

## CHAPTER XX.

## 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 1803 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 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.**—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 six seasons:—

## AREA UNDER CROP.

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	2,446,767	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	4,486,503	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	4,439	21,929,721
1930-31	6,811,247	6,715,660	1,144,216	5,426,075	4,792,017	267,632	1,550	5,419	25,163,816

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 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 1930-31 amounted to nearly 25.2 million acres. This area is the largest yet cultivated, and exceeds the previous record of 1929-30 by 3,234,095 acres or 15 per cent. The increase in acreage was almost entirely due to wheat. This cereal continues to be the most extensively grown crop in Australia, the area thereunder for both grain and hay during 1930-31 amounting to 77 per cent. of the total acreage under cultivation.

3. Artificially-sown Grasses.—In all the States there are considerable areas under artificially-grown 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. Distribution, Production, and Value of Crops.

1. Distribution of Crops.—The following table gives the areas in the several States under each of the principal crops for the season 1930-31:—

DISTRIBUTION OF CROPS, 1930-31.

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 ..	5,134,960	4,600,200	272,316	4,180,513	3,955,763	19,107	..	2,061	18,164,920
Oats ..	176,659	371,024	5,132	218,416	274,874	35,919	..	77	1,082,101
Maize ..	105,024	16,227	172,176	..	10	..	..	13	293,450
Barley—									
Malting ..	7,144	60,800	6,148	235,175	13,202	5,590	..	..	328,059
Other ..	4,382	26,718	2,286	16,782	4,034	602	..	24	54,828
Beans and Peas ..	..	9,311	42	8,766	2,496	21,597	..	..	42,212
Rye ..	3,293	959	29	1,455	356	..	..	36	6,128
Other Cereals ..	19,825	..	..	..	10	..	25	..	19,860
Hay ..	896,770	1,277,398	52,228	612,935	398,411	83,268	..	2,453	3,323,403
Green Forage ..	310,341	126,347	217,282	59,956	107,384	23,438	..	662	845,410
Grass and other Seeds ..	..	2,000	2,558	1,193	..	729	..	..	6,480
Orchards and other Fruit Gardens ..	78,176	79,490	37,102	29,630	19,333	32,561	..	55	276,347
Vines—									
Productive ..	13,345	37,528	1,519	49,521	4,649	..	..	..	106,562
Unproductive ..	2,018	1,192	168	2,713	317	..	..	..	6,408
Market Gardens ..	7,448	20,197	903	1,663	3,025	600	..	13	33,849
Sugar Cane—									
Productive ..	7,617	..	222,044	..	..	..	..	..	229,661
Unproductive ..	8,007	..	74,026	..	..	..	..	..	82,033
Potatoes ..	15,858	67,590	12,292	4,998	6,308	37,229	20	12	144,307
Onions ..	79	6,286	527	407	119	..	..	..	7,419
Other Root Crops ..	1,545	3,653	1,059	684	481	5,508	..	1	12,935
Tobacco ..	547	2,650	71	83	3	..	..	..	3,354
Brown Millet ..	2,182	1,232	510	..	..	..	..	..	3,924
Pumpkins and Melons ..	3,108	1,078	14,661	379	537	..	..	5	19,768
Hops ..	..	185	..	1	..	982	..	..	1,168
Cotton—									
Productive ..	..	..	22,652	..	..	..	..	..	22,652
Unproductive ..	..	..	12,875	..	..	..	..	..	12,875
All other Crops ..	12,919	3,595	13,610	805	705	502	1,505	2	33,643
Total Area ..	6,811,247	6,715,660	1,144,216	5,426,075	4,792,017	267,632	1,550	5,419	25,163,816

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 1930-31 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, and 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 1930-31 77 per cent. of the total area under cultivation.

#### RELATIVE AREAS UNDER CROP, 1930-31.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia
	%	%	%	%	%	%	%	%	%
Wheat ..	75.39	68.50	23.80	77.04	82.55	7.14	..	38.03	72.19
Hay ..	13.17	19.02	4.56	11.30	8.31	31.11	..	45.27	13.21
Oats ..	2.59	5.52	0.45	4.03	5.74	13.42	..	1.42	4.30
Green Forage..	4.56	1.88	18.99	1.10	2.24	8.76	..	12.22	3.36
Maize ..	1.54	0.24	15.05	..	0.00	..	..	0.24	1.17
Barley ..	0.17	1.30	0.74	4.64	0.36	2.31	..	0.26	1.52
Orchards and Fruit Gardens	1.15	1.18	3.24	0.55	0.40	12.17	..	1.01	1.10
Sugar-cane	0.23	..	25.88	..	..	..	..	..	1.24
Potatoes ..	0.23	1.00	1.07	0.09	0.13	13.91	1.29	0.22	0.57
Vineyards	0.23	0.58	0.15	0.96	0.10	..	..	..	0.45
All other..	0.74	0.78	6.07	0.29	0.17	11.18	98.71	1.33	0.89
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 1911-21 and 1921-31 are shown hereunder.

#### AREA UNDER CHIEF CROPS.—AUSTRALIA.

Crop.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	Average 1911-21.	Average 1921-31.
	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.
Barley (a) ..	321	276	307	389	328	149	287
Maize ..	286	401	315	298	293	318	322
Oats ..	844	1,122	1,046	1,516	1,082	808	1,061
Rice ..	4.0	9.9	14.1	19.8	19.9	..	6.9
Wheat ..	11,688	12,279	14,840	14,977	18,165	9,098	12,200
Green Forage ..	881	1,389	860	977	845	636	888
Hay ..	2,700	2,632	2,739	2,659	3,323	2,865	2,965
Beans and Peas ..	49	64	48	50	42	40	48
Onions ..	10.1	8.7	8.6	8.9	7.4	7.3	7.5
Potatoes (b) ..	139	163	138	124	142	135	140
Sugar Beet ..	2.0	2.4	2.1	2.5	3	1	2.1
Vineyards ..	112	113	115	115	113	67	111
Hops ..	1.6	1.6	1.5	1.4	1.2	1.4	1.6
Sugar Cane ..	285	291	299	307	312	167	271
Cotton ..	32	29	26	28	36	0.2	40
Tobacco ..	2.2	2.1	2.2	2.5	3.4	2.1	2.6
Market Gardens (c) ..	45	54	45	52	54	43	47
Orchards ..	276	278	277	278	276	243	277
All other Crops ..	95	103	106	126	118	100	103
Total ..	17,772	19,219	21,190	21,930	25,164	14,681	18,781

(a) Malting only.

(b) Not including Sweet Potatoes.

(c) Including Pumpkins and Melons.

4. **Total and Average Production, Chief Crops, Australia.**—The following table shows the production of the chief crops for the five years ending 1930-31 and averages for the decennia ending 1920-21 and 1930-31 :—

**TOTAL AND AVERAGE PRODUCTION, CHIEF CROPS.—AUSTRALIA.**

Crop.	Unit of Quantity.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	Average 1911-21.	Average 1921-31.
Barley (a) .. ..	1,000 bushels	5,872	4,041	5,692	6,439	5,674	2,749	5,119
Maize .. ..	"	6,970	11,393	8,323	7,946	8,026	8,002	8,587
Oats .. ..	"	12,571	12,084	14,109	14,424	16,658	12,771	14,588
Rice .. ..	"	215	879	1,308	1,829	1,428	..	574
Wheat .. ..	"	160,762	118,200	159,679	126,884	213,594	100,556	142,171
Hay .. ..	"	3,487	2,859	3,175	2,725	4,150	3,136	3,555
Beans and Peas .. ..	bushels	844	700	663	813	737	633	751
Onions .. ..	tons	50	37	34	50	47	33	40
Potatoes (b) .. ..	"	373	470	284	343	365	347	364
Beet Sugar .. ..	"	1.2	2.3	2.1	3.5	5.0	1.1	2.8
Grapes .. ..	"	348	241	393	386	284	105	277
Wine .. ..	gallons	20,456	17,303	18,600	16,069	13,078	6,390	14,967
Raisins and Currants .. ..	cwt.	1,125	657	1,444	1,469	1,016	205	913
Hops .. ..	lb.	2,278	2,898	2,342	2,340	1,973	1,800	2,410
Cane Sugar .. ..	tons	416	509	538	538	536	207	437
Cotton, Unginned .. ..	lb.	9,069	7,061	12,291	8,024	17,023	81	10,705
Tobacco .. ..	lb.	1,218	1,808	1,839	1,702	(c) 324	1,778	1,747
Pumpkins and Melons .. ..	tons	38	78	37	45	59	51	51

(a) Malting only.

(b) Not Including Sweet Potatoes.

(c) Exclusive of Victoria.

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

**AVERAGE PRODUCTION PER ACRE, CHIEF CROPS.—AUSTRALIA.**

Crop.	Unit of Quantity.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	Average 1911-21.	Average 1921-31.
Barley (a) .. ..	bushel	18.30	14.62	18.53	16.56	17.30	18.46	17.85
Maize .. ..	"	24.36	28.45	26.41	26.71	27.34	25.17	25.71
Oats .. ..	"	14.89	10.77	13.49	9.52	15.39	15.80	13.75
Rice .. ..	"	54.16	88.88	93.02	92.44	71.88	..	82.77
Wheat .. ..	"	13.75	9.63	10.76	8.47	11.76	11.05	11.65
Hay .. ..	ton	1.29	1.09	1.16	1.03	1.25	1.20	1.20
Beans and Peas .. ..	bushel	17.24	12.23	13.74	16.16	14.32	15.91	15.84
Onions .. ..	ton	5.01	4.20	4.03	5.57	6.29	4.49	5.27
Potatoes (b) .. ..	"	2.68	2.88	2.06	2.76	2.57	2.57	2.60
Beet Sugar .. ..	"	0.58	1.00	0.99	1.39	1.67	1.08	1.26
Grapes (c) .. ..	"	3.41	2.31	3.71	3.61	2.67	1.95	2.95
Wine .. ..	gallon	449	364	400	345	281	223	342
Raisins and Currants (c) .. ..	cwt.	22.67	13.43	27.52	27.77	19.17	16.52	21.13
Hops (c) .. ..	lb.	1,516	1,851	1,594	1,708	1,689	1,294	1,524
Cane Sugar (c) .. ..	ton	2.09	2.40	2.42	2.41	2.33	2.06	2.33
Cotton, Unginned (c) .. ..	lb.	482	472	605	535	752	382	420
Tobacco .. ..	lb.	801	848	822	689	460	858	736
Pumpkins and Melons .. ..	ton	3.02	3.58	2.79	2.76	2.96	3.80	3.26

(a) Malting only.

(b) Not including Sweet Potatoes.

(c) Per acre of productive crops.

6. **Gross Value of Agricultural Production, Australia, 1923-24 to 1930-31.**—The following table shows the gross value in the metropolitan wholesale markets of agricultural production in Australia for the years 1923-24 to 1930-31.

## GROSS VALUE OF AGRICULTURAL PRODUCTION.—AUSTRALIA.

Crops.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000
Barley (a) .. ..	752	1,156	1,126	1,109	1,006	1,096	1,059	685
Maize .. .. .	2,050	2,467	1,878	2,317	2,799	1,665	2,085	1,617
Oats .. .. .	2,933	2,734	2,334	2,165	2,321	2,137	2,097	1,437
Rice .. .. .	4	4	14	52	198	234	335	295
Wheat .. .. .	29,936	53,547	35,744	42,453	31,895	38,303	27,299	25,047
Green Forage .. ..	3,559	2,309	3,381	3,912	2,731	2,680	3,167	2,385
Hay .. .. .	20,712	18,493	17,078	17,252	15,120	14,137	12,721	14,397
Beans and Peas .. ..	292	234	267	337	333	256	257	199
Onions .. .. .	265	381	457	221	319	314	193	139
Potatoes (b) .. ..	2,433	2,435	3,639	3,116	2,327	3,424	2,375	1,690
Sugar Beet .. .. .	55	49	42	20	54	33	58	82
Grapes .. .. .	2,466	3,593	3,866	5,590	3,786	4,022	4,145	3,496
Hops .. .. .	236	268	207	171	258	189	132	157
Sugar Cane .. .. .	5,106	7,683	6,789	6,568	7,469	7,444	7,476	7,340
Tobacco .. .. .	130	109	168	123	108	97	92	187
Cotton, Unginned .. ..	289	377	380	190	145	214	186	355
Market Gardens (c) .. ..	2,158	2,177	2,331	2,680	2,374	2,384	2,640	2,259
Orchards .. .. .	6,324	7,484	8,043	8,198	9,109	8,807	8,469	7,086
Other Crops .. .. .	1,470	1,663	1,543	1,821	1,976	2,004	2,323	1,647
Total, Gross Value	81,166	107,163	89,267	98,295	84,328	89,440	77,109	70,500

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

7. Net Value of Production.—The following table shows the gross farm and net values, of agricultural production for the five years ending 1930-31 computed in accordance with the methods determined at the Statistical Conferences of 1924 and subsequent years. The heading "Marketing Costs" includes freight, handling charges, commission, and cost of containers. The united cost of these items is deducted from the gross value and the balance shown in column 4 represents the gross production valued at the farm. From this amount the cost of seed used and an estimate of the value of fodder consumed on the farm are deducted, leaving the marketed production valued at the farm or the net return to the farmer for his produce (column 6). The costs included in the heading "Materials used and Depreciation" in column 7 are (i) seed pickling (ii) manures (iii) spraying (iv) power and water used in irrigation and (v) depreciation of farm implements and machinery. The sum of these items is subtracted from column 6 leaving the net value of production (column 8). It is from the sum appearing in the last column that such items as wages, interest, rent and profit are met. The net value of agricultural production is, therefore, in fair harmony with that given for manufacturing production. Owing to the lack of complete data for all States, however, the value of materials used in maintenance of buildings, fences, etc., and an allowance for the depreciation of stock used for draught purposes have been omitted in arriving at the amount shown in column 7.

