CHAPTER XVII.

AGRICULTURAL PRODUCTION.

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

§ 1. Introductory.

1. **Early Attempts at Agriculture.**—The instructions issued to Captain Phillip on the 25th April, 1787, directed him, amongst other things, to proceed as soon as possible to the cultivation of the soil "under such regulations as may appear to be necessary and best calculated for securing supplies of grain and provisions." When the settlers landed at Botany Bay, however, it was found that the glowing accounts published in England by members of Captain Cook's expedition of the fertility of the soil in that locality were considerably overdrawn. Even when Phillip and his company moved round to Port Jackson on the 26th January, 1788, matters were for a time in no better case. The ground in the immediate neighbourhood of the settlement was not suitable for the cultivation of cereal crops, and when the time came to cultivate the soil it was found that there were very few who possessed the slightest acquaintance with the art of husbandry.

2. **The First Sowing.**—In his dispatch of the 15th May, 1788, Captain Phillip states that it was proposed to sow 8 acres with wheat and barley, although, owing to the depredations of field mice and ants, he was doubtful of the success of the crops.

3. **Discovery of Suitable Agricultural Land.**—A branch settlement was formed at Rosehill, on the Parramatta River, towards the close of 1788, and here grain crops were successfully raised. In his despatch of 12th February, 1790, Phillip refers to the harvest at Rosehill, at the end of December 1789, as consisting of 200 bushels of wheat and 60 of barley, in addition to small quantities of oats, Indian corn, and flax. By the year 1791 there were 213 acres under crop in this locality. In 1792 a new settlement was formed at Toongabbie, about 3 miles westward of Parramatta, where Phillip states "there are several thousand acres of exceeding good ground." The Hawkesbury Valley, which probably contains some of the richest land in the world, was first settled in 1794. For a long time agricultural operations in Australia were restricted to the narrow belt of country between the tableland and the east coast of New South Wales, as it was not until the year 1813 that a passage was discovered across the Blue Mountains to the fertile plains of the west.

§ 2. Progress of Agriculture.

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

At a muster taken in 1808 the following was the return of crops:—Wheat, 6,874 acres; maize, 3,389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 37 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania. At the end of 1850 the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres.

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; the area under cultivation in New South Wales decreased by nearly 66,000 acres, while in Tasmania a falling off of over 41,000 acres was experienced. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia totalled over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres. For the same year South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

2. Progress of Cultivation.—(i) *General.* The following table shows the area under crop in each of the States and Territories of Australia at decennial intervals since 1860, and during each of the last five seasons :—

AREA UNDER CROP, 1860 TO 1925-26.

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	4,489,503	779,497	3,231,083	1,804,987	297,383	296	1,966	15,069,858
1921-22	4,445,828	4,530,312	804,507	3,378,764	1,901,680	293,708	283	1,942	15,357,024
1922-23	4,694,287	4,862,548	863,755	3,575,452	2,274,998	298,611	427	2,172	16,572,250
1923-24	4,809,591	4,682,144	871,968	3,562,551	2,323,070	279,122	440	2,300	16,531,186
1924-25	4,912,124	4,761,394	1,069,837	3,557,405	2,710,856	263,872	342	2,361	17,278,191
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

The progress of agriculture was uninterrupted from 1860 onwards, reaching its maximum in 1915–16, when 18,528,234 acres were cultivated. Following that year, the decline in wheat-growing and the effects of the drought of 1918–19 reduced the acreage to 13,296,407 acres in 1919–20, a decrease of 5,231,827 acres in the space of four years. The obstacles to the disposal of the wheat crop having been removed, the area began to expand in 1920–21, and despite adverse weather at seeding time, the area planted in 1925–26 amounted to nearly 17,000,000 acres. Preliminary figures for 1926–27 reveal an increase of about 1,000,000 acres on the 1925–26 areas. Wheat continues to be the most extensively-grown crop in Australia, the area thereunder for both grain and hay during 1925–26 amounting to nearly 68 per cent. of the total acreage under cultivation. The extension of the wheat area since 1919–20, despite intermittent adverse climatic and market conditions, is a happy augury for the continuance of agricultural development in Australia. The maximum area cultivated in 1915–16, viz., 18,528,234 acres, was the result of a special war effort, and the results obtained far exceeded those for any previous year.

(ii) *Relation to Population.* The total area under cultivation per head of population reached its lowest point in recent years during 1919–20, but since that year the

total has increased at a much faster rate than the population. Details for the past five seasons are as follows :—

AREA UNDER CROP PER 1,000 OF POPULATION, 1921-22 TO 1925-26.

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.
1921-22 ..	2,089	2,921	1,045	6,723	5,674	1,345	76	941	2,787
1922-23 ..	2,160	3,058	1,096	6,968	6,621	1,364	120	849	2,942
1923-24 ..	2,177	2,881	1,075	6,789	6,566	1,274	124	877	2,875
1924-25 ..	2,179	2,873	1,281	6,606	7,444	1,211	95	788	2,942
1925-26 ..	1,976	2,633	1,200	6,497	7,878	1,228	107	553	2,803

(iii) *Relation to Total Area.* The next table furnishes a comparison of the area under crop in the several States and Territories and Australia with the respective total areas. For Australia as a whole, the area under crop in 1925-26 represented only about 1 acre in every 113. In Victoria the proportion was about 1 acre in every 13, in New South Wales 1 in 44, in Tasmania 1 in 63, in South Australia 1 in 68, in Western Australia 1 in 213, in Queensland 1 in 415, and in the Federal Territory 1 in 276.

PERCENTAGE OF AREA UNDER CROP ON TOTAL AREA, 1921-22 TO 1925-26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	%	%	%	%	%	%	%	%	%
1921-22 ..	2.245	8.054	0.187	1.389	0.304	1.751	..	0.323	0.807
1922-23 ..	2.370	8.645	0.201	1.470	0.364	1.780	..	0.361	0.871
1923-24 ..	2.429	8.324	0.203	1.465	0.372	1.664	..	0.382	0.868
1924-25 ..	2.480	8.465	0.249	1.462	0.434	1.573	..	0.392	0.908
1925-26 ..	2.293	7.882	0.241	1.473	0.469	1.587	..	0.362	0.882

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

3. **Artificially-sown Grasses.**—In all the States there are considerable areas under artificially-sown grasses mainly sown on uncultivated land after burning off the existing vegetation, and not included in "area under crops." Statistics regarding the areas under such grasses are as shown hereunder :—

AREA UNDER SOWN GRASSES, 1921-22 TO 1925-26.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1921-22	2,005,444	1,032,104	459,914	20,890	18,441	781,000	550	71	4,318,414
1922-23	1,925,432	957,454	475,226	22,278	25,377	857,581	510	18	4,263,876
1923-24	1,930,894	1,024,591	493,552	30,800	33,022	799,443	500	18	4,322,820
1924-25	1,993,694	944,339	538,165	64,212	60,257	866,331	500	24	4,467,522
1925-26	2,017,831	933,271	532,052	60,453	89,170	821,807	500	18	4,455,102

The increase in the area of the grass lands of Australia during recent years is due in large measure to the development of the dairying industry referred to in the next chapter.

§ 3. Relative Importance 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 1925–26 :—

DISTRIBUTION OF CROPS, 1925-26.

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 ..	2,924,745	2,513,494	165,999	2,465,648	2,112,032	19,091	..	267	10,201,276
Oats	100,652	437,696	1,293	158,062	278,344	36,741	..	445	1,013,233
Maize ..	120,955	21,913	154,252	2	8	..	10	..	297,140
Barley—									
Malting ..	3,765	72,244	5,496	224,558	8,744	4,634	..	..	319,441
Other ..	2,849	31,151	1,505	14,779	4,562	589	..	..	55,435
Beans and Peas	83	15,055	23	11,225	3,598	21,442	..	..	51,426
Rye	1,617	978	26	314	476	273	..	..	3,684
Other Cereals ..	1,556	..	3	..	173	..	..	..	1,732
Hay	749,192	1,013,613	66,828	517,220	391,142	92,595	..	1,413	2,832,003
Green Forage ..	479,434	107,873	247,482	102,732	100,558	17,101	..	30	1,055,210
Grass and other Seeds ..	..	1,385	4,017	473	53	641	..	..	6,569
Orchards and other Fruit Gardens ..	74,532	82,665	33,520	32,276	18,355	33,891	..	6	275,245
Vines—									
Productive ..	11,739	36,091	1,166	45,533	4,355	..	..	..	98,884
Unproductive	2,726	4,621	490	5,061	915	..	..	..	13,813
Market Gardens	8,973	16,609	1,017	1,517	2,725	587	..	12	31,440
Sugar Cane—									
Productive ..	8,688	..	189,675	..	..	..	..	..	198,363
Unproductive	10,675	..	79,834	..	..	..	..	..	90,509
Potatoes ..	22,723	63,369	10,478	2,895	4,262	33,190	..	8	136,925
Onions ..	172	5,379	456	351	96	6	..	..	6,460
Other Root Crops	1,033	3,550	2,288	360	231	3,997	20	..	11,479
Tobacco ..	1,473	1,179	96	11	..	..	..	..	2,759
Broom Millet ..	1,662	669	237	..	..	..	..	..	2,568
Pumpkins and Melons ..	3,106	1,719	8,232	210	724	..	..	..	13,991
Hops ..	..	312	..	2	..	1,418	..	..	1,732
Cotton—									
Productive ..	2	..	40,062	..	68	..	30	..	40,162
Unproductive	..	..	13,301	..	..	..	10	..	13,311
All other Crops	9,008	1,927	5,989	638	689	216	321	..	18,788
Total Area ..	4,541,360	4,433,492	1,033,765	3,583,867	2,932,110	266,412	391	2,181	16,793,578

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 to the total area under crop for the season 1925–26 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, while in the same States the hay crop is second in importance. 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 principal crops in the order of importance are sugar cane, green forage, wheat and maize, while in Tasmania, hay, oats, orchards and fruit gardens and potatoes occupy the leading positions.

As pointed out previously, wheat is the main crop in Australia, the area thereunder for grain and hay representing in 1925–26 nearly 68 per cent. of the total area under cultivation.

RELATIVE AREAS UNDER CROP, 1925–26.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	%	%	%	%	%	%	%	%	%
Wheat ..	64.40	56.69	16.06	68.80	72.03	7.17	..	12.24	60.75
Hay ..	16.50	22.87	6.46	14.43	13.34	34.76	..	64.79	16.86
Oats ..	2.22	9.87	0.13	4.41	9.49	13.79	..	20.40	6.03
Green Forage ..	10.56	2.43	23.94	2.87	3.43	6.42	..	1.38	6.28
Maize ..	2.66	0.49	14.92	0.00	0.00	..	2.55	..	1.77
Barley ..	0.15	2.33	0.68	6.68	0.45	1.96	..	..	2.23
Orchards and Fruit Gardens..	1.64	1.86	3.24	0.90	0.63	12.72	..	0.28	1.64
Sugar-cane	0.43	0.00	26.07	..	0.00	0.00	..	..	1.72
Potatoes ..	0.50	1.43	1.01	0.08	0.15	12.46	..	0.37	0.82
Vineyards	0.32	0.92	0.16	1.41	0.18	..	..	..	0.67
All other ..	0.62	1.11	7.33	0.42	0.30	10.72	97.45	0.54	1.23
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. **Area of Chief Crops, Australia, 1921–22 to 1925–26.**—The acreage under each of the principal crops in Australia during the last five seasons is shown below :—

AREA OF CHIEF CROPS.—AUSTRALIA, 1921–22 TO 1925–26.

Crop.	1921–22.	1922–23.	1923–24.	1924–25.	1925–26.
	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat	9,719,042	9,763,861	9,540,434	10,824,966	10,201,276
Hay	2,994,519	3,338,456	3,406,226	3,026,405	2,832,003
Oats	733,406	1,014,376	1,076,930	1,165,127	1,013,233
Green Forage ..	452,508	893,871	961,311	564,924	1,055,210
Maize	305,186	313,202	316,307	398,949	297,140
Orchards and Fruit Gardens	281,149	275,687	273,845	276,904	275,245
Barley	298,910	342,196	258,775	260,248	374,876
Sugar-cane ..	197,293	216,886	237,280	273,512	288,872
Potatoes	149,144	135,735	134,352	138,776	136,925
Vineyards	92,414	105,476	112,965	114,394	111,697
All other Crops ..	133,453	172,504	212,761	233,986	207,101
Total ..	15,357,024	16,572,250	16,531,186	17,278,191	16,793,578

During the period under review, the areas of most of the crops, while reflecting seasonal and economic influences, have expanded, the most notable advance taking place in wheat. Of the other crops, green forage, oats, barley and sugar-cane have made the most consistent progress since 1921–22.

§ 4. Wheat.

1. **Progress of Wheat-Growing.**—(i) *Area and Production.* Wheat is the principal crop raised in Australia, and the development of wheat-growing during the past 30 years constitutes the most interesting feature of Australian agriculture. Since 1895, when the area under wheat amounted to 3½ million acres, an average of 220,000 acres has been added annually, until in 1925–26 more than 10 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 1925–26, and are shown from the year 1860 onwards in the graphs hereinafter. An estimate is also appended for the 1926–27 crop :—

WHEAT.—AREA AND PRODUCTION, 1921–22 TO 1926–27.

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.
1921–22 ..	3,194,408	2,611,198	164,670	2,384,012	1,336,223	27,985	541	9,719,042
1922–23 ..	2,942,339	2,644,314	145,492	2,453,086	1,552,868	25,244	518	9,763,861
1923–24 ..	2,945,040	2,454,117	51,149	2,418,415	1,656,915	14,503	295	9,540,434
1924–25 ..	3,549,367	2,705,323	189,145	2,499,852	1,867,614	12,954	711	10,824,966
1925–26 ..	2,924,745	2,513,494	165,999	2,465,648	2,112,032	19,091	267	10,201,276
1926–27(*a*) ..	3,336,450	2,915,315	100,000	2,760,505	2,574,014	20,700	..	11,706,984
YIELD.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush.	Bushels.
1921–22 ..	42,759,389	43,867,596	3,025,786	24,946,525	13,904,721	577,178	7,611	129,088,806
1922–23 ..	28,660,824	35,697,220	1,877,836	28,784,767	13,857,432	569,587	7,176	109,454,842
1923–24 ..	33,171,300	37,795,704	243,713	34,551,955	18,920,271	305,628	4,700	124,993,271
1924–25 ..	59,752,435	47,364,495	2,779,829	30,528,625	23,887,397	231,388	14,565	164,558,734
1925–26 ..	33,800,619	29,255,534	1,973,477	28,603,101	20,471,177	395,603	4,881	114,504,392
1926–27(*a*) ..	47,288,600	46,886,020	645,000	35,535,566	30,041,783	455,400	..	160,852,369

(*a*) Preliminary figures.

The area devoted to the production of wheat for grain reached its maximum in 1915–16, when 12,484,512 acres were sown, largely as the result of a special war effort. After that year, however, there was a serious decline, brought about by war conditions and unfavourable seasons, and the area in 1919–20 fell to 6,419,160 acres, or only half that of 1915–16. The promise of remunerative Government guarantees, coupled with the prospects of high prices, was responsible for a marked advance in 1920–21, and the area was further extended during the next five years, the total gain for Australia since 1919–20 amounting to nearly 4 million acres.

Although final figures for 1926–27 for all the States are not yet available, the data to hand indicate the total area under wheat for grain in Australia at about 11,706,984 acres, an increase of 1½ million acres on the previous year's figure. The season was very favourable and the excellent yield of 160,852,369 bushels was harvested, the yield per acre being 13¾ bushels.

The harvest of 179,065,703 bushels reaped in 1915–16 represents the maximum production of wheat in Australia. Yields exceeding 100,000,000 bushels have been recorded on eleven occasions, all of which have occurred since 1913–14. The annual production of wheat during the seasons 1916–17 to 1925–26 averaged 117,724,092 bushels, and the extent to which this average may be exceeded depends in a great measure on seasonal conditions. During each of the last seven seasons the yield has exceeded 100 million bushels, the average for the period being 136,000,000 bushels. This is the first occasion on which such a succession of good harvests has occurred, and emphasizes clearly the value of bare-fallowing 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 failure of this crop.

(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 1916–26 :—

WHEAT.—YIELD PER ACRE, 1921–22 TO 1925–26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1921–22 ..	13.39	16.80	18.37	10.46	10.41	20.62	14.07	13.28
1922–23 ..	9.74	13.50	12.91	11.73	8.92	22.56	13.85	11.21
1923–24 ..	11.26	15.40	4.76	14.29	11.42	21.07	15.93	13.10
1924–25 ..	16.83	17.51	14.70	12.21	12.79	17.86	20.49	15.20
1925–26 ..	11.56	11.64	11.89	11.60	9.69	20.72	18.28	11.22
Average 10 seasons, 1916–26	11.79	14.40	13.30	12.44	10.05	18.13	16.36	12.41

As the above figures show, there were considerable variations in the average yields, chiefly due to the vagaries of the seasons. Considerable improvement has been shown in the average yields for the past three decades, the figures being 7.96, 10.81, and 12.41 bushels per acre respectively. The increased yields of the later years are principally due to the better cultural methods employed in wheat farming. The excellence of the 1920–21 and 1924–25 seasons is reflected in the splendid averages obtained in those years, the average of the former year, viz., 16.08 bushels having been exceeded only once by the 16.35 bushels reaped as far back as 1866, when less than 1,000,000 acres were sown in relatively fertile areas.

(iii) *Relation to Population.* During the seasons embraced in the following table, the Australian production of wheat per head of population has varied between 19 bushels in 1925–26 and 28 bushels in 1924–25. The State in which wheat growing occupies the most important position relatively to population is Western Australia, which in 1925–26 had a yield averaging 55 bushels per head. Queensland and Tasmania are the States in which the average production of wheat per head is least, the quantity raised being generally below that required for local consumption. Particulars for the past five seasons are as follows :—

WHEAT.—YIELD PER 1,000 OF POPULATION, 1921–22 TO 1925–26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1921–22 ..	20,101	28,284	3,930	49,635	41,485	2,643	3,688	23,427
1922–23 ..	13,190	22,448	2,382	56,089	40,329	2,602	2,806	19,430
1923–24 ..	15,013	23,253	300	65,845	53,475	1,395	1,793	21,739
1924–25 ..	26,504	28,583	3,329	56,691	65,602	1,062	4,858	28,107
1925–26 ..	14,706	17,372	2,292	51,852	55,003	1,823	1,240	19,019

The normal annual consumption of wheat in Australia, exclusive of the requirements for seed, poultry and other live stock, is 309 lb. (5.16 bushels) per head of population.

