CHAPTER XVII.

AGRICULTURAL PRODUCTION.

NOTE.—Except where otherwise stated, the "agricultural" years hereafter mentioned are taken as ending on 30th June.

§ 1. Introductory.

Preceding issues of the Official Year Book contain a brief reference to the attempts at cultivation by the first settlers in New South Wales, and to the discovery of suitable agricultural land on the Parramatta and Hawkesbury Rivers prior to the year 1813, and west of the Blue Mountains thereafter. (See No. 22, p. 670.)

§ 2. Progress of Agriculture.

1. **Early Records.**—In an "Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797," Governor Hunter gives the acreage under crop as follows:—Wheat, 3,361 acres; maize, 1,527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6,874 acres; maize, 3,389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 37 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.**—(i) *General.* The following table shows the area under crop in each of the States and Territories of Australia at decennial intervals since 1860 and during each of the last five seasons:—

AREA UNDER CROP, 1860 TO 1929-30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860–1	246,143	387,283	3,353	359,284	24,705	152,860	..	..	1,173,628
1870–1	385,151	692,840	52,210	801,571	54,527	157,410	..	..	2,143,709
1880–1	606,277	1,548,809	113,978	2,087,237	63,902	140,788	..	..	4,560,991
1890–1	852,704	2,031,955	224,993	2,093,515	69,678	157,376	..	..	5,430,221
1900–1	2,440,767	3,114,132	457,397	2,369,680	201,338	224,352	..	..	8,813,666
1910–11	3,386,017	3,952,070	667,113	2,746,334	855,024	286,920	360	..	11,893,838
1920–21	4,465,143	4,489,503	779,497	3,231,083	1,804,987	297,383	296	1,966	15,069,858
1925–26	4,541,360	4,433,492	1,033,765	3,583,867	2,932,110	266,412	391	2,181	16,793,578
1926–27	4,593,847	4,735,173	941,783	3,883,920	3,324,523	289,364	440	3,449	17,772,499
1927–28	4,998,272	4,942,258	1,066,613	4,192,167	3,720,100	296,875	570	2,539	19,219,394
1928–29	5,442,982	5,505,651	1,044,632	4,660,003	4,259,269	273,152	392	3,476	21,189,557
1929–30	5,500,946	5,579,258	1,046,235	4,966,916	4,566,001	265,317	609	4,436	21,929,721

The progress of agriculture was uninterrupted from 1860 until 1915–16, when, as the result of a special war effort, Australia cultivated 18,528,234 acres. Following that year, the decline in wheat-growing and the effects of the drought of 1918–19 reduced the acreage to 13,296,407 acres in 1919–20, a decrease of 5,231,827 acres in the space of four years. With the removal of the obstacles to the disposal of the wheat crop, the area began to expand in 1920–21, and despite occasional adverse seasons, the area planted in 1929–30 amounted to nearly 22 million acres. This area is the largest yet cultivated and exceeds the previous record of 1928–29 by 740,164 acres. Wheat continues to be the most extensively grown crop in Australia, the area thereunder for both grain and hay during 1929–30 amounting to almost 73 per cent. of the total acreage under cultivation. The extension of the wheat area since 1919–20, despite intermittent adverse climatic and market conditions, is a happy augury for the continuance of agricultural development in Australia.

(ii) *Relation to Population.* The total area under cultivation per head of population reached its lowest point in recent years during 1919–20, but since that year the position has considerably improved. The rate of progress during the past decennium has more than kept pace with the gain in population. Details for the past five seasons are as follow :—

AREA UNDER CROP PER 1,000 OF POPULATION, 1925–26 TO 1929–30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26 ..	1,976	2,633	1,200	6,497	7,878	1,228	107	553	2,803
1926–27 ..	1,957	2,766	1,068	6,857	8,777	1,347	113	701	2,908
1927–28 ..	2,082	2,838	1,186	7,281	9,483	1,375	131	443	3,083
1928–29 ..	2,226	3,126	1,140	8,044	10,494	1,261	98	430	3,344
1929–30 ..	2,220	3,140	1,124	8,560	10,956	1,211	136	536	3,419

(iii) *Relation to Total Area.* The next table furnishes a comparison of the area under crop in the several States and Territories and Australia with the respective total areas. For Australia as a whole, the area under crop in 1929–30 represented only about 1 acre in every 90. In Victoria the proportion was about 1 acre in every 10, in New South Wales 1 in 36, in South Australia 1 in 49, in Tasmania 1 in 63, in Western Australia 1 in 126, in Queensland 1 in 411, and in the Federal Territory 1 in 135.

PERCENTAGE OF AREA UNDER CROP ON TOTAL AREA, 1925–26 TO 1929–30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	%	%	%	%	%	%	%	%	%
1925–26 ..	2.293	7.882	0.241	1.473	0.469	1.587	..	0.362	0.882
1926–27 ..	2.320	8.418	0.219	1.597	0.532	1.725	..	0.573	0.934
1927–28 ..	2.524	8.787	0.249	1.723	0.596	1.769	..	0.422	1.009
1928–29 ..	2.748	9.789	0.243	1.916	0.682	1.628	..	0.578	1.113
1929–30 ..	2.778	9.919	0.244	2.042	0.731	1.581	..	0.738	1.152

In the Northern Territory the proportion which the area under crop bears to the total area is, at present, practically negligible.

3. **Artificially-sown Grasses.**—In all the States there are considerable areas under artificially-sown grasses mainly sown on uncultivated land after burning off the scrub, and not included in "area under crops." These areas are however liable to revert to bush and the information respecting them is too uncertain for formal record.

§ 3. Areas under Crops.

1. **Distribution of Crops.**—The following table gives the areas in the several States under each of the principal crops for the season 1929-30 :—

DISTRIBUTION OF CROPS, 1929-30.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ..	3,974,064	3,566,135	204,116	3,645,764	3,568,225	16,805	..	1,455	14,976,564
Oats.. ..	181,354	630,234	2,003	277,923	385,134	39,061	..	162	1,515,871
Maize ..	108,219	17,640	171,614	..	29	..	..	..	297,502
Barley—									
Malting ..	4,803	65,740	6,318	287,900	17,806	6,287	..	..	388,854
Other ..	3,144	31,938	3,436	17,416	5,843	648	..	60	62,485
Beans and Peas	..	10,253	43	13,487	2,338	24,167	..	..	50,288
Rye ..	3,974	854	27	653	384	..	..	..	5,892
Other Cereals	19,780	..	1	..	8	..	..	..	19,789
Hay ..	698,395	865,015	49,745	544,438	418,698	80,153	..	2,217	2,658,661
Green Forage	356,903	169,253	208,624	86,500	132,505	23,245	..	465	977,495
Grass and other Seeds ..	..	1,670	1,866	1,991	..	761	..	..	6,288
Orchards and other Fruit Gardens ..	77,532	80,820	38,412	30,073	18,855	32,159	..	53	277,904
Vines—									
Productive ..	13,499	38,327	1,617	48,790	4,601	..	..	..	106,834
Unproductive	2,090	2,267	132	3,539	363	..	..	..	8,391
Market Gardens	8,380	21,210	862	1,658	3,075	530	..	10	35,725
Sugar Cane—									
Productive ..	7,967	..	214,880	..	..	..	..	..	222,847
Unproductive	7,458	..	76,780	..	..	..	..	..	84,238
Potatoes ..	13,630	58,789	10,182	4,536	6,028	33,722	5	8	126,900
Onions ..	131	7,828	467	452	56	..	..	1	8,935
Other Root Crops	1,187	3,229	899	610	280	5,357	..	3	11,565
Tobacco ..	446	1,822	159	37	6	..	..	..	2,470
Broom Millet ..	2,521	1,677	378	..	..	..	..	..	4,576
Pumpkins and Melons ..	2,818	1,231	11,014	314	1,065	..	..	4	16,446
Hops ..	..	201	..	1	..	1,196	..	..	1,398
Cotton—									
Productive ..	..	..	15,003	..	..	..	..	..	15,003
Unproductive	..	..	12,656	..	..	..	..	..	12,656
All other Crops	12,651	3,125	15,001	834	702	1,226	604	1	34,144
Total Area ..	5,500,946	5,579,258	1,046,235	4,966,916	4,566,001	265,317	609	4,439	21,929,721

2. **Relative Areas of Crops in States and Territories.**—Taking the principal crops, i.e., those in the case of which the cultivation in Australia amounts to more than 100,000 acres, the proportion of each in the various States and Territories on the total area under crop for the season 1929-30 is shown 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, whilst hay is second in extent. In Victoria and Western Australia the oat crop occupies third position, while green forage ranks third in New South Wales, and barley in South Australia. In Queensland the most extensive crops are sugar cane, wheat, maize, and green forage, while in Tasmania, hay, oats, potatoes, and orchards and fruit gardens occupy the greatest area.

As pointed out previously, wheat is the main crop in Australia, the area thereunder for grain and hay representing in 1929-30 nearly 73 per cent. of the total area under cultivation.

RELATIVE AREAS UNDER CROP, 1929-30.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia
	%	%	%	%	%	%	%	%	%
Wheat ..	72.24	63.92	19.51	73.40	78.15	6.33	..	32.78	68.29
Hay ..	12.70	12.52	4.75	10.96	9.17	30.21	..	49.94	12.12
Oats ..	3.30	11.30	0.19	5.60	8.43	14.72	..	3.65	6.90
Green Forage ..	6.49	3.03	19.94	1.74	2.90	8.76	..	10.48	4.46
Maize ..	1.97	0.32	16.40	..	0.00	..	..	..	1.36
Barley ..	0.14	1.75	0.93	6.15	0.52	2.61	..	1.35	2.06
Orchards and Fruit Gardens	1.41	1.45	3.67	0.61	0.41	12.12	..	1.19	1.27
Sugar-cane	0.28	..	27.88	..	..	..	..	..	1.40
Potatoes ..	0.25	1.05	0.97	0.09	0.13	12.71	0.82	0.18	0.58
Vineyards	0.28	0.73	0.17	1.05	0.11	..	..	..	0.53
All other ..	0.94	3.93	5.59	0.40	0.18	12.54	99.18	0.43	1.03
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. **Area under Chief Crops, Australia.**—The area under the chief crops during each of the last five seasons, together with averages for the decennial periods 1911-20 and 1921-30 are shown hereunder.

AREA UNDER CHIEF CROPS.—AUSTRALIA, 1911 TO 1929-30.

Crop.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	Average 1911-20.	Average 1921-30.
	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.
Barley (*a*)	319	321	276	307	389	102	279
Maize	297	286	401	315	298	331	321
Oats	1,013	844	1,122	1,046	1,516	782	1,047
Rice	1.5	4.0	9.9	14.1	19.8	..	4.9
Wheat	10,201	11,688	12,279	14,840	14,977	8,928	11,291
Green Forage	1,055	881	1,389	860	977	633	844
Hay	2,832	2,700	2,632	2,739	2,659	2,768	2,956
Beans and Peas ..	51	49	64	48	50	41	46
Onions	6.5	10.1	8.7	8.6	8.9	7.1	7.7
Potatoes (*b*)	137	139	163	138	124	136	140
Sugar Beet	1.9	2.0	2.4	2.1	2.5	0.9	2.0
Vineyards	112	112	113	115	114	64	107
Hops	1.7	1.6	1.6	1.5	1.4	1.3	1.6
Sugar Cane	289	285	291	299	307	165	257
Cotton	54	32	29	26	28	0.2	37
Tobacco	2.8	2.2	2.1	2.2	2.5	2.1	2.4
Market Gardens (*c*) ..	45	45	54	45	52	43	46
Orchards	275	276	278	277	278	234	277
All other Crops	99	95	103	106	126	125	105
Total	16,794	17,772	19,219	21,190	21,930	14,364	17,771

(*a*) Malting only. (*b*) Not including Sweet Potatoes. (*c*) Including Pumpkins and Melons.

4. **Total and Average Yield, Chief Crops, Australia.**—The following table shows the yields of the chief crops for the five years ending 1929–30 together with averages for the decennia ending 1919–20 and 1929–30 :—

TOTAL AND AVERAGE YIELD CHIEF CROPS.—AUSTRALIA, 1911 TO 1929-30.

Crop.	Unit of Quantity.	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.	Average 1911–20.	Average 1921–30.
Barley (*a*) ..	1,000 bushels	5,401	5,872	4,041	5,692	6,439	2,362	5,077
Maize	,, ,,	7,432	6,970	11,393	8,323	7,946	8,581	8,510
Oats	,, ,,	12,212	12,571	12,084	14,109	14,424	12,463	14,775
Rice	,, ,,	61	215	879	1,308	1,829	..	431
Wheat	,, ,,	114,504	160,762	118,200	159,679	126,884	95,480	135,400
Hay	,, tons	2,978	3,487	2,859	3,175	2,725	3,285	3,608
Beans and Peas ..	,, bushels	610	844	790	663	813	669	735
Onions	,, tons	27	50	37	34	50	32	40
Potatoes (*b*) ..	,, ,,	313	373	470	284	343	350	365
Beet Sugar ..	,, ,,	2.3	1.2	2.4	2.1	2.8	1.1	2.3
Grapes	,, ,,	252	348	241	393	386	100	263
Wine	,, gallons	16,231	20,456	17,303	18,600	16,069	5,875	14,761
Raisins and Currants	,, cwts.	740	1,125	657	1,444	1,469	283	842
Hops	,, lbs.	2,184	2,278	2,898	2,342	2,340	1,788	2,412
Cane Sugar ..	,, tons	518	416	509	538	538	212	402
Cotton, Unginned ..	,, lbs.	19,561	9,069	7,061	12,291	8,024	90	9,008
Tobacco	,, lbs.	2,252	1,218	1,808	1,839	(*d*)	1,861	(*c*) 1,842
Pumpkins and Melons	,, tons	43	38	78	37	45	54	48

(*a*) Malting only. (*b*) Not including Sweet Potatoes. (*c*) Period 1920–1929. (*d*) Not yet available.

5. **Average Yield per Acre, Chief Crops, Australia.**—Details of the average yield for Australia of the principal crops are shown hereunder for the periods indicated :—

AVERAGE YIELD PER ACRE, CHIEF CROPS, AUSTRALIA, 1911 TO 1929-30.

Crop.	Unit of Quantity.	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.	Average 1911–20.	Average 1921–30.
Barley (*a*)	bushel	19.91	18.30	14.62	18.53	16.56	18.07	18.20
Maize	,,	25.01	24.36	28.45	26.41	26.71	25.93	26.47
Oats	,,	12.05	14.89	10.77	13.49	9.52	15.94	14.11
Rice	,,	39.21	54.16	88.88	93.02	92.44	..	87.07
Wheat	,,	11.22	13.75	9.63	10.76	8.47	10.69	11.99
Hay	ton	1.05	1.29	1.09	1.16	1.03	1.19	1.22
Beans and Peas ..	bushel	11.86	17.24	12.23	13.74	16.16	16.32	15.85
Onions	ton	4.19	5.01	4.29	4.03	5.57	4.52	5.19
Potatoes (*b*)	,,	2.29	2.68	2.88	2.06	2.76	2.57	2.61
Beet Sugar	,,	1.23	0.58	1.00	0.99	1.39	1.14	1.20
Grapes (*c*)	,,	2.55	3.41	2.31	3.71	3.61	1.89	3.09
Wine (*c*)	gallon	3.63	449	364	400	345	210	346
Raisins and Currants (*c*) ..	cwt.	15.67	22.67	13.43	27.52	27.77	16.46	21.03
Hops (*c*)	lb.	1,449	1,516	1,851	1,594	1,708	1,317	1,572
Cane Sugar (*c*)	ton	2.61	2.09	2.40	2.42	2.41	2.10	2.30
Cotton, Unginned (*c*)	lb.	487	482	472	605	535	376	388
Tobacco	lb.	816	801	848	822	(*d*)	867	(*e*) 780
Pumpkins and Melons ..	ton	3.10	3.02	3.58	2.79	2.76	3.93	3.31

(*a*) Malting only. (*b*) Not including Sweet Potatoes. (*c*) Per acre of productive crops. (*d*) Not yet available. (*e*) Period 1920–29.

6. **Value of Agricultural Production, Australia, 1922–3 to 1929–30.**—The following table shows the value of agricultural production in Australia for the years 1922–23 to 1929–30. For the year 1929–30 an attempt has been made to estimate also the local and net values of production in accordance with the resolutions of the Conferences of

Australian Statisticians. The gross value, represents the value in the metropolitan wholesale markets. Local value represents the amount accruing to the producer at the point of production and is obtained by deducting from the gross value the estimated costs of marketing, i.e., transport to market, value of containers, etc., and commission. A further deduction has been made for production costs, leaving an estimated net value of production, i.e., the amount available for distribution among those concerned in the agricultural industry, viz., workers of all grades, proprietors including landlords, and providers of capital. The items included in the above production costs are, (i) cost of seed, manures and sprays, (ii) value of hay, chaff, grain, etc., consumed by stock, (iii) value of power and water used (e.g., irrigation), (iv) value of material used in maintenance of buildings, fences, &c., and (v) depreciation of machinery, implements, tractors, etc. The net value of production as shown for 1929–30 must be regarded as a rough approximation only of the position. It is realized that complete data are not available, but the amount of £40,000,000 shown is considered to approximate the actual position. It is hoped to improve upon the reliability of this table as more accurate details are available. It may be noted that the net rather than the gross value affords a more comparable figure with the value of manufacturing production.

GROSS AND NET VALUES OF AGRICULTURAL PRODUCTION.—AUSTRALIA, 1922–23 TO 1929–30.