## GROSS, FARM AND NET VALUES OF AGRICULTURAL PRODUCTION.—AUSTRALIA.

(AS ESTIMATED BY STATE STATISTICIANS IN ACCORDANCE WITH CONFERENCE RESOLUTIONS.)

Year.	Gross Production valued at Metropolitan Wholesale Prices.	Marketing Costs. (c)	Gross Production valued at Farm.	Seed used, and Fodder for Farm Stock.	Marketed Production valued at Farm.	Value of Principal Materials used and allowance for Depreciation.	Net Value of Production.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000
1926-27 ..	98,295	17,556	80,739	(b) 18,578	..	(a)	62,161
1927-28 ..	84,328	15,819	68,509	(b) 19,731	..	(a)	48,778
1928-29 ..	89,440	15,480	73,960	(b) 18,444	..	(a)	55,516
1929-30 ..	77,109	15,637	61,472	12,182	49,290	9,562	39,728
1930-31 ..	70,500	18,487	52,013	11,756	40,257	9,029	31,228

(a) Not available separately, included with Seed used, &amp;c. (b) See Note (a). (c) For details see above.

On account of the fall in prices, and in spite of a greater volume of production, the gross value of agricultural production fell from £98 millions in 1926-27 to £70 millions in 1930-31, a fall of £28 millions or 28 per cent. The net value of production at the same time fell from £62 millions to £31 millions, a fall of £31 millions or 50 per cent. Marketing and production costs actually increased from £36 millions to £39 millions. With allowance for increased costs on account of the increased volume of production, it appears that costs remained at practically the same level during the fall in wholesale prices up to 1930-31. An appreciable measure of adjustment of costs will probably appear in the figures for 1931-32.

#### § 4. Wheat.

1. Progress of Wheat-growing.—(i) *Area and Production.* (a) *Seasons 1926-27 to 1931-32.* Wheat is the principal crop raised in Australia, and since 1895, when the area under this crop amounted to 3½ million acres, an average of 418,000 acres has been added annually, until in 1930-31 more than 18.1 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 1930-31, and are shown from the year 1860 onwards in the graphs hereinafter. The figures in the table include also an estimate for the 1931-32 crop :—

#### WHEAT.—AREA AND PRODUCTION.

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.
1926-27 ..	3,352,298	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 ..	5,134,960	4,600,200	272,316	4,180,513	3,955,763	19,107	2,061	18,164,920
1931-32(a)	3,625,000	3,565,872	300,000	4,071,370	3,158,888	11,700	2,000	14,734,830
PRODUCTION.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1926-27 ..	47,373,713	46,886,020	379,339	35,558,711	30,021,616	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 ..	65,877,000	53,814,369	5,107,561	34,871,526	53,504,149	391,490	28,296	213,594,391
1931-32(a)	54,140,000	41,955,856	3,427,267	48,093,102	41,360,698	222,000	30,000	189,228,923

(a) Final estimate.

The acreage under wheat for grain increased steadily until 1915-16, when, largely as the result of a special war effort, 12,484,512 acres were sown. After that year, however, there was a serious decline, brought about by prevailing 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 until 1930-31, the increase for Australia since 1919-20 amounting to more than 11.7 million acres.

The area sown to wheat for grain during 1930-31 was 18,164,920 acres, an increase of 3.2 million acres on the previous year, and the greatest recorded. This increase took place in spite of, or perhaps because of, a collapse in prices to half the average of the previous ten years. Seasonal conditions were, however, promising; the last crop had been light and the chances of good yields were high. In these circumstances farmers were not likely to lose by sowing largely, and the advice of experts was to increase acreage to the maximum. The Federal and State Governments also urged the farmers to increase exports in order to maintain national solvency. Consequently the area

under wheat rose from 14.9 million acres in 1929-30 to 18.1 million acres in 1930-31 an increase of 21 per cent., while production advanced from 126.8 million bushels to 213.5 million bushels, i.e., by 68 per cent. during the same period. 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 11.76 bushels per acre, as compared with 8.47 bushels for the previous year and 11.65 bushels the average for the decennium ending 1930-31. The total production of grain for the year amounted to more than 213 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 34,500,000 bushels, or 19.2 per cent.

The annual production during the seasons 1921-22 to 1930-31 averaged 142.2 million 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 twelve 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.

Although final figures are not yet available for all States, the data to hand for the year 1931-32 indicate the area sown to wheat for grain in Australia to be about 14,724,830 acres, a decrease of 3.4 million acres or 19 per cent. on that of the previous year. The fall in area was to be expected after the heavy increase during the preceding year, and indicates the resumption of normal conditions. The total, however, is still considerably in excess of the average sown for the decennium 1921-31, which amounted to 12.2 million acres. The 1931-32 season was particularly favourable and yields were high. Production according to the final estimate amounted to 189 million bushels, or 12.88 bushels per acre, compared with 213 million bushels or 11.76 bushels per acre for the previous year.

(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.

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 1921-31 :—

## WHEAT.—YIELD PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
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
1930-31 ..	12.83	11.70	18.76	8.34	13.53	20.49	13.73	11.76
Average 10 seasons, 1921-31	12.01	12.76	15.40	10.00	11.37	21.86	14.69	11.65

The great variations in the average yields were chiefly due to the vagaries of the seasons. Considerable improvement has been shown in the averages for the past three decades, the figures being 10.33, 11.05, and 11.65 bushels per acre respectively, the increased yields in the later years being principally due to the improvement in cultural methods. The best average yields for single seasons were obtained in 1924-25, 15.20 bushels; in 1920-21, 16.08 bushels; and in 1866, 16.35 bushels. In the last mentioned 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 closely approaches local demands, but Tasmania imports from the mainland to satisfy its needs. Normally the production of wheat greatly exceeds Australian requirements, and three-quarters of the crop is 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 Argentina. The quantity exported is approximately 10.7 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 the Netherlands of 46 bushels per acre to a minimum in the Union of South Africa of 8 bushels per acre.

## WHEAT.—YIELD PER ACRE, VARIOUS COUNTRIES.

Country.	Average Yield in Bushels per acre.		Country.	Average Yield in Bushels per acre.	
	Average, 1927-1929.	1930.		Average, 1927-1929.	1930.
Netherlands ..	45.87	42.67	Lithuania ..	17.76	21.56
Belgium ..	40.50	32.26	Yugoslavia ..	17.68	15.31
Denmark ..	35.54	41.04	Bulgaria ..	15.53	19.03
United Kingdom ..	34.12	30.03	United States of America ..	14.73	14.27
New Zealand ..	33.37	26.76	Rumania ..	13.96	17.25
Switzerland ..	32.81	28.99	Spain ..	13.12	13.23
Sweden ..	31.82	33.16	Uruguay ..	12.53	8.33
Germany ..	30.73	31.67	Peru ..	(b) 11.61	(a) 11.89
Czechoslovakia ..	26.45	25.72	Argentina Republic	10.99	12.04
Norway ..	26.12	23.64	Cyprus ..	10.51	10.11
Egypt ..	26.11	26.17	Soviet Republics	10.34	12.94
Japan ..	25.33	24.53	French Morocco ..	10.03	7.14
Austria ..	23.75	23.64	India ..	9.85	12.34
France ..	22.63	17.54	Korea ..	9.73	10.56
Brazil ..	(b) 22.26	(a) 12.94	Australia ..	9.62	11.76
Hungary ..	21.15	20.07	Portugal ..	9.15	12.34
Chile ..	19.85	13.23	Greece ..	9.07	9.22
Italy ..	18.14	17.69	Union of South Africa ..	8.49	8.92
Poland ..	18.48	20.22			
Canada ..	18.28	15.91			

(a) Year 1928.

(b) Average 1926-28.



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

### WHEAT.—TOTAL PRODUCTION, VARIOUS COUNTRIES.

Country.	Yield in Bushels (,000 omitted).		Country.	Yield in Bushels (,000 omitted).	
	Average, 1927-1929.	1930.		Average 1927-1929.	1930.
United States of America ..	862,565	863,444	French Morocco ..	22,687	21,303
Soviet Republics ..	758,025	1,083,939	Sweden ..	18,007	21,469
Canada ..	437,593	397,879	Belgium ..	15,830	13,236
India ..	313,799	390,843	Uruguay ..	14,672	7,218
France ..	292,428	231,121	Syria ..	12,454	19,378
Italy ..	228,210	210,073	Austria ..	12,145	12,008
Argentine Republic ..	227,989	235,962	Greece ..	11,519	12,048
Spain ..	139,653	146,701	Mexico ..	11,418	11,446
<b>Australia ..</b>	<b>134,921</b>	<b>213,594</b>	Denmark ..	11,132	10,216
Germany ..	128,394	139,218	Tunis ..	10,901	10,398
Rumania ..	104,012	130,772	Portugal ..	9,936	13,817
Yugoslavia ..	84,954	80,327	Korea ..	8,653	8,985
Hungary ..	83,711	84,339	New Zealand ..	8,347	6,500
Poland ..	62,058	82,322	Union of South Africa ..	7,626	10,180
United Kingdom ..	51,761	42,245	Lithuania ..	6,976	11,327
Czechoslovakia ..	50,535	50,607	Netherlands ..	6,319	6,056
Egypt ..	42,299	39,754	Brazil ..	(b) 4,581	(c) 6,266
Bulgaria ..	42,001	57,318	Switzerland ..	4,173	3,829
Chile ..	31,679	21,190	Peru ..	(b) 2,911	(a) 4,453
Algeria ..	30,644	32,440	Cyprus ..	1,875	1,873
Japan ..	30,177	29,539	Norway ..	718	720

(a) Year 1928. (b) Average 1926-28. (c) Year 1929.

NOTE.—The harvests reported above for 1930 relate to the year 1930 for the Northern, and 1930-31 for the Southern Hemisphere.

A complete statement of the world's production of wheat is not possible owing to the failure of certain countries to supply the necessary information. 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)

Years.	Area.	Production.	Yield per acre.
	Acres.	Bushels	Bushels.
Average 1909-1913 ..	270,266,000	3,779,479,000	13.98
1926 .. ..	302,030,330	4,294,357,000	14.27
1927 .. ..	311,024,770	4,387,933,000	14.13
1928 .. ..	310,424,317	4,720,485,000	15.17
1929 .. ..	312,013,170	4,132,564,000	13.23
1930 .. ..	331,212,840	4,767,863,000	14.42
Average, 1926-1930 ..	313,341,085	4,460,640,000	14.24

(a) From countries reporting.

The Report of the Institute mentions that if all countries for which data are lacking were taken into account, the world's total production of wheat may be approximately estimated at 5,000 million bushels.

The total area harvested in 1930 shows an increase on the figures for the previous year, the Soviet Union, Argentine and Australia 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 60,000,000 acres. In comparison with the pre-war period, areas sown to wheat in European countries, exclusive of the Soviet Union, slightly increased. North America, Argentine, and Australia were the chief contributing countries to the increase in 1930 over the average for 1909-13.

The world's acreage under wheat in 1930 and the production therefrom were the highest ever recorded. At the same time there were large accumulations of wheat in North America, and these factors led to a collapse in prices. The average wholesale price of wheat in Melbourne fell from 5s. 2d. per bushel in 1928 to 2s. 5½d. in 1931, a decrease of 53 per cent.

The Australian contribution to the world's average production shown above during the past five years amounted to nearly 3½ 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.

Item.	1927-28.	1928-29.	1929-30.	1930-31.	1931-32.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Price per bushel ..	5 6	4 10	5 0	2 5½	3 0½

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

4. **Exports of Wheat and Flour.**—(i) *Quantities.* The table appended shows the exports, and net exports of wheat and flour from 1926-27 to 1930-31. 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 144,386,954 bushels in 1930-31, the net exports for the period averaging 97,512,684 bushels.

