This decrease is particularly marked in the case of the index-numbers in which allowance is made for unemployment. In 1915 there was a decrease in unemployment when compared with the preceding year, but on the other hand the cost of food and groceries shews a very substantial increase, so that while nominal wages increased slightly, effective wages index-numbers, both for full work and allowing for unemployment, shew a large decrease, and are, in fact, lower than for any other year covered by the investigation.

§ 4. Changes in Rates of Wages.

1. **General.**—The collection of information regarding changes in rates of wages throughout the Commonwealth dates from the 1st January, 1913.

(i.) *Definition of a Change in Rate of Wages.* For the purpose of these statistics a change in rate of wages 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.

(ii.) *Sources of Information.* Primary information merely as to the fact that a change in rate of wages 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 wages; (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 wages, 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 unions, 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 wages paid before and

* 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.

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.¹

When the forms are returned from the various persons who are required to fill them in, 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 Wages in each State during 1914 and 1915.—The following table gives particulars of changes which occurred in each State of the Commonwealth during the years 1914 and 1915 respectively. 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 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 wages 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.

CHANGES IN RATES OF WAGES IN EACH STATE.—SUMMARISED RESULTS FOR YEARS 1914 and 1915.

State.	No. of Changes.		No. of Persons Affected.		Total Net Amount of Increase per Week.		Average Increase per Head per W'k.	
	1914.	1915.	1914.	1915.	1914.	1915.	1914.	1915.
					£	£	s. d.	s. d.
New South Wales...	185	169	55,469	109,260	13,558	29,525	4 10	5 5
Victoria ...	69	87	29,876	39,087	6,688	8,078	4 6	4 2
Queensland ...	50	60	20,198	22,864	5,128	6,398	5 1	5 7
South Australia ...	18	31	5,624	10,206	1,941	3,539	6 11	6 11
Western Australia ...	42	25	5,399	2,661	2,423	562	5 9	4 3
Tasmania ...	19	24	4,262	3,147	804	778	3 9	4 11
N. Territory ...	...	3	...	185	...	87	...	9 5
Commonwealth...	*384	†401	*125,218	†197,410	*30,685	†51,905	*4 11	†5 3

* Including one change brought about by agreement made pursuant to Section 24 of the Commonwealth Conciliation and Arbitration Act, the particulars relating to which in respect to the numbers of workpeople who were affected and the net amount of increase per week in each State were not ascertainable.

† Including two changes (common to all States) which resulted in an increase in wages of £2938 per week to 10,000 workpeople. The particulars relating to the numbers of workpeople who were affected and the net amount of increase per week in each State were not ascertainable.

1. In each of the Quarterly Bulletins since the beginning of the year 1915 a summary is included, giving the following particulars with respect to each change in rate of wage:—(a) Locality, industry and occupations affected; (b) date from which change took effect; (c) approximate number of workpeople affected (male and female separately); (d) method by which change brought about; and (e) brief information as to the extent of the change.

Included in the particulars contained in the foregoing table are those relating to five decreases during the year 1914 and seven during the year 1915. 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, and a decrease of £59 per week; and in 1915: New South Wales two, Tasmania two, Victoria, South Australia and Western Australia one each, affecting in all 494 workers to the extent of a decrease of £81 per week. It may be observed that not only were the changes in rates of wages recorded greater in number in 1915 than in 1914, but were also of greater magnitude in the average number of persons affected and in the average increase per head per week.

3. Number and Magnitude of Changes in Rates of Wages in the Commonwealth, Classified according to Industrial Groups, 1914 and 1915.—In the following table particulars are given of the number of changes, the number of persons affected, the total amount of increase per week, and the average increase per head per week, classified according to Industrial Groups throughout the Commonwealth during the years 1914 and 1915.

**CHANGES IN RATES OF WAGES IN COMMONWEALTH, CLASSIFIED IN
INDUSTRIAL GROUPS, 1914 and 1915.***

Industrial Groups.	No. of Changes.		No. of Persons Affected.		Total Net Amount of Increase per week.		Average Increase per Head per week.	
	1914.	1915.	1914.	1915.	1914.	1915.	1914.	1915.
I. Wood, Furniture, Timber, etc.	14	18	10,762	4,912	£ 2,516	£ 1,131	s. d. 4 8	s. d. 4 7
II. Engineering, Metal Works, etc.	30	51	9,582	32,322	1,834	8,835	3 10	5 6
III. Food, Drink, Tobacco, etc. ...	58	48	22,692	18,214	4,958	4,204	4 6	4 7
IV. Clothing, Hats, Boots, etc. ...	10	7	14,970	1,023	2,461	339	3 3	6 8
V. Books, Printing, etc. ...	17	7	2,686	1,724	523	539	3 11	6 3
VI. Other Manufacturing ...	41	61	9,061	15,451	2,481	2,921	4 10	3 9
VII. Building ...	19	13	8,380	6,616	2,471	1,173	5 11	3 7
VIII. Mines, Quarries, etc. ...	25	37	7,776	19,925	1,581	5,507	4 1	5 6
IX. Rail and Tramway Services...	15	19	5,313	27,140	1,334	4,629	5 1	3 5
X. Other Land Transport ...	10	15	4,020	5,468	716	2,062	3 7	7 7
XI. Shipping, etc. ...	26	21	16,758	13,154	6,933	3,702	8 3	5 8
XII. Pastoral, etc. ...	2	3	590	2,300	120	852	4 1	7 5
XIII. Domestic, Hotels, etc. ...	4	11	939	5,011	188	1,095	4 0	4 4
XIV. Miscellaneous ...	94	54	11,689	44,150	2,869	14,896	4 11	6 9
Total, Commonwealth ...	365	365	125,218	197,410	30,685	51,905	4 11	5 3

* In this table an Industrial Award or Agreement under the Commonwealth Conciliation and Arbitration Act is counted as one change only, although such Award or Agreement may be operative in more than one State.

In point of number of persons affected by changes in 1915, Group XIV. (Miscellaneous), with 54 changes, affecting 44,150 persons, comes first. This is followed in the order named by Groups II. (Engineering, etc.); IX. (Rail and Tramway Services); VIII. (Mines, Quarries, etc.); III. (Food, Drink, Tobacco, etc.); VI. (Other Manufacturing), down to Group IV. (Clothing, Hats, Boots, etc.), with seven changes, affecting 1023 persons only. In point of individual increase per head per week, Industrial Group X. (Other Land Transport), with an average increase of 7s. 7d. per week, comes first, followed closely by Group XII. (Pastoral, etc.). Other increases above 5s. per week per worker were recorded for the following Groups:—II., IV., V., VIII., XI., and XIV. respectively.

4. **Changes in Rates of Wages in Female Occupations.—Number and Effect of Changes in each State, 1914-1915.**—Included in the changes in rates of wages recorded in the tables on pages 1053-4 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 affected, etc., are set out hereunder.

(i.) *Changes in Rates of Wages according to States.* In the following table, particulars are given of the effect of changes in rates of wages to female workers, as recorded for each State during the years 1914 and 1915 inclusive:—

CHANGES IN RATES OF WAGES.—FEMALE OCCUPATIONS.—EFFECT OF CHANGES IN EACH STATE, 1914-1915.

Year.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
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NUMBER OF PERSONS AFFECTED.

1914	...	7,696	4,232	570	...	783	30	13,311
1915	...	11,588	3,065	1,033	399	73	360	16,518

NET AMOUNT OF INCREASE PER WEEK.

		£	£	£	£	£	£	£
1914	...	1,400	542	73	...	266	7	2,288
1915	...	2,550	506	148	108	17	48	3,377

AVERAGE INCREASE PER HEAD PER WEEK.

		s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
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

It will be seen that during the past two years the greatest movement in any State in wages in female occupations has taken place in New South Wales. In view of the chief industries (millinery, dressmaking, shirtmaking, and whitework) in which females are employed not being subject to any award of an industrial board in this State, the results are notable.

(ii.) *Changes in Rates of Wages in Female Occupations according to Industrial Groups.* The particulars set out in the immediately preceding table are further analysed and classified according to the industrial groups in which the changes took place in each State. It should be observed that with respect to the figures for the year 1915 for Victoria and South Australia, particulars as to a change in the rate of wage for fruit harvesters is included in the totals set out under Group XIV. (Miscellaneous).

**CHANGES IN RATES OF WAGES IN FEMALE OCCUPATIONS IN EACH STATE,
CLASSIFIED ACCORDING TO INDUSTRIAL GROUPS, 1914-1915.**

PARTICULARS.	INDUSTRIAL GROUP.							All Groups
	III. Food, Drink, etc.	IV. Cloth- ing, Hats, Boots, etc.	V. Books, Print- ing, etc.	VI. Other Manu- factur- ing.	XIII. Dom- estic, Hotels, etc.	XIV. Miscel- lane'us		
1914.								
NEW SOUTH WALES—								
Number of Persons affected	...	719	6,800	...	83	33	61	7,696
Amount of Increase per week	£	100	1,261	...	20	7	12	1,400
VICTORIA—								
Number of Persons affected	...	1,270	1,800	820	112	...	230	4,232
Amount of Increase per week	£	184	152	161	20	...	25	542
QUEENSLAND—								
Number of Persons affected	...	120	300	150	...	...	...	570
Amount of Increase per week	£	12	49	12	...	...	...	73
WESTERN AUSTRALIA—								
Number of Persons affected	230	553	783
Amount of Increase per week	£	90	176	266
TASMANIA—								
Number of Persons affected	...	30	...	...	...	...	...	30
Amount of Increase per week	£	7	...	...	...	...	...	7
COMMONWEALTH—								
Number of Persons affected	...	2,139	8,900	970	195	263	844	13,311
Amount of Increase per week	£	303	1,462	173	40	97	213	2,288
1915.								
NEW SOUTH WALES—								
Number of Persons affected	...	992	...	48	120	3,659	6,769	11,588
Amount of Increase per week	£	136	...	8	7	833	1,566	2,550
VICTORIA—								
Number of Persons affected	...	940	...	90	1,643	...	*392	3,065
Amount of Increase per week	£	83	...	18	271	...	134	506
QUEENSLAND—								
Number of Persons affected	...	30	...	...	20	8	975	1,033
Amount of Increase per week	£	7	...	...	3	1	137	148
SOUTH AUSTRALIA—								
Number of Persons affected	150	...	...	145	†104	399
Amount of Increase per week	£	...	52	...	...	15	41	108
WESTERN AUSTRALIA—								
Number of Persons affected	67	6	73
Amount of Increase per week	£	16	1	17
TASMANIA—								
Number of Persons affected	...	329	23	...	...	8	...	360
Amount of Increase per week	£	41	6	...	...	1	...	48
COMMONWEALTH—								
Number of Persons affected	...	2,291	173	138	1,783	4,287	7,846	16,518
Amount of Increase per week	£	267	58	26	281	1,026	1,719	3,377

* Including 300 workers in Group XII. (Fruit Harvesters). Amount of weekly increase £120.

† Including 100 workers in Group XII. (Fruit Harvesters). Amount of weekly increase, £40.

5. **Methods by which Changes were Effected.**—In the following table particulars are given for the Commonwealth of the number of changes in rates of wages, 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 1914 and 1915 respectively, as a result of the application of one or other of the methods set out in the tables:—

CHANGES IN RATES OF WAGES.—METHODS BY WHICH EFFECTED, 1914 and 1915.

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.
1914.									
By voluntary action of employers ...	11	3,032	£ 480	1	10	£ 2	12	3,042	£ 478
By direct negotiations ...	29	6,613	2,030	28	1,744	473	57	8,357	2,503
By negotiations, intervention or assistance of a third party ...	...	...	...	1	60	18	1	60	18
By award of court under Commonwealth Act ...	22	21,412	7,451	...	...	...	22	21,412	7,451
By agreement registered under Commonwealth Act ...	33	3,180	953	...	...	...	33	3,180	953
By award or determination under State Acts ...	194	85,991	18,449	3	1,140	270	197	87,131	18,719
By agreement registered under State Acts ...	62	2,036	563	...	...	...	62	2,036	563
Total ...	351	122,264	29,926	33	2,954	759	384	125,218	30,685

* Decrease.

1915.									
By voluntary action of employers ...	21	17,727	3,941	...	...	...	21	17,727	3,941
By direct negotiations ...	38	9,969	2,415	25	1,624	457	63	11,593	2,872
By negotiations, intervention or assistance of third party ...	10	784	207	10	1,803	386	20	2,587	593
By award of court under Commonwealth Act ...	29	16,236	4,239	1	150	78	30	16,386	4,317
By agreement registered under Commonwealth Act ...	28	10,680	2,812	1	940	268	29	11,620	3,080
By award or determination under State Acts ...	201	128,251	34,244	1	280	46	202	128,531	34,290
By agreement registered under State Acts ...	31	5,937	2,469	5	3,029	343	36	8,966	2,812
Total ...	358	189,584	50,327	43	7,826	1,578	401	197,410	51,905

Comparing the annual results for 1914 and 1915, it will be seen that in the latter year there was an increase in the number of changes effected "after a stoppage of work," also that the increased numbers were brought about almost entirely by negotiations involving the intervention or assistance of a third party not under any Commonwealth or State Act. Other notable features of these results are (a) the increase in the number of changes due to awards of the Commonwealth Court, and (b) the decrease in the number due to agreements registered under State Acts.

§ 5. Current Rates of Wages in Different Occupations and States.

1. **Comparative Table of Time Rates of Wages, 31st December, 1915.**—The particulars of wages given hereafter relate to some only of the principal industries and occupations which comprise the basis upon which weighted average wages are computed, and are 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 was 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.

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 first part of the table 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 Rates of Wages Payable to Adult Male Workers in each State, 31st December, 1915.**—The following table shews the weighted average weekly rates of wages 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 (=1000), 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 3948.

WEIGHTED AVERAGE NOMINAL WEEKLY RATES OF WAGES PAYABLE TO ADULT MALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH, 31st DECEMBER, 1915.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of Occupations included ...	874	909	627	567	499	492	3,948
Weighted Average Weekly Rates of Wages ...	57s. 7d.	55s. 3d.	54s. 4d.	54s. 8d.	63s. 4d.	53s. 3d.	56s. 6d.
Index-Numbers ...	1,019	978	960	968	1,121	942	1,000*

* Weighted average.

The results shew that nominal rates of wages are highest in Western Australia, followed in the order named by New South Wales, Victoria, South Australia, Queensland, and Tasmania.

3. Weighted Average Rates of Wages Payable to Adult Male Workers in each Industrial Group, 31st December, 1915.—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 (=1000).

WEIGHTED AVERAGE NOMINAL WEEKLY RATES OF WAGES PAYABLE TO ADULT MALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH INDUSTRIAL GROUP, 31st DECEMBER, 1915.

Industrial Groups.	No. of Rates Included.	Weighted Aver. Weekly Wage (for Full Week's Work).	Index-Numbers.
		s. d.	
I. Wood, Furniture, etc. ...	270	60 2	1,065
II. Engineering, Metal Works, etc. ...	636	60 2	1,066
III. Food, Drink, etc. ...	576	57 9	1,023
IV. Clothing, Boots, etc. ...	124	53 2	942
V. Books, Printing, etc. ...	205	64 6	1,141
VI. Other Manufacturing ...	875	57 8	1,020
VII. Building ...	190	65 10	1,166
VIII. Mining, etc. ...	161	66 7	1,179
IX. Rail and Tram Services, etc. ...	224	60 10	1,077
X. Other Land Transport ...	70	53 4	944
XI. Shipping, etc.† ...	198	52 7	931
XII. Agricultural, Pastoral, etc.* ...	72	49 8	880
XIII. Domestic, Hotels, etc.* ...	114	48 7	860
XIV. Miscellaneous ...	233	54 7	966
All Groups ...	3,948	56 6	1,000†

* The value of Board and Lodging (estimated at 15s. per week for Sydney, Brisbane, Adelaide, Perth and Hobart, and at 14s. per week for Melbourne) is included where supplied, in order that the results may be comparable with the rates paid in other industries. † Weighted average.
 ‡ The value of victualling and accommodation (estimated at 45s. per month) included where supplied.

From the above table it may be seen that the highest average wage was that paid in Group VIII. (Mining), 66s. 7d. per week, or approximately 18 per cent. above the weighted average for all groups. The rates of wage range from 66s. 7d. per week down to 48s. 7d. per week, the lowest being in Group XIII. (Hotels, etc.), which is nearly 14 per cent. below the average of all groups.

4. Weighted Average Rates of Wages Payable to Adult Female Workers in each State, 31st December, 1915.—The following table shews the weighted average weekly rates of wages 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 (=1000), index-numbers for each State are also shewn:—

WEIGHTED AVERAGE NOMINAL WEEKLY RATES OF WAGES PAYABLE TO ADULT FEMALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH, 31st DECEMBER, 1915.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of Occupations included ...	85	87	37	47	24	28	308
Weighted Average Weekly Rates of Wages ...	27s. 5d.	26s. 11d.	26s. 11d.	24s. 6d.	37s. 5d.	23s. 0d.	27s. 4d.
Index-Numbers ...	979	985	985	896	1,369	1,026	1,000*

* Weighted average.

It will be seen that nominal rates of wages for female workers are highest in Western Australia, followed in the order named by Tasmania, New South Wales, Victoria and Queensland equal, and South Australia. The average wage in Victoria, compared with that at the 31st December, 1914, shews a decrease of 10d. brought about mainly by a substantial reduction in the weekly wage for female cashiers and clerical assistants, awarded by the Court of Industrial Appeals, on an appeal against the Determination of the Commercial Clerks Wages Board.

5. Weighted Average Rates of Wages Payable to Adult Female Workers in Industrial Groups, 31st December, 1915.—The following table gives separate particulars regarding the nominal rates of wages of females in the chief industrial groups in which they are employed, and also shews the weighted average for all groups combined. Index-numbers based on the average for the Commonwealth as the base (=1000) are also given :—

WEIGHTED AVERAGE NOMINAL WEEKLY RATES OF WAGES PAYABLE TO ADULT FEMALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE-INDEX NUMBERS IN INDUSTRIAL GROUPS, 31st DECEMBER, 1915.

Industrial Groups.	No. of Rates Included.	Weighted Average Weekly Wage (for Full Week's Work).		Index-Numbers.
		s.	d.	
III. Food, Drink, etc.	35	24	9	892
IV. Clothing, Boots, etc.	114	25	1	917
I., II., V., VI., Other Manufacturing	84	27	4	999
XIII. Domestic, Hotels, etc. ...	57	30	9*	1,126
XIV. Shop Assistants, Clerks, etc. ..	18	30	1	1,100
All Groups	308	27	4	1,000†

* Including the value of Board and Lodging (estimated at 15s. per week for Sydney, Brisbane, Adelaide, Perth, and Hobart, and 14s. per week for Melbourne), where supplied, in order that the results may be comparable with the rates paid in other industries. † Weighted average.

6. Relative Hours of Labour and Hourly Rates of Wages, 1914 and 1915.—The rates of wages 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 constitute 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 and 31st December, 1914, and at 31st December, 1915.† 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 classes 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

† Details with respect to particulars in industrial classes have been published as follows:—To 30th April, 1914 (Labour Report No. 5, pp. 44-6); to 31st December, 1914 (Labour Bulletin No. 8, pp. 256-8), to 31st March, 1915 (Labour Bulletin No. 9, pp. 68-71); to 30th June, 1915 (Labour Bulletin No. 10, pp. 170-6); to 30th September, 1915 (Labour Bulletin No. 11, pp. 264-5); and to 31st December, 1915 (Labour Bulletin No. 12, pp. 413-4). § In Sydney, Brisbane, Adelaide, Perth, and Hobart the value of board and lodging has been assessed by Awards and Determinations at 15s. per week. In Melbourne it has been determined by a Wages Board at 14s. per week. The value of victualling in ships has been assessed by the Commonwealth Arbitration Court at 45s. per month.

industrial classes 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 wages 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. In Western Australia, however, the fact that the average working hours per week, in male occupations, are less than in any other State causes a corresponding increase in the hourly rate of wage as compared with the other 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, and 31st DECEMBER, 1915.

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
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MALE WORKERS.

		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
30th April, 1914.	{ Weekly Wage*...	55 9	54 3	52 8	54 4	62 2	52 6	55 1
	{ Working Hours†	49.42	48.80	48.78	48.60	47.78	48.62	48.93
	{ Hourly Wage† ...	13.93d.	13.68d.	13.45d.	13.84d.	16.33d.	13.02d.	13.96d.
31st Dec., 1914.	{ Weekly Wage*...	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	{ Working Hours†	56 2	54 7	53 5	54 5	62 10	52 8	55 7
	{ Hourly Wage† ...	49.35	48.66	48 64	48.59	48.18	48.62	48.87
31st Dec., 1915.	{ Weekly Wage*...	14.11d.	13.82d.	13.75d.	13.86d.	16.37d.	13.07d.	14.09d.
	{ Working Hours†	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	{ Hourly Wage† ...	57 7	55 3	54 4	54 8	63 4	53 2	56 6
		49.28	48.50	48.56	48.50	48.12	48.56	48.77
		14.50d.	14.05d.	14.07d.	13.98d.	16.50d.	13.20d.	14.38d.

FEMALE WORKERS.

		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
30th April, 1914.	{ Weekly Wage ...	26 9	27 4	26 11	24 1	37 4	25 10	27 2
	{ Working Hours ...	49.34	48.54	49.32	49.33	48.69	50.76	49.08
	{ Hourly Wage ...	6.51d.	6.78d.	6.43d.	5.85d.	9.20d.	6.11d.	6.64d.
31st Dec., 1914.	{ Weekly Wage ...	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	{ Working Hours ...	26 10	27 9	27 1	24 1	37 4	25 10	27 5
	{ Hourly Wage ...	49.34	48.54	49.32	49.33	49.44	50.76	49.11
31st Dec., 1915.	{ Weekly Wage ...	6.53d.	6.87d.	6.53d.	5.85d.	9.06d.	6.11d.	6.70d.
	{ Working Hours ...	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	{ Hourly Wage ...	27 5	26 11	26 11	24 6	37 5	28 0	27 4
		49.45	48.46	49.84	49.35	49.86	50.14	49.12
		6.65d.	6.67d.	6.43d.	5.96d.	9.01d.	6.71d.	6.68d.

* Weighted average weekly wage in all industrial classes combined. † Weighted average working hours per week, and computed hourly rates of wage for all industrial classes excepting Classes XI. (Shipping, etc.), and XII. (Agricultural, Pastoral, etc.). Working hours have not been generally regulated by industrial tribunals for occupations classified in industrial Classes XI. and XII.

From the foregoing table it may be seen that with the exception of Western Australia, there has been a steady diminution in the number of working hours constituting a full week's work in male occupations. On the other hand, excepting in Victoria and Tasmania, the hours of work in female occupations have shown a slight increase. 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 (=1000).

RELATIVE INDEX-NUMBERS FOR WEEKLY AND HOURLY WEIGHTED AVERAGE WAGE, 30th APRIL, 1914, 31st DECEMBER, 1914, AND 31st DECEMBER, 1915.

NOTE.—Weighted Average for the Commonwealth at 30th April, 1914, as base (=1000).

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth
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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

FEMALE WORKERS.

30th April, 1914 ...	Weekly Wage ...	984	1,006	989	885	1,373	950	1,000
	Hourly Wage ...	950	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

Comparing the index-numbers for the Commonwealth for the weekly and hourly wage at the 30th April, 1914, and at the 31st December, 1915, in male occupations, it may be seen that the former increased 2.3 per cent. in contrast with the latter, which increased 3 per cent.; the difference, 0.7 per cent., being due to the effect of the shorter working hours. In New South Wales and Victoria this difference amounted to 0.8 per cent.; in Queensland, 1.4 per cent., and in South Australia, 0.1 per cent. In Tasmania conditions remained normal, whereas in Western Australia the increase in working hours made a difference of 0.9 per cent. depreciation in the relative hourly wage.

7. Rates of Wages of Adult Males and Females.—In the tabular statement on pages 1063 to 1089 particulars are shewn for adult males and females separately of the minimum rates of wages fixed by awards, determinations, or agreements, at 31st December, 1915. (See paragraph 1 of this section.)

MINIMUM RATES OF WAGES FOR ADULT MALE WORKERS IN THE MAIN OCCUPATIONS IN THE CAPITAL TOWN OF EACH STATE FOR A FULL WEEK'S WORK AT 31st DECEMBER, 1915.

NOTE.—Ruling or predominant rates of wages 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, 1915. It is found, however, that in those States in which Awards, Determinations, or Industrial Agreements are made for a specified period, pending further review of the rates of wages 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 wages have been fixed for various classes or grades of work. It will be seen that in certain cases of this nature the wages are shown in the form, say, 50s. to 57s., indicating that in addition to the two rates specified, there are also certain intermediate rates in force. In other cases the rates are shown in the form 54s. and 60s., 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.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP I.—WOOD, FURNITURE, SAWMILLS AND TIMBER WORKS.						
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Coopers ...	80 0	72 0†	*67 6 & 72 0	66 0||	80 0	*70 0
Furniture and Bedding.†						
Bedding Makers ...	63 0	60 0	*51 4	54 0	60 0	48 0
Boults Carver Operator ...	*69 0	69 0	*60 6	*61 6	75 0	63 0
Cabinet Makers ...	67 0	65 0	*60 6	56 0	69 0	57 0
Carpet Cutters ...	73 0	65 0	...	...	...	*57 0
„ Layers ...	60 0	60 0	*60 0	*56 0	...	57 0
„ Planners ...	60 0	65 0	...	...	...	57 0
Chair Makers ...	67 0	65 0	*60 6	56 0	69 0	57 0
French Polishers ...	67 0	65 0	*56 10	56 0	66 0	57 0
Upholsterers ...	67 0	65 0	*56 10	56 0	66 0	57 0
Wood Carvers ...	67 0	65 0	*60 6	56 0	75 0	57 0
„ Machinists ...	67 0	63 0	*47 8	56 0	72 0	50 0
„ Turners ...	67 0	65 0	*60 6	56 0	69 0	to 57 0 57 0
Mattress Making (Wire).†						
Finishers ...	57 6	55 0	*53 2	48 0	...	48 0
Makers ...	57 6	58 0	*53 2	50 0	66 0	48 0
Varnishers ...	57 6	55 0	*53 2	43 0	...	48 0
Saw Milling and Timber Yards.§						
Box and Case Makers ...	60 0	59 0	54 0	51 0	...	46 6
Labourers... ..	54 0	53 0	52 0	48 0	54 0	46 6
Machinists—						
Box Printing ...	54 0	55 0	...	*51 6	...	...
Boults Carver ...	69 0	69 0	*66 0	...	...	66 0
Buzzer or Jointer ...	63 0	63 0	*52 0	51 0	57 0	54 0
General Joiner ...	69 0	66 0	...	...	72 0	51 0

† Coopers employed in Breweries, 78s. † Rates quoted for Melbourne in force from 1st January, 1916. § Rates quoted for Melbourne from 14th January, 1916. || Coopers in breweries, 72s., from 1st January, 1916.

Various numbers of hours constituting a full week's work.

(1) 18 hours. (2) 30 hours. (3) 33 hours. (4) 36 hours. (5) 42 hours. (5a) 43½ hours. (6) 44 hours. (7) 44½ hours. (8) 45 hours. (9) 45½ hours. (10) 46 hours. (11) 46½ 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. (19) 52 hours. (20) 52½ hours. (21) 52½ hours. (22) 53 hours. (23) 53½ hours. (24) 53½ hours. (25) 54 hours. (26) 54½ hours. (27) 55 hours. (28) 56 hours. (29) 56½ hours. (30) 57 hours. (31) 58 hours. (32) 59 hours. (33) 60 hours. (34) 63 hours. (35) 65 hours. (36) 70 hours. (37) 72 hours. (38) 77 hours. (39) 7 nights. (39a) 96 hours per fortnight. (39b) 98 hours per fortnight. (39c) 112 hours per fortnight. (40) 116 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). (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). (48) 55 hours (summer). 54 hours (winter). (49) 56 hours (summer). 48 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).

WEEKLY RATES OF WAGES, ETC.—Continued.

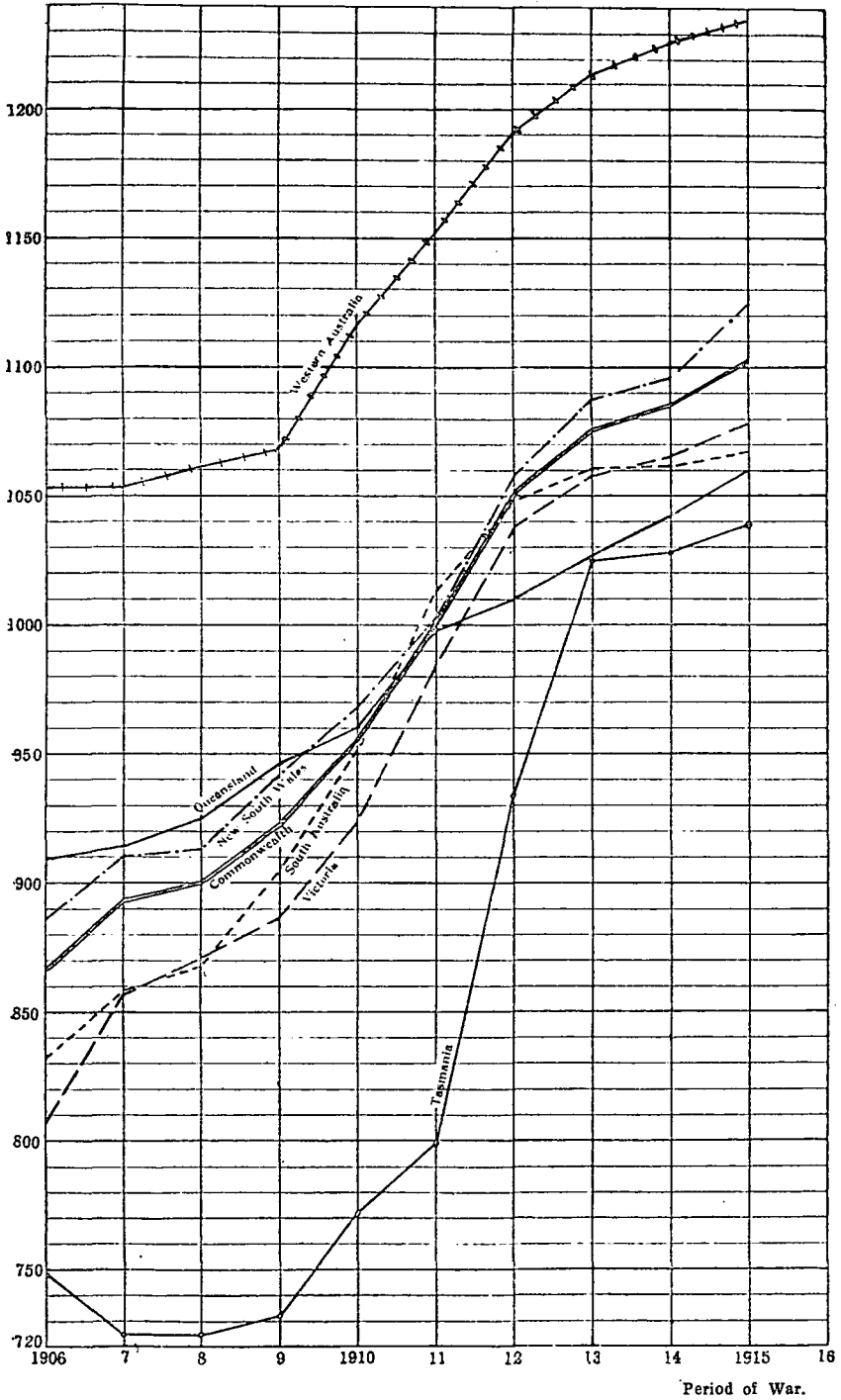
Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP I.—WOOD, FURNITURE, SAWMILLS AND TIMBER WORKS—Continued.						
Saw Milling, &c.—cont.						
Machinists—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Mortising or Boring ...	55 0	56 0	54 0	54 0	57 0	51 0
Moulding ...	62 0	63 0	68 0	57 0	60 0	53 0
„ own Grinder ...	68 0	68 0	...	61 6	& 66 0	63 0
Nailing ...	54 0	59 0	52 0	49 6	...	...
Planing... ...	63 0	63 0	60 0	49 6	72 0	54 0
Sandpapering ...	56 0	57 0	54 0	54 0	54 0	51 0
Shaping ...	69 0	69 0	78 0	57 0	75 0	66 0
Tenoning ...	63 0	63 0	*60 0	54 0	60 0	57 0
Ordermen... ..	58 0	60 0	56 0	54 0	*60 0	54 0
Pullers and Tailors Out ...	54 0	50 0	52 0	45 0	57 0	49 6
Saw Doctors ...	78 0	75 0	74 0	69 0	80 0	69 0
Saw Sharpeners ...	66 0	63 0	64 0	60 0	*72 0	54 0
Sawyers—Band or Jig ...	63 0	63 0	66 0	54 0	63 0	51 0
„ Circular... ..	54 0	59 0	60 0	54 0	60 0	53 0
„ Gang Frame ...	56 0	63 0	56 0	63 0	63 0	51 0
„ Re-Cut Band ...	54 0	63 0	62 0	63 0	63 0	51 0
Stackers ...	66 0*	60 0	*45 10*	*77 0	57 0	46 6
Tallymen ...	58 0	60 0	60 0	54 0	57 0	51 0
Wood Turners ...	69 0	63 0	66 0	56 0	*72 0	57 0

GROUP II.—ENGINEERING, METAL WORKS, ETC.

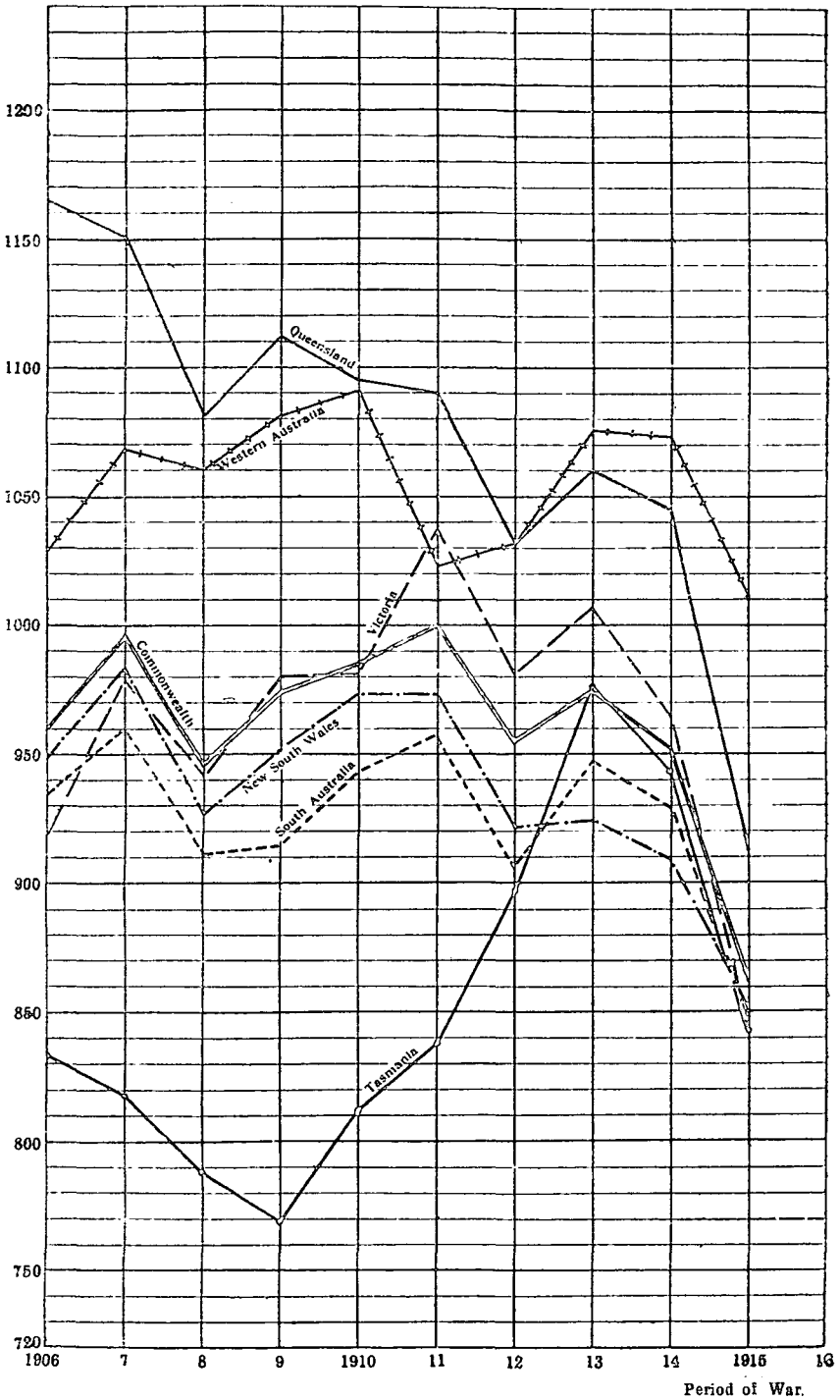
Agricultural Implements.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Assemblers ...	54 0	55 0	...	48 0	57 0	...
Blacksmiths ...	64 0	64 0	...	60 0	69 0	...
Bulldozermen ...	52 6	61 0	...	...	69 0	...
Carpenters ...	72 0	64 0	...	60 0	...	...
Drillers ...	52 6	55 0	...	48 0	57 0	...
Engine Drivers ...	66 0	48 0	...	54 0	...	...
Fitters ...	56 0	58 0	...	60 0	72 0	...
Grinders ...	52 6	58 0	...	48 0	...	...
Labourers (Unskilled) ...	52 6	52 0	...	45 0	54 0	...
Machinists, Iron ...	52 6	58 0	...	48 0	...	...
„ Wood ...	52 6	61 0	...	48 0	...	...
Painters (Brush) ...	54 0	55 0	...	51 0	...	...
„ (Scroll) ...	63 0	64 0	...	60 0	...	...
Patternmakers ...	74 0	70 0	...	66 0	81 0	...
Sheet Iron Workers ...	52 6	58 0	...	54 0	...	...
Storemen ...	52 6	52 0	...	45 0	...	...
Strikers ...	54 0	55 0	...	48 0	57 0	...
Turners ...	64 0	64 0	...	60 0	72 0	...
Wheelwrights ...	63 0	64 0	...	60 0	...	...

See also notes page 1063.

NOMINAL WAGE INDEX-NUMBERS IN EACH STATE, AND COMMONWEALTH, 1906 to 1915.



EFFECTIVE WAGE INDEX-NUMBERS IN EACH STATE, AND COMMONWEALTH,
1906 to 1915.



WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP II.—ENGINEERING, METAL WORKS, ETC.—Continued.						
Bedstead Making (Metal).	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Blacksmiths ...	59 0 to 65 0	58 0	55 0	48 0	...	...
Chillfitters (Modellers) ...	67 6	73 0	67 6	*56 0	...	...
„ (Other) ...	60 0	61 0	52 6	56 0	...	...
Chippers ...	55 0	55 0	51 0	43 0	...	...
Cutters, etc. ...	55 0	56 0	51 0	48 0	...	...
Electroplaters ...	60 0	69 0	*50 0*	63 0	...	...
Fitters-up ...	56 0	58 0	52 6	51 0	...	...
		& 61 0				
Foundry Hands ...	55 0	56 0	51 0	...	...	...
Frame Setters ...	58 0	59 0	57 6	54 0	...	...
Furnacemen ...	60 0	56 0	53 0	*43 0	...	...
Japanners ...	54 0	58 0	50 0	43 0	...	...
				& 51 0		
Lacquers ...	59 0	56 0	*48 0	48 0	...	...
Mounters ...	54 0	58 0	50 0	43 0	...	...
				& 51 0		
Polishers ...	57 0	56 0	*48 0	48 0	...	...
Boiler Making.						
Journeymen ...	72 0	†72 0	*66 0	72 0	72 0	60 0
			& 71 6			
Railway Men ...	68 0	63 0	*64 6	72 0	72 0	63 0
		to 72 0	to 70 6	to 78 0		to 69 0
Brass Working.						
Coremakers ...	68 0	58 0	*44 0	48 0	*72 0	...
	& 72 0				& 84 0	
Dressers ...	59 0	52 0	*44 0	43 0	...	...
Finishers ...	60 0	64 0	*60 6*	*60 0	*72 0	51 0
Furnacemen ...	59 0	54 6	*49 6	43 0	66 0	42 0
Moulders ...	68 0	64 0	*66 0	60 0	*72 0	60 0
	& 72 0				to 84 0	
Polishers ...	60 0	57 0	...	45 0	...	...
Cycles and Motors.						
Assemblers ...	56 0	57 6	...	...	*58 6	48 0
		& 60 0				
Cleaners ...	52 0	57 6	...	...	...	48 0
Filers ...	52 0	57 6	...	...	*57 0	48 0
Fitters ...	60 0	55 0	...	...	*72 0	60 0
Frame Builders ...	56 0	57 6	...	...	...	52 0
	& 60 0	& 62 0				
Repairers ...	56 0	57 6	...	...	...	48 0
	& 60 0	& 60 0				
Turners (Cycle) ...	60 0	...	...	...	*72 0	...
„ (Motor) ...	70 0	70 0	...	...	...	60 0
Wheel Builders ...	52 0	57 6	...	...	...	52 0
Electrical Installation.						
Armature Winders ...	72 0	66 0	63 0	66 0	72 0	63 0
Cable Jointers ...	72 0	69 0	69 0	60 0	...	60 0
Fitters ...	74 0	66 0	69 0	66 0	72 0	63 0
Linemen ...	66 0	63 0	60 0	60 0	63 0	54 0
						& 57 0
Mechanics ...	66 0	63 0	69 0	60 0	72 0	63 0
Wiremen ...	*64 0	63 0	...	51 0	66 0	57 0

† From 13th January, 1916. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP II.—ENGINEERING, METAL WORKS, ETC.—Continued.						
Electrical Supply.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Armature Winders ...	72 0	54 0 & 63 0	63 0	66 0	72 0	63 0
Cable Jointers ...	74 0	63 0	69 0	60 0	...	60 0
Carboner (Arc Lamp Attend.)	54 0	54 0	57 0	48 0	...	54 0
Instrument Makers ...	70 0	63 0	69 0	60 0	*72 0	63 0
Linemen ...	66 0	60 0	60 0	60 0	63 0	54 0 & 57 0
Switchboard Attendants ...	60 0	54 0	...	48 0	...	51 0
Electrical Trades.						
Fitters ...	74 0	66 0	69 0	66 0	72 0	63 0
Mechanics ...	66 0	63 0	69 0	60 0	72 0	63 0
Wiremen ...	*64 0	63 0	*60 0	51 0	66 0	57 0
Electroplating.						
Makers-up ...	58 0	52 0	...	*51 0	...	...
Platers ...	66 0	70 0	*650 0	66 0	66 0	...
Polishers ...	58 0 & 61 0	60 0	*650 0	*48 0	...	...
Engineering.†						
Blacksmiths ...	78 0	70 0	*75 2	63 0 & 69 0	78 0	60 0
Bolt and Nut Machinists ...	62 0	58 0	...	...	*66 0	...
Borers and Slotters ...	68 0 & 76 0	70 0	*66 0	60 0 & 66 0	66 0	60 0
Brass Finishers ...	76 0	64 0	*71 6	60 0	72 0	51 0
Coppersmiths ...	78 0	70 0	*71 6	69 0	78 0	60 0
Drillers (Radial) ...	...	*58 0	*655 0	58 0	66 0	60 0
„ (Other) ...	59 0	54 0	*660 6	52 0	60 0	60 0
Drophammer Smiths ...	72 0	70 0	*71 6	...	72 0	...
Fitters ...	76 0	70 0	*71 6	69 0	72 0	60 0
Lappers and Grinders ...	59 0	58 0	*71 6	66 0	...	...
Millers (Universal) ...	...	70 0	*71 6	69 0	72 0	60 0
„ (Other) ...	68 0 & 76 0	58 0	*71 6	66 0	66 0	60 0
Oliversmiths ...	72 0	70 0	*71 6	...	72 0	...
Pattern Makers ...	80 0	76 0	*77 0	69 0	81 0	60 0
Planers (Rail and Plate Edge)	68 0 & 76 0	58 0	*60 6	54 0	66 0	...
„ (Other) ...	68 0 & 76 0	70 0	*66 0	60 0	66 0	60 0
Shapers ...	68 0 & 76 0	58 0 & 70 0	*66 0	60 0	66 0	60 0
Springsmiths ...	70 0	70 0	...	...	*78 0	...
Turners ...	76 0	70 0	*71 6	69 0	72 0	60 0
Farrying.						
Firemen ...	72 0	60 0	¹ 252 6*	60 0	*66 0	*45 0
Floormen ...	66 0	55 0	¹ 247 6*	54 0	*60 0	*40 0
Shoeing Smiths...	72 0	60 0	¹ 252 6*	60 0	*66 0	*45 0
Ironworkers' Assistants.						
Boilermakers' Helpers ...	57 0	‡58 0	*46 9	51 0	57 0 to 60 0	48 0
„ Labourers ...	54 0	‡52 0	*49 6	51 0	54 0	45 0
Engineers' Labourers ...	54 0	52 0	*45 10	51 0	57 0	45 0
Furnacemen (Assistant)	57 0	55 0	*45 10	50 0	*54 0	...