Crops.	1922–23.	1923–24.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.
	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000
Barley (*b*)	1,021	752	1,156	1,126	1,109	1,006	1,096	1,059
Maize	2,084	2,050	2,467	1,878	2,317	2,799	1,665	2,085
Oats	2,777	2,933	2,734	2,334	2,165	2,321	2,137	2,097
Rice	..	..	4	14	52	198	234	335
Wheat	28,459	29,936	53,547	35,724	42,453	31,895	38,303	27,299
Green Forage	2,502	3,559	2,309	3,381	3,912	2,731	2,680	3,167
Hay	24,004	20,712	18,493	17,078	17,252	15,120	14,137	12,721
Beans and Peas	299	292	234	267	337	333	256	257
Onions	206	265	381	457	221	319	314	193
Potatoes (*c*)	2,905	2,433	2,435	3,639	3,116	2,327	3,424	2,375
Sugar Beet	49	55	49	42	20	54	33	58
Grapes	3,251	2,466	3,593	3,866	5,590	3,786	4,022	4,145
Hops	254	236	268	207	171	258	189	132
Sugar Cane	5,931	5,106	7,683	6,789	6,568	7,469	7,444	7,476
Tobacco	277	130	109	168	123	108	97	92
Cotton, Unginned	92	289	377	380	190	145	214	186
Market Gardens (*d*)	1,778	2,158	2,177	2,331	2,680	2,374	2,384	2,640
Orchards	6,667	6,324	7,484	8,043	8,198	9,109	8,807	8,469
Other Crops	1,627	1,470	1,663	1,543	1,821	1,976	2,004	2,323
Total, Gross Value	84,183	81,166	107,163	89,267	98,295	84,328	89,440	77,109
Less Marketing Costs	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)	17,063
Local Values	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)	60,046
Less Production Costs								19,794
Net Value of Production	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)	40,252

(*a*) No data available. (*b*) Malting only. (*c*) Not including Sweet Potatoes.
(*d*) Including Pumpkins and Melons.

§ 4. Wheat.

1. **Progress of Wheat-Growing.**—(i) *Area and Production.* (*a*) *Seasons 1925–26 to 1930–31.* Wheat is the principal crop raised in Australia, and its development during the past 30 years constitutes the most interesting feature of Australian agriculture. Since 1895, when the area under wheat amounted to 3½ million acres, an average of 343,000 acres has been added annually, until in 1929–30 more than 14.9 million acres were cut for grain. The area and yield of wheat for grain are given below for each State

for the five years ended 1929–30, and are shown from the year 1860 onwards in the graphs hereinafter. An estimate is also included for the 1930–31 crop :—

WHEAT.—AREA AND PRODUCTION, 1925–26 TO 1930–31.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26 ..	2,924,745	2,513,494	165,999	2,465,648	2,112,032	19,091	267	10,201,276
1926–27 ..	3,352,268	2,915,315	57,084	2,768,403	2,571,187	23,194	438	11,687,919
1927–28 ..	3,029,950	3,064,172	215,073	2,941,360	2,998,523	29,448	562	12,279,088
1928–29 ..	4,090,083	3,718,904	218,069	3,445,563	3,343,530	22,570	1,394	14,840,113
1929–30 ..	3,974,064	3,566,135	204,116	3,645,764	3,568,225	16,805	1,455	14,976,564
1930–31(*a*) ..	5,123,100	4,600,200	330,000	4,180,513	3,958,313	19,800	1,500	18,213,426
YIELD.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush.	Bushels.
1925–26 ..	33,800,619	29,255,534	1,973,477	28,693,101	20,471,177	395,603	4,881	114,504,392
1926–27 ..	47,373,713	46,886,020	379,339	35,558,711	30,021,016	537,000	5,487	160,761,886
1927–28 ..	27,042,000	26,160,814	3,783,584	24,066,012	36,370,219	773,142	4,004	118,199,775
1928–29 ..	49,257,000	46,818,833	2,515,561	26,826,094	33,790,040	455,336	16,557	159,679,421
1929–30 ..	34,407,000	25,412,587	4,235,172	23,345,093	39,081,183	375,849	27,738	126,884,622
1930–31(*a*) ..	65,811,000	53,814,369	4,755,282	34,871,526	52,891,492	455,000	30,000	212,628,669

(*a*) Final estimate.

The area devoted to the production of wheat for grain increased steadily until 1915–16, when 12,484,512 acres were sown, largely as the result of a special war effort. After that year, however, there was a serious decline, brought about by war conditions and unfavourable seasons, and the area in 1919–20 fell to 6,419,160 acres, or only half that of 1915–16. The promise of remunerative Government guarantees, coupled with the prospects of high prices, was responsible for a marked advance in 1920–21, and the area has been extended during each of the subsequent years, the increase for Australia since 1919–20 amounting to more than 8.5 million acres.

Although final figures for 1930-31 for all the States are not yet available, the data to hand indicate the total area under wheat for grain in Australia at about 18,213,426 acres, an increase of 3,236,862 acres (about 22 per cent.) on the previous year's record figure, and the greatest area yet devoted to the cultivation of this cereal. This remarkable increase was due mainly to a special appeal by the Commonwealth Government to the growers to sow more wheat. With the exception of South Australia, where drought conditions were experienced, the season was generally satisfactory and resulted in either average or over average yields in the remaining States. The average for the Commonwealth amounted to 11.67 bushels per acre, as compared with 8.47 bushels for the previous year and 11.99 bushels the average for the decennium ending 1929–30. The total production of grain for the year amounted to more than 212 million bushels, the greatest quantity ever produced in Australia in any one year, and exceeding the previous record production of 1915–16 by more than 33,500,000 bushels, or 18.7 per cent.

The annual production during the seasons 1920-21 to 1929-30 averaged 135,400,000 bushels, and the extent to which this average may be exceeded during any year depends in a great measure on seasonal conditions. For the last eleven seasons the yield has exceeded 100 million bushels. During this period, for the first time, a succession of good harvests was experienced, despite some unfavourable seasons, and the result exemplifies the value of bare fallowing, seed selection, and the application of manures. It is the considered opinion of agricultural experts that the improved cultural methods practised by modern wheat-growers preclude the possibility of absolute failure of this crop.

(*b*) *Area, Production and Prices, 1861–70 to 1921–30.* The following table gives average area, production and yield per acre for decennial periods since 1861, together with the average wholesale price since 1871. The price quoted represents the average at Melbourne (Williamstown), and may be accepted as fairly representative for Australia.

WHEAT.—AVERAGE AREA, PRODUCTION, AND WHOLESALE PRICE, AUSTRALIA 1861-1930.

Period.	Area.	Production.	Yield per Acre.	Average Wholesale Price.
	Acres.	Bushels.	Bushels.	s. d.
1861-70	831,457	10,621,697	12.77	(a)
1871-80	1,646,383	17,711,312	10.76	5 10
1881-90	3,257,709	26,992,020	8.29	4 7
1891-1900	4,086,701	29,933,993	7.32	3 8
1901-10	5,711,230	56,058,070	9.82	3 10
1911-20	8,927,974	95,479,866	10.69	5 0
1921-30	11,290,543	135,399,860	11.99	5 8

(a) Not available.

(ii) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the last five seasons, and for the decennium 1920-30:—

WHEAT.—YIELD PER ACRE, 1925-26 TO 1929-30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1925-26 ..	11.56	11.64	11.89	11.60	9.69	20.72	18.28	11.22
1926-27 ..	14.13	16.08	6.65	12.84	11.68	23.15	12.53	13.75
1927-28 ..	8.92	8.54	17.59	8.16	12.12	26.25	7.12	9.63
1928-29 ..	12.04	12.59	11.54	7.79	10.10	20.17	11.88	10.76
1929-30 ..	8.66	7.13	20.75	6.40	10.95	22.37	19.06	8.47
Average 10 seasons. 1920-30	12.43	13.29	15.44	10.72	10.89	21.74	15.74	11.99

There were, naturally, considerable variations in the average yields, chiefly due to the vagaries of the seasons. Considerable improvement has been shown in the averages for the past three decades, the figures being 9.82, 10.69, and 11.99 bushels per acre respectively. The increased yields of the later years are principally due to the better cultural methods employed in wheat farming. The best average yields were obtained in 1924-25, 15.20 bushels; in 1920-21, 16.08 bushels; and in 1866, 16.35 bushels. In the latter year less than 1,000,000 acres of relatively fertile land were sown.

(iii) *Relation to Population.* The main producing States of the Commonwealth are New South Wales, Victoria, South Australia and Western Australia. Queensland production approximates local requirements, but Tasmania imports from the mainland to satisfy its needs. Normally the production of wheat greatly exceeds Australian requirements and considerable quantities are exported overseas. During recent years Australia has ranked fourth on the list of exporting countries as compared with sixth in the pre-war period 1909-13. For the later years its exports are exceeded by those of Canada, the United States and Argentine. The quantity exported is approximately 11½ per cent. of the total quantity shipped by exporting countries.

2. **Australian and Foreign Wheat Yields.**—(i) *Average Yield.* The next table gives the average return per acre in the principal wheat-growing countries of the world, ranging from a maximum in Netherlands of 44 bushels per acre to a minimum in the Union of South Africa of 8 bushels per acre. Australia, with approximately 12, occupies a relatively subordinate position, but in comparison with the yields obtained in those countries where wheat is extensively grown the results obtained locally are very satisfactory. Germany, with 28.50 bushels; Canada, 20.55 bushels; France, 20.24 bushels; Italy, 17.85 bushels; United States, 15.27 bushels; and Argentine Republic, 13.49 bushels, exceed the Australian average, but the latter is in excess of the yields obtained in the Soviet Republics, and India.

WHEAT.—YIELD PER ACRE, VARIOUS COUNTRIES, 1926 TO 1929.

Country.	Average Yield in Bushels per acre.		Country.	Average Yield in Bushels per acre.	
	Average, 1926–1928.	1929.		Average, 1926–1928.	1929.
Netherlands ..	43.85	48.62	Jugoslavia ..	17.28	18.29
Belgium ..	40.20	37.17	Bulgaria ..	16.65	12.49
New Zealand ..	34.57	30.33	Lithuania ..	15.90	19.03
Denmark ..	32.54	45.79	United States of America ..	15.27	13.23
Switzerland ..	32.50	32.56	Rumania ..	13.57	14.72
United Kingdom ..	32.48	35.98	Argentine Republic	13.49	10.11
Sweden	31.47	33.16	Spain	12.82	14.57
Germany ..	28.50	31.08	Uruguay ..	12.03	12.04
Norway	26.54	25.43	Peru	11.61	*a*11.89
Czechoslovakia ..	25.28	26.17	**Australia** ..	11.30	8.48
Japan	25.22	25.13	Soviet Republics	11.21	9.81
Egypt	24.89	27.95	Korea	10.47	9.52
Austria	22.58	22.45	India	10.10	9.96
Brazil	22.26	*a*12.94	Greece	10.02	6.84
Hungary	21.15	20.22	Portugal ..	9.63	9.96
Canada	20.55	11.89	Cyprus	9.53	11.15
France	20.24	25.13	French Morocco ..	9.15	10.56
Chile	17.93	21.11	Union of South Africa ..	8.00	11.00
Italy	17.85	22.01			
Poland	17.65	18.73			

(*a*) Year 1928.

(ii) Total Production. The latest available official statistics of the production of wheat in various countries are given in the following table :—

WHEAT.—PRODUCTION IN VARIOUS COUNTRIES, 1926 TO 1929.

Country.	Yield in Bushels (,000 omitted).		Country.	Yield in Bushels (,000 omitted).	
	Average, 1926–1928.	1929.		Average, 1926–1928.	1929.
United States of America ..	871,164	806,521	French Morocco ..	22,960	31,764
Soviet Republics ..	808,197	738,916	Sweden ..	15,785	19,032
Canada	476,464	299,525	Belgium ..	15,688	13,225
India	316,251	317,595	Uruguay ..	13,617	13,404
France	263,063	319,866	Greece	12,409	8,502
Argentine Republic	255,786	137,437	Syria	11,671	16,288
Italy	218,352	260,219	Austria	11,438	11,559
Australia ..	146,214	126,462	Tunis	11,146	12,309
Spain	137,104	154,247	Mexico	11,055	11,333
Germany ..	119,183	123,064	Portugal ..	10,398	10,814
Rumania ..	107,722	99,754	Denmark ..	10,130	11,772
Hungary ..	83,685	74,986	Korea	9,385	8,320
Jugoslavia ..	77,098	95,000	New Zealand ..	8,480	7,100
Poland	57,601	65,862	Union of South Africa ..	7,036	10,273
United Kingdom ..	52,175	49,758	Netherlands ..	6,326	5,467
Bulgaria	44,626	33,192	Lithuania ..	5,260	9,329
Czechoslovakia ..	44,278	52,903	Brazil	4,581	*a*4,628
Egypt	39,622	45,229	Switzerland ..	4,132	4,152
Japan	29,488	30,496	Peru	2,911	*a*3,075
Algeria	27,392	33,307	Cyprus	1,684	2,195
Chile	27,091	37,051	Norway	663	750

(*a*) Year 1928.

NOTE.—The harvests reported above for 1929 relate to the year 1929 for the Northern, and 1929–30 for the Southern Hemisphere.

The complete compilation of the world's production of wheat is not possible owing to the failure of certain countries to report their harvests. The International Institute of Agriculture, Rome, has, however, compiled figures obtained from all the producing countries reporting, with the following results :—

WHEAT.—WORLD'S PRODUCTION(a), 1909-13 TO 1929.

Years.	Area.	Yield.	Yield per acre.
	Acres.	Bushels.	Bushels.
Average, 1909–1913 ..	270,266,000	3,779,479,000	13.98
1926	299,260,339	4,250,239,313	14.27
1927	308,944,188	4,304,550,176	13.98
1928	306,606,622	4,612,153,735	15.02
1929	310,268,644	4,111,693,517	13.23
Average, 1926–1929 ..	306,269,948	4,319,659,185	14.10

(a) From countries reporting.

It is stated in the Report of the Institute that if all countries for which progress data are lacking were taken into account, the world's total production of wheat may be approximately estimated at 4,500 million bushels.

The total area harvested in 1929 shows an increase on the figures for the previous year, the Soviet Union and the United States being chiefly responsible therefor. The other great divisions of the world showed little change in the area harvested, which exceeded the pre-war average by more than 40,000,000 acres. In comparison with the pre-war period, areas sown to wheat are still 2 per cent. lower in European Countries, exclusive of the Soviet Union. North America, Argentine, and Australia were the chief contributing countries to the increase in 1929 over the average for 1909–13.

Although the area sown in 1929 increased by nearly 4,000,000 acres, the production declined by 500,000,000 bushels as compared with that for the previous year, the decline being due to unfavourable seasons in several of the chief producing countries.

The Australian contribution to the world's average production shown above during the past four years amounted to almost 3¼ per cent.

3. Export Price of Wheat.—The table hereunder shows export prices of Australian wheat during each of the last five years :—

AUSTRALIAN WHEAT.—EXPORT PRICES, 1926-27 TO 1930-31.

Item.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	s. d.	s. d.	s. d.	s. d.	s. d.
Price per bushel	5 7	5 6	4 10	5 0	2 5¾

The export prices here shown are the averages for the successive years in the principal markets of Australia.

4. Exports of Wheat and Flour.—(i) *Quantities.* The table appended shows the exports, and net exports of wheat and flour from 1925–26 to 1929–30. For the sake of convenience, flour has been expressed at its equivalent in wheat, 1 ton of flour being taken as equal to 48 bushels of grain. In ordinary seasons the Australian imports of

wheat and flour are negligible. During the past five years the exports ranged between 62,745,891 bushels in 1929–30 and 108,958,789 bushels in 1928–29, the net exports for the period averaging 84,288,570 bushels.

WHEAT AND FLOUR.—EXPORTS, AUSTRALIA, 1925–26 TO 1929–30.

Year.	Exports.			Net Exports.
	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bushels.(a)	Bushels.	Bushels.
1925–26 ..	54,227,728	24,049,536	78,277,264	78,273,795
1926–27 ..	73,925,315	23,686,272	97,611,587	97,607,874
1927–28 ..	53,042,357	20,822,160	73,864,517	73,863,184
1928–29 ..	81,896,245	27,062,544	108,958,789	108,954,924
1929–30 ..	40,390,707	22,355,184	62,745,891	62,743,071

(a) Equivalent in bushels of wheat.

(ii) *Destination.* The following table gives the exports of wheat to various countries for each of the five years ending 1929–30 together with averages for the pre-war period 1909–13 and for the five years 1926–30 :—

EXPORTS OF WHEAT.—AUSTRALIA, 1910 TO 1929–30.

Country to which Exported.	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.	Average, 1910–13.	Average, 1926–30.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
United Kingdom	22,319,823	26,510,696	20,465,490	20,564,650	21,488,415	30,305,384	22,269,815
Italy	4,642,202	10,316,509	7,151,695	5,861,552	3,261,455	581,309	6,246,683
Japan	10,861,863	4,298,567	3,199,720	5,626,298	2,811,142	330,131	5,359,518
France	53,865	7,254,063	622,785	1,967,455	186,682	1,681,918	2,016,970
Union of South Africa ..	3,117,007	2,005,233	6,941,395	4,143,328	1,540,482	2,992,355	3,549,489
Belgium ..	1,349,347	4,782,332	1,729,143	994,923	408,990	1,218,131	1,852,947
Egypt	668,288	4,625,270	3,827,150	4,943,383	1,178,230	135,377	3,048,464
Germany ..	941,252	2,132,607	2,356,622	1,001,897	..	286,822	1,286,476
Netherlands ..	2,211,050	3,379,723	726,993	1,834,132	490,358	(a)	1,728,451
Other Countries ..	8,063,031	8,620,316	6,021,364	34,958,627	9,024,953	4,465,847	13,337,658
Total ..	54,227,728	73,925,316	53,042,357	81,896,245	40,390,707	41,997,274	60,696,471

(a) Included with Other Countries.

Exports of flour from Australia for the periods mentioned are given in the table below.

EXPORTS OF FLOUR.—AUSTRALIA, 1910 TO 1929–30.

Country to which Exported.	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.	Average, 1910–13.	Average, 1926–30.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Egypt	194,909	185,392	150,795	243,468	125,963	(a)	180,105
United Kingdom	70,537	76,167	71,837	57,945	85,364	27,699	72,370
Netherlands East Indies ..	66,868	64,648	65,923	79,040	82,595	26,099	71,815
Malaya (British) ..	48,910	42,451	41,071	52,176	51,160	15,492	47,153
Union of South Africa ..	22,780	18,912	22,183	24,558	18,256	30,714	21,338
Ceylon	18,130	16,060	20,203	21,705	21,252	3,389	19,470
New Zealand ..	12,363	28,383	5,053	3,556	3,823	3,221	10,636
Philippine Islands	11,389	8,754	7,569	8,436	8,707	13,680	8,971
Hong Kong ..	9,703	3,966	5,856	2,972	2,933	2,672	5,086
Mauritius ..	3,990	7,781	4,979	9,395	5,988	2,221	6,427
Portuguese East Africa ..	5,441	5,802	7,531	5,917	5,410	13,462	6,020
Other Countries ..	36,012	35,148	30,795	54,635	54,282	28,463	42,174
Total ..	501,032	493,464	433,795	563,803	465,733	167,112	491,565

(a) Included with other Countries.