#### WHEAT AND FLOUR.—EXPORTS, AUSTRALIA.

Year.	Exports.			Net Exports.
	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bushels.(a)	Bushels.	Bushels.
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
1930-31 ..	119,223,290	25,163,664	144,386,954	144,384,366

(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 1930-31, together with averages for the pre-war period 1909-13 and for the five years 1926-31 :—

## EXPORTS OF WHEAT.—AUSTRALIA.

Country to which Exported.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	Average, 1909-13.	Average, 1926-31.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
United Kingdom	26,510,696	20,465,490	20,564,650	21,488,415	39,095,488	30,305,384	25,804,948
Italy .. ..	10,316,509	7,151,695	5,861,552	3,261,455	12,697,635	581,309	7,857,769
Japan .. ..	4,208,567	3,199,720	5,626,298	2,811,142	17,676,232	330,131	6,722,392
France .. ..	7,254,063	622,785	1,967,455	186,682	350,638	1,681,918	2,076,325
Union of South Africa	2,005,233	6,941,395	4,143,328	1,540,482	956,317	2,992,355	3,117,351
Belgium .. ..	4,782,332	1,729,143	994,923	408,990	2,016,602	1,218,131	1,986,398
Egypt .. ..	4,625,279	3,827,159	4,943,383	1,178,230	3,143,433	135,377	3,543,493
Germany .. ..	2,132,607	2,356,622	1,001,897		193,935	286,822	1,137,012
Netherlands ..	3,379,723	726,993	1,834,132	490,358	2,158,470	(a)	1,717,935
Other Countries ..	8,620,316	6,021,364	34,958,627	9,024,953	40,034,540	4,465,847	19,731,960
Total ..	73,925,316	53,042,357	81,896,245	40,390,707	119,223,290	41,997,274	73,695,583

(a) Included with other Countries.

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

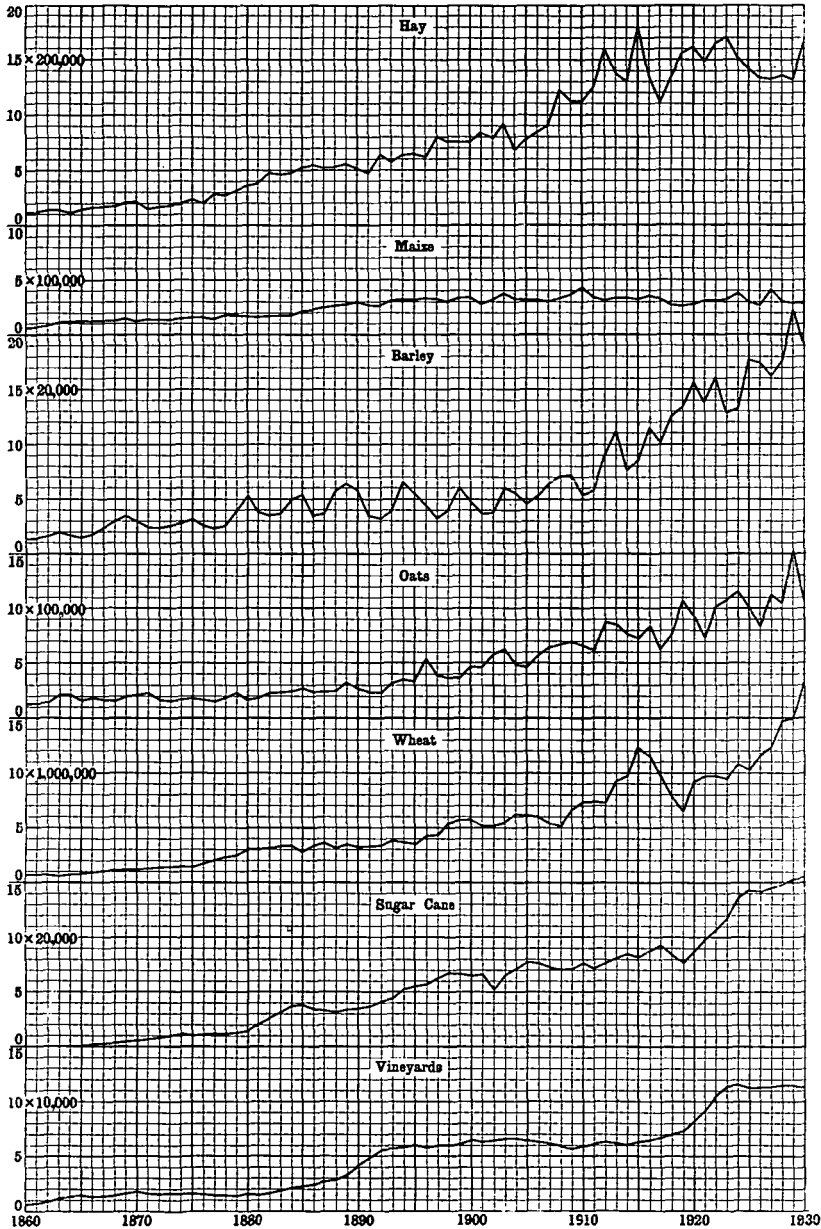
## EXPORTS OF FLOUR.—AUSTRALIA.

Country to which Exported.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	Average, 1909-13.	Average, 1926-31.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Egypt .. ..	185,392	150,795	243,468	125,963	145,694	(a)	170,262
United Kingdom	76,167	71,837	57,945	85,364	134,547	27,699	85,172
Netherlands East Indies	64,648	65,923	79,040	82,595	74,765	26,099	73,394
Malaya (British) ..	42,451	41,071	52,176	51,160	41,841	15,492	45,740
Union of South Africa	18,912	22,183	24,558	18,256	9,051	30,714	18,592
Ceylon .. ..	16,060	20,203	21,705	21,252	21,630	3,389	20,170
New Zealand .. ..	28,383	5,053	3,556	3,823	5,168	3,221	9,197
Philippine Islands	8,754	7,569	8,436	8,707	8,949	13,680	8,483
Hong Kong .. ..	3,066	5,856	2,072	2,933	5,947	2,672	4,335
Mauritius .. ..	7,781	4,979	9,395	5,988	4,896	2,221	6,608
Portuguese East Africa	5,802	7,531	5,917	5,410	5,747	13,462	6,081
Other Countries ..	35,148	30,795	54,635	54,282	66,008	28,463	48,174
Total ..	493,464	433,795	563,803	465,733	524,243	167,112	496,208

(a) Included with other Countries.

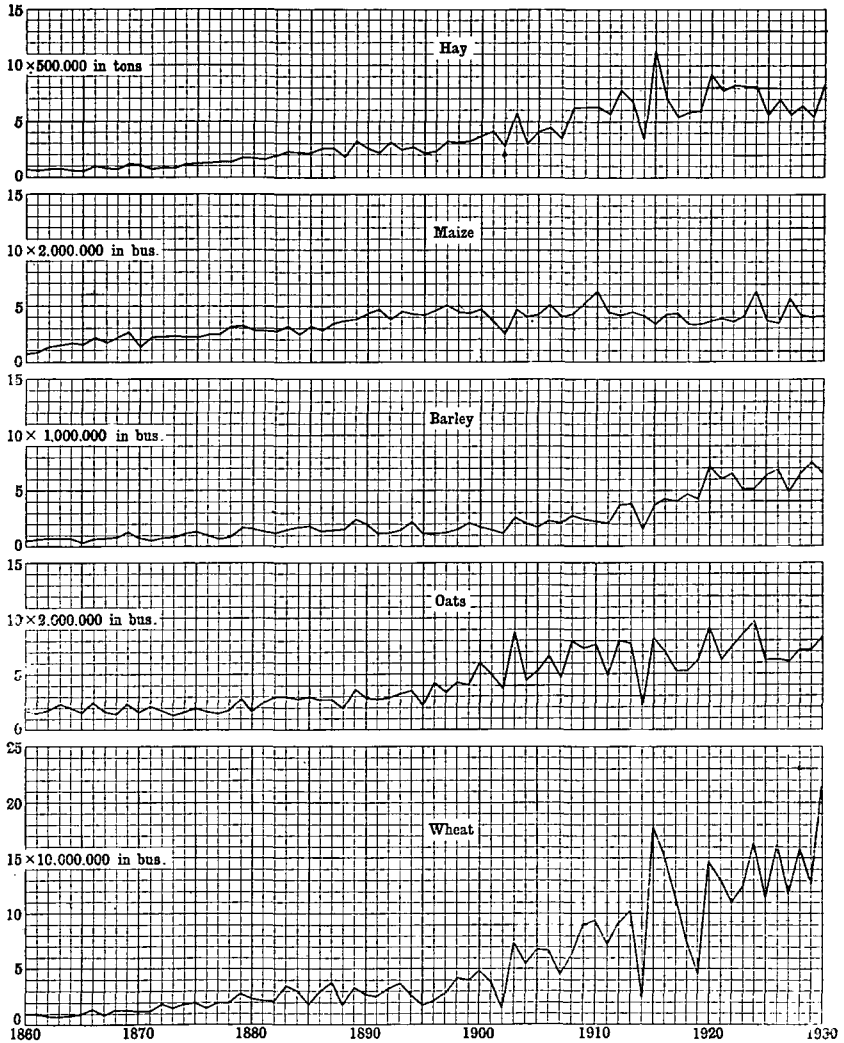
5. Exports—Principal Countries.—The following table shows the net quantities of wheat exported from the chief exporting countries for the years 1926 to 1930, the average for that period and the average for the period 1909-13. The figures are based mainly on information supplied by the International Institute of Agriculture. Comparison between the periods 1926-30 and 1909-13 shows that the world's supply of wheat in the later years has been obtained from North America, Canada supplying 37 per cent., and the United States 20 per cent., as compared with 14 and 15 per cent. respectively for the pre-war period. Russia's exports, which amounted to about 24 per cent. of the total for the period 1909-13, fell to 4 per cent. for the years 1926-30. Under Government stimulus, however, the area sown to wheat in the Soviet Republics is increasing rapidly. In 1930 the total amounted to 83.8 million acres, which produced 1,083.9 million bushels, an average of 12.94 bushels per acre. While Australian production was only 3½ per cent. of the world's total, the exports accounted for 10.7 per cent. of the quantities exported in the years 1926-30.

## AREA UNDER PRINCIPAL CROPS—AUSTRALIA 1860 TO 1931.



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.

## WHEAT.(a)—NET EXPORTS, PRINCIPAL COUNTRIES.

Country.	Average, 1909-13.		1926.	1927.
	Bushels.	Per cent.	Bushels.	Bushels.
Soviet Republics (a) ..	157,109,000	23.71	38,725,206	29,160,690
Canada ..	89,919,000	13.57	295,301,160	294,974,749
United States of America ..	100,864,000	15.22	178,433,508	215,091,653
Argentina ..	95,041,000	14.34	81,704,321	163,569,085
British India ..	50,886,000	7.68	8,330,180	12,245,294
Australia ..	49,417,000	7.46	73,735,524	104,352,729
All other Countries ..	119,351,000	18.02	74,715,751	42,795,718
Total ..	662,587,000	100.00	750,945,710	862,189,918
World's Production ..	3,779,479,000		4,294,357,000	4,387,933,000
Percentage of Australian Net Exports on Total Net Exports ..	7.46		9.82	12.10
Percentage of Australian Production on World's Production ..	2.39		3.74	2.69

Country.	1928.	1929.	1930.	Average, 1926-30.	
	Bushels.	Bushels.	Bushels.	Bushels.	Per cent.
Soviet Republics (b) ..	..	..	93,500,338	32,277,247	4.00
Canada ..	411,760,521	250,485,790	240,076,983	298,519,841	37.01
United States of America ..	131,835,470	137,914,928	127,484,281	158,151,980	19.61
Argentina ..	202,868,949	249,708,054	86,434,936	156,857,069	19.45
British India ..	27,765,634	..	4,376,075	10,543,436	1.31
Australia ..	79,670,093	99,150,188	75,115,330	86,404,773	10.71
All other Countries ..	51,747,821	71,425,641	78,525,402	63,842,066	7.91
Total ..	905,648,488	808,684,601	705,513,345	806,596,412	100.00
World's Production	4,720,485,000	4,132,564,000	4,767,863,000	4,460,640,400.	
Percentage of Australian Net Exports on Total Net Exports ..	8.80	12.26	10.65	10.71	
Percentage of Australian Production on World's Production ..	3.38	3.07	4.48	3.49	

(a) Including flour expressed in terms of wheat. (b) The average for 1909-13 is not strictly comparable with the later years, owing to changes of frontiers under the Peace Treaty.

6. Imports—Principal Countries.—The quantities of wheat and flour (expressed in terms of wheat) imported into the principal countries of destination, for the periods indicated, are shown in the following table. The United Kingdom is easily the leading importing country. Under the terms of the Agreement at the Imperial Economic Conference at Ottawa in August, 1932, the Government of the United Kingdom undertook to provide for a duty of 3d. per bushel on foreign wheat imported, and the concession should prove of considerable benefit to Canada and Australia. During recent years the imports of wheat to China and Japan have grown considerably, and a large share in this trade has been taken by Australia.