† In Melbourne the current Wages Board Determination provides for special rates of wages for night shifts. ‡ From 13th January, 1916. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP II.—ENGINEERING, METAL WORKS, ETC.—Continued.						
Ironworkers Assistants.—Cont.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
General Labourers ...	51 0	48 0	45 10	51 0	54 0	45 0
Moulders' „ ...	54 0	48 0	45 10	48 0	54 0	42 0
Strikers ...	59 0	54 0	45 10 & 49 6	51 0	57 0	48 0
Moulding, Iron.						
Coremakers (Machine) ...	72 0	60 0	46 9	60 0	66 0	60 0
„ (Other) ...	72 0	66 0 & 72 0	46 9	60 0	66 0	60 0
Dressers and Fettleers ...	56 0	56 6	44 0	50 0	54 0	42 0
Furnacemen ...	62 0	58 0	52 3	54 0	66 0	42 0
Moulders (Machine) ...	68 0	60 0	66 0	54 0	66 0	60 0
„ (Other) ...	72 0	66 0 & 72 0	66 0	60 0	66 0	60 0
Moulding, Pipe (Bank).						
Casters and Finishers ...	60 0	57 0	...	66 0	66 0	...
Coremakers ...	60 0	66 0 & 72 0	...	...	60 0	...
Footmen (4-in. and under) ...	66 0	60 0	60 6	60 0	66 0	...
„ (5 and 6-ins.) ...	68 0	63 0	60 6	60 0	72 0	60 0
Headmen (4-in. and under) ...	72 0	66 0	66 0	66 0	72 0	...
„ (5 and 6-ins.) ...	74 0	72 0	66 0	66 0	78 0	60 0
Moulding, Pipe (Vertical).						
Casters ...	60 0	57 0	57 9	...	66 0	60 0
Coremakers ...	60 0	57 0	46 9	66 0	66 0	60 0
Corers ...	60 0	57 0	57 9	...	60 0	...
Rammers ...	60 0	57 0	52 3	60 0	66 0	60 0
Moulding, Steel.						
Coremakers ...	72 0	60 0 to 72 0	55 0	60 0	72 0	...
Moulders ...	72 0	60 0 to 72 0	66 0	54 0 & 60 0	84 0	...
Moulding, Stove.						
Moulders ...	62 0 to 67 0	66 0	55 0	60 0	66 0	...
Sheet Metal Working.						
Canister Makers ...	51 0	57 0	52 0	50 0	57 6	...
Japanners (Coating or Brush-work) ...	...	51 0	54 0	45 0	...	...
Japanners (Grainers, Liners, etc.) ...	...	55 0	54 0	50 0	...	...
Japanners (Ornamental) ...	...	60 0	54 0	54 0	...	...
Machinists ...	51 0 & 56 0	56 0	52 0	46 6	57 6	...
Solderers ...	54 0	54 0 & 56 0	54 0	50 0	57 6	51 0
Tinsmiths ...	66 0	60 0	54 0	52 0	65 0	54 0

See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP III.—FOOD, DRINK, TOBACCO, ETC.						
Aerated Waters and Cordials.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bottlers ...	60 0	47 6	*50 0	44 8 0	54 0	45 0
		& 50 0				
Bottle Washers ...	58 0	43 6	*40 0	44 8 0	51 0	*49 0
Drivers (Motor) ...	1863 0	49 54 0	2847 6	1755 6	...	...
„ (One Horse) ...	1958 0	49 50 0	3845 0	1948 0	55 0	47 0
„ (Two Horses) ...	1961 0	49 52 6	3850 0	1950 0	55 0	52 0
Grooms or Stablemen ...	1958 0	50 44 5 0	3845 0	1948 0	2850 0	...
Loaders ...	58 0	43 6	*50 0	44 8 0	51 0	45 0
Packers ...	58 0	43 6	*50 0	44 8 0	54 0	45 0
Wirers ...	58 0	43 6	*32 6	44 8 0	51 0	45 0
					& 54 0	
Baking (Bread)						
Board Hands ...	60 0	76 0	60 0	60 0	63 0	52 6
			& 65 0			
Carters (One Horse) ...	2560 0	3151 0	3847 6	1948 0	2556 0	2547 0
„ (Two Horses) ...	2560 0	3151 0	3852 0	1950 0	2566 0	2552 0
Doughmen ...	60 0	76 0	65 0	60 0	63 0	52 6
Fore Hands ...	65 0	84 0	70 0	60 0	68 0	66 0
	& 70 0		to 75 0			
Ovenmen ...	65 0	76 0	65 0	60 0	68 0	52 6
			& 70 0			
Single Hands ...	65 0	84 0	70 0	60 0	68 0	66 0
Baking (Biscuits and Cakes).						
Adult Males ...	48 0	48 0	40 0	...	...	...
			to 50 0			
Bakers ...	62 6	58 0	60 0	...	...	65 0
Brakesmen ...	55 0	51 0	45 0	...	...	48 0
			to 50 0			
Mixers ...	50 6	54 0	60 0	...	...	55 0
	& 53 0					
Oven Firemen ...	55 0	51 0	45 0	...	...	52 6
			to 50 0			
Storemen ...	60 0	51 0	1252 6*	...	...	...
Brewing.†						
Adult Males ...	60 0	60 0	60 0	60 0	60 0	56 0
Bottle Packers ...	60 0	60 0	60 0	60 0	60 0	56 0
Bottlers and Washers ...	60 0	60 0	60 0	60 0	60 0	56
Cellarmen ...	63 0	63 0	63 0	63 0	60 0	59 0
Drivers (One Horse) ...	1960 0	1960 0	1960 0	1760 0	60 0	1956 0
„ (Two Horses) ...	1963 0	1963 0	1963 0	1763 0	60 0	1956 0
„ (Motor under 3 tons) ...	1963 0	1963 0	1963 0	1763 0	...	59 0
„ („ 3 tons & over) ...	1966 0	1966 0	1966 0	1766 0	67 6	62 0
					& 70 0	
Engine Drivers ...	66 0	66 0	56 0	72 0	*75 0	*47 6
	& 72 0	& 78 0	to 72 0			& 60 0
Firemen ...	60 0	60 0	54 0	66 0	63 0	48 0
		& 66 0				
Greasers and Trimmers ...	54 0	54 0	48 0	60 0	*63 0	48 0
			& 60 0			
Malt Hands ...	63 0	63 0	63 0	63 0	60 0	56 0
Stablemen and Grooms ...	1960 0	1960 0	1960 0	1760 0	2860 0	1956 0
Towermen ...	63 0	63 0	63 0	63 0	60 0	56 0
Butchering (Carcase).						
Carters (One horse) ...	3058 6†	...	1953 0	2548 0	3355 0	2547 0
„ (Two horses) ...	3063 6†	3155 0	1955 0	2549 0	3355 0	2552 0
Chilling Room Hands ...	54 0	66 0	1957 6	...	1960 0	...
			to 70 0			

† From 28th January, 1916. † Hobart rates from 1st January, 1916.
See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP III.—FOOD, DRINK, TOBACCO, ETC.—Continued.						
Butchering (Carcase).—cont.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Labourers (Beef) ...	60 0	48 0	1 ⁹ 52 6	45 0	54 0	52 6
„ (Mutton) ...	1 ⁶ 52 6	48 0	1 ⁹ 52 6	45 0	54 0	52 6
Scalders ...	1 ⁶ 60 0	1 ⁹ 57 0	1 ⁹ 55 0	2 ⁵ 55 0	1 ⁹ 54 0	2 ⁷ 52 6
Slaughtermen (Beef) ...	85 0	80 0	75 0	60 0	70 0	65 0
„ (Mutton) ...	†	80 0	75 0	58 0	70 0	65 0
Butchering (Retail).						
Carters (Cash Cutting) ...	...	1 ⁹ 57 0	1 ⁹ 70 0	...	1 ⁹ 60 0	2 ⁵ 60 0
„ (One Horse) ...	50 0	1 ⁹ 50 0	1 ⁹ 53 0	1 ⁷ 50 0	1 ⁹ 50 0	2 ⁵ 47 0
„ (Two Horses) ...	...	1 ⁹ 50 0	1 ⁹ 55 0	1 ⁷ 51 0	1 ⁹ 50 0	2 ⁵ 52 0
General Hands ...	55 0	1 ⁹ 57 0	1 ⁹ 70 0	1 ⁹ 58 0	1 ⁹ 60 0	2 ⁷ 52 6
Salters ...	65 0	1 ⁹ 57 0	1 ⁹ 60 0	1 ⁹ 58 0	1 ⁹ 70 0	2 ⁷ 52 6
			& 70 0			
Shopmen ...	60 0	1 ⁹ 65 0	1 ⁹ 60 0	1 ⁹ 58 0	2 ⁷ 60 0	2 ⁷ 52 6
	& 65 0		& 70 0	& 65 0	& 70 0	& 60 0
Smallgoodsmen ...	65 0	1 ⁹ 65 0	70 0	1 ⁹ 65 0	1 ⁹ 70 0	2 ⁷ 60 0
„ (Assistant) ...	60 0	1 ⁹ 57 0	60 0	1 ⁹ 58 0	1 ⁹ 60 0	2 ⁷ 52 6
Cold Storage and Ice.						
Carters (Motor) ...	4 ⁸ 59 0	50 0	2 ⁵ 47 6	...	...	...
	& 61 0†					
„ (One Horse) ...	4 ⁸ 54 6	5 ¹ 50 0	2 ⁸ 47 6	1 ⁹ 48 0	1 ⁷ 54 0*	47 0
	& 56 6‡					
„ (Two Horses) ...	4 ⁸ 57 0	5 ¹ 55 0	2 ⁸ 52 0	1 ⁹ 50 0	1 ⁷ 60 0*	52 0
	& 59 0‡					
Chamber Hands ...	60 0	66 0	4 ⁶ 62 6	...	...	...
Confectionery.§						
Journeyman ...	68 0	57 6	52 6	54 0	60 0	*50 0
Labourers ...	48 0	45 0	36 0	48 0	50 0	...
Storemen (Head) ...	53 0*	50 0	*50 0	50 0	60 0	...
	to 67 6		& 55 0			
„ (Other) ...	50 0	45 0	*42 6	45 0	50 0	...
			to 48 0			
Ham and Bacon Curing.						
Casing Cleaners (Foreman) ...	58 0	63 0	70 0	...	...	60 0
Curers (First Hand) ...	75 0	67 6	70 0	...	...	57 6
„ (Assistant) ...	65 0	54 0	56 0	...	...	...
		& 58 0				
Cutters-up (First Hand) ...	67 6	67 6	65 0	...	...	52 6
„ (Assistant) ...	60 0	60 0	57 6	...	...	52 6
Ham Baggers ...	...	53 0	60 0	...	...	...
Lardmen ...	50 0	51 0	60 0	...	...	52 6
		& 62 6				
Rollers and Trimmers ...	60 0	60 0	55 0	...	...	52 6
Scalders ...	55 0	60 0	62 6	...	56 0	52 6
Shavers ...	55 0	60 0	52 6	...	...	52 6
Slaughtermen ...	65 0	67 6	70 0	...	56 0	55 0
„ (Assistant) ...	55 0	60 0	65 0	...	...	52 6
Smallgoodsmen (First Hand) ...	65 0	67 6	70 0	...	...	57 6
„ (Assistant) ...	52 6	55 0	60 0	...	...	52 6
Smokers (First Hand) ...	60 0	62 6	65 0	...	...	52 6
„ (Assistant) ...	52 6	51 0	52 6	...	...	...
Washers (First Hand) ...	60 0	...	60 0	...	...	52 6
„ (Assistant) ...	52 6	51 0	55 0	...	...	...

† Piecework rates. ‡ From 28th January, 1916. § Adelaide rates from 8th January, 1916.
See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP III.—FOOD, DRINK, TOBACCO, ETC.—Continued.						
Jam Making and Preserving.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Adult Males ...	54 0	54 0	*50 0	45 0	...	48 0
Solderers ...	57 0	54 0	*56 0	48 0	...	51 0
Malting.						
Maltsters ...	56 0	60 0	54 0	...	60 0	*56 0
Milk Delivery.						
Carters (One Horse) ...	²⁵ 59 0	⁶¹ 50 0	²⁵ 47 6	¹⁷ 50 6	²⁵ 56 0	²⁸ 47 0
„ (Two Horses) ...	²⁷ 58 0	⁶¹ 55 0	...	¹⁷ 50 6	...	²⁸ 52 0
Milling (Flour).						
Engine Drivers ...	65 0†	64 6	56 0	60 0	*66 0	47 6
Firemen ...	59 0†	57 0	54 0	54 0	...	...
Millers (Head) ...	80 0	73 6	80 0	70 0	68 0	65 0
„ (Shift) ...	71 0	68 0	62 6	63 0	*68 0	52 6
Millwrights ...	74 0	69 6	...	66 0	...	...
Packermen ...	57 6	57 6	60 0	51 0	54 0	42 0
Purifiermen ...	59 0	59 0	60 0	52 6	...	42 0
Silksmen ...	59 0	59 0	60 0	52 6	...	42 0
Smuttermen ...	57 6	57 6	60 0	51 0	*54 0	...
Storemen (Head) ...	59 0	59 0	62 6	52 0	51 0	50 0
Topmen ...	59 0	59 0	60 0	52 6	...	42 0
Truckers and others ...	57 6	57 6	...	51 0	48 0	42 0
Wheat Carriers ...	†80 0	†72 0	†72 0	†72 0	†72 0	50 0
Pastrycooking.						
Carters ...	²⁵ 52 6	¹⁹ 40 0	³⁸ 47 6	48 0	...	²⁵ 42 0
Packers ...	52 0	50 0	...	...	...	...
Pastrycooks ...	to 63 0	56 0	²⁵ 70 0	60 0	60 0	66 0
„ (Assistant) ...	¹⁸ 48 0	50 0	²⁵ 60 0	...	...	52 6

GROUP IV.—CLOTHING, HATS, BOOTS, ETC.

Bootmaking.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bootmakers ...	60 0	60 0	60 0	60 0	60 0	60 0
Tailoring (Order).						
Cutters ...	75 0	60 0	70 0	70 0	70 0	*70 0
Pressers ...	60 0	55 0	52 6	55 0	60 0	*60 0
Tailors ...	60 0	60 0	55 0	60 0	70 0	*70 0
Trimmers... ..	65 0	52 6	50 0	51 0	...	...
Tailoring (Ready-made).						
Brushers ...	50 0	36 0	42 6	36 0	...	...
Cutters ...	65 0	60 0	57 6	60 0	70 0	...
Folders ...	50 0	45 0	42 6	45 0	...	...
Machinists ...	...	55 0	50 0	50 0	65 0	...
Pressers (Coat Hands) ...	60 0	55 0	52 6	55 0	60 0	60 0
„ (Trousers & Vest Hands) ...	60 0	55 0	52 6	50 0	60 0	60 0
Tailors ...	60 0	60 0	65 0	60 0	70 0	...

† Computed on the hourly rate for 48 hours. ‡ From 28th January, 1916. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP IV.—CLOTHING, HATS, BOOTS, ETC.—Continued.						
Tailoring (Ready-made)—cont.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Trimmers... ..	65 0	52 6	50 0	50 0	...	...
Under Pressers (Coat Hands)	50 0	36 0	42 0	36 0	60 0	*45 0
" " (Trouser and Vest Hands)...	48 0	36 0	42 0	36 0	50 0	*45 0
Textile Working (Woolen Mills).						
Carders	48 0	48 0	*45 0	*48 0	...	1054 0*
Dyehousemen	48 0	48 0	*45 0	...	...	1040 0*
Foremen	65 0	60 0	...	*60 0	...	...
Labourers (General) ...	48 0	48 0	*45 0	*48 0	...	1048 0*
" " (Willyhouse) ...	48 0	48 0	*45 0	*48 0	...	...
Milling Hands	48 0	50 0	*45 0	*48 0	...	...
Other Adults	48 0	48 0	*45 0	*48 0	...	1042 0*
Pattern Weavers	48 0	54 0	...	...	...	...
Scourers	48 0	50 0	*48 0	*48 0	...	1036 0*
Spinners	48 0	50 0	...	...	...	1045 0*
Tuners	56 0	52 0	*65 0	...	...	1055 0*
Twisters in	48 0	48 0	...	...	...	1046 0*
Warpers	48 0	48 0	...	...	...	1045 0*
GROUP V.—BOOKS, PRINTING, BINDING, ETC.						
Bookbinding.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Feeders	*30 0	36 0	42 0	45 0	...	...
Finishers	65 0	64 0	60 0	56 0	*65 0	*70 0
Journeymen Bookbinders	65 0	64 0	60 0	56 0	*65 0	*60 0
Marblers	65 0	64 0	60 0	56 0	*65 0	*60 0
Paper Rulers	65 0	64 0	60 0	56 0	*65 0	*60 0
	to 77 6					
Lithographing.						
Printers	62 6	60 0	65 0	58 0	...	...
Rotary Machinists ...	67 6	67 6	65 0	*60 0	...	...
Stone Polishers ... ..	...	45 0	42 0	45 0	...	...
Printing (Daily Newspapers).						
Compositors ... Day	88 0	90 0	*73 4	76 0	67 6	*63 0
" " Night	104 0	100 0	*73 4	80 0	*80 0	*70 0
Linotype Attendants Day	...	42 0	*50 0	50 0	*55 0	*50 0
		to 50 0				
" " Night	...	*55 0	*50 0	55 0	*560 0	*60 0
Linotype Operators Day	†	†	*84 0	*72 0	*80 0	†
" " Night	†	†	*84 0	†	*90 0	†
Machinists, 1st Hand Day	75 0	1069 0	*90 0*	70 0	65 0	*70 0
" " Night	*85 0	*77 0	*100 0*	70 0	*65 0	*570 0
Publishers	57 6	46 0	*60 0	57 0	*60 0	*660 0
	& 60 0	to 58 8				
Readers Day	80 0	85 0	*65 0	76 0	*75 0	*63 0
" " Night	100 0	90 0	*65 0	80 0	*85 0	*570 0
Reader's Assistant Day	45 0	*52 5	*40 0	45 0	*57 0	*45 0
" " Night	55 0	*60 0	*40 0	50 0	*57 0	*550 0
Stereotypers (1st Class) Day	67 6	1069 0	*75 0	58 0	*70 0	*70 0
" " Night	72 6	*77 0	*75 0	64 0	*870 0	*570 0
					to 80 0	

† Piecework rates. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP V.—BOOKS, PRINTING, BINDING, ETC.—Continued.						
Print'g (Daily Newspapers) cont.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Stereotypers (Assists.) Day	60 0	¹⁰ 57 6	⁶ 40 0	45 0	*55 0	*50 0
„ „ Night	65 0	⁶ 66 0	⁶ 40 0	50 0	*55 0	*50 0
Printing (Jobbing Offices).						
Compositors ...	65 0	66 0	60 0	60 0	*65 0	*63 0
Electrotypers ...	70 0	66 0	60 0	*60 0	...	...
General Hands ...	*48 0	42 0	42 0	45 0	*55 0	...
Linotype Operators ...	⁸ 75 0	⁵ 75 3	⁶ 65 0	⁸ 72 0	*58 0	†
			& 73 4		& 90 0	
Machinists ...	60 0	66 0	52 0	56 0	*65 0	*63 0
	& 65 0		& 60 0			
Monoline Operators ...	⁸ 71 3	⁵ 75 3	⁶ 65 0	⁸ 72 0	*58 0	†
			& 73 4		& 90 0	
Monotype Operators ...	⁸ 63 9	⁵ 75 3	⁶ 60 0	⁸ 72 0	*58 0	†
			& 66 0			
„ Casting Machinists	*48 0	⁵ 45 6	⁶ 47 6	52 0	...	...
Readers ...	65 0	70 0	65 0	60 0	*70 0	*63 0
Stereotypers ...	60 0	66 0	52 0	60 0	*70 0	*70 0
			& 60 0			
Typograph Operators ...	⁸ 75 0	⁵ 75 3	⁶ 65 0	⁸ 72 0	*65 0	...
			& 73 4			
GROUP VI.—OTHER MANUFACTURES.						
Brickmaking.†	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Burners ...	61 6	³ 75 0	² 67 8	³ 60 0	² 70 0	49 6
	& 63 0		& 70 0			
Carters (One Horse) ...	² 51 0	¹ 49 0	* ⁵ 647 6	48 0	54 0	² 42 0
„ (Two Horses) ...	² 56 0	¹ 55 0	* ⁵ 652 0	50 0	60 0	² 47 0
Clayholemen ...	62 0	54 0	56 0	51 0	60 0	*48 0
Drawers ...	64 0	65 0	56 0	54 0	†	49 6
Labourers ...	58 0	48 0	52 0	*51 0	56 0	*48 0
				& 54 0		
Loaders Out ...	58 0	...	54 0	...	...	*48 0
Loftsmen ...	54 0	48 0	52 0	48 0	52 0	48 0
Machinememen ...	60 0	¹ 59 6	¹ 60 8	52 0	58 0	48 0
					& 62 0	
Panmen ...	58 0	¹ 59 6	52 0	*51 0	58 0	48 0
				& 54 0		
Pit Foremen ...	70 0	*73 0	60 0	*60 0	66 0	*57 0
„ Men ...	62 0	57 0	56 0	51 0	60 0	48 0
„ Shooters ...	66 0	61 0	60 0	...	66 0	51 0
Setters ...	64 0	61 0	54 0	56 0	62 0	54 0
			& 56 0		& 64 0	
Truckers ...	...	52 0	52 0	34 0	56 0	43 0
Wheelers ...	58 0	52 0	52 0	48 0	60 0	48 0
			& 56 0			
Yardmen ...	58 0	48 0	52 0	48 0	56 0	48 0
Candle Making.§						
Acidifiers ...	57 6	57 0	*53 0	53 0	...	...
General Hands ...	52 6	52 0	45 0	48 0	...	...
Glycerine Distillers ...	60 0	57 0	...	53 0	...	...
Moulders ...	54 6	55 0	48 0	50 0	...	...
Press Room Gangers ...	55 0	55 0	47 0	51 0	...	...
Stillmen ...	57 6	57 0	50 0	53 0	...	...

† Piecework rates. ‡ Brisbane rates from 22nd January, 1916. § Sydney rates from 7th January, 1916, and Melbourne rates from 14th January, 1916. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP VI.—OTHER MANUFACTURES—Continued.						
Coachmaking (Road).	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bodymakers ...	60 0	63 0	651 4	60 0	63 0	60 0
Labourers... ..	45 0	42 0	639 5	45 0	*54 0	*45 0
Painters ...	60 0	63 0	651 4	60 0	63 0	60 0
„ Labourers... ..	46 0	42 0	639 5	51 0	...	...
Smiths ...	60 0	63 0	651 4	60 0	63 0	60 0
„ Strikers ...	45 0	42 0	635 9	45 0	60 0	...
Trimmers... ..	60 0	63 0	651 4	60 0	63 0	60 0
Vycemen ...	51 0	48 0	...	45 0	*63 0	45 0
Wheelmaking Machinists	60 0	63 0	651 4	60 0	63 0	*64 0
Wheelwrights ...	60 0	63 0	651 4	60 0	63 0	60 0
Fellmongering.						
Bate Hands ...	54 0	50 0	*48 0	...	...	...
Green Hands ...	52 6	50 0	*48 0	...	...	...
Labourers ...	52 6	50 0	48 0	53 0*	...	...
Limepit Men ...	54 0	50 0	51 0	53 0*	...	...
Machinists (Burring)	57 0	50 0	*54 0	...	...	...
„ (Fleshing)	57 0	50 0	51 0	...	...	...
„ (Scouring)	52 6	51 0	51 0	...	...	...
„ (Setting Out)	57 0	50 0	48 0	...	...	...
Soakhole Men ...	57 0	50 0	*51 0	...	...	...
Sweathouse Men ...	54 0	51 0	54 0	...	...	...
Wool Sorters ...	57 0	55 0	*48 0	53 0*	...	...
Gas Making and Supply.†						
Blacksmiths ...	*72 0	71 0	*660 6	*63 0	*78 0	67 6
Coke Trimmers ...	60 0	2 ^s 66 5	...	...	*54 0	*60 0
Engine Drivers ...	66 0	70 0	56 0	2 ^s 75 0*	*66 0	*69 0
		to 80 0	to 72 0		& 69 0	
Gas Fitters ...	72 0	*73 4	660 6	62 0	78 0	*69 0
Labourers ...	54 0	56 0	2 ^s 56 0	54 0	54 0	52 6
Mainlayers ...	70 0	...	1 ⁰ 56 10	...	72 0	...
	& 78 0		to 66 0			
Metermakers ...	60 0	72 0	...	...	72 0	...
Meter Testers ...	54 0	60 0	...	...	...	...
	& 60 0					
Service Layers ...	60 0	59 0	1 ⁰ 56 10	*66 0	66 0	58 0
			& 62 0			
„ „ (Labourers) ...	55 6	57 6	1 ⁰ 52 3	54 0	54 0	54 0
			to 57 0			
Stokers ...	66 0	68 0	2 ^s 79 4	2 ^s 82 6	66 0	64 6
				& 73 6		
Yardmen ...	54 0	56 0	1 ⁰ 49 6	54 0	54 0	52 6
			& 54 0			
Glassworking and Glazing.						
Bevellers ...	63 0	55 0	...	56 0	...	60 0
	& 64 0					
Cementers ...	*35 0	42 0	...	36 0	...	...
	to 48 0					
Cutters and Glaziers (Other)...	62 0	50 0	...	48 0	...	...
„ „ (Plate)...	62 0	52 6	...	56 0	...	...
Lead Light Glaziers ...	63 0	52 6	...	56 0	...	...
Packers ...	*48 0	48 0	...	48 0	...	...
Silverers (using Own Recipe)	66 0	...	...	60 0	...	...
„ (Others) ...	63 0	55 0	...	56 0	...	...

† Melbourne rates from 1st January, 1916. Working hours per week for main and service layers and yardmen are 44 in North Brisbane and 48 in South Brisbane. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP VI.—OTHER MANUFACTURES—Continued.						
Jewellery, Clock and Watch Making.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Chainmakers ...	65 0	57 6	*60 0	60 0	*70 0	*60 0
Engravers ...	70 0	65 0	*60 0	60 0	*70 0	*60 0
Mounters ...	65 0	60 0	*60 0	60 0	*70 0	*60 0
Setters ...	70 0	65 0	*60 0	60 0	*70 0	*60 0
Watch and Clock Makers ...	1170 0	1170 0	*60 0	60 0	*70 0	*60 0
„ „ Repairers ...	1170 0	1170 0	*60 0	60 0	*70 0	*60 0
Masons (Marble and Stone).						
Carvers ...	80 0	82 6	662 4	70 0	...	...
Machinists (Carborundum) ...	64 0	62 0	*662 4	56 0	*78 0	...
„ (Other) ...	...	70 0	*662 4	51 0	*78 0	...
Masons ...	72 0	671 6	667 10	60 0	*78 0	66 0
Polishers (Machine—Granite) ...	64 0	62 0	662 4	*51 0	...	...
„ „ (Marble) ...	64 0	62 0	662 4	51 0	...	...
„ (Other—Granite) ...	64 0	660 0	666 0	*51 0	54 0	...
„ („ Marble) ...	64 0	658 1	666 0	51 0	54 0	...
					& 60 0	
					& 60 0	
Mason, Monumental Workers.						
Carvers ...	684 4	677 0	662 4	70 0	*78 0	66 0
Fixers ...	76 0	60 0	662 4	60 0	*66 0	66 0
					to 78 0	
Labourers ...	52 0	58 0	647 8	48 0	*54 0	48 0
Letter Cutters ...	671 6	669 8	662 4	66 0	*78 0	66 0
		& 78 6				
Masons ...	669 8	666 0	662 4	60 0	*66 0	66 0
					to 78 0	
Potteries (General).†						
Burners (Head) ...	58 0	3370 0	2860 8	...	...	48 0
„ (Assistant) ...	*55 0	3365 0	2860 8	...	...	...
Hollowware Pressers ...	63 0	54 0	54 0	...	...	51 0
Labourers ...	52 0	50 0	52 0	...	...	45 0
Sagger Makers ...	55 0	50 0	...	...	...	...
Sanitary Pressers ...	69 0	56 0	54 0	...	...	51 0
Throwers (1st Class) ...	69 0	60 0	70 0	...	...	54 0
„ (2nd Class) ...	...	50 0	62 0	...	...	...
		to 57 6				
Turners ...	60 0	54 0	...	...	...	...
Potteries (Pipemaking).†						
Burners (Head) ...	63 0	3370 0	2870 0	3360 0*	...	54 0
„ (Assistant) ...	...	3365 0	2863 0	...	...	45 0
Drawers ...	*58 0	51 0	52 0	*54 0	...	...
Junction Stickers ...	60 0	52 0	54 0	...	...	48 0
Moulders ...	62 0	54 0	52 0	...	...	49 6
Mould Makers ...	58 0	63 0	56 0	*66 0	...	...
Setters ...	62 0	54 0	54 0	...	...	48 0
Saddlery and Harnessmaking.†						
Collarmakers ...	60 0	60 0	58 0	60 0	65 0	*58 0
Harnessmakers ...	60 0	60 0	58 0	60 0	60 0	*58 0
Machinists ...	60 0	60 0	58 0	60 0	60 0	*58 0
Saddlers ...	60 0	60 0	58 0	60 0	60 0	*58 0

† Brisbane rates from 22nd January, 1916. † Melbourne and Adelaide rates from 1st January, and Hobart rates from 3rd January, 1916. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP VI.—OTHER MANUFACTURES—Continued.						
Ship Workers.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Carpenters and Joiners ...	72 0	*66 0	66 0	72 0 to 84 0	...	*66 0
Dockers ...	60 0 & 68 0	*60 0	65 0 & 60 6	...	...	*48 0
Painters ...	72 0 & 80 0	*60 6	65 0 & 60 6	52 0	...	...
Shipwrights (New Work) ...	78 0	*69 8	69 8	*72 0 to 84 0	78 0	*66 0
„ (Old Work) ...	82 0	*71 6	73 4	*72 0 to 84 0	84 0	*66 0
Soap Making.						
Foremen ...	55 0	57 6	*60 0	57 6	...	...
General Hands ...	48 0	48 0	*42 0	48 0	...	...
Mixers ...	48 0	51 0	...	48 0	...	...
Soap Makers ...	60 0	65 0	*60 0	62 6	...	...
„ (Assistant) ...	50 0	57 6	*55 0	*57 6	...	...
Tallow Making.						
Tallowmen ...	59 0	*60 0	60 0	48 0 & 53 0	54 0	27 52 6
Tanning and Currying.						
Beamsmen ...	63 0	63 0	63 0	60 0	60 0	*65 0
Curriers ...	68 0	68 0	68 0	65 0	65 0	*68 0
Fancy Leather Finishers ...	58 0	58 0	58 0	55 0	55 0	...
Japanners or Enamellers ...	58 0	58 0	58 0	55 0	55 0	...
Jiggers and Grainers (Book-binding Leather) ...	61 0	61 0	61 0	58 0	58 0	*61 0
Labourers ...	54 0	54 0	54 0	51 0	51 0	...
Limemen and Yardmen ...	55 0	55 0	55 0	51 0	52 0	...
Machinists (Fleshing) ...	63 0	63 0	63 0	60 0	60 0	*63 0
„ (Scouring) ...	56 0	56 0	58 0	...	...	...
„ (Scudding) ...	58 0	58 0	58 0	55 0	55 0	*58 0
„ (Shaving) ...	61 0	58 0	61 0	58 0	58 0	*63 0
„ (Splitting) ...	68 0	68 0	68 0	65 0	65 0	*66 6
„ (Unhairing) ...	58 0	58 0	58 0	55 0	55 0	*58 0
„ (Whitening) ...	61 0	61 0	61 0	65 0	65 0	*61 0
„ (Other) ...	56 0	56 0	56 0	...	52 0	...
Rollers and Strikers ...	60 0	60 0	60 0	57 0	57 0	*60 0
Tablemen ...	58 0	58 0	58 0	55 0	55 0	*58 0
Tent and Tarpaulin Making.						
Cutters (1st Hand) ...	60 0	70 0	*60 0	*60 0	...	*70 0
„ (2nd „) ...	50 0	58 6	*60 0	...	...	*48 0
Dressers ...	54 0	50 0	...	...	...	...
Machinists ...	52 6	50 0	*64 9 6	...	...	...
Sewers (Hand) ...	60 0	58 6	*64 9 6	*60 0	57 0	...
Tentmakers ...	60 0	58 6	*64 9 6	*60 0	...	...
Wickerworking.						
Bamboo or Wickerworkers ...	63 0	57 6	63 2	55 0	60 0	52 0
Basket Makers and Repairers ...	66 0	56 0	*65 5 0	55 0	...	...
Upholsterers ...	*67 0	56 0	*65 5 0	50 0	...	...

† Melbourne and Adelaide rates from 1st January, 1916, and Hobart rates from 3rd January, 1916. ‡ Brisbane rates from 22nd January, 1916. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP VII.—BUILDING.						
Bricklaying.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bricklayers (Surface) ...	78 0	671 6	671 6	*66 0	*84 0	72 0
„ (Sewer & Tunnel) ...	84 0	677 0	677 0	*66 0	*84 0	78 0
Carpentering.†						
Carpenters ...	72 0	669 8	671 6	70 0	72 0	66 0
Joinery.						
Machinists (1st Class) ...	63 0	63 0	671 6	57 0	...	54 0
„ (2nd „) ...	60 0	60 0	*66 0	51 0	...	51 0
„ (3rd „) ...	54 0	53 0	*60 6	49 6	...	48 0
Labouring (Builders).‡						
Bricklayers' Labourers ...	62 0	658 8	655 0	60 0	*54 0 to 60 0	656 10
Carpenters' „ ...	54 0	658 8	655 0	60 0	*54 0 to 60 0	656 10
Concrete Workers ...	58 0	655 8	655 0	60 0	*60 0	656 10
Earth Excavators ...	54 0	658 8	655 0	54 0	*54 0	656 10
Gear Workers ...	62 0	658 8	655 0	66 0	*72 0	656 10
Masons' Labourers ...	62 0	658 8	655 0	60 0	*54 0 to 60 0	656 10
Plasterers' „ ...	58 0	658 8	655 0	60 0	*54 0 to 60 0	656 10
Scaffold Hands ...	62 0	658 8	655 0	66 0	*72 0	656 10
Lathing and Ceiling.						
Lathers ...	*78 0	672 0	*64 2	*72 0	*78 0	*68 0
Metal Ceilings ...	60 0	684 0	...	...	...	*48 0
Masons.						
Masons ...	669 8 to 73 4	671 6	667 10	60 0	*78 0	666 0
Painting (House) and Glazing.						
Glaziers ...	68 0	660 6	662 4	60 0	66 0	54 0
Painters ...	68 0	660 6	662 4	60 0	66 0	54 0
Paperhangers ...	68 0	660 6	662 4	60 0	66 0	54 0
Signwriters ...	76 0	660 6	662 4	60 0	72 0	60 0
Plastering.						
Fibrous Plaster Fixers ...	78 0	660 6	671 6	...	...	...
Plasterers (Surface) ...	76 0	669 8 to 73 4	671 6	72 0	78 0	68 0
Plumbing and Gasfitting.§						
Galvanised Iron Workers ...	72 0	673 4	660 6	62 0	78 0	*60 0
Gasfitters ...	72 0	673 4	660 6	62 0	78 0	*60 0
Plumbers ...	72 0	673 4	660 6	68 0	78 0	*60 0
Roofing.						
Shinglers ...	78 0	677 0	...	...	...	...
Slaters ...	78 0	677 0	...	*72 0	*72 0	*66 0
Tilers ...	78 0	677 0	...	*72 0	*72 0	*66 0
Tuckpointing.						
Tuckpointers ...	72 0	664 2	*666 0	*72 0	*72 0	...

† Brisbane rates from 29th January, 1916. ‡ The rates of wages quoted for Builders' Labourers for Sydney, Melbourne, and Adelaide are those payable under State Determinations or Awards. The rates quoted for Perth are the ruling Union or predominant rates, while those for Hobart and Brisbane are the rates fixed by the award of the Commonwealth Arbitration Court, which also awarded the following:—Sydney and Adelaide 60s. 6d., and Melbourne 56s. 10d., per week of 44 hours. § Melbourne rates from 1st January, 1916. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania
GROUP VIII.—MINING.						
Coal Mining. †§	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Blacksmiths ...	56 0 & 72 0	60 0	*68 3	...	...	54 0 to 66 0
Bracemen ...	63 0	50 0 & 60 0	*54 0 & 69 0	...	...	*48 0 to 54 0
Carpenters ...	56 6 to 72 0	60 0	*58 9 & 62 6	...	...	*54 0 to 66 0
Deputies ...	72 6 to 78 6	*75 0	*69 0 & 75 0	...	...	*63 0 to 69 0
Engine Drivers (Winding and Loco.) ...	66 0 to 80 0	66 0 to 75 0	66 0	...	...	66 0 to 78 0
Engine Drivers (Other) ...	60 0 to 75 0	60 0 to 69 0	60 0	75 6	...	60 0 to 80 0
Labourers (Surface) ...	54 6 to 60 0	45 0 to 54 0	*48 0 & 57 0	...	...	48 0
„ (Underground) ...	56 6 to 60 0	49 0 & 54 0	*51 0 & 60 0	60 6	...	...
Miners (Machine) ...	69 0 to 81 0	63 0 & 78 0	*63 0 to 72 0	†	...	...
„ (Manual, Dry Work) ...	71 4 to 77 6	60 0 & 72 0	*63 0 & 72 0	†	75 0	...
„ („ Wet Work) ...	77 4 to 83 6	65 0 & 78 0	*69 0 & 78 0	...	...	...
Platmen or Banksmen ...	60 0 & 61 0	60 0 & 66 0	*54 0 & 63 0	Not Mined.	*68 6	50 0
Shaftsinkers (Dry Work) ...	*76 6 to 76 6	66 0 & 75 0	*69 0 & 76 6		...	...
„ (Wet Work) ...	66 6 to 81 0	*66 0 & 81 0	*75 0 & 92 6		...	...
Shiftmen (Dry Work) ...	54 6 to 77 6	61 0 & 66 0	*63 0 & 72 0		†	64 6
„ (Wet Work) ...	63 0 to 80 0	67 0 & 72 0	*69 0 & 78 0		...	...
Shotfirers ...	68 6 to 72 6	...	...		83 6	...
Shovellers ...	51 0 to 63 0	48 0 & 54 0	...		72 6	...
Skip Repairers ...	55 0 to 55 0	51 0 & 54 0	...		...	54 0
Strikers ...	54 0	45 0	...		...	54 0
Timbermen ...	69 6 to 77 6	60 0 & 75 0	...		83 6	56 0
Weighmen ...	64 0 to 82 0	50 0	...		...	...
Wheelers ...	56 0 to 60 0	50 0 & 60 0	*52 6 & 61 6		71 6 & 78 6	51 0
Gold and Other Mining (except Coal). ††						
Battery Feeders ...	54 0 to 60 0	48 0 & 51 6	55 11 to 60 0	...	1265 0 to 77 0	45 0 to 54 0
Bracemen ...	57 0 to 69 0	55 0 to 59 0	63 3 to 78 0	63 0 to 66 0	1270 0 to 78 0	48 0 to 60 0
Engine Drivers (Stationary) ...	60 0 to 78 0	60 0 to 69 0	66 0 to 87 0	79 6 to 83 0	85 0	60 0 to 78 0
„ (Winding & Loco.) ...	72 0 & 90 0	66 0 to 75 0	80 0 to 93 0	92 6	89 0	78 0 & 84 0

† Contract work. ‡ Victoria.—Highest rates from 1st January, 1916, in State Coal Mine Wonthaggi. § Underground and surface labourers, platemen or banksmen, shiftmen and wheelers employed in the West Group Collieries work 51 hours per week, five days of nine hours and six hours on Saturday constitute a full shift. †† The number of working hours constituting a full week's work in Queensland have been fixed either by industrial agreement or award, as follows:—Mount Morgan and Cooktown, 48 hours; Gympie and Cloncurry, 44 hours. South Australian rates include a bonus, paid on a sliding scale regulated according to the price of copper, to workers engaged in copper mining. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane	Adelaide.	Perth.	Hobart.
GROUP VIII.—MINING—Continued.						
Gold and Other Mining (except Coal).—Cont.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Firemen ...	54 0	51 0	54 0	69 6	72 0	60 0
	to 78 0	to 69 0	to 75 0	to 76 0		to 66 0
Labourers ...	55 0	49 0	55 11	57 0	12 65 0	48 0
	& 60 0	& 54 9	to 66 0		& 70 0	to 60 0
Miners (Dry Work)	60 0	58 0	75 2	†	12 74 0	50 0
	to 72 0	& 64 0	to 78 0		& 90 0	to 66 0
„ (Machine) ...	60 0	60 0	75 2	†	12 80 0	50 0
	to 72 0	& 67 6	to 87 0		& 96 0	to 66 0
„ (Wet Work)	63 0	64 0	80 8	†	12 79 0	54 0
	to 75 0	& 70 6	to 87 0		to 96 0	to 72 0
Platmen ...	57 0	55 0	63 3	63 0	12 70 0	48 0
	to 69 0	& 59 0	to 78 0	to 66 0	to 81 0	to 54 0
Shaftsinkers (Dry Work)	63 0	62 0	75 2	†	12 75 0	54 0
	to 84 0	& 74 0	to 78 0		to 92 0	to 66 0
„ (Wet Work)	69 0	68 0	80 8	†	12 80 0	60 0
	to 90 0	& 80 0	to 87 0		to 96 0	to 72 0
Shift Bosses	63 0	64 0	80 0	83 0	90 0	66 0
	to 84 0	& 70 0		to 87 0	to 120 0	to 80 0
Timbermen	63 0	59 0	75 2	69 6	12 80 0	54 0
	to 78 0	& 69 10	to 87 0	to 73 0	to 93 0	to 69 0

GROUP IX.—RAILWAY AND TRAMWAY TRANSPORT.