5. **Local Consumption of Wheat.**—The estimated consumption of wheat for food and for seed purposes in Australia during the past five years is shown hereunder :—

AVERAGE HUMAN CONSUMPTION, 1925–26 TO 1929–30.

Flour Milled		1,145,794 tons
Less Net exports of flour	491,507 tons	
Less Net exports of flour in Biscuits	1,724 ,,	
		493,231 tons
Net quantity available for home consumption		652,563 ,,
Equivalent in terms of wheat		31,323,014 bushels
Net quantity available per head of population—		
As flour		210 lbs.
As wheat		5.038 bushels

AVERAGE USED FOR SEED, 1925–26 TO 1929–30.

Average area sown for grain and hay	13,919,117 acres
Average quantity of seed used	13,006,800 bushels
Average quantity of seed used per acre	56 lbs.
Average quantity per head of population	2.092 bushels

In addition to the above, the quantity of grain fed to poultry and other live stock as well as that used as seed for green forage crops must be taken into consideration. These quantities vary from year to year according to the price of wheat and the nature of the season, and sufficient data are not available on which to base an annual estimate, but, taken over a period, the amount so consumed has been estimated to range from one half to one bushel per head of population per annum. The flour available for human consumption necessarily fluctuates from year to year coincident with stocks. In some years the flour available per head of population, after deducting net exports from the quantity milled, shows a substantial increase over the average for the previous year, this, however, being counterbalanced by a decline in the following year. The average quantity of flour consumed per annum for the five years under consideration was 210 lbs. per head of population, which, expressed in equivalent terms in wheat, represents 5.038 bushels. The estimates of quantity of grain used for seed purposes are 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 or hay. The average annual quantity thus used during the five years was 2.092 bushels per head of population, or 56 lbs. per acre sown. For all purposes the consumption of wheat in Australia during the past five years averaged 48,993,104 bushels, or 7.88 bushels per head of population.

6. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in Australia during the season 1929–30 is shown below :—

WHEAT.—VALUE OF CROP(*a*), 1929–30.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value..	6,738,040	5,506,060	1,036,735	5,058,103	8,860,518	93,960	5,432	27,298,848
Value per acre ..	£1/13/11	£1/10/11	£5/1/7	£1/7/9	£2/9/8	£5/11/11	£3/14/8	£1/16/5

(*a*) Exclusive of the value of straw.

7. **Voluntary Wheat Pools.**—Reference to the operations of the voluntary Wheat Pools in the various States during 1930–31 will be found in the Appendix at the end of this volume.

§ 5. Oats.

1. Progress of Cultivation.—(i) *Area and Production.* Oats came next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for 68.29 per cent., oats represented only 6.91 per cent. of the area under crop in Australia. The area under cultivation of oats for the last five years is shown in the table hereunder, and more fully in the graphs herein :—

OATS.—AREA AND PRODUCTION, 1925-26 TO 1929-30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
				AREA.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26	100,652	437,696	1,293	158,062	278,344	36,741	445	1,013,233
1926–27	104,450	303,424	210	152,178	234,826	48,361	665	844,114
1927–28	114,988	529,392	2,272	197,024	235,469	42,950	208	1,122,303
1928–29	126,743	347,021	916	207,266	325,827	37,602	295	1,045,670
1929–30	181,354	630,234	2,003	277,923	385,134	39,061	162	1,515,871
				PRODUCTION.				
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1925–26	1,607,520	4,998,165	14,546	1,808,443	2,939,380	835,473	8,130	12,211,657
1926–27	1,890,746	4,884,006	1,674	1,713,337	2,716,436	1,357,000	8,004	12,571,203
1927–28	1,654,560	4,682,724	43,788	1,378,437	2,922,865	1,399,824	2,067	12,084,265
1928–29	2,183,880	5,602,409	13,737	1,740,515	3,551,609	1,011,367	2,160	14,108,677
1929–30	2,528,610	5,058,541	38,494	1,564,287	4,058,160	1,175,041	1,053	14,424,186

The oat crop showed considerable variation during the past decennium, ranging from 12,084,265 bushels in 1927–28 to 19,393,737 bushels in 1924–25, with an average around 14,700,000 bushels. The demand for the grain for oatmeal is limited to about 2,000,000 bushels annually. It is mainly used as feed grain, and its value, particularly in good seasons, is not sufficient to warrant the increase in cultivation which may be expected when oats are more generally marketed through live stock, and better prices thereby realized than those now offering in the local market.

The principal oat-growing State is Victoria, which produces on the average more than one-third of the total quantity of oats grown in all States. South Australia, Western Australia, and Tasmania, also produce considerable quantities in excess of local requirements. Western Australia disposes of its surplus to the East, principally to British Malaya, whilst the other States export chiefly to New South Wales and Queensland. For Australia as a whole the record yield of oats was obtained during 1924–25, when 19,393,737 bushels were harvested.

(ii) *Average Yield.* The average yield per acre of oats varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield in each of the last five seasons, and for the decennium 1920 to 1930 are given in the succeeding table :—

OATS.—AVERAGE YIELD PER ACRE, 1925-26 TO 1929-30.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1925–26	15.97	11.42	11.25	11.44	10.56	22.74	18.27	12.05
1926–27	18.10	16.10	7.97	11.26	11.57	28.06	12.04	14.89
1927–28	14.39	8.85	19.27	7.00	12.41	32.59	9.94	10.77
1928–29	17.23	16.14	15.00	8.40	10.91	26.90	7.32	13.49
1929–30	13.94	8.03	19.22	5.63	10.54	30.08	6.50	9.52
Average for 10 seasons 1920–30	16.99	15.25	17.61	9.84	11.42	27.75	14.63	14.11

The smallest average yield per acre ever recorded for Australia was that experienced in the abnormally dry season 1914–15, viz., 5.60 bushels, while the largest in the past ten years was that of the season 1920–21, amounting to 19.77 bushels per acre.

2. **World's Production.**—The production of oats in the world for the year 1929, as reported by the International Institute of Agriculture, amounted to 3,937 millions of bushels. Compared with 1928 the area in 1929 increased by over 3 million acres, but unfavourable seasons resulted in a decreased production of 124 million bushels. The average yield per acre in 1929 was 26.02 bushels. In the pre-war years 1909 to 1913 the production averaged 3,613 millions of bushels from an average area of 142,870,000 acres. Subsequently the area declined, principally in Europe, but for 1929 a total was returned of 151,000,000 acres, an increase of approximately 8,000,000 acres over the pre-war period.

3. **Prices of Oats.**—The average wholesale prices of oats in the markets of the several capitals for the year 1929–30 are given in the following table :—

OATS.—AVERAGE WHOLESALE PRICES, 1929-30.

Particulars.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	4 6¾	3 7¾	5 0½	3 0½	2 3	3 7

4. **Imports and Exports.**—The production of oats in Australia has not yet reached sufficient proportions to admit of a regular export trade; in fact in three of the years in the following table imports have exceeded the exports. The quantities and values of oats imported into and exported from Australia during the years 1925–26 to 1929–30 are given hereunder :—

OATS.—IMPORTS AND EXPORTS, AUSTRALIA, 1925-26 TO 1929-30.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1925–26 ..	266,103	49,927	76,978	15,844	—189,125	—34,083
1926–27 ..	197,070	40,553	137,768	26,301	— 59,302	—14,252
1927–28 ..	525,568	92,301	64,987	14,172	—460,581	—78,129
1928–29 ..	38,993	8,045	90,463	18,833	51,470	10,788
1929–30 ..	8,658	2,181	117,300	24,950	108,642	22,769

NOTE.—(—) signifies net import.

The principal country from which imports of oats have been obtained is New Zealand, while the principal countries to which oats were exported during the period under review were New Zealand, Malaya (British), Ceylon, and Netherlands East Indies.

5. **Oatmeal, etc.**—The production of oatmeal in Australia during 1929–30 amounted to 329,846 cwts., practically the whole of which is consumed locally, the quantity of oats used for oatmeal being 1,911,599 bushels or 13 per cent. of the total production. Oversea trade in this and similar products is small, the importations of oatmeal, wheatmeal and rolled oats during 1929–30 amounting to 4,374 cwts., while the exports totalled 6,028 cwts.

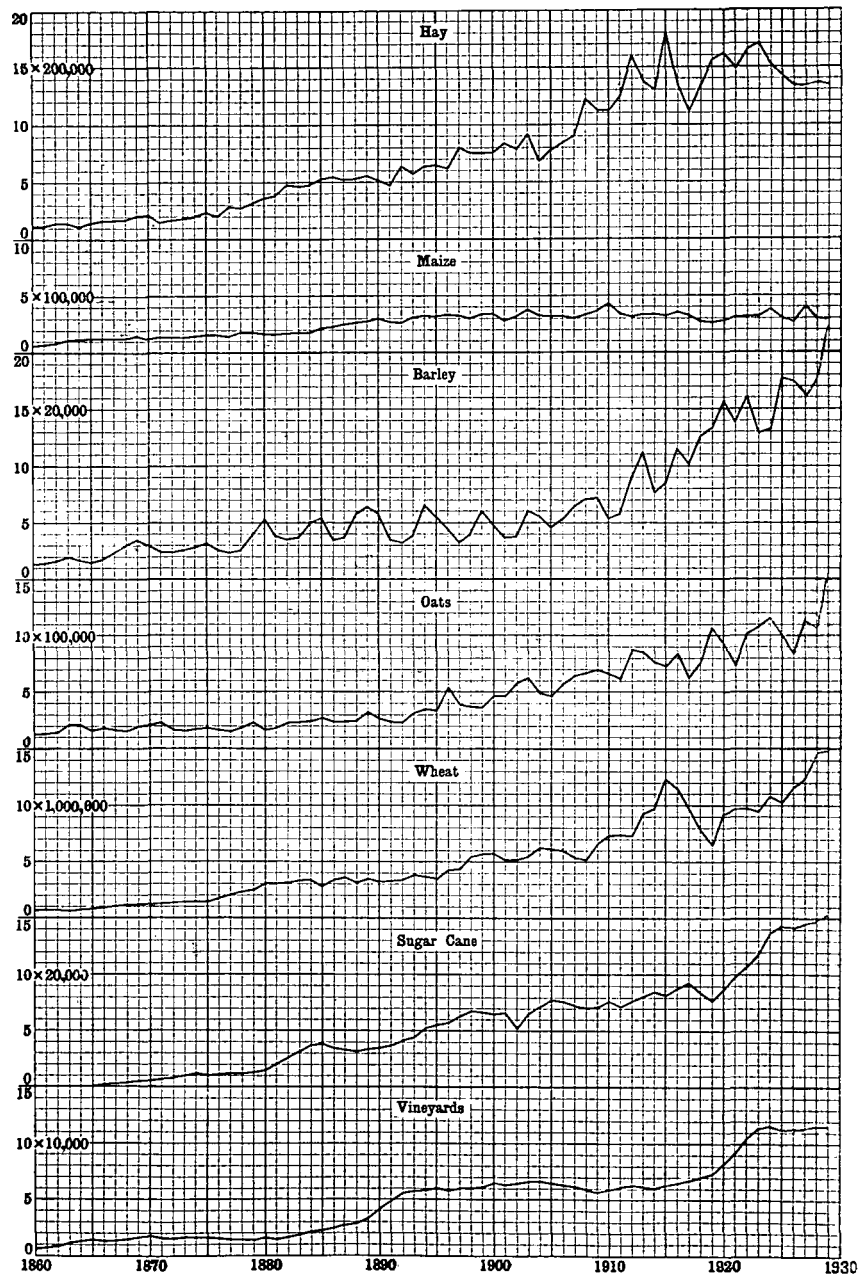
6. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of Australia for the season 1929–30 is as follows :—

OATS.—VALUE OF CROP,(a) 1929 30.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value..	410,900	843,090	9,664	250,938	388,906	193,270	171	2,096,939
Value per acre ..	£2/5/4	£1/6/9	£4/16/6	£0/18/1	£1/0/2	£4/19/0	£1/1/2	£1/7/8

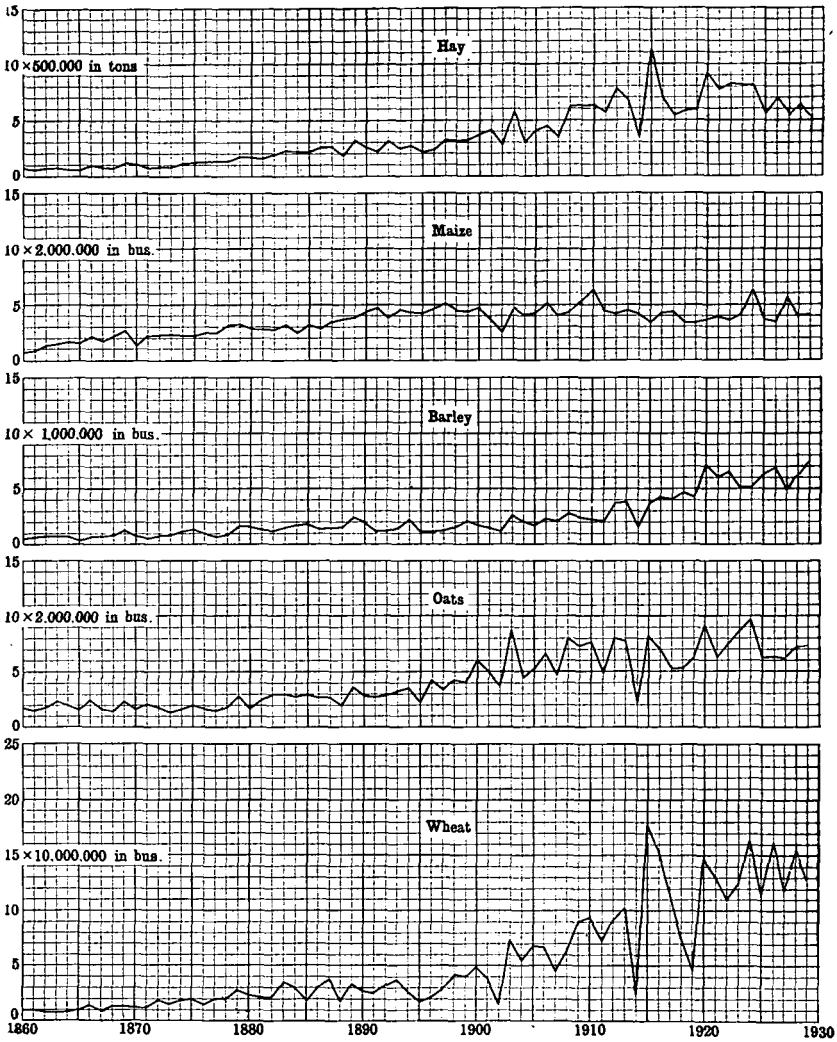
(a) Exclusive of the value of straw.

AREA UNDER PRINCIPAL CROPS—AUSTRALIA, 1860 TO 1930.



EXPLANATION.—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given on the left of the graph. The height of each curve above its base line denotes, for the crop to which it relates, the total area under cultivation in Australia during the successive seasons.

PRODUCTION OF PRINCIPAL CROPS—AUSTRALIA, 1860 TO 1930.



EXPLANATION.—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 wheat, 10,000,000 bushels; oats, 2,000,000 bushels; barley, 1,000,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each curve above its base line denotes the aggregate yield in Australia of the particular crop during the successive seasons.

§ 6. Maize.

1. States Growing Maize.—Maize is grown for grain chiefly in New South Wales and Queensland, the area so cropped in these States during the season 1929–30 being 279,833 acres, or 94 per cent. of the total for Australia. Of the balance, Victoria contributed 17,640 acres, and Western Australia 29 acres. The climate of Tasmania is unsuitable for the growing of maize for grain. In the States mentioned the crop is grown to a greater or less extent for green forage, particularly in connexion with the dairying industry.

2. Progress of Maize-growing.—(i) *Area and Production.* Notwithstanding its valuable properties and its pre-eminence as the world's most extensively grown cereal, the cultivation of maize has decreased in Australia during the past decennium. Compared with the previous year, the area in 1929–30 decreased by more than 18,000 acres. The greatest area under this cereal was in 1910–11, when 414,914 acres were sown. The average area under cultivation during the decennium 1920–30 was 321,443 acres.

The area and production of maize for grain in each State are given in the following table for the last five years. The fluctuations from year to year are shown more fully on the graph herein.

MAIZE.—AREA AND PRODUCTION, 1925–26 TO 1929–30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Nor. Ter.	Fed. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26	120,955	21,913	154,252	2	8	10	..	297,140
1926–27	128,512	20,046	137,542	2	32	40	4	286,178
1927–28	148,801	17,645	234,013	..	63	10	12	400,544
1928–29	106,835	16,077	192,173	..	55	..	..	315,140
1929–30	108,219	17,640	171,614	..	29	..	..	297,502
PRODUCTION.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1925–26	3,278,350	768,761	3,384,172	51	227	..	..	7,431,561
1926–27	3,625,410	685,407	2,658,895	99	342	..	120	6,970,273
1927–28	3,930,570	757,780	6,703,518	..	1,098	..	84	11,393,050
1928–29	2,506,470	679,810	5,135,607	...	831	..	..	8,322,718
1929–30	3,035,850	533,719	4,376,412	..	339	..	..	7,946,320

The maximum production of maize in Australia was recorded in 1910–11, when the harvest amounted to over 13,000,000 bushels. This figure was considerably in excess of the yields during recent years, except that of 1924, when a bountiful harvest in Queensland increased the Australian total to 12,400,000 bushels. The production for the year under review amounted to 7,946,320 bushels, while the average for the past decennium was 8,510,000 bushels.

(ii) *Average Yield.* The following table gives particulars of the average yield per acre of the maize crops of the States for the seasons 1925–26 to 1929–30, and for the decennium 1920–1930:—

MAIZE.—AVERAGE YIELD PER ACRE, 1925-26 TO 1929-30.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1925–26	27.10	35.08	21.94	25.50	28.38	..	..	25.01
1926–27	28.21	34.19	19.33	49.50	10.69	..	30.00	24.36
1927–28	26.42	42.95	28.65	..	17.43	..	7.00	28.45
1928–29	23.46	42.28	26.72	..	15.11	..	..	26.41
1929–30	28.05	30.26	25.50	..	11.69	..	..	26.71
Average for 10 seasons 1920–30	27.03	39.68	24.26	19.90	13.13	5.70	20.83	26.47

The average yield of maize per acre in Victoria during the year 1929–30 was amongst the highest in the world. This is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts peculiarly suited to its growth. The average yield in New South Wales generally exceeds that obtained in Queensland.