## WHEAT.(a)—IMPORTS, PRINCIPAL COUNTRIES.(b)

Country Importing.	Average, 1909-13.		1926.	1927.
	Bushels.	Per cent.	Bushels.	Bushels.
Germany .. ..	89,731,507	12.44	85,774,904	98,892,898
Belgium .. ..	73,962,974	10.26	38,929,693	45,790,749
France .. ..	38,681,717	5.36	17,601,901	80,043,137
Great Britain ..	219,365,265	30.42	206,210,629	233,425,613
Italy .. ..	57,156,174	7.93	78,972,418	84,898,799
Netherlands ..	76,340,387	10.59	27,347,235	30,809,530
Brazil .. ..	20,774,307	2.88	30,783,821	31,884,695
China .. ..	5,525,863	0.77	21,923,598	15,081,749
Japan .. ..	3,713,840	0.52	26,273,531	18,156,065
Egypt .. ..	7,914,626	1.10	10,042,843	7,620,107
South Africa ..	6,519,097	0.90	4,511,045	5,781,875
All other Countries	121,409,356	16.83	198,638,406	226,553,482
Total .. ..	721,095,113	100.00	747,010,024	878,938,699

Country Importing.	1928.	1929.	1930.	Average, 1926-30.	
	Bushels.	Bushels.	Bushels.	Bushels.	Per cent.
Germany .. ..	92,748,593	79,779,402	45,076,168	80,454,375	9.58
Belgium .. ..	44,514,982	44,654,975	44,876,382	43,753,356	5.21
France .. ..	38,356,333	52,592,676	39,331,044	45,585,018	5.43
Great Britain ..	215,560,947	232,781,569	224,793,731	222,554,498	26.50
Italy .. ..	101,033,230	65,030,081	71,417,907	80,270,487	9.56
Netherlands ..	29,519,980	30,187,874	33,835,932	30,340,110	3.61
Brazil .. ..	35,798,744	35,397,705	31,279,111	33,028,815	3.93
China .. ..	19,731,378	47,929,460	21,501,395	25,233,516	3.00
Japan .. ..	24,568,194	27,530,853	18,756,906	23,057,110	2.75
Egypt .. ..	8,162,124	12,656,077	10,225,853	9,741,401	1.16
South Africa ..	8,749,311	7,634,672	2,794,289	5,894,239	0.70
All other Countries	266,606,749	280,693,876	227,141,083	239,926,719	28.57
Total .. ..	885,350,475	916,869,220	771,029,801	839,839,644	100.00

(a) Including flour expressed in terms of wheat. (b) In some instances, the average 1909-13 is not strictly comparable with the other years shown, owing to changes of frontiers.

7. Consumption of Wheat.—(i) *Australia.* The estimated consumption of wheat for food and the quantity used for seed in Australia during the past five years are shown hereunder :—

**AVERAGE HUMAN CONSUMPTION, 1926-27 TO 1930-31.**

Flour Milled .. .. .	1,144,540 tons
Less Net exports of flour .. .. .	496,154 tons
Less Net exports of flour in Biscuits .. .. .	1,563 "
	497,717 "
Net quantity available for home consumption .. .. .	646,823 "
Equivalent in terms of wheat .. .. .	31,047,504 bushels
Net quantity available per head of population—	
As flour .. .. .	205 lb.
As wheat .. .. .	4.917 bushels

**AVERAGE USED FOR SEED, 1926-27 TO 1930-31.**

Average area sown for grain and hay .. .. .	15,454,037 acres
Average quantity of seed used .. .. .	14,525,600 bushels
Average quantity of seed used per acre .. .. .	56 lb.
Average quantity per head of population .. .. .	2.300 bushels

In addition to the above, allowance must be made for wheat fed to poultry and other live stock or used as seed for green forage crops. The quantities so used 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 counter-balanced by a decline in the following year. The average quantity of flour consumed per annum for the five years under consideration was 205 lb. per head of population, which, expressed in terms in wheat, represents 4.917 bushels. The estimates of quantity of grain used for seed in Victoria, South Australia and Western Australia are based on data collected from growers. In the other States estimates supplied by the Agricultural Departments have been used. The average annual quantity used for the purposes indicated during the last five years was 2.300 bushels per head of population, or 56 lb. per acre sown. The consumption of wheat in Australia for all purposes during the period dealt with averaged, therefore, 50,309,000 bushels, or 7.97 bushels per head of population.

(ii) *Other Countries.* The following table gives the consumption of wheat in some of the principal countries of the world. The figures, which were obtained partly from the Food Research Institute, of California, represent the *per capita* consumption of wheat exclusive of the quantity used for seed purposes.

**PER CAPITA CONSUMPTION OF WHEAT, EXCLUDING SEED, FOR PERIOD 1922-1929.**

Country.	Used for human consumption.	Fed to Stock.	Total.
	Bushels.	Bushels.	Bushels.
Argentina .. .. .	5.4	0.2	5.6
Australia (a) .. .. .	4.9	0.7	5.6
Canada .. .. .	4.5	3.3	7.8
New Zealand (b) .. .. .	5.9	0.2	6.1
United Kingdom .. .. .	4.8	1.0	5.8
United States .. .. .	4.2	0.6	4.8

(a) Average for five years ending 1930-31.

(b) Average for five years ending 1930.



8. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in Australia during the season 1930-31 is shown below :—

WHEAT.—VALUE OF CROP(a), 1930-31.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value..	7,136,680	6,726,796	1,030,642	3,995,696	6,100,588	53,830	3,065	25,047,297
Value per acre ..	£1/7/10	£1/9/3	£3/15/8	£0/19/1	£1/10/10	£2/16/4	£1/9/9	£1/7/7

(a) Gross value of total crop, including seed used on farm, valued at metropolitan prices; but exclusive of value of straw.

9. **Stocks of Wheat and Flour.**—Stocks of wheat and flour held by each State at 30th November, 1931, and the total held in Australia on the same date for the previous four years will be found in the following table. The figures have been compiled from information collected from millers, merchants, the Railway Departments and other sources but are exclusive in certain instances of stocks held by farmers.

STOCKS OF WHEAT AND FLOUR.—AUSTRALIA, 30TH NOVEMBER, 1931.

State.		Wheat.	Flour.	Total in terms of wheat.(a)
		Bushels.	Tons.	Bushels.
New South Wales	.. ..	4,033,965	29,565	5,453,085
Victoria	.. ..	6,800,694	21,676	7,841,157
Queensland	.. ..	125,993	6,178	422,525
South Australia	.. ..	876,634	14,236	1,559,959
Western Australia	.. ..	485,793	6,910	817,473
Tasmania	.. ..	124,145	1,487	195,521
Total, 30th November, 1931		12,447,224	80,052	16,289,720
"	" 1930	10,106,694	77,066	13,805,879
"	" 1929	11,085,059	93,825	15,588,659
"	" 1928	5,468,531	70,513	8,853,156
"	" 1927	7,638,708	92,460	12,076,772

(a) One ton of flour treated as equivalent to 48 bushels of wheat.

10. **Voluntary Wheat Pools.**—Reference to the operations of the voluntary Wheat Pools in the various States during 1931-32 will be found in the Appendix at the end of this volume.

## § 5. Oats.

1. **Progress of Cultivation.**—(i) *Area and Production.* Oats is usually next in importance to wheat amongst the grain crops cultivated in Australia, but while wheat grown for grain accounted for 72.19 per cent., oats represented only 4.30 per cent. of the area under crop in 1930-31. The acreage and production of oats for the last five years is shown in the table hereunder, and more fully in the graphs herein :—

## OATS.—AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
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## AREA.

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
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
1930-31	176,659	371,024	5,132	218,416	274,874	35,919	77	1,082,101

## PRODUCTION.

	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
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	3,554,609	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
1930-31	3,241,980	6,893,827	94,452	2,080,311	3,292,560	1,052,768	2,160	16,658,058

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 for the period of 14,700,000 bushels. The demand for the grain for oatmeal is limited to about 2,000,000 bushels annually. The product is mainly used as feed grain, and its value, particularly in good seasons, is not sufficient to warrant an increase in cultivation.

The principal oat-growing State is Victoria, which produces on the average more than one-third of the total quantity grown in Australia. 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. Averages for each of the last five seasons, and for the decennium 1921 to 1931 are given in the table below :—

## OATS.—AVERAGE YIELD PER ACRE.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
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
1930-31 ..	18.35	18.58	18.40	9.52	11.98	29.31	28.05	15.39
Average for 10 seasons 1921-31	16.92	14.60	16.73	9.43	11.55	27.62	15.08	13.75

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 world's production of oats for the year 1930, as computed by the International Institute of Agriculture, amounted to 3,802 million bushels. Compared with 1929, the area in 1930 decreased by 3 million acres and the production by 135 million bushels. The average yield per acre in 1930 was 25.70 bushels. In the 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 1930 a total was returned of 148,000,000 acres, an increase of 5,000,000 acres over the pre-war period.

3. **Prices of Oats.**—The average wholesale prices in the metropolitan markets for the year 1930-31 are given in the following table :—

OATS.—AVERAGE WHOLESALE PRICES, 1930-31.

Particulars.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Average price per bushel ..	3 3½	2 3	3 8½	1 10¾	1 6	1 9½

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 two 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 1926-27 to 1930-31 are given hereunder :—

OATS.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
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
1930-31 ..	3,293	966	171,825	23,957	168,532	22,991

NOTE.—(—) signifies net import.

Imports have been obtained chiefly from New Zealand, while the principal countries to which oats were exported during the years quoted were New Zealand, Malaya (British), Ceylon, and Netherlands East Indies.

5. **Oatmeal, etc.**—The production of oatmeal in Australia during 1930-31 amounted to 274,796 cwt., practically the whole of which is consumed locally, the quantity of oats used for oatmeal being 1,676,661 bushels or 10 per cent. of the total production. Oversea trade in this and similar products is small, the imports of oatmeal, wheatmeal and rolled oats during 1930-31 amounting to 3,415 cwt., and exports to 8,403 cwt.

6. **Value of Oat Crop.**—The estimated value of the oat crop for the season 1930-31 was as follows :—

OATS.—VALUE OF CROP,(a) 1930-31.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value..	276,930	617,572	22,039	169,025	257,232	94,450	185	1,437,433
Value per acre ..	£1/11/4	£1/13/6	£4/5/11	£0/15/6	£0/18/9	£2/12/7	£2/8/1	£1/10/9

(a) Exclusive of the value of straw.

## § 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 1930-31 being 277,200 acres, or 94 per cent. of the total for Australia. Of the balance, Victoria contributed 16,227 acres, and Western Australia 10 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 Cultivation.**—(i) *Area and Production.* Notwithstanding 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 1930-31 decreased by more than 4,000 acres. The greatest area grown was in 1910-11 when it amounted to 414,914 acres. The average for the decennium 1921-31 was 322,360 acres.

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

MAIZE.—AREA AND PRODUCTION.

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.
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
1930-31	105,024	16,227	172,176	..	10	..	13	293,450
PRODUCTION.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
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
1930-31	2,766,660	692,896	4,565,850	..	87	..	126	8,025,619

The greatest production of maize in Australia was recorded in 1910-11, when it amounted to over 13,000,000 bushels. This figure was considerably in excess of the yields for recent years, except in 1924, when a bountiful harvest in Queensland increased the Australian total to 12,400,000 bushels. The production in 1930-31 amounted to 8,025,619 bushels, and the average for the past decennium was 8,586,506 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 1926-27 to 1930-31, and for the decennium 1921-1931:—

MAIZE.—AVERAGE YIELD PER ACRE.

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.
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
1930-31 ..	26.34	42.70	26.52	..	8.70	..	9.69	27.34
Average for 10 seasons 1921-31	26.76	39.40	24.96	20.15	13.17	5.69	19.71	26.64

The average for Victoria in 1930-31 was amongst the highest in the world. The area, however, is comparatively small and is situated in specially favourable districts. The average for New South Wales is generally higher than for Queensland.

(iii) *Production per Acre—Various Countries.* The average for Australia for the past 10 years was 26.6 bushels per acre. The United States of America shows an average of 27.6 bushels, Argentine 32.98 bushels, Rumania 16.25 bushels, and the Soviet Republic 18.16 bushels per acre.

3. *World's Production.*—The production in 1925, amounting to 4,685 million bushels, was the highest on record. Since that year there was a decline down to 1929 when an increase of approximately 200 million bushels was returned. Totals from 1909 to 1930 were as follow :—

Average 1909 to 1913	..	..	..	4,174,000,000 bushels
1926	..	..	..	4,464,000,000 „
1927	..	..	..	4,373,000,000 „
1928	..	..	..	4,301,000,000 „
1929	..	..	..	4,508,000,000 „
1930	..	..	..	3,972,000,000 „

The United States is the most important maize-producing country in the world. Approximately 100,000,000 acres are planted there annually, and nearly 3,000,000,000 bushels are reaped, representing about 75 per cent. of the world's production. About 85 per cent. of the total 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.

4. *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.

Particulars.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Average price per bushel ..	6 10	4 7	4 11½	6 0½	4 1

5. *Overseas Imports and Exports.*—The decline in production has necessitated an average annual import of more than 180,000 bushels during the last five years, the bulk of the supplies being furnished by South Africa. Details of imports and exports for the years 1926-27 to 1930-31 are as follow :—

MAIZE.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
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
1930-31 ..	3,945	681	1,498	377	— 2,447	— 304

NOTE.—(—) denotes net exports.

6. *Maize Products.*—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 but in 1930-31 the figures fell to 10 lb., valued at £1. Exports from Australia are small, and in 1930-31 amounted to 15,922 lb., valued at £373

7. Value of Crop.—The value of the crop for the season 1930–31 was as follows :—

MAIZE.—VALUE OF CROP, 1930-31.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	F.C.T.	Australia.
	£	£	£	£	£	£	£
Aggregate value	521,520	129,918	965,487	..	30	24	1,616,979
Value per acre	£4/19/4	£8/0/0	£5/12/2	..	£3/0/0	£1/16/11	£5/10/3

§ 7. Barley.