Railways.†	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Engine Drivers (Loco).—§	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
„ (1st class) ...	96 0	87 0	84 0	90 0	90 0	75 0
			to 93 0			
„ (2nd „) ...	90 0	81 0	79 6	84 0	84 0	69 0
			to 85 6			& 72 0
„ (3rd „) ...	84 0	69 0	72 0	78 0	78 0	66 0
		to 75 0	to 78 0			& 69 0
„ (4th „) ...	78 0	69 0	67 6	72 0	72 0	63 0
			to 73 6			
„ (5th „) ...	72 0	...	63 0	...	66 0	60 0
			to 69 0			
Firemen (1st class)§	66 0	57 0	58 6	66 0	66 0	54 0
			to 64 6			
„ (2nd „)...	60 0	54 0	54 0	61 6	60 0	51 0
			to 60 0			
„ (3rd „)...	57 0	51 0	49 6	57 0	57 0	46 6
			to 52 6			& 48 0
Guards (1st class) ...	72 0	69 0	78 0	69 0	60 0 to 75 0	66 0
		& 72 0	to 90 0	& 73 6		& 72 0
„ (2nd „) ...	57 0	57 0	66 0	57 0		57 0
	to 69 0	to 66 0	to 81 0	to 70 6		& 63 0
„ (3rd „) ...	54 0	51 0	54 0	51 0		48 0
	to 60 0	& 54 0	to 69 0	to 58 6		to 54 0
Porters ...	52 6	51 0	49 6	48 0	54 0	45 0
	to 57 0	to 57 0	to 55 6	& 51 0		to 51 0

† Contract work.

‡ The hours of labour for Railway Employees are 48 per week (in N.S.W. 96 per fortnight) except in the following cases:—N.S.W.—Porters, 108 to 120 hours per fortnight; VICTORIA—Porters, 48 to 60 hours per week; SOUTH AUSTRALIA—Porters and Signalmen, 48 to 57 hours per week; and TASMANIA—Guards and Shunters, 54, and Porters, 48 to 54 hours per week. 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 wages 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 wages fixed for different lengths of service. The classification of Locomotive Drivers and Firemen employed in the Victorian Railway Service fixes different rates of wages for the following grades of service:—(1) Country Passenger Service; (2) First-grade Suburban Passenger Service; (3) Second-grade Passenger Service; and (4) Goods or Switching Service. The rates of wages 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 on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP IX.—RAILWAY AND TRAMWAY TRANSPORT—Continued.						
Railways—Cont.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Shunters (1st class) ...	69 0 to 78 0	66 0 & 69 0	69 0 to 78 0	57 0	69 0 to 75 0	54 0 to 57 0
„ (2nd „) ...	66 0 to 72 0	60 0 & 63 0	58 6 to 64 6	54 0	63 0 & 66 0	52 6
„ (3rd „) ...	57 0 to 63 0	...	52 6 & 55 6	51 0	...	49 6
„ (Ordinary) ...	54 0	51 0 to 57 0	48 0	...	57 0 & 60 0	...
Signalmen (Special) ...	...	72 0 & 75 0	63 0	...	78 0 & 81 0	...
„ (1st class) ...	75 0 & 78 0	66 0 & 69 0	57 0 & 60 0	60 0 & 66 0	69 0 to 75 0	54 0 & 57 0
„ (2nd „) ...	72 0	60 0 & 63 0	51 0 & 54 0	54 0	63 0 & 66 0	46 6 to 51 0
„ (3rd „) ...	69 0	57 0	48 0	51 0	57 0 & 60 0	...
„ (4th „) ...	66 0	54 0	...	...	54 0 & 57 0	...
Tramways (Electric and Cable)†						
Car Washers or Cleaners ...	52 6	51 0 & 54 0	1749 3	51 0	54 0 to 60 0	48 0
Conductors—1st year ...	52 6	51 0 & 54 0	1745 0	50 0	54 0	45 0
„ 2nd year ...	55 6	54 0 & 57 0	1748 0	52 0	57 0	48 0
„ 3rd year ...	58 0	57 0 & 60 0	1760 0	*54 0	60 0	51 0
Firemen (four fires) ...	*59 0	*60 0 & 63 0	61 0	60 0	*63 0	...
„ (less than four fires) ...	57 0	57 0 & 60 0	57 0	...	*60 0	...
Horse Drivers ...	52 6	51 0 & 57 0	48 0	55 6	2560 0	48 0
Labourers... ...	52 6	51 0 & 57 0	48 0	51 0	54 0 & 57 0	48 0
Lamp Trimmers ...	52 6	54 0	...	...	...	...
Maintenance men ...	52 6	51 0 & 54 0	48 0	51 0 & 60 0	54 0 & 57 0	48 0
Motormen or Gripmen—						
1st year ...	58 0	51 0 & 54 0	1745 0 & 48 0	54 0	54 0	51 0
2nd year ...	60 0	54 0 & 57 0	1748 0 & 52 6	56 0	57 0	54 0
3rd year ...	62 0	57 0 & 60 0	1760 0	58 0	60 0	57 0
Night Watchmen ...	56 0	48 0	4253 6	48 0	2554 0 to 67 6	50 0
Overhead Wiremen (Leading)	*75 0	63 0	1760 6	*63 0	66 0	...
„ „ (Other) ...	*57 0 to 66 0	57 0	1749 9 to 53 0	*60 0	57 0	48 0
Pitmen ...	60 0	60 0	48 0	*57 0	57 0 & 60 0	...
Signalmen ...	62 0 to 66 0	57 0 & 63 0	2557 0	54 0 to 58 0	...	...
Tower Wagon Drivers (Horse)	52 6	51 0	1753 0	*48 0	2560 0	...
„ „ (Motor)	60 0	...	...	*54 0	...	...
Track Cleaners ...	52 6	51 0 & 54 0	1744 6	51 0	54 0 & 57 0	48 0
Trimmers or Fuel Men ...	*52 6 & 54 0	...	54 0	*48 0	*54 0	...

† For Sydney the wages quoted are those determined by State Awards. For Melbourne, Perth, Adelaide, and Hobart the rates are those specified in agreements registered under the Commonwealth Conciliation and Arbitration Act. For Brisbane ruling or predominant rates are quoted. The higher rate quoted for Melbourne was granted voluntarily by one company until 30th June, 1916. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP X.—OTHER LAND TRANSPORT.						
Carrying (Merchandise).§	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Carriers (One Horse) ...	2 ⁹ 50 0	2 ⁵ 50 0	5 ⁸ 47 6	1 ⁷ 50 0	54 0	2 ⁵ 47 0
„ (Two Horses) ...	2 ⁹ 55 0	2 ⁵ 55 0	5 ⁸ 52 0	1 ⁷ 52 0	60 0	2 ⁵ 52 0
„ (Three Horses) ...	2 ⁹ 58 0	2 ⁵ 59 0	5 ⁸ 55 0	1 ⁷ 53 0	...	...
Corporation Carters—						
(One Horse) ...	55 0	2 ⁵ 50 0	2 ⁵ 48 0||	*50 0	60 0	47 0
(Two Horses) ...	...	2 ⁵ 55 0	& 52 6	*52 0	66 0	52 0
Jinkers (One Horse) ...	2 ⁸ 54 0	2 ⁵ 55 0	5 ⁶ 47 6	1 ⁷ 50 0	65 0	2 ⁵ 53 0
„ (Two Horses) ...	2 ⁸ 59 0	2 ⁵ 60 0	5 ⁶ 52 0	1 ⁷ 52 0	65 0	2 ⁵ 58 0
Sanitary Carters ...	60 0	2 ⁵ 55 0	2 ⁷ 57 6	...	72 0	52 0
						& 57 0
Stable Hands ...	3 ¹ 49 0	2 ⁵ 50 0	...	...	...	...
	& 54 0					
Tip Dray Drivers ...	2 ⁹ 50 0	2 ⁵ 49 0	...	...	60 0	52 0
	& 54 0					& 57 0
Motor Lorries and Waggon—						
Under 3 tons carrying						
capacity ...	2 ⁴ 52 6	60 0	3 ¹ 50 0	57 6	...	52 0
3 tons carrying capacity...	2 ⁴ 61 6	60 0	3 ¹ 57 6	57 6	...	55 0
Carrying (Passenger).						
Bus or Coach Drivers (Horse) ...	...	2 ⁵ 54 0	...	54 0	...	3 ⁰ 42 0
						& 47 0
Chauffeurs ...	5 ⁷ 45 0	3 ³ 52 6	3 ⁹ 50 0	...	...	...
Lift Attendants.						
Goods ...	1 ⁷ 50 0	1 ⁷ 48 0	1 ⁷ 45 0	*50 0	...	3 ³ 45 0*
Passenger ...	1 ⁷ 42 0	3 ¹ 45 0	...	*50 0	...	3 ³ 45 0*
	& 45 0					

GROUP XI.—SHIPPING, WHARF LABOUR, ETC.

Towing (Tug Boats).	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Engineers... ..	3 ⁶ 55 0	...	2 ⁵ 67 6	2 ⁵ 64 6	...	...
	to 83 5			to 80 0		
Firemen	57 6	56 6	2 ⁵ 60 0	...	...	...
		& 57 8				
Masters	3 ⁶ 55 0	78 6	2 ⁵ 67 6	2 ⁵ 64 6	1 ⁹ 75 0	...
	to 83 5	to 87 8		to 80 0	& 77 6	
Waterside Working.						
Coal Lumpers per hour	1 9	1 9	1 9	1 9	1 9	1 9
Lightermen	66 0	*50 0	2 ⁸ 56 0	66 0	1 ² 60 0	*50 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	160 0	290 0*	240 0	...	240 0	160 0
	to 270 0					
„ (Second)	130 0	200 0*	140 0	...	140 0	130 0
	to 170 0					
„ (Third)	130 0	150 0*	100 0	...	100 0	...
„ (Ship's)	170 0	130 0*	...	...	...	...
Nightwatchmen ...	130 0	...	140 0	...	140 0	...
Pantrymen	140 0	170 0*	130 0	...	130 0	...
„ (Assistant) ...	110 0	140 0*	110 0	...	110 0	...

† Rates of wages quoted are in addition to victualling. ‡ Rate of wage quoted is for other than special cargo. § Adelaide rates from 6th January, 1916. || Lower rate for contractors' employees. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
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GROUP XI.—SHIPPING, WHARF LABOUR, ETC.—Continued.						
Passenger Vessels (Intra-state)						
—Cont.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Stewards (Second) per month	150 0	180 0*	150 0	...	150 0	110 0
„ (2nd Saloon) „	140 0	...	150 0	...	150 0	...
„ (Asst. „) „	110 0	...	110 0	...	110 0	...
„ (Steerage) „	130 0	140 0*	130 0	...	130 0	...
„ (Bedroom) „	130 0	140 0*	110 0	...	110 0	...
„ (Bath and Mess Room) „	120 0	...	100 0	...	100 0	...

Passenger Vessels (Interstate).†						
Bakers ... per month		s.			s.	
Barmen ... „		240			220	
Butchers ... „		140			140	
Cooks (Chief) ... „		180			160	
„ (Second) ... „		320			290	
„ (Third) ... „		200			200	
„ (Ship's) ... „		150			150	
Pantrymen ... „		180			180	
Scullerymen ... „		160			160	
Stewards—1st Saloon		160			160	
„ (Chief) ... „		150			150	
„ (Second) ... „		180			180	
„ (Second Saloon) ... „		180			180	
„ (Fore cabin) ... „		160			160	
„ (Bedroom and other) ... „		140			140	

All Vessels (Interstate).†						
A.B. Seamen ... per month	...	...	s.			
Boatswains ... „	...	...	185			
Donkeymen ... „	...	...	205			
Firemen ... „	...	...	245			
Greasers ... „	...	...	225			
Lamp Trimmers ... „	...	...	225			
Fuel ... „	...	...	205			
	...	...	185			

Marine Engineers.†‡						
		LOWEST CLASS.			HIGHEST CLASS.	
		Under 100 N.H.P.			600 or more N.H.P.	
		s.			s.	
Chief ... per month		440			680	
Second ... „		350			440	
Third ... „		310			360	
Fourth ... „		...			300	
5th, 6th, 7th, 8th ... „		...			240	

		INTERSTATE			INTERSTATE	
		PASSENGER VESSELS.			CARGO VESSELS.	
		Lowest	Highest		Lowest	Highest
		Class, 250	Class, over		Class, 250	Class, over
		tons & under.	4000 tons.		tons & under.	4000 tons.
Merchant Service.†‡						
Masters ... per month	420s.	860s.		400s.	720s.	
Officers, Chief ... „	300s.	400s.		280s.	360s.	
„ Second ... „	240s.	340s.		240s.	300s.	
„ Third ... „	...	280s.		...	360s.	
„ Fourth & Fifth ... „	...	200s.		...	200s.	

† Rates quoted are exclusive of value of victualling and accommodation. ‡ Minimum rates under the Commonwealth Arbitration Court Award are classified according to nominal horsepower of vessel; the lowest and highest classes are here specified. ¶ 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. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tas.
GROUP XII.—AGRICULTURAL, PASTORAL, ETC.						
Farming:	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
General Hands† ...	20 0	20 0	20 0	25 0	20 0	20 0
Harvesters† ...	30 0	30 0	30 0	30 0	30 0	30 0
Milkers† ...	15 0	15 0	15 0	15 0	15 0	15 0
Ploughmen† ...	20 0	20 0	20 0	20 0	20 0	20 0
Chaff Cutters (Portable)	50 0	50 0	...	...	...	3060 0
„ (Stationary)	52 0	52 0	...	...	...	3056 0
Thresher (Feeders)	...	...	...	...	...	3065 0
„ (Machinists)	...	...	...	...	...	3056 0
Gardening.						
Gardeners ...	54 0	48 0	*48 0	2548 0*	60 0	*54 0
„ (Labourers)	48 0	45 0	*42 0	2548 0*	*48 0	*48 0
Nurserymen ...	54 0	48 0	*48 0	2548 0*	60 0	*54 0
„ (Labourers)	48 0	42 0	*42 0	2542 0*	*48 0	*48 0
Pastoral Workers.						
Cooks ...	50 0	50 0	50 0	50 0	*60 0	50 0.
Shearers ... per 100	24 0	24 0	24 0	24 0	*25 0	24 0
Shed Hands† ...	37 6	37 6	37 6	37 6	*46 0	37 6
Wool Pressers ...	65 0	65 0	65 0	65 0	*60 0	65 0.
Rural Workers.						
Fruit Harvesters per hour	...	1 3½	...	1 3½	...	...

† Rates of wages quoted are in addition to Board and Lodging provided.

GROUP XIII.—DOMESTIC, HOTELS, ETC.

NOTE.—Except where otherwise specified the rates of wages specified for Employees in Clubs, Hotels, and Restaurants represent the weekly cash payment where Board and Lodging are provided. If Board and Lodging are not provided, payment has to be made, in lieu thereof, upon an estimated value, fixed by Industrial Determinations for the Capital Towns as follows: Sydney, 15s.; Melbourne, 14s.; Brisbane, 15s.; Adelaide, 15s.; Perth, 15s.; and Hobart, 15s. per week. Of this sum 10s. per week is allocated as value of Board in each instance.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
Clubs (Residential).	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Barmen ...	4027 0	2541 0	3330 0 & 35 0	1955 0*	2565 0*	3135 0.
Billiard Markers ...	4024 0	3128 6	3350 0	2825 0 & 30 0	...	3130 0
Cooks (Hotels, Clubs, etc.).						
Chefs ...	4052 6	3141 0	3455 0	2847 6	2845 0	3140 0
Cooks (Second) ...	4042 6	3133 6	3445 0	2845 0	2840 0	3127 6
„ (Third) ...	4035 0	3133 6	3445 0	2840 0	2835 0	3127 6
Kitchenmen ...	4026 6	3126 0	3325 0	2825 0 & 30 0	2825 0	3120 0
Lift Attendants ...	3122 6	3145 0†	2820 0	2825 0	...	...
Porters (Day) ...	4025 0	3126 0	3335 0	2830 0	2825 0	3120 0.
„ (Night) ...	4125 0	3126 0	3325 0	2825 0	2830 0	3122 6

† Not in addition to Board and Lodging. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP XIII.—DOMESTIC, HOTELS, ETC.—Continued.						
Hairdressing.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Full Hands ...	2760 0	1965 0	...	...	...	...
Hairdressers ...	2755 0	1955 0	2255 0	1955 0	2560 0	...
Hotels.						
Barmen ...	2541 0	3141 0	3330 0 to 42 6	2555 0*	2565 0†	3130 0 & 35 0
Billiard Markers ...	3125 0	3128 6	3325 0	2825 0	...	3122 6
Handy Men ...	3333 0	3121 0	3322 6	2825 0	2825 0	3115 0 to 20 0
Kitchenmen ...	3338 0	3126 0	3325 0	2825 0 & 30 0	2825 0	3120 0
Lift Attendants ...	3122 6	3145 0†	3325 0	...	...	...
Porters (Day) ...	3138 0	3126 0	2820 0	2830 0	2825 0	3120 0
„ (Night) ...	2838 0	3126 0	3325 0	2825 0	2830 0	3122 6
Waiters (Head) ...	2845 0	3136 0	3335 0	2842 6	...	3125 0 to 40 0
„ (Other) ...	2838 0	3131 0	3320 0	2830 0	2832 6	3120 0 to 30 0
Restaurants.						
Pantrymen ...	3132 6 & 37 6	3126 0	2830 0	2825 0 & 30 0	2825 0	3125 0
Waiters ...	3135 0 & 40 0	3131 0	2840 0	2830 0	2832 6	3120 0
GROUP XIV.—MISCELLANEOUS AND GENERAL LABOUR.						
Bill Posting.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Billposters ...	50 0	51 0	* 48 0	* 48 0	...	* 50 0
Factory Engine Driving.						
Engine Drivers (Stationary)—						
1st class ...	66 0	63 0	72 0	* 72 0	72 0	* 63 0
2nd class ...	63 0	54 0	64 0	* 66 0	66 0	* 60 0
3rd class ...	60 0	48 0	56 0	* 60 0	60 0	* 57 0
Firemen (1st Class) ...	58 0	54 0	54 0	* 66 0	* 60 0	* 51 0
„ (2nd Class) ...	54 0	48 0	...	* 60 0	* 54 0	* 48 0
Greasers ...	54 0	48 0	60 0	* 54 0	* 54 0	* 42 0
Trimmers ...	54 0	48 0	48 0	* 54 0	* 54 0	* 45 0
Fuel Distribution (Coal & Coke).†						
Baggers and Loaders ...	2448 0	64 0	...	48 0	...	* 49 6
Carters (One Horse) ...	2852 0	1952 0 & 52 6	3147 6	48 0	60 0	1947 0
„ (Two Horses) ...	2855 0	1957 0 & 57 6	3152 0	50 0	60 0	1952 0
Trimmers ...	2448 0	84 0	...	48 0	...	* 49 6
Fuel Distribution (Firewood).						
Carters (One Horse) ...	2852 0	2550 0	2547 6	48 0	54 0	1947 0
„ (Two Horses) ...	2855 0	2555 0	2552 0	50 0	54 0	1952 0
Other Adults ...	2554 0*	1748 0	* 42 0	49 0	...	...
Sawyers ...	2254 0*	1757 0	48 0	57 6	...	* 51 0
Yardmen ...	54 0	1748 0 to 52 0	* 42 0	48 0	...	* 46 6
Municipal.						
Labourers ...	60 0	* 55 0	* 51 0	* 54 0	54 0	* 48 0
Street Sweepers ...	55 0	* 55 0	* 48 0	* 54 0	54 0	* 48 0

† Not in addition to Board and Lodging.

‡ Melbourne rates from 8th January, 1916.

See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP XIV.—MISCELLANEOUS AND GENERAL LABOUR—Continued.						
Musicians.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Orchestral ...	160 0 & 80 0	160 0	160 0	*160 0	160 0	*160 0
Shop and Other Assistants.						
Boot Salesmen ...	1748 0 to 62 6	1752 6	1440 0 to 60 0	1757 6*	57 6	*40 0 to 60 0
Chemists' Assistants ...	58 6	...	2240 0 to 70 8	...	...	...
Clerks ...	1735 0 to 50 0	52 0 to 56 0	1740 0 to 1960 0	...	...	...
Clothing (Men's) Salesmen ...	1748 0 to 62 6	1742 6 to 60 0	1440 0 to 60 0	1757 6	57 6	*40 0 to 60 0
Confectionery Salesmen ...	2552 6	...	1440 0 to 60 0	...	...	...
Drapery Salesmen ...	1748 0 to 62 6	60 0	1440 0 to 60 0	1757 6	57 6	40 0 to 60 0
Fruit Salesmen ...	2552 6	...	1440 0 to 60 0	...	...	...
Furniture Salesmen ...	1748 0 to 62 6	60 0	1440 0 to 60 0	1755 0*	62 6	*40 0 to 60 0
Grocery Salesmen ...	2348 0 to 52 6	1755 0	1440 0 to 60 0	1855 0	57 6	52 0
HARDWARE.						
Managers (Branch) ...	1775 0	1780 0	...	1790 0*	...	...
„ (Departmental) ...	1765 0	1780 0 & 90 0	...	1780 0 to 90 0	...	1590 0
Salesmen (Junior) ...	1735 0 to 50 0	1740 0 to 55 0	14 40 0 to 60 0	1737 6 to 52 6	...	1540 0 to 55 0
„ (Outside) ...	...	1770 0	to 60 0	1745 0 to 65 0	...	...
„ (Senior) ...	1748 0 to 62 6	1760 0	60 0	1755 0 & 57 6	62 6	1560 0
Storemen—Packing, Cleaning, etc.†						
Night Watchmen ...	4250 0	3757 0	3742 0	2856 0	56 0	3740 0* & 45 0
Office Cleaners ...	49 0	1742 0	...	...	...	...
Packers (General) ...	56 0 to 60 0	56 6	1255 0	1750 0	55 0	*30 0 to 40 0
Storemen (General) ...	54 6 to 60 0	56 6	1255 0	1750 0	55 0	*30 0 to 40 0
WHOLESALE GROCERY.						
Packers (Head) ...	60 0 to 80 0	55 0	1259 0 to 84 0	1755 0	*60 0	48 0
„ (Other) ...	55 6	50 0	1255 0	1749 0*	55 0	*48 0
Storemen (Head) ...	60 0 to 80 0	60 0	1259 0 to 84 0	1755 0	*60 0	*48 0
„ (Other) ...	54 6	57 6	1255 0	1749 0*	55 0	*48 0
WHOLESALE HARDWARE.						
Packers ...	1357 6	1747 6	1440 0 to 55 0	50 0	55 0	1545 0 to 55 0
Storemen ...	1354 6	1747 6	1440 0 to 55 0	50 0	55 0	1545 0 to 55 0

† Melbourne rates from 24th January, 1916. Brisbane rates from 17th January, 1916.
See also explanatory notes on page 1063.

**MINIMUM RATES OF WAGES FOR ADULT FEMALE WORKERS IN THE MAIN
OCCUPATIONS IN THE CAPITAL TOWN OF EACH STATE FOR A FULL
WEEK'S WORK AT 31st DECEMBER, 1915.**

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP III.—FOOD, DRINK, TOBACCO, ETC.						
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Biscuitmaking ...	23 0	25 0	*25 0	...	...	...
Buttermaking ...	...	30 0	...	...	...	...
Cheesemaking ...	...	30 0	...	...	...	...
Confectionery—Chocolate Dippers	24 0	22 0	22 0	22 0	*20 0 to 22 6	...
" Other Adults ...	20 0 & 24 0	20 0	17 6	21 0	*20 0 to 22 6	...
Jam Making and Preserving— Fillers ...	25 0 & 33 0	31 6	*17 6	21 0	...	27 0
Other Adults ...	23 0	25 0	*17 6	21 0	...	22 6
Pastrycooks ...	22 0 to 43 0	20 0	20 0	...	...	...
Tea Packing—Headwomen ...	*27 6 to 30 0	28 6	...	...	...	...
" Other Adults ...	*24 0	17 6 to 22 6	...	...	...	...
Tobacco Working (Cigars)— Ringers ...	25 0	24 0	...	...	...	...
Wrapper Leaf Strippers...	25 0	25 0	...	...	...	...

GROUP IV.—CLOTHING, HATS, BOOTS, ETC.

	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bootmaking— Machinists (Wax Thread) ...	35 0	35 0	28 0	*30 0	...	35 0
Other Adults ...	28 0	28 0	28 0	27 0	*30 0	28 0
Dressmakers ...	*20 0 to 25 0	21 6	*20 0 to 25 0	16 0	*25 0 to 30 0	*20 0
Dyers and Cleaners ...	*30 0	*25 0	...	...	...	...
Hatmaking (Straw)—Finishers	10 25 0	*25 0	...	...	...	...
" Machinists	10 30 0	30 0	...	...	...	...
Milliners ...	*25 0	25 0	*21 0	*20 0	*25 0 to 30 0	*20 0
Shirtmakers ...	*25 0	22 6	*20 0	16 0	...	...
Tailoring (Order)— Machinists (Coat Hands) ...	28 6	25 6	26 0	25 6	40 0	*25 0 to 35 0
" (Trouser, Vest Hands)	24 0	25 6	26 0	25 6	40 0	...
Tailoresses (Coat Hands) ...	30 0 & 35 0	26 0	26 0	26 0	45 0	35 0
" (Trouser, Vest Hands)	25 0 & 29 0	24 0	23 6	24 0	35 0	29 0
Tailoring (Ready Made)— Machinists (Coat Hands) ...	25 0	24 0	24 0	22 6	40 0	5s 35 0
" (Trouser, Vest Hands)	23 0 25 0	24 0	21 6 21 0	22 6 22 6	40 0 45 0	5s 35 0 5s 35 0
Tailoresses (Coat Hands) ...	23 0 & 24 0	22 6	21 0	20 0	35 0	5s 35

See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUP IV.—CLOTHING, HATS, BOOTS, ETC.—Continued.						
Textile Working (Woollen Mills)	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Comb Minders ...	21 0	22 6	*15 0	20 0	...	*20 0
Drawers and Menders ...	30 0	22 6	*22 0	20 0	...	*20 0
Gillbox Minders ...	21 0	22 6	*17 6	20 0	...	*20 0
Other Adults ...	21 0	21 0	...	20 0	...	*20 0
Warpers ...	30 0	30 0	20 0	25 0*	...	*25 0
Weavers, Loom ...	35 0	30 0	20 0	22 0	...	*25 0
Tiemaking—			to 30 0*	to 32 0*		
Machinists ...	*22 6	20 0	...	...	...	...
Needlewomen ...	*25 0	22 6	...	...	...	...
Boxers, Pressers and other ...	*20 0	20 0	...	...	...	...
Underclothing ...	*20 0	20 0	*20 0	16 0	*25 0	*16 0
Waterproof Clothing—						
Garmentmakers ...	*20 0	27 6	...	...	...	...
Needlewomen ...	to 25 0	22 6	...	...	...	...

GROUPS I, II, V. AND VI.—PRINTING AND OTHER MANUFACTURES.

Bedding and Furniture—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bedding Machinists ...	30 0	†30 0	*27 6	25 6	...	27 6
Mattress (Wire) Workers ...	36 0	†36 0	...	25 6	...	27 6
Picture Frame Workers ...	*25 0	*22 6	...	...	...	...
Bookbinding—						
Folders ...	*23 0	21 0	20 0	22 0	20 0 to	...
„ Sewers ...	*25 0	23 0	20 0	22 0	25 0*	...
Brassworking—						
Coremakers ...	37 0	30 0	...	...	...	...
„ Other Adults ...	*20 0	20 0	...	...	...	...
Brushmaking—						
Bass Broom Drawers ...	...	...	...	21 0	...	...
Bench Drawers ...	...	21 0	...	21 0	...	...
Machinists (Treadle Knot) ...	...	21 0	...	21 0	...	...
Candlemaking—Forewomen ...	30 0	27 6	21 6	...	...	...
Cardboard Box Making—						
Box Makers ...	*25 0	25 0	...	*20 0	...	...
Other Adults ...	*20 0	23 0	...	*20 0	...	...
Jewellery—						
Chainmakers ...	36 0	35 0	...	35 0	...	...
Enamel Fillers ...	20 0	...	...	35 0	...	...
Gilders ...	36 0	45 0	...	35 0	...	...
Polishers ...	36 0	45 0	...	35 0	...	...
Scratch Brushers ...	35 0	35 0	...	35 0	...	...
Workers, n.e.i. ...	40 0	55 0	...	35 0	...	...
Leather Small Goods—						
Hand Stitchers ...	26 0	†28 0	...	...	...	...
Other Adults ...	26 0	†22 6	...	...	...	...
Paper Makers ...	22 6	21 0	...	...	...	...
Paper Bag Makers ...	22 6	20 0	...	...	...	...
Polish Makers ...	...	25 0	...	...	...	...
Potteries ...	20 0	25 0	...	...	...	...

† From 1st January, 1916. ‡ From 21st January, 1916. See also explanatory notes on page 1063.

WEEKLY RATES OF WAGES, ETC.—Continued.

Industry and Occupation.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
GROUPS I., II., V. AND VI.—PRINTING AND OTHER MANUFACTURES—Continued.						
Printing—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Jobbing Office Assistants ...	23 0	22 0	20 0	22 6	...	...
Lithographic Feeders ...	25 0	22 0	20 0	22 6	...	...
Rubber Workers ...	27 0	27 0	...	...	...	...
Saddlery and Harness Makers ...	28 0	28 0	27 6	30 0	30 0	...
Sail Making ...	30 0	27 6	20 0	...	...	...
			& 25 0*			
Soap Making ...	21 0	27 6	...	...	...	...
Tent and Tarpaulin Making—						
Machinists ...	27 6	27 6	21 0*	...	...	...
	to 32 6					

GROUP XIII.—DOMESTIC, HOTELS, ETC.

NOTE.—Except where otherwise specified the rates of wages specified for Employees in Hotels and Restaurants represent the weekly cash payment where Board and Lodging are provided. If Board and Lodging are not provided, payment has to be made in lieu thereof, upon an estimated value, fixed by Industrial Determinations for the Capital Towns as follows: Sydney, 15s.; Melbourne, 14s.; Brisbane, 15s.; Adelaide, 15s.; Perth, 15s.; and Hobart, 15s. per week. Of this sum 10s. per week is allocated as value of Board in each instance.

Hotels—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Barmaids ...	17 26 0	17 26 0	27 25 0	25 55 0*	25 65 0†	31 20 0
						& 25 0
Housemaids ...	33 14 0	28 16 0	33 15 0	28 18 6	19 20 0	31 12 0
				& 20 0		& 15 0
Laundresses ...	33 20 0	28 21 0	20 0	28 27 6*	...	...
Waitresses (Head) ...	28 20 0	28 16 0	...	28 20 0	...	31 20 0
				& 25 0		& 25 0
„ (Other) ...	38 17 6	28 15 0	28 15 0	28 18 6	19 22 6	31 15 0
				& 20 0		& 20 0
Laundries—						
General Hands ...	21 0	24 0	...	20 0	36 0	24 0*
Machinists (Shirt and Collar) ...	25 0	27 0	21 0*	20 0	42 0	24 0*
Sorters ...	25 0	25 0	22 0	22 0	36 0	24 0*
			to 25 0*			
Starchers ...	25 0	24 0	...	20 0	36 0	24 0*
Washers ...	25 0	24 0	24 0	20 0	36 0	24 0*
			to 36 0*			
Office Cleaners ...	32 1 0	22 6	...	...	...	...
Restaurants—Pantry Maids ...	31 18 0	31 15 0	28 16 0	28 22 6	28 20 0	31 15 0
	& 21 0					
„ Waitresses ...	31 17 6	31 15 0	28 16 0	28 18 6	28 22 6	31 15 0
	to 24 0					

GROUP XIV.—SHOP ASSISTANTS, CLERKS, ETC.

Saleswomen, Clerks, etc.—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Cashiers ...	17 25 0	32 0	22 6	...	...	...
	to 35 0		to 35 0			
Clerical Assistants ...	17 25 0	36 0	22 6	...	...	...
	to 35 0		to 35 0			
Saleswomen—						
Boot ...	17 25 0	17 30 0	22 6	17 22 6	34 6	...
	to 36 0		to 35 0	to 27 6		
Drapery ...	17 25 0	32 0	22 6	17 22 6	34 6	...
	to 36 0		to 35 0	to 27 6		
Fruit and Confectionery ...	35 20 0	...	22 6	...	34 6	...
			to 35 0			
News Agent and Bookstall ...	25 25 0	...	22 6	...	...	...
	& 32 6		to 35 0			
Tobacconist ...	25 35 0	...	22 6	...	...	...
	& 40 0		to 35 0			

† Not in addition to Board and Lodging. † From 1st January, 1916. See also explanatory notes on page 1063.

§ 6. Industrial Disputes.

1. **General.**—The systematic collection of information regarding industrial disputes throughout the Commonwealth was initiated at the beginning of the year 1913. An examination of the available data for previous years contained in official reports, newspapers, and other publications, shewed that there was insufficient material available for the compilation of anything like complete or comprehensive information regarding industrial disputes in the Commonwealth. In the State of New South Wales, a considerable amount of information regarding industrial disputes is available from the 1st July, 1907, and has been published in the New South Wales Industrial Gazette (April, 1913, and January, 1914). The particulars given are, however, stated to be incomplete for the period from July, 1907, to April, 1912.

(i.) *Collection of Particulars.* Under the system initiated in 1913, information as to the occurrence of an industrial dispute is derived from a number of sources, of which the following are the most important:—(a) Reports by labour agents and correspondents who have been appointed in all the most important industrial centres of the Commonwealth; (b) monthly reports sent in by secretaries of trade unions, and (c) newspaper, trade and labour journals, and other publications.

Upon information being obtained as to the existence of an industrial dispute involving stoppage of work, forms* are despatched to the several parties concerned, viz., secretaries of trade unions, employers' organisations, and individual employers. The first parts of these forms are required to be returned immediately, and provide for the insertion of information as to (a) the locality in which the dispute exists, (b) its cause or object, (c) the date of commencement, and (d) the number of persons involved directly and indirectly. The second parts of the forms, which are required to be returned as soon as the dispute is terminated, provide for information regarding (a) the date of termination, (b) the conditions or terms on which work was resumed, (c) the method of settlement, (d) the estimated loss in wages, and (e) particulars as to the number affected, etc., if the result involves a change in rates of wages or hours of labour.

(ii.) *Methods of Tabulation.* If the information given by one party to the dispute substantially agrees with that furnished by the other, the facts are considered to be accurate, and the particulars are accepted for tabulation. In all cases where discrepancies or inconsistent accounts are received, special enquiries are instituted, ordinarily through labour agents and correspondents. The whole of the available information is then determined as judicially as possible, making the summarised result to agree not necessarily with the testimony of a single individual, but to harmonise with the concurrent evidence of the majority, or of those whose returns appear to be the most reliable. It may, therefore, happen that the particulars, as presented in the reports concerning certain disputes, will not agree with the returns as submitted by participants in such disputes. Certain stoppages of work are, however, excluded from the tabulations for the reason that they are not of sufficient magnitude.† In tabulating the particulars thus received and compared, the information is divided under four headings:—(a) number of establishments involved; (b) number of workpeople involved, (i.) directly, and (ii.) indirectly; (c) number of working days lost; and (d) estimated loss in wages.

(iii.) *Definitions and Explanations of Terms.* Industrial disputes involving stoppage of work may be classified under three main headings, viz., (a) a strike; (b) a lockout; or (c) a sympathetic strike. For the purposes of these investigations the following definitions have been accepted:—

* As these forms have been prescribed under the Census and Statistics Act 1905, it is compulsory upon prescribed persons to furnish the information required. † Disputes involving an aggregate loss of less than ten working days.

- (a) A strike is defined as a concerted withdrawal from work by a part or all of the employees of an establishment or of several establishments, with a view to enforcing a demand on the part of the employees, or of resisting some demand made by their employers.
- (b) A lockout is a refusal on the part of an employer or several employers, to permit a part or all of the employees to continue at work, such refusal being made to enforce a demand on the part of the employers, or to resist some demand made by their employees.
- (c) A sympathetic strike is one in which the employees of an establishment, or of several establishments, make no demand for their own benefit, but leave work in order to assist employees of some *other* establishment or establishments, on strike or locked out, for the purpose of enforcing or resisting a demand.

In view of the difficulty which may often occur in distinguishing clearly whether a stoppage of work constitutes a strike or a lockout, for the purposes of these investigations all stoppages* coming within the definitions adopted are grouped under the generic term "industrial disputes."

"Establishment" means the place of work or business carried on by a person, firm, company, or Government Department. Shops, factories, places of business or construction or repairing works of different employers in the same locality, or of the same employer in different localities, are considered as separate establishments.

"Workpeople directly involved in dispute"† includes only those workpeople who actually joined in the demand, and who, on refusal of such demand, ceased work. In the case of a lockout, the term is used to include the number of workpeople whom the employer refused to allow to work unless they complied with his demand.

"Workpeople indirectly involved in dispute" refers only to those employees who were involuntarily thrown out of work as the result of an industrial dispute caused by certain other employees going on strike, or through an employer or employers locking-out certain other employees, whose absence from work rendered it impossible for work to proceed in the establishment or establishments affected by the dispute. It often occurs also, that when one section of employees is engaged in an industrial dispute the effect of such dispute is to cause loss of time to other employees following occupations which are dependent upon those followed by the workpeople actually on strike or locked out.

"Working days lost" refers to working time lost in consequence of the dispute, and is obtained by multiplying the number of workpeople directly and indirectly involved by the duration of the dispute in working days.

In computing the duration of a dispute in working days, Sundays (except where continuous processes are carried on) and holidays are excluded. It is generally considered that had a dispute not occurred the employment would have been constant, and allowance is not made for short-time work, due to slackness of trade, etc. This course is not precisely correct, but until a complete investigation can be made as to the amount of unemployment due to seasonal trades, or intermittency in trade activity, no definite allowance can be computed and allowed.

"Estimated loss in wages" is computed, and represents the amount in wages which would have been earned by the workpeople involved had a stoppage not taken place. It is admitted that the element of unemployment also enters into this phase of the statistics. Further, in some industrial work (*e.g.*, shearing and sugar-cane cutting) the amount of work available is definite, and the amount to be earned in wages, in executing

* It must be observed, however, that certain stoppages of work do not come within these definitions, such as those where the relationship of employer and employee does not exist, *e.g.*, rabbit trappers who refused to continue to supply certain freezing companies with rabbits owing to the companies refusing to pay an advanced price; and labourers refusing to commence work at the rate of wage offered. It has been held judicially that a refusal to commence or to continue work does not constitute a strike, unless such refusal is a breach of an existing contract of employment. Again, stoppages of work for the purpose of holding meetings are not designated industrial disputes, seeing that the stoppage is not necessarily for the purpose of enforcing or resisting demands. † The same persons may, of course, be involved in two or more disputes in a single year, in which case the number would be included on each occasion in the statistics of the number of workpeople involved in dispute. This remark also applies to those workpeople involuntarily thrown out of employment.

the work, is not reduced by reason of it not being entered upon and finished within a certain reasonable period. For some purposes, therefore, it may be contended that a loss in wages is not necessarily incurred if only the commencement or completion of the work is delayed through a stoppage of work.

In all quarterly tabulations particulars of disputes which commenced within the quarterly period (so far as they relate to the number of working days and wages lost) are separated from those respecting disputes which had commenced in a previous quarter, but which had not been settled within that period.

In annual 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 in 1914 and 1915.—The systematic collection of information as to industrial disputes 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 1914 and 1915 respectively, 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 1914 AND 1915.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	F.T.*	N.T.†	C'w'ith.
No. of disputes, 1914 ...	235	44	18	13	18	6	1	2	337
1915 ...	272	38	17	15	6	2	1	7	358
No. of workpeople involved ...	1914 56,281	7,051	1,686	1,191	4,409	313	50	68	71,049
1915 69,614	6,243	2,066	1,483	646	922	20	298	81,292	
No. of working days lost ...	1914 836,948	84,106	25,703	15,275	124,175	3,286	350	553	1,090,395
1915 464,343	64,878	19,334	19,877	4,068	4,808	80	5,237	593,225	
Total estimated loss in wages ...	1914 £ 419,656	39,619	11,747	7,677	70,552	1,459	170	348	551,228
1915 £ 240,322	28,476	9,505	14,442	2,294	2,174	55	2,365	299,633	

* Federal Capital Territory.