(iii) *Yield per Acre Various Countries.* The average yield of maize per acre in Australia for the past 10 years was 26.5 bushels per acre. Of the principal maize producing countries the United States has an average of 27.6 bushels, Argentine 32.3 bushels, Rumania 15.5 bushels, and the Soviet Republic 16.1 bushels per acre.

3. **World's Production.**—The maize harvest in 1925, when the production amounted to 4,685 million bushels, was one of the most abundant on record. Since then the total yield has declined, except in 1929 when an increase of approximately 200 million bushels was recorded. The average yields per acre since 1927 are 24, 22, and 23 bushels respectively. The total yields from 1909 to 1928 were as follows:—

Average 1909 to 1913, 4,119,000,000 bushels.
1925, 4,685,000,000 bushels.
1926, 4,463,700,000 ,,
1927, 4,391,000,000 ,,
1928, 4,248,000,000 ,,
1929, 4,440,000,000 ,,

4. **Australian and Foreign Maize Production.**—The United States of America is the most important maize-producing country of the world. Approximately 100,000,000 acres are planted annually, and nearly 3,000,000,000 bushels are reaped, representing about 75 per cent. of the world's production. Of the huge quantities raised, about 85 per cent. is fed to live stock on farms, 10 per cent. is used for human food, and only a very small fraction, viz., 1½ per cent., is exported.

5. **Price of Maize.**—The average wholesale price of maize in the Sydney market for each of the last five years is given in the following table:—

MAIZE.—AVERAGE PRICE, SYDNEY, 1925-26 TO 1929-30.

Particulars.	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Average price per bushel ..	5 8	6 10	4 7	4 11¾	6 0½

6. Oversea Imports and Exports.—The decline in the production of maize in Australia of late years has necessitated an average annual import of more than 500,000 bushels during the past quinquennium, the bulk of the supplies being furnished by South Africa. Details of imports and exports for the years 1925-26 to 1929-30 are as follow :—

MAIZE.—IMPORTS AND EXPORTS, AUSTRALIA, 1925-26 TO 1929-30.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1925-26 ..	1,562,453	323,486	54,720	14,734	1,507,733	308,752
1926-27 ..	1,173,514	277,821	2,477	890	1,171,037	276,931
1927-28 ..	115,638	25,443	145,402	24,421	— 29,764	1,022
1928-29 ..	773	539	278,289	50,451	— 277,516	— 49,912
1929-30 ..	66,968	13,899	5,911	824	61,057	13,075

NOTE.—(—) denotes net exports.

7. Prepared Maize.—A small quantity of corn-flour is imported annually into Australia, the principal countries of supply being the United Kingdom, South Africa, and the United States of America. During the year 1929-30 the imports amounted to 702,062 lb., and represented a value of £7,956. The exports from Australia are small, and in 1929-30 amounted to only 19,398 lb., valued at £409.

8. Value of Maize Crop.—The value of the Australian maize crop for the season 1929-30 has been estimated at £2,084,697, made up as follows :—

MAIZE.—VALUE OF CROP, 1929-30.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	F.C.T.	Australia.
	£	£	£	£	£	£	£
Aggregate value	923,410	144,549	1,016,604	..	134	..	2,084,697
Value per acre	£8/10/8	£8/3/11	£5/18/6	..	£4/12/5	..	£7/0/0

§ 7. Barley.

1. Progress of Cultivation.—(i) *Area and Production.* The area under barley in Australia has fluctuated very considerably, but results for the last ten years show a marked advance. The average annual area sown for the decennium 1920 to 1930 amounted to 336,889 acres, which was nearly double the average of the previous ten-yearly period, i.e., 190,913 acres. Victoria was originally the principal barley-growing State, but the rapid expansion of the cultivation of this crop in South Australia during recent years brought the latter State into the lead in 1913-14, and, during 1929-30, the area under barley in South Australia accounted for more than 67 per cent. of the Australian acreage. Victoria was next in importance with 22 per cent., leaving a small balance of about 11 per cent. distributed among the other States. The figures here given relate to

the areas harvested for grain ; small areas only are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this subsection. The area and production of barley for grain in the several States are shown in the following table for the last five years, while the progress since 1860 is illustrated in the graphs herein :—

BARLEY.—AREA AND PRODUCTION, 1925-26 TO 1929-30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
			AREA.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26 ..	6,614	103,395	7,001	239,337	13,306	5,223	374,876
1926–27 ..	5,626	88,896	399	256,528	13,826	5,665	*a*370,943
1927–28 ..	5,600	76,768	3,220	219,491	12,138	5,101	322,318
1928–29 ..	5,024	75,451	7,654	247,348	14,429	4,613	*b*354,539
1929–30 ..	7,947	97,678	9,754	305,316	23,649	6,935	*c*451,339
			PRODUCTION.				
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1925–26 ..	105,150	1,774,963	92,441	4,134,824	158,300	90,619	6,356,297
1926–27 ..	100,221	1,920,722	1,991	4,630,044	128,136	149,800	*a*6,930,953
1927–28 ..	65,850	1,552,109	72,400	3,001,420	126,835	141,407	4,960,021
1928–29 ..	80,910	1,556,118	107,593	4,583,715	189,560	99,085	*b*6,617,341
1929–30 ..	113,850	2,183,325	205,567	4,656,254	261,870	166,984	*c*7,588,852

(*a*) Including Federal Capital Territory, 3 acres, 39 bushels.
(*b*) Including Federal Capital Territory, 20 acres, 360 bushels.
(*c*) Including Federal Capital Territory, 60 acres, 1,002 bushels.

The States in which the annual production of barley averaged over 1,000,000 bushels for the past decade were South Australia and Victoria, the yields being respectively 3,828,456 and 1,916,154 bushels, the higher return per acre in the latter State tending to diminish the advantage held by South Australia in regard to acreage.

(ii) *Malting and other Barley.* (*a*) *Year 1929–30.* In recent years the statistics of all the States have distinguished between " malting " and " other " barley. Particulars for the season 1929-30 are as follow :—

BARLEY, MALTING AND OTHER.—AREA AND PRODUCTION, 1929-30.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley ..	4,803	65,740	6,318	287,900	17,806	6,287	388,854
Other barley ..	3,144	31,938	3,436	17,416	5,843	648	*a*62,485
Total ..	7,947	97,678	9,754	305,316	23,649	6,935	*a*451,339
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Malting barley ..	74,460	1,378,022	139,604	4,501,605	195,492	149,667	6,438,850
Other barley ..	39,390	805,303	65,963	154,649	66,378	17,317	*a*1,150,002
Total ..	113,850	2,183,325	205,567	4,656,254	261,870	166,984	*a*7,588,852

(*a*) Including Federal Capital Territory, 60 acres, 1,002 bushels.

Taking Australia as a whole, about 86 per cent. of the area under barley in 1929–30 was sown with the malting variety. The proportion varies largely in the several States.

(*b*) *Progress of Cultivation.* The following table sets out the acreage and production of malting and other barley in Australia as a whole during the past five seasons :—

BARLEY, MALTING AND OTHER.—AREA AND PRODUCTION, AUSTRALIA, 1925-26 TO 1929-30.

Season.	Acres.			Bushels.			Average Yields per Acre.		
	Malting.	Other.	Total.	Malting.	Other.	Total.	Malting.	Other.	Total.
1925-26 ..	319,441	55,435	374,876	5,401,489	954,808	6,356,297	16.91	17.22	16.96
1926-27 ..	320,846	50,097	370,943	5,872,144	1,058,809	6,930,953	18.30	21.13	18.68
1927-28 ..	276,483	45,835	322,318	4,040,975	919,046	4,960,021	14.62	20.05	15.39
1928-29 ..	307,154	47,385	354,539	5,691,673	925,668	6,617,341	18.53	19.53	18.66
1929-30 ..	388,854	62,485	451,339	6,438,850	1,150,002	7,588,852	16.56	18.40	16.81
Average 10 seasons 1920-30	278,988	57,901	336,889	5,076,764	1,151,750	6,228,514	18.20	19.89	18.49

During the past ten seasons the area and production of malting barley have represented more than four times the corresponding figures for other barley. The average yield per acre differs very little in respect of the two classes, the results for the past ten-yearly period being slightly in favour of the Cape variety.

(iii) *Average Yield.* The average yield of barley per acre varies considerably in the different States, being as a rule highest in Victoria and Tasmania, and lowest in Western Australia. Details for each State during the past five seasons, and for the decennium 1920–30, are given in the following table :—

BARLEY.—YIELD PER ACRE, 1925-26 TO 1929-30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1925–26	15.90	17.17	13.20	17.28	11.89	17.35	16.96
1926–27	17.81	21.61	4.99	18.05	9.27	26.44	18.68
1927–28	11.76	20.22	22.48	13.67	10.45	27.72	15.39
1928–29	16.10	20.62	14.06	18.53	13.14	21.48	18.66
1929–30	14.33	22.35	21.08	15.25	11.07	24.08	16.81
Average for 10 seasons 1920–30	16.20	22.30	18.07	17.35	11.52	23.64	18.49

2. **Comparison with Other Countries.**—In comparison with the barley production of other countries, that of Australia appears extremely small. Particulars for some of the leading countries during recent years are as follows, viz., United States 258 million bushels; Soviet Republic 220 million bushels; Germany 129 million bushels; India 110 million bushels; and Canada 107 million bushels.

3. **World's Production.**—The area under barley in 1929 exceeded that of the previous year. Compared with the average pre-war area, i.e., for 1909–13, the total under cultivation in 1929, amounting to nearly 93 million acres, showed an increase of

about 7,500,000 acres. Weather conditions were generally favourable, and the yield of 1,897 million bushels was the greatest recorded since the war. The production of barley in millions of bushels from 1909 onwards was as follows :—

Year.	Production.
Average 1909–1913	1,676 millions of bushels.
1925	1,619 "
1926	1,531 "
1927	1,567 "
1928	1,783 "
1929	1,897 "

4. Price of Barley.—The average price of barley in the Melbourne market during each of the past five years is given in the following table :—

BARLEY.—AVERAGE MELBOURNE PRICE PER BUSHEL, 1925-26 TO 1929-30.

Particulars.	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.
	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley	4 11	4 3	4 7¾	4 7	4 1
Cape barley	..	3 11	4 3	3 6	3 3¾

5. Imports and Exports.—Australian exports of barley during the last five years averaged 1,185,800 bushels. The grain was consigned mainly to the United Kingdom and Belgium, South Australia being the principal exporting State. Particulars of the Australian overseas imports and exports for the years 1925-26 to 1929-30 are contained in the following table :—

BARLEY.—IMPORTS AND EXPORTS, AUSTRALIA, 1925-26 TO 1929-30.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1925–26	32	14	729,528	142,948	729,496	142,934
1926–27	696	285	2,021,480	383,103	2,020,784	382,818
1927–28	262	108	1,251,444	291,636	1,251,182	291,528
1928–29	150	58	1,279,014	228,707	1,278,864	228,649
1929–30	1,760	745	647,542	99,046	645,782	98,301

In some years there is an export of Australian pearl and Scotch barley, the total for 1929-30 reaching 16,209 lb., valued at £171, consigned mainly to the Pacific Islands.

6. Imports and Exports of Malt.—In pre-war times the imports of malt into Australia were fairly extensive, the supply being obtained principally from the United Kingdom. Since the outbreak of the war in 1914, however, imports have practically ceased, and in 1917–18 and 1920–21 fairly large quantities were exported to South Africa and Japan. Details of imports and exports for the years 1925–26 to 1929–30 are given in the next table :—

MALT.—IMPORTS AND EXPORTS, AUSTRALIA, 1925-26 TO 1929-30.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1925–26	325	182	1,830	971	1,505	789
1926–27	688	197	2,285	1,340	1,597	1,143
1927–28	365	119	3,593	1,498	3,228	1,379
1928–29	508	186	4,958	1,897	4,450	1,711
1929–30	133	92	8,185	3,467	8,052	3,375

7. **Value of Barley Crop.**—The estimated value of the barley crop for the several States of Australia for the season 1929-30 and the value per acre are shown in the following table :—

BARLEY.—VALUE OF CROP(*a*), 1929-30.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
Total value..	£25,080	£382,530	£43,125	£713,328	£43,645	£30,180	£196	£1,238,084
Value per acre	£3/3/1	£3/18/4	£4/8/5	£2/6/9	£1/16/11	£4/7/0	£3/5/4	£2/14/10

(*a*) Exclusive of the value of straw.

§ 8. Rice.

The success attending the efforts of rice growers on the Murrumbidgee Irrigation Area has proved that rice can be grown profitably on the settlement. Experimental rice cultivation has been carried on at the Yanco Experimental Farm for some years, but it was not until 1924–25 that an attempt was made to grow the cereal on a commercial basis. Over-production should not present undue difficulties, as there is a ready market in the East, as well as in England and Germany. The United States of America first grew rice commercially in 1912, and having met its own requirements is now exporting to European countries and to Japan. The Commonwealth Government has protected the new industry by the imposition of a Customs duty of 8s. 4d. per cental on uncleaned rice and 12s. 6d. per cental on other than uncleaned.

Details of the area, production, and average yield, &c., since 1924–25 will be found in the following table :—

RICE.—AREA, PRODUCTION, ETC., AUSTRALIA, 1924-25 to 1929-30.

Year.	Area.	Production.	Average Yield.	Imports.	Exports.	Retail Price.
	Acres.	Bushels.	Bushels.	Bushels.	Bushels.	Pence per lb.
1924–25 ..	153	16,240	106.14	861,659	..	3.43
1925–26 ..	1,559	61,133	39.21	1,209,693	..	3.40
1926–27 ..	3,967	214,860	54.16	1,195,706	..	3.65
1927–28 ..	9,901	879,113	88.88	521,776	288	3.79
1928–29 ..	14,058	1,307,641	93.02	237,493	7,250	3.74
1929–30 ..	19,789	1,829,297	92.44	282,489	30,866	3.65

The area and production shown in the above table refer chiefly to the Murrumbidgee Irrigation Area. The production from several small experimental plots in other States is also included, but the quantity is negligible. According to the report of the Irrigation Commission of New South Wales, there are about 53,000 acres of land in the irrigation

settlement suitable for rice-growing, and it is estimated that at least 40,000 acres could be so used, of which, probably, 20,000 acres would be under fallow each year and 20,000 under crop. Annual local requirements are computed at 1,100,000 bushels, but the production during the past two years has exceeded consumption, the surplus of Australian-grown rice thus available being exported chiefly to the United Kingdom, New Zealand, and Nauru.

§ 9. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the principal other grain and pulse crops grown in Australia are beans, peas, and rye. The total area under the two former crops for the season 1929–30 was 50,288 acres, giving a yield of 812,760 bushels, or an average of 16.16 bushels per acre, being above the average yield for the decennium ended 1929–30, which was 15.85 bushels per acre. The States in which the greatest area is devoted to beans and peas are Tasmania, South Australia and Victoria. Peas are exported in considerable quantities to the United Kingdom, the chief exporting State being Tasmania. The total area under rye in Australia during the season 1929–30 was 5,892 acres, yielding 75,332 bushels, giving an average of 12.79 bushels per acre. This was lower than the average for the past ten seasons, which was 13.14 bushels per acre. Over 76 per cent. of the rye grown during the season was produced in New South Wales, and 14 per cent. in Victoria.

§ 10. Potatoes.

1. Progress of Cultivation.—(i) *Area and Production.* The principal potato-growing State is Victoria, which possesses peculiar advantages for the growth of this tuber. The rainfall is generally satisfactory, while the atmosphere is sufficiently dry to be unfavourable to the spread of Irish blight, consequently potatoes are grown in nearly every district except in the wheat belt. Tasmania comes next in order of importance, followed by New South Wales.

The area and production of potatoes in each State during the last five years are given hereunder:—

POTATOES.—AREA AND PRODUCTION, 1925-26 TO 1929-30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
				AREA.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26 ..	22,723	63,369	10,478	2,895	4,262	33,190	8	136,925
1926–27 ..	21,906	66,185	8,642	3,549	5,144	33,984	35	139,445
1927–28 ..	21,578	77,649	10,035	4,309	5,280	44,359	21	163,231
1928–29 ..	14,830	68,412	8,154	4,518	4,819	37,299	16	a138,068
1929–30 ..	12,785	58,789	8,116	4,536	6,024	33,722	8	123,980
				PRODUCTION.				
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1925–26 ..	43,031	160,729	15,386	10,764	16,052	67,341	56	313.409
1926–27 ..	53,223	162,909	9,749	15,375	17,755	114,100	65	373,176
1927–28 ..	47,397	230,348	18,914	17,749	16,746	138,837	50	470,041
1928–29 ..	26,339	140,158	9,687	13,859	18,774	75,222	11	284,050
1929–30 ..	23,907	171,747	13,214	14,990	27,546	91,137	..	342,541

(a) Includes Northern Territory, 20 acres.

The cultivation of potatoes in Australia during the last five years was fairly uniform, except in 1927–28, when the area was increased by nearly 24,000 acres, chiefly owing to larger planting in Victoria and Tasmania. The production for the year 1929–30 amounted to 342,541 tons, as compared with an average of 365,241 tons for the last ten years and 360,407 tons for the previous decennial period. The record production of 507,153 tons was obtained in 1906–7.

(ii) *Average Yield.* The suitability of the soil, climate, and general conditions for potato growing is evidenced by the satisfactory yields per acre which are generally obtained in Australia, the average yield during the past ten seasons being 2.61 tons per acre. The lowest yield was shown by Queensland with an average of 1.64 tons for the same period.

Particulars for each State for the seasons 1925–26 to 1929–30, and for the past decennium, are given hereunder :—

POTATOES.—YIELD PER ACRE, 1925–26 TO 1929–30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1925–26	1.90	2.54	1.47	3.72	3.77	2.03	7.00	2.29
1926–27	2.43	2.46	1.13	4.33	3.45	3.36	1.86	2.68
1927–28	2.40	2.97	1.88	4.12	3.17	3.13	2.38	2.88
1928–29	1.78	2.05	1.19	3.07	3.90	2.02	0.69	2.06
1929–30	1.87	2.92	1.63	3.30	4.57	2.70	1.13	2.76
Averages for 10 seasons 1920–30	2.14	2.70	1.64	3.56	3.77	2.70	3.06	2.61

The comparatively low yield per acre as compared with many other countries where the return is double that of Australia is due in large measure to the neglect of rotation, and the insufficient use of manures. The production in New Zealand, for example, in 1929–30 averaged 5.60 tons per acre from an area of 23,214 acres, as compared with 2.61 tons per acre from 140,000 acres in Australia.