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 Denmark of 40½ bushels per acre to a minimum in the Union of South Africa of 8¼ bushels per acre. Australia, with approximately 13¼, occupies a relatively subordinate position, but in comparison with the yields obtained in those countries where wheat is extensively grown the results obtained in Australia are very satisfactory. Germany, with 25.07 bushels; France, 19.82 bushels; Canada, 16.92 bushels; Italy, 16.22 bushels; and United States, 14.47 bushels, exceed the Australian average, but the latter is in excess of the yields obtained in the Soviet Republics, India, Argentine, Spain, and Rumania.

WHEAT.—YIELD PER ACRE, VARIOUS COUNTRIES, 1922–1925.

Country.	Average Yield in Bushels per acre.		Country.	Average Yield in Bushels per acre.	
	Average, 1922–1924.	1925.		Average, 1922–1924.	1925.
Denmark ..	40.51	49.28	Lithuania ..	15.79	19.10
Netherlands ..	37.32	42.24	Korea	(a) 14.75	11.85
Belgium	34.01	39.69	Bulgaria ..	14.62	19.57
United Kingdom ..	32.40	34.10	United States of America ..	14.47	12.77
Switzerland ..	29.05	23.40	Jugo-Slavia ..	13.64	17.95
New Zealand ..	27.92	28.76	**Australia** ..	**13.24**	**11.22**
Sweden	26.29	38.02	Spain	12.97	15.16
Japan	25.10	25.70	Rumania ..	12.52	12.84
Germany.. ..	25.07	30.82	Argentine Republic	12.31	9.96
Egypt	24.94	26.27	Cyprus	12.24	11.34
Norway	24.03	22.41	India	12.18	10.22
Czecho-Slovakia ..	22.73	25.77	Greece	(c)11.56	(b)12.48
France	19.82	23.85	Uruguay ..	11.18	9.52
Chile	18.41	18.36	Peru	10.72	(b)12.77
Austria	17.51	22.04	Portugal ..	9.84	(b)9.14
Canada	16.92	18.72	French Morocco ..	9.09	9.11
Hungary ..	16.83	23.28	Soviet Republics	(b)8.29	12.40
Brazil	16.71	(b)16.11	Union of South Africa ..	8.28	7.87
Italy	16.22	20.64			
Poland	16.11	21.43			

(a) Average for years 1923–1924. (b) Year 1924. (c) Average for years 1921–1923.

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

WHEAT.—YIELD IN VARIOUS COUNTRIES, 1922–1925.

Country.	Yield in Bushels (,000 omitted).		Country.	Yield in Bushels (,000 omitted).	
	Average, 1922–1924.	1925.		Average, 1922–1924.	1925.
United States of America ..	838,222	666,496	French Morocco ..	20,535	23,883
Soviet Republics ..	(b)381,738	661,137	Belgium ..	12,332	14,485
Canada	378,667	411,383	Greece	(a)10,857	11,173
India	366,464	324,875	Mexico	10,767	9,440
France	266,691	330,847	Portugal ..	10,459	11,478
Argentine Republic	209,075	191,143	Uruguay ..	9,171	9,596
Italy	185,542	240,848	Sweden ..	9,116	13,791
Spain	134,787	162,593	Korea	(c)8,650	10,509
Australia ..	**133,002**	**114,504**	Austria	8,267	10,672
Germany.. ..	89,194	118,214	Denmark ..	7,980	9,748
Rumania ..	87,815	104,742	Syria	(b)6,651	7,492
United Kingdom ..	59,163	52,918	Union of South Africa ..	6,619	8,333
Hungary ..	54,783	71,675	Tunis	6,259	11,760
Jugo-Slavia ..	53,696	78,647	New Zealand ..	5,919	4,600
Poland	41,562	57,916	Netherlands ..	5,327	5,577
Egypt	37,163	36,248	Brazil	3,727	(b)3,902
Czecho-Slovakia ..	34,329	39,310	Lithuania ..	3,186	5,285
Bulgaria	34,082	49,644	Switzerland ..	3,023	3,516
Japan	29,970	29,541	Peru	2,886	(b)2,876
Chile	25,401	27,587	Cyprus	2,342	2,079
Algeria	23,595	32,671			

(a) Average for years 1921–1923. (b) Year 1924. (c) Average for years 1923–1924.

NOTE.—The harvests reported above for 1925 relate to the year 1925 for the Northern, and 1925–26 for the Southern Hemisphere.

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

WHEAT.—WORLD'S PRODUCTION (a), 1909–13 TO 1925.

Years.	Area.	Yield.	Yield per acre.
	Acres.	Bushels.	Bushels.
Average, 1909–1913 ..	266,421,000	3,703,765,000	13.90
1921	254,686,000	3,312,930,000	13.01
1922	241,990,000	3,403,157,000	14.06
1923	256,900,000	3,828,694,000	14.90
1924	260,883,000	3,424,513,000	13.13
1925	268,356,000	3,891,158,000	14.50
Average, 1921–1925 ..	256,563,000	3,572,090,000	13.92

(a) From countries reporting.

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

The total area harvested in 1925 again shows an increase on the figures for the previous year. Europe, and the Soviet Union in particular, are responsible for this increase, which has manifested itself all over the world with the exception of Oceania. Nevertheless, in comparison with the pre-war period, areas sown to wheat are still 5 per cent. lower in European Countries and 29 per cent. lower in the Soviet Union, though considerably more in other continents, especially in North America, Argentina and Australia. The 1925 area was the largest since the war, and the first to exceed the average for the five years 1909–1913.

The increase in sowing was accompanied by favourable weather conditions in Europe, the Soviet Union, North Africa and Canada, and exceptionally heavy yields were obtained in these countries. In the United States, India, Argentina and Australia the yields were not so satisfactory, but the total world output was the greatest since the war, and exceeded the 1909–1913 average by 187,000,000 bushels.

The Australian contribution to the world's production shown above during the past five years amounted to nearly 4 per cent.

3. Prices of Wheat.—(i) *British Wheat.* Since the United Kingdom is the largest importer of Australian wheat, the price of wheat in the British markets is a matter of prime importance to the local producer. The table below gives the average prices per Imperial quarter realized for British grown wheat :—

BRITISH WHEAT.—PRICES PER QUARTER, 1861 TO 1926.

Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.	Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1861 ..	55 4	61 6	50 0	1919 ..	72 11	73 4	72 5
1871 ..	56 8	60 0	52 6	1920 ..	80 10	90 11	72 6
1881 ..	45 4	55 2	40 9	1921 ..	71 6	89 10	44 0
1891 ..	37 0	41 8	32 3	1922 ..	47 10	56 3	37 5
1901 ..	26 9	27 8	25 8	1923 ..	42 2	49 3	37 6
1911 ..	31 8	33 4	30 0	1924 ..	49 3	56 1	41 5
1917 ..	75 9	83 10	70 3	1925 ..	52 2	59 3	43 11
1918 ..	72 10	74 5	71 2	1926 ..	53 3	62 2	47 6

(ii) *Australian Export Values.* In the next table will be found a statement of the export values of Australian wheat during each of the last six years :—

AUSTRALIAN WHEAT.—EXPORT VALUES, 1921–22 TO 1926–27.

Heading.	1921–22.	1922–23.	1923–24.	1924–25.	1925–26.	1926–27.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Price per bushel ..	5 9	5 5	4 8	6 8	6 4	5 7

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

4. Imports and Exports of Wheat and Flour.—(i) *Quantities.* The table hereunder shows the imports, exports, and net exports of wheat and flour from 1921–22 to 1925–26. 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 50,446,320 bushels in 1922–23 and 125,044,344 bushels in 1924–25, the net exports for the period averaging 91,081,124 bushels.

WHEAT AND FLOUR.—IMPORTS AND EXPORTS, AUSTRALIA, 1921–22 TO 1925–26.

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bushels.(a)	Bushels.	Bushels.	Eq. Bushels.(a)	Bushels.	Bushels.
1921–22	247	1,728	1,975	99,947,223	17,267,232	117,214,455	117,212,480
1922–23	15,288	2,112	17,400	31,510,272	18,936,048	50,446,320	50,428,920
1923–24	203	1,920	2,123	59,910,480	24,537,168	84,447,648	84,445,525
1924–25	42	2,784	2,826	103,538,088	21,506,256	125,044,344	125,041,518
1925–26	13	72	85	54,227,728	24,049,536	78,277,264	78,277,179

(a) Equivalent in bushels of wheat.

(ii) *Destination of Exported Breadstuffs.* In the next two tables will be found a list of the principal countries to which Australia exported wheat and flour during each year of the period 1921–22 to 1925–26. The countries are as shown in the Australian Customs returns, but wheat ships are frequently instructed to call for orders at various ports, and the countries to which these ports belong cannot, therefore, always be considered as the ultimate destination of the whole of the wheat said to be exported to them.

WHEAT.—EXPORTS, AUSTRALIA, 1921–22 TO 1925–26.

Country to which Exported.	1921–22.	1922–23.	1923–24.	1924–25.	1925–26.	Total for Five Years.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
United Kingdom	40,914,035	10,762,600	23,017,707	39,356,580	22,319,823	136,370,745
Italy	18,447,762	11,647,165	6,483,732	15,560,605	4,642,202	56,781,466
Japan ..	7,497,943	3,711,211	13,067,907	7,018,627	10,861,863	42,157,551
France ..	3,341,835	1,284,924	3,562,313	14,580,859	53,865	22,823,796
India	15,035,429	..	..	..	1,326,860	16,362,289
Union of South Africa ..	1,331,417	2,545,162	3,721,697	3,674,773	3,117,007	14,390,056
Belgium ..	1,312,480	178,930	622,283	4,440,158	1,349,347	7,903,198
Egypt ..	3,286,433	38,783	1,339,707	1,887,777	668,288	7,220,988
Germany ..	2,996,292	397	110,770	3,061,950	941,252	7,110,661
Netherlands ..	1,192,977	..	142,753	3,297,382	2,211,050	6,844,162
New Zealand ..	73,539	..	1,247,362	2,682,908	2,533,847	6,537,656
Peru	697,205	167,110	..	528,367	1,635,802	3,028,484
Sweden ..	..	412,547	1,304,445	1,040,585	129,397	2,886,974
Norway ..	960,855	117,012	106,415	326,037	225,877	1,736,196
China ..	..	..	..	..	985,865	985,865
Canary Islands(a)	236,807	..	..	470,527	..	707,334
Other Countries	2,622,214	644,493	5,183,389	5,610,953	1,225,383	15,286,432
Total ..	99,947,223	31,510,334	59,910,480	103,538,088	54,227,728	349,133,853

(a) For orders.

The exports of flour during the same period and the principal countries of destination were as follows :—

FLOUR.—EXPORTS, AUSTRALIA, 1921-22 TO 1925-26.

Country to which Exported.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.	Total for Five Years.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Egypt	108,550	127,072	182,938	172,416	194,909	785,885
United Kingdom	103,634	83,804	92,425	103,817	70,537	454,217
Netherlands East Indies ..	41,826	50,899	49,262	44,875	66,868	253,730
Malaya (British)	20,471	32,619	33,683	29,408	48,910	165,091
Union of South Africa ..	24,947	39,250	37,685	25,475	22,780	150,137
Philippine Islands	10,749	10,292	13,012	10,016	11,389	55,458
Ceylon	6,282	7,681	10,142	10,416	18,130	52,651
Hong Kong	10,003	6,318	11,739	13,247	9,703	51,010
Mauritius	5,639	8,757	8,569	6,496	3,990	33,451
Japan	6,555	1,664	15,430	156	732	24,537
Malta	..	6,133	5,631	1,967	4,817	18,548
New Caledonia	3,532	3,517	3,765	3,522	3,911	18,247
Portuguese East Africa ..	3,542	3,475	2,963	2,621	5,441	18,042
China	4,391	260	12,905	219	132	17,907
New Zealand	95	84	294	4,258	12,363	17,094
Fiji	2,484	2,602	3,024	2,989	4,039	15,138
French Indo-China	789	1,826	1,884	1,295	3,421	9,215
India	657	1,063	130	470	1,584	3,904
Papua	322	378	780	912	946	3,338
Italy	..	112	2,025	156	..	2,293
Other Countries	5,266	6,695	22,905	13,316	16,430	64,612
Total	359,734	394,501	511,191	448,047	501,032	2,214,505

For the five years under review the export of wheat to the United Kingdom amounted to 136,370,745 bushels, or 39.06 per cent. of the total export for the period, while the export of flour to the same destination aggregated 454,217 tons, or 20.51 per cent. of the total export. The country to which the largest consignments of flour were made during the last quinquennium was Egypt, followed by the United Kingdom, Netherlands East Indies, Malaya (British), and the Union of South Africa.

(iii) *Exports of Wheat and Flour.* From the foregoing returns it will be seen that the quantity of wheat exported in the form of flour during the past five years represents, on the average, about 23 per cent. of the total equivalent in wheat exported as wheat or flour from Australia.

A point of some interest in connexion with the export of wheat, and one which bears also on the proportion of wheat and flour exports just referred to, is that concerning the quantity of phosphoric acid which this export has the effect of removing from Australia, and the necessity which exists for the return to the soil of this substance in some form.

According to an estimate furnished by the chemist to the New South Wales Department of Agriculture (F. B. Guthrie, Esq., F.C.S., &c.), the proportions of milled product from a bushel (60 lb.) of wheat are, approximately, 42 lbs. of flour, 9 lbs. of bran, and 9 lbs. of pollard, while the percentage of phosphoric acid contained in these products is as follows :—

Flour	0.32 per cent., or	0.13 lb. per bushel.
Bran	3.00 ,,	0.27 ,,
Pollard	0.90 ,,	0.08 ,,

The total amount of phosphoric acid contained in a bushel of wheat, is, therefore, 0.48 lb., of which 0.13 lb. is in the flour and 0.35 lb. in the offal.

During the last ten years the net exports from Australia of wheat and its milled products have amounted to 631,203,215 bushels of wheat, 4,109,585 tons of flour, and 9,201,560 bushels of bran, pollard, and sharps. On the basis of the figures quoted above this export would contain no less than 332,960,000 lbs. of phosphoric acid, the value of which as a fertilizer would amount to approximately four million pounds sterling.

5. Local Consumption of Wheat.—The estimated consumption of wheat for food and for seed purposes in Australia during the past ten years is given in the following tables :—

WHEAT.—HUMAN CONSUMPTION, AUSTRALIA, 1916-17 TO 1925-26.

Year.	Flour Milled.	Net Exports of Flour.		Net Quantity Available for Home Consumption.		Net Quantity Available per Head of Population.	
		Flour.	Flour in Biscuits Exported.	Flour.	Equivalent in Terms of Wheat.	Flour.	Equivalent in Terms of Wheat.
	Tons.	Tons.	Tons.	Tons.	Bushels.	Tons.	Bushels.
1916-17 ..	869,975	290,572	2,885	576,518	27,672,860	.1171	5.623
1917-18 ..	985,761	374,062	9,810	601,889	28,890,670	.1205	5.784
1918-19 ..	1,046,268	483,340	6,437	556,491	26,711,570	.1098	5.270
1919-20 ..	1,050,228	517,708	4,590	527,930	25,340,640	.1000	4.801
1920-21 ..	801,511	229,648	3,375	568,488	27,287,420	.1052	5.050
1921-22 ..	911,452	359,698	2,284	549,470	26,374,560	.0999	4.798
1922-23 ..	985,479	394,457	1,831	589,191	28,281,170	.1049	5.034
1923-24 ..	1,092,856	511,151	1,727	579,978	27,838,940	.1011	4.853
1924-25 ..	1,068,698	447,989	1,814	618,895	29,706,960	.1054	5.058
1925-26 ..	1,185,968	500,960	2,473	682,535	32,761,680	.1139	5.467
Aggregate 10 years	9,998,196	4,109,585	37,226	5,851,385	280,866,470	.1075	5.158

WHEAT USED FOR SEED.—AUSTRALIA, 1916 TO 1925.

Year.	Area for Grain and Hay.	Wheat for Seed Purposes.		
		Quantity.	Per Acre.	Per Head of Population.
	Acres.	Bushels.	Bushels.	Bushels.
1916	12,894,917	11,523,000	.894	2.343
1917	10,910,669	9,713,000	.890	1.949
1918	9,428,398	9,054,000	.960	1.782
1919	8,250,572	7,774,000	.942	1.466
1920	10 271,055	9,471,000	.922	1.750
1921	10,878,401	10,077,000	.926	1.847
1922	11,253,078	10,456,000	.929	1.878
1923	11,016,608	10,328,000	.937	1.816
1924	11,859,102	10,967,000	.925	1.890
1925	11,405,943	10,627,000	.932	1.774
Aggregate for 10 years ..	108,168,743	99,990,000	.924	1.836

In addition to the above, the quantity of grain fed to poultry and other live stock as well as that used as seed for green forage crops must be taken into consideration. These quantities vary from year to year according to the price of wheat and the nature of the season, and sufficient data are not available on which to base an annual estimate, but, taken over a period, the amount so consumed has been estimated to range from one half to one bushel per head of population per annum. The flour available for human consumption necessarily fluctuates from year to year coincident with stocks. In some years the flour available per head of population, after deducting net exports from the quantity milled, shows a substantial increase over the average for the previous year, this, however, being counterbalanced by a decline in the following year. The average quantity of

flour consumed per annum for the ten years under consideration was 0.1075 tons per head of population, which, expressed in equivalent terms in wheat, represents 5.158 bushels. The estimates of quantity of grain used for seed purposes are based on data supplied by the Agricultural departments of the several States giving average quantities of seed used per acre for wheat sown either for grain or hay. The average annual quantity thus used during the ten years was 1.836 bushels per head of population, and 0.924 bushels or 55 lbs. per acre sown. For all purposes the consumption of wheat in Australia during the past five years averaged 42,953,000 bushels, or 7.47 bushels per head of the population.

6. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in Australia during the season 1925–26 is shown below :—

WHEAT.—VALUE OF CROP (*a*), 1925–26.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value..	10,985,200	8,776,660	534,483	8,878,879	6,418,567	128,570	1,590	35,723,949
Value per acre ..	£3/15/1	£3/9/10	£3/4/5	£3/12/0	£3/0/9	£6/14/8	£5/18/1	£3/10/0

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

7. **Voluntary Wheat Pools.**—Reference to the operations of the Voluntary Wheat Pools in the various States during 1926–27 will be found in the Appendix at the end of this volume.

§ 5. Oats.

1. **Progress of Cultivation.**—(i) *Area and Yield.* Oats came next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for 60.75 per cent., oats represented only 6.03 per cent, of the area under crop in Australia. The progress in cultivation of oats for the last five years is shown in the table hereunder, and more fully in the graphs herein :—

OATS.—AREA AND YIELD, 1921–22 TO 1925–26.

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.
1921–22	69,619	318,681	2,274	125,148	162,866	54,642	176	733,406
1922–23	73,635	492,356	1,216	173,716	214,269	58,813	371	1,014,376
1923–24	86,402	520,654	216	176,299	241,608	51,460	291	1,076,930
1924–25	122,994	517,229	4,010	155,214	318,982	46,175	523	1,165,127
1925–26	100,652	437,696	1,293	158,062	278,344	36,741	445	1,013,233
				YIELD.				
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1921–22	1,168,406	6,082,258	34,409	1,297,646	2,019,603	1,543,617	1,494	12,147,433
1922–23	1,243,198	8,093,459	19,499	1,681,783	2,261,863	1,674,751	7,602	14,982,155
1923–24	1,564,970	9,366,205	2,427	2,157,938	2,846,670	1,359,785	5,330	17,303,325
1924–25	2,500,951	9,572,003	63,912	1,939,415	4,241,074	1,065,933	10,449	19,393,737
1925–26	1,607,520	4,998,165	14,546	1,808,443	2,939,380	835,473	8,130	12,211,657

The oat crop exhibited little variation during the past decennium, ranging on the average around 14,000,000 bushels. The demand for the grain for oatmeal is limited to about 2,000,000 bushels annually. It is mainly used as feed grain, and its value, particularly in good seasons, is not sufficient to warrant the increase in cultivation which may be expected when oats is more generally marketed through live stock and better prices thereby realized than those now offering on the local market.

The principal oat-growing State is Victoria, which produces more than half the total quantity of oats grown in all States. For Australia as a whole the record yield of oats was obtained during 1924–25, when 19,393,737 bushels were harvested.

(ii) *Average Yield.* The average yield per acre of oats varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield in each of the last five seasons, and for the decennium 1916–26 are given in the succeeding table :—

OATS.—AVERAGE YIELD PER ACRE, 1921–22 TO 1925–26.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1921–22	16.78	19.09	15.13	10.37	12.40	28.25	8.49	16.56
1922–23	16.88	16.44	16.04	9.68	10.56	28.48	20.49	14.77
1923–24	18.11	17.99	11.24	12.24	11.78	26.42	18.32	16.07
1924–25	20.33	18.51	15.94	12.50	13.30	23.08	19.98	16.65
1925–26	15.97	11.42	11.25	11.44	10.56	22.74	18.27	12.05
Average for 10 seasons 1916–26	16.75	17.25	16.66	11.16	11.69	24.72	18.29	15.37

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.

(iii) *Relation to Population.* The State in which oat production occupies the most important position in relation to population is Tasmania, the yield for that State representing about 6 bushels per head during the last five years, as compared with 2.64 bushels per head for Australia as a whole. Particulars for the seasons 1921–22 to 1925–26 are furnished in the succeeding table :—

OATS.—YIELD PER 1,000 OF POPULATION, 1921–22 TO 1925–26.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1921–22	549	3,922	45	2,582	6,026	7,067	724	2,205
1922–23	572	5,090	25	3,277	6,583	7,650	2,973	2,660
1923–24	708	5,762	3	4,112	8,046	6,207	2,033	3,009
1924–25	1,109	5,776	76	3,601	11,647	4,893	3,485	3,302
1925–26	699	2,968	17	3,278	7,898	3,850	2,066	2,038

2. **Comparison with Other Countries.**—(i) *Total Production.* A comparison of the Australian production of oats with that of the leading oat-producing countries of the world is furnished in the following table :—

OATS.—PRODUCTION IN VARIOUS COUNTRIES, 1922-1925.

Country.	Yield in Bushels (000 omitted). Average, 1922-1924.	1925.	Country.	Yield in Bushels (000 omitted). Average, 1922-1924.	1925.
United States of America ..	1,081,929	1,209,515	Hungary ..	17,451	20,425
Canada	414,007	436,373	**Australia** ..	**17,226**	**12,212**
Soviet Republics ..	(*b*)407,266	561,391	Jugo-Slavia ..	15,953	19,017
Germany.. ..	289,843	307,796	Netherlands ..	15,673	16,251
France	248,201	261,568	Latvia	14,201	16,747
Poland	155,058	182,518	Japan	9,156	(*b*)7,946
United Kingdom ..	131,357	132,655	Algeria	9,055	12,615
Czecho-Slovakia ..	65,986	71,891	Norway	8,539	9,639
Sweden	60,672	67,517	Estonia ..	7,380	6,978
Rumania ..	54,502	40,789	Portugal ..	6,994	4,547
Argentine Republic	50,637	64,347	Bulgaria ..	6,863	8,182
Denmark ..	49,258	52,670	Union of South Africa ..	(*a*)5,447	(*d*)5,277
Belgium	33,879	34,001	New Zealand ..	4,615	3,607
Irish Free State ..	29,931	37,980	Greece	(*c*)4,264	4,550
Italy	27,624	37,980	Korea	3,326	2,873
Spain	27,152	34,756	Chile	2,576	4,148
Finland	22,240	32,329	Switzerland ..	2,192	2,155
Lithuania ..	18,748	15,687	Uruguay ..	1,864	2,238
Austria	17,873	21,409	Tunis	1,369	2,205

(*a*) Average years 1921-1923. (*b*) Year 1924. (*c*) Average years 1922-1923. (*d*) Year 1923.

(ii) *Yield per Acre.* The average yield per acre of oats is very low in Australia compared with other countries where its cultivation is more extensive. Arranging the countries contained in the foregoing table according to the magnitude of average yield for the years specified, the results are as follows :—

OATS.—YIELD PER ACRE, VARIOUS COUNTRIES, 1922-1925.

Country.	Yield in Bushels per acre. Average, 1922-1924.	1925.	Country.	Yield in Bushels per acre. Average, 1922-1924.	1925.
Belgium	50.18	52.01	Austria	23.64	28.16
Denmark ..	43.71	47.90	Lithuania ..	23.55	18.40
Switzerland ..	43.27	44.05	Italy	23.38	31.60
Netherlands ..	40.91	44.43	Hungary ..	22.23	28.48
United Kingdom ..	38.59	42.58	Finland ..	21.55	30.15
Irish Free State ..	38.11	56.57	Argentine Republic	18.96	20.15
Germany.. ..	34.94	36.08	Latvia	18.88	20.56
New Zealand ..	33.64	34.61	Bulgaria ..	18.80	23.13
Sweden	33.01	37.49	Estonia ..	18.65	18.79
Chile	32.82	45.05	Jugo-Slavia ..	17.20	22.21
Norway	32.55	40.07	Spain	17.17	19.32
Japan	32.40	(*b*)28.96	Rumania ..	16.90	13.93
Czecho-Slovakia ..	32.00	34.76	**Australia** ..	**15.87**	**12.05**
France	29.11	30.42	Uruguay ..	15.52	15.61
Canada	28.61	29.74	Algeria	15.05	19.37
Greece	(*a*)26.57	(*c*)26.57	Soviet Republics ..	(*b*)14.07	19.44
United States of America ..	26.11	26.78	Portugal ..	13.73	(*b*)7.74
Poland	25.17	28.66	Korea	12.19	10.74

(*a*) Average years 1922-1923. (*b*) Year 1924. (*c*) Year 1923.

3. **World's Production.**—The production of oats in the world for the year 1925, as reported by the International Institute of Agriculture, amounted to 3,726 millions of bushels. The yield was considerably larger than that of the previous year, viz., 3,357 millions of bushels, owing to the increased acreage sown and the favourableness of the season. In the pre-war years 1909 to 1913 the production averaged 3,588 millions of bushels from an average area of 141,700,000 acres. Subsequently the area declined in Europe, but a considerable increase was recorded in North America, with the result that in 1925 nearly 141,000,000 acres were sown to oats.

4. **Price of Oats.**—The average wholesale prices of oats in the markets of the several capitals for the year 1925–26 are given in the following table :—

OATS.—AVERAGE WHOLESALE PRICES, 1925–1926.

Particulars.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	5 6	3 8	..	2 9	2 8	4 2

5. **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 certain years the imports have exceeded the exports, notably in 1903, 1906, 1908, 1910, in each of the four years prior to 1916–17, in 1922–23 and in 1925–26. The quantities and values of oats imported into and exported from Australia during the years 1921–22 to 1925–26 are given hereunder :—

OATS.—IMPORTS AND EXPORTS, AUSTRALIA, 1921–22 TO 1925–26.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1921–22 ..	14,880	2,569	325,792	49,980	310,912	47,411
1922–23 ..	557,523	90,255	35,895	7,506	—521,628	—82,749
1923–24 ..	108,260	18,624	190,453	41,647	82,193	23,023
1924–25 ..	1,723	482	219,278	42,255	217,555	41,773
1925–26 ..	266,103	49,927	76,978	15,844	—189,125	—34,083

NOTE.—(—) signifies net import.

The principal country from which imports of oats have been obtained is New Zealand, while the principal countries to which oats were exported during the period under review were New Zealand, Java, and the United Kingdom.

6. **Oatmeal, etc.**—The production of oatmeal in Australia during 1925–26 amounted to 309,877 cwts., practically the whole of which is consumed locally. Oversea trade in this and similar products is small, the importations of oatmeal, wheatmeal and rolled oats during 1925–26 amounting to 194,105 lbs., while the exports totalled 661,832 lbs.

7. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of Australia for the season 1925–26 is as follows :—

OATS.—VALUE OF CROP, (*a*) 1925–26.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value..	462,160	989,220	2,727	293,872	394,979	188,450	2,340	2,333,748
Value per acre ..	£4/11/10	£2/5/2	£2/2/2	£1/17/2	£1/8/5	£5/2/7	£5/5/2	£2/6/1

(*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 1925–26 being 275,207 acres, or nearly 93 per cent. of the total for Australia. Of the balance, Victoria contributed 21,913 acres, South Australia 2 acres, Western Australia 8 acres, and the Northern Territory 10 acres. The climate of Tasmania is unsuitable for the growing of maize for grain. In all the States, the crop is grown to a greater or less extent for green forage, particularly in connexion with the dairying industry.

2. Progress of Maize-growing.—(i) *Area and Yield.* Notwithstanding its valuable properties and its pre-eminence as the world's most extensively grown cereal, the cultivation of maize has decreased in Australia by more than 20,000 acres during the past decennium. Increases in area were recorded in both Queensland and Victoria, but the decline of more than 30,000 acres in New South Wales was responsible for the reduction in the total for Australia. The maximum area sown to maize was 414,914 acres, as far back as 1910–11, this acreage being considerably in excess of the average planted during the last ten years which amounted to 315,948 acres. The area and yield of maize for grain in each State are given in the following table for the last five years. The fluctuations from year to year are shown more fully on the graph herein.

MAIZE.—AREA AND YIELD, 1921–22 TO 1925–26.

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.
1921–22	146,687	23,227	135,034	186	43	9	..	305,186
1922–23	138,169	25,846	149,048	116	23	..	..	313,202
1923–24	166,933	29,104	120,092	94	43	..	41	316,307
1924–25	146,564	23,126	229,160	7	71	21	..	398,949
1925–26	120,955	21,913	154,252	2	8	10	..	297,140
			YIELD.					
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1921–22	3,976,300	951,960	2,907,754	3,792	540	92	..	7,840,438
1922–23	3,287,500	879,915	3,217,848	2,716	335	..	..	7,388,314
1923–24	4,621,950	1,464,731	2,024,902	1,266	834	..	1,050	8,114,733
1924–25	4,208,200	891,987	7,330,821	276	333	420	..	12,432,037
1925–26	3,278,350	768,761	3,384,172	51	227	..	..	7,431,561

The maximum production of maize in Australia was recorded in 1910–11, when the harvest exceeded 13,000,000 bushels. No approach to this figure was made in recent years, until a superabundant crop in Queensland during 1924 brought the total to nearly 12,500,000 bushels, but the average for the past decade was only 8,000,000 bushels. Moreover the falling-off in the demand coupled with the low market price for the grain adversely affected the industry, particularly in Queensland, and the harvest during 1925–26 was only 7,500,000 bushels.

A maize reaper-thresher, invented and manufactured in Australia, and an imported maize picker and husker were used in the maize fields of Queensland during the past season, and proved most suitable for the work for which they were designed. The perfecting of a machine for harvesting and threshing maize is a matter of very great importance in the development of the industry.

(ii) *Average Yield.* The following table gives particulars of the average yield per acre of the maize crops of the States for the seasons 1921–22 to 1925–26, and also for the decennium 1916–26:—

MAIZE.—AVERAGE YIELD PER ACRE, 1921–22 TO 1925–26.

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.
1921–22	27·11	40·99	21·53	20·39	12·56	10·22	..	25·69
1922–23	23·79	34·04	21·59	23·41	14·57	..	..	23·59
1923–24	27·69	50·33	16·86	13·47	19·40	..	25·61	25·65
1924–25	28·71	38·57	31·99	39·43	4·70	20·00	..	31·16
1925–26	27·10	35·08	21.94	25·50	28·38	..	..	25·01
Average for 10 seasons 1916–26	26·51	41·86	22·61	16·10	12·01	11·90	22·82	25·80

With the exception of Canada, the average yield of maize per acre in Victoria is the largest in the world. This is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts peculiarly suited to its growth. The average yield in New South Wales exceeds that obtained in Queensland.

(iii) *Relation to population.* During the past five seasons the Australian production of maize has averaged 1½ bushels per head of population, while the average for Queensland, the State in which the production per head is highest, amounted to 4½ bushels. Details for the several States during the past five seasons are as follow :—

MAIZE.—YIELD PER 1,000 OF POPULATION, 1921–22 TO 1925–26.

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.
1921–22 ..	1,869	614	3,776	8	2	25	..	1,423
1922–23 ..	1,513	553	4,082	5	1	..	..	1,312
1923–24 ..	2,092	901	2,496	2	2	..	400	1,411
1924–25 ..	1,866	538	8,781	1	1	117	..	2,117
1925–26 ..	1,426	457	3,930	..	1	..	..	1,240

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

MAIZE.—PRODUCTION IN VARIOUS COUNTRIES, 1922–1925.

Country.	Yield in Bushels (000 omitted).		Country.	Yield in Bushels (000 omitted).	
	Average, 1922–1924.	1925.		Average 1922–1924.	1925.
United States of America ..	2,793,850	2,905,029	Portugal ..	(*b*)11,086	11,729
Argentine Republic	203,503	279,002	Czecho-Slovakia	10,248	12,043
Brazil	173,661	(*c*)161,733	**Australia** ..	**9,312**	**7,432**
Rumania ..	142,160	165,155	Salvador ..	(*a*)7,836	(*d*)10,629
Jugo-Slavia ..	107,773	149,232	French Equatorial and West Africa	7,750	9,291
Soviet Republics	(*c*)94,299	176,460	Greece ..	(*b*)7,659	(*c*)7,106
Mexico	91,976	73,326	Belgian Congo ..	7,414	(*c*)7,480
Italy	90,560	109,979	Madagascar ..	(*b*)6,525	4,331
India	(*b*)86,480	(*c*)67,560	Japan	6,297	(*c*)6,488
Egypt	67,049	(*c*)67,573	Guatemala ..	5,933	4,630
Dutch East Indies	58,930	63,469	Uruguay ..	(*f*)5,550	(*d*)4,600
Hungary ..	51,955	87,970	French Indo-China	(*e*)5,413	5,598
Union of South Africa ..	(*b*)48,355	41,071	Rhodesia ..	4,869	5,536
Spain	25,520	28,210	French Morocco ..	4,031	3,740
Bulgaria ..	23,203	28,158	Poland ..	3,589	3,467
Turkey	..	20,606	Austria ..	3,549	3,745
Philippine Islands	16,896	17,371	Korea	2,694	2,852
France	14,459	20,003	Kenya	2,672	(*c*)3,190
Canada	13,128	10,564	Paraguay ..	1,675	2,280

(*a*) Average, years 1920–1922. (*b*) Average, years 1921–1923. (*c*) Year 1924. (*d*) Year 1923. (*e*) Average, years 1923–1925. (*f*) Average, years 1922–1923.

(ii) *Yield per Acre.* The average yield per acre of maize in Australia during 1925–26 was 25.01 bushels, which may be regarded as satisfactory when compared with those of other maize-producing countries, the yields per acre for which are shown in the following table :—

MAIZE.—YIELD PER ACRE IN VARIOUS COUNTRIES, 1922–1925.