1. Progress of Cultivation.—(i) *Area and Production.* The area under barley has fluctuated considerably, but results for the last ten years show a tendency towards an increase. The average annual area sown for the decennium 1921–1931 amounted to 341,703 acres, as compared with an average of 213,564 acres for the previous ten years. Victoria was originally the principal barley-growing State, but since 1913–14, South Australia has been the chief producing State, accounting for nearly 66 per cent. of the Australian acreage in 1930–31. Victoria was next in importance with 23 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 sub-section. 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.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
AREA.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1926–27 ..	5,626	88,896	399	256,528	13,826	5,665	4370,943
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	4354,539
1929–30 ..	7,947	97,678	9,754	305,316	23,649	6,935	4451,339
1930–31 ..	11,526	87,518	8,434	251,957	17,236	6,192	4382,887
PRODUCTION.							
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1926–27 ..	100,221	1,920,722	1,991	4,630,044	128,136	149,800	46,930,953
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	46,617,341
1929–30 ..	113,850	2,183,325	205,507	4,656,254	261,870	166,984	47,588,852
1930–31 ..	188,610	1,983,130	173,563	3,960,929	185,301	168,625	46,660,911

(a) Including Federal Capital Territory, 3 acres, 39 bushels.

(b) " " " " " 20 acres, 360 bushels.

(c) " " " " " 60 acres, 1,002 bushels.

(d) " " " " " 24 acres, 753 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 3,829,943 and 1,864,891 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 1930-31.* Particulars for the season 1930-31 are as follow :—

**BARLEY, MALTING AND OTHER.—AREA AND PRODUCTION, 1930-31.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley..	7,144	60,800	6,148	235,175	13,202	5,590	328,059
Other barley ..	4,382	26,718	2,286	16,782	4,034	602	54,828
Total ..	11,526	87,518	8,434	251,957	17,236	6,192	382,887
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Malting barley..	126,720	1,401,306	134,226	3,717,883	141,240	152,565	5,673,940
Other barley ..	61,890	581,824	39,337	243,046	44,061	16,060	986,971
Total ..	188,610	1,983,130	173,563	3,960,929	185,301	168,625	6,660,911

(a) Including Federal Capital Territory, 24 acres, 753 bushels.

Taking Australia as a whole, about 85 per cent. of the area under barley in 1930-31 was sown with malting barley. The proportion, however, 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.**

Season.	Acres.			Bushels.			Average Yields per Acre.		
	Malting.	Other.	Total.	Malting.	Other.	Total.	Malting.	Other.	Total.
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
1930-31 ..	328,059	54,828	382,887	5,673,940	986,921	6,660,861	17.30	18.00	17.40
Average 10 seasons									
1921-31	286,803	54,900	341,703	5,119,272	1,059,796	6,179,068	17.85	19.30	18.08

During the past ten seasons the area and production of malting barley have represented almost five 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 1921-31, are given in the following table :—

## BARLEY.—YIELD PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
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
1930-31 ..	16.36	22.66	20.58	15.72	10.75	27.23	17.40
Average for 10 seasons 1921-31	15.81	21.86	17.92	16.97	11.51	23.76	18.08

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:—United States 265 million bushels; Soviet Republic 300 million bushels; Germany 132 million bushels; India 110 million bushels; and Canada 105 million bushels.

3. **World's Production.**—The area under barley in 1930 showed a decrease of 3 million acres on that of the previous year. Compared with the average for 1909-13, the total under cultivation in 1930 amounting to 91 million acres, increased by about 5,000,000 acres. The production of barley in millions of bushels from 1909 onwards was as follows:—

	Year.	Production.
Average 1909-13	.. ..	1,676 millions of bushels.
1926	.. ..	1,531 ..
1927	.. ..	1,567 ..
1928	.. ..	1,781 ..
1929	.. ..	1,897 ..
1930	.. ..	1,808 ..

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

## BARLEY.—AVERAGE MELBOURNE PRICE PER BUSHEL.

Particulars.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley ..	4 3	4 7½	4 7	4 1	2 11
Cape barley ..	3 11	4 3	3 6	3 3½	2 2

5. **Imports and Exports.**—Australian exports of barley during the last five years averaged 1,705,626 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 1926-27 to 1930-31 are contained in the following table:—

## BARLEY.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
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
1930-31 ..	110	52	3,328,652	403,919	3,328,542	403,867



In some years there is an export of Australian pearl and Scotch barley, the total for 1930-31 reaching 13,693 lb., valued at £116 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 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 1926-27 to 1930-31 are given in the next table :—

#### MALT.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
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
1930-31 .. ..	38	57	4,253	1,730	4,215	1,673

7. **Value of Barley Crop.**—The estimated value of the barley crop for the season 1930-31 and the value per acre are shown in the following table :—

#### BARLEY.—VALUE OF CROP(x), 1930-31.

Value.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Total ..	31,480	226,073	31,451	439,782	24,366	22,790	70	776,012
Per acre ..	£2/14/7	£2/11/8	£3/14/7	£1/14/11	£1/8/3	£3/13/7	£2/18/4	£2/0/6

(a) Exclusive of the value of straw.

### § 8. Rice.

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. In that year production amounted to 16,240 bushels from 153 acres, or an average of 106 bushels per acre.

Figures relating to area, production, etc., since 1925-26 will be found in the following table :—

#### RICE.—AREA, PRODUCTION, ETC., AUSTRALIA.

Year.	Area.	Production. Paddy Rice.	Average. Yield.	Imports.	Exports.	Retail Price.
	Acres.	Bushels.	Bushels.	Bushels.	Bushels.	Pence per lb.
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
1930-31 ..	19,860	1,427,524	71.88	117,624	200,760	3.58

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

settlements 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 three years has exceeded consumption and the surplus has been exported chiefly to the United Kingdom, Canada, New Zealand, and the Pacific Islands.

### § 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 1930-31 was 42,212 acres, giving a yield of 736,523 bushels, or an average of 17.45 bushels per acre, being above the average yield for the decennium ended 1930-31, which was 15.84 bushels per acre. Beans and peas are grown chiefly in 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 1930-31 was 6,128 acres, yielding 80,919 bushels, giving an average of 13.20 bushels per acre, or slightly higher than the average for the past ten seasons, i.e., 13.10 bushels per acre. Nearly 73 per cent. of the rye grown during the season was produced in New South Wales, and 12 per cent. in Victoria.

### § 10. Potatoes.

**I. Progress of Cultivation.**—(i) *Area and Production.* Victoria possesses peculiar advantages for the growth of potatoes, as the rainfall is generally satisfactory, and the climate is unfavourable to the spread of Irish blight, consequently the crop is 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.

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.
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	118,068
1929-30 ..	12,785	58,789	8,116	4,536	6,024	33,722	8	123,980
1930-31 ..	15,304	67,590	10,277	4,998	6,306	37,229	12	141,716
PRODUCTION.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
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
1930-31 ..	32,283	173,341	18,489	18,991	26,318	95,289	13	364,724

(a) Includes Northern Territory, 20 acres.

The acreage grown during the last five years was fairly uniform, except in 1927-28, when there was an increase of nearly 24,000 acres, chiefly owing to larger planting in Victoria and Tasmania. The production in 1930-31 amounted to 364,724 tons, as compared with an average of 364,408 tons for the last ten years and 365,241 tons for the previous decennial period. The record production of 507,153 tons was obtained in 1906-7.

(ii) *Average Production.* Particulars for each State for the seasons 1926-27 to 1930-31, and for the past decennium, are given hereunder:—

#### POTATOES.—PRODUCTION YIELD PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
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
1930-31 .. ..	2.11	2.56	1.80	3.80	4.17	2.56	1.08	2.57
Averages for 10 seasons 1921-31..	2.12	2.68	1.60	3.59	3.88	2.67	2.83	2.60

The comparatively low yield per acre compared with that of many other countries is due in large measure to the neglect of rotation, and the insufficient use of manures. The production in New Zealand, for example, in 1930-31 averaged 5.56 tons per acre from an area of 23,998 acres, as compared with 2.60 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 10 cwt. Details for all States for the seasons 1926-27 to 1930-31 are as follow:—

#### POTATOES.—PRODUCTION PER 1,000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
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
1930-31 .. ..	13	97	20	33	63	432	2	56

(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 figures shown above, 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, 1927-31.

State.	Average Annual Production.	Average Annual Consumption.	Average Annual Imports.
	1,000 Tons.	1,000 Tons.	1,000 Tons.
New South Wales .. ..	37	141	104
Victoria .. ..	176	103	— 73
Queensland .. ..	14	53	39
South Australia .. ..	16	34	18
Western Australia .. ..	21	23	2
Tasmania .. ..	103	13	— 90
Australia .. ..	367	367	..

The minus sign (—) denotes average exports.

2. Imports and Exports.—Under normal conditions small quantities of potatoes are exported, principally to the Pacific Islands and Papua. In case of a shortage in any of the States, supplies are usually obtained from New Zealand. Figures showing the trade for the past five years are given in the following table :—

POTATOES.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
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
1930-31 .. ..	7	128	1,917	13,948	1,910	13,820

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 1930-31 is given in the following table :—

POTATOES.—VALUE OF CROP, 1930-31.

Value.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Total ..	218,720	624,027	165,245	86,319	166,818	428,800	88	(a)1,690,017
Per acre ..	£14/5/10	£9/4/8	£16/1/7	£17/5/5	£26/9/1	£11/10/4	£7/6/8	£11/18/6

(a) Includes £60 Northern Territory.

### § 11. Other Root and Tuber Crops.

1. **General.**—Root crops, other than potatoes, are not extensively grown in Australia, the total area under such crops for the season 1930–31 being only 20,354 acres. The most important were 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 1930–31 was 7,419 acres, giving a yield of 46,660 tons, and averaging 6.29 tons per acre. The area in 1930–31 under root crops other than potatoes and onions was 15,526 acres, from which a production of 118,932 tons was obtained, or an average of 7.66 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 overseas trade is carried on by Australia is that of onions. During the past five years 8,395 tons, valued at £91,760, were imported, principally from Japan, the United States of America, and New Zealand, while during the same period the exports which amounted to 16,101 tons, valued at £127,988, were shipped mainly to New Zealand, the Pacific Islands, the Philippine Islands, and Canada.

### § 12. Hay.

1. **General.**—(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 1930–31 averaged more than 13 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 consists of wheat, oats and lucerne. 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.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	Fed Cap. Ter.	Aus- tralia.
AREA.									
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
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
1930–31	896,770	1,277,398	52,228	612,935	398,411	83,268	..	2,453	3,323,463
PRODUCTION.									
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
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
1930–31	1,191,696	1,605,900	87,146	641,273	491,595	128,957	..	3,094	4,149,661

Owing to various causes, the principal being the variation in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop, the area under hay is liable to fluctuate considerably. 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 2,965,026 acres.

(ii) *Average Production.* During the last ten years Tasmania and Queensland show the highest average production per acre, although the area sown in these States is the smallest. 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 1926-27 to 1930-31 and the average for the last ten years are given hereunder :—

## HAY.—PRODUCTION PER ACRE.

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.
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
1930-31 .. ..	1.33	1.26	1.67	1.05	1.23	1.55	..	1.26	1.25
Average for 10 seasons									
1921-1931 .. ..	1.23	1.22	1.41	1.11	1.24	1.48	1.67	1.22	1.20

(iii) *Varieties Grown.* Information in regard to the crops cut for hay is available for all States excepting Tasmania. It is known, however, that oaten hay constitutes the most important variety grown in the island State.