(iii) *Relation to Population.* The average annual production of potatoes per head of the population of Australia for the past five seasons was approximately 130 lb. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906–7 was nearly a ton, while for the past five seasons it has averaged almost 9 cwt. Details for all States for the seasons 1925–26 to 1929–30 are as follows :—

POTATOES.—PRODUCTION PER 1,000 OF POPULATION, 1925–26 TO 1929–30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1925–26 ..	19	95	18	20	43	310	14	52
1926–27 ..	23	95	11	27	47	531	13	61
1927–28 ..	20	132	21	31	43	643	9	75
1928–29 ..	11	80	11	24	46	347	1	45
1929–30 ..	10	97	14	26	66	416	..	53

(iv) *Consumption.* Oversea trade in potatoes is comparatively small, and the consumption in Australia averages between 50 and 60 tons per 1,000 of population or about 128 lb. per head. From the above table, therefore, it is apparent that New South Wales, Queensland and South Australia do not produce the quantities necessary for their

requirements and must import from Tasmania and Victoria which have a surplus. Assuming that the consumption is uniform in each State, the following table which gives the average annual production and consumption indicates also estimated average annual deficiencies or surpluses for the last five years :—

POTATOES.—PRODUCTION AND CONSUMPTION—STATES, 1926-30.

State.	Average Annual Production.	Average Annual Consumption.	Average Annual Imports.
	1,000 Tons.	1,000 Tons.	1,000 Tons.
New South Wales	39	138	99
Victoria	173	100	— 73
Queensland	13	52	38
South Australia	15	33	18
Western Australia	20	22	3
Tasmania	97	12	— 85
Australia	357	357	..

The minus sign (–) denotes average exports.

2. Imports and Exports.—Under normal conditions there is a moderate export trade in potatoes carried on by Australia principally with the Pacific Islands and Papua. On the other hand, when the recurrence of droughts causes a shortage in any of the States, importations are usually made from New Zealand. The quantities and values of the Australian oversea imports and exports of potatoes during the past five years are shown in the following table :—

POTATOES.—IMPORTS AND EXPORTS, AUSTRALIA, 1925-26 TO 1929-30.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1925–26	8,168	77,056	1,017	16,674	— 7,151	— 60,382
1926–27	14,491	125,188	1,158	14,950	— 13,333	— 110,238
1927–28	218	1,831	2,132	16,619	1,914	14,788
1928–29	4	82	1,766	19,948	1,762	19,866
1929–30	52	736	1,173	16,974	1,121	16,238

NOTE.—The minus sign (–) signifies net imports.

3. Value of Potato Crop.—The estimated value of the potato crop of each State for the season 1929-30 is given in the following table, together with the value per acre :—

POTATOES.—VALUE OF CROP, 1929-30.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Total value ..	207,690	987,545	225,739	126,358	212,219	615,180	78	2,374,809(a)
Value per acre	£16/4/11	£16/16/0	£27/16/3	£27/17/2	£35/4/7	£18/4/10	£9/15/0	£19/3/1

(a) Includes £20, Northern Territory.

§ 11. 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 1929–30 being only 23,420 acres. The principal crops comprised are onions, mangolds, sugar beet, turnips, and "sweet potatoes." Of these, onions, sugar beet and mangolds are most largely grown in Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in Australia during the season 1929–30 was 8,935 acres, giving a yield of 49,790 tons, and averaging 5.57 tons per acre. The area devoted in 1929–30 to root crops other than potatoes and onions, viz., 14,485 acres, yielded 94,872 tons, and gave an average of 6.55 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," reference to which is made further on.

2. Imports and Exports.—The only root crop, other than potatoes, in which any considerable oversea trade is carried on by Australia is that of onions. During the past five years 11,073 tons, valued at £126,575, were imported, principally from Japan, the United States of America, and New Zealand, while during the same period the exports totalled 12,598 tons, valued at £124,161, and were shipped mainly to New Zealand, the Pacific Islands, the Philippine Islands, and Canada.

§ 12. Hay.

1. Nature and Extent.—(i) *Area and Production.* As already stated, the chief crop in Australia is wheat grown for grain. Next in importance is hay, which for the season 1929–30 averaged more than 12 per cent. of the total area cropped. In most European countries the hay consists almost entirely of meadow and other grasses, but in Australia a very large proportion is composed of wheat and oats. Large quantities of lucerne hay are also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States during the last five years is given hereunder. The progress from 1860 onwards may be traced from the graph accompanying this chapter.

HAY.—AREA AND PRODUCTION, 1925–26 TO 1929–30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	Fed. Cap. Ter.	Australia.
				AREA.					
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26	749,192	1,013,913	66,828	517,220	391,142	92,595	..	1,413	2,832,003
1926–27	623,424	1,080,993	40,141	496,105	358,487	98,289	..	2,192	2,699,631
1927–28	680,919	908,804	65,412	532,568	357,065	85,769	..	1,682	2,632,219
1928–29	684,730	1,005,063	55,498	497,538	414,866	80,190	..	788	2,738,673
1929–30	698,395	865,015	49,745	544,438	418,698	80,153	..	2,217	2,658,661
				PRODUCTION.					
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1925–26	564,006	929,068	99,742	612,671	355,269	114,920	..	2,269	2,677,945
1926–27	875,227	1,387,971	47,740	598,835	423,839	151,200	..	2,540	3,487,352
1927–28	754,176	1,001,251	94,996	464,905	416,707	124,924	..	2,004	2,858,963
1928–29	793,255	1,267,437	85,651	486,993	421,504	119,427	..	971	3,175,238
1929–30	686,962	963,089	79,583	445,579	428,328	119,800	..	1,933	2,725,274

In all the States marked fluctuations occur yearly in the area under hay. 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 grain is not satisfactory. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. The area under hay in Australia during the season 1915–16, i.e., 3,597,771 acres, was the highest on record, whilst the average during the past decennium amounted to 2,955,998 acres.

(ii) *Average Yield.* The States in which the highest average yields per acre have been obtained during the last decennium are Tasmania and Queensland, in which States also the smallest areas are devoted to this crop. For the same period the lowest yield for Australia as a whole was that of 21 cwt. per acre in 1929–30, while the highest was that of 29 cwt. in 1920–21, followed closely by 27 cwt. obtained in 1924–25. The average for the decennium was 24 cwt. Particulars for the several States for the seasons 1925–26 to 1929–30, and the average for the last ten years are given hereunder :—

HAY.—YIELD PER ACRE, 1925-26 TO 1929-30.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1925–26	0.75	0.92	1.49	1.18	0.91	1.24	..	1.60	1.05
1926–27	1.40	1.28	1.19	1.21	1.18	1.54	..	1.16	1.29
1927–28	1.11	1.10	1.45	0.87	1.17	1.46	..	1.19	1.09
1928–29	1.16	1.26	1.54	0.98	1.02	1.49	..	1.23	1.16
1929–30	0.98	1.11	1.60	0.82	1.02	1.49	..	0.87	1.03
Average for 10 seasons 1920–1930 ..	1.26	1.25	1.37	1.14	1.07	1.48	1.80	1.24	1.22

(iii) *Varieties Grown.* Particulars concerning the kinds 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 :—

HAY.—VARIETIES GROWN, 1925-26 TO 1929-30.

Varieties.	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.
NEW SOUTH WALES—	Acres.	Acres.	Acres.	Acres.	Acres.
Wheaten	449,653	311,073	369,960	375,270	381,071
Oaten	209,047	216,403	200,872	214,137	226,025
Barley	781	692	615	817	1,294
Lucerne	89,368	95,003	109,194	94,275	89,385
Other	343	253	278	231	620
Total	749,192	623,424	680,919	684,730	698,395

HAY.—VARIETIES GROWN, 1925-26 TO 1929-30—*continued.*

Varieties.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
	Acres.	Acres.	Acres.	Acres.	Acres.
VICTORIA—					
Wheaten	230,364	101,243	224,454	135,718	165,564
Oaten	759,209	959,019	659,983	845,731	675,256
Lucerne, etc.	24,040	20,731	24,367	23,614	24,195
Total ..	1,013,613	1,080,993	908,804	1,005,063	865,015
QUEENSLAND—					
Wheaten	10,514	2,798	3,637	4,585	3,811
Oaten	2,214	790	2,468	2,192	2,608
Lucerne	50,526	33,263	48,346	45,476	40,013
Other	3,574	3,290	10,961	3,245	3,313
Total	66,828	40,141	65,412	55,498	49,745
SOUTH AUSTRALIA—					
Wheaten	273,300	230,120	289,219	270,805	318,239
Oaten	234,923	256,417	233,709	218,140	212,956
Lucerne	6,218	5,613	5,649	4,833	5,447
Other	2,779	3,955	3,991	3,760	7,796
Total	517,220	496,105	532,568	497,538	544,438
WESTERN AUSTRALIA—					
Wheaten	238,110	207,841	223,827	250,786	209,893
Oaten	150,534	148,150	130,109	160,675	198,529
Lucerne	368	340	120	184	293
Other	2,130	2,156	3,009	3,221	9,983
Total	391,142	358,487	357,065	414,866	418,698

Wheaten hay is the principal hay crop in New South Wales, South Australia, and Western Australia, oaten hay in Victoria and Tasmania, and lucerne in Queensland. For all States the proportions of the principal kinds of hay produced average about 54.7 per cent. for oaten, 34.4 per cent. for wheaten, 9.8 per cent. for lucerne, and 1.1 per cent. for other hay.

2. **Comparison with 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, consequently any attempt to furnish extensive comparisons would be misleading. It may be noted, however, that in Great Britain the production of hay from clover, sainfoin, etc., for the year 1930 amounted to 2,980,000 tons from 2,005,536 acres, while from permanent grasses a yield of 5,843,000 tons of hay was obtained from 5,221,646 acres, giving a total of 8,823,000 tons from 7,227,182 acres, or about 24 cwt. per acre.

3. **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 Australia. During 1929-30, 355 tons were imported, while the exports amounted to 5,672 tons, valued at £34,319, the principal purchases being made by India, the Philippine Islands, Malaya (British), Ceylon, and Hong Kong.

4. Value of Hay Crop.—The following table shows the value, and the value per acre, of the hay crop of the several States for the season 1929-30 :—

HAY.—VALUE OF CROP, 1929-30.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Total Value ..	4,269,160	4,093,128	447,284	2,205,616	1,184,856	509,150	12,040	12,721,234
Value per acre ..	£6/2/3	£4/14/8	£3/19/10	£4/1/0	£2/16/7	£6/7/0	£5/8/7	£4/15/8

§ 13. Green Forage.

1. Nature and Extent.—(i) *Area.* In all the States a considerable area is devoted to the production of green forage, mainly in connexion with the dairying industry. The total area so cropped is considerably swollen in adverse seasons by the inclusion of wheat or other cereal crops deemed unsuitable for the production of either grain or hay. 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 during each of the last five years are given in the following table :—

GREEN FORAGE.—AREA, 1925-26 TO 1929-30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925-26	479,434	107,873	247,482	102,732	100,558	17,101	..	30	1,055,210
1926-27	217,385	87,241	342,580	105,170	109,314	19,213	..	54	880,957
1927-28	848,042	94,895	155,843	184,782	82,241	23,409	..	8	1,389,220
1928-29	264,699	107,351	180,524	155,460	125,311	25,402	..	837	859,584
1929-30	356,903	169,253	208,624	86,500	132,505	23,245	..	465	977,495

2. Value of Green Forage Crops.—The value of these crops is variously estimated in the several States, and the Australian total for the season 1929-30 may be taken approximately as £3,167,119 or about £3 4s. 10d. per acre.

§ 14. Sugar-cane and Sugar-beet.

1. Sugar-cane.—(i) *Area.* Sugar-cane for sugar-making purposes is grown only in Queensland and New South Wales, and much more extensively in the former than in the latter State. Thus, of a total area of 307,085 acres under sugar-cane in Australia for the season 1929-30, there were 291,660 acres, or about 95 per cent., in Queensland. Sugar-cane growing appears to have been started in Australia in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of 20 acres for the season 1862-63. In the following season the New South Wales returns show an area of 2 acres under this crop. The area under cane in New South Wales reached its maximum in 1895-96 with a total of 32,927 acres. Thenceforward with slight variations it gradually fell to 10,490 acres in 1918-19,but from that year it expanded until 1924-25, when about 20,000 acres were planted. Later, however, the area declined, and in 1929-30 only 15,425 acres were under cultivation. In Queensland,

although fluctuations in area are manifest, the general trend has been upwards, the acreage under cane for the season 1929-30 being the highest on record. The area under sugar-cane in Australia from 1925–26 is given in the following table, and particulars for earlier years may be seen from the accompanying graphs.

SUGAR-CANE.—AREA, 1925–26 TO 1929–30.

Season.	New South Wales.		Queensland.		Australia.		
	Productive.	Unproductive.	Productive.	Unproductive.	Productive.	Unproductive.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26 ..	8,688	10,675	189,675	79,834	198,363	90,509	288,872
1926–27 ..	10,128	8,181	189,312	77,207	199,440	85,388	284,828
1927–28 ..	8,556	7,905	203,748	71,090	212,304	78,995	291,299
1928–29 ..	6,783	9,055	215,674	67,802	222,457	76,857	299,314
1929–30 ..	7,967	7,458	214,880	76,780	222,847	84,238	307,085

(ii) *Productive and Unproductive Cane.* The areas given in the preceding table do not include the small acreage cut for green forage. The whole area was not necessarily cut for crushing during any one season, there being always a considerable amount of young and "stand over" cane, as well as a small quantity required for plants. The season in which the highest acreage is recorded may not show the greatest area of productive cane cut for crushing, as was evidenced in 1923–24, when, although the total acreage was greater, the area cut was less than in the previous year.

(iii) *Production of Cane and Sugar.* Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897–98. In that season the total for Australia was 1,073,883 tons, as against the maximum production of 3,965,587 tons in 1925–26. The average production of cane during the decennium ended 1929–30 was 3,148,291 tons. The three highest yields of sugar were in 1929–30, 1928–29, and 1925–26, the quantities being 538,084 tons, 537,574 tons, and 517,970 tons respectively. The decennial average was 402,082 tons of sugar. Particulars relative to the total production of cane and sugar for the past five years are as follows :—

SUGAR-CANE.—PRODUCTION OF CANE AND SUGAR, 1925–26 TO 1929–30.

Season.	New South Wales.		Queensland.		Australia.	
	Cane.	Sugar.	Cane.	Sugar.	Cane.	Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1925–26 ..	297,335	32,385	3,668,252	485,585	3,965,587	517,970
1926–27 ..	230,254	26,604	2,925,662	389,272	3,155,916	415,876
1927–28 ..	208,612	23,349	3,555,827	485,745	3,764,439	509,094
1928–29 ..	147,414	16,954	3,736,311	520,620	3,883,725	537,574
1929–30 ..	174,110	19,568	3,581,265	518,516	3,755,375	538,084

The production of raw sugar in Australia in 1929–30 amounted to 538,084 tons manufactured from 3,755,375 tons of cane. These figures show a small improvement on the returns for the previous year, the fall in Queensland having been more than counterbalanced by an increase in New South Wales. The assistance given by the Commonwealth and State Governments during recent years has greatly benefited the sugar industry. In 1920–21 the area cultivated in Queensland was 162,619 acres and the number of cane farmers was 3,930, whereas in 1929–30, 291,660 acres were under cultivation and the number of growers of five acres and over had risen to 6,247, or an increase of 2,317 in the nine years.

Final figures for the 1930–31 season are not yet complete, but it is anticipated from the data available that the production of raw sugar will amount to 536,603 tons from 3,703,660 tons of cane crushed.

Early indications point to a reduced crop in 1931–32, and it is anticipated that the production will amount to about 530,000 tons of raw sugar.

(iv) *Average Yield of Cane and Sugar.* 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 25.59 tons for the former and 17.70 for the latter State. For some years prior to 1910–11, the yield in New South Wales remained practically constant at about 21 tons per acre. Since that year, the average yield per acre has shown an upward tendency, reaching 30 tons or over during 1913–14, 1914–15, 1917–18, and 1925–26. The climatic conditions affecting the long coastal area where this industry is situated in Queensland are largely responsible for the great variations in the yields of sugar for that State, the figures ranging during the past decennium from 14.75 tons per acre in 1923–24 to 19.34 tons in 1925–26.

The greatest production of sugar per acre crushed during the past decennium occurred in 1925–26, when 2.61 tons were obtained, the respective crushings for New South Wales and Queensland averaging 3.73 and 2.56 tons. The average yield per acre for the past ten years was 2.91 tons in New South Wales, and 2.28 tons in Queensland.

(v) *Quality of Cane.* The quantity of cane required to produce a ton of sugar varies with the variety planted, the district where grown, and with the season, and for the decennium ended 1929–30 averaged 7.83 tons, the average production of sugar being 12.77 per cent. of the weight of cane crushed. As the result of the systematic study of cane culture in Queensland, the sugar contents of the cane have been considerably increased in recent years, and in 1929 only 6.91 tons of cane were required to produce one ton of sugar. It is believed that this is the highest sugar content obtained anywhere in the world. During the ten years ended 1919–20 it required on the average 8.61 tons of cane to produce one ton of sugar, whereas the average figure for the past decennium was reduced to 7.83 tons.

SUGAR-CANE AND SUGAR.—YIELD PER ACRE, 1925-26 TO 1929-30.

Season.	New South Wales.			Queensland.			Australia.		
	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1925–26	34.22	3.73	9.18	19.34	2.56	7.55	19.99	2.61	7.66
1926–27	22.73	2.63	8.65	15.45	2.06	7.52	15.82	2.09	7.59
1927–28	24.38	2.73	8.93	17.45	2.38	7.32	17.73	2.40	7.39
1928–29	21.73	2.50	8.69	17.32	2.41	7.18	17.46	2.42	7.22
1929–30	21.85	2.46	8.90	16.67	2.41	6.91	16.85	2.41	6.98
Average 10 seasons 1920–30 ..	25.59	2.91	8.78	17.70	2.28	7.78	18.03	2.30	7.83

The Bureau of Sugar Experiment Stations established in Queensland is rendering useful service to the sugar industry in that State by advocating and demonstrating better methods of cultivation, the use of green manures, limes, and fertilizers, together with the introduction and distribution of improved varieties of sugar cane. During the year 1929 a re-organization of the Bureau was effected, and it now comprises four divisions—Soils and Agriculture, Pathology, Entomology, and Sugar Mill Technology. Further experiments were conducted in connexion with cane cutting by machine, and results are regarded as satisfactory.