Country.	Average Yield per acre in Bushels.		Country.	Average Yield per acre in Bushels.	
	Average, 1922–1924.	1925.		Average, 1922–1924.	1925.
Canada	42.30	44.25	Rhodesia ..	18.08	22.14
Belgian Congo ..	35.03	(c)34.40	Greece	(e)17.88	(c)21.86
Egypt	34.81	(c)35.99	France	17.48	23.42
United States of America ..	27.23	28.58	Paraguay ..	16.90	19.97
Australia	**27.16**	**25.01**	French Indo-China	(c)16.85	17.43
Kenya	25.61	(c)24.60	Bulgaria ..	16.81	18.39
Czecho-Slovakia ..	25.08	31.15	Salvador ..	(f)16.67	(c)16.67
Argentine Republic	23.96	26.28	Rumania ..	16.48	17.00
Italy	23.82	28.64	Portugal ..	(e)14.94	(d)13.60
Hungary ..	23.63	33.13	Guatemala ..	13.70	12.05
Brazil	23.48	(c)26.18	Philippine Islands	12.50	13.47
Jugo-Slavia ..	22.72	28.58	Mexico	11.97	10.53
Spain	21.95	24.10	Korea	11.75	11.83
Madagascar ..	(a)21.83	21.90	India	(e)11.61	(c) 8.61
Japan	21.02	(c)18.90	Union of South Africa ..	(e)11.24	(d)10.63
Austria	21.01	25.18	Uruguay ..	(b)10.85	(d) 9.99
Turkey	..	(c)20.58	Dutch East Indies	7.94	16.07
Poland	19.18	18.04	Basutoland ..	7.72	5.30
Soviet Republics ..	(c)18.68	23.00	French Morocco ..	7.47	7.26
French Equatorial and West Africa	18.13	19.09			

(a) Average years 1923–1925. (b) Years 1922–1923. (c) Year 1924. (d) Year 1923.
(e) Average, years 1921–1923. (f) Years 1920–1922.

4. **World's Production.**—The maize harvest in 1925 was one of the most abundant on record. In the United States of America, where the production normally provides about 75 per cent. of the world's output and in Argentina, the next largest producer, weather conditions were very favourable and large yields were reaped. The total world production in 1925 was greater than the exceptionally large harvest in 1923 and 12 per cent. greater than the average for the pre-war period, 1909 to 1913. The total yields from 1909 to 1925 were as follows :—

Average 1909 to 1913, 3,752,000,000 bushels
1923, 4,149,000,000 ,,
1924, 3,480,000,000 ,,
1925, 4,205,000,000 ,,

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

MAIZE.—AVERAGE PRICE, SYDNEY, 1921–22 TO 1925–26.

Particulars.	1921–22.	1922–23.	1923–24.	1924–25.	1925–26.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Average price per bushel ..	5 2	6 1	5 1	3 11	5 8

6. **Oversea Imports and Exports.**—The decline in the production of maize in Australia of late years has necessitated an average annual import of more than 1,000,000 bushels during the past decade, the bulk of the supplies being furnished by South Africa. Details of imports and exports for the years 1921–22 to 1925–26 are as follows :—

MAIZE.—IMPORTS AND EXPORTS, AUSTRALIA, 1921–22 TO 1925–26.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1921–22 ..	45,066	9,791	36,320	9,023	8,746	768
1922–23 ..	1,198,673	264,758	8,427	2,736	1,190,246	262,022
1923–24 ..	2,572,809	515,468	37,918	9,524	2,534,891	505,944
1924–25 ..	480	242	2,554,052	511,921	- 2,553,572	- 511,679
1925–26 ..	1,562,454	323,486	54,720	14,734	1,507,734	308,752

NOTE.—(−) denotes net exports.

7. **Prepared Maize.**—A small quantity of corn-flour is imported annually into Australia, the principal countries of supply being the United Kingdom and the United States of America. During the year 1925–26 the imports amounted to 501,920 lb., and represented a value of £6,957. The exports from Australia are small, and amounted to only 15,482 lb., valued at £383 in 1925–26.

8. **Value of Maize Crop.**—The value of the Australian maize crop for the season 1925–26 has been estimated at £1,878,267, made up as follows :—

MAIZE.—VALUE OF CROP, 1925–26.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N.T.	Australia.
	£	£	£	£	£	£	£
Aggregate value	983,500	217,816	676,834	19	98	..	1,878,267
Value per acre	£8/2/7	£9/18/10	£4/7/9	£9/10/0	£12/5/0	..	£6/6/5

§ 7. Barley.

1. **Progress of Cultivation.**—(i) *Area and Yield.* The area under barley in Australia has fluctuated very considerably, but results for the last ten years reveal a marked advance. The average annual area sown for the decennium 1916 to 1926 amounted to 282,705 acres, which was nearly double the average of the previous ten-yearly period, i.e., 147,270 acres. Victoria was originally the principal barley growing State, but the rapid expansion of the cultivation of this crop in South Australia during recent years brought the latter State into the lead in 1913–14, and, during 1925–26, the area under barley in South Australia accounted for nearly 64 per cent. of the Australian acreage. Victoria was next in importance with 27½ per cent., leaving a small margin of about

8½ per cent. distributed among the other States. The figures here given relate to the areas harvested for grain; small areas only are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this subsection. The area and yield 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 YIELD, 1921-22 TO 1925-26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
			AREA.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1921-22 ..	5,031	100,127	7,730	170,887	7,894	7,241	298,910
1922-23 ..	3,899	102,773	5,292	215,283	9,243	5,706	342,196
1923-24 ..	4,350	56,564	665	184,286	8,673	4,230	*a*258,775
1924-25 ..	6,638	63,764	8,798	166,432	11,606	3,010	260,248
1925-26 ..	6,614	103,395	7,001	239,337	13,306	5,223	374,876
			YIELD.				
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1921-22 ..	83,950	2,336,246	133,885	3,278,787	85,857	166,960	6,085,685
1922-23 ..	55,520	2,442,041	93,693	3,697,849	107,804	152,028	6,548,935
1923-24 ..	71,700	1,455,435	3,808	3,251,885	97,779	94,634	*a*4,975,451
1924-25 ..	118,300	1,444,823	171,124	3,103,718	177,537	50,729	5,066,231
1925-26 ..	105,150	1,774,963	92,441	4,134,824	158,300	90,619	6,356,297

(*a*) Including Federal Capital Territory, 7 acres, 210 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 2,966,486 and 1,927,699 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 1925-26.* In recent years the statistics of all the States have distinguished between "malting" and "other" barley. Particulars for the season 1925-26 are as follows :—

BARLEY, MALTING AND OTHER.—AREA AND YIELD, 1925-26.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley ..	3,765	72,244	5,496	224,558	8,744	4,634	319,441
Other barley ..	2,849	31,151	1,505	14,779	4,562	589	55,435
Total ..	6,614	103,395	7,001	239,337	13,306	5,223	374,876
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Malting barley ..	54,440	1,189,081	74,575	3,895,631	108,460	79,302	5,401,489
Other barley ..	50,710	585,882	17,866	239,193	49,840	11,317	954,808
Total ..	105,150	1,774,963	92,441	4,134,824	158,300	90,619	6,356,297

The cultivation of malting barley is a special industry to meet the demands of the brewing trade. Its expansion, however, appears to be restricted, although of late years the exports have increased. Taking Australia as a whole, more than 85 per cent. of the area under barley in 1925–26 was sown with the malting variety. The proportion varies largely in the several States.

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

BARLEY, MALTING AND OTHER.—AREA AND YIELD, AUSTRALIA, 1921–22 TO 1925–6.

Season.	Acres.			Bushels.			Average Yields per Acre.		
	Malting.	Other.	Total.	Malting.	Other.	Total.	Malting.	Other.	Total.
1921–22 ..	218,662	80,248	298,910	4,430,599	1,655,086	6,085,685	20.26	20.62	20.36
1922–23 ..	279,159	63,037	342,196	5,283,144	1,265,791	6,548,935	18.93	20.08	19.14
1923–24 ..	217,613	41,162	258,775	4,196,008	779,443	4,975,451	19.28	18.94	19.23
1924–25 ..	211,761	48,487	260,248	4,163,896	902,335	5,066,231	19.66	18.61	19.47
1925–26 ..	319,441	55,435	374,876	5,401,489	954,808	6,356,297	16.91	17.22	16.96
Average 10 seasons 1916–26	215,911	66,794	282,705	4,060,345	1,271,352	5,331,697	18.81	19.03	18.86

During the past ten seasons the area and production of malting barley have represented more than three 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 1916–26, are given in the following table :—

BARLEY.—YIELD PER ACRE, 1921–22 TO 1925–26.

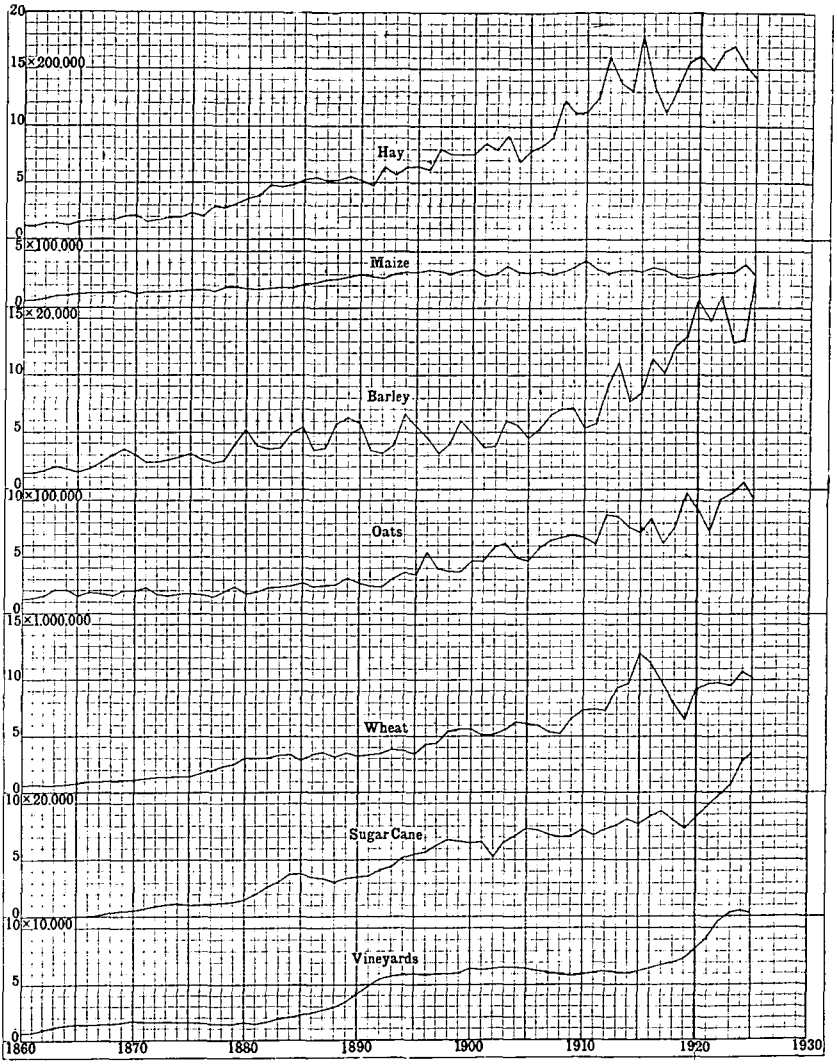
Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1921–22	16.69	23.33	17.32	19.19	10.88	23.06	20.36
1922–23	14.24	23.76	17.70	17.18	11.66	26.64	19.14
1923–24	16.48	25.73	5.73	17.65	11.27	22.37	19.23
1924–25	17.82	22.66	19.45	18.65	15.30	16.85	19.47
1925–26	15.90	17.17	13.20	17.28	11.89	17.35	16.96
Average for 10 seasons 1916–26	14.88	21.81	17.76	17.81	11.68	21.29	18.86

(iv) *Relation to Population.* During the last five seasons the quantity of barley produced in Australia has averaged 1 bushel per head of population. For the season 1925–26 the production ranged from 7½ bushels per head in South Australia to 2¾ lbs. per head in New South Wales. Details for the years 1921–22 to 1925–26 are as follows :—

BARLEY.—PRODUCTION PER 1,000 OF POPULATION, 1921–22 TO 1925–26.

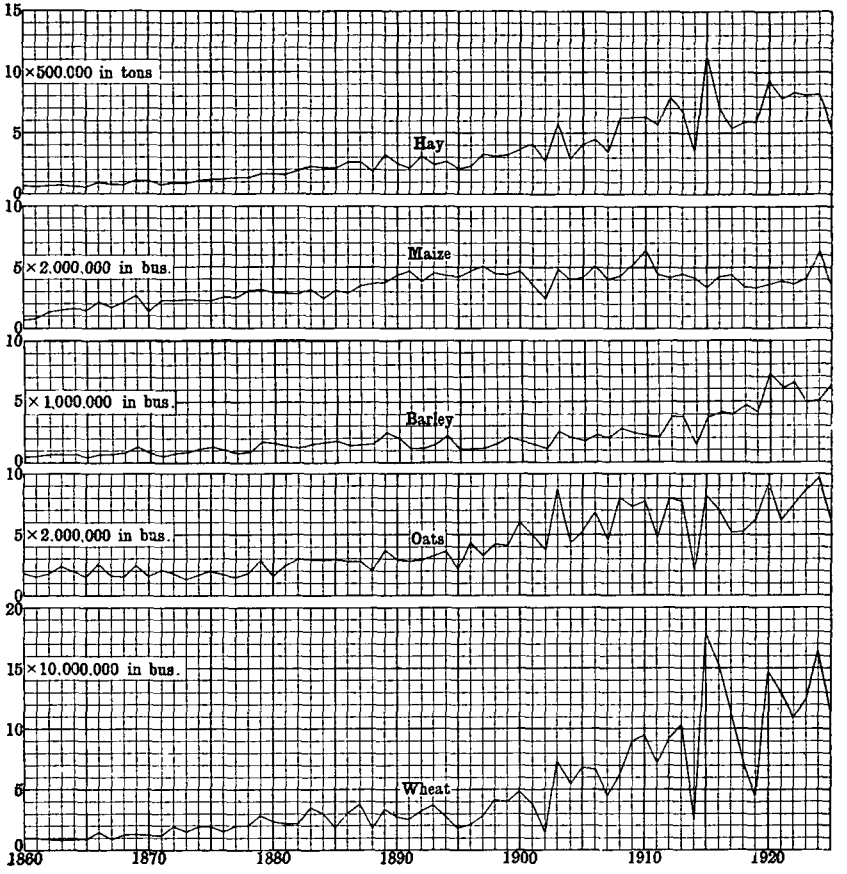
Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1921–22	39	1,506	174	6,524	256	764	1,104
1922–23	26	1,536	119	7,206	314	694	1,163
1923–24	32	895	5	6,197	276	432	865
1924–25	52	872	205	5,764	488	233	863
1925–26	46	1,054	107	7,496	425	418	1,061

AREA UNDER PRINCIPAL CROPS--AUSTRALIA, 1860 TO 1925-26.

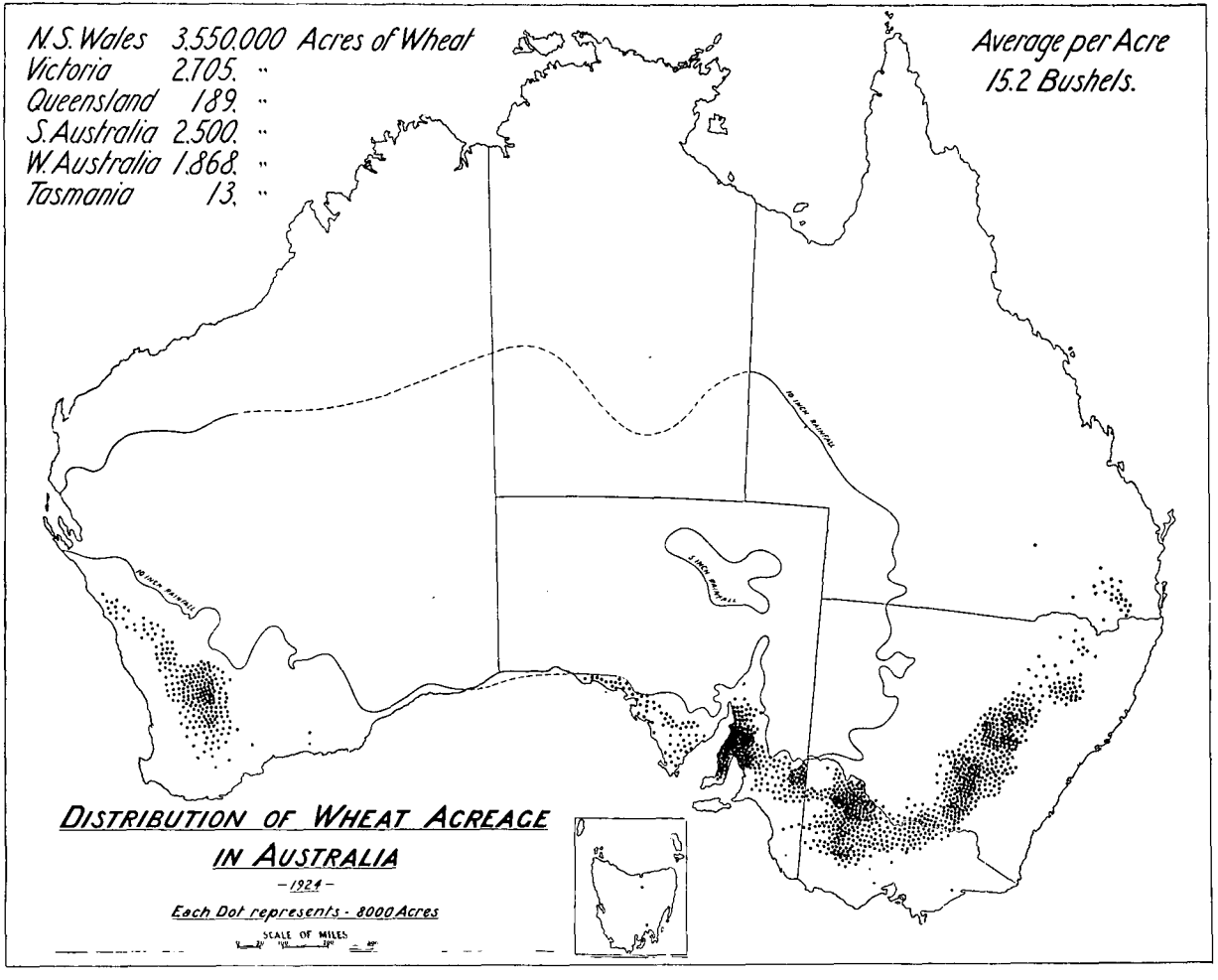


EXPLANATION.—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given on the left of the graph. The height of each curve above its base line denotes for the crop to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

PRODUCTION OF PRINCIPAL CROPS.—AUSTRALIA 1860 TO 1925-26.