Details for the past five seasons are given in the following table :—

## HAY.—VARIETIES GROWN.

Varieties.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—					
Wheaten .. ..	311,073	369,960	375,270	381,071	520,993
Oaten .. ..	216,403	200,872	214,137	226,025	278,865
Barley .. ..	692	615	817	1,294	1,081
Lucerne .. ..	95,003	109,194	94,275	89,385	95,181
Other .. ..	253	278	231	620	650
Total .. ..	623,424	680,919	684,730	698,395	896,770

HAY.—VARIETIES GROWN—*continued.*

Varieties.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	Acres.	Acres.	Acres.	Acres.	Acres.
<b>VICTORIA—</b>					
Wheaten .. ..	101,243	224,454	135,718	165,564	188,360
Oaten .. ..	959,019	659,983	845,731	675,256	1,049,019
Lucerne, etc. .. ..	20,731	24,367	23,614	24,195	40,019
Total .. ..	1,080,993	908,804	1,005,063	865,015	1,277,398
<b>QUEENSLAND—</b>					
Wheaten .. ..	2,798	3,637	4,585	3,811	10,645
Oaten .. ..	790	2,468	2,192	2,608	4,280
Lucerne .. ..	33,263	48,346	45,476	40,013	34,845
Other .. ..	3,290	10,961	3,245	3,313	2,458
Total .. ..	40,141	65,412	55,498	49,745	52,228
<b>SOUTH AUSTRALIA—</b>					
Wheaten .. ..	230,120	289,219	270,805	318,239	321,295
Oaten .. ..	256,417	233,709	218,140	212,956	275,526
Lucerne .. ..	5,613	5,649	4,833	5,447	6,390
Other .. ..	3,955	3,991	3,760	7,796	9,724
Total .. ..	496,105	532,568	497,538	544,438	612,935
<b>WESTERN AUSTRALIA—</b>					
Wheaten .. ..	207,841	223,827	250,786	209,893	192,345
Oaten .. ..	148,150	130,109	160,675	198,529	192,243
Lucerne .. ..	340	120	184	293	234
Other .. ..	2,156	3,009	3,221	9,983	13,589
Total .. ..	358,487	357,065	414,866	418,698	398,411

Wheat is most largely used for hay in New South Wales, South Australia, and Western Australia, oats in Victoria and Tasmania, and lucerne in Queensland. For all States the proportions of the principal kinds of hay produced average about 55.8 per cent. for oaten, 36.5 per cent. for wheaten, 6.8 per cent. for lucerne, and 0.9 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 1931 amounted to 2,605,000 tons from 1,726,444 acres, while from permanent grasses a yield of 5,328,000 tons of hay was obtained from 4,777,843 acres, giving a total of 7,933,000 tons from 6,504,287 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 1930-31, 180 tons were imported, while the exports amounted to 4,040 tons, valued at £21,495, the principal purchases being made by New Zealand, Malaya (British), Ceylon, the Philippine Islands, 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 1930-31 :—

HAY.—VALUE OF CROP, 1930-31.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Total Value ..	7,009,320	4,255,635	430,571	1,330,641	964,929	386,870	18,677	14,396,643
Value per acre ..	£7/16/4	£3/6/8	£8/4/11	£2/3/5	£2/8/5	£4/12/11	£7/12/3	£4/6/8

### § 13. Green Forage.

1. **Nature and Extent.**—(i) *Area.* 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.

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.
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
1930-31	310,341	126,347	217,282	59,956	107,384	23,438	..	662	845,410

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 1930-31 may be taken approximately as £2,384,747 or about £2 16s. 5d. 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 311,694 acres under sugar-cane in Australia for the season 1930-31, there were 296,070 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 1930-31 only 15,624 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 1930-31 being the highest on record. The area under sugar-cane in Australia from 1926-27 is given in the following table, and particulars for earlier years may be seen from the accompanying graphs.



## SUGAR-CANE.—AREA.

Season.	New South Wales.		Queensland.		Australia.		Total.
	Productive.	Unproductive.	Productive.	Unproductive.	Productive.	Unproductive.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
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
1930-31 ..	7,617	8,007	222,044	74,026	229,661	82,033	311,694

(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.* For 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 1930-31 was 3,370,101 tons. The three highest yields of sugar were in 1930-31, 1929-30, and 1928-29, the quantities being 535,624 tons, 538,084 tons, and 537,574 tons respectively. The decennial average was 437,392 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.

Season.	New South Wales.		Queensland.		Australia.	
	Cane.	Sugar.	Cane.	Sugar.	Cane.	Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
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	3,730,311	520,620	3,883,725	537,574
1929-30 ..	174,110	19,568	3,581,265	518,516	3,755,375	538,084
1930-31 ..	160,209	18,841	3,528,660	516,783	3,688,869	535,624

The production of raw sugar in Australia in 1929-30 amounted to 535,624 tons manufactured from 3,688,869 tons of cane. These figures show a small decrease on the returns for the previous year. The assistance mentioned hereafter 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 1930-31, 296,070 acres were under cultivation and the number of growers had risen to 7,221, or an increase of 3,291 in the ten years. Official data are not available regarding the total number engaged in the sugar industry in Queensland, but the average number of persons employed in sugar mills is given as approximately 6,000. In addition, it is unofficially estimated that 15,000 persons are engaged as cane cutters and field workers. The total number of persons directly engaged in the industry in Queensland may therefore be estimated at approximately 28,000.

Final figures for the 1931-32 season are not yet complete, but it is anticipated from the data available that the production of raw sugar will amount to 600,117 tons from 4,194,509 tons of cane crushed. Early indications point to a smaller crop in 1932-33, and it is anticipated that the production will amount to about 544,000 tons of raw sugar.

(iv) *Average Production of Cane and Sugar.* Owing to climatic variation, comparison between the average yield of cane per productive acre in Queensland and New South Wales cannot be accurately made except on an annual basis. In New South Wales between 20 and 24 months are required for the crop to mature, but in Queensland 12 to 14 months is sufficient. After making due allowance on this score, therefore, the average annual yield of cane per productive acre for the decennium ending 1930-31 was for New South Wales, 13.78 tons, and 6.26 tons for Queensland. Similarly, the production of sugar per acre for the same period is estimated at 1.57 tons and 2.12 tons respectively. Leaving aside the consideration mentioned above, the yield of cane and sugar per acre crushed for Australia for the ten years ending 1930-31 was 17.92 tons and 2.33 tons respectively, as compared with 17.62 tons and 2.06 tons for the decennium ended 1920-21.

(v) *Quality of Cane.* The quantity of cane required to produce a ton of sugar varies with the variety planted, the district, and the season, and for the decennium ended 1930-31 averaged 7.70 tons, the average production of sugar being 12.98 per cent. of the weight of cane crushed. As the result of the systematic study of cane culture in Queensland, the sugar content of the cane has been considerably increased in recent years, and in 1930 only 6.83 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 1920-21 it required on the average 8.56 tons of cane to produce one ton of sugar, whereas the average figure for the past decennium was reduced to 7.70 tons.

#### SUGAR-CANE AND SUGAR.—YIELD PER ACRE.

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.
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
1930-31 .. ..	21.03	2.47	8.50	15.89	2.33	6.83	16.06	2.33	6.89
Average 10 seasons, 1921-31 ..	25.27	2.88	8.77	17.61	2.30	7.65	17.92	2.33	7.70

The Bureau of Sugar Experiment Stations in Queensland is rendering useful service to the sugar industry by advocating and demonstrating better methods of cultivation, the more scientific use of fertilizers, lime, etc., and by producing and distributing improved varieties of cane.

(vi) *Relation to Population.* The yield of sugar in Australia during the five years 1926-27 to 1930-31 was more than sufficient to supply local requirements, the average production during the period amounting to 180 lb. per head of population. Figures for the period 1926-27 to 1930-31 are as follow :—

#### SUGAR.—PRODUCTION PER HEAD OF POPULATION.

State.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	lb.	lb.	lb.	lb.	lb.
New South Wales ..	25	22	16	18	19
Queensland ..	988	1,210	1,272	1,248	982
Australia .. ..	152	183	190	188	151

(vii) *Consumption.* The average annual consumption of raw sugar during the five years ending 1930-31 is estimated at 346,000 tons, equal to 123 lb. of raw sugar or 117 lb. of refined sugar per head of population. Sugar contained in jam, preserved fruit, milk, etc., exported during the period has not been taken into account in arriving at the figures quoted. The quantity of sugar used during the last three years in factories is shown in the following table, the figures including, where necessary, estimates of consumption based on the sugar contents of the finished product.

#### SUGAR.—CONSUMPTION IN FACTORIES, AUSTRALIA.

Factories.	1928-29.	1929-30.	1930-31.
	Tons.	Tons.	Tons.
Aerated Waters and Cordials .. ..	11,063	8,958	6,316
Bacon Factories .. ..	125	113	102
Bakeries—including Cakes and Pastry ..	8,575	8,815	7,267
Biscuits .. ..	5,837	5,385	4,359
Breweries .. ..	15,264	13,836	10,939
Condensed and Concentrated Milk ..	8,975	7,503	6,133
Confectionery .. ..	24,275	23,166	16,940
Jams, Jellies and Preserved Fruit ..	27,779	29,186	22,786
Jelly Crystals .. ..	1,269	1,177	896
Total .. ..	103,162	98,139	75,738

2. *Sugar-beet.*—(i) *Area and Production.* Victoria is the only State at present growing beets for sugar, and particulars in regard to acreage and production for the last five years are incorporated in the table below :—

#### SUGAR-BEET.—AREA AND PRODUCTION, VICTORIA.

Particulars.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
Area harvested .. acres	2,024	2,353	2,130	2,500	3,045
Production .. tons	9,851	25,438	15,237	26,525	38,291
Average per acre ..	4.87	10.81	7.15	10.61	12.58
Sugar produced ..	1,177	2,352	2,096	3,472	5,095

Seasonal conditions were favourable during 1930-31, the production amounting to 38,291 tons of beet, from which 5,095 tons of sugar were obtained. The quantity of beet required to produce one ton of sugar was 7.52 tons, as compared with 7.64 tons for the previous year. The average production per acre was 12.58 tons, and the average for the ten years ended 1931 was 10.63 tons.

(ii) *Encouragement of Beet-growing.* During recent years efforts have been made to expand the industry, and the Victorian Government has advanced its irrigation scheme on the Macalister River to provide an increased water supply for the district. 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.*—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 industry. The Committee consisted of eight members, representing the various interests concerned. 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. In 1932, however, conferences were arranged between the Commonwealth Government and representatives of the industry. It was decided that the Sugar Agreement of 1931–36 should be amended to provide for a reduction in the retail price of sugar by  $\frac{1}{4}$ d. per lb. from 1st January, 1933, and that the reduced retail price of 4d. per lb. should continue until the end of the period of the agreement (31st August, 1936). It was recommended also that the amount of assistance to the fruit industry should be reduced by £115,000 to £200,000. Legislation for the ratification of these proposals had not been passed at the time of compilation of this Chapter.

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 :—

SUGAR.—NET RETURN, ETC., FOR CROP, AUSTRALIA.

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.	£
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
1930–31 .. ..	39.23	8 5 0	19 12 11	10,196,500

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 so obtained.

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 :—

#### SUGAR.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
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
1930-31 ..	..	1	199,161	1,805,897	199,161	1,805,896

The export values quoted in the above table represent the amounts realized overseas.

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 XXIV. —“Manufacturing.” A distillation plant erected at the Plane Creek Central Sugar Mill, Mackay, was opened during 1927 and produces power alcohol of excellent quality.

A building material known as “megass board” can be made from megass or bagasse, i.e., the residuum of crushed fibre after the removal of the sugar content from the sugar cane, and the possibility of the manufacture of artificial silk from the same material has also been considered. Up to the present, however, there is no record of commercial production of these commodities.

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.

#### SUGAR.—PRICES, AUSTRALIA.

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(b) .. ..	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.; in 1929-30, £20 8s. 2d.; and in 1930-31, £19 12s. 11d.

(b) See letterpress in 5. Sugar Agreement, hereinbefore.

## § 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.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1926-27.. ..	14,281	40,612	1,682	50,271	5,274	There are no vineyards in Tasmania.	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
1930-31.. ..	15,363	38,720	1,687	52,234	4,966		112,970

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. In 1930-31, however, there was again a decline of 2,255 acres as compared with 1929-30.

(ii) *Report on the Wine Industry.* An investigation into conditions in the wine industry was undertaken recently by the Commonwealth Director of Development and the Senior Inspector of Excise, Department of Trade and Customs, and a comprehensive report was presented to Parliament on the 17th July, 1931.

(iii) *Wine Production, Bounties, etc.* The production of wine has not increased as rapidly as the suitability of soil and climate would appear to warrant, owing chiefly to two causes. In the first place Australians are not a wine-drinking people, and consequently do not provide a local market for the product. Secondly, the comparatively new and unknown wines of Australia must compete in the markets of the old world with the well-known and long-established brands from other countries. 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. At the Imperial Economic Conference at Ottawa in 1932, the margin of preference to be granted by the Government of the United Kingdom is 2s. per gallon on Australian wines not exceeding 27 degrees of proof spirit. Hitherto the duties imposed were as follows:—Empire wines not exceeding 27 degrees, 2s. per gallon, Foreign wines not exceeding 25 degrees, 3s. per gallon, a margin of preference of 1s. per gallon. The margin of 2 degrees in the strength of Empire wines is also

considered a measure of preference. New or additional preferences are also hoped for from certain Crown Colonies and Protectorates. The bulk of the wine exported from Australia contains more than 27 degrees of proof spirit, consequently, under the present (1932) duties in force in the United Kingdom, Australian wines of a strength exceeding 27 but under 42 degrees enjoy a preference of 4s. per gallon.

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

## WINE.—PRODUCTION.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No production of wine in Tasmania.	Gallons.
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
1930-31 ..	1,335,882	1,254,615	48,899	10,131,034	307,788		13,078,218

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. The imports for the past five years are given hereunder :—

## WINE.—IMPORTS, AUSTRALIA.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
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
1930-31 ..	2,314	13,166	15,480	5,400	6,262	11,662

(ii) *Exports.* Wine is exported from Australia chiefly to the United Kingdom and New Zealand, although the share of the latter country is comparatively small. Exports for the past five years are given in the following table :—

## WINE.—EXPORTS, AUSTRALIA.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
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
1930-31 ..	2,224	2,205,983	2,208,207	3,684	506,368	510,052

3. *Other Viticultural Products.*—(i) *Table Grapes.* 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 during the past five seasons are as follow :—

TABLE GRAPES.—PRODUCTION.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
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
1930-31 ..	3,680	3,799	2,067	891	2,835	..	13,272

(ii) *Raisins and Currants.* 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.—PRODUCTION.