(vi) *Relation to Population.* The yield of sugar in Australia during the five years 1925–26 to 1929–30 was more than sufficient to supply local requirements, the average production during the period amounting to 181 lb. per head of population, while the consumption was estimated to average 118 lb. per head. Details for the period 1925–26 to 1929–30 are as follow :—

SUGAR.—PRODUCTION PER HEAD OF POPULATION, 1925-26 TO 1929-30.

State.	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.
	lb.	lb.	lb.	lb.	lb.
New South Wales ..	32	25	22	16	18
Queensland	1,263	988	1,210	1,272	1,248
Australia	194	152	183	190	188

2. **Sugar-beet.**—(i) *Area and Yield.* The following table shows the acreage under sugar-beet, and the production in Victoria, in which State alone is sugar-beet grown, during the past five seasons :—

SUGAR-BEET.—AREA AND PRODUCTION IN VICTORIA, 1925-26 TO 1929-30.

Particulars.		1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
Area harvested ..	acres	1,880	2,024	2,353	2,130	2,500
Production ..	tons	21,194	9,851	25,438	15,237	26,525
Average per acre ..	,,	11.27	4.87	10.81	7.15	10.61
Sugar produced ..	,,	2,315	1,177	2,352	2,096	3,472

Seasonal conditions were favourable during 1929-30, the yield amounting to 26,525 tons. The sugar content, however, was not so high, the quantity of beet required to produce one ton of sugar being 7.64 tons as compared with 7.26 tons for the previous year. The average production per acre was 10.61 tons, while the average for the ten years ending 1930 was 10.05 tons.

(ii) *Encouragement of Beet-growing.* During recent years an effort has been made to expand the sugar-beet industry in Victoria. The State Government has advanced its irrigation scheme on the Macalister River to provide water for the district, and it is hoped that the industry will be greatly assisted thereby. A fine grade of white sugar is manufactured at Maffra, and considerable quantities of beet pulp and molasses are distributed for stock feed.

3. **Sugar Bounties.**—The provision of bounties or similar aids to the sugar growers of Australia 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 connexion therewith. An account of the various Acts in connexion with sugar bounties and sugar excise tariffs will be found on pages 394 to 396 of 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 connexion 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.

4. **Sugar Purchase by Commonwealth Government.**—The steps taken by the Commonwealth Government in connexion with this matter were alluded to in previous issues of the Year Book. (See No. 18, p. 720.)

5. **Sugar Agreement—Embargo on Imports, etc.**—By agreement between the Commonwealth and Queensland Governments in 1925, it was arranged that the embargo on the importation of foreign sugar should be extended for three years from 1st September, 1925. The price payable for the raw sugar needed for home consumption was fixed at £27 per ton, less £1 per ton to defray administrative and general expenses of the Sugar Board, and to provide special concessions to certain consumers of sugar, while for that portion reserved for export, the price was fixed at a much lower figure, the latter of course being subject to realization adjustments. The embargo was later extended for a further period of three years until 1st August, 1931, on practically the same terms as previously. In response to representations, the Commonwealth Government appointed a Committee of Inquiry on the 23rd August, 1930, to report on the sugar industry in Australia. The Committee consisted of eight members, representing the various interests concerned. The terms of reference were of a comprehensive nature, and included such important items as costs of production, manufacture, and distribution, terms of the existing agreement and any variations thereof considered desirable, efficiency in field and factory, prices at home and abroad, &c. The reports of the Committee were made available in March 1931, and the renewal of the sugar agreement with certain modifications was recommended. The terms of the present agreement follow largely on those previously in force, particularly as regards the embargo on imports and fixation

of prices. The assistance to the fruit industry has, however, been increased from £205,000 per annum to £315,000 by way of grant from the sugar industry. The agreement was signed on 1st June, 1931, and remains in force for a period of five years from 1st September 1931.

6. **Net Return for Sugar Crop.**—Final calculations by the Sugar Board regarding the disposal of the crop, net value of exports and the average price for the crop will be found in the following table :—

NET RETURN, ETC., SUGAR CROP, AUSTRALIA, 1925-26 to 1929-30.

Year.	Percentage Exported.	Net Value of Exports per Ton.	Average Price per Ton for Whole Crop.	Estimated Total Value of Crop.
	Per cent.	£ s. d.	£ s. d.	£
1925–26	44.00	11 5 9	19 10 7	10,114,000
1926–27	18.67	14 18 10	24 10 10	9,954,000
1927–28	31.18	12 2 6	22 0 4	11,034,000
1928–29	35.70	10 10 0	20 17 11	11,002,000
1929–30	37.71	9 17 0	20 8 2	10,713,000

The estimated value of the crop is obtained by applying the wholesale price of £26 per ton to the quantity locally consumed and the net value per ton of exports to the quantity exported and adding the totals.

7. **Imports and Exports of Sugar.**—Owing to the embargo and the increased production of sugar in Australia, the imports have dwindled to insignificant proportions. Supplies to make up for local deficiencies are usually drawn from Java and Fiji. Particulars concerning the imports and exports of cane sugar for the past five years are as follow :—

CANE SUGAR.—IMPORTS AND EXPORTS, AUSTRALIA, 1925-26 TO 1929-30.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1925–26	345	9,425	208,805	2,803,207	208,460	2,793,782
1926–27	3,611	47,844	66,523	1,140,315	62,912	1,092,471
1927–28	20	457	154,654	2,191,576	154,634	2,191,119
1928–29	11	241	199,497	2,391,469	199,486	2,391,228
1929–30	12	192	181,745	2,217,176	181,733	2,216,984

The export values quoted in the above table have been revised, and now show the value realized overseas instead of the value on the basis of market prices in Australia as shown hitherto.

8. **Sugar By-products.**—Large quantities of molasses are produced as a by-product in the sugar mills. Details for a series of years of the quantity produced and the proportions used for distilling, fuel, manure and other purposes will be found in Chapter XXII. —"Manufacturing." A distillation plant erected at the Plane Creek Central Sugar Mill, Mackay, was opened during 1927 and produces power alcohol of a very fine quality.

Proposals have been under consideration in regard to the establishment of an industry to undertake the manufacture of a building material known as "megass board" from megass or bagasse, i.e., the residuum of crushed fibre after the removal of the sugar content from the sugar cane. The possibility of the manufacture of artificial silk from the same material has also been considered.

9. Sugar Prices.—The prices of sugar in Australia from 1915 to 1936 are shown in the table below. During recent years the prices were fixed in accordance with the agreement referred to previously.

AUSTRALIAN SUGAR PRICES, 1915 TO 1936.

Date of Determination.	Raw Sugar.			Refined Sugar.			
	Price to Grower and Miller per Ton.			Wholesale Price per Ton.			Retail Price per lb.
	£	s.	d.	£	s.	d.	d.
19.7.15 to 15.1.16	18	0	0	25	10	0	3
16.1.16 to 30.6.17	18	0	0	29	5	0	3½
1.7.17 to 24.3.20	21	0	0	29	5	0	3½
25.3.20 to 30.6.20	21	0	0	49	0	0	6
1.7.20 to 31.10.22	30	6	8	49	0	0	6
1.11.22 to 30.6.23	30	6	8	42	0	0	5
1.7.23 to 21.10.23	27	0	0	42	0	0	5
22.10.23 to 31.8.25	26	0	0	37	11	4	4½
1.9.25 to 31.8.31	(a)26	10	0	37	6	8	4½
1.9.31 to 31.8.36	22	0	0	37	6	8	4½

(a) The price of raw sugar for the years 1925 to 1931 is estimated at £26 10s. per ton, but, as the result of the values received for the surpluses exported, the actual price obtained in 1925–26 was £19 10s. 7d.; in 1926–27, £24 10s. 10d.; in 1927–28, £22 0s. 4d.; in 1928–29, £20 17s. 11d.; and in 1929–30, £20 8s. 2d.

§ 15. Vineyards.

1. Progress of Cultivation.—(i) *Area of Vineyards.* The date of introduction of the vine into Australia has been variously set down by different investigators, the years 1815 and 1828 being principally favoured. It would seem, however, that plants were brought out with the first fleet in 1788, consequently the Australian vine is as old as Australian settlement. As already mentioned, a report by Governor Hunter gives the area under vines in 1797 as 8 acres. From New South Wales the cultivation spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area under this crop. In Queensland and Western Australia also, vine-growing has been carried on for many years, but little progress has been made. 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.:—(*a*) for wine-making, (*b*) for table use, and (*c*) for drying. The total area under vines in the several States during each of the last five years is given in the following table, while particulars from 1860 onwards may be gathered from the graph accompanying this chapter.

VINEYARDS.—AREA, 1925-26 TO 1929-30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26.. ..	14,465	40,712	1,656	50,594	5,270	There are no vineyards in Tasmania.	112,697
1926–27.. ..	14,281	40,612	1,682	50,271	5,274		112,120
1927–28.. ..	14,880	40,988	1,762	50,663	4,959		113,252
1928–29.. ..	15,200	41,565	1,787	51,802	4,943		115,297
1929–30.. ..	15,589	40,594	1,749	52,329	4,964		115,225

The area under vines in Australia amounted to 65,673 acres in 1904–5. From that year onwards a gradual decline set in, and at the end of 1914–15 the acreage had decreased to 60,985. Since that date, however, as a result of extensive plantings, particularly of varieties suitable for drying, the 1904–5 figure was soon exceeded, and the area for 1928–29 was the highest on record, being practically equalled by that for 1929–30.

The wine-growing industry in Australia, especially in Victoria and New South Wales, received a severe check by various outbreaks of phylloxera. With a view to the eradication of this disease extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resistant stocks, was prohibited.

(ii) *Wine Production.* The production of wine has not increased as rapidly as the suitability of soil and climate would appear to warrant. The cause is probably twofold, being due in the first place to the fact that Australians are not a wine-drinking people, and consequently do not provide a local market for the product, and in the second, to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Continued efforts are made to bring the Australian wines under notice, while the Commonwealth bounty on the export of fortified wine of specified strength has greatly benefited the industry. The bounty was increased to 1s. 9d. per gallon from 13th March, 1930, under the *Wine Export Bounty Act* 1930 which provides that this rate will be paid until the 28th February, 1935.

Particulars of the quantity of wine produced in the several States during the past five seasons are given in the table hereunder :—

WINE.—PRODUCTION, 1925–26 TO 1929–30.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.		Gallons.
1925–26 ..	1,240,893	1,637,274	39,375	13,074,874	238,726	No production of wine in Tasmania.	16,231,142
1926–27 ..	1,625,507	2,346,314	32,974	16,159,595	291,951		20,456,341
1927–28 ..	2,295,030	1,739,560	38,571	12,820,733	408,717		17,302,611
1928–29 ..	1,481,846	1,942,701	37,210	14,828,968	309,524		18,600,249
1929–30 ..	1,933,709	1,363,575	48,174	12,406,017	317,637		16,069,112

2. Imports and Exports of Wine.—(i) *Imports.* The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Italy, the bulk of the sparkling wines coming from France. Particulars relative to the importations of wine into Australia during the past five years are given hereunder :—

WINE.—IMPORTS, AUSTRALIA, 1925–26 TO 1929–30.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1925–26 ..	25,896	61,511	87,407	65,763	37,432	103,195
1926–27 ..	27,720	61,878	89,598	64,134	37,325	101,459
1927–28 ..	20,737	55,403	76,140	45,703	33,997	79,700
1928–29 ..	20,212	56,171	76,383	50,576	32,948	83,524
1929–30 ..	16,833	64,286	81,119	42,434	36,242	78,676

(ii) *Exports.* The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand, the bulk of the shipments during the past two years being consigned to the former country. Details concerning the exports of wine from Australia during the past five years are given in the following table :—

WINE.—EXPORTS, AUSTRALIA, 1925–26 TO 1929–30.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1925–26 ..	3,564	1,719,045	1,722,609	7,156	364,766	371,922
1926–27 ..	2,956	3,078,841	3,081,797	6,075	827,722	833,797
1927–28 ..	2,744	3,770,035	3,772,779	5,577	1,056,831	1,062,408
1928–29 ..	2,932	1,738,047	1,740,979	5,685	495,299	500,984
1929–30 ..	2,884	2,181,253	2,184,137	4,439	551,682	556,121

3. Other Viticultural Products.—(i) *Table Grapes.* Large quantities of grapes for table use are grown in all the States except Tasmania, but the greatest development in the industry has taken place in the drying of raisins and currants, particularly in Victoria and South Australia. The quantities of table grapes grown in the several States during the past five seasons are as follow :—

TABLE GRAPES.—PRODUCTION, 1925–26 TO 1929–30.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1925–26 ..	3,837	3,616	996	1,063	2,284	..	11,796
1926–27 ..	4,689	4,634	1,410	791	2,195	..	13,719
1927–28 ..	4,250	3,338	1,474	581	2,642	..	12,285
1928–29 ..	4,278	3,909	1,535	899	2,811	..	13,432
1929–30 ..	4,216	3,845	1,642	752	2,900	..	13,355

(ii) *Raisins and Currants.* Statistics of the quantities of raisins (sultanas and lexias) and currants dried during each of the past five seasons are given in the following table :—

RAISINS(*a*) AND CURRANTS.—QUANTITIES DRIED, 1925–26 TO 1929–30.

Season.	N.S. Wales.		Victoria.		South Aust.		Western Aust.		Australia.	
	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.
	tons.	tons.	tons.	tons.	tons.	tons.	tons.	tons.	tons.	tons.
1925–26 ..	1,158	307	17,575	6,187	5,563	5,196	482	546	24,778	12,236
1926–27 ..	2,053	455	32,886	6,773	8,120	4,383	443	1,147	43,502	12,758
1927–28 ..	1,542	227	20,116	3,655	2,757	2,521	810	1,222	25,225	7,625
1928–29 ..	3,004	488	38,556	9,499	10,527	8,207	602	1,311	52,689	19,505
1929–30 ..	4,170	542	39,183	8,911	10,562	8,094	652	1,332	54,567	18,879
Average 10 seasons 1920–30	1,485	327	21,825	5,962	5,949	5,236	491	805	29,750	12,330

(*a*) Sultanas and Lexias.

4. **Imports and Exports of Raisins and Currants.**—The following table gives the oversea imports and exports of raisins and currants during each of the past five years :—

RAISINS AND CURRANTS.—IMPORTS AND EXPORTS, AUSTRALIA, 1925-26 TO 1929-30.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			RAISINS.			
	tons.	£	tons.	£	tons.	£
1925-26 ..	46	5,224	15,874	1,026,339	15,828	1,021,115
1926-27 ..	44	5,385	19,678	1,265,994	19,634	1,260,609
1927-28 ..	48	4,388	24,236	1,398,595	24,188	1,394,207
1928-29 ..	148	7,002	33,575	1,620,307	33,427	1,613,305
1929-20 ..	83	4,777	35,413	1,486,580	35,330	1,481,803
			CURRANTS.			
1925-26 ..	7	494	8,413	402,283	8,406	401,789
1926-27 ..	2	173	8,576	377,895	8,574	377,722
1927-28 ..	(a)	4	3,667	177,605	3,667	177,601
1928-29 ..	(a)	30	13,326	597,917	13,326	597,887
1929-30 ..	(a)	17	14,867	621,192	14,867	621,175

(a) Quantity negligible.

The quantities of raisins and currants imported into Australia were generally greater than the exports for all years prior to 1912, when the increased production in Australia left a surplus available for export. During the last five years the value of the exports exceeded that of the imports by £8,947,213, the average annual excess for the quinquennium being £1,789,443.

5. **Marketing of Raisins and Currants.**—The Dried Fruits Control Board appointed under the Dried Fruits Export Control Act has power to regulate the export, and sale and distribution after export, of Australian sultanas, lexias and currants. The Board, with an agency in London, is financed by an export levy charged on all dried fruits exported.

The regulation of sales and fixation of prices within the Commonwealth is in the hands of the Australian Dried Fruits Association which has, in addition, power to regulate interstate transfers. The prices fixed for home consumption are somewhat higher than those realized on exports overseas, as will be seen from the next table.

6. **Prices of Australian Raisins and Currants**—The average prices of Australian raisins and currants both locally and in Great Britain during the last five years will be found in the following table :—

RAISINS AND CURRANTS.—PRICES 1925-26 to 1929-30.

Year.	Average Wholesale Price per lb.—Australia.		Average Price per lb.—Great Britain.	
	Sultanas.	Currants.	Sultanas.	Currants.
	d.	*d.*	*d.*	*d.*
1925-26	6¼	7	7	4
1926-27	6½	7¼	5½	4½
1927-28	6½	7½	3¾	6
1928-29	6¾	7½	4	4½
1929-30	7	7¼	4½	3¾

§ 16. Orchards and Fruit Gardens.

1. **Progress of Cultivation.**—(i) *Total Area.* The maximum area under orchards and fruit gardens was recorded in 1921–22, when 281,149 acres were planted. Since that year the industry has declined slightly owing to difficulties experienced in disposing of the surplus production. The total area under orchards and fruit gardens in the several States is given in the following table :—

ORCHARDS AND FRUIT GARDENS.—AREA, 1925–26 TO 1929–30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26 ..	74,532	82,665	33,520	32,276	18,355	33,891	6	275,245
1926–27 ..	74,682	83,215	35,145	31,570	18,512	33,322	5	276,451
1927–28 ..	76,999	81,397	36,206	30,983	18,393	33,834	14	277,826
1928–29 ..	76,009	79,322	38,452	30,836	18,735	34,087	35	277,476
1929–30 ..	77,532	80,820	38,412	30,073	18,855	32,159	53	277,904

2. **Varieties of Crops**—(i) *General.* The varieties grown differ in various parts of the States, ranging from such fruits as the pineapple, paw-paw, mango, and guava of the tropics to the strawberry, the raspberry, and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, peach, pear, orange, plum, and apricot. In New South Wales citrus fruits (oranges, lemons, etc.) occupy the leading position, although apples, peaches, plums, pears, cherries and bananas are extensively grown. In Queensland, the banana, the pineapple, the apple, the orange, the peach, the plum, and the coconut are the varieties most largely cultivated. In South Australia, in addition to the apple, orange, apricot, plum, peach, and pear, the almond and the olive are extensively grown. In Western Australia, the apple, orange, pear, plum, peach, apricot and fig are the chief varieties. In Tasmania the apple occupies nearly four-fifths of the fruit-growing area, but small fruits, such as the currant, raspberry, and gooseberry are extensively grown, while the balance of the area is taken up with the pear, apricot, plum, and cherry. The following tables give the acreage—bearing and non-bearing—under the principal kinds of fruit, and the quantity and value of fruit produced. Although statistics of area are not collected annually in Victoria, the acreage under each class of fruit is estimated from data based on the triennial collection of the number of trees, subject to annual variations in the total area under orchards and fruit gardens.