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.


N.S. Wales 3.550.000 Acres of Wheat
Victoria 2.705. "
Queensland 189. "
S. Australia 2.500. "
W. Australia 1.868. "
Tasmania 13. "
Average per Acre
15.2 Bushels.
DISTRIBUTION OF WHEAT ACREAGE
IN AUSTRALIA
-1924-
Each Dot represents - 8000 Acres
SCALE OF MILES

2. **Comparison with Other Countries.**—(i) *Total Yield.* 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, the Australian figure being added for the purpose of comparison :—

BARLEY.—PRODUCTION IN VARIOUS COUNTRIES, 1922–25.

Country.	Yield in Bushels (000 omitted).		Country.	Yield in Bushels (000 omitted).	
	Average, 1922–1924.	1925.		Average, 1922–1924.	1925.
United States of America ..	183,091	208,793	Jugo-Slavia ..	12,182	17,419
Soviet Republics ..	167,785	263,730	Egypt	10,896	10,698
India	137,118	118,451	Bulgaria ..	9,904	14,066
Germany	93,604	114,600	Lithuania ..	8,960	10,802
Spain	87,391	94,969	Italy	8,780	12,346
Canada	76,053	108,159	Argentine Republic	8,539	16,372
Japan	75,390	87,810	Greece	(*a*)6,817	9,134
Poland	61,147	73,956	Austria	6,612	8,848
Rumania	59,730	44,945	Latvia	6,473	7,842
Turkey	..	55,448	Irish Free State ..	5,982	5,925
United Kingdom ..	49,049	51,755	**Australia** ..	**5,530**	**6,356**
Czecho-Slovakia ..	46,694	54,918	Estonia ..	5,218	5,078
France	42,875	45,273	Tunis	5,071	6,614
French Morocco ..	37,081	46.297	Syria	4,920	5,082
Korea	32,219	38,747	Finland ..	4,611	6,208
Denmark ..	31,063	35,112	Chile	4,331	5,082
Algeria	27,337	35,816	Norway ..	3,986	4,972
Hungary ..	20,115	24,413	Belgium ..	3,630	3,998
Sweden	12,453	14,115	Netherlands ..	3,010	3,414

(*a*) Average, years 1922–1923.

(ii) *Yield per Acre.* The following table shows the average yield of barley per acre in various countries of the world, the return ranging from 49.15 bushels in Netherlands to 8.89 bushels in Syria :—

BARLEY.—AVERAGE YIELD PER ACRE IN VARIOUS COUNTRIES, 1922–1925.

Country.	Yield in Bushels per acre.		Country.	Yield in Bushels per acre.	
	Average, 1922–1924.	1925.		Average, 1922–1924.	1925.
Netherlands ..	49.15	46.52	**Australia** ..	**19.26**	**16.96**
Belgium	44.82	50.68	India	18.75	13.63
Denmark ..	44.35	47.16	Bulgaria ..	18.53	25.85
Irish Free State ..	37.18	40.69	Hungary ..	18.27	23.96
Chile	36.01	40.29	Austria	18.07	25.43
New Zealand ..	33.16	(*b*)31.75	Greece	(*a*)17.05	(*c*)17.05
United Kingdom ..	32.67	35.14	Finland ..	16.76	22.86
Norway	30.43	35.80	Estonia ..	16.47	17.90
Sweden	29.93	34.31	Latvia	15.36	17.89
Germany	29.14	32.30	Korea	15.04	17.90
Egypt	28.49	29.20	Italy	14.48	21.43
Japan	28.17	35.59	Jugo-Slavia ..	13.38	19.72
Czecho-Slovakia ..	27.79	32.04	Argentine Republic	13.36	18.19
Canada	25.95	26.54	Rumania ..	13.29	10.67
France	24.92	26.22	French Morocco ..	13.13	13.74
United States of America ..	24.54	25.33	Union of South Africa ..	(*a*)10.90	(*c*)10.87
Spain	21.91	21.52	Algeria	9.25	10.80
Poland	20.85	24.44	Soviet Republics	(*b*)9.89	17.89
Lithuania ..	20.16	21.32	Syria	(*b*)8.89	8.92
Turkey	..	21.32			

(*a*) Average, years 1922–1923. (*b*) Year 1924. (*c*) Year 1923.

3. **World's Production.**—The area under barley in 1925 was slightly in excess of that of the previous year. There was an increase of 8 per cent. over the pre-war period for all countries for which figures are available, with the exception of the Soviet Republics, where in this important barley-growing centre the area is still 45 per cent. below the average for the years 1909 to 1913. Weather conditions were generally favourable in the principal producing areas, and the total yield exceeded the production of 1924 by 291 million bushels, and very nearly approached the pre-war average, although harvested from a smaller area. The production of barley in millions of bushels from 1909 onwards was as follows :—

Year.	Production.
Average, 1909–1913	1,640 millions of bushels.
1923	1,464 ,,
1924	1,305 ,,
1925	1,596 ,,

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

BARLEY.—AVERAGE MELBOURNE PRICE PER BUSHEL, 1921 TO 1925.

Particulars.	1921.	1922.	1923.	1924.	1925.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Malting barley	4 5	4 1½	4 0¾	5 8	4 11
Cape barley	3 5	3 0	3 1½	4 7¾	..

5. **Imports and Exports.**—The Australian export trade in barley has increased in recent years, the average annual shipments during the last five years amounting to 1,640,000 bushels, as compared with an average of 1,000,000 bushels for the previous quinquennium. 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 1921–22 to 1925–26 are contained in the following table :—

BARLEY.—IMPORTS AND EXPORTS, AUSTRALIA, 1921–22 TO 1925–26.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1921–22	7,052	1,891	1,935,830	396,883	1,928,778	394,992
1922–23	34	18	2,213,184	432,326	2,213,150	432,308
1923–24	4	3	1,828,788	318,912	1,828,784	318,909
1924–25	67,242	16,926	1,490,416	420,432	1,423,174	403,506
1925–26	32	14	729,528	142,948	729,496	142,934

In some years there is an export of Australian pearl and Scotch barley, the total for 1925–26 reaching 172,868 lb., valued at £1,155. The trade for the year was mainly with New Zealand and South Africa.

6. **Imports and Exports of Malt.**—In pre-war times the imports of malt into Australia were fairly extensive, the supply being obtained principally from the United Kingdom. Since the outbreak of the war in 1914, however, imports have practically ceased,

and in 1917–18 and 1920–21 fairly large quantities were exported to South Africa and Japan. Details of imports and exports for the years 1921–22 to 1925–26 are given hereunder :—

MALT.—IMPORTS AND EXPORTS, AUSTRALIA, 1921–22 TO 1925–26.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1921–22	40	43	7,553	3,238	7,513	3,195
1922–23	28	63	4,618	2,006	4,590	1,943
1923–24	28	13	3,573	1,550	3,545	1,537
1924–25	43	29	3,228	1,698	3,185	1,669
1925–26	325	182	1,830	971	1,505	789

7. Value of Barley Crop. The estimated values of the barley crop of Australia for the seasons 1921–22 to 1925–26 were £1,139,736, £1,220,703, £879,811, £1,363,656 and £1,305,328. The extent to which the several States have contributed to the total in 1925–26 is shown in the following table :—

BARLEY.—VALUE OF CROP (*a*), 1925–26.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Total value ..	£27,430	£387,233	£19,109	£816,001	£31,245	£24,310	£1,305,328
Value per acre	£4/2/10	£3/14/11	£2/14/7	£3/8/2	£2/7/0	£4/13/0	£3/9/7

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

§ 8. Rice.

The success attending the efforts of rice growers on the Murrumbidgee Irrigation Area has proved that rice can be grown profitably on the settlement. Experimental rice cultivation has been carried on at the Yanco Experimental Farm for some years, but it was not until 1924–25 that an attempt was made to grow the cereal on a commercial basis. In that year 153 acres were cropped for a yield of 16,240 bushels. Consignments of " paddy " rice were forwarded to Sydney and Melbourne for the necessary treatment before marketing, and the results showed that the quality was much superior to the imported article. Owing to a late winter the preparation of the land was delayed in 1925–26, and adverse harvesting weather was encountered later in the season. Despite these drawbacks 1,556 acres were reaped for 61,098 bushels, or an average yield of 39.27 bushels per acre. The estimate of the area sown in 1926–27 is 5,100 acres, from which approximately 213,333 bushels of rice will be obtained. It is anticipated that 13,000 acres will be devoted to this crop in 1927–28. The annual importation of rice into Australia is about 25,000 tons, and reckoning on a 60-bushel crop per acre as an average, 22,000 acres would be necessary to fulfil this demand, and would mean something like £250,000 to the area. The total area of land suitable for rice-growing on the Irrigation Settlement is approximately 79,000 acres, of which about 40,000 acres could be cropped. Allowing for half under fallow, it would leave 20,000 acres under crop each year, and as the Settlement is only partially developed the acreage could be increased as more land is thrown open for irrigation. There appears to be little danger from over production, as once the local demands are met there is a ready market in the East, as well as in England and Germany. United States of America first grew rice commercially in 1912, and having met her own requirements is now exporting to European Countries and to Japan. The Commonwealth Government has protected the new industry by the imposition of a Customs duty of 3s. 4d. per cental on uncleaned rice and 6s. per cental on other than uncleaned.

§ 9. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the only other grain and pulse crops extensively grown in Australia are beans, peas, and rye. The total area under the two former crops for the season 1925–26 was 51,426 acres, giving a yield of 609,659 bushels, or an average of 11.85 bushels per acre, being considerably less than the average yield for the decennium ended 1925–26, which was 16.28 bushels per acre. The States in which the greatest area is devoted to beans and peas are Tasmania, Victoria and South Australia. The total area under rye in Australia during the season 1925–26 was 3,684 acres, yielding 47,557 bushels, and giving an average of 12.91 bushels per acre. This was higher than the average for the past ten seasons, which was 11.38 bushels per acre. Nearly 44 per cent. of the rye grown during the season was produced in New South Wales, and 27 per cent. in Victoria.

§ 10. Potatoes.

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

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

POTATOES.—AREA AND YIELD, 1921–22 TO 1925–26.

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.
1921–22 ..	29,491	63,895	9,553	5,795	3,612	36,795	3	149,144
1922–23 ..	22,556	61,741	7,649	5,749	3,621	34,407	12	135,735
1923–24 ..	21,850	59,306	6,127	5,239	4,761	37,040	29	134,352
1924–25 ..	23,384	61,295	9,493	3,292	5,122	36,171	19	138,776
1925–26 ..	22,723	63,369	10,478	2,895	4,262	33,190	8	136,925
			YIELD.					
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1921–22 ..	57,825	173,660	16,794	18,573	13,605	107,624	10	388,091
1922–23 ..	35,694	148,354	10,517	17,356	15,198	101,201	32	328,352
1923–24 ..	60,949	238 520	8,878	21,327	17,830	99,936	130	447,570
1924–25 ..	57,179	139,043	20,314	12,226	19,891	83,377	95	332,125
1925–26 ..	43,081	160,729	15,386	10,764	16,052	67,341	56	313,409

The cultivation of potatoes in Australia has declined by 5,704 acres during the past decennium, due mainly to a decrease in New South Wales of 11,384 acres. In Victoria and Tasmania—the chief potato-growing areas—increases of 4,346 and 3,074 acres respectively were recorded. The average yield during the last ten years was 344,162 tons, compared with 389,695 tons during the previous decade. The record production of 507,153 tons was obtained in 1906–7.

(ii) *Average Yield.* The suitability of the soil, climate, and general conditions for potato growing is evidenced by the satisfactory yields per acre which are generally obtained in Australia despite the little attention paid to this crop, the average yield during the past ten seasons being 2.56 tons per acre. The lowest average yield is that obtained in Queensland with an average of 1.83 tons for the same period.

Particulars for each State for the seasons 1921–22 to 1925–26, and for the past decennium, are given hereunder :—

POTATOES.—YIELD PER ACRE, 1921–22 TO 1925–26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1921–22	1.96	2.72	1.76	3.21	3.77	2.92	3.33	2.60
1922–23	1.58	2.40	1.37	3.02	4.20	2.94	2.67	2.42
1923–24	2.79	4.02	1.45	4.07	3.74	2.70	4.48	3.33
1924–25	2.45	2.27	2.14	3.71	3.88	2.31	5.00	2.39
1925–26	1.90	2.54	1.47	3.72	3.77	2.03	7.00	2.29
Averages for 10 seasons 1916–26	2.11	2.73	1.83	3.53	3.43	2.49	3.81	2.56

Concurrent with the decrease in acreage a falling off has occurred in the average yield per acre during the past decennium. This decline was in evidence throughout the principal States, and for Australia as a whole averaged nearly 4½ cwt. per acre. In Tasmania, where the decrease was greatest, the average yield diminished by 16 cwt. during the past decade. The comparatively low yield per acre is due to the neglect of rotation, and the insufficient use of manures. Rotation and manuring are carefully studied in many European countries, with the result that the production per acre is double that obtained 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 141 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 about 8½ cwts. Details for the seasons 1921–22 to 1925–26 are as follows :—

POTATOES.—PRODUCTION PER 1,000 OF POPULATION, 1921–22 TO 1925–26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1921–22 ..	27	112	22	37	41	493	5	70
1922–23 ..	16	93	13	34	44	462	13	58
1923–24 ..	28	147	11	41	50	456	50	78
1924–25 ..	25	84	24	23	55	383	32	57
1925–26 ..	19	95	18	20	43	310	14	52

2. **Imports and Exports.**—Under normal conditions there is a moderate export trade in potatoes carried on by Australia principally with New Zealand, the Pacific Islands and the Philippine Islands. On the other hand, when the recurrence of droughts causes

a shortage in any of the States, importations are usually made from New Zealand. The quantities and values of the Australian oversea imports and exports of potatoes during the past five years are shown in the following table :—

POTATOES.—IMPORTS AND EXPORTS, AUSTRALIA, 1921-22 TO 1925-26.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1921-22	59	499	2,540	21,611	2,481	21,112
1922-23	72	957	2,061	23,599	1,989	22,642
1923-24	38	639	3,951	29,974	3,913	29,335
1924-25	71	877	5,832	30,283	5,761	29,406
1925-26	8,168	77,056	1,017	16,674	— 7,151	— 60,382

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 1925-26 is given in the following table, together with value per acre :—

POTATOES.—VALUE OF CROP, 1925-26.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Total value ..	580,520	1,687,655	220,597	114,162	245,679	790,000	750	3,639,363
Value per acre	£25/10/11	£26/12/8	£21/1/1	£39/8/8	£57/12/11	£24/2/8	£93/15/0	£26/11/7

§ 11. Other Root and Tuber Crops.

1. **Nature and Extent.**—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1925-26 being only 17,939 acres. The principal of these crops are onions, mangolds, sugar beet, turnips, and "sweet potatoes." Of these, onions, sugar beet and mangolds are most largely grown in Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in Australia during the season 1925-26 was 6,460 acres, giving a yield of 27,082 tons, and averaging 4.19 tons per acre. The area devoted in 1925-26 to root crops other than potatoes and onions, viz., 11,479 acres, yielded 78,332 tons, and gave an average of 6.82 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," reference to which is made further on.

2. **Imports and Exports.**—The only root crop, other than potatoes, in which any considerable oversea trade is carried on by Australia is that of onions. During the past five years 3,561 tons, valued at £48,638, were imported, principally from Japan, the United States of America, New Zealand, and Canada, while during the same period, the exports totalled 27,566 tons, valued at £256,585, and were shipped mainly to New Zealand, the Pacific Islands, the Philippine Islands, and the United States of America.

§ 12. Hay.

1. Nature and Extent.—(i) *Area and Yield.* As already stated, the chief crop in Australia is wheat grown for grain. Next in importance is hay, which for the season 1925–26 averaged nearly 17 per cent. of the total area cropped. In most European countries the hay consists almost entirely of meadow and other grasses, but in Australia a very large proportion is composed of wheat and oats. Large quantities of lucerne hay are made also, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States during the last five years is given hereunder. The progress from 1860 onwards may be traced from the graph accompanying this chapter.

HAY.—AREA AND YIELD, 1921-22 TO 1925-26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	Fed. Cap. Ter.	Australia.
				AREA.					
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1921–22	749,738	1,159,135	98,155	559,285	335,561	91,443	12	1,190	2,994,519
1922–23	888,250	1,261,408	78,050	577,810	431,633	100,088	10	1,207	3,338,456
1923–24	1,022,118	1,277,606	46,909	631,267	329,534	97,183	10	1,599	3,406,226
1924–25	762,242	1,120,312	95,007	562,253	397,591	87,945	10	1,045	3,026,405
1925–26	749,192	1,013,613	66,828	517,220	391,142	92,595	..	1,413	2,832,003
				YIELD.					
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1921–22	1,027,833	1,548,453	138,675	680,201	368,720	136,991	25	1,291	3,902,189
1922–23	1,059,529	1,665,089	101,069	697,189	457,371	167,282	10	1,450	4,148,989
1923–24	1,170,737	1,541,287	43,407	781,768	368,122	144,298	5	2,310	4,051,934
1924–25	1,151,238	1,492,588	136,804	716,749	448,525	121,110	30	1,375	4,068,419
1925–26	864,006	929,068	99,742	612,671	355,269	114,920	..	2,269	2,977,945

In all the States marked fluctuations occur yearly in the area under hay. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus, crops originally sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for grain is not satisfactory. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. The area under hay in Australia during the season 1915–16, *i.e.*, 3,597,771 acres, was the highest on record, whilst the average during the past decennium amounted to 2,953,413 acres.

(ii) *Average Yield.* The States in which the highest average yields per acre have been obtained during the last decennium are Tasmania, Queensland and Victoria, in the two former of which States also the smallest areas are devoted to this crop. For the same period the lowest yield for Australia as a whole was that of 19 cwt. per acre in 1919–20; 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 24½ cwt. Particulars for the several States for the seasons 1921–22 to 1925–26, and the average for the last ten years, are given hereunder :—

HAY.—YIELD PER ACRE, 1921–22 TO 1925–26.