† Northern Territory.

During the year 1914 a very protracted dispute occurred in the Northern Colliery area in New South Wales. The employees demanded the abolition of the afternoon shift, which involved 2930 workers in a loss of 522,967 working days, and an estimated loss of £258,750 in wages. It should be observed that a complete stoppage of work at the collieries did not occur, but the refusal of the miners and others to work the afternoon shift materially affected the output of coal. The presence of these abnormal figures preclude any direct comparison of the results for the year 1914 with either the preceding or the succeeding year.

It may be seen, however, from the foregoing table that industrial disputes throughout the Commonwealth were more frequent during 1915 than during the year 1914. In point of magnitude, i.e., average number of persons involved in each dispute, the disputes which occurred during the year 1914 (omitting 2930 workers involved in the abnormal dispute on the northern coalfields of New South Wales, referred to in a preceding paragraph) averaged 203 persons involved, whereas those which occurred during 1915 averaged 227 persons involved. In contradistinction to these results, the average

† 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. § For this reason the aggregate of the particulars relating to each quarter of any year will not necessarily agree with the annual results.

duration of the disputes shews (omitting the figures—522,567—in connection with the dispute on the northern coalfields in 1914) a decrease in 1915 as compared with 1914. The average duration of each dispute in each of the years 1914 and 1915 was approximately $8\frac{1}{2}$ and $7\frac{1}{2}$ working days respectively. The estimated loss in wages entailed in each dispute averaged for 1914 (omitting the figures in connection with the particular dispute beforementioned, viz., £258,750) £4 2s., and for 1915 £3 14s. per worker involved.

The prevalence of industrial disputes in New South Wales as compared with the other States is best expressed in percentage of the aggregates recorded for all States and Territories. Thus the disputes in New South Wales represented no less than 61 per cent. in 1914 and 76 per cent. in 1915. The disputes in Victoria equalled 13 and 11 per cent. of the total industrial disputes in the respective years, and Queensland approximately 5 per cent. in each year. South Australia and the Northern Territory records shew a slight increase in point of number of disputes recorded in the later year, but Western Australia and Tasmania shew a comparatively large decrease. In each instance, however, the numbers form but a small proportion of the aggregate.

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 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.

3. Number and Magnitude of Industrial Disputes in the Commonwealth, Classified according to Industrial Groups.—Comparative Particulars for 1914 and 1915.—The following table gives particulars of disputes in the Commonwealth during the years 1914 and 1915, classified according to industrial groups. The system of classification selected is similar to that adopted in connection with labour organisations, unemployment, rates of wages, etc. (see Report No. 5, Labour and Industrial Branch, page 6).

INDUSTRIAL DISPUTES IN THE COMMONWEALTH, CLASSIFIED ACCORDING TO INDUSTRIAL GROUPS, 1914 AND 1915.

Industrial Group.	No. of Disputes.		No. of Work-people involved in Disputes.		No. of Working Days Lost.		Total Estimated Loss in Wages.	
	1914.	1915.	1914.	1915.	1914.	1915.	1914.	1915.
I. Wood, Furniture, Timber, etc.	5	7	556	620	3,086	14,382	1,345	7,444
II. Engineering, Metal Wks., etc.	29	23	8,039	3,016	118,679	35,983	63,039	19,314
III. Food, Drink, etc.	9	14	2,670	3,756	43,972	31,312	20,151	10,881
IV. Clothing, Hats, Boots, etc.	1	2	54	565	25	8,742	5	2,315
V. Books, Printing, etc.	3	...	163	...	2,148	...	1,029	...
VI. Other Manufacturing	14	21	1,535	7,223	13,668	38,950	6,554	18,805
VII. Building	16	8	4,321	301	140,581	801	72,715	462
VIII. Mines, Quarries, etc.	186	204	48,735	54,315	698,725	357,757	350,568	192,948
IX. Rail and Tramway Services	23	33	1,994	5,731	44,310	44,982	24,495	25,871
X. Other Land Transport	6	7	580	474	2,612	2,453	1,176	1,130
XI. Shipping, Wharf Labour	11	14	682	2,345	8,783	13,550	4,282	6,243
XII. Pastoral, Agricultural, etc.	5	4	359	213	6,942	1,611	2,815	683
XIII. Domestic, Hotel, etc.	1	2	48	94	48	4,553	12	1,354
XIV. Miscellaneous	28	19	1,263	2,639	6,516	28,149	3,042	12,183
Commonwealth, All Groups	337	358	71,049	81,292	1,090,395	583,225	551,228	290,633

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 1914 the proportion of disputes in those industries represented practically 55 per cent. of the total number recorded. During the year 1915 this proportion rose to 57 per cent. 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 are, however, in excess of a similar proportion.

4. **Industrial Disputes, Classified as to Causes and Results.**—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 years 1914 and 1915, classified according to principal cause and result:—

INDUSTRIAL DISPUTES, CLASSIFIED ACCORDING TO CAUSES AND RESULTS.

PARTICULARS.	No. of Disputes.				No. of Workpeople involved in Disputes.				Total No. of Working Days Lost by Disputes.			
	In Favour of Workpeople.	In Favour of Employer.	In Compromise.	Indefinite.	In Favour of Workpeople.	In Favour of Employer.	In Compromise.	Indefinite.	In Favour of Workpeople.	In Favour of Employer.	In Compromise.	Indefinite.

1914.												
Wages—												
(a) For increase	21	16	13	...	3,468	1,733	2,161	...	44,602	18,674	36,175	...
(b) Against decrease	3	...	...	...	534	...	...	...	32,965	...	...	...
(c) Other wage questions	18	18	29	2	1,765	2,975	10,274	229	6,130	36,696	124,431	2,590
Hours of Labour—												
(a) For reduction	...	1	...	...	...	220	...	...	...	9,240	...	...
(b) Other disputes re hours	...	5	7	1	...	1,192	2,015	30	...	3,726	11,809	1,320
Trade Unionism—												
(a) Against employment of non-unionists	10	1	1	1	2,607	70	3,039	91	5,963	70	85,030	1,657
(b) Other union questions	5	3	3	...	676	607	310	...	1,636	1,630	3,702	...
Employment of particular classes or persons	34	27	19	3	6,336	6,111	2,344	72	14,349	28,966	17,518	3,534
Working conditions	20	21	31	...	4,392	4,086	8,575	...	21,376	19,141	543,772	...
Sympathy	...	...	...	3	...	...	...	675	...	...	...	2,125
Other causes	7	6	7	1	1,446	1,248	1,678	90	2,974	1,676	6,828	90
TOTAL	118	98	110	11	21,224	18,242	30,366	1,187	129,995	119,819	829,265	11,316

1915.												
Wages—												
(a) For increase	44	15	9	5	13,879	1,452	2,238	1,224	142,321	30,283	16,613	1,428
(b) Against decrease	4	...	6	...	525	...	588	...	4,230	...	8,325	...
(c) Other wage questions	24	9	12	1	5,431	2,835	3,696	28	41,483	31,862	60,233	28
Hours of Labour—												
(a) For reduction	2	...	...	1	522	...	...	374	462	...	...	374
(b) Other disputes re hours	1	2	2	1	50	510	583	1,500	12	510	3,352	19,500
Trade Unionism—												
(a) Against employment of non-unionists	15	3	1	...	3,521	330	22	...	7,503	23,422	220	...
(b) Other union questions	8	2	6	...	1,335	301	2,103	...	1,703	325	5,406	...
Employment of particular classes or persons	39	21	13	3	6,542	3,397	2,856	1,039	16,425	24,287	32,375	4,775
Working conditions	42	16	16	2	9,667	3,968	2,359	120	24,756	34,551	22,175	840
Sympathy	2	2	...	2	259	305	...	386	3,386	1,460	...	1,158
Other causes	9	8	3	7	2,409	2,229	415	2,294	3,344	8,959	2,945	2,294
TOTAL	190	78	68	23	44,140	15,327	14,860	6,965	245,625	155,659	151,544	30,397

In comparison with 1914, the results of disputes commenced during 1915 would appear to have been substantially more in favour of the employees. This characteristic would be borne out by a comparison of the results in the first column "in favour of workpeople" in the above tables. To these figures, however, should be added those under the third heading, "Compromise." The whole of a demand made by a body of employees may not be conceded, but so much may be agreed upon between the disputants that the compromise actually represents a substantial concession, and for practical purposes the result might be classified as being in favour of the workpeople. In some instances one only of two demands is conceded, which might rightly be termed a compromise, but the result would be influenced by the character of the concession. If the claim conceded related to the principal cause, the result might be taken as in favour of the workpeople.

§ 7. —Retail Prices, House Rents, and Cost of Living.

1. **Introduction.**—In 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 and 6, results of further investigations were given, and in those Reports, and in Labour Bulletins Nos. 1 to 12, information was given as to variations in retail and wholesale prices, house-rent, and purchasing power of money up to the end of 1915.

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 1000 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 that we shall select a suitable list of commodities, the quantities of each being taken in due proportion to their relative average consumption, and, keeping this list with the quantities constant, ascertain what it costs to purchase the whole group. In this way we can compare 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 thirty 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 inquiries 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. 6 (pages 22-23) 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 1915.—In Reports Nos. 1, 2, 5 and 6, and Labour Bulletins Nos. 1 to 12, 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 (=1000). 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 (=1000). 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 and 1904 to 1915.**

TOWN.	1901.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Sydney ...	917	877	972	964	936	1,030	1,012	1,000	989	1,124	1,131	1,156	1,396
Melbourne ...	965	916	952	945	925	995	949	960	935	1,082	1,024	1,091	1,411
Brisbane ...	965	892	945	959	947	1,023	983	1,000	1,018	1,102	1,042	1,078	1,373
Adelaide ...	1,028	940	993	982	951	1,010	1,025	1,001	1,020	1,154	1,119	1,215	1,487
Perth ...	1,184	1,210	1,258	1,237	1,197	1,226	1,212	1,251	1,346	1,345	1,267	1,302	1,483
Hobart ...	1,011	981	1,030	1,047	1,010	1,055	1,093	1,073	1,058	1,190	1,164	1,219	1,445
Weighted Average*	972	924	986	980	955	1,031	1,006	1,005	1,000	1,129	1,095	1,144	1,416

* 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 £1000 in the capital towns considered as a whole in 1911, would have cost £917 in Sydney in 1901, £1346 in Perth in 1911, or £1411 in Melbourne in 1915.

(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 1915, 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 and 6, 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 and 1904 to 1915.**

TOWN.	1901.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Sydney ...	858	866	887	891	911	922	955	988	1,090	1,183	1,246	1,279	1,220
Melbourne ...	733	764	771	782	804	828	842	916	970	1,016	1,089	1,126	1,085
Brisbane ...	488	508	519	524	575	616	662	700	767	804	863	882	859
Adelaide ...	629	629	702	761	812	872	940	1,018	1,112	1,160	1,125	1,040	932
Perth ...	801	798	739	716	684	678	667	696	810	880	928	914	848
Hobart ...	667	674	681	686	708	727	749	776	805	829	887	914	928
Weighted Average*	751	766	782	793	816	839	867	919	1,000	1,063	1,118	1,135	1,081

* For all capital towns.

NOTE.—The above figures are directly comparable in every respect.

It may be seen that, except in Adelaide, where rents remained constant from 1901 to 1904, and in Perth, where they decreased from 1903 to 1909, there was a uniform increase in each metropolitan town from 1901 to 1914. The increase was greater in

Adelaide (where the average rent in 1901 was only 629, compared with 1112 in 1911, and 1125 in 1913), and in 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 graph for Perth presents features entirely different from those for the other towns; the fall in rents commencing in 1903 and lasting until 1907, is followed, after another temporary decline in 1909, by a rapid rise. In 1914 rents fell slightly in Adelaide and Perth, but rose in the other towns. During 1915, there was a decrease in house rents in all the capital towns except Hobart.

(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 and 1904 to 1915.**

TOWN.	1901.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Sydney ...	893	872	937	934	926	986	989	995	1,031	1,148	1,178	1,206	1,333
Melbourne	870	854	878	878	875	926	905	942	950	1,055	1,051	1,105	1,277
Brisbane	769	734	770	780	794	856	851	877	915	979	969	997	1,162
Adelaide	864	812	873	891	894	953	990	1,008	1,058	1,157	1,121	1,143	1,259
Perth ...	1,027	1,041	1,045	1,023	986	1,001	988	1,023	1,126	1,154	1,128	1,143	1,222
Hobart ...	869	855	886	899	886	920	952	951	954	1,042	1,050	1,090	1,233
Weighted Average*	880	858	901	902	897	951	948	970	1,000	1,101	1,104	1,140	1,278

* For all capital towns.

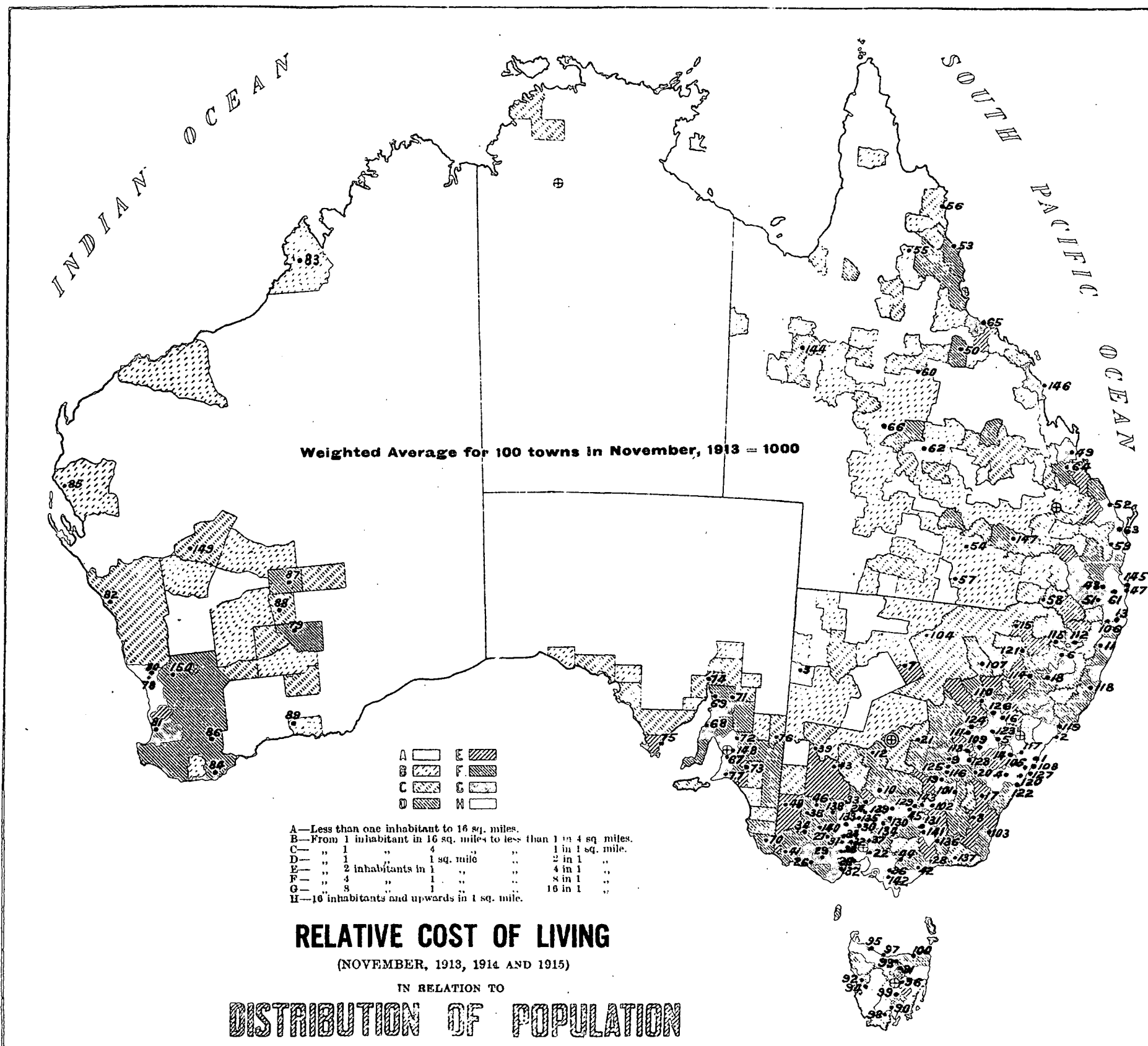
NOTE.—The above figures are directly comparable in every respect.

Generally speaking, prices were low in 1904, high in 1902 and 1908, and rose steadily each year since 1909. The general trend of the graph for Perth is different to that for the other towns, owing mainly to the decline in house rents in that place, which occurred from 1903 to 1907, and again in 1909.

The general result for all the six towns shews that the index-number was only 0.3 per cent. higher in 1913 than in 1912. 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.

5. Relative Cost of Food, Groceries, and House Rent in Different Towns, 1915.—

The index-numbers given in the preceding paragraphs shew *changes in the cost of food, groceries, and house rent separately for each individual town during the years 1901 to 1915.* The figures given in the table below shew *the relative cost of food, groceries, and house rent in 1915 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 1000, hence the columns are comparable both horizontally and vertically.

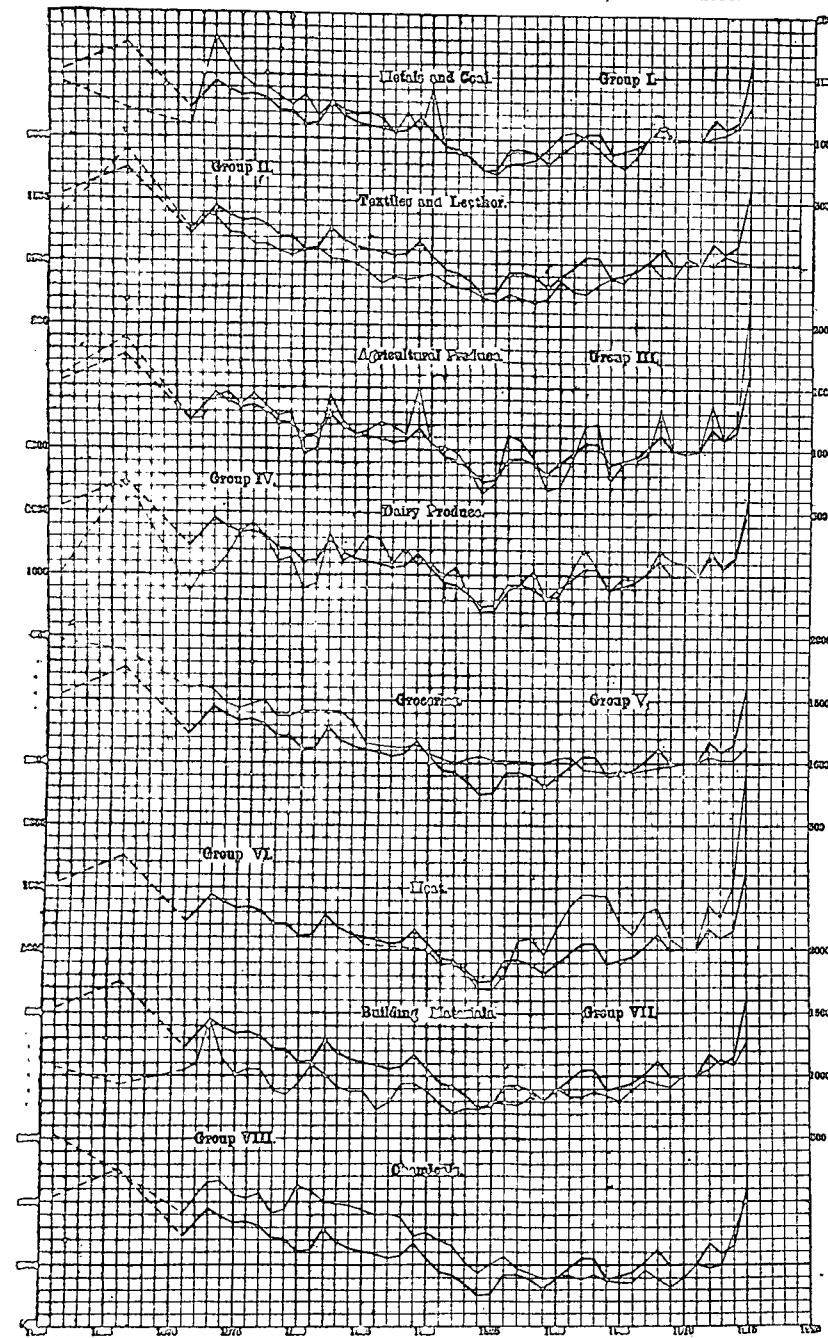


	1913.		1914.		1915.			1915.	
	A	B	A	B	A	B		A	B
1 SYDNEY	1,109	634	1,124	651	1,321	861	N. S. Wales—		
2 Newcastle	980	637	972	648	1,228	847	101 Adelong	1,110	922
3 Broken Hill	1,116	768	849	773	1,192	1,013	102 Albury	1,174	868
4 Goulburn	974	629	1,035	667	1,271	854	103 Bega	1,137	873
5 Bathurst	892	583	909	608	1,102	825	104 Bourke	1,146	920
6 Armidale	875	601	948	618	1,148	863	105 Bowral	1,135	841
7 Cobar	987	661	881	742	996	907	106 Casino	1,185	884
8 Cooma	861	638	975	662	1,221	962	107 Coonamble	1,202	883
9 Cootamundra	977	632	990	653	1,290	892	108 Corral	1,078	854
10 Deniliquin	836	606	943	675	1,199	924	109 Cowra	1,217	854
11 Grafton	919	632	922	654	1,181	913	110 Dubbo	1,190	887
12 Hay	918	688	989	740	1,277	1,006	111 Forbes	1,131	886
13 Lismore	931	695	1,042	723	1,213	860	112 Glen Innes	1,101	859
14 Lithgow	915	628	938	625	1,227	894	113 Grenfell	1,221	902
15 Moree	981	681	1,041	696	1,256	937	114 Gunnedah	1,252	870
16 Mudgee	824	569	895	640	1,131	863	115 Inverell	1,201	841
17 Queanbeyan	1,052	650	980	635	1,213	906	116 Junee	1,223	885
18 Tamworth	902	599	1,066	649	1,231	874	117 Katoomba	1,225	847
19 Wagga Wagga	987	584	949	670	1,172	834	118 Kempsey	1,120	862
20 Yass	943	637	1,040	676	1,251	948	119 Maitland	1,087	822
21 West Wyalong	966	631	952	669	1,130	890	120 Moss Vale	1,258	869
22 MELBOURNE	964	568	1,019	628	1,240	852	121 Narrabri	1,190	877
23 Ballarat	787	566	845	636	1,084	874	122 Nowra	1,060	856
24 Bendigo	815	573	873	641	1,088	843	123 Orange	1,210	834
25 Geelong	872	579	943	639	1,145	849	124 Parkes	1,153	879
26 Warrnambool	865	581	914	620	1,152	868	125 Temora	1,262	911
27 Ararat	832	577	915	641	1,179	895	126 Wellington	1,197	859
28 Bairnsdale	796	579	838	615	1,155	903	127 Wollongong	1,141	838
29 Camperdown	866	572	915	625	1,101	818	128 Young	1,180	874
30 Castlemaine	773	547	911	636	1,137	862	VICTORIA—		
31 Creswick	730	577	808	636	1,056	883	129 Beechworth	1,059	893
32 Daylesford	779	590	817	638	1,073	885	130 Benalla	1,153	879
33 Echuca	811	607	857	672	1,061	876	131 Bright	1,118	921
34 Hamilton	871	594	926	636	1,275	924	132 Colac	1,161	856
35 Horsham	849	534	938	670	1,202	921	133 Dunnolly	1,045	853
36 Korumburra	839	596	892	625	1,162	907	134 Euroa	1,071	857
37 Kyneton	766	562	790	611	1,114	887	135 Maldon	996	875
38 Maryborough	745	573	808	626	1,029	844	136 Omeo	1,158	1,005
39 Mildura	972	608	1,053	696	1,272	930	137 Orbost	1,162	890
40 Nhill	867	593	905	656	1,121	887	138 St Arnaud	1,188	946
41 Portland	796	592	904	624	1,220	928	139 Shepparton	1,149	859
42 Sale	784	551	874	634	1,070	824	140 Stawell	1,186	942
43 Swan Hill	975	618	1,000	649	1,279	874	141 Wandiligong	1,081	954
44 Walhalla	790	687	808	693	1,025	897	142 Wonthaggi	1,236	917
45 Wangaratta	825	589	885	662	1,173	876	143 Yackandandah	1,038	873
46 Warracknabeal	810	555	877	647	1,082	814	QUEENSLAND—		
47 BRISBANE	878	583	919	627	1,166	878	144 Cloncurry	1,447	1,032
48 Toowoomba	840	603	898	646	1,119	894	145 Hamilton	1,279	896
49 Rockhampton	863	617	920	668	1,184	945	146 Mackay	1,227	895
50 Charters Towers	907	658	997	752	1,188	942	147 Roma	1,286	937
51 Warwick	822	590	863	635	1,077	863	S. AUSTRALIA		
52 Bundaberg	851	621	893	650	1,123	873	148 Gawler	1,180	873
53 Cairns	1,067	704	1,140	809	1,248	913	W. AUSTRALIA		
54 Charleville	1,069	704	1,041	722	1,396	1,001	149 Cus	1,315	1,092
55 Chillagoe	1,153	834	1,052	892	1,319	1,000	150 Northam	1,259	879
56 Cooktown	937	745	1,003	799	1,125	959			
57 Cunnamulla	992	724	1,047	779	1,321	1,065			
58 Goonawindi	958	639	968	680	1,190	935			
59 Gympie	791	600	819	653	1,088	890			
60 Hughenden	1,145	756	1,269	803	1,334	951			
61 Ipswich	874	606	900	632	1,180	899			
62 Longreach	1,047	728	1,123	823	1,209	945			
63 Maryborough	762	584	830	624	1,133	913			
64 Mount Morgan	880	637	951	696	1,204	949			
65 Townsville	996	636	1,123	769	1,343	952			
66 Winton	1,147	803	1,136	817	1,443	997			
67 ADELAIDE	1,056	619	1,078	698	1,243	876			
68 Kadina-Moonta	862	636	941	690	1,150	891			
69 Port Pirie	972	644	973	729	1,189	922			
70 Mount Gambier	816	568	894	614	1,100	838			
71 Petersburg	996	613	1,099	742	1,214	895			
72 Kapunda	847	618	901	690	1,066	866			
73 Murray Bridge	811	618	1,004	640	1,210	856			
74 Port Augusta	931	680	1,115	770	1,300	892			
75 Port Lincoln	993	674	1,034	716	1,220	901			
76 Renmark	985	666	1,041	696	1,222	897			
77 Victor Harbour	924	637	1,103	720	1,192	863			
78 PERTH	1,116	719	1,131	762	1,186	836			
79 Kalgoorlie	1,277	912	1,344	988	1,451	1,030			
80 Midland Junction	1,079	731	1,106	777	1,171	847			
81 Bunbury	1,113	757	1,155	819	1,155	894			
82 Geraldton	1,317	783	1,344	856	1,413	941			
83 Broome	942	942	943	943	943	944			
84 Albany	1,147	793	1,184	817	1,268	901			
85 Carnarvon	1,343	960	1,316	965	1,296	961			
86 Katanning	1,154	748	1,160	774	1,218	844			
87 Leonora	1,265	1,042	1,324	1,069	1,381	1,139			
88 Menzies	1,153	1,026	1,286	1,133	1,395	1,242			
89 Ravensthorpe	1,147	1,019	1,150	1,010	1,260	1,119			
90 HOBART	975	645	1,042	702	1,231	876			
91 Launceston	811	596	999	668	1,209	868			
92 Zeehan	934	717	928	758	1,141	975			
93 Beaconsfield	769	654	806	710	1,083	987			
94 Queenstown	988	724	1,062	746	1,314	982			
95 Burnie	956	606	1,011	633	1,220	870			
96 Campbell Town	701	599	756	660	+	+			
97 Devonport	899	623	879	633	1,228	903			
98 Franklin	909	654	919	703	+	+			
99 Oatlands	820	628	874	682	961	788			
100 Scottsdale	768	570	844	632	1,032	846			

Weighted Average .. *1,000 *621 *1,035 *665 *1,234 *872

* Weighted average of 100 Towns.
† Weighted average of 150 Towns.
‡ Not available.

MELBOURNE WHOLESALE PRICE INDEX-NUMBERS, 1861 TO 1915.



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, and that of the graphs for groups 2, 4, 6, and 8 on the left of the diagram, the line marked 1000 shewing 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 indicating in each case the index-numbers for the separate group.

1915.—INDEX-NUMBERS, SHEWING RELATIVE COST IN EACH OF THIRTY TOWNS, OF FOOD AND GROCERIES AND HOUSE RENT (INCLUDING 4, 5, AND 6 ROOMED HOUSES, AND ALL HOUSES), COMPARED WITH WEIGHTED AVERAGE EXPENDITURE ON GROCERIES, FOOD, AND RENT IN THE SIX CAPITAL TOWNS IN 1911 AS BASE (=1000).

Town.	Groceries and Food.	HOUSE RENT.				FOOD, GROCERIES, AND RENT, INCLUDING HOUSES HAVING—			
		4-r'm'd Houses only.	5-r'm'd Houses only.	6-r'm'd Houses only.	All Houses. Weightd Average.	4 Rooms.	5 Rooms.	6 Rooms.	All Houses. Weightd Average.
N. S. WALES—									
Sydney ...	892	383	474	549	501	1,205	1,296	1,371	1,323
Newcastle ...	818	228	321	410	329	1,046	1,139	1,228	1,147
Broken Hill*	967	106	144	178	120	1,073	1,111	1,145	1,087
Goulburn ...	817	265	401	531	457	1,082	1,218	1,348	1,274
Bathurst ...	987	197	257	329	317	984	1,044	1,116	1,104
Weighted Average	827	354	444	519	468	1,181	1,271	1,346	1,295
VICTORIA—									
Melbourne ...	831	314	404	499	446	1,145	1,235	1,330	1,277
Ballarat ...	850	145	216	292	261	995	1,066	1,142	1,111
Bendigo ...	842	178	236	334	268	1,020	1,078	1,176	1,110
Geelong ...	821	200	284	402	361	1,021	1,105	1,223	1,182
Warrnambool ...	839	229	301	363	318	1,068	1,140	1,202	1,157
Weighted Average	833	287	373	468	416	1,120	1,206	1,301	1,249
QUEENSLAND—									
Brisbane ...	809	228	298	378	353	1,037	1,107	1,187	1,162
Toowoomba ...	828	199	247	291	306	1,027	1,075	1,119	1,133
Rockhampton ...	842	209	253	327	312	1,051	1,095	1,169	1,154
Charlton Towers	911	187	253	299	240	1,098	1,164	1,210	1,151
Warwick ...	808	146	224	277	259	954	1,032	1,085	1,067
Weighted Average	823	217	282	355	332	1,040	1,105	1,178	1,155
S. AUSTRALIA—									
Adelaide ...	876	295	375	456	383	1,171	1,251	1,332	1,259
Moonta, etc. ...	887	170	258	330	252	1,057	1,145	1,217	1,139
Port Pirie*	919	216	258	319	253	1,135	1,177	1,238	1,172
Mt. Gambier ...	814	213	270	353	295	1,027	1,084	1,167	1,109
Petersburg ...	886	279	358	414	348	1,165	1,244	1,300	1,234
Weighted Average	877	282	359	439	366	1,159	1,236	1,316	1,243
W. AUSTRALIA—									
Perth ...	874	293	365	448	348	1,167	1,239	1,322	1,222
Kalgoorlie, etc. ...	1,066	344	404	487	332	1,410	1,470	1,553	1,398
Mid. Junct., etc. ...	893	242	333	419	311	1,135	1,226	1,312	1,204
Bunbury ...	931	253	312	330	263	1,184	1,243	1,311	1,194
Geraldton ...	977	382	497	596	409	1,359	1,474	1,573	1,386
Weighted Average	918	303	374	458	343	1,221	1,292	1,376	1,261
TASMANIA—									
Hobart ...	851	301	362	421	382	1,152	1,213	1,272	1,233
Launceston ...	828	253	351	417	362	1,081	1,179	1,245	1,190
Zeehan ...	925	134	171	218	123	1,059	1,096	1,143	1,048
Beaconsfield ...	891	92	98	125	100	983	989	1,016	991
Queenstown ...	931	293	342	372	277	1,224	1,273	1,303	1,208
Weighted Average	854	269	337	395	345	1,123	1,191	1,249	1,199
Commonwealth									
Weighted Average ...	841	304	387	469	414	1,145	1,228	1,310	1,255

* See remarks on p. 40, Labour Report No. 6, with reference to House Rents.

6. Variation in Purchasing-Power of Money, 1901 to 1915.—The tables in paragraph 4 give the relative cost of food, groceries, and house rent in the six capital towns from 1901 to 1915 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.—AMOUNT NECESSARY ON THE AVERAGE IN EACH YEAR FROM 1901 TO 1915 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.	Melb'ne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	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
1915 {1st Quarter	24 7	22 11	21 1	23 3	23 10	22 10	23 6
1915 {2nd "	25 2	25 3	22 8	25 4	24 8	24 3	24 11
1915 {3rd "	28 1	27 6	24 2	26 6	25 1	25 10	27 2
1915 {4th "	28 0	26 5	25 1	25 8	24 1	25 9	26 8

* 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 1915 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.	Melb'ne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	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
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
1915 {1st Quarter	24 7	23 9	23 11	26 4	28 5	25 10	24 8
1915 {2nd "	25 9	27 8	26 4	30 2	30 2	28 3	27 3
1915 {3rd "	30 0	31 8	29 0	32 0	30 11	30 10	31 1
1915 {4th "	30 7	29 10	30 8	30 6	29 2	30 8	30 3

* 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 1915 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.	Melb'ne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
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
1915 { 1st Quarter	24 7	21 10	17 1	18 10	17 5	18 6	21 9
1915 { 2nd „	24 5	21 9	17 4	18 6	16 11	18 7	21 7
1915 { 3rd „	24 5	21 7	17 2	18 7	16 10	18 7	21 7
1915 { 4th „	24 3	21 7	17 2	18 7	16 10	18 7	21 6

* Basis of Table.

7. Monthly Fluctuations in Retail Prices of Food and Groceries, July, 1914, to May, 1916.—The following table has been prepared in order to shew 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 or decrease is shewn for each town in May, 1916, compared with July, 1914.

The aggregate result for the thirty towns covered by the investigations shews that prices were 30.9 per cent. higher in May, 1916, than in July, 1914. Prices of the 46 commodities included were 35.3 per cent. higher in May last than in May, 1912, or May, 1913, 30.5 per cent. higher than in May, 1914, and 11.1 per cent. higher than in May, 1915.

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 (=1000).†

Particulars.	1914.	1915.				1916.					Increase from July, 1914, to May, 1916.
	July.	Mar.	April.	May.	Jan.	Feb.	Mar.	April.	May.		
NEW SOUTH WALES—											%
Sydney	1,153	1,231	1,252	1,268	1,529	1,597	1,570	1,512	1,509	30.9	
Newcastle	1,147	1,246	1,262	1,285	1,513	1,544	1,539	1,493	1,507	31.4	
Broken Hill	1,468	1,505	1,576	1,575	1,737	1,751	1,864	1,820	1,817	23.9	
Goulburn	1,183	1,225	1,250	1,312	1,502	1,543	1,568	1,543	1,550	31.1	
Bathurst	1,097	1,192	1,221	1,243	1,431	1,480	1,453	1,474	1,479	34.8	
* Weighted Average ...	1,165	1,243	1,265	1,283	1,535	1,597	1,578	1,523	1,522	30.5	
VICTORIA—											
Melbourne	1,106	1,216	1,282	1,386	1,442	1,547	1,541	1,484	1,485	34.2	
Ballarat	1,103	1,237	1,307	1,424	1,458	1,531	1,519	1,496	1,506	36.6	
Bendigo	1,107	1,244	1,313	1,390	1,465	1,505	1,543	1,475	1,482	33.9	
Geelong	1,089	1,207	1,264	1,350	1,435	1,526	1,537	1,500	1,514	39.1	
Warrnambool	1,087	1,223	1,278	1,404	1,455	1,510	1,541	1,475	1,493	37.4	
* Weighted Average ...	1,105	1,219	1,285	1,388	1,444	1,542	1,540	1,485	1,488	34.7	
QUEENSLAND—											
Brisbane	1,057	1,193	1,289	1,326	1,547	1,573	1,531	1,486	1,491	41.1	
Toowoomba	1,041	1,239	1,323	1,371	1,554	1,573	1,536	1,506	1,457	40.1	
Rockhampton	1,156	1,268	1,306	1,378	1,647	1,681	1,661	1,642	1,613	39.6	
Charters Towers	1,246	1,468	1,510	1,588	1,692	1,676	1,666	1,650	1,644	32.1	
Warwick	1,083	1,237	1,312	1,379	1,534	1,532	1,502	1,467	1,462	35.1	
* Weighted Average ...	1,082	1,230	1,313	1,359	1,570	1,592	1,556	1,517	1,512	39.9	
SOUTH AUSTRALIA—											
Adelaide	1,250	1,354	1,427	1,485	1,506	1,572	1,574	1,549	1,584	26.6	
Kadina, Moonta, Wallaroo	1,230	1,369	1,446	1,488	1,540	1,609	1,625	1,592	1,612	31.0	
Port Pirie	1,291	1,448	1,476	1,530	1,618	1,672	1,656	1,640	1,643	27.3	
Mt. Gambier	1,064	1,253	1,315	1,382	1,425	1,495	1,522	1,532	1,504	41.4	
Petersburg	1,340	1,396	1,433	1,536	1,513	1,638	1,642	1,621	1,622	21.1	
* Weighted Average ...	1,247	1,357	1,427	1,485	1,511	1,577	1,580	1,557	1,586	27.3	
WESTERN AUSTRALIA—											
Perth	1,340	1,471	1,495	1,502	1,462	1,521	1,528	1,513	1,550	15.7	
Kalgoorlie and Boulder	1,664	1,765	1,758	1,806	1,774	1,842	1,851	1,792	1,814	9.0	
Mid. Junction & Guildford	1,354	1,501	1,511	1,532	1,461	1,549	1,586	1,529	1,534	13.2	
Bunbury	1,418	1,524	1,575	1,593	1,555	1,637	1,639	1,630	1,608	13.3	
Geraldton	1,445	1,642	1,671	1,689	1,632	1,682	1,719	1,663	1,675	15.9	
* Weighted Average ...	1,412	1,539	1,556	1,573	1,533	1,596	1,605	1,578	1,608	14.0	
TASMANIA—											
Hobart	1,211	1,313	1,391	1,401	1,519	1,645	1,615	1,588	1,551	27.9	
Launceston	1,144	1,245	1,314	1,345	1,460	1,600	1,573	1,564	1,538	34.5	
Zeehan	1,292	1,391	1,420	1,531	1,629	1,736	1,711	1,698	1,683	30.3	
Beaconsfield	1,230	1,319	1,368	1,436	1,533	1,678	1,673	1,674	1,647	33.9	
Queenstown	1,315	1,453	1,467	1,519	1,653	1,715	1,694	1,678	1,697	29.1	
* Weighted Average ...	1,201	1,305	1,372	1,399	1,515	1,641	1,613	1,595	1,566	30.4	
† Weighted Aver. for C'wealth	1,164	1,269	1,318	1,372	1,504	1,577	1,566	1,520	1,524	30.9	

* 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 Report No. 6, pp. 33 to 35.

§ 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, and November, 1915. At the latter period the number of 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 in all for 150 towns.

2. **Map shewing relative Purchasing-Power of Money.**—On the map on page 1099 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 and 1915. 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 all the 150 towns in 1913 is taken as base, as 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, and in Report No. 6, those for the years 1914 and 1915.

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. 2 (page 61).

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 £1000 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 1229 in 1871, and 974 in 1901, as compared with 1000 in 1911, 1170 in 1912, 1088 in 1913, 1149 in 1914, and 1604 in 1915. In other words, prices were lower in 1911 than in either 1871, 1914, or 1915, 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 (=1000), while for later years the aggregate expenditure on 92 commodities is taken.

**MELBOURNE WHOLESALE PRICES INDEX-NUMBERS, 1861 to 1915, COMPUTED
TO YEAR 1911 AS BASE.**

YEAR.	I. Metals and Coal.	II. Jute, Leather, &c.	III. Agri- cultural Produce, &c.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Ma- terials.	VIII. Chem- icals.	All com- modities together.
1861 ...	1,438	1,381	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	1,194	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	936	1,443	875	921	1,049
1904 ...	821	885	754	876	916	1,427	845	875	890
1905 ...	772	850	890	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	963	961	1,021
1908 ...	1,033	901	1,312	1,198	968	1,335	835	891	1,115
1909 ...	1,014	907	1,000	1,119	978	1,068	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	1,179
1913 ...	1,046	1,070	1,097	1,054	1,024	1,252	1,128	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	1,528	1,604

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 shewn for each group and for all groups combined in the graphs on page 1099. The heavy line, repeated on each graph, represents the index-numbers for the weighted average for all groups, and is shewn 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 shew 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 and 5.

4. *Fluctuations in Wholesale Prices, July, 1914, to May, 1916.*—Since the outbreak of war, prices of many commodities have increased considerably. This is shewn in the following table in which the index-numbers are given for each group for the month of May, 1916, taking July, 1914, the last month before the outbreak of war, as base (= 1000) for each group :—

**MELBOURNE WHOLESALE PRICES.—VARIATIONS BETWEEN JULY, 1914,
and MAY, 1916.**

Particulars.	I. Metals and Ccal.	II. Jute, Leather, etc.	III. Agri- cultural Produce, etc.	IV. Dairy Produce.	V. Groceries	VI. Meat.	VII. Building Mater- ials.	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
May, 1916 ...	1,574	1,200	1,130	1,313	1,285	1,550	1,344	1,853	1,315

It may be seen that there has been an aggregate increase in prices during the period specified of no less than 31.5 per cent. The greatest increase, 85.3 per cent., is recorded in Group VIII. (Chemicals), and the least, 13.0 per cent., in Group III. (Agricultural, Produce, etc.).

§ 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 will be found in Labour Bulletin No. 6, September, 1914, pages 132-147.