(ii) *Area.* The table hereunder shows the total acreage for 1929–30.

ORCHARDS AND FRUIT GARDENS.—TOTAL AREA, 1929–30.

Fruit.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Federal Capital Territory.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Apples ..	14,718	32,205	4,012	10,328	10,885	25,307	33	97,488
Apricots ..	1,998	5,107	122	3,327	688	1,434	3	12,679
Bananas ..	3,340	..	19,357	..	8	..	..	22,705
Cherries ..	3,651	1,523	3	658	..	59	3	5,897
Lemons ..	2,839	2,016	179	438	503	..	..	5,975
Nectarines and Peaches ..	7,271	12,032	1,716	2,457	1,014	62	4	24,556
Nuts ..	558	531	..	1,369	(a)	..	1	2,459
Oranges ..	30,766	5,948	3,872	4,943	3,036	..	..	48,565
Pineapples ..	95	..	5,144	..	..	..	..	5,239
Pears ..	4,145	11,203	271	2,167	1,015	2,130	3	20,934
Plums ..	6,317	5,244	1,341	3,024	915	566	5	17,412
Small fruits ..	36	1,168	182	308	40	2,550	..	4,284
Other fruits ..	1,798	3,843	2,213	1,054	751	51	1	9,711
Total ..	77,532	80,820	38,412	30,073	18,855	32,159	53	277,904

(a) Included with " Other Fruits."

(iii) *Production—(a) Quantities.* The production in 1929–30 is shown in the next table.

ORCHARDS AND FRUIT GARDENS.—PRODUCTION, 1929–30.

Fruit.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Federal Capital Territory.	Australia.
Apples .. bushels	931,486	2,779,107	177,062	1,224,541	442,243	3,950,000	873	9,505,312
Apricots .. bushels	166,653	447,131	5,530	261,278	62,193	126,000	49	1,068,834
Bananas .. bushels	175,680	..	2,205,513	..	1,684	..	..	2,382,877
Cherries .. bushels	86,630	46,060	294	38,386	..	1,600	60	173,030
Lemons .. bushels	284,491	114,081	16,423	35,887	58,180	..	..	509,062
Nectarines and Peaches bushels	495,780	1,210,463	114,764	183,707	80,778	5,000	26	2,090,518
Nuts .. lb.	202,552	106,706	..	664,160	..	..	..	973,418
Oranges .. bushels	2,228,877	385,106	272,801	406,383	232,488	..	..	3,525,655
Pineapples .. dozen	24,345	..	857,116	..	..	..	..	881,461
Pears .. bushels	313,060	1,166,418	13,829	210,221	87,461	274,000	59	2,065,048
Plums .. bushels	298,087	290,881	56,121	151,206	70,732	70,000	83	937,110
Small Fruits cwt.	840	28,737	4,423	8,570	569	87,205	..	130,344

(*b*) *Values.* The value of production for the various classes of fruit for the year 1929–30 is given in the following table.

ORCHARDS AND FRUIT GARDENS.—VALUE OF PRODUCTION, 1929-30.

Fruit.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Federal Capital Territory.	Australia.
	£	£	£	£	£	£	£	£
Apples	530,250	521,083	95,355	347,744	279,166	663,000	497	2,437,095
Apricots	82,910	78,248	5,530	58,583	22,156	26,250	24	273,701
Bananas	138,590	..	927,923	..	2,526	..	..	1,069,039
Cherries	112,360	40,303	368	27,830	..	800	78	181,739
Lemons	158,430	57,041	10,435	15,252	33,514	..	..	274,672
Nectarines and Peaches	213,370	259,144	62,869	50,010	51,237	1,250	11	637,891
Nuts	5,469	4,303	..	18,240	(*a*)	..	..	28,012
Oranges	1,294,340	206,994	175,900	208,687	148,829	..	..	2,034,750
Pineapples	9,740	..	212,326	..	..	..	..	222,066
Pears	135,350	189,543	5,589	35,865	43,822	62,790	26	472,985
Plums	129,340	59,615	51,561	24,218	30,356	11,960	36	307,086
Small Fruits ..	5,200	70,652	33,143	15,156	4,423	98,500	..	227,074
Other Fruits.. ..	79,071	108,709	80,403	15,676	18,175	1,140	11	303,185
Total ..	2,894,420	1,595,635	1,661,402	817,261	634,204	865,690	683	8,469,295

(*a*) Included with "Other Fruit".

3. **Principal Fruit Crops**—(i) *Area.* The area in Australia under the principal fruit crops for the year 1913–14 and for each of the last five years is shown hereunder.

PRINCIPAL FRUIT CROPS.—AREA, BEARING AND NON-BEARING, AUSTRALIA, 1913–14 TO 1929–30.

Year.	Apples.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1913–14	56,577	7,778	24,840	13,645	9,657	8,410
1925–26	98,383	16,515	53,013	25,761	21,804	18,349
1926–27	98,322	18,345	53,570	25,420	22,014	18,070
1927–28	98,244	19,971	54,660	24,869	21,671	17,906
1928–29	98,338	21,681	54,286	23,722	21,268	17,433
1929–30	97,488	22,705	55,013	23,247	20,934	17,412

(ii) *Production—(a) Quantities.* In the next table the total production for the principal varieties of fruit grown in Australia is shown for the same periods.

PRINCIPAL FRUIT CROPS.—PRODUCTION, AUSTRALIA, 1913–14 TO 1929–30.

Year.	Apples.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1913–14 ..	5,000,178	835,868	1,638,961	930,144	951,277	621,525
1925–26 ..	8,491,780	2,039,786	3,892,558	2,232,546	1,521,541	870,691
1926–27 ..	5,228,475	2,163,345	3,667,895	1,801,818	1,166,566	675,595
1927–28 ..	11,505,289	2,260,295	3,922,773	2,225,636	1,804,604	895,105
1928–29 ..	5,519,341	2,571,616	4,642,142	1,765,818	1,516,253	794,488
1929–30 ..	9,505,312	2,382,877	4,034,717	1,998,632	2,065,048	937,110

(*b*) *Values.* The value of the principal fruit crops during the periods mentioned is given in the subjoined table.

PRINCIPAL FRUIT CROPS.—VALUE OF PRODUCTION, AUSTRALIA, 1913–14 TO 1929–30.

Year.	Apples.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums.
	£	£	£	£	£	£
1913–14 ..	1,132,427	157,710	719,808	306,433	258,235	135,654
1925–26 ..	2,471,148	819,594	1,605,565	862,289	485,324	301,716
1926–27 ..	2,477,708	730,576	1,900,613	882,366	447,127	287,695
1927–28 ..	2,837,137	1,276,532	1,916,864	897,571	498,869	289,409
1928–29 ..	2,707,273	1,042,305	2,056,830	702,602	543,940	295,240
1929–30 ..	2,437,095	1,069,039	2,323,256	594,133	472,985	307,086

4. Imports and Exports of Fruit.—(i) *General.* A considerable export trade in both fresh and dried fruits is carried on by Australia with oversea countries. The import trade in fresh fruits declined heavily during recent years, owing to the imposition of a Customs duty of 1d. per lb. on imported bananas, which had previously been the chief variety of fresh fruit imported into Australia. The imports of dried fruits at present consist mainly of dates. The export trade in fresh and dried fruits, however, has greatly expanded during recent years; the value of the shipments in 1929–30 amounting to £4,033,842. Apples constitute the bulk of the fresh fruit exported, although the exports of citrus fruits and pears are fairly considerable, and experiments are being conducted in regard to the dispatch of other fruits. Shipments of raisins and currants have developed into large proportions since 1914–15, and are mainly responsible for the increase in the dried fruits exports. Other fruits in the dried state, notably apricots, are also receiving attention from overseas.

(ii) *Fresh Fruits.* Information with regard to the Australian oversea trade in fresh fruits is given hereunder :—

FRESH FRUITS.—IMPORTS AND EXPORTS, AUSTRALIA, 1925–26 TO 1929–30.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1925–26 ..	3,228,900	35,154	149,673,100	1,553,650	146,444,200	1,518,496
1926–27 ..	5,086,900	56,932	75,776,600	805,573	70,689,700	748,641
1927–28 ..	4,772,200	61,606	186,625,800	1,819,796	181,853,600	1,758,190
1928–29 ..	6,350,000	69,011	82,706,700	942,960	76,356,700	873,949
1929–30 ..	7,838,000	93,110	196,000,600	1,862,603	188,162,600	1,769,493

(iii) *Exports of Apples, Pears, and Citrus Fruits.* The quantity and value of apples, pears, and citrus fruits exported during each of the last five years are shown in the following table :—

APPLES, PEARS, AND CITRUS FRUITS.—EXPORTS, AUSTRALIA 1925-26 TO 1929-30.

Year.	Apples.		Pears.		Citrus Fruits.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Cental.	£	Cental.	£	Cental.	£
1925-26 ..	1,297,180	1,275,485	40,468	57,063	127,156	156,990
1926-27 ..	631,508	624,040	30,007	37,001	65,803	80,246
1927-28 ..	1,736,965	1,636,000	57,831	62,742	32,388	46,645
1928-29 ..	644,183	703,037	55,006	68,290	71,932	76,023
1929-30 ..	1,737,872	1,576,275	127,897	136,353	39,271	58,481

(iv) *Dried Fruits.* The quantity and value of oversea imports and exports of dried fruits, other than raisins and currants, for the last five years are shown below; about 85 per cent. of the total imports consisted of dates obtained chiefly from Iraq.

DRIED FRUITS(*a*).—IMPORTS AND EXPORTS, AUSTRALIA, 1925-26 TO 1929-30.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1925-26..	11,669,068	136,204	650,437	29,778	11,018,631	106,426
1926-27..	11,214,659	168,404	72,140	3,284	11,142,519	165,120
1927-28..	11,983,431	178,225	685,052	23,954	11,298,379	154,271
1928-29..	11,098,182	146,078	2,096,416	81,106	9,001,766	64,972
1929-30..	11,579,470	134,244	1,780,189	62,060	9,799,281	72,184

(*a*) Excluding raisins and currants referred to separately under Vineyards, § 15, 4.

(v) *Jams and Jellies.* Jams and jellies were exported in large quantities during the war years, and in 1918-19 the record shipment of 79,277,560 lbs., valued at £1,847,970, was dispatched from Australia. Since that year, however, the trade has dwindled, the value of the exports in 1929-30 amounting to only £44,398. Particulars relative to imports and exports during each of the last five years are as follows :—

JAMS AND JELLIES.—IMPORTS AND EXPORTS, AUSTRALIA, 1925-26 TO 1929-30.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1925-26 ..	190,302	8,813	2,665,243	82,447	2,474,941	73,634
1926-27 ..	357,838	15,004	2,422,988	72,354	2,065,150	57,350
1927-28 ..	438,427	18,408	2,298,225	68,949	1,859,798	50,541
1928-29 ..	325,422	13,133	1,947,786	58,204	1,622,364	45,071
1929-30 ..	300,805	10,811	1,535,720	44,398	1,234,915	33,587

(vi) *Preserved Fruit.* Details concerning the quantities and values of preserved fruit imported into Australia 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 preserved or partly preserved in liquid, or pulped, imported into Australia during 1929–30 was £222,199. Oversea exports in 1929–30 were as follows :—Apricots, 5,681,784 lb., £100,944 ; peaches, 19,060,032 lb., £323,184 ; pears, 5,589,720 lb., £117,295 ; pineapples, 40,263 lb., £909 ; and other, 1,085,397 lb., £24,474, or a total shipment of £566,806.

§ 17. Minor Crops.

1. General.—In addition to the crops previously dealt with, 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, Nurseries, Grass Seed, Tobacco, and Millet. Cotton-growing has recently received considerable attention in the tropical portions of Australia, and the prospects of establishing this industry are hopeful. The decline in area under cultivation from 82,409 acres in 1924–25 to 27,659 acres in 1929–30 was due to poor seasons and difficulty in marketing the product. The total area in Australia during the season 1929–30 devoted to crops not dealt with in previous sections was 126,360 acres, the major portion of which consisted of cotton and market-gardens.

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 shown either under some specific head, or under some general head as "Other Root Crops," or "All Other Crops." The area under market gardens during each of the last five seasons is given hereunder :—

MARKET GARDENS.—AREA, 1925–26 TO 1929–30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1925–26 ..	8,973	16,609	1,017	1,517	2,725	587	..	12	31,440
1926–27 ..	8,184	17,751	1,096	1,320	2,872	599	..	46	31,868
1927–28 ..	7,729	18,984	1,083	1,303	2,647	732	..	32	32,510
1928–29 ..	7,709	18,630	918	1,408	2,924	546	..	11	32,146
1929–30 ..	8,380	21,210	862	1,658	3,075	530	..	10	35,725

3. Grass Seed.—The total area under this crop during 1929–30, exclusive of New South Wales and Western Australia, for which States complete figures as to area are not available, was 6,288 acres, of which 1,670 acres were in Victoria, 761 acres in Tasmania, 1,866 acres in Queensland, and 1,991 acres in South Australia. The total yield for 1929–30, including New South Wales, was 137,981 bushels, valued at £201,971. In addition to the areas planted above, 948 acres were sown to canary seed in Queensland during 1929–30, returning a yield of 11,208 bushels, valued at £9,565.

4. Tobacco.—Tobacco-growing has undergone marked fluctuations, although at one time it promised to occupy an important place amongst the agricultural industries of Australia. Thus, as early as the season 1888–89, the area under this crop amounted to as much as 6,641 acres, of which 4,833 were in New South Wales, 1,685 in Victoria, and 123 in Queensland. This promise of importance was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2,000 acres, and that in Queensland to over 1,000 acres, the total area for the season 1920–21 had declined to 1,345 acres. Since that date the area has again fluctuated, but with an upward tendency, and in 1929–30, 2,470 acres were planted, of which 446 were in New South Wales, 1,822 in Victoria, 159 in Queensland,

37 in South Australia, and 6 in Western Australia. Greater attention is now being paid to the proper treatment of the leaf, and flue-curing is becoming more general. 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 heavy importations of tobacco in its various forms into Australia are an index of the extensive local market which exists for an article grown and prepared to meet the requirements of consumers. The value of the net importations of tobacco into Australia during the year 1929–30 amounted to £1,960,827 including 20,280,139 lb. of unmanufactured tobacco valued at £1,768,498.

A Select Committee appointed by the Commonwealth Government to inquire into the position of the industry in Australia presented its report in July, 1930. In accordance with its recommendations the duty on unmanufactured unstemmed tobacco was increased from 3s. per lb. to 5s. 2d. per lb. The Committee was not in favour of the payment of a bounty on Australian-grown leaf. A new agreement between the British-Australasian Tobacco Co. and the Commonwealth Government was entered into for three years from July, 1931, the company undertaking to contribute towards investigation work on a £ for £ basis with a maximum contribution of £3,000 per annum. Other manufacturing firms have been invited to co-operate. A Director of Australian Tobacco Investigation has been appointed with head-quarters at Canberra. Practical tests have shown that suitable leaf can be grown, and research is in progress with a view to improvement in quality and aroma of the product and the combating of disease. The sowing of seed free from blue mould will, it is believed, materially reduce the loss occasioned by this parasitic disease. The extensive local demand coupled with the protection afforded by the tariff has resulted in a large increase in the area sown to tobacco. Sufficient seed has been distributed to sow about 30,000 acres in the season 1931–32 as compared with 3,000 acres in 1930–31 and 2,470 acres in 1929–30. The quantity of seed supplied to growers is sufficient to produce the whole of Australia's requirements, but a certain amount of preliminary failure will be inevitable on account of inexperience in growing and curing the leaf. The number of persons engaged in the growing of tobacco is estimated at 603 in 1920, 454 in 1925 and 2,300 in 1931.

5. **Pumpkins and Melons.**—The total area under this crop in Australia during 1929–30 was 16,446 acres, of which 2,818 acres were in New South Wales, 1,231 acres in Victoria, 11,014 acres in Queensland, 1,065 acres in Western Australia, 314 acres in South Australia, and 4 acres in Federal Capital Territory. The production in all the States amounted to 45,368 tons.

6. **Hops.**—Hop-growing in Australia is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1929–30 being 1,398 acres, of which 1,196 acres were in Tasmania, 201 acres in Victoria, and 1 acre in South Australia. The Tasmanian area, though still small, has increased considerably during the past thirty years, the total for the season 1901–2 being only 599 acres. In Victoria the area, which in 1901–2 was 307 acres, dwindled to 71 acres in 1918–19, then rose to 312 acres in 1925–26 and dropped to 201 in 1929–30. The cultivation of hops was much more extensive in Victoria some 40 years ago than at present, the area in 1883–84 being no less than 1,758 acres. During the year 1929–30 the imports of hops exceeded the exports by 130,069 lb., the excess value being £8,887. The value of the production in Australia in 1929–30 amounted to £131,662.

7. **Flax.**—For over twenty years flax has been grown intermittently in the Gippsland district of Victoria, and attempts have been made to introduce its cultivation into Tasmania and New South Wales, but without success. About the end of the year 1917 the shortage of flax fibre in the world had become acute, and endeavours were made by the Commonwealth Government to encourage local cultivation. The acreage in Victoria increased from 419 acres in 1917–18 to 1,611 acres in 1919–20, but the area had declined in 1928–29 to 179 acres. As the result of the bounty, however, the area increased to 773 acres in 1929–30, but there has not been any production of fibre. Flax products to the value of more than £1,500,000 are annually imported into Australia, and, as it has been demonstrated that flax can be grown to perfection here, good prospects exist for the ultimate establishment of a local industry. In order to assist in this direction the Commonwealth Parliament has granted the payment of a bounty on the production of

flax and linseed grown in Australia for a period of five years, commencing 1st March, 1930. The rates of bounty payable are 15 per cent. of the market value of the flax or linseed for the first two years, 10 per cent. for the next two years, and 7½ per cent. for the last year. The total amount paid shall not exceed £20,000 in any one financial year.