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.
1921–22	1.37	1.34	1.41	1.22	1.10	1.50	2.08	1.08	1.30
1922–23	1.19	1.32	1.29	1.21	1.06	1.67	1.00	1.20	1.24
1923–24	1.15	1.21	0.93	1.24	1.12	1.48	0.50	1.44	1.19
1924–25	1.51	1.33	1.44	1.27	1.13	1.38	3.00	1.32	1.34
1925–26	1.15	0.92	1.49	1.18	0.91	1.24	..	1.60	1.05
Average for 10 seasons 1916–1926 ..	1.20	1.25	1.35	1.21	1.05	1.41	2.93	1.51	1.22

(iii) *Relation to Population.* During the past five seasons the Australian hay production per head of population has varied between 10 cwt. in 1925–26 and 14¾ cwt. in 1922–23; averaging about 13⅓ cwt. per head for the period. Hay production per head of population is highest in South Australia. Details for the seasons 1921–22 to 1925–26 are given hereunder :—

HAY.—YIELD PER 1,000 OF POPULATION, 1921–22 TO 1925–26.

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.
1921–22 ..	483	998	180	1,353	1,100	627	7	625	708
1922–23 ..	488	1,047	128	1,359	1,331	764	3	567	737
1923–24 ..	530	948	54	1,490	1,040	659	1	881	705
1924–25 ..	511	901	163	1,331	1,231	556	8	459	693
1925–26 ..	376	552	116	1,111	955	530	..	576	497

(iv) *Varieties Grown.* Particulars concerning the kinds of crop cut for hay are furnished in the returns prepared by five of the States. In the case of Tasmania the bulk consists of oaten hay; full particulars, however, are not available for that State.

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

HAY.—VARIETIES GROWN, 1921–22 TO 1925–26.

Varieties.	1921–22.	1922–23.	1923–24.	1924–25.	1925–26.
NEW SOUTH WALES—					
	Acres.	Acres.	Acres.	Acres.	Acres.
Wheaten	467,068	597,959	695,369	388,422	449,653
Oaten	203,074	216,136	241,161	274,408	209,047
Barley	899	1,265	1,584	1,150	781
Lucerne	77,527	72,337	83,256	97,994	89,368
Other	1,170	553	748	268	343
Total	749,738	888,250	1,022,118	762,242	749,192

HAY.—VARIETIES GROWN, 1921-22 TO 1925-26—*continued.*

Varieties.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.
	Acres.	Acres.	Acres.	Acres.	Acres.
VICTORIA—					
Wheaten	130,181	213,219	163,826	87,312	230,364
Oaten	1,001,256	1,021,216	1,084,136	1,000,382	759,209
Lucerne, etc.	27,698	26,973	29,644	32,618	24,040
Total ..	1,159,135	1,261,408	1,277,606	1,120,312	1,013,613
QUEENSLAND—					
Wheaten	13,837	8,834	8,714	9,457	10,514
Oaten	12,480	4,542	1,344	8,304	2,214
Lucerne	67,183	60,042	33,505	61,089	50,526
Other..	4,655	4,632	3,346	16,157	3,574
Total ..	98,155	78,050	46,909	95,007	66,828
SOUTH AUSTRALIA—					
Wheaten	325,769	359,834	381,962	304,183	273,300
Oaten	225,878	208,769	234,899	246,825	234,923
Lucerne	4,145	4,973	7,270	8,344	6,218
Other..	3,493	4,234	7,136	2,901	2,779
Total ..	559,285	577,810	631,267	562,253	517,220
WESTERN AUSTRALIA—					
Wheaten	222,209	307,142	223,770	242,216	238,110
Oaten	111,386	123,232	103,723	153,315	150,534
Lucerne	125	142	175	339	368
Other..	1,841	1,117	1,866	1,721	2,130
Total ..	335,561	431,633	329,534	397,591	391,142

Wheaten hay is the principal hay crop in New South Wales, South Australia, and Western Australia, oaten hay in Victoria and Tasmania, and lucerne in Queensland.

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 1926 amounted to 3,071,000 tons from 1,991,469 acres, while from permanent grasses a yield of 5,050,000 tons of hay was obtained from 4,524,612 acres, giving a total of 8,121,000 tons from 6,516,081 acres, or about 25 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 1925-26, 222 tons were imported, while the exports amounted to 9,601 tons, valued at £57,105, the principal purchases being made by New Zealand, India, the Philippine Islands, Malaya (British), Ceylon, and Netherlands East Indies.

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 1925–26 :—

HAY.—VALUE OF CROP, 1925–26.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£	£
Total Value ..	7,281,630	4,645,340	652,630	2,174,982	1,527,305	775,710	..	19,910	17,077,507
Value per acre	£9/14/5	£4/11/8	£9/15/4	£4/4/1	£3/18/1	£8/7/7	..	£14/1/10	£6/0/7

§ 13. Green Forage.

1. **Nature and Extent.**—(i) *Area.* In all the States a considerable area is devoted to the production of green forage, mainly in connexion with the dairying industry. The total area so cropped is considerably swollen in adverse seasons by the inclusion of wheat or other cereal crops deemed unsuitable for the production of either grain or hay. Under normal conditions the principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States during each of the last five years are given in the following table :—

GREEN FORAGE.—AREA, 1921–22 TO 1925–26.

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.
1921–22	128,965	89,410	147,135	50,121	27,396	9,481	..	..	452,508
1922–23	499,679	102,451	188,636	61,000	32,997	9,073	..	35	893,871
1923–24	429,765	107,371	306,693	55,282	51,754	10,389	50	7	961,311
1924–25	166,030	99.531	134,109	73,023	78,586	13,602	..	43	564,924
1925–26	479,434	107,873	247,482	102,732	100,558	17,101	..	30	1,055,210

(ii) *Relation to Population.* Particulars of the area under green forage per 1,000 of the population for the seasons 1921–22 to 1925–26 are given hereunder :—

GREEN FORAGE.—AREA PER 1,000 OF POPULATION, 1921–22 TO 1925–26.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1921–22 ..	61	58	191	100	82	43	..	..	82
1922–23 ..	230	64	239	119	96	41	..	14	159
1923–24 ..	195	66	378	105	146	47	14	3	167
1924–25 ..	74	60	161	136	216	62	..	14	96
1925–26 ..	209	64	287	186	270	79	..	8	176

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 1925–26 may be taken approximately as £3,380,785 or about £3 4s. 1d. 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. Thus, of a total area of 288,872 acres under sugar-cane in Australia for the season 1925–26, there were 269,509 acres, or about 93¾ 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 1862–3. 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 1895–6 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 onwards considerable improvement has taken place, nearly 8,000 acres being added to the cane-fields during the past five years. In Queensland, although fluctuations in area are manifest, the general trend has been upwards, the acreage under cane for the season 1925–26 being the highest on record. The area under sugar-cane in Australia from 1921–22 is given in the following table, and particulars for earlier years may be seen from the accompanying graphs :—

SUGAR-CANE.—AREA, 1921–22 TO 1925–26.

Season.	New South Wales.		Queensland.		Australia.		
	Productive.	Unproductive.	Productive.	Unproductive.	Productive.	Unproductive.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1921–22 ..	5,400	7,380	122,956	61,557	128,356	68,937	197,293
1922–23 ..	5,879	8,704	140,850	61,453	146,729	70,157	216,886
1923–24 ..	6,733	10,582	138,742	81,223	145,475	91,805	237,280
1924–25 ..	7,761	12,232	167,649	85,870	175,410	98,102	273,512
1925–26 ..	8,688	10,675	189,675	79,834	198,363	90,509	288,872

(ii) *Productive and Unproductive Cane.* The areas given in the preceding table represent sugar-cane grown for purposes other than 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) *Yield of Cane and Sugar.* Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897–8. In that season the total for 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 1925–26 was 2,349,975 tons. The three highest yields of sugar were in 1925–26, 1924–25 and 1917–18, the quantities being 517,970 tons, 427,327 tons, and 327,589 tons respectively. The decennial average was 291,605 tons of sugar. Particulars relative to the total yields of cane and sugar for the past five years are as follows :—

SUGAR-CANE.—YIELD OF CANE AND SUGAR, 1921–22 TO 1925–26.

Season.	New South Wales.		Queensland.		Australia.	
	Cane.	Sugar.	Cane.	Sugar.	Cane.	Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1921–22 ..	149,474	17,806	2,287,416	282,198	2,436,890	300,004
1922–23 ..	147,992	18,580	2,167,990	287,785	2,315,982	306,365
1923–24 ..	132,084	16,829	2,045,808	269,175	2,177,892	286,004
1924–25 ..	228,978	26,682	3,171,341	400,645	3,400,319	427,327
1925–26 ..	297,335	32,385	3,668,252	485,585	3,965,587	517,970

The cane cut in 1925–26 amounted to 3,965,587 tons. The season was extremely favourable, and the sugar content of the cane high, with the result that the output of raw sugar totalled 517,970 tons, the record production to date, and more than 90,000 tons greater than the previous highest obtained in 1924–25. The assistance given by the Commonwealth and State Governments during recent years has greatly benefited the sugar industry. In 1920–21 the area cultivated in Queensland was 162,619 acres and

the number of cane farmers was 3,930, whereas in the record year, 1925–26, 269,509 acres were under cultivation and the number of growers of 5 acres and over had risen to 6,730, or an increase of 2,800 in the five years.

Final figures for the 1926–27 season are not yet available, but the quantity of cane cut has been estimated at 3,252,000 tons. Owing to the dry season experienced the sugar content was high and 413,296 tons of sugar were crushed.

A preliminary estimate of the production of sugar in 1927–28 places the amount at 450,000 tons.

(iv) *Average Yield of Cane and Sugar.* The average yield per acre of productive cane is much higher in New South Wales than in Queensland, the average during the last decade being 26.62 tons for the former and 17.80 for the latter State. For some years prior to 1910–11, the yield in New South Wales remained practically constant at about 21 tons per acre. Since that year, the average yield per acre has shown an upward tendency, reaching 30 tons or over during 1913–14, 1914–15, 1917–18, and 1925–26. The climatic conditions affecting the long coastal area where this industry is situated in Queensland are largely responsible for the great variations in the yields of sugar for that State, the figures ranging during the past decennium from 12.20 tons per acre in 1915–16 to 24.88 tons in 1917–18.

The greatest production of sugar per acre crushed during the past decennium occurred in 1917–18, when 2.87 tons were obtained, the respective crushings for New South Wales and Queensland averaging 3.56 and 2.83 tons. The average yield per acre for the past ten years was 3.10 tons in New South Wales, and 2.26 tons in Queensland.

(v) *Quality of Cane.* The quantity of cane required to produce a ton of sugar varies with the variety sown, the district where grown, and also with the season, and for the decennium ended 1925–26 averaged 8.06 tons, the average production of sugar being 12.41 per cent. of the weight of cane crushed. As the result of the systematic study of cane culture in Queensland, the sugar contents of the cane have been considerably increased in recent years. During the ten years ended 1908 it required on the average 9.20 tons of cane to produce 1 ton of sugar, whereas the average figure for the past seven years has been reduced to 7.75 tons.

SUGAR-CANE AND SUGAR.—YIELD PER ACRE, 1921–22 TO 1925–26.

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.
1921–22	27.68	3.30	8.40	18.60	2.30	8.11	18.99	2.34	8.12
1922–23	25.17	3.16	7.97	15.39	2.04	7.53	15.78	2.09	7.56
1923–24	19.62	2.50	7.85	14.75	1.94	7.60	14.97	1.97	7.60
1924–25	29.50	3.44	8.58	18.92	2.39	7.92	19.38	2.44	7.96
1925–26	34.22	3.73	9.18	19.34	2.56	7.55	19.99	2.61	7.66
Average 10 seasons 1916–26 ..	26.62	3.10	8.59	17.80	2.22	8.02	18.21	2.26	8.06

The Bureau of Sugar Experiment Stations established in Queensland is rendering splendid service to the sugar industry in that State, by advocating and demonstrating better methods of cultivation, the use of green manures, lime, and fertilizers, together with the introduction and distribution of improved varieties of sugar cane.

The Falkiner cane-harvester was further tried out in North Queensland during 1926–27, and although the machine is promising, it requires further alterations and adjustments to enable it to operate successfully in heavy crops of green cane. When these have been effected better results will be achieved. Improvements in cultivating machinery, moreover, are continually being made, and the use of tractors is universal in the sugar districts of North Queensland.

(vi) *Relation to Population.* The yield of sugar in Australia during the five years 1921–22 to 1925–26 was more than sufficient to supply local requirements, the average production during the period amounting to 143 lbs. per head of population, while the

consumption was estimated to average 117 lbs. per head. Details for the period 1921–22 to 1925–26 are as follows :—

SUGAR.—PRODUCTION PER HEAD OF POPULATION, 1921–22 TO 1925–26.

State.	1921–22.	1922–23.	1923–24.	1924–25.	1925–26.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ..	19	19	17	27	32
Queensland	821	818	743	1,098	1,263
Australia	122	122	111	166	194

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

SUGAR-BEET.—AREA AND PRODUCTION IN VICTORIA, 1921–22 TO 1925–26.

Particulars.		1921–22.	1922–23.	1923–24.	1924–25.	1925–26.
Area harvested ..	acres	1,600	2,045	1,937	1,897	1,880
Production ..	tons	16,577	20,444	29,512	24,468	21,194
Average per acre	,,	10.36	10.00	15.24	12.90	11.27
Sugar produced ..	,,	1,872	2,784	3,499	3,017	2,315

The 1925–26 season was below average as regards sugar production. Growers were paid 40s. a ton for their beets, and a net profit of £3,529 was realized by the sugar-beet factory as the result of the year's operations.

(ii) *Encouragement of Beet-growing.* During recent years an effort has been made to revive the sugar-beet industry in Victoria. The State Government has advanced its irrigation scheme on the Macalister River to provide water for part of the district for the present season and eventually to serve the whole area. A fine grade of white sugar is manufactured at Maffra, and considerable quantities of beet pulp and molasses are distributed for stock feed.

3. **Sugar Bounties.**—The provision of bounties or similar aids to the sugar growers of Australia early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry, and at the same time diminishing the employment of coloured labour in connexion therewith. An account of the various Acts in connexion with sugar bounties and sugar excise tariffs will be found on pages 394 to 396 of Year Book No. 6. In 1912 the Sugar Excise Repeal Act and the Sugar Bounty Abolition Act were passed by the Federal Parliament, conditionally on the Queensland Parliament approving of legislation prohibiting the employment of coloured labour in connexion with the industry. The State Sugar Cultivation Act, the Sugar Growers Act, and the Sugar Growers' Employees Act of 1913, having been approved of, the 1912 Federal Acts, which repeal all previous enactments in regard to excise on sugar and bounty on cane, came into force by proclamation in July, 1913.

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

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. Final calculations by the Sugar Board showed that 56 per cent. of the total production in 1925–26 was consumed in Australia, while the net value per ton of exported sugar was £11 5s. 9d., making the average price for the whole crop £19 10s. 7d. per ton.

Owing to the reduced production in the 1926–27 season 81⅓ per cent. was delivered for home consumption, and the net value of the surplus exported was £14 18s. 10d. per ton, making an average return of £24 10s. 10d. per ton.

5. **Imports and Exports of Sugar.**—Owing to the increased production of sugar in Australia during the past four years 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 follows :—

CANE SUGAR.—IMPORTS AND EXPORTS, AUSTRALIA, 1921–22 TO 1925–26.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1921–22	6,888	174,850	1,918	60,145	−4,970	−114,705
1922–23	4,551	87,317	5,127	159,897	576	72,580
1923–24	525	12,200	15,591	443,183	15,066	430,983
1924–25	3,046	65,579	82,747	2,162,309	79,701	2,096,730
1925–26	345	9,425	208,805	5,313,135	208,460	5,303,710

Note.—The minus sign (−) signifies net imports.

6. **Sugar By-products.**—Large quantities of molasses are produced as a by-product in the sugar mills, but, at present, much of it is allowed to run to waste. Details for a series of years of the quantity produced and the proportions used for distilling, fuel, manure and other purposes will be found in Chapter XXII.—"Manufacturing."

Keen interest has recently been aroused in the utilization of the by-products of sugar manufacture. A distillation plant has been erected at the Plane Creek Central Sugar Mill, Mackay, where molasses and cassava (a starch-bearing plant) are being converted into power alcohol. Varieties of cassava with a high starch content have been specially introduced from Java by the Queensland Government. One ton of molasses will produce approximately 65 gallons of power alcohol, and a similar quantity of cassava roots will yield 39 gallons.

Steps are also being taken to launch an industry to undertake the manufacture of a building material known as "megass board" from megass or bagasse, i.e., the residuum of crushed fibre left over from the sugar cane after the removal of the sugar content. The Australian megass board is claimed to possess superior qualities to the "celotex" made from bagasse in America.

7. **Sugar Prices.**—The prices of sugar per ton of raw and refined sugar and the retail price in Australia from 1915 to date are given hereunder :—

AUSTRALIAN SUGAR PRICES, 1915 TO 1925.

Date.	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 31.8.28	(a)26 10 0	37 6 8	4½

(a) The price of raw sugar for the years 1925 to 1928 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., and in 1926–27, £24 10s. 10d.

§ 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, 1921-22 TO 1925-26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1921-22.. ..	12,583	33,175	1,281	41,424	3,951	There are no vineyards in Tasmania.	92,414
1922-23.. ..	13,734	38,892	1,242	46,750	4,858		105,476
1923-24.. ..	14,559	42,599	1,269	49,303	5,235		112,965
1924-25.. ..	14,737	42,467	1,579	50,280	5,331		114,394
1925-26.. ..	14,465	40,712	1,656	50,594	5,270		112,697

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 the result of satisfactory annual increases, the 1904–5 figure was soon exceeded, and the total for 1924–25 was the highest on record.