As a further outcome of the 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; the amount then available and likely to be so for export, having due regard to the requirements of Australia; the development of fresh sources of supply; and any other important matters relating to conditions of trade and industry arising from the war. This commission ceased to exercise its functions after the 30th October, 1914.

There has been great diversity in regard to the operations of the various authorities created in the different States. In New South Wales and Queensland prices have been fixed for a large number of commodities, whereas in Victoria only a comparatively few commodities were dealt with, and these only during the latter half of 1914 and early in 1915. In South Australia it was not until the latter part of 1915 that the Necessary Commodities Commission began to fix prices. In Western Australia the Food Stuffs Commission fixed the price of some commodities, and refused to sanction proposed advances in others. The commission was revoked in October, 1915. In Tasmania the Legislative Council rejected the Bill creating a Necessaries of Life Control Bill, and consequently no action has been taken in that State to deal with prices of commodities in the manner adopted by the other States.

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 of Australia. Prices of bread were fixed in upwards of 1000 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 were 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. At the time of going to press prices have been fixed in Victoria for certain invalid and infants' foods and for fresh milk.

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, little is being done. 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 in handbooks, newspapers, and periodicals, the resources and attractions of Australia.

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. At the present time, however, owing to war, no State action is being 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 pages 106, 113, and of assisted immigration on page 118 hereinbefore.

3. **Commonwealth Scheme of Immigration.**—It is the function of the Commonwealth Department of External Affairs 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 for the present, the matter of advertising and recruiting for immigrants is practically at a standstill.

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.,

COMMONWEALTH OFFICES,

72 VICTORIA STREET,

LONDON, S.W.

Information regarding individual States may be obtained from the officials specified below :—

AUSTRALIAN AGENTS-GENERAL.

<i>New South Wales</i>	Hon. B. R. WISE, K.C. ...	123-125 Cannon St., London, E.C.
<i>Victoria</i> ...	Sir PETER MCBRIDE ...	Melbourne Place, Strand, London
<i>Queensland</i> ...	Major Sir T. B. ROBINSON	Marble Hall, 409-10, Strand, London
<i>South Australia</i>	Hon. A. A. KIRKPATRICK ...	85 Gracechurch St., London, E.C.
<i>Western Australia</i>	Sir NEWTON J. MOORE, K.C.M.G. ...	15 Victoria St., Westminster, London
<i>Tasmania</i> ...	Hon. SIR J. MCCALL, M.D.	56 Victoria St., Westminster, London

(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 26 herein.)

(ii.) *Legislation.* The powers above specified have now been exercised by the Commonwealth Government, and the laws passed in pursuance thereof supersede the State laws above referred to.

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 of 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 there is a difficulty in the employers obtaining 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, and the employer is also liable to pay 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 Acts.* Persons comprised in the following classes are prohibited from entering the Commonwealth, viz. :—(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 with 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. (ga) 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. (gb) 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. (gc) 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. He will arrange 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.* To these restrictions there are the following exemptions, viz. :—(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,

and 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. Liability 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 not exceeding £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; the vessel may 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 1903, 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 *bonâ 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 of External Affairs, whose department administers the Act, and also 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, 1908 to 1915.**

Year.	Persons Admitted who Passed Education Test.	Persons Admitted without Passing Education Test.	Persons Refused Admission.
1908 ...	1	75,670	108
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

NATIONALITY OF PERSONS ADMITTED, 1908 to 1915.

Nationality.	1908.(a)	1909.(a)	1910.	1911.	1912.	1913.	1914.	1915.
	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.
EUROPEANS—								
Austrians ...	736	895	815	1,184	855	794	676	27
Belgians ...	45	35	50	84	95	63	63	105
British ...	64,374	71,201	81,457	124,061	146,602	122,443	93,136	60,505
Danes ...	227	272	269	393	371	444	478	305
Dutch ...	120	187	175	307	435	288	287	182
French ...	1,546	1,347	1,160	1,166	1,238	1,491	1,187	595
Germans ...	1,911	2,109	2,449	2,517	3,501	3,155	3,395	890
Greeks ...	296	327	380	583	736	480	772	361
Italians ...	902	1,078	883	1,365	1,632	1,963	1,642	645
Maltese ...	...	...	...	41	122	193	464	57
Poles ...	22	24	11	34	17	7	12	2
Portuguese ...	5	10	3	6	9	25	12	1
Rumanians ...	12	11	3	13	24	9	34	6
Russians ...	349	466	735	994	1,159	1,334	1,446	716
Scandinavians ...	825	891	1,210	1,384	1,303	1,285	1,489	1,202
Spaniards ...	57	56	49	128	118	116	119	206
Swiss ...	78	131	109	130	209	202	220	64
Turks ...	4	14	10	10	6	5	19	1
Other Europeans (b) ...	112	16	22	27	(c) 57	(d) 165	13	13
AMERICANS—								
N. Americans ...	687	692	746	914	1,386	1,713	1,529	1,066
S. Americans ...	10	14	13	17	37	14	31	5
American Indians ...	...	...	...	31	9	...	1	1
Negroes ...	4	6	14	13	47	7	23	9
West Indians ...	23	6	13	11	8	1	3	2
ASIATICS—								
Afghans ...	15	3	2	14	17	7	2	3
Arabs ...	13	1	1	1	18	14	19	2
Burmese ...	...	...	...	...	...	1	1	1
Chinese ...	1,771	1,729	1,817	2,009	2,250	2,286	1,975	2,287
Cingalese ...	10	10	14	4	17	8	9	6
Eurasians ...	...	6	14	7	13	2	...	...
Filipinos ...	27	37	66	17	13	12	4	15
Hindoos ...	74	130	156	188	157	187	305	144
Japanese ...	555	509	610	459	698	822	387	423
Javanese ...	...	52	4	12	6	3	20	3
Malays ...	230	309	304	479	326	303	291	285
Syrians ...	45	73	95	104	75	31	19	5
OTHER RACES—								
Maoris ...	48	108	62	31	32	41	21	16
Mauritians ...	3	3	4	9	2	7	1	...
Pacific Islanders ...	89	94	54	69	92	105	101	37
Papuans ...	430	439	622	139	196	171	189	185
St. Helena Blacks ...	1	1	...	...	...	...	...	...
Unspecified ...	14	31	141	(e) 65	(e) 102	(e) 214	(e) 104	58
Total ...	75,670	83,324	94,543	139,020	163,990	140,251	110,701	70,436

(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.

The following table has been prepared, shewing to what extent immigration has taken place into the several States of the Commonwealth from 1908 to 1915 :—

IMMIGRATION INTO THE SEVERAL STATES OF THE COMMONWEALTH, 1908-1915.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	C'wealth.
1908	48,068	12,840	4,474	2,788	5,142	2,171	187	75,670
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

§ 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. The Commonwealth Constitution Act conferred upon the Federal Parliament power to legislate respecting these matters. (See page 26 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 with the totality of Australian experience.

2. **Patents.**—The first Commonwealth Patents Act was passed in 1903, and was amended in 1906, 1909, and 1910. (See page 43 hereinbefore.) 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 by either 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 87a, 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 87a 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 could 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.

(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 1909 to 1915 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, 1909 to 1915.**

Year	1909.	1910.	1911.	1912.	1913.	1914.	1915.
No. of applications	3,309	3,605	3,497	4,071	4,163	3,436	3,117
No. of applications accompanied by provisional specifications	2,165	2,294	2,290	2,273	2,626	2,232	2,133
Letters patent sealed during each year ...	1,269	1,552	2,027	1,502	1,495	2,098	1,279

(xi.) *Revenue of Patent Office.* The revenue of the Commonwealth Patent Office for each year from 1909 to the end of the year 1915 is shewn in the subjoined table:—

REVENUE OF COMMONWEALTH PATENT OFFICE, 1909 to 1915.

Particulars.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
	£	£	£	£	£	£	£
Fees collected under—							
States Patents Acts ...	1,703	1,940	768	118	50	16	19
Patents Acts 1903-10 ...	14,087	17,042	19,640	18,542	18,800	21,575	15,463
Receipts from publications	216	208	237	305	283	274	298
Petty receipts ...	33	33	48	50	49	81	6
Total ...	16,039	19,223	20,693	19,015	19,182	21,946	15,786

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 a 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 ground 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. *Designs.* Lists of registered owners of designs and the subject matter of applications are published weekly in the official *Journal of Trade Marks*. 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 comprise 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 trade mark and design applications received and registered under the Commonwealth Acts from 1909 to 1915 inclusive :—

**TRADE MARK AND DESIGN APPLICATIONS RECEIVED AND REGISTERED UNDER
COMMONWEALTH ACTS, 1909 to 1915.**

Applications.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
RECEIVED.							
Trade Marks ...	1,688	1,729	1,977	1,803	1,957	1,619	1,526
Designs ...	187	186	203	235	301	267	326
REGISTERED.							
Trade Marks ...	1,455	1,190	1,323	1,389	1,468	1,272	1,015
Designs ...	166	160	180	211	281	220	266

The following table shews the revenue of the Trade Mark and Design Office during the years 1912 to 1915 :—

REVENUE OF TRADE MARK AND DESIGN OFFICE, 1912 to 1915.

Particulars.	1912.			1913.			1914.			1915.		
	Trade Marks.	Desig's	Publi- cations	Trade Marks.	Desig's	Publi- cations	Trade Marks.	Desig's	Publi- cations	Trade Marks.	Desig's	Publi- cations
	£	£	£	£	£	£	£	£	£	£	£	£
Fees collected under State Acts ...	67	...	...	38	...	...	42	...	...	32	...	...
Fees collected under Commonwealth Acts ...	5,012	198	98	5,260	293	123	4,610	266	102	4,024	329	95
Total ...	5,079	198	98	5,298	293	123	4,652	266	102	4,056	329	95

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 June, 1916, nineteen applications had been made under these Acts to avoid or suspend patents, of which five were granted and three refused, the others being withdrawn. Twenty-seven applications were also made to avoid or suspend trade marks, of which seven were granted, ten refused, three withdrawn, and seven are still pending. Five hundred and fifty-eight Commonwealth and eleven 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. 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.

7. Publication of Inventions during Present State of War.—Under the War Precautions (Patents) Regulations 1916 (Statutory Rules 140), any person intending to apply for a patent outside the Commonwealth must give notice of his intention to the Commissioner of Patents, who will refer the notice to the Patents Inquiry Board. If the Board is of opinion that the invention is one which would be of assistance to the enemy, or its publication outside the Commonwealth would be detrimental to the interests of the Commonwealth, the applicant is directed not to publish or communicate his invention.

Under the same regulations every application for a patent, except applications the publication of which in the opinion of the Commissioner of Patents would obviously not be detrimental to the Commonwealth, shall also be referred to the Board. If the Board determines that an invention might be of assistance to the enemy, the applicant shall not, during the continuance of the present state of war, proceed with his application either within or beyond the Commonwealth.

Provision is also made under these regulations for the Attorney-General to give permission in writing for an application to be made abroad under the terms of the International Convention in respect of any invention the subject of an application in the Commonwealth lodged prior to the 12th January, 1916.

§ 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 British international relations embracing the Berne-Paris provisions of the International Copyright Union and the reciprocal relations with the United States of America, but, 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. In order to obtain local, as distinguished from British or Imperial, protection, the Act

required that a book must have been "printed from type set up in Australia, or plates made therefrom, or from plates or negatives made in Australia in cases where type is not necessarily used," and published in Australia, after the commencement of the Act, before or simultaneously with its first publication elsewhere. The "Common Law of England" was specifically applied to unpublished literary compositions. Artistic works were not protected in Australia under either the Commonwealth Act of 1905 or Imperial law unless "made in Australia."

Copyright in the case of literary works endured for a period of forty-two years from the date of first publication, or the life of the author or the last surviving joint-author and seven years thereafter, whichever was the longer. If, however, first publication of a book took place after the death of the author the duration of copyright was limited to forty-two years. Performing right and lecturing right subsisted separately for a like period from first public performance or delivery simultaneously with first public performance or delivery elsewhere. But the lecturing right ceased when the lecture was published as a book. Copyright in artistic works subsisted for the term of forty-two years from the date of the making thereof, or for the author's life and seven years, whichever was the longer.

Provision was also made for the assignment of copyright, performing right, and lecturing right, either wholly or in part, and either generally or limited to any particular place or period, and owners of any of the rights specified could grant any interest therein by license; but such an assignment or grant would not be valid unless it was in writing, signed by the owner of the right.

The Act of 1905 prohibited the importation of all pirated books or artistic works "in which copyright is subsisting in Australia (whether under this Act or otherwise)," and provided for the forfeiture of such works, on condition of written notice of the copyright by the owner of the copyright or his agent to the Minister, directly or through the Commissioners of Customs of the United Kingdom.

Registration of any copyright, performing right, or lecturing right was required as a prerequisite for legal action, but copyright and performing right existed, and in some cases could be enforced, without registration.

2. The Copyright Act of 1912.—The Copyright Act of 1905 was repealed by the Copyright Act of 1912, which was assented to and became operative on 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 whatsoever, 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.

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).

3. Applications for Copyright.—The following table gives particulars of copyright applications received and registered under the Commonwealth Acts from 1911 to 1915 inclusive:—

COPYRIGHT APPLICATIONS RECEIVED AND REGISTERED UNDER COMMONWEALTH ACTS, 1911 to 1915.

Year.	Copyrights.			
	Literary.	Artistic.	International and State.	Total.
APPLICATIONS RECEIVED.				
1911	440	466	15	921
1912	463	415	8	886
1913	505	340	...	845
1914	743	219	5	967
1915	740	237	4	981
APPLICATIONS REGISTERED.				
1911	379	412	11	802
1912	401	318	10	729
1913	429	245	...	674
1914	693	184	5	882
1915	742	222	3	967

The revenue from copyright for the years 1912, 1913, 1914 and 1915 was £145, £169, £239 and £252 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 sections 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.

2. Number of Commonwealth Claims and Old-age Pensions.—During the first year of practical working of the Commonwealth Act, viz., that ended 30th June, 1910, the number of cases considered was 76,168. Of these, 39,875 were cases in which a State old-age pension was exchanged for one payable by the Commonwealth. The remaining 36,293 were new applications received during the year, of which 30,526 were granted, 3921 were rejected, and 1846 were still in course of consideration on 30th June, 1910.

Details of the several States as at 30th June, 1915, are as follows :—

COMMONWEALTH OLD-AGE PENSIONS, YEAR ENDED 30th JUNE, 1915.

	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Claims examined during year ending 30th June, 1915 ...	4,763	3,875	1,639	1,474	587	548	12,886
Claims rejected ...	702	170	348	100	61	49	1,430
Claims granted ...	4,061	3,705	1,291	1,374	526	499	11,456
Transfers from other States ...	357	278	142	153	96	54	1,080
Existing 30th June, 1914 ...	32,165	27,150	11,758	8,396	3,909	4,402	87,780
	36,583	31,133	13,191	9,923	4,531	4,955	100,316
To be deducted—							
Deaths ...	2,845	2,206	906	682	268	325	7,232
Cancellations, and transfers to other States ...	834	562	361	223	110	102	2,192
	3,679	2,768	1,267	905	378	427	9,424
Old-age Pensions existing on 30th June, 1915 ...	32,904	28,365	11,924	9,013	4,153	4,528	90,892

3. Sexes of Old-age Pensioners.—Of the 90,892 persons in receipt of pensions at 30th June, 1915, 38,165 (or 42 per cent.) were males, and 52,727 (or 58 per cent.) were females. Details for the several States are as follows :—

SEXES OF PENSIONERS, 30th JUNE, 1915.

State.	Males.	Females.	Total.	*Masculinity.
New South Wales ...	14,569	18,335	32,904	79.46
Victoria ...	11,044	17,321	28,365	63.18
Queensland ...	5,565	6,359	11,924	87.52
South Australia ...	3,434	5,584	9,018	61.50
Western Australia ...	1,954	2,199	4,153	88.86
Tasmania ...	1,599	2,929	4,528	54.61
Total ...	38,165	52,727	90,892	72.38

* Number of males to each 100 females.

4. Ages and Conjugal Condition of Old-age Pensioners Admitted during 1914-15.
—The recorded ages of the 11,456 persons to whom pensions were granted during the year 1914-15 varied considerably, ranging from 1924 at age 60 to one at age 99. Particulars for quinquennial age-groups are as follows :—

AGES AND CONJUGAL CONDITION OF PENSIONERS ADMITTED DURING 1914-15.

Age at Admission.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed	Total.	Single.	Married.	Widowed	Total.	
60-64 ...	65	188	61	314	343	1,886	1,686	3,915	4,229
65-69 ...	676	1,741	643	3,060	109	643	652	1,404	4,464
70-74 ...	214	525	230	969	46	260	380	686	1,655
75-79 ...	63	187	128	378	21	91	235	347	725
80-84 ...	18	43	56	117	4	25	135	164	281
85-89 ...	7	16	20	43	...	4	45	49	92
Above 90 ...	1	...	3	4	...	1	5	6	10
Total ...	1,044	2,700	1,141	4,885	523	2,910	3,138	6,571	11,456

5. Commonwealth Claims for Invalid Pensions.—The situation as at 30th June, 1915, was as follows:—

COMMONWEALTH INVALID PENSIONS.—YEAR ENDED 30th JUNE, 1915.

	N.S.W.	Vic.	Q.	S.A.	W.A.	Tas.	Total C'wealth.
Claims examined during year ending 30th June, 1915 ...	2,227	2,128	803	609	316	392	6,475
Claims rejected ...	507	368	165	110	62	55	1,267
Claims granted ...	1,720	1,760	638	499	254	337	5,208
Transfers from other States ...	48	47	27	18	9	6	155
Existing 30th June, 1914 ...	6,908	4,844	2,023	1,179	766	1,145	16,865
	8,676	6,651	2,688	1,696	1,029	1,488	22,228
Deduct—							
Deaths ...	388	479	183	148	74	93	1,365
Cancellations and Transfers to other States ...	150	118	75	37	20	46	446
	538	597	258	185	94	139	1,811
Invalid Pensions existing 30th June, 1915 ...	8,138	6,054	2,430	1,511	935	1,349	20,417

6. Sexes of Invalid Pensioners.—Of the 20,417 persons in receipt of an invalid pension on 30th June, 1915, 10,291 or 50.4 per cent. were males, and 10,126 or 49.6 per cent. were females. Details for the several States are as follows:—

SEXES OF INVALID PENSIONERS, 30th JUNE, 1915.

State.	Males.	Females.	Total.	*Masculinity.
New South Wales ...	4,158	3,980	8,138	104.47
Victoria ...	2,985	3,069	6,054	97.26
Queensland ...	1,313	1,117	2,430	117.55
South Australia ...	675	836	1,511	80.74
Western Australia ...	528	407	935	129.73
Tasmania ...	632	717	1,349	88.14
Commonwealth ...	10,291	10,126	20,417	101.63

* Number of males per 100 females.

7. Ages and Conjugal Condition of Invalid Pensioners Admitted during 1914-15.—

The recorded ages of the 5208 persons who received invalid pensions in the period under review varied from 16 to 93. The following table gives particulars for those up to age 20 and in decennial age-groups after age 20:—

AGE AND CONJUGAL CONDITION OF INVALID PENSIONERS ADMITTED IN 1914-15.

Age at Admission.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed	Total.	Single.	Married.	Widowed	Total.	
16-19	165	...	...	165	160	...	...	160	325
20-29	208	41	1	250	271	20	8	299	549
30-39	149	156	5	310	183	48	38	269	579
40-49	199	295	25	519	144	117	119	380	899
50-59	253	565	104	922	158	396	496	1,050	1,972
60-69	177	337	132	646	24	55	42	121	767
70-79	18	26	11	55	7	26	19	52	107
80 and over ...	1	2	1	4	...	...	6	6	10
Total	1,170	1,422	279	2,871	947	662	728	2,337	5,208

8. 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 1914-15 the total cost to the Commonwealth of administering the Old-age and Invalid Pensions Department was £48,407, or about 1.8 per cent. of the amount actually paid in pensions. Details concerning the cost of administration for 1914-15 are as follows:—

	£
Salaries	15,394
Temporary assistance	1,377
Services of magistrates, registrars, clerks of courts, and police ...	4,039
Commission to Postmaster-General's Dept., at 12s. 6d. per £100 paid	16,633
Postage and telegrams	1,926
Other expenses	9,088
Total	£48,407

The actual sum disbursed in Old-age and Invalid Pensions in the financial year 1914-15, apart from the cost of administration, was approximately £2,704,309.

9. 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.

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 Fortnightly 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	48,407	1 15 5 %	19 5

§ 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.

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

(a) From 10th October, 1912.

§ 6. 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 consolidates 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. 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 3023 hotels in existence; of this number 293 were ordered to be closed at varying dates. At the election of 1910 there were 2869 hotels, and of these, 28 were ordered to be closed. At the 1913 election there were 2719 hotels, of which 23 will be closed in accordance with the local option vote. The number of wine licenses at the time of the vote of 1907 was 633, of which 46 were abolished. In 1910, 5 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.	
	Elector-ates.	Votes.	Elector-ates.	Votes.	Elector-ates.	Votes.
<i>Results in favour of—</i>						
(a) Continuance ...	25	209,384	76	324,973	74	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 five 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 must be closed at that hour. This determination will prevail 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, is the Licensing Act 1915, No. 2683. Other Acts, now repealed, which dealt with the subject, are the Licensing Acts 1876, 1885, 1888, 1890, 1906, and 1907.

Part XIII. of the Act of 1915 relates to the subject of local option; this part, however, does not come into force until the 1st January, 1917. In the meantime, in order to reduce the number of victuallers' licenses in Victoria, a Licenses Reduction Board has been constituted.

(i.) *The Licenses Reduction Board.* Although the operations of this Board are not conducted in accordance with the principles of local option, the duties of the Board are, until the 31st December, 1916, after which date a system of local option comes into force under the Act of 1906, to reduce the number of licenses in excess of the statutory number, and to award compensation according to the scheme provided for by that Act. The Board consists of three members at a salary of £800 per annum each, who may not engage in any business or employment other than the duties of their office as members of the Board. The Board was first appointed on the 21st May, 1907. A Compensation Fund has also been established under the Act, and is raised by means of a compensation fee at the rate of 3 per cent. on the value of liquor purchased by every licensed victualler. The owner of the premises is chargeable with two-thirds, and the tenant with one-third of the compensation fee. The total amount paid into the Compensation Fund was £60,138 for 1914, £63,625 for 1915, and £60,396 for 1916. When any reduction of licensed premises has been made, the remaining hotels, which will be benefited, are to bear a *pro rata* assessment to make up the amount of license fees lost. The amount so lost up to the end of the year 1915 was £15,430, of which sum £3864 was remitted, and £11,566 apportioned among 1792 hotels in proportion to the benefit which, in the opinion of the Board, they will derive from the closing. By an amendment to the Act in 1912, the Board has been given discretion in certain circumstances to allot less than the amount lost. The maximum compensation, which is payable out of the Compensation Fund referred to above, is to be based on the results of the three years preceding the 31st December, 1906, in the case of owners, and of the three years preceding the 31st December, 1905, in the case of licensees. Up to the 31st December, 1915, 911 hotels had been closed by the Board, 230 of this number having surrendered their licenses. In all cases compensation, where claimed, was awarded, the total paid amounting to £456,708, or an average of £501 each. 243 of these hotels were situated in the metropolitan district, while the remaining 668 were in country districts. In three owners' cases and 191 licensees' cases no claims for compensation were made. The following table shews particulars of the operations of the Board up to the 31st December, 1915:—

VICTORIA.—OPERATIONS OF LICENSES REDUCTION BOARD, 31st DECEMBER, 1915.

Particulars.	Licenses in December, 1906.			Hotels Deprived of Licenses	Compensation Awarded.		Hotels Surrendered.	Compensation Awarded.	
	Number in Existence.	Statutory Number.	Number in Excess.		Owner.	Licensee.		Owner.	Licensee.
Metropolitan & Suburban	1,020	877	401	231	£ 174,304	£ 33,093	12	£ 5,973	£ 1,149
Country ...	2,428	1,622	967	450	164,744	25,302	218	47,172	4,971
Total ...	3,448	2,499	1,368	681	339,048	58,395	230	53,145	6,120

* 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.

No reduction of any licensed premises is allowed in any licensing district in which the number of licensed premises is below the statutory number, but new licenses may, until 1917, be granted in such districts provided that a majority of the electors vote in favour of the increase, and that at least one-third of the number of electors on the roll record their votes. The statutory number varies yearly with the change of the population. The number of hotels below the statutory number in the districts referred to for the year 1915 was 1025.

Where a deprivation sitting is held before 30th June the Acts specify that a deprived license expiring on or before the 31st December following shall not be renewed. Where the sitting takes place after 30th June the license may be renewed for a period making in all six months from the first day of such sitting. To avoid difficulties on this score the Board holds its deprivation sittings in the first half of the year and its compensation and re-allotment sittings in the second half. Surrenders take effect on the date fixed by the Board at the time of acceptance.

In addition to those scheduled above, the Board, up to the 7th August, 1916, had deprived 110 hotels of their licenses, of which 13 were surrendered, making a grand total of 1021.

In previous issues reference has been made to the methods of procedure to be followed on the coming into force of the system of local option on 1st January, 1917.

(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 is 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. About 360 applications have been received and dealt with by the Board under this provision.

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 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 10 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, 16 districts voted on the same resolution, in 11 of which it was carried, while in 1915, 16 districts also voted, the resolution being carried in 10 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" remain 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.

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 these resolutions.

5. South Australia.—In this State the subject of local option is now regulated by Part V. of the Licensing Act 1908.

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 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 under the Act, 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 Polls.* 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 23 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. No other petitions were received during the year from any of the other local option districts.

(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.

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 favor of State Management throughout all Licensing Districts.	
Votes given in favor of the number of Licenses in the various districts being increased.	Votes given in favor of the number of Licenses in the various districts <i>not</i> 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.

(i.) *Regulation of Liquor Traffic during the War.* In 1914, upon the outbreak of war, a special Act was passed in Western Australia empowering 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.

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 2000 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.

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, does 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 Inn Keepers 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.

Particulars as to operations under Part VI. of the Act are not available.

(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 3951 votes for other hours. The majority in favour of closing at six o'clock over all other hours was 12,609, and a Bill is to be presented to Parliament in the present session to give effect to the wishes of the electors.

§ 7. 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.

§ 8. 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 returns collected in 1909 and subsequent years, however, may be taken as substantially correct. The table hereunder shews the approximate value of the production from all industries during the years 1908 to 1914 :—

ESTIMATED VALUE OF PRODUCTION FROM INDUSTRIES, 1908 to 1914.

Year.	Agriculture.	Pastoral	Dairy, Poultry, & Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing.*	Total.
	£1000.	£1000.	£1000.	£1000.	£1000.	£1000.	£1000.
1908	37,150	47,259	15,045	4,286	24,580	36,637	164,957
1909	41,056	50,864	15,064	4,462	23,039	39,713	174,198
1910	39,752	56,993	17,387	4,789	23,215	45,598	187,734
1911	38,774	50,725	19,107	5,723	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

* 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 1914 was £209,485,000, equal to an average of £42 11s. 8d. 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.

§ 9. 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 8528 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, and the average annual rainfall 43 inches.

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 External Affairs, through an Administrator and Chief Magistrate.

3. Population and Live Stock.—The population on 31st December, 1915, was 436 males, 393 females, total 829. Of these, 98 males and 10 females were Melanesians being trained at the mission station. The latest returns of live stock shew that there are in the island 1637 cattle, 713 horses, 817 sheep, and 116 pigs.

4. Production, Trade, etc.—In 1914-15 the imports were valued at £12,119, of which £10,679 was imported from New South Wales, £554 from New Zealand, and £886 from England. The exports were valued at £4001, the chief items being fruit, £810; seeds, £438; lemon juice, £1795; and hides, £256. 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 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, and there is a public school under the N.S.W. Department of Public Instruction, and with standards corresponding to the State public schools. The number of scholars enrolled is 164 (82 boys and 82 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.

§ 10. 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 3220 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. The flora is varied and the vegetation luxuriant, with shady forests, principally of palms and banyans. The highest point is Mount Gower, 2840 feet. The climate is mild and the rainfall abundant.

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 supervised by a visiting magistrate.

3. Population.—The population at the Census of 3rd April, 1911, was 56 males, 49 females, total 105.

4. Production, Trade, etc.—The principal product is the seed of the native or *Kentia* palms. A monthly steamship service is maintained with Sydney. The lands belong to the Crown. The occupants pay no rent, and are tenants on sufferance.

§ 11. Interstate Conferences.

Reference to the various Interstate Conferences, held in 1914 and 1915, will be found on page 1081 Official Year Book, No. 8. Considerations of space preclude their insertion in the present issue.

§ 12. Interstate Commission.

In accordance with the provisions of the Commonwealth Constitution Act (sections 101 to 104, see page 33) 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, 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 investigate and report as soon as practicable upon the following matters:—

- (a) Any industries now in urgent need of tariff assistance;
- (b) Anomalies in the existing tariff Acts which are either technical in character or are due to or arise from the incidence of the taxation;
- (c) The lessening, where consistent with the general policy of the tariff Acts, of the cost of the ordinary necessities of life, without injury to the workers engaged in any useful industry.

In accordance with the Government's suggestions, investigations were made by the Commissioners, and a Tariff Investigation Report was presented by them on the 22nd April, 1915. The matters dealt with in the report comprise:—Progress of manufacturing industries; comparison of the value of output of manufacturing industries with the value of imports; conflicting interests of the different industries; profits to manufacturers; salaries and wages; local prejudice against the use of Australian goods; complaints of lessening efficiency of workers; the future of Australian manufacturing industries in the relation to employment; large scale industry; duties on raw materials; interstate freights; prohibiting duties; export duties; mode of stating the *ad valorem* rates of duty chargeable.

The Commission has now completed its tariff investigation, having issued in all 70 reports, dealing with the following matters:—Ale and beer; apparel, viz., corsets; apparel, viz., women's and men's garments, piece goods and curtains, etc.; apparel, viz., socks and stockings; boots and shoes; brasswork; brushware, brushmakers' drafts, and brushmakers' woodware; butter, margarine, and edible oils; cement (Portland); copper (refined, bounty); cordage; corks and cork manufactures; cotton growing; electroplated ware; electrotypes, stereotypes and matrices, and machinery connected therewith; enamelledware and hollowware; fruits (dried); fruits (fresh); furniture; gas meters; glass, glass bottles, glassware, and stained glass windows; glucose; grain and pulse; hats and caps; hides and skins; inks (printing), and printers' roller composition; inks—stains and dressings for leather; inks (writing), and ink powders; nails (horseshoe); nails (wire) and barbed wire; machinery and implements (agricultural), also incubators and irrigation apparatus; machinery (electrical), and electric and gas appliances, telephones, etc.; machinery—engines and boilers, and machines generally; machinery (weighing and testing); manures, native sulphur and pyrites; marble and granite; matches and vestas; oil (olive); oil (shale); paints and colours, varnishes and paint oils; pianos; pickles, sauces and spices; rubber goods; slate slabs, roofing slates, and roofing and other tiles; soap and soapmaking materials; spirits (manufacturing); spirits (potable); stoves (fuel and gas), and register grates, etc.; timber; tin ores and unrefined tin—export duty; tobacco, cigars, and cigarettes; type, printers' metal; vehicles and parts (including motor vehicles); vessels, ships, dredges, etc.; wattle bark; wool tops, woollen yarns, and machinery for the manufacture of tops and textiles generally; works of art, modelled

statues, and coloured printed pictures; iron and steel; paper, paper boards, and manufactures of paper; motor cycles and cycle parts; leather; leatherware, etc.; locks and lock furniture.

Miscellaneous Group I. (comprising arrowroot, biscuits (dog), coffee, fish (preserved), foods (infants' and invalids'), game and eggs, lemon syrup crystals, nuts (edible), onions and potatoes, polish (metal), salt, seed (canary), seeds of green manure plants, tamarinds, yeast).

Miscellaneous Group II. (comprising badges, etc., calico, etc., carpets, cottons, feathers, felt (roofing, etc.), felt (saddlers'), flowers (artificial), hessians, etc., parasols, quilts (down), saddlebags and divan covers, sails, etc., shirt studs, woven small-ware).

Miscellaneous Group III. (comprising steam cookers, gold leaf, gold sheet, etc., lead wool, incandescent mantles, malleable iron castings, metal plate goods, metal printing, oil drums, picks (miners'), snap-hooks, etc., spirit gas stoves, wire (brass pinion), wire netting, woven wire, electrolytic zinc, manufactures of metal).

Miscellaneous Group IV. (comprising bitumen, chalk, filters, flints for tube mills, glue, etc., grindstones, plaster of paris, whale oil).

Miscellaneous Group V. (comprising alkalis, calcium carbide, disinfectants, glycerine, opium for medicinal purposes, rabbit poison tablets, sodium peroxide, etc., sulphur candles).

Miscellaneous Group VI. (comprising cinematographs, fishing rods, field glasses, etc., golf clubs, photo. films, etc., sapphires, spectacle cases, teeth (artificial), turquoise, watches, wooden plant pots, etc., wooden rims, woodware (printers').

Miscellaneous Group VII. (comprising asbestos, concertinas, earth (infusorial), etc., explosives, knives, mica, saws, smoking pipes (clay), also tailors' chalk, tricycles, etc., undertakers' requisites, welding compounds).

The Commission has now entered upon an investigation with a view to the development of trade in the South Pacific.

§ 13. The Commonwealth Advisory Council of Science and Industry.

1. **General.**—In January, 1916, a conference convened by the Right Honourable the Prime Minister of Australia, consisting of Ministers of State Agriculture Departments and representatives of the Universities, Associated Chambers of Manufactures and of Commerce, of the mining and other industries, and of Scientific Government Departments, met in Melbourne to discuss the development of the primary and secondary industries of the Commonwealth, and especially the application of science to industry. A committee of the conference was appointed to formulate proposals to the Government and a report was presented recommending the establishment, by Act of Parliament, of a Commonwealth Institute of Science and Industry, the proposed functions of which are as follows:—

(a) To consider and initiate scientific researches in connection with, or for the promotion of, primary or secondary industries in the Commonwealth.

(b) The collection of industrial scientific information and the formation of a Bureau for its dissemination amongst those engaged in industry.

(c) The establishment of National Laboratories.

(d) The general control and administration of such laboratories when established.

(e) To promote the immediate utilisation of existising institutions, whether Federal or State, for the purposes of industrial scientific research.

(f) To make recommendations from time to time for the establishment or development of special institutions or departments of existing institutions for the scientific study of problems affecting particular industries and trades.

(g) The establishment and award of industrial research studentships and fellowships, to include either travelling fellowships or fellowships attached to particular institutions.

(h) To draw attention to any new industries which might be profitably established in the Commonwealth.

(i) To keep in close touch with, and seek the aid of all Commonwealth and State Government departments, learned and professional societies and private enterprises concerned with, or interested in, scientific industrial research.

(j) The co-ordination and direction of scientific investigation, and of research and experimental work, with a view to the prevention of undesirable overlapping of effort.

(k) To advise the several authorities as to the steps which should be taken for increasing the supply of workers competent to undertake scientific research.

(l) To recommend grants by the Commonwealth Government in aid of pure scientific research in existing institutions.

(m) To seek, from time to time, the co-operation of the educational authorities and scientific societies in the States, with a view to advancing the teaching of science in schools, technical colleges, and universities, where its teaching is determined upon by those authorities.

As regards the constitution of the proposed Institute, the committee made the following recommendations, viz.:—

(i.) That an Advisory Council, consisting of nine members representing science and the principal primary and secondary industries, be appointed who shall advise and co-operate with the directors in framing the policy and in the administration of the Institute.

(ii.) That the members be appointed by the Governor-General in Council.

(iii.) That for the purposes of controlling and administering the Institute and of collecting information, and determining on the researches to be undertaken and directing their elucidation, three highly qualified salaried directors, of whom one shall be chairman of the directors, shall be appointed by the Governor-General in Council. The directors shall seek the advice and co-operation of the council and shall be *ex-officio* members thereof.

(iv.) That of the three directors one should be an expert business and financial man with ability in organisation; the other two should be chosen mainly on account of scientific attainments and wide experience.

(v.) The tenure of the directors shall be fixed by the Act.

(vi.) That the scientific staff should be appointed by the Governor-General in Council on the recommendation of the directors.

2. Immediate Arrangements.—Realising that the adoption of the recommendations, if approved, for the establishment of the Institute would necessarily involve delay, but being impressed with the urgent need for work of the character proposed, the committee recommended that until the Institute is established an Advisory Council be appointed particularly to carry out the objects expressed in sections (a) and (b) of paragraph above. The committee also recommended (a) that the Federal and State Munitions Committees, the heads of Government scientific departments, and bodies representative of Commonwealth manufacture, commerce, agriculture, mining and engineering, the Universities and Technical Colleges, and private enterprises be invited to suggest branches of industrial scientific research in which investigation would be of immediate practical use; and (b) that, when appointed, the Council should immediately take steps to initiate research work into the most pressing matters needing investigation, and should seek the co-operation of existing institutions, and utilise the available resources of staff and equipment. For the consideration of the Advisory Council, the following problems, among others, were suggested as being pressing:—

- (a) The sheep fly pest.
- (b) Improved methods of extracting zinc from Australian ores, including the commercial manufacture of electrolytic zinc.
- (c) The utilisation of brown coal with recovery of by-products.
- (d) The introduction of a mechanical cotton picker.
- (e) The eradication of the prickly pear.
- (f) The production of aluminium and ferro-alloys.
- (g) The recovery of potash, manufacture of alkali, and condensation of sulphurous acid gas at present being wasted.
- (h) The cultivation of useful indigenous grasses and salt bushes; and
- (i) The manufacture of fine chemicals, drugs and explosives.

3. **Appointment of Advisory Council.**—The establishment of the proposed Commonwealth Institute of Science and Industry has, for the present, been postponed, but the "immediate recommendations" of the committee for the appointment of an Advisory Council have been adopted by the Commonwealth Government. The Council appointed by the Governor-General consists of 34 members representing the scientific and industrial interests of each State, and including the six State Ministers for Agriculture, who are *ex-officio* members. The Prime Minister or, in his absence, the Vice-President of the Federal Executive Council, is the chairman.

The general control and direction of the work of the Council is in the hands of an Executive Committee of 13 members. In addition, a committee has been established in each State consisting of the State representatives on the Advisory Council, together with associate members appointed on the nomination of the respective State Governments. The chairman of each State committee is *ex-officio* a member of the Central Executive Committee. A grant of £5000 has been made by the Commonwealth Government to cover the cost of the scientific work of the Council and incidental expenses in connection therewith.

4. **Nature of Work Performed.**—Two reports have been issued by the Executive Committee, dated 21st June and 1st August, 1916, respectively. The work done by the committee may be classified under two main heads, viz.:—(i.) The collection of general information; and (ii.) the initiation of investigations.

(i.) *The Collection of General Information.* In order to enable the Council to perform the duties committed to it, and to facilitate the work of the permanent Institute, when established, a number of enquiries have been made by the Executive committee. These include:—

- (a) A census of scientific *personnel* and equipment available for research in universities, higher technical schools, and Government technical departments in Australia.
- (b) A census of industries and their problems.
- (c) Enquiries from universities and higher technical schools regarding provisions for training investigators.
- (d) Enquiries from Public Service Commissioners regarding the possibilities of training and prospects for encouragement of technical officers in Government departments; and
- (e) A census of research work in progress in universities, higher technical schools and Government technical departments.

In addition, initial steps have been taken by the appointment of a "science abstractor" towards the establishment of a Bureau of Information for the collection of industrial scientific information and its dissemination.

(ii.) *The Initiation of Investigations.* The problems suggested for the consideration of the Advisory Council as being specially pressing (see paragraph 2 hereinbefore), have all received attention and, in addition, expert information has been obtained regarding a number of other matters. In some cases no definite course of action has been adopted,

but in others provision has been made for systematic research by special committees of two or more experts, who receive grants from the fund at the disposal of the Executive for the payment of assistants and other working expenses.

Researches have been initiated into the production of chrome and tungsten ferro-alloys, which are important in connection with the production of high speed tool steels. A special committee has been appointed to investigate the question of the manufacture in Australia of chemicals now imported. Another special committee is enquiring into the production of potash salts. There are large deposits of alunite in Australia, a mineral which has commercial value as a source of potassium sulphate and of alumina. Since the German supplies of potash salts have been cut off, alunite has acquired a greatly enhanced value, but its treatment in Australia has not been attempted. The possible commercial utilisation of posidonia fibre, of which there are immense deposits in Spencer's Gulf, is being investigated,^o while another special committee is enquiring into the mode of occurrence of gold in quartz, with a view to cheapening deep prospecting. One of the most important problems affecting the pastoral industry in Australia is the tick pest in cattle. A special committee has been appointed to review the whole position, and to suggest measures (including legislation) to deal with the mischief. Similar action has been taken in regard to the nodule disease in cattle, which has so seriously injured the export trade in meat. A grant has been made to complete investigations into the cultivation of yeasts. The results already obtained afford hope that it will be possible to so shorten the period of the maturing of dough as to contribute materially to the solution of the day-baking difficulty. A committee has been appointed to deal with the problem of the standardisation of apparatus used for educational purposes. Other matters to which the Executive Committee has taken similar action, or to which they have given attention, include the production of aluminium, the cultivation of cotton and the problem of a mechanical cotton picker, the prickly pear pest, the brown coal of Victoria, wheat selection and breeding, indigenous grasses and saltbushes, the standard for alcoholometry, and forestry and timber industries. The Executive is also in touch with other problems which it has not yet had time to discuss in detail, but with which it hopes to deal at an early date.

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.

§ 4. Elements of Growth of Population.

3. **Net Immigration, p. 106.**—The following table gives particulars of net immigration for the year 1915:—

NET IMMIGRATION,¹ 1915.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	North- ern.	Federal	
Arrivals ...	377,118	273,137	131,003	82,428	20,734	39,767	1,904	...	70,961
Departures ...	403,498	305,189	139,868	91,562	31,761	43,988	1,278	...	162,014
Excess of arrivals over departures	² —26,380	—32,052	—8,865	—9,134	—11,027	—4,221	626	³ —160	—91,053

NOTE.—The sign — denotes excess of departures over arrivals.

1. Figures for States and Territories represent Interstate, Interterritorial and Oversea migration; those for Commonwealth represent Oversea migration only. 2. Including Federal Territory. 3. Included with New South Wales migration.