Season.	N.S. Wales.		Victoria.		South Aust.		Western Aust.		Australia.	
	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.
1926-27 ..	tons. 2,053	tons. 455	tons. 32,886	tons. 6,773	tons. 8,120	tons. 4,383	tins. 443	tons. 1,147	tons. 43,502	tons. 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	52,680	19,505
1929-30 ..	4,170	542	39,183	8,911	10,562	8,094	652	1,332	54,567	18,879
1930-31 ..	2,364	425	22,377	7,834	7,825	7,588	651	1,738	33,217	17,585
Average 10 seasons 1921-31	1,700	357	23,478	6,431	6,534	5,668	519	950	32,231	13,406

(a) Sultanas and Lexias.

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

RAISINS AND CURRANTS.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
RAISINS.						
1926-27 ..	tons. 44	£ 5,385	tons. 19,678	£ 1,265,994	tons. 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
1929-30 ..	83	4,777	35,413	1,486,580	35,330	1,481,803
1930-31 ..	(a)	21	39,803	1,606,735	39,803	1,606,714
CURRANTS.						
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
1930-31 ..	(a)	1	14,381	578,037	14,381	578,036

(a) Quantity negligible.



Since 1912 Australia has not only produced sufficient quantities of raisins and currants for home consumption, but has been able to maintain a large export trade. The average annual production for the decennium ended 1930-31 exceeded 45,500 tons, of which 12,500 tons satisfied local requirements, leaving a surplus averaging 33,000 tons available for export. Under favourable conditions the production has reached 73,000 tons. The chief countries importing Australian raisins and currants are the United Kingdom, Canada and New Zealand, which take 80 per cent., 13 per cent. and 5 per cent. respectively of the average quantity exported. Under the terms of the agreement reached at the Imperial Economic Conference at Ottawa in 1932, it is proposed to increase the tariff in the United Kingdom from 7s. per cwt. to 10s. 6d. per cwt. on raisins imported from foreign countries. As already stated, the United Kingdom absorbs 80 per cent. of Australia's exports, and the proposed preference will therefore, prove of considerable benefit to the Australian grower. The existence of the Anglo-Grecian Trade Treaty, however, precludes any immediate prospect of an advance in the present rate of preference—2s. per cwt.—being secured on Australian currants imported into Great Britain. The exports to Canada have increased from 3,000 tons in 1929 to nearly 10,000 tons in 1932.

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, leixias 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.

Year.	Average Wholesale Price per lb.— Australia.		Average Price per lb.— Great Britain.	
	Sultanas.	Currants.	Sultanas.	Currants.
	d.	d.	d.	d.
1926-27 .. ..	6½	7½	5½	4½
1927-28 .. ..	6½	7½	3½	6
1928-29 .. ..	6½	7½	4	4½
1929-30 .. ..	7	7½	4½	3½
1930-31 .. ..	7	7	6½	4½

### § 16. Orchards and Fruit Gardens.

1. **Progress of Cultivation.**—(i) *Total Area.* The greatest area under orchards and fruit gardens was 281,149 acres in 1921-22. Since that year the area has declined slightly owing to difficulty 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.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
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
1930-31 .. ..	78,176	79,490	37,102	29,630	19,333	32,501	55	276,347

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 1930-31.

#### ORCHARDS AND FRUIT GARDENS.—TOTAL AREA, 1930-31.

Fruit.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Federal Capital Territory.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Apples ..	14,760	31,725	4,039	10,371	11,243	25,724	36	97,898
Apricots ..	1,892	5,059	131	3 202	666	1,379	3	12,332
Bananas ..	4,959		18,030		10			22,999
Cherries ..	3,660	1,504	4	673	(a)	64	2	5,907
Lemons ..	2,829	1,976	136	433	496			5,870
Nectarines and Peaches ..	7,156	11,883	1,691	2,148	1,002	62	4	23,946
Nuts ..	545	518		1,313	(a)		3	2,379
Oranges ..	30,177	5,795	3,773	5,012	3,066			47,823
Pineapples ..	83		5,543					5,626
Pears ..	3,998	11,044	240	2,140	1,053	2,191	2	20,668
Plums ..	6,218	5,172	1,215	2,960	940	603	5	17,113
Small fruits ..	31	1,163	173	320	53	2,481		4,221
Other fruits ..	1,868	3,651	2,127	1,058	804	57		9,565
Total ..	78,176	79,490	37,102	29,630	19,333	32,561	55	276,347

(a) Included with "Other Fruits."

(iii) *Production.*—(a) *Quantities.* The production in 1930-31 is shown in the next table.

#### ORCHARDS AND FRUIT GARDENS.—PRODUCTION, 1930-31.

Fruit.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Federal Capital Territory.	Australia.
Apples .. bushels	908,705	1,515,410	217,317	486,773	749,449	3,800,000	440	7,678,103
Apricots .. "	113,303	305,717	6,705	283,570	43,840	111,100		864,235
Bananas .. "	325,134		2,301,108		1,075			2,627,317
Cherries .. "	79,220	46,256	332	35,962		2,200		163,970
Lemons .. "	320,156	134,479	12,340	28,185	61,605			556,765
Nectarines and Peaches .. bushels	444,001	1,042,842	106,044	138,139	61,702	6,500		1,799,228
Nuts .. lb.	251,104	146,018		868,000				1,265,122
Oranges .. bushels	2,579,353	516,133	308,967	409,816	275,490			4,089,759
Pineapples .. dozen	17,680		1,000,508					1,018,188
Pears .. bushels	313,970	707,145	16,751	127,883	80,684	302,800		1,549,233
Plums .. "	346,244	297,640	58,306	134,924	57,956	64,100	43	959,213
Small Fruits .. cwt.	624	20,993	2,805	6,027	397	65,071		95,917

(b) *Values.* The value of production for the various classes of fruit for the year 1930-31 is given in the following table.

**ORCHARDS AND FRUIT GARDENS.—VALUE OF PRODUCTION, 1930-31.**

Fruit.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Federal Capital Territory.	Australia.
	£	£	£	£	£	£	£	£
Apples .. ..	341,110	397,797	77,601	157,599	343,497	950,000	165	2,267,769
Apricots .. ..	62,310	53,500	4,819	59,540	29,272	27,800	..	237,241
Bananas .. ..	200,500	..	903,113	..	1,613	..	..	1,105,226
Cherries .. ..	91,040	39,318	288	25,623	(a)	1,600	..	157,869
Lemons .. ..	89,800	43,706	8,612	12,683	19,572	..	..	174,373
Nectarines and Peaches ..	193,920	205,000	40,655	37,213	40,546	1,900	..	519,234
Nuts .. ..	5,641	4,980	..	21,658	(a)	..	..	32,279
Oranges .. ..	701,340	193,550	122,943	170,857	110,595	..	..	1,299,285
Pineapples .. ..	4,910	..	212,528	..	..	..	..	217,438
Pears .. ..	107,840	141,429	6,526	32,509	28,996	60,500	..	377,800
Plums .. ..	146,040	42,954	32,068	31,147	35,860	9,600	18	297,687
Small Fruits .. ..	3,540	44,780	14,615	12,524	3,413	59,200	..	138,072
Other Fruits .. ..	77,859	79,899	66,205	16,178	20,576	1,300	..	262,017
Total .. ..	2,025,850	1,246,913	1,489,973	577,531	633,940	1,111,900	183	7,086,290

(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.**

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
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
1930-31 ..	97,898	22,999	54,222	22,694	20,668	17,113

(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.**

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
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
1930-31 ..	7,678,103	2,627,317	4,688,848	1,725,039	1,549,233	959,213

(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.**

Year.	Apples.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums.
	£	£	£	£	£	£
1913-14 ..	1,132,427	157,710	719,808	306,433	258,235	135,654
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
1930-31 ..	2,267,769	1,105,226	1,490,373	484,904	377,800	297,687

4. *Imports and Exports of Fruit.*—(i) *General.* A considerable export trade in both fresh and dried fruits is carried on by Australia with overseas 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. Under the terms of the agreement reached at Ottawa in 1932, however, 40,000 centals of bananas will be admitted annually from Fiji at the rate of duty of 2s. 6s. per cental. 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 1930-31 amounting to £3,838,122. 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 increased greatly since 1914-15, and are mainly responsible for the growth in the dried fruits exports. Dried apricots also figure amongst the exports.

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

**FRESH FRUITS.—IMPORTS AND EXPORTS, AUSTRALIA.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
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
1930-31 ..	4,015,400	23,858	168,035,900	1,588,128	164,020,500	1,564,270

(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.**

Year.	Apples.		Pears.		Citrus Fruits.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Cental.	£	Cental.	£	Cental.	£
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
1930-31 ..	1,329,563	1,235,583	160,684	150,069	117,000	110,414

(iv) *Dried Fruits.* The quantity and value of overseas 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.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
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
1930-31..	4,423,939	36,116	2,083,242	65,168	2,340,697	— 29,052

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

NOTE.—The minus sign (—) signifies net exports.

(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 1930-31 amounting to only £40,916. Particulars relative to imports and exports during each of the last five years are as follows:—

#### JAMS AND JELLIES.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
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
1930-31..	6,423	417	1,445,520	40,916	1,439,097	40,499

(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 1930-31 was £4,808. Oversea exports in 1930-31 were as follows:—Apricots, 4,689,781 lb., £77,425; peaches, 21,823,440 lb., £354,018; pears, 6,451,069 lb., £121,007; pineapples, 926,905 lb., £20,389; and other 542,955 lb., £13,390, or a total shipment of £586,229.

### § 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 35,527 acres in 1930-31 was due to poor seasons and difficulty in marketing the product. The total area in Australia during the season 1930-31 devoted to crops not dealt with in previous sections was 133,246 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.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Aus- tralia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
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
1930-31 ..	7,448	20,197	903	1,663	3,025	600	..	13	33,849

3. **Grass Seed.**—The area under this crop during 1930-31, exclusive of New South Wales and Western Australia, for which States complete figures as to area are not available, was 6,480 acres, of which 2,000 acres were in Victoria, 729 acres in Tasmania, 2,558 acres in Queensland, and 1,193 acres in South Australia. The production for 1930-31, including New South Wales, was 110,642 bushels, valued at £131,460. In addition to the areas planted above, 3,299 acres were sown to canary seed in Queensland during 1930-31, returning a yield of 41,298 bushels, valued at £33,554.

4. **Tobacco.**—Tobacco-growing some years ago 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 6,641 acres, of which 4,833 were in New South Wales, 1,685 in Victoria, and 123 in Queensland. This promise 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 declined considerably.

In all the States in which its cultivation has been tried, the soil and climate appear to be suitable for the growth of the plant, and the large imports of tobacco in its various forms are an index of the market for a properly prepared product. The net imports of tobacco into Australia during the year 1930-31 were valued at £1,201,401. A total of 22,367,576 lb. of unmanufactured tobacco valued at £1,411,878 was imported in 1930-31.

A Select Committee appointed by the Commonwealth Government to inquire into the position of the industry in Australia presented its report in July, 1930. 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 were invited to co-operate, and a Director of Australian Tobacco Investigation was appointed with head-quarters at Canberra. It has been proved 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, together with improved methods of cultivation, will, it is believed, materially reduce the loss occasioned by this parasitic

disease. The extensive local demand which amounts to approximately 18 million lb. annually, coupled with the protection afforded by the tariff, has resulted in a large increase in the area planted. In addition, under an agreement between the Federal Government and the Australian Tobacco Manufacturers, the latter undertook to purchase 7.2 million lb. of suitable local leaf during the season 1931-32 at an average price of 2s. 3d. per lb. At the end of October, 1932, more than 6 million lb. had been purchased at an average price of 2s. 3.103d. per lb.

The following table furnishes details of the average area, production, etc., in quinquennial periods from 1901 to 1925, and annually from 1926-27 to 1931-32 :—

**TOBACCO.—AREA, PRODUCTION, ETC., AUSTRALIA.**

Period.	Area.	Production.	Value.	Number of Registered Growers.
	Acres.	Cwts.	£	No.
1901-05 .. .. .	1,412	10,473	(a)	387
1906-10 .. .. .	1,678	12,670	41,581	518
1911-15 .. .. .	2,496	18,805	65,615	479
1916-20 .. .. .	1,648	12,943	104,978	487
1921-25 .. .. .	2,677	17,523	158,748	925
1926-27 .. .. .	2,192	10,878	123,436	727
1927-28 .. .. .	2,133	16,143	108,030	631
1928-29 .. .. .	2,238	16,416	97,438	632
1929-30 .. .. .	2,470	15,200	92,055	647
1930-31 .. .. .	3,354	(b) 19,351	186,984	693
1931-32 (b) .. .. .	5,692	(a)	(a)	(c) 2,774

(a) Not available.  
did not produce.

(b) Subject to revision.