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

(ii) *Wine Production.* The production of wine has not increased as rapidly as the suitability of soil and climate would appear to warrant. The cause is probably twofold, being due in the first place to the fact that Australians are not a wine-drinking people, and consequently do not provide a local market for the product, and in the second, to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Active steps are being taken in various ways to bring the Australian wines under notice, and the Commonwealth bounty of 4s. per gallon on the export of fortified wine of specified strength has greatly benefited the industry during the past three years.

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

WINE.—PRODUCTION, 1921-22 TO 1925-26.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.		Gallons.
1921-22 ..	627,105	1,335,066	57,793	6,370,310	152,299	No production of wine in Tasmania.	8,542,573
1922-23 ..	771,206	1,717,490	53,171	8,653,579	232,347		11,427,793
1923-24 ..	1,459,778	2,177,127	37,242	10,756,538	233,196		14,663,881
1924-25 ..	1,171,264	1,368,765	33,119	10,502,381	223,761		13,299,290
1925-26 ..	1,240,893	1,637,274	39,375	13,074,874	238,726		16,231,142

(iii) *Relation to Population.* In relation to population the areas of the vineyards of the several States show an upward tendency during the last five years, the Australian total increasing from 17 to 19 acres per 1,000 of the population during the period. Details for the seasons 1921-22 to 1925-26 are given in the succeeding table :—

VINEYARDS.—AREA PER 1,000 OF POPULATION, 1921-22 TO 1925-26.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1921-22 ..	6	21	2	82	12	..	17
1922-23 ..	6	24	2	91	14	..	19
1923-24 ..	7	26	2	94	15	..	20
1924-25 ..	7	26	2	93	15	..	19
1925-26 ..	6	24	2	92	14	..	19

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

WINE.—IMPORTS, AUSTRALIA, 1921-22 TO 1925-26.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1921-22 ..	7,398	37,814	45,212	20,781	35,830	56,611
1922-23 ..	15,368	43,199	58,567	41,305	32,692	73,997
1923-24 ..	21,770	54,988	76,758	56,069	38,434	94,503
1924-25 ..	28,324	52,999	81,323	72,042	33,743	105,785
1925-26 ..	25,896	61,511	87,407	65,763	37,432	103,195

(ii) *Exports.* The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand, a small but fairly regular export trade being also carried on with India, Ceylon, and the Pacific Islands. Details concerning the exports of wine from Australia during the past five years are given in the following table :—

WINE.—EXPORTS, AUSTRALIA, 1921-22 TO 1925-26.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1921-22 ..	2,177	602,853	605,030	5,451	155,487	160,938
1922-23 ..	2,607	703,710	706,317	5,626	159,368	164,994
1923-24 ..	3,601	987,703	991,304	7,180	210,132	217,312
1924-25 ..	4,003	877,466	881,469	8,304	180,387	188,691
1925-26 ..	3,564	1,719,045	1,722,609	7,156	364,766	371,922

3. **Other Viticultural Products.**—(i) *Table Grapes.* In addition to grapes for wine-making purposes, large quantities are grown in all the States for table use, while, particularly in Victoria and South Australia, the drying of raisins and currants is extensively carried on. The quantities of table grapes grown in the several States during the past five seasons are as follows :—

TABLE GRAPES.—PRODUCTION, 1921-22 TO 1925-26.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1921-22 ..	2,914	3,075	602	1,027	1,894	..	9,512
1922-23 ..	3,513	3,304	570	1,314	2,344	..	11,045
1923-24 ..	3,983	2,726	1,038	1,056	2,662	..	11,465
1924-25 ..	3,590	2,672	961	1,156	2,069	..	10,448
1925-26 ..	3,837	3,616	996	1,063	2,284	..	11,796

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

RAISINS AND CURRANTS.—QUANTITIES DRIED, 1921-22 TO 1925-26.

Season.	N.S. Wales.		Victoria.		South Aust.		Western Aust.		Australia.	
	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
1921-22 ..	6,696	4,189	190,451	75,042	66,083	76,534	6,790	6,371	270,020	162,136
1922-23 ..	11,253	5,768	285,520	98,081	69,261	96,807	6,748	9,250	372,782	209,906
1923-24 ..	16,967	6,658	438,827	150,867	125,006	131,000	9,606	15,769	590,406	304,294
1924-25 ..	19,180	5,953	366,999	104,948	139,385	109,446	7,940	12,689	533,504	233,036
1925-26 ..	23,168	6,132	351,506	123,733	111,261	103,910	9,631	10,919	495,566	244,694
Average 10 seasons 1916-26	10,004	4,027	234,444	85,973	71,651	82,531	5,614	7,189	321,713	179,720

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

RAISINS AND CURRANTS.—IMPORTS AND EXPORTS, AUSTRALIA, 1921-22 TO 1925-26.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			RAISINS.			
	lbs.	£	lbs.	£	lbs.	£
1921-22 ..	219,499	12,021	13,206,052	550,838	12,986,553	538,817
1922-23 ..	81,018	5,292	19,240,729	721,641	19,159,711	716,349
1923-24 ..	433,907	8,137	26,399,830	803,365	25,965,923	795,228
1924-25 ..	193,372	8,682	56,046,855	1,392,566	55,853,483	1,383,884
1925-26 ..	103,094	5,224	35,556,767	1,026,339	35,453,673	1,021,115
			CURRANTS.			
1921-22 ..	3,577	102	10,941,175	344,238	10,937,598	344,136
1922-23 ..	3,236	90	14,502,772	404,184	14,499,536	404,094
1923-24 ..	4,267	178	16,458,561	420,380	16,454,294	420,202
1924-25 ..	7,852	231	21,558,804	509,179	21,550,952	508,948
1925-26 ..	15,147	494	18,844,854	402,283	18,829,707	401,789

The quantities of raisins and currants imported into Australia were generally greater than the exports for all years prior to 1912, when the increased production in Australia left a surplus available for export. During the last five years the value of the exports exceeded that of the imports by £6,534,562, the average annual excess for the quinquennium being £1,306,912.

§ 16. Orchards and Fruit Gardens.

1. **Progress of Cultivation.**—(i) *Area.* Fruit-growing made rapid progress in Australia until in 1921-22 the maximum area of 281,149 acres was planted. Owing to unsatisfactory marketing of the surplus production, the area has declined since that date by some 6,000 acres, the decrease being most noticeable in Victoria and Tasmania. The total area under orchards and fruit gardens in the several States is given in the following table :—

ORCHARDS AND FRUIT GARDENS.—AREA, 1921-22 TO 1925-26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1921-22 ..	75,746	89,491	28,035	32,295	19,012	36,565	5	281,149
1922-23 ..	73,134	86,014	29,431	33,003	19,405	34,689	11	275,687
1923-24 ..	72,372	85,570	29,568	33,472	18,776	34,076	11	273,845
1924-25 ..	73,972	85,358	31,738	33,319	18,520	33,992	5	276,904
1925-26 ..	74,532	82,665	33,520	32,276	18,355	33,891	6	275,245

(ii) *Varieties and Yield.* 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 apple, the pineapple, 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 table gives the acreage under the principal kinds of fruit, and the quantity and value of fruit produced. The acreages are exclusive of young trees not yet bearing. 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 :—

ORCHARDS AND FRUIT GARDENS.—VARIETIES AND YIELD, 1925-26.

Fruit.		N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
Apples	acres	13,925	32,886	4,360	10,528	9,751	26,927	6	98,383
	bushels	758,742	2,063,214	130,369	882,064	524,391	4,132,000	1,000	8,491,780
	£	297,420	722,125	70,888	218,831	336,484	825,000	400	2,471,148
Apricots	acres	2,241	5,120	107	3,612	717	1,679	..	13,476
	bushels	176,834	247,600	2,771	245,243	46,751	102,139	..	821,338
	£	72,900	92,850	1,362	87,596	20,941	20,430	..	296,079
Bananas	acres	1,729	..	14,766	..	20	..	..	16,515
	bushels	102,250	..	1,937,088	..	448	..	..	2,039,786
	£	65,610	..	753,312	..	672	..	..	819,594
Cherries	acres	3,263	1,545	6	796	..	85	..	5,695
	bushels	134,476	69,639	126	44,386	..	2,171	5	250,803
	£	163,054	50,488	126	26,632	..	870	6	241,176
Lemons	acres	2,913	2,092	210	504	572	..	..	6,291
	bushels	319,355	128,889	21,568	45,201	51,575	..	..	566,588
	£	94,850	48,333	4,853	10,170	19,341	..	..	177,547
Nectarines and Peaches	acres	8,797	12,184	2,013	3,007	1,079	70	..	27,150
	bshls.	751,435	1,236,871	103,685	159,967	64,513	3,902	40	2,320,413
	£	308,176	432,714	61,634	52,765	37,148	875	24	893,336
Nuts	acres	602	560	..	1,778	..	..	..	2,940
	lbs.	156,532	150,319	..	882,112	..	..	..	1,188,963
	£	6,357	6,899	..	37,836	..	..	..	51,092
Oranges	acres	28,181	6,301	3,756	5,012	3,234	..	..	46,484
	bushels	2,152,067	310,890	281,862	367,432	213,719	..	..	3,325,970
	£	915,840	139,900	116,268	137,787	112,626	..	..	1,422,421
Pineapples	acres	53	..	3,995	..	..	..	..	4,048
	dozen	9,901	..	902,636	..	..	..	..	912,537
	£	4,580	..	300,879	..	..	..	..	305,459
Pears	acres	4,560	11,414	260	2,355	1,191	2,024	..	21,804
	bushels	278,539	840,113	11,313	166,315	90,261	135,000	..	1,521,541
	£	105,020	252,034	9,428	46,445	37,797	34,600	..	485,324
Plums	acres	6,980	5,334	1,273	3,188	911	663	..	18,349
	bushels	344,419	253,742	45,394	128,526	50,995	47,615	..	870,691
	£	140,800	60,263	36,315	33,528	24,860	5,950	..	301,716
Small fruits	acres	34	1,148	119	338	53	2,378	..	4,070
	cwt.	1,660	18,455	1,810	6,499	921	87,539	..	116,884
	£	5,040	51,438	23,590	15,665	4,049	127,365	..	227,147
Other fruits	acres	1,254	4,081	2,655	1,158	827	65	..	10,040
	£	77,772	153,095	79,744	15,947	23,647	905	..	351,110
Total acres	..	74,532	82,665	33,520	32,276	18,355	33,891	6	275,245
	£	2,257,419	2,010,139	1,458,399	683,202	617,565	1,015,995	430	8,043,149

(iii) *Relation to Population.* The acreage of the orchards and fruit gardens of Australia in relation to population declined during the past five years. The Australian

figure for 1925–26 amounted to .046 acres per head, whilst the range amongst the States varied from .032 in New South Wales to .156 acres in Tasmania. Details for orchards and fruit gardens for the years 1921–22 to 1925–26 are as follows :—

ORCHARDS AND FRUIT GARDENS.—AREA PER 1,000 OF POPULATION, 1921–22 TO 1925–26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1921–22 ..	36	58	36	64	57	167	..	2	51
1922–23 ..	34	54	37	64	56	158	..	4	49
1923–24 ..	33	53	37	64	53	156	..	4	48
1924–25 ..	33	52	38	62	51	156	..	2	47
1925–26 ..	32	49	39	59	49	156	..	2	46

2. **Imports and Exports of Fruit.**—(i) *General.* A considerable export trade in both fresh and dried fruits is carried on by Australia with oversea countries. The import trade in fresh fruits declined heavily during the past five years, owing to the imposition of a Customs duty of 1d. per lb. on imported bananas, which had hitherto been the chief item of fresh fruit imported into Australia, while the imports of dried fruits at present consist mainly of dates from Mesopotamia. The export trade in both fruits, however, has greatly expanded during the past quinquennium, the value of the shipments during 1925–26 amounting to £3,017,067. Apples constitute the bulk of the fresh fruit exported, although the exports of citrus fruits and pears are expanding, and experiments are being conducted in regard to the despatch of other fruits. Shipments of raisins and currants have developed into large proportions since 1914–15, and are mainly responsible for the increase in the dried fruits exports. Other fruits in the dried state, notably apricots and peaches, are also receiving attention from overseas.

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

FRESH FRUITS.—IMPORTS AND EXPORTS, AUSTRALIA, 1921–22 TO 1925–26

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1921–22..	2,385,800	29,907	97,343,800	973,726	94,958,000	943,819
1922–23..	2,390,600	28,103	108,391,900	1,040,310	106,001,300	1,012,207
1923–24..	3,473,300	47,343	78,927,000	870,260	75,453,700	822,917
1924–25..	3,228,200	32,009	101,348,900	1,089,544	98,120,700	1,057,535
1925–26..	3,228,900	35,154	149,673,100	1,553,651	146,444,200	1,518,497

The value of the exports of apples in 1925–26 amounted to £1,275,485, and of citrus fruits to £157,191.

(iii) *Dried Fruits.* Particulars of oversea imports and exports of dried fruits for the last five years are as follows :—

DRIED FRUITS (*a*).—IMPORTS AND EXPORTS, AUSTRALIA, 1921-22 TO 1925-26.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1921-22..	6,036,379	132,392	25,955,733	969,457	19,919,354	837,065
1922-23..	10,957,699	189,397	36,047,962	1,232,124	25,090,263	1,042,727
1923-24..	11,091,289	167,366	43,581,329	1,243,272	32,490,040	1,075,906
1924-25..	9,429,764	136,185	78,952,737	1,939,820	69,522,973	1,803,644
1925-26..	11,787,309	141,922	55,428,846	1,463,417	43,641,537	1,321,495

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

(iv) *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 despatched from Australia. Since that year, however, the trade has been lost, the value of the exports in 1925-26 amounting to only £82,447. Particulars relative to imports and exports during each of the last five years are as follows :—

JAMS AND JELLIES.—IMPORTS AND EXPORTS, AUSTRALIA, 1921-22 TO 1925-26.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1921-22..	184,993	8,437	5,640,579	164,046	5,455,586	155,609
1922-23..	151,572	8,253	2,605,554	79,396	2,453,982	71,143
1923-24..	138,219	7,597	2,680,047	85,062	2,541,828	77,465
1924-25..	226,253	10,810	2,470,431	74,464	2,244,178	63,654
1925-26..	190,302	8,813	2,665,243	82,447	2,474,941	73,634

(v) *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 1925-26 was £176,915. Particulars in respect of exports are available, and the following shipments were sent overseas in 1925-26 :—Apricots, 3,628,746 lbs., £72,086 ; peaches, 10,040,779 lbs., £202,148 ; pears, 2,545,926 lbs., £63,050 ; pineapples, 33,107 lbs., £755 ; and other, 663,131 lbs., £16,264.

§ 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 on a large scale are very favourable. The total area in Australia during the season 1925–26, devoted to crops not dealt with in previous sections, was 131,326 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, 1921–22 TO 1925–26.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1921–22 ..	8,217	14,304	1,965	1,486	2,274	681	..	27	28,954
1922–23 ..	7,743	14,108	1,838	1,438	2,698	540	..	18	28,383
1923–24 ..	8,526	16,212	1,719	1,448	2,259	478	..	17	30,659
1924–25 ..	8,824	14,620	1,619	1,577	2,913	576	..	13	30,142
1925–26 ..	8,973	16,609	1,017	1,517	2,725	587	..	12	31,440

3. **Grass Seed.**—The total area under this crop during 1925–26, exclusive of New South Wales, for which State complete figures as to area are not available, was 3,278 acres, of which 1,385 acres were in Victoria, 641 acres in Tasmania, 726 acres in Queensland, and 473 acres in South Australia. The total yield for 1925–26, including New South Wales, was 25,303 bushels, valued at £51,459. In addition to the areas planted above, 3,291 acres were sown to canary seed in Queensland during 1925–26, and furnished a yield of 9,257 bushels, valued at £9,390.

4. **Tobacco.**—Tobacco-growing has undergone marked fluctuations, although at one time it promised to occupy an important place amongst the agricultural industries of Australia. Thus, as early as the season 1888–89, the area under this crop amounted to as much as 6,641 acres, of which 4,833 were in New South Wales, 1,685 in Victoria, and 123 in Queensland. This promise of importance was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2,000 acres, and that in Queensland to over 1,000 acres, the total area for the season 1920–21 had declined to 1,345 acres. Since that date the area has again fluctuated, but with an upward tendency, and in 1925–26 2,759 acres were planted, of which 1,473 were in New South Wales, 1,179 in Victoria, 96 in Queensland and 11 in South Australia. Greater attention is now being paid to the proper treatment of the leaf, and flue-curing is becoming more general. In all the States in which its cultivation had been tried, the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into Australia furnish an indication of the extensive local market which exists for an article grown and prepared to meet the requirements of consumers. The value of the net importations of tobacco into Australia during the year 1925–26 amounted to £2,414,729, comprising unmanufactured tobacco £2,249,640, cigars £110,083, cigarettes £275,688, and snuff £920, while manufactured tobacco revealed a balance in favour of exports amounting to £221,602. Important proposals for the development of the tobacco-growing industry in Australia have recently been formulated. The British-Australasian Tobacco Co. and the Commonwealth Government have entered into an agreement whereby the sum of £90,000 is to be spent to carry out exhaustive

tests to determine the capabilities of Australia to produce enough tobacco for her own requirements. The terms of the agreement are that over a first period of three years the company shall contribute a sum of £20,000 for investigation and field-testing, and that the Commonwealth and State Governments shall provide £10,000. If at the expiration of this period the work has progressed satisfactorily enough to warrant further expenditure, the company will contribute an additional £30,000, and the Governments £30,000 for expenditure over a further period. A sum of £90,000 will thus be made available as necessary, and of this sum the company is finding £50,000. The company has also consented to buy for the next three seasons, 1927, 1928 and 1929, tobacco crops, properly graded, of lemon-coloured tobacco at 2s. 6d. a pound, bright mahogany at 2s. a pound, and dark mahogany at 1s. 6d. a pound, and has offered a bonus of 6d. per lb. for the purpose of stimulating the production of the first two varieties. An executive committee has been formed, and a federal expert is being sought to supervise the investigations, while an economic survey is proceeding to ascertain the present position of the industry in Australia.