5. **Total Increase, p. 105.**—The following table gives particulars of the total increase in population for each State and Territory and for the Commonwealth during the year 1915:—

TOTAL INCREASE OF POPULATION, 1915.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	North- ern.	Federal	
Excess of births over deaths ...	33,346	19,186	12,604	7,104	6,025	3,830	—36	30	82,089
Excess of arrivals over departures	—26,220	—32,052	—8,865	—9,134	—11,027	—4,221	626	—160	—91,053
Total increase	7,126	—12,866	3,739	—2,030	—5,002	—391	590	—130	—8,964

NOTE. — signifies excess of departures over arrivals.

§ 8. Enumerations and Estimates.

5. **Estimates of Population, pp. 120 to 123.**—The following table shows the estimated population of each State and the Commonwealth on the 31st December, 1915 :—

ESTIMATED POPULATION ON 31st DECEMBER, 1915.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	North-ern.	Federal	
Males ...	951,889	692,275	361,312	213,455	171,304	101,761	3,687	957	2,496,140
Females ...	917,259	725,526	319,134	226,205	146,712	99,264	876	872	2,435,848
Total ...	1,868,648	1,417,801	680,446	439,660	318,016	201,025	4,563	1,829	4,931,988

SECTION V.

VITAL STATISTICS.

§ 1. Births.

1. **Male and Female Births, p. 150.**—The total number of male and female births registered, and the birth rates per 1000 of the population in each State and Territory and in the Commonwealth, during the year 1915, were as follows :—

BIRTHS AND BIRTH RATES, 1915.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal	
Males ...	27,085	17,820	10,444	6,076	4,578	2,991	33	22	69,049
Females ...	25,846	17,189	9,719	5,722	4,439	2,854	28	25	65,822
Total ...	52,931	35,009	20,163	11,798	9,017	5,845	61	47	134,871
Birth rates ...	28.33	24.55	29.35	26.81	27.97	29.32	13.85	19.05	27.25

§ 2. Marriages.

1. **Marriages, p. 165.**—The following statement shows the number of marriages registered in each State and Territory and in the Commonwealth, and the marriage rates per 1000 of the mean population, during the year 1915 :—

MARRIAGES AND MARRIAGE RATES, 1915.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal	
No. of marriages	18,095	12,832	6,135	3,965	2,581	1,600	12	4	45,224
Marriage rates ¹	9.68	9.00	8.93	9.01	8.01	8.03	2.73	1.62	9.14

1. Number of marriages, not persons married, per 1000 of mean population.

§ 3. Deaths.

1. **Male and Female Deaths, p. 172.**—The number of deaths registered in each State and Territory and in the Commonwealth during 1915, and the death rates per 1000 of the mean population, are shown in the following table:—

MALE AND FEMALE DEATHS AND DEATH RATES, 1915.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Federal	
Male ...	11,439	8,860	4,695	2,587	1,887	1,083	89	14	30,654
Female ...	8,146	6,963	2,864	2,107	1,105	932	8	3	22,128
Total ...	19,585	15,823	7,559	4,694	2,992	2,015	97	17	52,782
Death rates...	10.48	11.10	11.00	10.67	9.28	10.11	22.03	6.89	10.66

SECTION VII.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

3. **Increase in Numbers, p. 280.**—The following table shows the estimated number of horses, cattle, sheep, and pigs in the Commonwealth at 31st December, 1915:—

PRELIMINARY FIGURES.—LIVE STOCK AT END OF 1915.

States and Territories.			Horses.	Cattle.	Sheep.	Pigs.
New South Wales ¹	...	...	731,735	2,472,631	32,874,359	286,478
Victoria	...	...	493,779	1,043,604	10,545,632	192,002
Queensland	...	...	686,871	4,780,893	15,950,154	117,787
South Australia...	...	...	253,333	226,565	3,674,547	66,237
Western Australia	...	...	163,863	811,553	4,831,727	57,954
Tasmania	...	...	41,422	169,575	1,624,450	37,778
Northern Territory ²	...	...	21,985	414,558	70,200	1,240
Federal Territory	...	...	1,606	4,961	134,679	226
Commonwealth	...	...	2,394,594	9,924,340	69,705,748	759,702

1. As at 30th June, 1915.

2. 1914 figures; number for 1915 not yet available.

SECTION VIII.

AGRICULTURAL PRODUCTION.

§ 4. Wheat.

1. **Progress of Wheat Growing, p. 314.**—The following table shows the area under wheat and the yields in each State and the Commonwealth for the season 1915-16:—

AREA UNDER WHEAT, AND YIELDS, 1915-16.

Particulars.	N.S.W. ¹	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Area ... Acres	4,235,074	3,679,971	93,703	2,739,214	1,733,629	48,642	12,530,233
Yield ... Bush.	67,323,390	58,521,706	414,438	34,134,504	18,234,392	993,790	179,622,220
Average yield per acre ..	15.90	15.90	4.42	12.46	10.52	20.43	14.34

1. Including Federal Territory.

2. Final figures, with exception of New South Wales and Western Australia.

SECTION XII.

MINES AND MINING.

§ 1. The Mineral Wealth of Australia.

3. **Value of Production during 1915.**—The following table shews the value of the production of the principal minerals and of all minerals in each State of the Commonwealth during the year 1915:—

COMMONWEALTH MINERAL PRODUCTION IN 1915.

Minerals.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.*	C'wealth.
	£	£	£	£	£	£	£	£
Gold	562,819	1,397,793	1,060,703	25,830	5,140,227	78,784	3,252	7,769,408
Silver and lead ...	3,321,101	1,250	34,610	902	53,915	91,689	5	3,503,472
Copper	234,437	—	1,428,793	561,247	77,636	709,534	7,000	3,018,647
Tin	266,780	9,447	183,473	—	41,391	292,306	5,545	798,941
Coal	3,424,630	274,770	409,342	—	—	30,418	—	—
All minerals	9,600,137	1,737,158	3,322,361	988,395	—	1,225,575	17,387	—

* First six months of year only.

§ 17. Commonwealth Government Control of Industrial Metals.

1. **General.**—Prior to the declaration of war by Great Britain, the Australian base metal production was controlled by the German metal organisation. The outbreak of hostilities threw the industry into chaos, and steps were immediately taken to free it from enemy control, and to establish the industry on a sound and permanent foundation consistent with British interests.

The following legislative and administrative acts may be cited:—

- (i.) Cancellation of all mineral and metal contracts with enemy companies and firms.
- (ii.) Dissolution of the Lead Convention controlled by Germans which determined output and price to consumer and producer of all Australian lead.
- (iii.) Dissolution of the Zinc Combine—a purely German combine which controlled the world's spelter market, determining price, output, and manipulating the market as it pleased in the interests of Germany.
- (iv.) Elimination of the German interests which dominated the copper industry in Australia.
- (v.) Elimination of all enemy agencies controlling tin, molybdenite, wolfram, and other metals.

The policy of the 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.

2. **Lead.**—Steps taken by the Commonwealth Government resulted in the formation and extension of the Broken Hill Associated Smelters Proprietary Limited, which has taken over the Broken Hill Proprietary Works at Port Pirie. The new company is a co-operative institution for the smelting of silver-lead ores and concentrates, and the refining of the silver-lead bullion. It has the largest silver-lead smelting works in the world, with a capacity for an output of 200,000 tons of pig lead, and 5,000,000 to 6,000,000 ounces of silver per annum. The addition of a large silver, lead, and gold refinery is in hand at the Cockle Creek Smelting Works, New South Wales, and when this plant is erected the Sulphide Corporation will be self-contained.

3. **Zinc.**—A new company, the Zinc Producers' Association Proprietary Limited, has been formed to control and dispose of the output of zinc concentrates produced within the Commonwealth. All of the zinc-producing companies are members, and the Association is founded on a co-operative basis. One of the fundamental principles is "equality of treatment" to all members, irrespective of tonnage of output. The Commonwealth Government is represented on the Board, thus safeguarding the interests of the general community.

The annual output of zinc concentrates within the Commonwealth amounts to 450,000 tons, and arrangements have been made whereby 40 per cent. of this quantity will be reserved for local treatment. The Australian Electrolytic Zinc Company has been formed, and the first unit of the refinery is in the course of erection. Contracts for electrical power have been arranged with the Tasmanian Government, and technical experts have been engaged to instal the plant and work the process. In order to facilitate the early establishment of Australian zinc industries, the Imperial Government has undertaken to advance £500,000 at the same rate of interest as is paid by the Imperial Government, if required, to finance Australian zinc works. The Mount Lyell Company, Tasmania, is embarking upon a new venture for the treatment of the West Coast mixed sulphide ores, and promises to be a substantial producer of electrolytic zinc. The enlargement of the Broken Hill Associated Smelters' zinc distillery at Port Pirie is also receiving attention.

4. **Copper.**—The policy of encouraging the treatment in Australia of all copper ores produced within the Commonwealth has been pursued, and considerable extensions of the treatment and refining works at Port Kembla and Wallaroo have been made. Before the end of the year it is expected that all copper ores and products will be refined within the Commonwealth. A new company, called the "Metal Manufactures Limited," has been formed for the production of copper wire, tubes, sheets, etc., and when the works are completed, will be in a position to meet all Australian requirements.

5. **Molybdenite, Wolfram, and Scheelite.**—The Commonwealth Government entered into an agreement with the Imperial Government for the acquisition of all wolframite, molybdenite, etc., produced in Australia. Under this agreement practically the whole of these minerals produced in Australia has been acquired for the Imperial Government.

6. **Formation of Metal Exchange.**—Another action of the Government towards the elimination of German influence was the creation of an Australian Metal Exchange at Melbourne and Sydney. No metals or minerals can be exported from Australia unless first registered through the Exchange by an active member, and, during the war, with the consent of the Minister for Trade and Customs. The members of the Exchange must be natural-born British subjects, and the Attorney-General has the right of veto with regard to membership during the war and twelve months after. Since its establishment, the Melbourne exchange alone has registered over 720 contracts, and shipments under those contracts amount to approximately £7,000,000.

SECTION XV.

COMMERCE.

§ 3. Regulation of Trade during the War (p. 541).

The following is a list of goods as at 31st August, 1916, the exportation of which is restricted, and applications for permission to export any of them must be made to the Collector of Customs in the State from which exportation is desired to be made:—

Acaroid resin; acetates of all kinds; acetic acid and acetates; acetic ether; acetones, and raw and finished materials usable for their preparation; aircraft of all kinds, including aeroplanes, airships, balloons, and their component parts, together with accessories and articles suitable for use in connection with aircraft; alloys; alundum, natural and artificial; aluminium, alumina, and salts of aluminium; ammonia liquor, salts, anhydrous, etc.; aniline and its derivatives; animal, fish, and vegetable oils and fats, not including essential oils or materials in the form of foodstuffs prepared for consumption; animals, saddle, draught, or pack, suitable or which may become suitable for use in war; antimony, together with the sulphides and oxides of antimony; apparatus designed exclusively for the manufacture of munitions of war, or for the manufacture or repair of arms or of war material for use on land or sea; armour plates; arms of all kinds, including arms for sporting purposes, and their component parts; arsenic and its compounds; arsenical ore; articles especially adapted for use in the manufacture or repair of tyres; asbestos; asphalt; bamboo; barbed wire; barium chlorate, perchlorate, carbonate and hydrate; barium salts; bark; bauxite; benzene; benzol and its mixtures and derivatives; bitumen; bladders, guts, casings, and sausage skins; bones in any form, whole or crushed, and bone ash; boots and shoes suitable for use in war; borax, boric acid, and other boron compounds; bran; brass; bromine; bullion, silver-lead, etc.; butter; calcium acetate, calcium nitrate, and calcium carbide; camp equipments, articles of, and their component parts; camphor; canvas; capsicum; carbides of all kinds; carbolic acid; carbon disulphide; carbon, halogen compounds of; carbons suitable for searchlights; carbonyl chloride; carborundum in all forms; cartridges of all kinds and their component parts; casein; casings (sausage, etc.); caustic potash; caustic soda; celluloid; chaff; charges and cartridges of all kinds and their component parts; chlorides, metallic (except chloride of sodium), and metalloids; chlorine; chrome ore; chronometers; clothing and fabrics for clothing suitable for use in war; clothing of a distinctive military character; coal; coal sacks; cobalt; concentrates (metal), all; copper pyrites and other copper ores; copper, unwrought and part wrought, copper wire, alloys and compounds of copper; copra; cork, including cork dust; corundum, natural and artificial (alundum), in all forms; cotton, raw, linters, cotton waste, cotton yarns, cotton piece goods, and other cotton products capable of being used in the manufacture of explosives; cresol and its mixtures and derivatives; currants; cyanamide; diamonds (see precious stones); dimethylaniline; docks, parts of; dyes; electric appliances adapted for use in war, and their component parts; emery in all forms; equipment of a distinctively military character; ether; ether, sulphuric; ethyl alcohol; explosives, whether specially prepared for use in war or not; explosives, materials used in the manufacture of; fabrics for clothing suitable for use in war clothing; fats, animal, fish, and vegetable, not including essential oils or materials in the form of foodstuffs prepared for consumption; felspar; ferro alloys, including ferro-tungsten, ferro-molybdenum, ferro-manganese, ferro-vanadium, and ferro-chrome; field forges and their component parts; field glasses; flax; floating docks and their component parts; flour; fodder; foodstuffs; forage and feeding stuffs for animals; formic ether; fruit, fresh or dried, etc.; fuel, other than mineral oils; fuming sulphuric acid; furs utilizable for clothing suitable for use in war; glycerine, and materials usable

in the manufacture of; gold; goldbeater's skin; graphite; gum, Yacca and Grass-tree; gun mountings and their component parts; guts; hair, animal of all kinds, and tops, noils, and yarns of animal hair; hares; harness and saddlery; harness of a distinctively military character, all kinds of; hay; hemp; hides of cattle, buffaloes, and horses; horseshoes and shoeing material; hydrochloric acid; implements designed exclusively for the manufacture of munitions of war, or for the manufacture or repair of arms or of war material for use on land or sea; implements for fixing and cutting barbed wire; iodides; iodine and its compounds; iron, electrolytic; iron, hæmatite and hæmatite iron ore; iron pyrites; jewellery, gold; kapok; lanoline; lard; lathes capable of being employed in the manufacture of munitions of war; lead and lead ore; leather belting, hydraulic leather, pump leather; leather, undressed or dressed, suitable for saddlery, harness, military boots, or military clothing; lexias; limbers, and limber-boxes and their component parts; linen duck cloth; lubricants; machines capable of being employed in the manufacture of munitions of war; maize; manganese and manganese ore; manganese dioxide; maps and plans of any place within the territory of any belligerent, or within the area of military operations, on a scale of four miles to one inch or any large scale, and reproductions on any scales by photography, or otherwise, of such maps or plans; materials especially adapted for use in the manufacture or repair of tyres; materials used in the manufacture of explosives; meat; mercury; metals, alloys, and minerals; methyl alcohol; mica; military waggons and their component parts; mineral jelly; mineral oils, including benzine and motor spirit; minerals; molybdenum and molybdenite; motor spirit; motor vehicles of all kinds and their component parts and accessories; muriatic acid; naphtha solvent and its mixtures and derivatives; naphthalene and its mixtures and derivatives; nautical instruments, all kinds of; nickel and nickel ore; nitrates of all kinds; nitric acid; nuts used as fruit; oats; oil cake, linseed; oil, coconut; oils and fats, animal, fish, and vegetable, not including essential oils, or materials in the form of foodstuffs prepared for consumption; oleaginous seeds, nuts and kernels; oleum; opals (see precious stones); ores, all; osmiridium; paper, waste; paraffin wax; peppers; phenol (carbolic acid) and its mixtures and derivatives; phosphorus and its compounds; phosgene; photographic films, plates and paper, sensitized; picric acid; pitch; platinum; pollard; potassium salts; powders, whether specially prepared for use in war or not; precious stones (except to United Kingdom, New Zealand, and France); precipitates (metal), all; projectiles of all kinds and their component parts; prussiate of soda; rabbits; railway materials, both fixed and rolling stock; raisins; ramie; rangefinders and their component parts; rattans; resinous products; rubber, including raw, waste, and reclaimed rubber, solutions and jellies containing rubber, or any other preparations containing rubber, balata, and gutta-percha, and the following varieties of rubber, viz., Borneo, Guayule, Jelutong, Palembang, Pontianac, and all other substances containing caoutchouc, and goods made wholly or partly of rubber; sabadilla seeds and preparations therefrom; saltpetre; sausage skins; scheelite; searchlights and their component parts; selenium; silk cloths, braid and thread suitable for cartridges; silver, ingots, bars, sheet, or granulated; skins, furred; skins of calves, pigs, sheep, goats, and deer; skins utilizable for clothing for use in war; soap; soda ash, or any compound of soda; soda, prussiate of; sodium; sodium, chlorate and perchlorate; sodium, cyanide; sodium salts; solvent naphtha and its mixtures and derivatives; starch; steel containing tungsten or molybdenum; straw; submarine sound-signalling apparatus; sugar; sulphur; sulphur dioxide; sulphuric (or sulphurous) acid; sulphuric ether; sultanas; talc; tallow; tanning substances of all kinds, including quebrache wood and extracts for use in tanning; tar; telegraphs, materials for; telephones, materials for; telescopes; tin, chloride of tin, and tin ore; tin plates; toluol and its mixtures and derivatives; tools capable of being employed in the manufacture of munitions of war; tungsten; turpentine, oil and spirit; tyres for motor vehicles and for cycles, and materials in manufacture or repair of; urea; vanadium; vegetable fibres and yarns made therefrom; vehicles of all kinds, other than motor vehicles, available for use in war, and their component parts; vessels, craft, and boats of all kinds; warships, including boats and their component parts of such a nature that they can only be used

on a vessel of war; whale oil; wheat; wireless telegraphs, materials for; wolframite; wood tar and wood-tar oil; wool, raw, combed, or carded, wool waste, wool tops and noils; woollen or worsted yarns; xylol and its mixtures and derivatives; yacca gum; yarns made from vegetable fibres; zinc ore.

§ 5. Oversea Trade.

1. **Total Oversea Trade, p. 542.**—The following figures represent the preliminary totals of the trade of the Commonwealth during the year 1914-15.

Recorded Value.			Value per Inhabitant.			Percentage of Exports on Imports.
Imports.	Exports.	Total.	Imports.	Exports.	Total.	
£	£	£	£ s. d.	£ s. d.	£ s. d.	%
77,370,687	74,976,117	152,346,804	15 13 9	15 4 0	80 17 9	96.90

SECTION XVI.

SHIPPING.

§ 2. Oversea Shipping.

1. **Total Oversea Shipping, p. 597.**—The following figures represent the preliminary totals for the year 1915-16:—

SHIPPING.—NET TONNAGE ENTERED AND CLEARED.

Tonnage Entered.			Tonnage Cleared.		
With Cargo.	In Ballast.	Total.	With Cargo.	In Ballast.	Total.
3,609,931	644,744	4,254,705	3,904,165	371,696	4,275,861

§ 4. Vessels Built and Registered (p. 608).

Commonwealth Government Line of Steamships.

The difficulty of obtaining tonnage to transport the products of Australia to the ports of the United Kingdom and those of Allied countries, and the high rate of freights, which, except where controlled by Admiralty requisition or influence, threatened to become prohibitive, became so acute that, towards the end of June, 1916, the Prime Minister of the Commonwealth, the Hon. W. M. Hughes, while in London, purchased a fleet of fifteen steamers on behalf of the Commonwealth Government. The dead weight capacity of the vessels purchased amounted to 105,893 tons, and the price paid was about £2,050,000. The fleet will be known as the "Commonwealth Government Line," and will be used for carrying cargo only.

SECTION XVIII.

POSTS, TELEGRAPHS AND TELEPHONES.

§ 1. Posts.

8. **Ocean Mail Services, p. 691.**—Later information is now available as to the mail services to and from ports on the north-west coast of Western Australia (page 695). That undertaken by the State Steamship Service between Fremantle and Derby, and Fremantle and Darwin, is now regulated by an agreement dated 31st March, 1916, to terminate three months after the termination of the war; at the same subsidy as previously.

The agreement for the service performed by the State steamships to and from ports on the south coast has also been renewed as from the 19th June, 1916, terminating on the 30th June, 1918, the amount of subsidy being reduced to £2000.

SECTION XIX.

COMMONWEALTH FINANCE.

§ 2. Consolidated Revenue Fund.

Treasurer's Financial Statement, 1916.—The Hon. W. G. Higgs, Commonwealth Treasurer, made his interim statement on the 27th September, 1916, and the principal information therein is contained in the tables hereunder.

TABLE I.—COMPARATIVE STATEMENT SHEWING RECEIPTS DURING 1915-16, AND ESTIMATED RECEIPTS FOR 1916-17.

Heads of Revenue.								1915-16.	1916-17 (Estimate).
								£	£
Customs	...	...	...	...	...	...	...	13,621,471	13,500,000
Excise	...	...	...	...	...	...	...	3,393,470	3,250,000
Post Office	...	...	...	...	...	...	...	5,055,183	5,450,000
Land Tax	...	...	...	...	...	...	...	2,040,176	1,900,000
Income Tax	...	...	...	...	...	...	...	3,933,471	3,250,000
Probate and Succession Duties	...	...	...	...	...	...	...	625,990	550,000
Miscellaneous	...	...	...	...	...	...	...	2,028,182	2,529,290
Sugar	...	...	...	...	...	...	...	...	500,000
Entertainments Tax (say half-year)	...	...	...	...	...	...	...	...	1,000,000
War Time Profits Tax, 1915-16	...	...	...	...	...	...	...	...	1,000,000
" " 1916-17	...	...	...	...	...	...	...	...	2,000,000
Increased Income Tax	...	...	...	...	...	...	...	...	1,000,000
Funds accumulated in previous year for Old Age Pensions								30,627,943	35,929,290
								...	3,000,000
Total Revenue								30,627,943	38,929,290
Levy on wealth for Repatriation Fund	...	...	...	...	...	...	...	...	3,333,000
Balance of First Imperial War Loan	...	...	...	...	...	...	...	10,400,000	...
Internal Loans raised and to be raised	...	...	...	...	...	...	...	35,256,684	45,931,809
Second Imperial War Loan	...	...	...	...	...	...	...	12,000,000	13,000,000
Treasury Bills and Inscribed Stock	...	...	...	...	...	...	...	2,768,005	...
Balance of War Loans from previous year	...	...	...	...	...	...	...	...	17,074,192
Loans raised for advances to States	...	...	...	...	...	...	...	...	7,500,000
Loan for purchase of Steamships	...	...	...	...	...	...	...	...	2,068,000
Total Receipts								91,052,632	127,836,291

TABLE II.—COMPARATIVE STATEMENT SHEWING EXPENDITURE FOR 1915-16, AND ESTIMATED EXPENDITURE FOR 1916-17.

Heads of Expenditure.	1915-16.	1916-17 (Estimated).
	£	£
Special Appropriations... ..	12,470,256	19,022,105
Parliament	41,001	43,505
Prime Minister... ..	72,166	74,009
Treasury (excluding Pensions)	966,393	823,669
War Pensions	129,273	1,000,000
Attorney-General's Department	59,917	71,069
External Affairs Department	701,012	717,813
Department of Defence (Military)	33,949,104	73,670,616
Department of Navy	7,591,084	8,987,532
Department of Trade and Customs	568,145	574,307
Department of Home Affairs	899,081	1,129,818
Postmaster-General	4,926,189	5,105,871
New Works	2,886,814	4,394,187
Capital Works ... ..	...	2,270,790
	65,260,435	117,885,291
Deduct War Expenditure	41,195,568	85,299,500
Normal Expenditure apart from War... ..	24,064,867	32,585,791
Add War Expenditure from Revenue	3,563,076	6,343,499
Provision for next year Old Age Pensions	3,000,000	...
Total Charge to Revenue	30,627,943	38,929,290
Repatriation Fund ... ..	...	3,333,000
Loan Expenditure—		
For War	37,632,492	78,956,001
For Works	2,768,005	...
For Advances to States	2,950,000	4,550,000
Commonwealth Steamships ... ..	...	2,068,000
	73,978,440	127,836,291
Balance of War Loan Money carried forward to next year	17,074,192	...
Total Expenditure	91,052,632	127,836,291

TABLE III.—COMPARATIVE STATEMENT SHEWING COMMONWEALTH PUBLIC DEBT AS AT 30th JUNE, 1916, AND ESTIMATED DEBT AS AT 30th JUNE, 1917.

Heads of Debt.	30th June, 1916.	30th June, 1917 (estimated).
	£	£
Loan for construction of Port Augusta-Kalgoorlie Railway	5,158,847	5,158,847
Loans for other Public Works	3,767,360	3,767,360
Loans raised in London ... ..	...	7,500,000
Balance of Loans taken over from South Australia—		
(a) Northern Territory	2,778,266	2,772,516
(b) Port Augusta-Oodnadatta Railway	1,896,132	1,759,001
Transferred Properties	10,781,797	10,781,797
Commonwealth Steamships ... ..	...	2,068,000
War Debt—		
(a) Raised in Australia	34,965,403	81,144,092
(b) Loans from Imperial Government	36,774,296	49,774,269
(c) Treasury Bills	371,118	371,118
(d) Deferred Pay	4,759,730	10,500,000
Total Debt	101,252,949	175,597,000

6. **Proposed New Taxation, p. 724.**—(i.) *Entertainments Tax.* This tax will amount to $\frac{1}{2}$ d. on a ticket costing 3d.; 1d. for a ticket costing 6d.; and 1d. for each additional 6d. or part thereof.

(ii.) *War-time Profits Tax for 1915-16.* The Government propose to take 50 per cent. of the excess profits for 1915-16, allowing an exemption of £200, and a minimum standard of profit of 5 per cent. for companies, and 6 per cent. for individuals.

(iii.) *War-time Profits Tax for 1916-17.* The Government propose to allow a minimum standard of profit of 7 and 8 per cent. respectively for this year, and an exemption of £200, but propose to take all war profits over this sum.

(iv.) *Increased Income Tax*.—The exemption is reduced to £100, and all persons will pay a tax equivalent to their assessment, or £1, whichever is the higher. The exemption allowed for children is raised from £13 to £26 for each child under 16 years of age. Married men and single men with dependants are also exempted up to £156. The tax is increased by 25 per cent.

(v.) *Levy on Wealth*. This will amount to $1\frac{1}{2}$ per cent. on all estates, real and personal of the value of £500 and over. The levy may be paid in three equal annual instalments of $\frac{1}{2}$ per cent. each, or it may be paid in one lump sum, in which latter case the contributor is entitled to a discount calculated on the basis of war loan interest for the period covered by the prepayment.

§ 4. Commonwealth Public Debt.

It was stated at the head of page 743 that a third issue of a Commonwealth War Loan had been thrown open for subscription. No definite amount was asked for, but a sum of £21,559,080 was subscribed, which may be regarded as entirely satisfactory, when it is remembered that this loan was the third of its kind within a year, and that the other two had already realised upwards of £35,000,000. In addition to this internal loan, the Commonwealth Government have arranged with the Imperial Government for a further loan of £25,000,000 in monthly instalments. Thus by the time when the whole of this money is received the Commonwealth Government will have an indebtedness directly owing to the war of upwards of £106,000,000 made up as follows:—

COMMONWEALTH WAR LOAN.

(1) To British Government:	1st loan	...	£24,500,000
	2nd loan	...	25,000,000
(2) Internal:	1st issue	...	13,389,440
	2nd issue	...	21,655,580
	3rd issue	...	21,559,080
Total ...	...	...	£106,104,100

SECTION XXV.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

1. *The Western Australian Ministry, p. 870*.—The following Ministry took office on the 27th July, 1916:—

Premier and Colonial Treasurer	...	...	Hon. F. WILSON, C.M.G.
Minister for Lands and Agriculture	...	...	Hon. H. B. LEFROY, C.M.G.
Minister for Railways, Water Supply and Industries	...	...	Hon. J. MITCHELL.
Attorney-General and Minister for Mines	...	...	Hon. R. T. ROBINSON.
Minister for Works and Trading Concerns...	...	...	Hon. W. J. GEORGE.
Colonial Secretary and Minister for Education	...	...	Hon. H. P. COLEBATCH, M.L.C.
Ministers without Portfolio	...	...	{ Hon. J. D. CONNOLLY.
			{ Hon. A. J. H. SAW, M.L.C., M.D.

2. *The Tasmanian Ministry, p. 870*.—The following Ministry assumed office on the 15th April, 1916:—

Premier, Chief Secretary, and Minister for Education	...	...	...	Hon. W. H. LEE.
Treasurer and Minister for Mines	...	...	...	Hon. SIR N. E. LEWIS, K.C.M.G.
Attorney-General and Minister for Railways	...	...	...	Hon. W. B. PROPSTING, M.L.C.
Minister for Land, Works, and Agriculture	...	...	...	Hon. J. B. HAYES.
Ministers without Portfolio	...	...	{	Hon. H. HAYS.
			{	Hon. T. SHIELDS, M.L.C.

SECTION XXVIII.

DEFENCE.

§ 6. Special Defence Legislation.

2. War Precaution Regulations, p. 1004.—(i.) *Enemy Firms.* At the outbreak of the war there were in Australia a number of Australian companies whose shareholders were principally of German nationality and origin. These persons were still sharing in the profits made from Australian trade, and to that extent German influence was still felt in the trade of the Commonwealth. The Government decided that this influence must be eradicated, and in pursuance of this policy, the following steps were taken:—

A proclamation under the Trading with the Enemy Act 1914 was made, declaring that any transaction with any company, the shares of which were owned wholly or mainly by persons of enemy nationality or resident or carrying on business in an enemy country; or which the Attorney-General declared to be, directly or indirectly, carried on wholly or mainly for the benefit or on behalf of persons of enemy nationality or resident or carrying on business in an enemy country, was trading with the enemy, and was prohibited. Under this Proclamation, 33 firms and companies in Australia have been listed as enemy firms, and have, consequently, gone out of business. Under the Trading with the Enemy Act 1916, power is given to the Public Trustee to make application to the Court to wind up any such company.

(ii.) *Enemy Shareholders and Naturalised Persons of Enemy Origin.*—By regulations under the War Precautions Act, enemy subjects and naturalised persons of enemy origin, unless exempted, were ordered to transfer their shares to the Public Trustee, with full authority to hold them until twelve months after the end of the war, or to sell the shares in accordance with the Regulations. Under these Regulations shares to the value of £236,125 have been transferred to the Public Trustee. No enemy subject or naturalised person of enemy origin to whom the Attorney-General has not granted an exemption can purchase any shares in any company incorporated in Australia.

By the War Precautions (Land Transfer) Regulations, the transfer of land to enemy subjects is absolutely prohibited, and the transfer of land to naturalised persons of enemy origin is prohibited without the consent of the Attorney-General.

(iii.) *Formation of Companies.*—By the War Precautions (Companies) Regulations, it is necessary to obtain the consent of the Treasurer of the Commonwealth before making application for the registration of any company or firm, or any society, club, or association, having for its object, or one of its objects, the pecuniary benefit of its members. The consent of the Treasurer is also necessary before a company can increase its nominal capital, or issue any of its authorised capital or make a call upon shares issued by it.

3. Military Service Referendum Act. On the 13th September, 1916, the Prime Minister brought in a Bill providing for the taking of a Referendum of the people of Australia on the question of Compulsory Military Service outside the Commonwealth. The prescribed question to be submitted to the electors was as follows:—"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?"

The Bill was passed through both Houses by large majorities, and the Referendum will be taken on the 28th October, 1916.

INDEX

An index to special articles, etc., appearing in previous issues, is given at the commencement of this book, page viii.

A		PAGE			PAGE
Aborigines			Advances		
in Northern Territory	..	1037	for Mining .. ..	..	444
Number of .. ..	..	99	made by Banks of Issue ..	..	779
Protection of .. ..	..	864	to Settlers (see also Loans)	248, 368	
Accidents			Advisory Council of Science and		
Deaths from	188 to 190, 202		Industry .. ..	..	1135
in Mining .. ..	..	436, 444	Agates .. ..	..	442
on Government Railways	633, 666		Age Distribution of Population	98, 102, 125	
Acts			Agency Companies .. ..	..	780
Administered by various Depts.	885		Agents-General for the States	..	1109
Aliens Restriction .. ..	..	1003	Ages		
Arbitration, Compulsory ..	..	963	at Death .. ..	..	177
Australian Notes	738, 773		of Married Persons ..	..	209
Banking .. ..	..	773	at Marriage .. ..	..	166
Coinage .. ..	..	771	of Mothers	155, 161	
Commercial	538 to 582		who died in Childbirth ..	..	201
Commonwealth, Table of ..	..	41	of Persons who committed suicide	204	
Constitution, Commonwealth ..	17		who died of Cancer ..	..	196
Copyright .. ..	..	1120	Agreement		
Customs	538 to 582		Financial .. ..	..	720
Defence	540, 975, 999, 1150		Naval .. ..	..	985, 989
Employers' Liability .. ..	..	953	Agricultural		
Enemy, Trading with .. ..	..	540	Colleges and Experimental Farms		
Factories	947, 954		in each State .. ..	..	364
Fertilisers .. ..	..	359	Departments .. ..	..	368
Health, Public .. ..	..	1014	Expansion, Influence on		
Immigration .. ..	..	1109	Population .. ..	..	94
Income Tax (Commonwealth) ..	725		Implement Works .. ..	..	500
Income Tax (State) .. ..	..	756	Produce Parcels Post ..	..	702
Industrial	947, 954		Training in State Schools ..	..	806
Land .. ..	..	225	Agriculture		
Land Tax, Commonwealth ..	..	724	Acreage of Principal Crops ..	..	314
Maternity Allowance .. ..	..	1125	Agricultural Colleges ..	..	364
Military Service Referendum ..	..	1150	Apples .. ..	..	353
Mining .. ..	..	952	Area under Crop	310 to 314	
Naturalisation .. ..	..	135	in Relation to Population	310	
Patents, Enemy .. ..	..	1118	in Relation to Total Area ..	..	311
Public Hygiene .. ..	..	1014	Artificially-sown Grasses ..	..	311
Sea Carriage of Goods .. ..	..	538	Artificial Manures .. ..	..	359
Secret Commission .. ..	..	538	Barley .. ..	..	330
Surplus Revenue .. ..	..	721	Beans .. ..	..	334
Tariff	538, 582		Beet .. ..	..	345
Trade Descriptions .. ..	..	539	Bounties on Products ..	345, 358	
War Precautions	999, 1150		Bran .. ..	..	320
Administration, Letters of ..	797, 847		Cane, Sugar .. ..	..	342
Military .. ..	..	974	Chaff .. ..	..	341
Administrations, Commonwealth	38, 868		Coffee .. ..	..	358
Administrative Government, Commonwealth and States	..	885	Cornflour .. ..	..	330

Agriculture (continued)		PAGE			PAGE
Cotton .. ..	..	357	Arbitration Court ..	..	849, 963
Currants .. ..	..	352	Area of Australia compared with that	..	..
Dried Fruits .. ..	..	355	of other Countries ..	..	47
Early Attempts at, and Records of	..	309	Areas	..	..
Ensilage .. ..	..	363	of States and Territories ..	..	16
Experimental Farms ..	..	364	of Tropical and Temperate	..	..
Fertilisers	359, 441	..	Regions, Australia ..	..	47
Flour .. ..	..	318	Arms Factory, Small ..	..	992
Fruit Gardens .. ..	..	352	Arrivals, Excess of, over Depar-	..	..
Grapes	347, 351	..	tures ..	..	106, 113, 1139
Graphs of	349, 350	..	Arsenic .. ..	..	422
Grass Seeds .. ..	..	356	Art Galleries .. ..	..	829
Grasses Sown .. ..	..	311	Artesian Basins, Map of ..	..	529
Green Forage .. ..	..	341	Artesian Water .. ..	..	517
Hay .. ..	..	338	Artificial Manures (see Fertilisers) ..	..	359
Hops .. ..	..	357	Asbestos .. ..	..	439
Jams and Jellies .. ..	..	355	Assemblies, Legislative, in the	..	..
Loans to Farmers	248, 367	..	States	877 to 884	..
Lucerne	323, 339	..	Assisted Immigration .. ..	..	118
Maize .. ..	..	327	Assurance, Life, see Life Assurance.	..	..
Malt .. ..	..	333	Asylums	..	..
Mangolds .. ..	..	337	Benevolent and Destitute ..	..	856
Market Gardens .. ..	..	356	for the Insane .. ..	..	860
Melons .. ..	..	357	Attendance at Schools ..	134, 802, 811	..
Millet .. ..	..	357	Attorney-Generals since 1901 ..	..	868
Nurseries .. ..	..	357	Attorney-General's Department ..	..	734
Oatmeal .. ..	..	326	Auction Sales of Crown Lands	227, 233	..
Oats .. ..	..	323	Australia	..	..
Onions .. ..	..	337	Discovery and Colonisation of ..	..	15
Orchards .. ..	..	352	Physiography of .. ..	..	47
Papua .. ..	..	1008	Population of	91 to 149, 1140	..
Peas .. ..	..	334	Australian Notes	738, 743, 755, 773	..
Phosphates, Use of ..	359, 441	..			
Pollard .. ..	..	320			
Potatoes .. ..	..	335			
Preserved Fruit .. ..	..	355			
Progress of .. ..	..	310			
Pumpkins .. ..	..	357			
Raisins .. ..	..	352			
Relative Importance of Crops ..	..	312			
Rice .. ..	..	334			
Rye .. ..	..	334			
Sown Grasses .. ..	..	311			
Sugar Cane .. ..	..	342			
Sweet Potatoes .. ..	..	337			
Tobacco .. ..	..	356			
Training in State Schools ..	..	806			
Turnips .. ..	..	337			
Value of Production .. ..	..	1131			
Vineyards .. ..	..	347			
Wheat	314, 1141	..			
Wine Production .. ..	..	348			
Alcohol, Consumption of ..	..	838			
Alienation of Crown Lands (see Land	..	..	
Tenure).	..	..	
Aliens, Tenure of Crown Lands by	230	..			
Restriction Order .. ..	..	1003			
Allowance, Maternity .. ..	..	1125			
Alumite	438, 1138	..			
Angora Goats .. ..	..	282			
Annexation of Australia ..	..	15			
Annexation of Papua	16, 1006	..			
Antimony .. ..	..	422			
Apprenticeship in Factories	..	483			

B

Bacon	..	..
and Ham	..	..
Curing Factories .. ..	..	503
Graph of .. ..	..	300
Imports and Exports of	374, 380	..
Imports into United Kingdom	381	..
Local Consumption of ..	..	375
Production of	374, 379	..
Balance Sheet Postal Department ..	..	706
Balances, State Consolidated Rev-	..	..
enue Fund .. ..	..	754
Bank, Commonwealth .. ..	..	774
" " Savings .. ..	..	785
Banking (see also Banks of Issue) ..	..	772
Legislation .. ..	..	773
Premiers' Conference, 1912 ..	..	786
Bank Notes	738, 743, 755, 773	..
Bankruptcies .. ..	..	847
Banks of Issue	..	..
Advances made by .. ..	..	778
Assets of .. ..	..	776
Australian Notes Act .. ..	..	773
Banking Facilities .. ..	..	772
Banking Legislation .. ..	..	773
Bank Notes, Duty on .. ..	..	755
Bank Notes Tax Act	755, 773	..
Capital Resources of .. ..	..	775
Clearing Houses .. ..	..	780
Deposits in .. ..	..	778

	PAGE		PAGE
Banks of Issue (continued)		Birthplaces (continued)	
Liabilities of	776	of Persons Married	169
Percentage of Coin and Bullion		of Population	103, 125
to Liabilities at Call	777	Births—	
Banks, Savings	783	Actual, compared with Increase	
Amount of Deposits in	784	at 1890 Rates	220
Annual Business	785	Ages of Parents	155
Commonwealth	785	Birthplaces of Parents	158
Number of Depositors in	783	Crude Rates	151
Premiers' Conference 1912	786	Deaths of Mothers during Child-	
School	810	birth	189, 200
Barisal Guns	56	Duration of Marriage	161
Barium	422	Excess of, over Deaths	104
Bark, Tanning, Exports of	390	Ex-nuptial	153
Barley		Masculinity of	153
Area under	330	Female	150, 1140
Graphs of	349, 350	Graphs of	211, 214, 215
Imports and Exports of	332	Explanation of	220
Malt, Imports and Exports of	333	Interval between Birth and Re-	
Malting	331	gistration	164
Pearl and Scotch	333	Interval between Marriage and	
Price of	334	first Birth	163
Production in Relation to Popu-		Issue of Marriages	161
lation	332	Male	150, 1140
Production of in various Countries	333	Masculinity of	152
Value of	332	Ex-nuptial	153
Yield of	334	Mothers' Ages, etc.	161
Barometric Pressure	66	Multiple	155
Barton Administration	38	Natural Increase	104
Barytes	439	Occupations of Fathers	160
Beans	334	Previous Issue of Mothers	161
Bêche-de-mer Fisheries	392	Rates	151, 1140
Bee Farming	377	Annual, Graphs of	214, 215
Beef, Frozen, Export of	289	Ex-nuptial	154
to Eastern Countries	564	of various Countries	152
Beer, Consumption of	838	Total	150, 1140
Beeswax	378	Triplets	155
Beet, Sugar	345	Twins	155
Benevolence, Public		Biscuit Manufactories	506
Aborigines, Protection of	864	Bismuth	422
Asylums, Benevolent & Destitute	856	Blind Persons in Commonwealth	135
Asylums for the Insane	860	Boards	
Benevolent Asylums	856	Country Roads, Victoria	618
Consumptive Homes	855	Harbour	931
Destitute Asylums	856	Marine	930
Expenditure on	864	Naval	986
Hospitals	852	of Water Supply, Sydney	910
for the Insane	860	of Works, Melbourne	914
for Special Cases	855	Wages—see Unionism.	
Industrial Schools	857	Bonus—see Bounties.	
Lepers	859	Book-keeping System of Common-	
Lunatic Asylums	860	wealth Accounts	729
Orphanages	857	Boot and Shoe Factories	512
Treatment of Inebriates	839	Bores, Artesian	518
Bertillon Index of Causes of Death	187	Bounties—	
Beryls	442	Agricultural Products	345, 358
Beverages, Alcoholic, Consumption of	838	Fish, Preserved	398
Bibliography of Works on Aust.	13	Iron and Steel	419, 421
Billiard Table Making Factories	515	Maternity	1125
Birthplace, Enemy, Persons of	1004	Shale Oils	437
Birthplaces		Sugar	345
of Deceased Persons	182, 210	Wool, Combed (Tops)	297
of Deceased Married Persons	210	“Braddon” Clause	32, 720
of Parents	158	Bran	320
		Breweries	509