8. **Millet.**—Millet figures in the statistical records of three of the States. The total area devoted thereto in 1929–30 was 4,576 acres, of which 2,521 acres were in New South Wales, 1,677 in Victoria, and 378 in Queensland. The particulars here given relate to millet grown for grain and fibre, the quantity for green forage being dealt with in the section relating thereto.

9. **Nurseries.**—In all the States fairly large areas are occupied as nurseries for raising plants, trees, etc. Statistics of the area under flowers, fruit trees, etc., are available for New South Wales, Victoria, South Australia, and Western Australia. During 1929–30 the areas in those States were 624, 1,266, 177, and 103 acres respectively.

10. **Cotton.**—The cultivation of cotton was begun in Queensland in 1860, and ten years later the area cropped had increased from fourteen to upwards of fourteen thousand acres. The re-appearance of American cotton in the European market on the conclusion of the Civil War gave a severe setback to the new industry, and the area declined continuously till 1888, when only 37 acres were planted. The industry was resuscitated soon after, and manufacturing was undertaken on two separate occasions at Ipswich, but operations were at no time very extensive, and low prices over a term of years checked development. Added interest was shown in the crop in 1903, and in 1913 the Queensland Government made an advance of 1½d. per lb. on seed cotton, and ginned it on owner's account, the final return being equal to about 1¾d. per lb.

Rising prices for the staple enabled the Government to offer the substantial guarantee of 5½d. per lb. for seed cotton of good quality for the three years ended 31st July, 1923, and as a result considerable activity was displayed in the industry, the area picked rising from 166 acres in 1920 to 50,186 in 1924. Government guarantees were continued until 1926, when the Commonwealth Government granted a bounty of 1½d. per lb. on the better grades and ¾d. on the lower grades of seed cotton grown in Australia. In addition to this direct assistance to the cotton-growing industry, the Government subsidized the cotton-manufacturing industry by granting a graduated bounty varying from ½d. to 1s. per lb. on all cotton yarn manufactured in Australia which contained 50 per cent. of home-grown cotton. The rates payable under the new Act for seed cotton vary from 1½d. per lb. for the first year for the higher grades and ¾d. per lb. for the lower grades to ½d. and ¼d. per lb. respectively for the year ending 30th September, 1936. The bounty payable on cotton yarn varies according to count, the rate decreasing each year until 1936. The amount of bounty payable in any financial year is limited to £260,000. The object of this policy is to foster and establish the primary and secondary industries concurrently, thus creating a home market for the raw cotton produced.

The area under cultivation and the yield in Queensland since the year 1920 are shown hereunder :—

COTTON.—AREA AND YIELD, QUEENSLAND, 1920 TO 1930.

Year.	Area.(a)	Yield of Unginned Cotton.
	Acres.	lb.
1920	166	57,065
1921	1,944	940,126
1922	8,716	3,956,635
1923	40,821	12,543,770
1924	50,186	16,416,170
1925	40,062	19,537,274
1926	18,743	9,059,907
1927	14,975	7,060,756
1928	20,316	12,290,910
1929	15,003	8,024.502
1930 (b)	22,652	17,022,897

(a) Area harvested. (b) Estimated.

Consequent upon the lapse of the Government guarantees and the change over to the bounty system, a cotton pool was formed in Queensland under the Primary Products Pools Act and a cotton board was elected to control the handling, financing, and marketing of all cotton grown in the State. The serious decline in world prices, however, affected local prices and resulted in a smaller return to the growers during the year 1929, the amount paid for seed cotton, including Commonwealth bounty, averaging 4.62d. per lb. The whole of the crop was sold to local spinners.

11. Coffee.—Queensland is the only State in which coffee-growing has been extensively tried, but the results have not been satisfactory. The area under crop reached its highest point in the season 1901–2 with 547 acres. In subsequent seasons the acreage fluctuated, but on the whole with a downward tendency, and in 1929–30 only 12 acres were recorded with a yield of 8,227 lb.

12. **Other Crops.**—Amongst miscellaneous small crops grown in the several States may be mentioned tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

§ 18. Bounties.

With the object of encouraging the manufacture and production of certain articles in Australia, bounties have been granted by the Commonwealth Parliament, and during the year ending 30th June, 1931, the sum of £516,460 was paid in connexion therewith. In the following table will be found particulars regarding all bounties in operation in Australia during the years 1926–27 to 1930–31 :—

BOUNTIES.—AUSTRALIA, 1926–27 TO 1930–31.

Articles on which Bounty was Paid.	Rate of Bounty Payable. (*d*)	Date of Expiry of Bounty.	Amount Paid.				
			1926–27.	1927–28.	1928–29.	1929–30.	1930–31.
			£	£	£	£	£
Shale Oil Bounties Act—							
Crude Shale Oil, as prescribed, produced in Australia from Mined Kerosene Shale	3½d. per gallon up to 3,500,000 gallons 2d. per gallon, 3,500,000 to 5,000,000 gallons 1¾d. per gallon, 5,000,000 to 8,000,000 gallons 1½d. each additional gallon	31st Aug., 1929	705	428	..	..	..
Iron and Steel Products Bounty Act—							
*Fencing Wire ..	£2 12s. per ton (*f*) ..	(*g*) 6th Nov., 1930	98,389	104,485	121,839	114,141	39,913
*Galvanized Sheets..	£2 12s. per ton (*a*) ..	(*g*) 3rd Oct., 1930	67,915	65,128	102,650	89,561	79,429
*Wire Netting ..	£3 8s. per ton (*e*) ..	..	90,299	73,873	73,945	56,486	22,696
*Traction Engines ..	According to capacity, £40–£90 per tractor less 6 per cent. from 9th July, 1930, and less 16 per cent. from 7th November, 1930	..	250	140	7,109	199	1,974
* Manufactured from Materials produced and manufactured in Australia							
Sulphur Bounty Act—							
Sulphur from Australian Pyrites and other Sulphide Ores or Concentrates	£2 5s. per ton ..	..	34,339	57,377	52,009	55,018	48,520
Flax and Linseed Bounties Act 1930	Rates vary according to year	28th Feb., 1935	..	..	..	..	..

(*a*) Amount of Bounty raised to £3 12s. per ton on 1st January, 1928, to £4 10s. per ton from 1st January 1930, and reduced to £3 10s. on 21st June, 1930, and to £3 3s. on 10th July, 1930. (*d*) All Bounties are subject to 20 per cent. reduction from 20th July, 1931. (*e*) Amount of Bounty reduced to £2 14s. per ton on 10th July, 1930, and to £2 5s. 6d. per ton on 7th November, 1930. (*f*) Amount of Bounty reduced to £2 6s. on 10th July, 1930. (*g*) Date on which Bounty ceased.

BOUNTIES.—AUSTRALIA, 1926-27 TO 1930-31—*continued.*

Articles on which Bounty was Paid.	Rate of Bounty Payable. (*d*)	Date of Expiry of Bounty.	Amount Paid.				
			1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
			£	£	£	£	£
Wine Export Bounty Act—							
Fortified Wine, containing not less than 34 per centum of proof spirit, exported from the Commonwealth from 1st September, 1924, to 28th February, 1935	4s. per gallon to 31st August, 1927 1s. 9d. per gallon from 1st September, 1927, to 8th March, 1928 1s. per gallon from 9th March, 1928 1s. 9d. per gallon from 13th March, 1930	28th Feb., 1935	442,410	482,843	76,455	83,210	165,009
Canned Fruit Bounty Act—							
Apricots, Peaches, Pears, and Pineapples canned from 1st November, 1923, to 30th September, 1924	9d. to 1s. per dozen tins, each containing 30 oz. net	..	..	4,731	..	..	..
Such canned fruit exported from the Commonwealth on or before 28th February, 1925	1s. to 1s. 9d. per dozen tins, each containing 30 oz. net	..					
Cotton Bounty Act—							
Seed Cotton grown in Australia and delivered and graded as prescribed	Varies on Higher Grades from 1½d. per lb. up to 1932, to ½d. per lb. in 1936 Varies on Lower Grades from ¾d. per lb. up to 1932, to ¼d. per lb. in 1936	30th Sept., 1936	7,038	81,454	64,930	70,307	100,848
Cotton Yarn manufactured in Australia	Varies according to count and year	„ „	30,002	24,846	33,638	48,660	57,085
Papua and New Guinea Bounties Act—							
Cocoa and Coffee Beans (*b*) produced in these Territories imported into the Commonwealth for home consumption	1½d. per lb. ..	31st Dec., 1936	..	194	1,641	1,059	(*c*) 946
Sisal Hemp ..	£6 per ton ..	„ „	..	..	..	..	40
Total	.. .. ..	..	771,347	895,499	534,216	518,641	516,460

(*b*) Other goods are scheduled in the Act, but no importations of them were made. (*c*) Including £1 9s. 3d., being amount of bounty paid on 234 lbs. of spices. (*d*) All Bounties are subject to 20 per cent. reduction from 20th July, 1931.

§ 19. Fertilizers.

1. **General.**—In the early days of settlement in Australia, scientific cultivation was practically neglected. Farmers were neither under the necessity nor were they aware of the value of supplying the proper constituents to the soil for each class of crop. The widely divergent character of the soils, their degeneration by repeated cropping, the limitations of climatic conditions, and 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 fertilizer-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 in the future.

2. **Fertilizers 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 fertilizers. A list of these Acts and their main features will be found in Year Book No. 12 (page 378).

3. Imports.—The local production of artificial manures has greatly increased in recent years, and the home requirements of prepared fertilizers can now be supplied by Australian manufacturers. Imports of fertilizers are also expanding, but the bulk of the inward shipments consists of rock phosphates, which form the raw material for the home manufactured superphosphate, a fertilizer which has proved eminently suitable for the growing of cereals in Australian soils. During 1929–30 the value of rock phosphates imported represented more than 78 per cent. of the total importation of fertilizers. Nauru and Gilbert and Ellice Islands Colony in almost equal proportions supplied almost the whole of the shipments. Sodium nitrate is wholly obtained from Chile.

The imports of artificial manures during the last five years are given in the following table. Although considerable quantities of manufactured superphosphates were annually imported up till 1914–15, importations during recent years were very small.

FERTILIZERS.—IMPORTS, AUSTRALIA, 1925–26 TO 1929–30.

Fertilizer.		1925–26.	1926–27.	1927–28.	1928–29.	1929–30.
Bonedust	cwt.	..	100	(a)	(a)	(a)
„	£	..	58	(a)	(a)	(a)
Guano	cwt.	1,829	20,826	500	52,018	1,000
„	£	1,061	1,238	242	6,438	462
Superphosphates	cwt.	1,035	1,201	1,400	2,560	4,572
„	£	517	573	937	1,834	3,331
Rock phosphates	cwt.	6,463,733	10,171,652	9,220,120	12,349,710	10,579,094
„ „	£	799,273	1,109,414	915,840	1,291,583	1,126,531
Soda nitrate	cwt.	187,284	100,567	175,074	152,747	256,457
„ „	£	105,384	60,951	91,885	75,888	123,635
Other	cwt.	172,993	187,773	237,354	308,425	402,188
„	£	80,900	87,281	103,634	112,232	205,574
Total	cwt.	6,826,874	10,482,119	9,634,448	12,865,460	11,243,311
	£	987,135	1,259,515	1,112,538	1,487,975	1,459,533

(a) Now included with Other Fertilizers.

4. Exports.—The subjoined table shows the exports of artificial manures for the years 1925–26 to 1929–30. Practically the whole of these fertilizers are manufactured locally, and are shipped mainly to New Zealand, Japan, Java, and the Pacific Islands :—

FERTILIZERS.—EXPORTS, AUSTRALIA, 1925–26 TO 1929–30.

Fertilizer.		1925–26.	1926–27.	1927–28.	1928–29.	1929–30.
Bonedust	cwt.	10,012	2,668	74	39	6,426
„	£	3,664	1,220	46	27	2,756
Superphosphates	cwt.	149	21	33	316	168
„	£	49	18	14	83	54
Rock phosphates	cwt.	62	200	..	..	4
„ „	£	24	58	..	..	1
Soda nitrate	cwt.	1,445	398	7	6	34
„ „	£	1,241	311	7	9	27
Ammonia sulphate	cwt.	141,866	99,928	71,911	18,610	972
„ „	£	88,745	61,478	42,229	11,255	440
Other	cwt.	124,263	39,718	29,464	66,429	31,474
„	£	47,011	16,237	12,861	30,097	13,766
Total	cwt.	277,797	142,933	101,489	85,400	39,078
	£	140,734	79,322	55,157	41,471	17,044

5. Statistics of Use of Fertilizers.—Statistics regarding the use of manures are collected in all the States, and the particulars for 1929-30 are as follow :—

FERTILIZERS USED IN EACH STATE, 1929-30.

State or Territory.	Area Manured.			Manure Used.	
	Total Area of Crops.	Aggregate.	Percentage on Total Area of Crops.	Natural (Stable Yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
New South Wales ..	5,500,946	3,901,635	70.93	130,009	126,173
Victoria	5,579,258	(a)6,022,951	(b) 97.17	120,991	(a)269,967
Queensland	1,046,235	112,895	10.79	39,405	22,925
South Australia ..	4,966,916	4,606,210	92.74	46,164	181,045
Western Australia ..	4,566,001	(a)5,049,339	(c) 98.64	57,212	(a)231,128
Tasmania	265,317	229,259	86.41	11,916	21,550
Northern Territory ..	609	..	..	..	..
Fed. Cap. Territory ..	4,439	3,699	83.33	115	137
Total	21,929,721	19,925,988	90.86	405,812	852,925

(a) Includes area under sown grasses and manure used. (b) 1926 figure. (c) 1923 figure.

Similar particulars in respect of Australia as a whole during the past five years are as shown below :—

FERTILIZERS USED IN AUSTRALIA, 1925-26 TO 1929-30.

Year.	Total Area of Crops.	Area Manured.		Manure Used.		
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable Yard, etc.).	Artificial.	Artificial per Acre of Total Area.
	Acres.	Acres.	%	Loads.	Tons.	lb.
1925-26 ..	16,793,578	13,387,111	78.98	625,099	576,786	77
1926-27 ..	17,772,499	14,770,498	83.11	562,055	642,511	81
1927-28 ..	19,219,393	16,607,826	86.41	516,241	725,782	85
1928-29 ..	21,189,557	18,701,389	88.26	450,474	813,656	86
1929-30 ..	21,929,721	19,925,988	90.86	405,812	852,925	87

The quantity of chemical fertilizers used per acre of all crops has increased from 75 lb., the average for the period 1910-13, to 87 lb. in 1929-30.

The percentage of the area manured on the total area cultivated has advanced from 78.98 to 90.86 during the past five years, while the use of artificial manures has increased by more than 276,139 tons during the same period.

6. Local Production of Fertilizers.—Statistics relative to the local production of fertilizers are incomplete, and detailed returns for fertilizer factories other than bone mills are not available. The number of firms engaged in the manufacture of artificial manures in Australia at latest available date was 104, made up as follows :—New South Wales, 20 ; Victoria, 30 ; Queensland, 24 ; South Australia, 11 ; Western Australia, 11 ; and Tasmania, 8. The production of superphosphates in Australia during 1929-30 amounted to 932,209 tons, the largest producing States being Victoria and Western Australia.

§ 20. Ensilage.

1. Government Assistance in Production.—Efforts have been made for some years by the various State Governments to educate the farming community in regard to the value of ensilage. Monetary aid is afforded in the erection of silos, and expert advice is supplied in connexion with the design of the silos and the cutting and packing of the silage.

2. Quantity Made.—Particulars concerning the number of holdings on which ensilage was made, and the quantity made during the seasons 1925–26 to 1929–30, are given in the following table :—

ENSILAGE MADE, 1925–26 TO 1929–30.

State or Territory.	1925–26.		1926–27.		1927–28.		1928–29.		1929–30.	
	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.
	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.
New South Wales ..	241	30,457	407	48,718	473	50,464	350	27,177	338	28,155
Victoria	113	6,092	94	6,132	75	6,037	89	7,775	74	4,783
Queensland	67	4,654	50	4,728	76	5,420	72	4,037	43	2,933
South Australia ..	28	2,857	23	2,405	17	2,415	12	2,808	22	1,319
Western Australia ..	43	3,325	72	5,642	72	5,147	93	7,022	105	7,966
Tasmania	3	170	8	488	12	526	5	115	6	75
Northern Territory ..	1	5	..	..	..	..	..	..	..	..
Total ..	496	47,560	654	68,113	725	70,009	621	48,934	588	45,231

(a) No. of holdings on which ensilage was made.

Following the drought of 1902–3 greater attention was paid to the making of ensilage, and during the four seasons ended 1909–10 there was an increase both in the number of holdings on which ensilage was made and in the quantity produced. The following five seasons, however, showed a falling off, but the reduction was due to the fact that stocks had not been drawn upon to any great extent during the previous seasons. The accumulated stocks proved of great value during the 1914 drought, though far below what would have been the case if more attention had been paid to production during the previous years when there was a surplus of green forage. The quantities made since that date have fluctuated considerably, the output in 1929-30 amounting to 45,231 tons.

§ 21. Agricultural Colleges and Experimental Farms.

1. General.—In most of the States agricultural colleges and experimental farms have been established with a view to the promotion of more scientific methods in agriculture, stock-breeding and dairying. In the 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 fertilizers are made, manures are tested, and elementary veterinary science, etc., are taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of showing that it is practicable to produce certain crops in a given place, but also to show how it is possible to make farming pay in the 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 carpentering, blacksmithing, and other trades.

Travelling expert lecturers visit the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins.

2. Particulars of Agricultural Colleges and Experimental Farms.—In previous issues of this volume detailed information was given regarding agricultural colleges, experimental farms, and agricultural education generally. See Year Book No. 11, pp. 393–5.

3. Particulars respecting Agricultural and Stock Departments.—A synopsis of the activities and operations of the Agricultural and Stock Departments of the several States on 30th June, 1920, will be found in Year Book No. 14, pages 1180 to 1191. The main features of organization are set out under their respective headings as regards staff, expenditure, work undertaken in agricultural colleges, technical schools, experimental farms and orchards and vineyards. The subject of lectures and other forms of agricultural instruction by experts is dealt with, as well as such matters as the distribution of plants, and the special steps taken to disseminate information amongst agriculturists, and to facilitate the marketing of products.