5. **Pumpkins and Melons.**—The total area under this crop in Australia during 1925–26 was 13,991 acres, of which 3,106 acres were in New South Wales, 1,719 acres in Victoria, 8,232 acres in Queensland, 724 acres in Western Australia, and 210 acres in South Australia. The production in all the States amounted to 43,382 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 1925–26 being 1,732 acres, of which 1,418 acres were in Tasmania, 312 acres in Victoria, and 2 acres in South Australia. The Tasmanian area, though still small, has increased considerably during the past twenty 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, but during the past seven years small annual gains have increased the area to 312 acres in 1925–26. 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 1925–26 the imports of hops exceeded the exports by 311,322 lbs., the excess value being £24,827.

7. **Flax.**—For over twenty years flax has been grown intermittently in the Gippsland district of Victoria, and attempts have been made to introduce its cultivation into Tasmania and New South Wales, but without success. About the end of the year 1917 the shortage of flax fibre in the world had become acute, and endeavours were made by the Commonwealth Government to encourage the cultivation of flax. The acreage in Victoria increased from 419 acres in 1917–18 to 1,611 acres in 1919–20, but the area had declined in 1925–26 to 154 acres. Flax products to the value of more than £1,500,000 are annually imported into Australia, and, as it has been demonstrated that flax can be grown to perfection here, a good prospect exists for the ultimate establishment of a local industry.

8. **Millet.**—Millet figures in the statistical records of three of the States. The total area devoted thereto in 1925–26 was 2,568 acres, of which 1,662 acres were in New South Wales, 669 in Victoria, and 237 in Queensland. The particulars here given relate to millet grown for grain and fibre, the quantity for green forage being dealt with in the section relating thereto.

9. **Nurseries.**—In all the States fairly large areas are occupied as nurseries for raising plants, trees, etc. Statistics of the area under flowers, fruit trees, etc., are available for New South Wales, Victoria, South Australia, and Western Australia. During 1925–26 the areas in those States were 517, 721, 139, and 77 acres respectively.

10. Cotton.—The cultivation of cotton was begun in Queensland in 1860, and ten years later the area cropped had increased from fourteen to upwards of fourteen thousand acres. The re-appearance of American cotton in the European market on the conclusion of the Civil War gave a severe setback to the new industry, and the area declined continuously till 1888 when only 37 acres were planted. The industry was resuscitated soon after, and manufacturing was undertaken on two separate occasions at Ipswich, but operations were not at any time very extensive, and low prices over a term of years checked development. Added interest was shown in the crop in 1903, and in 1913 the Queensland Government made an advance of 1½d. per lb. on seed cotton, and ginned it on owner's account, the final return being equal to about 1¾d. per lb.

Rising prices for the staple enabled the Government to offer the substantial guarantee of 5½d. per lb. for seed cotton of good quality for the three years ended 31st July, 1923, and as the result considerable activity was displayed in the industry, and the area picked rose from 166 acres in 1920 to 50,186 in 1924.

The area under cultivation and the yield in Queensland since the year 1919 are shown hereunder :—

COTTON.—AREA AND YIELD, QUEENSLAND, 1919 TO 1927.

Year.	Area.(a)	Yield of Unginned Cotton.
	Acres.	lbs.
1919	72	27,470
1920	166	57,065
1921	1,944	940,126
1922	8,716	3,956,635
1923	40,821	12,543,770
1924	50,186	16,416,170
1925	40,062	19,537,274
1926	28,000	9,055,120
1927 (b)	(c)	6,000,000

(a) Area harvested. (b) Estimated. (c) Not available.

The decline in production during the past two years is attributable to particularly adverse seasons, and to uncertainty regarding oversea prices. The establishment of the cotton manufacturing industry in Australia and the bounty on both seed cotton and cotton yarn have however materially improved the outlook of cotton-growing in Australia. Manufacturers are given a bounty on condition that they use 50 per cent. of Australian cotton, and they purchased the whole of the crop from the growers in 1927. The crop generally speaking was of high quality, the bulk having been classified in long staple grades.

A pool for seed cotton was constituted on the 11th March, 1926, which applies to all seed cotton produced in Queensland after the 1st January, 1927, for a period of five years. The board to administer the pool consists of seven representatives of the growers, and one member appointed by the Minister, and is empowered to make arrangements for the ginning and marketing of cotton and seed and by-products in Australia and oversea. It is also empowered to co-operate with the Department of Agriculture and Stock with respect to the distribution of seed for planting.

11. Coffee.—Queensland is the only State in which coffee-growing has been extensively tried, but the results have not been satisfactory. The area under crop reached its highest point in the season 1901–2 with 547 acres. In subsequent seasons the area fluctuated somewhat, but on the whole with a downward tendency, and in 1925–26 only 12 acres were recorded, with a yield of 5,192 lbs.

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

§ 18. Bounties.

1. **General.**—The Bounties Acts and Amendments passed by the Federal Parliament with the object of encouraging the manufacture and production of certain articles in Australia, include among the items on which bonuses were payable since 1922–23 the following agricultural products :—Cotton, wine and canned fruits. In the table hereunder are shown the amounts which have been paid in respect of all bounties in operation during the years 1922–23 to 1926–27 :—

BOUNTIES.—AMOUNTS PAID, 1922–23 TO 1926–27.

Articles on which Bounty was Paid.	Rate of Bounty Payable.	Date of Expiry of Bounty.	Amount Paid.				
			1922–23.	1923–24.	1924–25.	1925–26.	1926–27.
			£	£	£	£	£
Iron and Steel Bounty Act—							
Black Steel Sheets not exceeding 1-16th of an inch in thickness, made from Australian Iron Ore and Steel manufactured in Australia, or from such imported Sheet Bar Steel as is authorized by this Act	When freight is £2 10s. per ton or under—£1 10s. per ton.						
	When freight exceeds £2 10s. per ton—£1 10s. per ton, less the amount by which the freight exceeds £2 10s. per ton.	30th Sept., 1923 ..	541	..	..	..	..
Galvanized Sheets made from Australian Iron Ore and Steel manufactured in Australia, or from such imported Sheet Bar Steel as is authorized by this Act	When freight is £2 10s. per ton or under—£2 per ton.	30th Sept., 1923 ..	5,133	..	..	..	..
	When freight exceeds £2 10s. per ton—£2 per ton, less the amount by which the freight exceeds £2 10s. per ton.						
Shale Oil Bounties Act—							
Crude Shale Oil, as prescribed, produced in Australia from Mined Kerosene Shale ..	3½d. per gal., up to 3,500,000 gals. 2d. per gal., 3,500,000 to 5,000,000 gals. 1¾d. per gal., 5,000,000 to 8,000,000 gals. 1½d. each additional gal.	31st Aug., 1929 ..	18,400	..	335	..	705
Iron and Steel Products Bounty Act—							
Fencing Wire (Manufactured from Materials produced and manufactured in Australia)	£2 12s. per ton	..	11,985	53,487	71,948	97,387	98,389
Galvanized Sheets .. (Manufactured from Materials produced and manufactured in Australia)	£2 12s. „ ..	..	..	39,758	44,545	49,221	67,915
Wire Netting (Manufactured from Materials produced and manufactured in Australia)	£3 8s. „ ..	..	25,195	64,768	90,340	95,127	90,299
Traction Engines (Manufactured from Materials produced and manufactured in Australia)	According to capacity, £40—£90 per tractor ..	..	..	1,420	500	270	250
Sulphur Bounty Act—							
Sulphur from Australian Pyrites and other Sulphide Ores or Concentrates ..	£2 5s. per ton ..	..	..	9,382	47,140	38,549	34,339
Meat Export Bounties Act—							
Standard and Canned Beef slaughtered and exported within prescribed dates ..	Standard beef, ¼d. per lb. ..	..	117,246	136,900	1,039	..	..
	Canned beef, ¼d. per lb. ..						
Export of Live Cattle for slaughter during prescribed period	Live cattle, 10s. per head ..	..	4,521	3,632	3,991	919	..

BOUNTIES.—AMOUNTS PAID, 1922-23 TO 1926-27—*continued.*

Articles on which Bounty was Paid.	Rate of Bounty Payable.	Date of Expiry of Bounty.	Amount Paid.				
			1922–23.	1923–24.	1924–25.	1925–26.	1926–27.
			£	£	£	£	£
Wine Export Bounty Act(*a*)— Fortified Wine, containing not less than 34 per centum of proof spirit, exported from the Commonwealth from 1st September, 1924, to 31st August, 1927	4s. per gallon ..	..	..	..	28,417	217 109	442,410
Canned Fruit Bounty Act— Apricots, Peaches, Pears, and Pineapples canned within prescribed dates ..	9d. to 1s. per dozen tins each containing 30 ozs. net ..	..	..	63,477	64,752	10,963	..
Such canned fruit exported from the Commonwealth during prescribed period ..	1s. to 1s. 9d. per dozen tins, each containing 30 ozs. net ..	..	..				
Cotton Bounty Act— Seed Cotton grown in Australia and delivered and graded as prescribed ..	1¼d. per lb. higher grades ¾d. per lb. lower grades	15th Aug., 1931 ..	..	..	..	..	7,038
Cotton Yarn manufactured in Australia	½d. to 12d. per lb. according to count	..	..	..	..	..	30,002
Total	.. ..	..	183,021	372,824	353,007	509,545	771,347

(*a*) This bounty has been extended for a further period of three years, but the rate has been reduced to 1s. 9d. per gallon.

§ 19. Fertilizers.

1. **General.**—In the early days of settlement in Australia, scientific cultivation was practically neglected. Farmers were neither under the necessity nor were they aware of the value of supplying the proper constituents to the soil for each class of crop. The widely divergent character of the soils, their degeneration by repeated cropping, the limitations of climatic conditions, and the difficulties of following any desired order of rotation of crops, all rendered it essential to give attention to artificial manuring. The introduction of the modern seed-drill acting also as a fertilizer-distributor has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made productive. There is reason to believe that this feature will be even more strikingly characteristic in the future.

2. **Fertilizers Acts.**—In order to protect the interests of users of artificial manures, legislation has been passed in each of the States, regulating the sale and preventing the adulteration of fertilizers. A list of these Acts and their main features will be found in Year Book No. 12 (page 378).

3. **Imports.**—The local production of artificial manures has greatly increased in recent years, and the home requirements of prepared fertilizers can now be supplied by Australian manufacturers. Imports of fertilizers are also expanding, but the bulk of the inward shipments consists of rock phosphates, which form the raw material for the home manufactured superphosphate, a fertilizer which has proved eminently suitable for the growing of cereals in Australian soils. During 1925–26, the value of rock phosphates imported represented nearly 81 per cent. of the total importation of fertilizers. Nauru and Gilbert and Ellice Islands Colony in equal proportions supplied practically the whole of the shipments. Sodium nitrate is wholly obtained from Chile.

The imports of artificial manures during the last five years are given in the following table. Although considerable quantities of manufactured superphosphates were annually imported up till 1914–15, the importations of this fertilizer have now practically ceased :—

FERTILIZERS.—IMPORTS, AUSTRALIA, 1921–22 TO 1925–26.

Fertilizer.		1921–22.	1922–23.	1923–24.	1924–25.	1925–26.
Bonedust	cwt.	910	..	542	..	..
,,	£	556	..	164	..	..
Guano	cwt.	704,039	857,411	821,938	893,478	1,829
,,	£	72,892	97,526	90,415	98,515	1,061
Superphosphates	cwt.	1,034	1,007	1,270	1,200	1,035
,,	£	1,145	660	806	785	517
Rock Phosphates	cwt.	3,255,808	3,390,089	4,697,574	5,751,583	6,463,733
,, ,,	£	553,109	516,059	678,446	739,588	799,273
Soda Nitrate	cwt.	50,214	143,274	74,990	182,846	187,284
,, ,,	£	38,409	96,083	45,358	104,729	105,384
Other	cwt.	42,063	175,778	138,897	186,209	172,993
,,	£	33,561	80,720	74,403	79,616	80,900
Total	cwt.	4,054,068	4,567,559	5,735,211	7,015,316	6,826,874
	£	699,672	791,048	889,592	1,023,233	987,135

4. Exports.—The subjoined table shows the exports of artificial manures for the years 1921–22 to 1925–26. Practically the whole of these fertilizers are manufactured locally, and are shipped mainly to New Zealand, Japan, Java, and the Pacific Islands :—

FERTILIZERS.—EXPORTS, AUSTRALIA, 1921–22 TO 1925–26.

Fertilizer.		1921–22.	1922–23.	1923–24.	1924–25.	1925–26.
Bonedust	cwt.	33,311	54,385	49,966	13,942	10,012
,,	£	18,517	24,400	22,327	6,079	3,664
Superphosphates	cwt.	26,727	73	22	57	149
,,	£	6,284	35	7	18	49
Rock phosphates	cwt.	12,900	..	20	..	62
,, ,,	£	1,960	..	10	..	24
Soda nitrate	cwt.	5,790	600	405	2,529	1,445
,, ,,	£	5,717	715	315	1,851	1,241
Ammonia sulphate	cwt.	155,414	68,799	93,157	111,594	141,866
,, ,,	£	105,472	58,571	69,491	73,665	88,745
Other	cwt.	24,525	34,323	31,431	45,098	124,263
,,	£	11,956	15,816	11,824	13,916	47,011
Total	cwt.	258,667	158,180	175,001	173,220	277,797
	£	149,906	99,537	103,974	95,529	140,734

5. **Statistics of Use of Fertilizers.**—Statistics regarding the use of manures are collected in all the States, and the particulars for 1925–26 are as follows :—

FERTILIZERS USED IN EACH STATE, 1925–26.

State or Territory.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable Yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
New South Wales ..	4,541,360	2,642,735	58.19	268,930	85,466
Victoria	4,433,492	4,244,191	95.73	144,537	195,542
Queensland	1,033,765	68,192	6.60	59,096	18,401
South Australia ..	3,583,867	3,205,199	89.43	70,865	130,217
Western Australia ..	2,932,110	*a*3,015,647	*b*98.64	65,695	*a*128,092
Tasmania	266,412	210,655	79.07	15,976	19,046
Northern Territory ..	391	25	6.39	..	10
Fed. Cap. Territory ..	2,181	467	21.41	..	12
Total	16,793,578	13,387,111	78.98	625,099	576,786

(*a*) Includes area under sown grasses and manure used.—(*b*) Previous year's figure.

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

FERTILIZERS USED IN AUSTRALIA, 1921–22 TO 1925–26.

Year.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable Yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1921–22	15,357,024	10,999,259	71.62	582,725	408,742
1922–23	16,543,555	12,131,831	73.33	616,804	463,673
1923–24	16,531,186	12,084,583	73.10	590,900	488,601
1924–25	17,278,191	13,031,329	75.14	534,702	529,027
1925–26	16,793,578	13,387,111	78.98	625,099	576,786

The percentage of the area manured on the total area cultivated has advanced from 71.62 to 78.98 during the past five years, while the use of artificial manures has increased by more than 168,000 tons during the same period.

6. **Local Production of Fertilizers.**—Statistics relative to the local production of fertilizers are incomplete, and detailed returns for fertilizer factories other than bone mills are not available. The number of firms engaged in the manufacture of artificial manures in Australia at latest available date was 104, made up as follows :—New South Wales, 20 ; Victoria, 30 ; Queensland, 24 ; South Australia, 11 ; Western Australia, 11 ; and Tasmania, 8. The production of superphosphates in Australia during 1925–26 amounted to 724,928 tons, the largest producing States being Victoria, 244,927 tons, and Western Australia, 240,283 tons.

§ 20. Ensilage.

1. **Government Assistance in Production.**—The Government of Victoria, recognizing that defective methods of making ensilage were often adopted, has for some years been making special efforts to educate the farming community by lectures, the issue of bulletins, etc. The Government also undertakes the erection of different types of silos on very liberal terms, repayment extending over a series of years. Experts erect the silos and give practical lessons in regard to cutting and packing the silage. The New South Wales Government also gives advice in the "Agricultural Gazette," and issues special bulletins dealing with the subject, while silos have been erected at the various experimental farms.

2. **Quantity Made.**—Particulars concerning the number of holdings on which ensilage was made, and the quantity made during the seasons 1921–22 to 1925–26, are given in the following table :—

ENSILAGE MADE, 1921–22 TO 1925–26.

State or Territory.	1921–22.		1922–23.		1923–24.		1924–25.		1925–26.	
	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.
	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.
New South Wales ..	166	24,174	116	12,191	152	19,292	269	35,145	241	30,457
Victoria ..	107	5,873	103	5,674	61	3,649	106	6,667	113	6,092
Queensland	96	6,575	65	5,300	71	4,833	104	8,195	67	4,654
South Australia ..	26	1,849	26	2,595	24	2,838	20	2,067	28	2,857
Western Australia ..	7	381	12	331	20	1,596	29	2,287	43	2,325
Tasmania	10	544	12	437	9	372	10	301	3	170
Northern Territory ..	..	..	..	..	..	..	1	5	1	5
Total ..	412	39,396	334	26,528	337	32,580	539	54,667	496	47,560

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

Following the drought of 1902–3 greater attention was paid to the making of ensilage, and during the four seasons ended 1909–10 there was an increase both in the number of holdings on which ensilage was made and in the quantity produced. The following five seasons, however, showed a falling-off, but the reduction was due to the fact that stocks had not been drawn upon to any great extent during the previous seasons. The accumulated stocks proved of great value during the 1914 drought, though far below what would have been the case if more attention had been paid to production during the previous years when there was a surplus of green forage. The quantities made since that date have fluctuated considerably, with the output in 1924–25, viz., 54,667 tons, the highest for the period.

§ 21. Agricultural Colleges and Experimental Farms.

1. **General.**—In most of the States agricultural colleges and experimental farms have been established with a view to the promotion of more scientific methods in agriculture, stock-breeding and dairying. In the colleges, and on some of the farms, provision is made for the accommodation of pupils to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilizers are made, manures are tested, and elementary veterinary science, etc., are taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of showing that it is practicable to produce certain crops in a given place, but also to show how it is possible to make farming pay in the locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder; in cheese and butter making; in the management, breeding, and preparation for the market of live stock; in the eradication of pests and weeds; and in carpentering, blacksmithing, and other trades.

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

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

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