	PAGE
Bridegrooms, Ages and Occupation	
of	166, 169
Brides, Ages of	166
Bridges and Roads	615
Bright's Disease, Deaths from	
188 to 190, 200	
Brigades, Fire	792, 932
British New Guinea—see Papua.	
Broken Hill Silver Mines	411, 1143
Broken Hill Co. Iron Works	420
Bronze, Specie, Imports and Exports	
of	569
Building and Investment Societies..	751
Building Stones of Commonwealth	446
Bullion, Imports and Exports of ..	569
Bunbury Harbour Board	931
Bundaberg Harbour Board	931
Bureau of Census and Statistics ..	1
Burnie Marine Board	931
Burns, Deaths from	203
Burrinjuck Dam	526
Bursters (Winds)	75
Business Colleges	822
Butter—	
Exports of	372
to Eastern Countries	561
Factories	370, 504
Graphs of	300
Imports of	372
into United Kingdom	380
Local Consumption of	373
Production of	371, 379

C

Cabinet-making Factories	515
Cabinet Ministers	
Commonwealth	38, 868
State	869, 1149
Cablegrams Received and Despatched	713
Deferred	715
Week-end	715
Cable	
Rates	714
Routes, Lengths of	714
Tramways, Melbourne	679
Cables, Submarine (see Submarine	
Cables).	
Cadets (see Defence).	
Cairns Harbour Board	931
Camels	282, 925
Canadian-Pacific Mail Service	693
Canberra	1033
Canberra-Queanbeyan Railway	631, 1034
Cancer	
Ages of Persons Dying from	196
Deaths from	188 to 190, 196
Death Rates from	197
Occupation of Males Dying from	197
Candle Factories	498
Capital Punishment	842
Carnotite	423
Casualties, Expeditionary Forces ..	996
Cataract Dam, N.S.W.	910

Cattle	
Dairy, in Commonwealth	370, 1019
Exports of Frozen Beef	289
to Eastern Countries	564
Graphs of	299
Hides	305
Imports and Exports of	288
in the Commonwealth	
280, 287, 370, 1141	
in various Countries	290
Number treated at Preserving	
Works	506
Percentage of, in each State ..	288
per Head of Population	291
per Square Mile	282
Purposes for which Raised	287
Slaughtered in Commonwealth	289
Causes of Deaths (see Deaths)	187, 207
Census and Statistics Bureaux	1
Census of 1911	119, 123
Censuses, Australian	120, 124
Centenarians, Deaths of	181
Chaff, Exports of, to Eastern Countries	563
Charities (see Benevolence).	
Cheese	
Factories	370, 504
Graphs of	300
Imports and Exports of	372
Imports into United Kingdom ..	381
Local Consumption of	373
Production of	371, 379
Chiasolite	442
Childbirth, Deaths in	189, 200
Child Labour in Factories	481, 956
Children	
Attending Schools	133, 802, 811
Medical Inspection of	1027
Deaths of	174, 187, 1026
Education of	132, 824
Neglected, Homes for	857
Children's Courts	840
Chromium	423
Cigar and Cigarette Factories	510
Cinnabar	423
Citizen Forces	977
Civil Courts (see Courts).	
Clays	439
Clearing House, Banking	780
Climate—see Meteorology	56
Climatological Stations	58
Tables of Australian Capitals ..	78
Closer Settlement	230 to 248, 367
in irrigable areas, Vic.	252
" " " S.A.	255
Clothing Factories	514
Clothing Factory, Commonwealth ..	992
Coachbuilding Works	515
Coal	425
Accidents in Mining	436, 444
Coke	436
Consumption of	433
Distribution of, in each State ..	426
Exports of	430
to Eastern Countries	562
Gas and Coke Works	516

	PAGE		PAGE
Coal (continued)		Commerce, Imports (continued)	
Graph, shewing value of	.. 432	from Foreign Countries	553, 577
Persons engaged in Mining	436, 443	from United Kingdom	551, 577
Price of	.. 434	Methods of Recording	.. 541
Production of		of the Commonwealth	.. 546
in British Empire	.. 430	Income Tax Assessment Act	.. 540
in each State	.. 425, 1142	Interstate Commission	33, 1134
in Foreign Countries	.. 430	Metal Industry, Control of	.. 1142
Wages Paid in Mining	.. 1079	Northern Territory	.. 1041
Coastal Configuration	.. 54	Oversea Trade, 1826 to 1914-15	542
Shipping Services	.. 612	Preferential Tariff	.. 581
Cobalt	.. 423	Proclamations, Effect of War	.. 541
Coffee	.. 358	Sea Carriage of Goods Act	.. 538
Coin (see Currency).		Secret Commission Act	.. 538
Coin and Bullion, Imports and Ex-		Ships' Stores	.. 542
ports of	.. 569	"Special Trade" of various	
Coinage		Countries	.. 574
Act	.. 771	Specie, Imports and Exports of	569
Australian	.. 768	Tariff Acts	.. 538 to 540
Revenue	.. 722	Tariff, Preferential	.. 581
Standard Weight and Fineness of	770*	Tariffs of other Countries	.. 595
Coke, Production of	.. 436	Trade of United Kingdom with	
Works	.. 516	Australia	.. 576
College, Military	981, 1035	Trade Year, Alteration of	.. 544
Naval	989, 1035	Trades Descriptions Acts	.. 539
Colleges, Agricultural	.. 364	Trading with the Enemy Act	.. 540
Business	.. 822	Vessels (Ships) Imported and	
Colonies, Australian, Creation of	15	Exported	.. 541
Commerce		War, Regulation of Trade during	541, 1144
Alteration of Trade Year	.. 544	Commissions, Royal	
Bullion, Imports and Exports of	569	Insurance	.. 787
Commercial Legislation	.. 538	Interstate	.. 33, 1134
Comparison of Tariffs of other		Pearl Fisheries	.. 392
Countries	.. 595	Postal	.. 707
Constitutional Powers of Com-		Trade and Prices during War	.. 1107
monwealth with regard to	.. 25, 30	Commonwealth	
Customs Acts	.. 538	Advisory Council of Science and	
Revenue	.. 723	Industry	.. 1135
Tariff, 1914	.. 582	Area, Compared with that of	
Development of Export Trade		other Countries	.. 47
to Eastern Countries	.. 560	Bank	.. 773, 786
Direction of Trade	.. 546, 555	Constitution Act	.. 17
Exchange, Metal	.. 1143	Debt, Public	.. 740, 743, 1148
Excise Revenue	.. 723	Departments, Cost of	.. 730
Exports		Finance	.. 719, 1147
Classification of	.. 566	Government Line of Steamers	1146
Decline of	.. 544	Income Tax	.. 725
Direction of	.. 555	Land Tax	.. 724, 726
Effect of Prices on Value of	571	Notes	.. 738, 743, 755, 773
from 1826 to 1914-15	.. 542	Railways	.. 630
Items Affected by War	.. 541	Referenda	.. 876, 1150
Methods of Recording	.. 541	Royal Proclamation of	.. 37
to British Possessions	.. 558	Savings Bank	.. 785
to Eastern Countries	.. 560	Seat of Government	.. 1038
to Foreign Countries	.. 559	Subsidy Paid to States	736, 747
to United Kingdom	380, 558	Taxation	.. 724
to various Countries	.. 555	Companies	
External Trade of var. Countries	574	Building and Invest. Societies	781
Imports		Co-operative Societies	.. 782
Classification of	.. 566	Fire Insurance	.. 792
Comparative Rates of Duty	595	Life Assurance	.. 788
from 1826 to 1914-15	.. 542	Trustees, Executors and Agency	780
from British Possessions	.. 552	Compulsory Service Abroad	.. 1150
from Countries of Shipment		Concentrated Milk	.. 372, 376
and Origin	.. 546	Conciliation—see Arbitration.	

	PAGE
Condensed Milk	372, 376
Milk Factories	504
Conditional Purchases of Crown Land	227, 237
Confectionery Factories	507
Conferences	
Advisory Council of Science and Industry	1135
Banking	786
Forestry	385
Interstate	1133
Murray River Waters	537
State Premiers'	786
Confinements, Deaths from Accidents of	189, 200
Congresses, Forest	385
Conjugal Condition of Population	129
Persons at Marriage	167
Conservation, Water	517
Consolidated Revenue, C'wealth	721
State	746
Constitution	
Act, C'wealth of Australia	17
Alteration of	36, 966
Constitutions of States	17
Under Commonwealth	34
Consumption (see Tuberculosis)	193
Consumptive Homes	855
Contingents, Australian	993
Contract Immigrants	1109
Contracts, Enemy, Annulment	999
Cook Administration	40
Co-operative Societies	782
Coorongite	439
Copi	440
Copper	413
Accidents in Mining	444
Control of Industry	1143
Exports to Eastern Countries	562
Graph, shewing value of	431
Persons Employed in Mining	415, 443
Price of	415
Production of	413, 1142
Sources of Production	413
Wages Paid in Mining	1079
World's Production of	415
Copyright	1119
Act of 1912	1120
Revenue from	1121
Cordite Factory, C'wealth Govt.	992
Cornflour	330
<i>Corrigenda</i>	xxx
Cost of Living (see also Labour)	1095
Commodities included	1096
House Rent	1097
Regulation of Prices in War time	1107
Retail Prices	1095
War, Effect of	1106
Wholesale Prices	1105
Cotton	357
Bounties on	358
Mills	511
Council, Advisory, of Science and Industry	1135
Council, Executive	28, 867

	PAGE
Councils, Legislative	877 to 884
Courts	
Arbitration	849, 963
Civil	
Bankruptcy	847
Divorce	846
High Court	848
Judicial Separations	846
Letters of Administration	847
Lower Courts	845
Probate, etc.	847
Superior Courts	846
Lower (Magistrates')	
Children's Courts	840
Committals to Superior Courts	840
Convictions and Committals at	835
Decrease in Crime	836
Drunkenness, Cases of	837
Persons Charged at	834
Powers of the Magistrates	833
Treatment of	
First Offenders	840
Habitual Offenders	839
Inebriates	839
Superior	
Capital Punishment	842
Civil Cases in	846
Committals from Lower Courts	840
Convictions at	841
Creation of Commonwealth	17
Crédit Foncier	367
Crime, Convictions for	835, 841
Crocidolite	442
Crops—see Agriculture	314
Croup, Deaths from	188 to 190
Crown Lands—see Land Tenure	225
Currants	352
Currency	
Australian Mints	768
Coinage Revenue	728
Imports and Exports of Coin and Bullion	569
Mints	768
Prices of Silver	770
Standard Weight and Fineness of Coinage	770
Customs	
Acts	538 to 582
Duties	595
Preferential Tariff	581
Revenue	723
Tariff, 1914	582
Cyanide Works	503
Cyclones	75

D

Dairies, Supervision of	369, 1018
Dairy Premises Registered	1019
Dairy Production—see Farmyard	369
Dates, Bounty on	358
Dead Letter Office	702

	PAGE
Deaf Mutes in Commonwealth ..	135
Deakin Administrations ..	39, 40
Deaths	
Actual, compared with increase	
at 1890 Rate ..	220
Age at Marriage of Males and	
Females ..	210
Ages and Issues of Married Males	
and Females ..	209
Age Groups ..	177
at Single Ages ..	177
Bertillon Index of Causes of ..	187
Birthplaces of Deceased Persons	
182, 210	
and Issue of Married Persons	209
Cancer ..	188 to 190, 196
Causes of, in Classes ..	187, 207
Centenarians ..	181
Certification of ..	192
Children under 1 year	174, 207, 1026
Classification of Causes of ..	187
Croup ..	188 to 190, 193
Crude Rates ..	174
Diarrhoea of Children	188 to 190, 199
Diphtheria ..	188 to 190, 193
Duration of Life after Marriage	210
during Childbirth, Ages of ..	
Mothers ..	201
Expeditionary Forces ..	996
Female ..	172, 1141
Friendly Societies ..	795
Graphs of ..	213 to 217
Explanation of ..	220 to 224
Heart Disease ..	188 to 190, 198
Index of Mortality ..	184
Infantile Mortality	174, 187, 207, 1026
Graph of ..	217
Effect on Birthrate of ..	177
Rates of ..	174, 187, 1026
in various Countries ..	176
Issue of Married Males and Fe-	
males ..	209
Length of Residence in Common-	
wealth of Deceased Persons	181
Male ..	172, 1141
Measles ..	188 to 190, 193
Metropolitan Children ..	1026
Occupations of Deceased Persons	183
and Issue of Married Males	219
Puerperal Diseases ..	189, 201
Rates ..	173, 1141
Infantile	174, 187, 207, 1026
Monthly Variation in ..	186
of various Countries ..	173
Suicides ..	188 to 190, 203
Ages of Persons committing	204
Occupation of Males com-	
mitting ..	205
Total ..	173, 1141
Tuberculosis ..	188 to 190, 198
Typhoid ..	188 to 190, 192
Violence ..	188 to 190, 202
War, European ..	996
Whooping Cough ..	188 to 190, 193

	PAGE
Debility	
Congenital, Deaths from 188 to 190, 202	
Senile, Deaths from 188 to 190, 202	
Debt, Commonwealth ..	740, 743, 1148
Northern Territory ..	1043
State Public ..	760
Dedications of Crown Lands	227, 231
Defence	
Acts ..	975, 999, 1150
Aliens Restriction ..	1003
Australian Contingents ..	993
Cadet System ..	977
Citizen Forces ..	977
Casualties in European War ..	996
Clothing Factory ..	992
Companies, Formation of ..	1150
Compulsory Service Abroad ..	1150
Compulsory Training	976, 981
Cordite Factory ..	992
Duntroon Military College ..	981
Enemy Birthplace, Persons of	1004
Firms ..	1150
Shareholders ..	1150
Estimates ..	991
European War, 1914 ..	994
Expeditionary Forces ..	994
Expenditure ..	736, 991
Compared with other Coun-	
tries ..	992
Fleet, Australian ..	990
Harness and Saddlery Factory	992
Henderson, Admiral, Report of	988
Higher Training ..	980
Kitchener, Lord, Report of ..	976
Legislation ..	540, 975, 999, 1150
Metal Industry, Control of ..	1142
Military	
Administration ..	974
Cadets ..	977
Classification of Land Forces	
979, 983	
College ..	981, 1035
Instruction of Officers ..	980
Land Defence of Aust. ..	974
Population ..	975
Rifle Clubs ..	979
Service Abroad ..	1150
Strength of Forces	979, 983
Systems, Developing of ..	974
Naval	
Agreement with British Go-	
vernment ..	985, 989
Board ..	986
College ..	989, 1035
"Emden," Capture of ..	997
Forces, Strength of ..	990
Historical Outline ..	985
Present System of ..	975, 981
Allotment of Units ..	979
Anthropometric Record ..	975
Citizen Forces ..	977
Compulsory Training	976, 981
Efficiency ..	978
Equipment ..	979
Establishments ..	992
Exemptions from Service ..	978

	PAGE
Executive Government ..	28, 867
Executors' Companies ..	780
Ex-Nuptial Births ..	153 to 157
Expeditionary Forces ..	994
Expenditure—see Finance, Commonwealth and State.	
Experimental Farms ..	364
Exploration ..	17
Exports	
Classification of ..	566
Effects of Prices on ..	571
Farmyard and Dairy Produce ..	372
Methods of Recording ..	541
of the Commonwealth ..	546, 555
Prohibited Items of ..	541, 1144
to Eastern Countries ..	560
to United Kingdom ..	380, 558
External Affairs Department, Cost of	732
Ministers of ..	868

F

Factories

Acts relating to ..	947, 954
Apprenticeship in ..	483
Child Labour in ..	481, 956
Classification of ..	468, 470
According to Number Employed ..	473
Agricultural Implements ..	500
Bacon-curing ..	503
Billiard Table Making ..	515
Biscuit ..	506
Boot and Shoe ..	512
Breweries ..	509
Butter ..	370, 504
Cabinet Making ..	515
Candle ..	498
Cheese ..	370, 504
Cigar and Cigarette ..	510
Clothing ..	514
Coachbuilding ..	515
Coke Works ..	516
Condensed Milk ..	504
Confectionery ..	507
Cotton Mills ..	511
Cyanide Works ..	503
Distilleries ..	510
Dressmaking ..	514
Electric Light and Power Works ..	516
Engineering Works ..	501
Fellmongering ..	497
Fish Preserving Works ..	505
Flour Mills ..	507
Foundries ..	501
Fruit Preserving ..	506
Furniture, etc. ..	515
Gas Works ..	516
Ice Works ..	505
Implements ..	500
Ironworks ..	501
Jam ..	506
Meat Preserving Works ..	505

	PAGE
Factories, Classification of (continued)	
Millinery ..	514
Mills	
Flour ..	507
Saw ..	499
Sugar ..	508
Woollen and Tweed ..	511
Pickles, etc. ..	506
Pyrites Works ..	503
Railway Workshops ..	502
Refineries, Sugar ..	509
Refrigerating Works ..	505
Sauces, etc. ..	506
Saw Mills ..	499
Shoe and Boot ..	512
Smelting Works ..	503, 1143
Soap and Candle ..	498
Sugar Mills ..	508
Sugar Refineries ..	509
Tailoring ..	514
Tanneries ..	496
Tobacco ..	510
Tramway Workshops ..	502
Tweed Mills ..	511
Vinegar, etc. ..	506
Wagon Building Works ..	515
Wool-scouring ..	497
Woollen and Tweed Mills ..	511
Child Labour in ..	481, 956
Commonwealth Government ..	992
Defects in Industrial Statistics ..	468
Effects of Gold Discovery on ..	467
Female Employment in particular Industries ..	477, 956
Fuel and Light used in, Value of ..	487
Increasing Ratio of Female Employment ..	479
Industrial Progress of ..	467
Land and Buildings, Value of ..	492
Mechanical Power in ..	471
Number of ..	467, 469
Number of Children Employed in ..	481
Number of Employees in ..	467, 472, 474
Output of ..	489
Value of ..	1132
Outworkers connected with ..	476
Plant and Machinery, Value of ..	492
Production of ..	489
Raw Materials used in ..	488
Registered ..	952
Sex Distribution in ..	477
Unemployment ..	1047
Use of Mechanical Power in ..	471
Value of Production of ..	489, 1132
Wages paid in ..	483, 1063
Farmers, Loans to ..	367
Farmyard and Dairy Production	
Bacon and Ham ..	374, 379
Bee Farming ..	377
Beeswax ..	378
British Imports of ..	380
Butter ..	371, 379
Factories ..	370, 504
Cheese ..	371, 379
Factories ..	370, 504

	PAGE		PAGE
Farmyard and Dairy Production (contd.)		Finance, Commonwealth (continued)	
Concentrated Milk ..	372	Departments Transferred to Commonwealth ..	719
Dairy Cattle in C'wealth ..	370, 1019	Departments Transferable ..	719
Dairy Production ..	375, 379, 1131	Expenditure	
Eggs ..	376, 379	Attorney-General's Dept. ..	734
Exports ..	372	Cost of Departments ..	730
Factory System ..	369	Customs Department ..	735
Graphs ..	300	Defence ..	736, 991
Honey ..	378	External Affairs Department ..	732
Lard ..	375	Federal Capital ..	1034
Milk ..	370	Governor-General's Establishment ..	730
Mixed Farming ..	369	Home Affairs Department ..	734
Pigs, Bacon, etc. ..	373	Loan Fund ..	740
Pork, Frozen ..	374	Loans to States ..	763, 1148
Poultry Farming ..	376	Local Government ..	935
Supervision of Industry ..	369	Maternity Allowance ..	1125
Summary of ..	379	Nature of ..	729
Value of ..	379, 1131	Northern Territory ..	732, 1043
Fauna, Australian ..	55	Old-age and Invalid Pensions ..	1121
Northern Territory ..	1039	on New Works, etc. ..	729
Federal		Papua ..	733, 1010
High Court ..	848	Parliament ..	731, 873
Movement in Australia ..	17	Payments to the Several States ..	736
Parliament ..	874	per Head of Population ..	729
Railways ..	630	Postal Department ..	736
Federal Capital ..	1033	Prime Minister's Department ..	731
Defined by Constitution ..	35	Railways ..	630
Education at ..	802, 1034	Special Assistance to States ..	721
Jervis Bay ..	1034	Subsidy paid to States ..	736, 747
Land Tenure ..	279, 1033	Total ..	729
Live Stock ..	1034	Trade and Customs Department ..	735
Military College ..	981, 1035	Treasurer's Department ..	734
Naval College ..	989, 1035	Financial Relations between Commonwealth and States ..	720
Population of Territory ..	91, 1034	Financial Provisions of Constitution ..	719
Railways ..	630, 1034	Financial Statement, 1916 ..	1147
Rainfall and Temperatures at ..	77	Imperial War Loan ..	741, 1148
Revenue and Expenditure ..	1034	Insurance, Royal Commission ..	787
Territory, Population of ..	91, 1034	Interest on Loans ..	744
Territory, Tenures of Land ..	279, 1033	Note Issue ..	738, 743, 755, 773
Transfer of, to Commonwealth ..	17	Place of Loan Flotation ..	743
Fellmongering Industries ..	497	Public Debt ..	740, 743, 1148
Female, Diseases, Deaths from ..	189, 200	Rate of Interest on Loans ..	744
Workers in Factories ..	477, 956	Revenue	
Wages of ..	1087	Coinage ..	723
Ferries, Sydney Harbour ..	678	Collections per Head ..	722
Fertilisers		Customs ..	723
Acts ..	359	Defence ..	728
Benefits derived from Use of ..	362	Excise ..	723
Imports and Exports of ..	359, 360	Federal Capital ..	1034
Local Production of ..	362	Income Tax ..	725
Natural ..	359, 441	Land Tax ..	726
Statistics of Use of ..	361	Net ..	736
Fertility of Marriages ..	170	Northern Territory ..	732, 1043
Fibres, Bounty on ..	358	Papua ..	733, 1010
Finance, Commonwealth		Patents ..	728
Advances to States ..	736, 763	per Head of Population ..	722
Assistance to States ..	721	Postal Department ..	705, 728
Bank Notes ..	738, 743, 755, 773	Railways ..	631
Book-keeping System ..	729	Sources of ..	722
"Braddon" Clause ..	32, 720		
Budget of 1914-15 ..	724		
Consolidated Revenue ..	721		
Debt, Public ..	740, 743, 1148		
Defined by Constitution ..	30		
Departments ..	720		

	PAGE
Finance, Commonwealth (continued)	
Revenue (continued)	
Taxation	724
Total	721
Trade Marks, etc. ..	728
Savings Bank	785
Special Assistance to States ..	721
Transferred Properties ..	741
Treasurer's Financial State- ment, 1916	1147
Trust Fund	738
War Loans	741, 742, 1148
Finance, Local Government ..	935
Finance, Private	
Banking	772
Building Societies	781
Companies	780
Co-operative Societies ..	782
Currency	768
Fire Insurance	792
Friendly Societies	795
Intestate Estates	798
Life Assurance	787
Marine Insurance	794
Probates	797, 847
Savings Banks	783
Finance, State	
Accounts of State Governments	745
Assistance from C'wealth ..	721
Balances	754
Consolidated Revenue	746
Dividend Tax	756
Expenditure	752
Details of	752
Heads of	751
per Head of Population	752, 753
Railways	643
Flotation of Loans	757, 762
Functions of State Governments	745
Income Tax in the several States	748, 756
Inter-relation of C'wealth & State	745
Intestate Estates	798
Land Tax	748, 756
Loan Expenditure	758
per Head of Population ..	760
Loan Funds	757
Dates of Maturity	765
Parliamentary Expenditure ..	873
Probate Duties	748, 754
Public Debt	760
Rates of Interest	763
Revenue	
C'wealth and State Taxation	749
Commonwealth Subsidy ..	751
Details of	746
Dividend Tax	756
Income Tax	748, 756
Land	750
Land Tax	748, 756
Loans from Commonwealth	763
per Head of Population	746, 747
Probate Duties	748, 754
Public Works and Services	750
Sources of	746, 747

	PAGE
Finance, Revenue (continued)	
Stamp Duties	748, 755
Succession Duties	748, 754
Taxation	748
Total	746
Sinking Funds	766
Stamp Duties	748, 755
Succession Duties	748, 754
Trust Funds	757
Fire Brigades	
Adelaide	793, 934
Brisbane	793, 933
Country Districts, Victoria	793, 933
Hobart	934
Melbourne	792, 932
Perth	793, 934
Sydney	792, 932
Fireclay	439
Fire Insurance	792
First Offenders	840
Fish (see also Fisheries) ..	391
Consumption of	397
Oversea Trade in	394
Preserving Bounties	398
Works	505
Fisher Administration	39, 40
Fisheries	
Bêche-de-mer	392
Bounties	398
Commonwealth Investigations	396
Development of Industry ..	396
F.I.S. "Endeavour"	397
Fish Preserving Works	505
Oversea Trade in Fish	394
Oyster	391
Pearl Shelling	391, 1041
Revenue from	393
Statistics	392
Trawling, State, N. S. Wales ..	397
Value of Production	392, 1131
Flannel, Production of	512
Flax, Bounty on	358
Fleet, Australian	990
Flora, Australian	55
Northern Territory	1039
Flour, Exports of, to Eastern Countries	563
Imports & Exports of Wheat & Mills	318
Fodder, Exports of	507
Fodder Plants, Australian ..	563
Value of Saltbushes as ..	84
Food, Inspection of	89
Forces, Expeditionary	1017
Forestry (see also Forests) ..	994
Conferences	382
Departments	385
Expenditure and Revenue	383
Nurseries and Plantations ..	384
Scientific Instruction	384
Forests	
Area of	382
Area of in Various Countries ..	383
Commercial Uses of Timber ..	385
Influence on Climate	76

	PAGE
Forests (continued)	
Oversea Trade in Timber ..	386
Production of ..	386
Value of ..	1131
Reserves and Nurseries ..	384
Revenue and Expenditure ..	384
Sandalwood Exports ..	389, 565
Scientific Forestry ..	385
Tanning Bark, Exports of ..	390
Foundries ..	501
Franchise, Qualifications for ..	874, 882
Free Kindergartens ..	813
Fremantle Harbour Trust ..	930
French Mail Services ..	693
Friendly Societies ..	795
Funds of ..	797
Number of Societies, Lodges and Members ..	795
Revenue and Expenditure ..	796
Sickness and Death ..	795
Frozen Pork, Imports and Exports of ..	374
Poultry, Oversea Trade in ..	377
Fruit	
Dried, Bounties on ..	358
Gardens, Area of ..	352
Area, in Relation to Population ..	354
Imports and Exports of ..	354
Jams and Jellies ..	355
Preserved ..	355
Preserving Manufactories ..	506
Fuller's Earth ..	439
Funds, Trust	
Commonwealth ..	738
State ..	757
Furniture Making Factories ..	515

G

Galleries, Art ..	829
Gaols ..	842
Gardens, Market ..	356
Garnets ..	442
Gas Works ..	516
Gauge of Railways ..	628, 635
Gauges, Loading, Railway ..	626
Geelong Harbour Trust ..	931
Gems and Gemstones ..	441
Geographical Position of Australia ..	47
Geology ..	56
German Mail Services ..	693
German New Guinea ..	997, 1005
Goats ..	282
Gold, Accidents in, Mining ..	443
Discovery of, in various States ..	401
Dredging ..	403
Effect on Industries ..	467
Graph shewing value of ..	431
Increase in Yield, var. Countries ..	408
Methods of Mining in the several States ..	403
Modes of Occurrence of ..	407
Persons engaged in Mining ..	408

Gold (continued)	
Production, 1851 to 1915 ..	401, 1142
Relative Positions of States ..	403
Remarkable Masses of ..	407
Specie and Bullion, Imports and Exports of ..	569
Wages paid in Mining ..	1079
World's Production of ..	407
Goldfields (W.A.) Water Supply ..	924
Government	
Commonwealth ..	37
Executive ..	28
Loans to Farmers (see also Loans) ..	367
Parliament, Number of Members ..	866
Government, General	
Administrative Government, Commonwealth and States ..	884
"Braddon" Clause ..	32, 720
Cabinet and Executive Government, The ..	867
Commonwealth Executive Council ..	867
Cost of Parliamentary Govt. ..	731, 873
Dissolution of Parl'm't, 1914, ..	37, 874
Elections ..	874
Enactments of the Parliament ..	41, 870
Federal Parliament, Elections for ..	874
Governor-General, Powers and Functions of ..	871
Governors, Powers and Functions of ..	871
Members of Parliament, Number of ..	866
Ministers, Appointment of ..	870
Ministries, Commonwealth ..	868
State ..	869, 1149
Parliament	
Commonwealth and States ..	874 to 884
Enactments of ..	41, 870
Parliamentary Government, Cost of ..	731, 873
Referenda ..	25, 876, 1150
Government, Local—see Local Govt.	
Governors-General ..	38, 872
Governors, State ..	872
Governor-General's Establishment, Expenditure on ..	730
Grain and Pulse, Exports of, to Eastern Countries ..	562
Grants of Crown Lands, Free ..	227, 231
Grapes ..	347, 351
Graphite ..	440
Graphs and Maps—see Index, p. x.	
Grasses, Artificially Sown ..	311
Grasses, Native, of Australia ..	84
Grass Seed ..	356
Green Forage ..	341
Group Settlement, Queensland ..	254
Guano ..	360, 441
Gypsum ..	440

	PAGE
H	
Habitual Offenders, Treatment of ..	839
Hail	66
Ham—see Bacon.	
Harbour and Marine Boards	
Bunbury	931
Bundaberg	931
Burnie and Table Cape ..	931
Cairns	931
Hobart	930
Launceston	930
Rockhampton	931
Harbour Ferries, Sydney ..	678
Harbour Trust	
Fremantle	930
Geelong	931
Melbourne	927
Sydney	927
Harbours and Ports of C'wealth ..	613
" " of Shipping ..	607
Harness Factory, Commonwealth ..	992
Hay	
Area under	338
Different Kinds of	338
Exports of	341
to Eastern Countries ..	563
Graphs of	349, 350
Imports of	341
Production of	339
in other Countries ..	341
in Relation to Population	341
Value of Crop	340
Yield of, per acre	340
Health, Public, see Hygiene.	
Heart, Deaths from Organic Diseases	
of	188 to 190, 198
Hemp, Bounty on	358
Henderson, Report of Admiral ..	988
Hides and Sheepskins	305
Export of to Eastern Countries	565
High Commissioner	1108
High Court, Federal	848
Higher State Schools	803
Home Affairs Department	
Expenditure on	734
Ministers of	868
Homes, Benevolent	856
Homestead	
Area, Selection of, Tasmania ..	241
Blocks, South Australia ..	254
Farms, New South Wales ..	242
Free, Queensland	238
Honey	373
Honorary Ministers of the Common-	
wealth	869
Hops	357
Horses, Breeding of, in Australia ..	283
Exports of, to Eastern Countries	564
Graph of	299
in the Commonwealth 282, 284, 1141	
in various Countries	286
Oversea Trade in	284
Percentage of, in each State ..	284
per Head of Population	287

	PAGE
Horses (continued)	
per Square Mile	282
Value of Exports	285
Hospitals	
Expenditure	855
for General and Special Cases ..	855
for Insane Persons	860
for Lepers	859
for Plague	1020, 1023
Particulars of	852
House of Representatives	21
Allowances to Members	873, 882
Number of Members	866
Qualification for Membership 874, 882	
Hughes Administration	40
Humidity at the several Capitals 78 to 83	
Relative	59
Hunter District Water Supply,	
N.S.W.	913
Hygiene, Public	
Acts, Commonwealth and States 1014	
Contagious Diseases, Prevention	
of	1020
Dairy Premises, No. Registered 1019	
Dairy Supervision	369, 1018
Drugs, Inspection and Sale of ..	1017
Food, Inspection and Sale of ..	1017
Infant Life, Supervision of ..	1026
Infectious Diseases, Prevention	
of	1020
Institute of Tropical Medicine ..	1026
Medical Inspection of State	
School Children	1027
Milk Institute and Depots	1026
Milk Supply, Supervision of 369, 1018	
Mortality, Infantile	174, 1026
Mosquitoes, Destruction of	1025
Notifiable Diseases	1022
Quarantine	1020
Small-pox Epidemics	1024
State Legislation	1014
Supervision of Dairy Produce 369, 1018	
of Factories	951
of Infant Life	1026
of Milk Supply	369, 1018
Tropical Diseases	1025
Vaccination	1023

I

Ice and Refrigerating Works	505
Illegitimacy	153
Illiteracy	
at Census Periods	824
at Marriage	171, 825
Immigration	
Acts	1109
Agents-General for Australia ..	1109
Agreement with other Countries 1111	
Assisted	118
Commonwealth Scheme	1108
Contract	1109
High Commissioner for Australia 1108	
Legislation of the C'wealth ..	1109

	PAGE
Immigration (continued)	
Liabilities of Shipmasters and others	1111
Nationality of Immigrants ..	100, 1112
Net	106, 113, 1139
Number of Immigrants ..	1112
Pre-Federal Restrictions ..	1109
Prohibited Immigrants ..	1110
Regulations	1109
State	1108, 1113
Imperial Forces, Australian ..	994
Imperial War Loan ..	741, 1148
Implement Works ..	500
Imports	
Classification of	566
Coin and Bullion	569
Methods of Recording ..	541
of the Commonwealth ..	546
Income Tax, Commonwealth ..	724, 1148
Income Tax, State	756
Increase of Population ..	104, 1139
Graphical Representation of ..	142 to 144
Index of Mortality	184
Individual Industries—see Factories	496
Industrial	
Assurance	788
Legislation	947
Production	1131
Progress	467
Schools	857
Statistics—see Labour.	
Unionism—see Unionism.	
Industries, Manufacturing—see	
Factories	467
Industry, Advisory Council of Science and	1143
Inebriates, Treatment of ..	839
Infantile Deaths ..	174, 187, 207, 1026
Effect on Birthrate	177
Rates of	174, 187
in Metropolitan Areas ..	1027
Infant Life, Supervision of ..	1026
Infectious Diseases	
Hospitals	855
Prevention of	1020
Influenza, Deaths from ..	188 to 190, 193
Insane, Hospitals for the ..	860
Insanity	860 to 864
Insolvencies	847
Institute of Tropical Medicine ..	1026
Insurance, Fire	792
Life—see Life Assurance ..	787
Marine	794
Interstate Commission ..	33, 1134
Conference	786, 1134
Shipping	609
Interest on Commonwealth Loans ..	744
Intestate Estates	798
Intoxicants, Consumption of ..	838
Intoxication	837
Invalid Pensions	
Age and Conjugal Condition ..	1124
Claims for	1123
Expenditure on	1125
Sex of Pensioners	1123

	PAGE
Investment Societies	781
Iridium	409
Iridosmine	409
Iron	419
Bounties payable on ..	419, 421
Broken Hill Co.'s Works ..	420
Imports into Commonwealth ..	579
Lithgow Ironworks	420
Manufactures Encouragement	
Act	419
Production of	420
Works	501
World's Production of ..	422
Irrigation	
in the several States	525
Closer Settlement, Victoria ..	252
Closer Settlement, S. Aust. ..	255
Murray Waters	537
Issue of Deceased Married Persons ..	209
„ Married Persons	161

J

Jam Factories	506
Jams and Jellies	355
Jervis Bay	989
Judicature, Commonwealth ..	29
Judicial Separation	846
Justice, Public	
Arbitration Court	849
Bankruptcies	847
Capital Punishment	842
Children's Courts	840
Civil Courts	845
Cost of Administration of ..	849
Courts, Lower (Magistrates') ..	833
Superior	841, 846
Crime, Decrease in	836
Divorces & Judicial Separations	846
Drunkennes	837
Expenditure on	849
First Offenders, Treatment of ..	840
Habitual Offenders, Treatment of	839
High Court	848
Inebriates, Treatment of ..	839
Lower (Magistrates') Courts ..	833
Police	831
Prisons	842
Probates	847
Superior Courts	841, 846
Jute, Bounties on	358

K

Kaolin	439
Katherine River-Pine Creek Rlwy.	630
Kerosene Bounties	438
Kindergartens, Free	813
Kitchener, Lord, Report of ..	976

L	PAGE	Land Tenure and Settlement (cont.)	PAGE
Labour—see also Unionism		Diagram shewing Alienation, etc.	279
Acts relating to ..	947, 954	Federal Capital ..	279, 1033
Arbitration Court ..	849, 963	Free Grants of Crown Lands	227, 231
Child Labour in Factories	481, 956	Group Settlement, Q'land ..	254
Cost of Living ..	.. 1095	Homestead Farms, N. S. Wales	242
Employers' Liability ..	.. 953	Homestead Blocks, S. Aust. ..	254
Factories and Shops Act	947, 954	Homestead Farms, W. Aust. ..	240
Federated Unions ..	.. 946	Homestead Selections, Tas. ..	241
Industrial Disputes ..	.. 1090	Irrigation Schemes, N. S. Wales	526,
Industries, Classification of ..	.. 944	Irrigation Schemes, Victoria ..	534
Limitation of Hours of ..	.. 949	Labour Settlements, N. S. Wales	250
Mining Acts ..	.. 952	Leases and Licenses ..	227, 241
"New Protection" ..	.. 967	Mining ..	258
"New Unionism" ..	.. 940	Licenses of Crown Land ..	241
Organisations .. 943, 946, 1046		Loans	
Prices, Control of, during War	1107	to Farmers ..	367
Prices, Retail ..	.. 1095	to Settlers ..	248
Wholesale ..	.. 1105	Mallee Lands, Victoria ..	226
Purchasing-Power of Money	1096, 1105	Miners' Rights in the Several	
Variation in ..	.. 1101	States ..	258 to 265
Registered Factories ..	.. 952	Mining Leases and Licenses in	
Registered Trade Unions ..	.. 942	the several States ..	258 to 265
Rents ..	.. 1095	Murray Settlement Leases, Vic.	238
Settlements, N. S. W. ..	.. 250	Northern Territory ..	226, 246, 1044
Strikes and Lockouts	965, 1090	Occupation, etc., of Crown Land	
Trade, Control of, during War	1107	States ..	227, 267, 277
Unemployment ..	.. 1045	Papua ..	.. 1012
Unions ..	.. 937, 942, 1046	Pinnaroo Railway Lands, S.A.	239
Wages Boards ..	.. 960, 970	Progress of ..	276
Wages		Reservations of Crown Lands	
Change in Rates of ..	.. 1052	States ..	227, 231
Current Rates of ..	.. 1058	Resumption of Alienated Lands	266
Female Workers ..	.. 1087	Sales of Crown Land ..	233
Variations in ..	.. 1048	Special Sales of Crown Land	227, 233
Workmen's Compensation ..	.. 953	Tenure of Land by Aliens ..	230
Lamb, Frozen, Exports of ..	.. 293	Tenures, Classification of ..	227
Lambs Slaughtered in Common-		Village Communities, Vic. ..	252
wealth ..	.. 293	Western Lands Acts, N. S. W. ..	225
Land Legislation in States ..	.. 225	Workingmen's Blocks, W. A. ..	257
State Revenue ..	.. 750	Lard ..	375, 380
Tax, Commonwealth ..	.. 726	Lazarets ..	859
Tax, State ..	748, 756	Lead ..	409, 423, 1143
Transfer (War Precautions)	1004, 1150	Accidents in Mining ..	443
Land Tenure and Settlement ..	.. 225	Commonwealth Control of ..	1143
Acts now in Force ..	.. 225	Exports of, to Eastern	
Administration of Crown Lands	226	Countries ..	565
Advances to Settlers ..	.. 248	Production of ..	409, 423, 1142
Agricultural and Grazing Allot-		Wages Paid in Mining ..	1079
ments, Victoria ..	.. 238	Leases and Licenses of Crown	
Alienated Lands, Resumption of	266	Land ..	214
Alienation, etc., of Crown Lands		Leases and Licenses, Mining ..	258
227, 267, 277		Leather, Australian ..	497
Aliens, Tenure of Land by ..	.. 230	Legislation—see Acts.	
Auction Sales of Land ..	227, 233	Legislative Assemblies	
Classification of Crown Lands ..	.. 227	Allowance to Members of	873, 882
of Holdings ..	.. 273	Elections for ..	874
Closer Settlement ..	230, 248, 367	Number of Members of	866, 882
in Irrigable Areas, Vic. ..	.. 252	Qualifications for Membership	
in Irrigable Areas, S. A. ..	.. 255	and for Franchise ..	874, 882
Conditional Purchases	227, 237	Legislative Council	
Credit Foncier ..	.. 367	Allowance to Members of	873, 882
Crown Leases, N. S. Wales	.. 242	Elections for ..	874
Dedication of Crown Lands	227, 231	Number of Members of	866, 882

	PAGE		PAGE
Legislative Council (continued)		Local Government, N.S.W. (contd.)	
Qualifications for Membership		Distribution of Incorporated Areas ..	895
and for Franchise ..	874, 882	Fire Commissioner's Board	932
Leprosy	859	Hunter District Water Supply ..	913
Letter Rates	689	Municipalities ..	897
Telegrams	710	Shires	896
Letters, etc., dealt with by Postal Department ..	687	Sydney Harbour Trust ..	927
Letters, Week-End Cable ..	715	Sydney Metropolitan Board of Water Supply ..	910
Registered	690	Sewerage System ..	912
Letters of Administration	737, 847	Water Supply	910
Libraries	823	Water Supply and Sewerage in Country Towns ..	914
Licenses of Crown Land ..	241	Victoria	
Licenses, Mining	258	Board of Works	914
Licenses Reduction Board, Vic. ..	1127	Boroughs	900
Life Assurance	787	Country Towns Water Supply ..	918
Companies in Commonwealth	788	Development of Types ..	899
Industrial, Business in Force ..	789	Endowment	900
Liabilities and Assets ..	791	Fire Brigades	932
Receipts and Expenditure	790	Geelong Harbour Trust ..	931
Ordinary, Business in Force ..	789	Geelong Waterworks Trust	919
Liabilities and Assets ..	790	Melbourne Harbour Trust	927
Receipts and Expenditure	789	Melbourne Water Supply	916
Royal Commission on ..	787	Metrop. Board of Works ..	914
Total Assets of Companies ..	792	Metrop. Sewage Farm ..	917
Lighthouses	613	Municipalities	900
Linseed, Bounties on	358	Sewerage Systems ..	917
Liquor Referenda	1126 to 1131	Shires	900
Live Stock, Camels	282, 925	Queensland	
Cattle	280, 370, 1141	Brisbane Water Supply ..	919
Donkeys	282	Bundaberg Harbour Board	931
Goats	282	Cairns Harbour Board ..	931
Horses	280, 1141	Country Towns Water Supply	921
Mules	282	Development of Systems ..	902
Ostriches	282	Fire Brigades	933
Pigs	280, 373, 1141	Municipalities	
Sheep	280, 1141	Assets and Liabilities	903
in Commonwealth	280, 1141	Revenue and Expenditure	904
in Federal Territory	1034	Rockhampton Harbour Board ..	931
in Northern Territory ..	1039	Water and Sewerage Board	919
in Relation to Area and Population ..	281	South Australia	
Living, Cost of	1095	Adelaide Sewerage System	921
Loading Gauges, Railways ..	626	Water Supply	921
Loan Funds, Commonwealth	740, 1148	Country Towns Water Supply	922
Loan Funds, State	757	Development of Systems ..	904
Loans		District Councils	904
Australian War	741, 742, 1148	Fire Brigades	934
Imperial to C'wealth ..	741, 1148	Municipalities	905
Local Government	936	Western Australia	
Flotation of	743, 762	Agricultural Areas Water Supply ..	925
to Farmers	367	Boards of Health	907
to Settlers	248	Bunbury Harbour Board ..	931
Lobsters—see Fisheries ..	392	Fire Brigades	934
Local Government		Fremantle Harbour Trust	930
Areas, Population of	116	Goldfields Water Supply ..	924
Early History of	895	Mines Water Supply ..	925
Loans	936	Municipalities	906
Revenue and Expenditure ..	935	Area and Population of	906
Systems of	895	Revenue and Expenditure	907
Valuation	935		
New South Wales			
Country Water Supply and Sewerage	914		
Development of Systems ..	895		