(c) Exclusive of 274 growers registered, but who

5. **Pumpkins and Melons.**—The total area under this crop in Australia during 1930-31 was 19,768 acres, of which 3,108 acres were in New South Wales, 1,078 acres in Victoria, 14,661 acres in Queensland, 537 acres in Western Australia, 379 acres in South Australia, and 5 acres in Federal Capital Territory. The production in all the States amounted to 58,554 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 1930-31 being 1,168 acres, of which 982 acres were in Tasmania, 185 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 185 in 1930-31. 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 1930-31 the exports of hops exceeded the imports by 30,997 lb., though the value was £3,237 less. The value of the production in Australia in 1930-31 amounted to £156,921.

7. **Flax.**—For many years flax was grown intermittently in the Gippsland district of Victoria, and attempts were 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 cultivation had fallen in 1928-29 to 179 acres. As the result of the bounty, however, the area increased to 1,216 acres in 1930-31.

Bounty is payable on flax and linseed grown in Australia for a period of five years, commencing on the 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  $7\frac{1}{2}$  per cent. for the last year. The total amount paid shall not exceed £20,000 in any one financial year. During the year 1931-32 the sum of £1,561 was paid on 117 tons of flax and 316 tons of linseed.

8. **Millet.**—Millet figures in the statistical returns of three of the States. The total area devoted thereto in 1930-31 was 3,924 acres, of which 2,182 acres were in New South Wales, 1,232 in Victoria, and 510 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, but figures in regard to acreages under flowers, fruit trees, etc., are available only for New South Wales, Victoria, South Australia, and Western Australia. During 1930-31 the areas in those States were 825, 1,266, 148, and 137 acres respectively.

10. **Cotton.**—The cultivation of cotton was begun in Queensland in 1860, and ten years later the area cropped had increased from 14 acres to over 14,000 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. Later on the industry was resuscitated, and manufacturing on a small scale was undertaken on two separate occasions at Ipswich, but low prices over a term of years checked development. 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 1½d. per lb. The rise in price enabled the Government to offer a guarantee of 5½d. per lb. for seed cotton of good quality for the three years ended 31st July, 1923, and the area picked increased from 166 acres in 1920 to 50,186 acres in 1924. 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 growers, 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. This bounty, however, ceased to operate after 30th June, 1932. The rates payable to growers 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 amount of bounty payable in any financial year is limited to £260,000.

The area under cultivation and the production in Queensland since the year 1921 are shown hereunder:—

#### COTTON.—AREA AND PRODUCTION, QUEENSLAND.

Year.						Area(a).	Yield of Unginned Cotton.
						Acres.	lb.
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	..	..	..	..	..	22,652	17,022,897
1931 (b)	..	..	..	..	..	(b) 39,000	(c)

(a) Area picked.

(b) Estimated.

(c) Not yet available.



With 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 1930. The whole of the crop was sold to local spinners.

11. **Coffee.**—Queensland is the only State in which coffee has been to any extent grown, but the results have not been satisfactory. The area under crop reached its highest point in the season 1901-2 with 547 acres. Thereafter the acreage fluctuated, but on the whole with a downward tendency, and in 1930-31 only 12 acres were returned with a production of 6,458 lb.

12. **Other Crops.**—Miscellaneous small crops grown in Australia include tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

### § 18. Bounties.

The bounties paid by the Commonwealth Parliament during the year ending 30th June, 1932, amounted to £3,777,982. For purposes of convenience particulars regarding bounties in operation in Australia on all commodities during the years 1927-28 to 1931-32 have been included in the following table:—

#### BOUNTIES.—AUSTRALIA.

Articles on which Bounty was Paid.	Rate of Bounty Payable(a).	Date of Expiry of Bounty.	Amount Paid.				
			1927-28.	1928-29.	1929-30.	1930-31.	1931-32.
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 1½d. per gallon, 5,000,000 to 8,000,000 gallons 1¼d. each additional gallon	31st Aug., 1929	£ 428	£ ..	£ ..	£ ..	£ ..
Iron and Steel Products Bounty Act— *Fencing Wire ..	£2 12s. per ton (f) ..	(g) 6th Nov., 1930	104,485	121,839	114,141	39,913	..
*Galvanized Sheets ..	£2 12s. per ton (d) ..	27th Mar., 1931	65,128	102,650	89,561	79,429	..
*Wire Netting ..	£3 8s. per ton (e) ..	..	73,873	73,945	56,486	22,696	6,334
*Traction Engines ..	According to capacity, £40-£90 per tractor less 10 per cent. from 9th July, 1930, increased to 16 per cent. from 7th November, 1930, and to 40% from 11th July, 1931	..	140	7,109	199	1,974	1,058
Sulphur Bounty Act— Sulphur from Australian Pyrites and other Sulphide Ores or Concentrates	£2 5s. per ton ..	..	57,377	52,009	55,018	48,520	30,962
Flax and Linseed Bounties Act 1930	Rates vary according to year	28th Feb., 1935	..	..	..	..	1,561

(a) All bounties are subject to 20 per cent. reduction from 20th July, 1931. (d) 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. Bounty ceased on 27th March, 1931, owing to increase in Customs duty. (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, and to 12s. per ton from 11th July, 1931. (f) Amount of Bounty reduced to £2 6s. on 10th July, 1930. Bounty ceased on 6th November, 1930, owing to increase in Customs duty. (g) Date on which Bounty ceased.

## BOUNTIES.—AUSTRALIA—continued.

Articles on which Bounty was Paid.	Rate of Bounty Payable. (d)	Date of Expiry of Bounty.	Amount Paid.				
			1927-28.	1928-29.	1929-30.	1930-31.	1931-32.
			£	£	£	£	£
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	482,843	76,455	83,210	165,009	201,268
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	..	4,751	..	..	..	..
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 ½d. per lb. up to 1932, to ¼d. per lb. in 1936	30th Sept., 1936	81,454	64,930	70,307	100,848	64,206
Cotton Yarn manufactured in Australia	Varies according to count and year	30th June, 1932	24,846	33,638	48,660	57,085	94,395
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	(c) 830
Sisal Hemp ..	£6 per ton	.. ..	..	..	..	40	..
Gold Bounty Act— Gold produced in Australia as prescribed	Varies according to production (h)	31st Dec., 1940	..	..	..	..	80,904
Wheat Bounty Act— Wheat harvested in Australia during the period 1st October, 1931, and 31st March, 1932, and sold or delivered for sale between 1st October, 1931, and 31st October, 1932, as prescribed	4½d. per bushel	31st Oct., 1932	..	..	..	..	3,296,464
Total .. ..	.. ..	..	895,499	534,216	518,641	516,460	3,777,982

(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 lb. of spices in 1930-31, and 12s. 7d. on 126 lb. in 1931-32.

(d) All Bounties are subject to 20 per cent. reduction from 20th July, 1931. (h) Rate of Bounty on gold produced for six months ending June, 1931, was 2.623s. and for six months ending December, 1931, 3.269s. per fine ounce.

## § 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.

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 prohibiting 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 Australian production of prepared fertilizers is sufficient for local requirements. Imports consist chiefly of rock phosphate, which is used in making superphosphate, a valuable fertilizer for cereals. During 1930-31 the value of rock phosphate imported represented more than 78 per cent. of the total imports of fertilizers. Nauru and Gilbert and Ellice Islands Colony supplied almost the whole of the shipments. Sodium nitrate is obtained chiefly from Chile.

The imports of artificial manures during the last five years are given in the following table. Although considerable quantities of manufactured superphosphate were imported up to the year 1914-15, imports during recent years were very small.

## FERTILIZERS.—IMPORTS, AUSTRALIA.

Fertilizer.			1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
Bonedust ..	.. cwt.	100	(a)	(a)	(a)	(a)	(a)
" ..	.. £	58	(a)	(a)	(a)	(a)	(a)
Guano ..	.. cwt.	20,826	500	52,018	1,000	..	..
" ..	.. £	1,238	242	6,438	462	..	..
Superphosphate ..	.. cwt.	1,201	1,400	2,560	4,572	511	..
" ..	.. £	573	937	1,834	3,331	353	..
Rock phosphate ..	.. cwt.	10,171,652	9,220,120	12,349,710	10,579,094	8,614,718	..
" ..	.. £	1,109,414	915,840	1,291,583	1,126,531	568,776	..
Soda nitrate ..	.. cwt.	100,567	175,074	152,747	256,457	27,434	..
" ..	.. £	60,951	91,885	75,888	123,635	13,096	..
Other ..	.. cwt.	187,773	237,354	308,425	402,188	341,023	..
" ..	.. £	87,281	103,634	112,232	205,574	147,500	..
Total .. cwt.			10,482,119	9,634,448	12,865,460	11,243,311	8,983,686
£			1,259,515	1,112,538	1,487,975	1,459,533	729,725

(a) Now included with other fertilizers.

4. Exports.—The subjoined table shows the exports of artificial manures for the years 1926-27 to 1930-31. Practically all these fertilizers are manufactured locally, the quantities exported being consigned chiefly to New Zealand, Japan, Java, and the Pacific Islands.

## FERTILIZERS.—EXPORTS, AUSTRALIA.

Fertilizer.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
Bonedust .. .. cwt.	2,668	74	39	6,426	6
" .. .. £	1,220	46	27	2,756	4
Superphosphates .. cwt.	21	33	316	168	144
" .. .. £	18	14	83	54	52
Rock phosphates .. cwt.	200	..	..	4	..
" .. .. £	58	..	..	1	..
Soda nitrate .. cwt.	398	7	6	34	7
" .. .. £	311	7	9	27	14
Ammonia sulphate .. cwt.	99,928	71,911	18,610	972	3,882
" .. .. £	61,478	42,229	11,255	440	1,470
Other .. .. cwt.	39,718	29,464	66,429	31,474	12,935
" .. .. £	16,237	12,861	30,097	13,766	4,186
Total .. cwt.	142,933	101,489	85,400	39,078	16,974
£	79,322	55,157	41,471	17,044	5,726

5. Quantities Locally Used.—Information regarding quantities, etc., of manures used in each State during the year 1930-31 is given in the table hereunder :—

## FERTILIZERS USED IN EACH STATE, 1930-31.

State or Territory.	Total Area of Crops.	Area Manured.		Manures Used.	
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable Yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
New South Wales ..	6,811,247	4,558,287	66.92	142,416	131,572
Victoria ..	6,715,660	(a) 6,898,718	(b) 97.17	104,732	(a) 274,420
Queensland ..	1,144,216	126,701	11.07	99,011	28,783
South Australia ..	5,426,075	5,140,446	94.74	42,031	194,008
Western Australia ..	4,792,017	(a) 5,195,771	(c) 98.64	62,204	(a) 236,146
Tasmania ..	267,632	226,416	84.60	16,074	20,767
Northern Territory ..	1,550	..	..	..	..
Fed. Cap. Territory ..	5,419	3,695	68.19	..	131
Total ..	25,163,816	22,150,034	88.02	466,468	885,827

(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.

Year.	Total Area of Crops.	Area Manured.		Manure Used.		
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable Yard, etc.).	Artificial.	Average per Acre of Total Area (Artificial).
	Acres.	Acres.	%	Loads.	Tons.	lb.
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	495,812	852,925	87
1930-31 ..	25,163,816	22,150,034	88.02	466,468	885,827	79

The quantity of chemical fertilizers used per acre of all crops increased from 75 lb., the average for the period 1910-13, to 87 lb. in 1929-30, followed by a decrease in 1930-31 to 79 lb. on account of failure of crops in the preceding season owing to drought. It was considered that manured areas on which crops had failed could reasonably be expected to produce another crop without further manuring, or with, at the most, a light dressing.

The percentage of the area manured on the total area cultivated has advanced from 83.11 to 88.02 during the past five years, while the use of artificial manures has increased by more than 243,000 tons during the same period.

6. **Local Production.**—Complete information regarding local production of fertilizers is not available. The number of firms engaged in the manufacture of artificial manures in Australia for the year 1930-31 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 1930-31 amounted to 660,131 tons, the largest producing States being Victoria and Western Australia.

### § 20. Ensilage.

1. **Government Assistance in Production.**—The various State Governments devote a considerable amount of attention to the education of 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.**—Information regarding the number of holdings on which ensilage was made, and the quantity made during the seasons 1926-27 to 1930-31, is given in the following table :—

### ENSILAGE MADE.

State or Territory.	1926-27.		1927-28.		1928-29.		1929-30.		1930-31.	
	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.
	(a)		(a)		(a)		(a)		(a)	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
New South Wales ..	407	48,718	473	50,464	350	27,177	338	28,155	669	60,172
Victoria ..	94	6,132	75	6,037	89	7,775	74	4,783	99	6,373
Queensland ..	50	4,728	76	5,420	72	4,037	43	2,933	60	4,880
South Australia ..	23	2,405	17	2,415	12	2,808	22	1,319	21	3,656
Western Australia ..	72	5,642	72	5,147	93	7,022	105	7,966	209	10,509
Tasmania ..	8	488	12	526	5	115	6	75	14	840
Northern Territory ..	..	..	..	..	..	..	..	..	..	..
Total ..	654	68,113	725	70,009	621	48,934	588	45,231	1,072	86,430

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

The drought of 1902-3 drew increased attention to the value of stocks 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 1930-31 amounting to 86,430 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 to show also 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. **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, pages 393-5, and a summary in respect of the year 1930-31 will be found in the Production Bulletin No. 25 issued by this Bureau.

3. **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.