	PAGE
Local Government, W. Aust. (cont.)	
Perth Water Supply ..	923
Road Districts ..	907
Sewerage Department ..	924
Types of Local Authorities	905
Water Supply Department	922
Tasmania	
Acts now in Force ..	908
Burnie and Table Cape	
Marine Board ..	931
Development of Areas ..	908
Fire Brigades ..	934
Hobart Marine Board ..	930
Launceston Marine Board	930
Municipalities, Revenue and	
Expenditure ..	909
Sewerage Systems ..	926
Water Supply ..	925
Local Option ..	1126
Lockouts and Strikes ..	965, 1090
Lord Howe Island ..	1133
Lower (Magistrates') Courts	833
Lucerne "Pool" ..	323
Lunatic Asylums ..	860
Lungs, Deaths from Tuberculosis of	
188 to 190, 193	
M	
Magistrates' Courts ..	833
Magnesite ..	440
Mail	
Contract ..	692
Route, San Francisco ..	691
Suez Canal ..	692
Service, Canadian-Pacific	693
French ..	693
German ..	693
Interstate ..	694
Ocean ..	691, 1147
Vancouver ..	693
Subsidies ..	697
Maize	
Area under ..	327
Graphs of ..	349, 350
Imports and Exports of ..	330
Prepared ..	330
Price of ..	330
Production in Relation to Popu-	
lation ..	329
Value of Crop ..	328
World's Production ..	329
Yield of ..	328
Malarial Cachexia, Deaths from	
188 to 190, 192	
Male Population of the C'wealth	91, 1140
Mallee	
Lands Acts, Victoria ..	226
Perpetual Leases ..	242
Malt, Imports and Exports of	333
Malting Barley, Area under	331
Manganese ..	424
Mangolds ..	337
Manufactures Encouragement Act	419

	PAGE
Manufacturing Industries (see also	
Factories) ..	467
Manures	
Artificial—see Fertilisers	359
Natural ..	359, 441
Maps, etc.—see Index, p. x.	
Marine Insurance ..	794
Marine Boards—see Harbour Boards	926
Maritime Strike, 1890 ..	940
Mark Signatures, at Marriage	171, 825
Market Gardens ..	356
Marriages	
Actual, Compared with Increase	
at 1890 Rates ..	220
Age at Marriage ..	166
Birthplaces of Persons Married	169
Bridegrooms	
Ages of ..	167
Occupations of ..	169
Brides, Ages of ..	167
Conjugal Conditions of Persons	
Married ..	168
Crude Rates ..	166
Denominations, Religious ..	171
Duration of Life after	210
Fertility of ..	170
Graph of Rates of ..	214
in each Denomination ..	171
Interval between Marriage and	
First Birth ..	163
Issue of Married Persons ..	161
Mark Signatures at ..	171, 825
Occupations of Bridegrooms ..	169
and Issue of Deceased Males	219
Rates ..	165, 1140
of various Countries ..	166
Registration of ..	171
Total ..	165, 1140
Masculinity	
of Births ..	152
of Population ..	95, 102
Maternity Allowance ..	1125
Maturity of Public Debts,	
Measles, Deaths from ..	765
Meat, Preserving Works ..	188 to 190
Meats Preserved or Frozen	505
Exports of ..	288
to Eastern Countries ..	564
Mechanical Power in Factories	471
Medical Inspection of Cadets ..	985
" " of Citizen Forces	985
" " of School Children	1027
Melons ..	357
Members	
of Parliament ..	866
of Cabinets ..	38, 868, 1149
Mercury ..	423
Metal Exchange ..	1143
Metals—see Mines and Mining	399
Commonwealth Control of ..	1143
Meteorology ..	56
Barometric Pressure ..	66
Climatological Tables for the	
Several Capitals ..	78 to 83
Cyclones and Storms ..	75

	PAGE		PAGE
Meteorology (continued)		Mines and Mining (continued)	
Divisions	57	Cinnabar	423
Evaporation	59	Clay	439
Graphs	67 to 72	Coal	425, 1142
Hail	66	Cobalt	423
Humidity	59	Coke	436
Maps	71, 73, 74	Coorongite	439
Publications	56	Copi	440
Rainfall	60	Copper	413, 1142, 1143
Rainfalls, Comparisons of ..	76	Crocidolite	442
Snowfall	66	Cyanide Works	503
Special Climatological Stations	58	Diamonds	441
Temperatures	58	Diatomaceous Earth	440
Comparisons of	76	Emeralds	442
Wettest and Driest Regions of		Employment in Mining	443
Australia	60	Extent of Mineral Wealth ..	399
Wind	75	Fireclay	439
Metrop. Board of Water Supply, Syd.	910	Fuller's Earth	439
Metrop. Board of Works, Melbourne	914	Garnets	442
Mildura Settlement	534	Gems and Gemstones	441
Mileage of Railways	627, 634	Gold	401, 1142
Military—see Defence	974	Government Aid to Mining ..	444
Military Service Referendum ..	1150	Graphs of Mineral Production	
Milk		431, 432	
Concentrated and Condensed	372, 379	Graphite	440
Factories	504	Guano	360, 441
Imports and Exports of ..	372	Gypsum	440
Dairy Cattle in C'wealth	370, 1019	Iridium	409
Institutes and Depots	1026	Iridosmine	409
Production of	370, 375	Iron	419
Supervision of Supply	369, 1018	Kaolin	439
Millet	357	Kerosene Bounties	438
Millinery Factories	514	Lead	409, 423, 1142, 1143
Mills		Leases and Licenses	258
Flour	507	Magnesite	440
Saw	499	Manganese	424
Sugar	508	Manufactures Encouragement	
Woollen and Tweed	511	Act	419
Mineral (see also Mines)	399	Manures, Natural	359, 441
C'wealth Control of Industry	1143	Mercury	423
Discoveries, Effects on Population	94	Metal Exchange	1143
Oils	437	Mineral Oils	437
Production in 1914	399	Wealth of Australia	399
to end of 1915	400, 1131, 1142	Miners' Rights	259
Wealth of Australia	399	Molybdenum	424, 1143
Miners' Rights—see Land Tenure	258	Natural Manures	359, 441
Mines and Mining		Northern Territory	247, 1040
Accidents in Mining	436, 444	Ochre	439
Acts	952	Oil Shale	437
Agates	442	Opal	442
Aids to Mining	444	Osmium	409
Alunite	438	Osmiridium	409
Antimony	422	Papua	1009
Arsenic	422	Paraffin Wax	438
Asbestos	439	Persons engaged in Mining ..	443
Australian Development ..	399	Petroleum	437
Barium	422	Phosphate, Rock	359, 441
Barytes	439	Pigment Clays	439
Beryls	442	“Pilbarite”	424
Bismuth	422	Platinum and Platinoid Metals	409
Broken Hill Mines	411, 1143	Pottery Clay	439
Building Stones	446	Production in 1914	399
Carnotite	423	to end of 1915	400, 1131, 1142
Chastolite	442	Pyrites Works	503
Chromium	423	Quicksilver	423

	PAGE		PAGE
Mines and Mining (continued)		Musters of Population ..	119
Radium	424	Mutton and Lamb, Frozen, Exports of	293
Rhodium	409	N	
Rock Phosphate ..	360, 441	National Debt ..	740, 743, 760, 1148
Rubies	442	Nationality of Population ..	99
Salt	440	Native Grasses of Australia ..	84
Sapphires	441	Natural Increase of Population ..	104
Scheelite	424, 1143	Graphs shewing ..	144, 214
Schools of	818	Naturalisation	135, 1004
Shale Oil	437	Naval Defence—see Defence.	
Silver	409, 1142	Navy, Australian	990
Smelting Works ..	503, 1143	Navy, Minister for	869
State Aid to Mining ..	444	Neglected Children, Care of ..	857
Steatite	439	New Caledonian Cable	713
Steel	419, 421	New Guinea—see Papua ..	1005
Stones, Building	446	" " Expeditionary Force ..	996
Tantalum	425	"New Protection," The	967
Tin	416, 1142	"New" Unionism	940
Topazes	442	Newspapers, Postal Rates for ..	689
Tourmaline	442	Registered in the Com'wealth ..	690
Tripolite	440	New Zealand	
Tungsten	424, 1143	Cable	713
Turquoises	442	Preferential Tariff	581
Uranium	425	Non-European Races in Australia ..	100
Value of Production 399,	1131, 1142	Norfolk Island	17, 1132
Wages Paid in Mining ..	1079	Northern Territory	
Wax, Paraffin	438	Aborigines	1037
Wolfram	424, 1143	Administration	1037
Zinc	418, 1143	Area of	54, 1036
Zircon	442	Artesian Water	525
Mining Leases and Licenses ..	258	Boundaries	1036
Mining Legislation	952	Climate	1039
Ministers		Commerce	1041
Appointment of	871	Expenditure	732, 1043
Cabinet, Commonwealth ..	38, 868	Fauna and Flora	1039
State	869, 1149	Finance	1043
Ministries		Gold	1040
Commonwealth	38, 868	Imports and Exports	1041
State	869, 1149	Land Tenure	226, 1044
Mints (see also Currency) ..	768	Present Policy of	246
Mohair	282	Legislation	1037
Molasses	508	Liquor Traffic	1038
Molybdenum	424, 1143	Live Stock	1039
Money Orders	697	Loans	1043
Mortality		Migration	1037
Index of	184	Mining	247, 1040, 1142
Infantile	174, 187, 207, 1026	Ordinances	1038
Effect on Birthrate of ..	177	Pearl Shell	1041
Mosquitoes, Destruction of ..	1025	Physiography	1039
Mothers		Population ..	91, 104, 108, 1036, 1140
Ages of	155, 161	Postal Services	1042
Birthplaces of	158	Production	1039, 1141
who died in Childbirth ..	201	Public Debt	1043
Mules	282	Railways	630, 1042
Multiple Births	155	Revenue	732, 1043
Municipalities		Shipping	1041
in the several States ..	895 to 910	Telegraphs	1042
Population of	116	Transfer to Commonwealth ..	16, 1037
Murray River Irrigation Scheme ..	532	Notes	
Settlement Leases, Victoria ..	238	Bank	738, 743, 755, 773
Waters Conference	537	Postal	697
Murrumbidgee Irrigation Scheme ..	526		
Museums	828		

	PAGE
Northern Territory (continued)	
Nurseries	
Agricultural	357
Sylvicultural	384
O	
Oatmeal	326
Oats	
Area under	323
Graphs of	349, 350
Imports and Exports of	325
Oatmeal	326
Price of	327
Production of	324
in Relation to Population	325
Value of Crop	325
Yield of	324
in various Countries	326
per Acre	324
Occupation, etc., of Crown Lands ..	267
Occupations	
of Bridegrooms	169
of Deceased Males	183
of Deceased Married Males	219
of Fathers	159
of Male Persons who Committed Suicide	205
of Population	126
Ocean Mail Services	691, 1147
Summary of	693
Ochre	439
Offenders	
First, Treatment of	840
Habitual, Treatment of	839
Offices	
Postal	689, 704
Telegraph	708
Oils, Shale	437
Old-Age Pensions	1121
Ages and Conjugal Condition ..	1122
Claims for	1121
Cost of Administration	1124
Expenditure on	1125
Sex of Pensioners	1122
Onions	337
Oodnadatta Railway	630
Opal	442
Option, Local	1126
Orchards	352
Ordinances, Northern Territory ..	1038
Ores—see Minerals.	
Orphanages	857
Osmium	409
Osmiridium	409
Ostriches	282
Oversea Shipping	597, 1146
Oversea Trade, 1826 to 1914-15 ..	542, 1146
Oyster Fisheries	391
P	
Pacific Cable	712
Packet Rates, Postal	690
Papua	16, 1005

	PAGE
Papua (continued)	
Agricultural Products	1008
Annexation by Commonw'lth 16, ..	1006
Area of	1005
Discovery and Colonisation of ..	1005
Expenditure	733, 1010
Fisheries	1009
Forest Products	1009
Geographical Situation of	1005
Gold Production	1010
Imports and Exports	1011
Land Tenure	1012
Live Stock in	1009
Mining in	1009
Native Labour in	1007
Partition of	1005
Physical Characteristics of	1006
Population of	1007
Postal Statistics	1011
Production	1008
Progress of	1013
Revenue	733, 1010
Shipping	1011
Statistical Summary	1010
Paraffin Wax, Refined	438
Parcel Rates	
Postal	689
Railway	663
Parents	
Ages of	155
Birthplaces of	158
Occupations of	159
Parliament	
Commonwealth	19, 37, 874
New South Wales	877
Victoria	878
Queensland	879
South Australia	880
Western Australia	881
Tasmania	881
Expenditure on	731, 873
Members, Number of	866
Powers of	25
Passengers	
Railway	635, 655
Tramway	675 to 685
Pastoral Development, Influence on	
Population of	94
Pastoral Production	280, 1141
Camels	282, 925
Cattle	280, 287, 370, 1141
Development of	280
Donkeys	282
Exports of	282
Fluctuations in Live Stock	281
Goats	282
Graphs of	299
Hides and Sheep Skins	305
Horses	280, 283, 1141
Live Stock in Relation to Area and Population	281
Mules	282
Native Grasses as Fodder	84
Northern Territory	1039
Ostriches	282
Pigs	280, 1141

INDEX.

1171

	PAGE
Pastoral Production (continued)	
Saltbushes as Fodder ..	89
Sheep ..	280, 291, 1141
Value of ..	1131
Wool ..	295
Patents ..	1113
Applications Filed ..	1115
Enemy, Suspension of ..	1118
International Protection ..	1115
Publication of, during War ..	1119
Revenue ..	828, 1116
Pearl Shell, Exports of ..	395
Fisheries ..	392, 1041
Peas ..	334
Penological Methods (Prison) ..	843
Pensions, Invalid ..	1123
Pensions, Old Age ..	1121
Pensions, War ..	999
Petroleum ..	437
Phosphate, Rock ..	359, 441
Physiography ..	47
Climate ..	56
Description of Australia ..	47
Fauna ..	55
Flora ..	55
Geology ..	56
Grasses ..	84
Meteorology ..	56
Saltbushes ..	89
Seismology ..	56
Pickles, etc., Manufactories ..	506
Pigment Clays ..	439
Pigs (See also Bacon and Ham)	
Exports of ..	374
Graph of ..	299
in Commonwealth ..	280, 373, 1141
Number Treated at Preserving Works ..	506
per Head of Population ..	281
per Square Mile ..	282
Products of, Trade in ..	374
"Pilbarite" ..	424
Pine Creek-Katherine River Railway	630
Pinnaroo Railway Lands ..	239
Pisciculture (see Fisheries) ..	391
Plague Hospitals ..	1020, 1023
Plantations (see Forestry) ..	382
Platinum and Platinoid Metals ..	409
Pneumonia, Deaths from 188 to 190,	199
Poison, Deaths from ..	203
Police ..	831
Pollard ..	320
"Pool," Lucerne ..	323
Wheat ..	321
Population ..	91, 1139
Aborigines ..	99
Age Distribution ..	98, 102, 125
Assisted Immigration ..	118
Birthplaces ..	103, 125
Blind ..	135
Census of 1911 ..	119, 123
Censuses, Australian ..	120, 124
Characteristics of ..	95
Commonwealth from Earliest Date ..	91, 121

	PAGE
Population (continued)	
Conjugal Condition ..	129
Deaf and Dumb ..	135
Density of ..	110
Distribution of ..	91
Education ..	132
Effect of Mineral Discoveries on	94
Elements of Growth of ..	104
Estimates of, to 1st Jan., 1915	120, 1140
Federal Territory	91, 104, 1034, 1140
Female ..	91, 1140
Graphs ..	139 to 145
Explanation of ..	138
Growth of ..	91, 108, 124, 1139
Immigrant Races ..	100, 1112
Immigration—see Immigration.	
Increase, Natural ..	104
Influences affecting Growth and Distribution of ..	94
Local Government Areas ..	116
Male ..	91, 1140
Masculinity of ..	95 to 98, 102
Metropolitan Areas ..	114
Military ..	975
Municipal Areas ..	116
Musters ..	119
Natural Increase ..	104
Graphical Representation of in various Countries ..	144
Naturalisation ..	135, 1004
Net Immigration ..	106, 113, 1139
Non-European Races ..	100
Northern Territory	91, 104, 1036, 1140
Occupations of ..	126
of various Countries of the World	111
Papua ..	1007
Race and Nationality ..	99
Rates of Increase in various Countries ..	109
Religions ..	128
School Attendance of ..	133
Seasonal Variation of ..	113
Sex Distribution ..	95, 102
Total Increase, 1915 ..	1139
Towns, Principal ..	115
Urban ..	114
World's ..	111
Pork, Frozen	
Imports and Exports of into United Kingdom ..	374
into United Kingdom ..	381
Port Augusta-Kalgoorlie Railway ..	630
Port Augusta-Oodnadatta Railway	630
Ports of Shipping ..	607
of the Commonwealth ..	613
Postal Department	
Agricultural Produce Parcels	
Post ..	702
Balance Sheet ..	706
Business of the Several States	688
Cables, Submarine ..	711
Canadian-Pacific Mail Service	693
Dead Letter Office ..	702
Deferred Cablegrams ..	715
Department, Commonwealth ..	686
Development of Services ..	686

	PAGE		PAGE
Postal Department (continued)		Pregnancy, Deaths from Puerperal	
Employees, Number of	703	Accidents of ..	189, 200
Expenditure ..	705, 736	Premiers of the Several States ..	869
Facilities ..	688	Premiers' Conference, 1912 ..	786
French Mail Services ..	693	Premiers' Conferences, 1914 and 1915	1134
German Mail Services ..	693	Preserved Fruit—see Fruit.	
Interstate Postages ..	687	Press Cable Rates ..	715
Letter Rates ..	689	Deferred Press Cablegrams ..	715
Letter Telegrams ..	710	Subsidised Service ..	716
Mail Contract, Present	692	Prevention of Infectious Diseases ..	1020
Contractors, Number of ..	704	Prices, Control of, during War ..	1107
Services ..	691	Effect of War on ..	1106
Subsidies ..	697	Retail ..	1095
Money Orders ..	697	Wholesale ..	1105
New Caledonian Cable ..	713	Prickly Pear Leases, N. S. Wales ..	242
Newspapers ..	690	Prickly Pear Selections, Queensland	238
Northern Territory ..	1042	Prime Minister's Department ..	731
Notes, Postal ..	697	Prime Ministers of the Common-	
Ocean Mail Services ..	691	wealth ..	38, 868
Summary of ..	693, 1147	Prisons.. ..	842
Offices, Number of ..	688, 703	Private	
Oversea Postages ..	687	Finance—see Finance ..	768
Papua ..	1011	Railways—see Railways ..	668
Parcels ..	690	Schools—see Schools ..	811
Post Offices, Number of	688, 703	Probate and Succession Duties	748, 754
Postages for each State	688	Probate and Letters of Administra-	
Postal Notes ..	697	tion ..	797, 847
Press Cable Service ..	716	Proclamation of Commonwealth ..	37
Produce Parcels Post ..	702	Produce, Parcels Post ..	702
Rates ..	689	Production	
Receiving Offices ..	703	Agricultural ..	309, 1132
Registered Letters ..	690	Dairy ..	369, 379, 1132
Revenue ..	705, 728	Farmyard ..	369, 379
Routes ..	691, 704	Forestral ..	385, 1132
Royal Commission ..	707	Manufacturing ..	483, 1132
San Francisco Mail Route	691	Mineral ..	399, 1132
Submarine Cables ..	711	Pastoral ..	280, 1132, 1141
Subsidies ..	697	Value of Commonwealth ..	1132
Cable ..	716	Prohibited Immigrants ..	1110
Suez Canal Mail Routes	692	Prohibition of Exports ..	541, 1144
Telegraphs—see Telegraphs	707	Protection, "New" ..	967
Telephones ..	717	Publications, Statistical	
Time Occupied in Transmission		Commonwealth ..	2
of Foreign Mails ..	697	States ..	6
Value Payable Post ..	701	Public Benevolence—see Benevolence	851
Vancouver Mail Service ..	693	Public Debt, Commonwealth	
Week-end Cable Letters	715	Flotation of Loans ..	743
Wireless Telegraphy ..	710	Loan Fund ..	740
Postmasters-General of the Common-		Note Issue ..	743
wealth ..	868	Rates of Interest ..	744
Potatoes		Total Debt ..	743, 1148
Area under ..	335	Transferred Properties ..	741
Imports and Exports of	336	War Loans, Australian	742, 1148
Production of ..	335	War Loan, Imperial ..	741, 1148
in Relation to Population	336	Public Debt, State	
"Sweet" ..	337	Dates of Maturity ..	765
Value of Crop ..	336	Flotations of Loans ..	762
Yield in various Countries	337	Increase in Indebtedness ..	761
per Acre ..	335	Indebtedness per Head ..	762
Pottery, Clay ..	439	Interest Payable per Head ..	765
Poultry Farming ..	376	Nature of Securities ..	760
Precautions Act, War ..	999	Rates of Interest ..	763
Precautions Regulations, War	1004, 1150	Sinking Funds ..	766
Preferential Tariff ..	582	Public Hygiene—see Hygiene	1014
Preferential Voting ..	1131		

	PAGE
Public Instruction	
Advisory Council of Science and Industry	1135
Agricultural Training in State Schools	806
Art Galleries	829
Business Colleges	822
Diffusion of Education	823
Education at Census Period 132 ..	824
Evening Schools	803
Expenditure on Education, Science and Art	830
Free Kindergartens	813
Higher State Schools	803
Illiteracy at Census Period at Marriage	824
in Sparsely-settled Areas	803
Kindergartens	813
Libraries	928
Medical Inspection of State School Children	1027
Museums	828
Primary Systems of the States ..	799
Private Schools	811
Royal Societies	826
Savings Banks in Schools	810
Schools, Private	811
Schools, State—see Schools	802
Schools, Technical	818
Scientific Societies	826
Shorthand Schools	822
State Educational Systems	799
Technical Education	818
Training Colleges	808
Universities	813
University Extension	817
Workmen's Tutorial Classes	817
Public Justice—see Justice	831
Puerperal Diseases, Deaths from ..	189, 200
Pumpkins and Melons	357
Pyrites Works	503

Q

Quarantine	1020
Quartz Mining—see Mining	
Queanbeyan-Canberra Railway ..	631, 1034
Quicksilver	423

R

Rabaul, Occupation of	996
Rabbits, Exports of	282, 381
Race and Nationality of Population ..	99
Radio-telegraphy	710
Radium	424
Railways	
Commonwealth Government	630
Communication in the Commonwealth	623
Comparison Government and Private Lines	627
Darwin-Pine Creek line	630

	PAGE
Railways (continued)	
Electrification of, in Victoria ..	656
Facilities in various States	628
Government, Federal	630
Accidents on	633
Average Mileage worked	631
Classification of Gauges	629
Cost of Construction	631
Employees, Number of	633
Expenditure	631, 740
Loading Gauges	626
Passenger Journeys	631
Queanbeyan-Canberra	631, 1034
Revenue	631
Rolling Stock	632
Tonnage of Goods Carried	631
Government, State	
Accidents on	666
Administration	638
Average Mileage Worked	635
Classification of Gauges	628
Coaching Traffic Receipts	644, 645
Cost of Construction and Equipment	640
Distribution of Working Expenses	653
Employees, Number of	665
Expenses, Working	651
Fares, Passenger	661
Freights	661
Gauge	
Classification of Lines according to	628
in each State	635
Non-conformity of	624
Unification of	625
Goods, Classification of	656
Goods Rates	661
Receipts	644, 646
Graphs of	646 to 648
Gross Revenue of	643
Interest on Capital Cost	660
Interstate Communication	624
Length and Gauge in each State	628, 635
Lines Authorised for Construction	638
Lines under Construction	638
Live Stock Carried	635
Receipts	644, 646
Loading Gauges	626
Loan Expenditure	643, 753
Map of	645
Metropolitan and Suburban Traffic	655
Mileage Opened	627, 634
Passenger	657
Worked, Average	635
Miscellaneous Receipts	644
Net Revenue	653
Non-conformity of Gauge	624
Number of Employees	665
Parcels Rates	663

	PAGE		PAGE
Railways (continued)		Referenda, Commonwealth	25, 876
Passenger Fares ..	661	Referendum, Military Service ..	1150
Journeys ..	635, 655	Referendum, Liquor, N.S.W. ..	1126
Mileage ..	657	" " S.A. ..	1129
Rates, Goods ..	661	" " Tas. ..	1131
Receipts, Coaching	644, 645	" " W.A. ..	1130
Goods ..	644, 646	Refineries, Sugar ..	509
Live Stock ..	644, 646	Reformatories ..	857
Miscellaneous ..	644	Refrigerating Works ..	505
Revenue, Gross ..	643	Registered	
Net ..	653	Building Societies ..	781
Rolling Stock ..	664	Co-operative Societies ..	782
Ton Mileage ..	657	Dairy Premises ..	1019
Tonnage of Goods and Live		Factories ..	952
Stock Carried ..	635	Letters ..	690
Traffic Conditions ..	655	Shipping ..	608
Train Miles Run ..	635	Trade Unions ..	942
Unification of Gauge ..	625	Registration	
Working Expenses ..	651	Interval between Birth and	164
Interstate Communication ..	624	of Marriages ..	171
Loading Gauges ..	626	Reid Administration ..	39
Mileage open, Total ..	627, 634	Religions of Population ..	128
Non-conformity of Gauge ..	624	Remount Depots ..	993
Northern Territory ..	630, 1042	Renmark Irrigation Trust ..	535
Port Augusta-Kalgoorlie Line	630	Rents—see Labour.	
Port Augusta-Oodnadatta Line	630	Representatives, House of	21
Private		Allowance to Members of	873, 882
Classification of ..	668	Elections for ..	874
Gauges ..	669	Number of Members of	866, 882
In the several States ..	672	Qualifications for Membership	
Length of each Line ..	669	and for Franchise ..	874, 882
Mileage Open ..	627, 668	Reservations of Crown Lands	227, 231
Queanbeyan-Canberra Line	631, 1034	Respiratory System, Deaths from	
Transcontinental ..	630	Diseases of ..	188 to 190, 198
Unification of Gauge ..	625	Restriction Order, Aliens...	1003
Wages of Employees ..	1080	Retail Prices ..	1095
War Council ..	981	Revenue	
Workshops ..	502	Commonwealth—see Finance.	
Rainfall ..	60	State—see Finance.	
at Australian Capitals	62, 78 to 83	Rhodium ..	409
Comparison of ..	76	Rice ..	334
Influence of Forests on ..	76	Bounties on ..	358
Maps shewing ..	71, 73, 74	Rifle Clubs ..	979
Remarkable Falls in Various		River Murray Waters Conference	537
States ..	63	Roads and Bridges	
Wettest and Driest Regions of		Expenditure on ..	615
Australia ..	60	in the various States ..	616 to 622
Raisins ..	352	Rock Phosphate ..	360, 441
Rates		Routes, Postal ..	691, 704
Birth ..	151, 154, 1140	" Cable ..	714
Cable ..	714	Royal Australian Navy ..	990
Death ..	173, 174, 184, 1141	Royal Commission—see Commissions.	
Cancer ..	196	Royal Societies ..	826
Infantile ..	175	Rubies ..	442
Tuberculosis ..	195	Rye ..	334
Interest, Commonwealth Loan	744		
Marriage ..	166, 1140		
Postal ..	689		
Radio-Telegrams ..	710		
Railway ..	661		
Telegrams ..	709		
Telephone ..	717		
Wages, Current ..	1058		
Raw Materials used in Factories	488		
Receiving Postal Offices ..	688, 703		

S

Sales of Crown Lands ..	227, 233, 750
Salt ..	440
Saltbushes of Australia ..	89
Sandalwood	
Exports of ..	389
to Eastern Countries ..	565

	PAGE
San Francisco Mail Route ..	691
Sapphires ..	441
Sauces, etc., Manufactories ..	506
Savings Banks ..	783
Saw Mills ..	499
Scarlet Fever, Deaths from 188 to 190, 193	
Scheelite ..	424, 1143
Schools	
Business ..	822
Free Kindergarten ..	813
Private	
Attendances at ..	134, 811
Number of ..	811
Registration of ..	812
Teachers in ..	811
Shorthand and Business ..	822
State	
Agricultural Training in ..	806
Attendance at ..	134, 802
Centralisation of ..	803
Cost of Primary Education ..	810
Education in Sparsely-settled	
Districts ..	803
Enrolment in ..	802
Evening Schools ..	803
Expenditure on ..	810
Federal Capital Area ..	802
Higher Schools ..	803
Savings Banks at ..	810
Teachers in ..	807
Training Colleges ..	808
Technical ..	818
Science and Industry, Council of ..	1135
Scientific Societies ..	826
Sea Carriage of Goods Act ..	538
Seat of Government—see Federal	
Capital Site ..	1033
Secret Commission Act ..	538
Seismology ..	56
Senate, The ..	19
Allowance to Members of ..	873, 882
Elections for ..	874
Number of Members of ..	866, 882
Qualification for Membership	
and for Franchise ..	874, 882
Senile Debility, Deaths from 189 to 190, 202	
Separations, Judicial ..	846
Septicæmia, Puerperal, Deaths from	
188 to 190, 200	
Service Abroad, Military ..	1150
Settlement (see Land Tenure) ..	225
Closer (see Closer Settlement) ..	248
Settlers, Advances to ..	248, 367
Sewerage Systems in the Several	
States ..	910 to 926
Sex	
Distribution in Factories ..	477
of Population ..	95
Shale and Shale Oil ..	437
Shareholders, Enemy ..	1004, 1150
Sheep	
Comparison with other Countries ..	294
Founding of the Industry ..	291
Graph of ..	299
Imports and Exports of ..	293

	PAGE
Sheep (continued)	
in the Commonwealth 280, 292, 1141	
Mutton and Lamb, Exports of	
Frozen ..	293
Number treated at Preserving	
Works ..	506
Percentage of, in each State ..	292
per Head of Population ..	281, 295
per Square Mile ..	282
Slaughtered in Commonwealth ..	293
Wool (see Wool) ..	295
Sheepskins	
with Wool, Export of ..	305
without Wool, Export of ..	306
Shipping	
Coastal Services ..	612
Vessels, Wages ..	1082
C'wealth Government Line ..	1146
Difficulties of Comparisons of ..	596
Interstate ..	609
Lighthouses ..	613
Northern Territory ..	1041
Oversea ..	597
Nationality of ..	603
of Various Countries ..	598
Ports of the Commonwealth ..	613
the British Empire ..	607
Record of ..	596
Registered ..	608
Shipwrecks ..	613
Sydney Harbour Ferries ..	678
System of Record ..	596
Tonnage Entered and Cleared ..	602
in Ballast ..	606
Trend of ..	601
Vessels Built and Registered ..	608
Imported and Exported 541, 1146	
Wages of Employees ..	1082
Wrecks, Number of ..	613
Ships' Stores ..	542
Ships, Training ..	989
Shipwrecks ..	613
Shires—see Local Government.	
Shoe and Boot Factories ..	512
Shorthand Schools ..	822
Signatures, Mark, at Marriage ..	171, 825
Silver ..	409
Accidents in Mining ..	444
Broken Hill Mines ..	411, 1143
Chief Centres of Production ..	411
Graph, shewing Value of ..	431, 432
Imports and Exports of ..	569
Occurrence in each State ..	409
Persons Engaged in Mining ..	412, 443
Prices of ..	412, 770
Production of ..	409, 1142
Wages Paid in Mining ..	1079
World's Production of ..	412
Sinking Funds, State ..	766
Skins, etc., Exports of ..	282, 305, 565
Smallpox ..	188 to 190, 1023
Smelting Works ..	503, 1143
Snowfall ..	66
Soap and Candle Factories ..	498

	PAGE
Teachers (continued)	
in Technical Schools	819 to 822
in Universities ..	815
Technical Education ..	818 to 823
Telegraphs	
Cables Received and Despatched	713
Deferred Cablegrams ..	715
Development of Service ..	708
Expenditure ..	706
First Lines Constructed ..	707
Length of Line and Wire ..	708
Letter Telegrams ..	710
Northern Territory ..	1042
Number of Telegrams Despatched	709
Offices; Number of ..	708
Rates for Transmission of Tele-	
grams ..	709
Revenue ..	705
Wireless Telegraphy ..	710
Telephones	
Connections ..	718
Development of Service ..	717
Number of Exchanges ..	718
Rates ..	717
Revenue ..	705
Rental Charges ..	717
Temperatures ..	58
at the Several Capitals	78 to 83
Comparison of ..	76
Hottest and Coldest Parts of	
Australia ..	59
Tenure, Land—see Land Tenure ..	225
Timber (see also Forests)	
Commercial Uses of ..	385
Exports of, to Eastern Countries	566
Imports and Exports of ..	386
Mills ..	499
Production of ..	386
Tin ..	416
Accidents in Mining ..	444
Exports of, to Eastern Countries	566
Persons Employed in Mining	418, 443
Prices of ..	47
Production of ..	416, 1142
Wages Paid in Mining	1079
World's Production of ..	417
Tobacco	
Bounties on ..	358
Cultivation of ..	356
Duty on Imports of ..	585, 595
Factories ..	510
Tonnage, Shipping (see Shipping).	
Topazes ..	442
Tortoiseshell, Export of ..	395
Tourmaline ..	442
Towns in Australia, Population of ..	114
Townsville Institute and Hospital ..	1026
Trade (see also Commerce) ..	30
and Customs Department	
Expenditure ..	735
Revenue ..	723
Control of, during War ..	1107
Descriptions Act ..	539
Enemy Trading Act ..	539
Shareholders ..	1150

	PAGE
Trade (continued)	
Marks ..	1116
Applications for ..	1117
Enemy, Suspension of ..	1118
Revenue ..	728, 1118
of the United Kingdom with	
Australia ..	576
Metal Exchange ..	1143
Oversea, of Commonwealth	542, 1146
Prohibited Exports ..	1144
Regulation of, during War	541, 1107
Special, of various Countries ..	574
Unions (see Unionism)	937, 943, 1046
Year, Alteration of ..	544
Training, Agricultural, in State Schools	806
Colleges ..	808
Compulsory—see Defence.	
Ships ..	989
Tramway Workshops ..	502
Tramways in the several States ..	675
Electric, Summary of ..	685
Mileage Open ..	675
Wages of Employees ..	1081
Transcontinental Railway Line ..	630
Transfer of Land (War Precautions)	1004
Transferred Properties ..	741
Trawling Experiments ..	396
State Industry, N.S.W. ..	397
Treasurer's Department, C'wealth,	
Expenditure ..	734
Financial Statement, 1916 ..	1147
Treasurers of the Commonwealth ..	868
Triplets, Number of ..	155
Tripolite ..	440
Tropical Diseases in Australia ..	1026
Tropical Regions of Australia ..	47
Trustees, Executors and Agency Cos.	780
Trust Funds, Commonwealth ..	738
State ..	757
Trusts, Harbour ..	926
Tuberculosis	
Age of Persons Dying from ..	194
Deaths from ..	188 to 190, 193
Death Rates of ..	195
Length of Residence in Common-	
wealth of Persons Dying from	195
Occupations of Males Dying from	194
Tumours, Malignant, Deaths from	
188 to 190, 196	
Non-cancerous, Female Deaths	
from ..	183, 200
Tungsten ..	424, 1143
Turnips ..	337
Turquoises ..	442
Tutorial Classes, Workmen's ..	817
Tweed Mills ..	511
Twins, Number of ..	155
Typhoid Fever, Deaths from	188 to 190

	PAGE
U	
Unemployment—see Labour ..	1045
Unification of Railway Gauges ..	625
Unionism, Industrial	
Administration of Acts ..	951
Arbitration Court ..	849, 963
Benefits Conferred by the Acts ..	949
Central Labour Organisations ..	946
Constitution Alteration ..	36, 966
Development of ..	937, 945
Employers' Liability ..	953
Factories' Acts, Restrictions ..	956
Federated Unions, 1915 ..	946
History of ..	937
Industrial Boards ..	970
Interstate Unions, 1915 ..	946
Legislation ..	947, 954
Limitation of Hours ..	949
Lockouts and Strikes ..	965, 1090
Maritime Strike, 1890 ..	940
Mining Acts ..	952
Movement towards Uniformity ..	966
"New Protection" ..	967
"New Unionism" ..	940
Number of Unions ..	943, 1046
Registered Factories ..	952
Registration under Industrial Acts ..	942
Registration under Trade Union Acts ..	942
Regulation of Wages ..	959, 1058
Statutes affecting Labour ..	947, 954
Strikes and Lockouts ..	965, 1090
Trade Unions, Development of ..	937, 945
Number & Membership ..	943, 1046
Registered ..	942
Types of ..	943
Tribunals ..	968
Wages, Current Rates of ..	1058
Wages Boards ..	960, 970
Wages Boards Determinations ..	970, 1058
Workmen's Compensation Act ..	953
Universal Military Training ..	976, 981
Universities	
Extension Lectures ..	817
Origin and Development ..	813
Private Benefactions ..	816
Revenues of ..	816
Students and Teachers at ..	815
Workmen's Tutorial Classes ..	817
Uranium ..	425
Urban Population ..	114

V

Vaccination ..	1023
Value Payable Post ..	701
Vancouver Mail Service ..	693
Vessels—see Shipping ..	596
Village Communities, Victoria ..	252
Vinegar, etc., Manufactories ..	506

	PAGE
Vineyards	
Area of ..	347
Graph of ..	349
Wine Production ..	348
Violence, Deaths from ..	188 to 190, 202
Vital Statistics	
Births—see Births ..	150, 1140
Deaths—see Deaths ..	172, 1141
Marriages—see Marriages ..	165, 1140
Graphical Representation ..	211 to 217
Voting	
at Federal Elections ..	875
at Referenda ..	876
at State Elections ..	877 to 884
Preferential ..	1131
Qualifications for ..	874, 882

W

Wages	
Boards ..	960, 970
Change in Rates of ..	1052
Current Rates of ..	1058
Female Workers ..	1087
Mining ..	1079
Railways ..	1080
Shipping ..	1082
Tramways ..	1081
Wagon Building Works ..	515
War	
Australian Contingents ..	993
Casualties, European War ..	996
Compulsory Service ..	1150
Enemy Contracts ..	999
Patents ..	1118
Shareholders ..	1150
European War, 1914 ..	994
Expeditionary Forces ..	994
Expenditure ..	998
Finance ..	742, 1147
Liquor Traffic, during—see Local Option ..	1126
Loans, Australian ..	742, 1148
Loan, Imperial ..	741, 1148
New Guinea Expeditionary Force ..	996
Pensions ..	999
Precautions Act ..	999
Precautions Regulations ..	1004, 1150
Prices, Effect of ..	1106
Railway Council ..	981
Referendum Service Abroad ..	1150
Regulation of Trade during ..	541, 1107
South African ..	993
Taxation ..	1148
Trading with Enemy Act ..	540
Water Conservation ..	517
Artesian Wells ..	518
Murray Waters ..	537
Murrumbidgee Irrigation ..	526
Water Supply in the several States ..	910 to 926
Goldfields, W.A. ..	924
Hunter River District ..	913
Watson Administration ..	39
Wax, Refined Paraffin ..	438

	PAGE
Weather—see Meteorology ..	56
Week-end Cablegrams ..	715
Wells, Artesian ..	518, 925
Western Lands Act, N.S.W. ..	225
Wheat	
and Flour, Imports and Exp. of ..	318
Area under ..	314, 1141
Board, Australian ..	322
Export Values per Bushel ..	318
Exports of ..	319
to Eastern Countries ..	562
Graphs of ..	349, 350
"Pool" ..	321
Prices of ..	317
Prices of Foreign, imported into	
United Kingdom ..	318
Production of ..	315, 1141
World's ..	317
Progress of Cultivation ..	314
Value of Crop ..	321
Yield of, in various Countries	316
per Acre ..	315, 1141
Whooping Cough, Deaths from	188 to 190, 193
Wind ..	75
at the several Capitals	78 to 83
Wine	
Consumption of ..	838
Imports and Exports of ..	348
Production ..	348
Wireless Telegraphy ..	710
Wolfram ..	424, 1143

	PAGE
Wool ..	295
Bounties on ..	297
Destination of Exports ..	303
Export Value per lb... ..	301
Exports of ..	282, 297
from each State ..	302
to Eastern Countries ..	566
Imports into Europe and North	
America ..	298
United Kingdom ..	298
Locally Used ..	296
Market ..	301
Producing Countries in Southern	
Hemisphere ..	298
Production of ..	295
Scouring Industry ..	497
Various Descriptions of, Sold ..	304
Woollen and Tweed Mills..	511
Workmen's Compensation ..	953
Workmen's Tutorial Classes ..	817
Workingmen's Blocks, W.A. ..	257

Y

Yass-Canberra—see Fed. Cap. Site	1033
Railway ..	631
Year, Trade, Alteration of ..	544

Z

Zinc ..	418, 1143
Graph, shewing Production ..	431
Zirconia.. ..	442

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