

CHAPTER XIV. AGRICULTURAL PRODUCTION.

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

§ 1. Introductory.

A brief reference to the attempts at cultivation by the first settlers in New South Wales and to the discovery of suitable agricultural land on the Parramatta and Hawkesbury Rivers prior to the year 1813 and west of the Blue Mountains thereafter is contained in early issues of the Official Year Book. (See No. 22, p. 67o.)

§ 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 of crops 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 of crops 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 of crops declining from 491,000 acres in 1850 to 458,000 acres in 1854. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia exceeded a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres. For the same year South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales, 223,000 acres.

2. **Progress of Cultivation.**—The following table shows the area of crops in each of the States and Territories of Australia at decennial intervals since 1860 and during each of the last five seasons:—

AREA OF CROPS.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N.T.	A.C.T.	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	1,548,309	113,978	2,087,237	63,902	119,788	..	..	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	4,489,143	779,497	3,231,083	1,804,987	297,383	296	1,966	15,069,858
1930-31	6,811,247	6,715,660	1,144,216	5,426,075	4,792,017	267,632	1,550	5,419	25,163,816
1934-35	5,687,988	4,677,683	1,296,619	4,629,303	3,838,618	292,000	1,132	5,456	20,428,799
1935-36	5,735,681	4,438,761	1,334,690	4,463,163	3,754,158	242,189	1,070	4,330	19,974,042
1936-37	5,957,520	4,497,312	1,506,423	4,577,707	3,884,349	263,251	1,305	4,728	20,602,595
1937-38	6,470,160	4,662,354	1,618,738	4,736,428	4,201,548	255,260	1,612	5,631	21,951,731
1938-39	7,049,357	5,019,299	1,734,789	4,724,090	4,719,254	243,048	1,116	6,827	23,497,780

The progress of agriculture was practically uninterrupted from 1860 to 1915-16, when, as the result of a special effort to raise wheat during the War of 1914-19, 18,528,234 acres were cultivated in Australia. Four years later the area of crops was down to 13,296,407 acres owing to the accumulation of wheat stocks consequent

upon the difficulty of securing freight space during the war years. After the termination of hostilities the area again began to expand and rose steadily to a new maximum of 25,163,816 acres in 1930-31. Thereafter the slump in wheat prices seriously depressed the agricultural industry and the area of crops receded to less than 20 million acres in 1935-36. Since that year, the area increased by 3½ million acres. Wheat is the most extensively grown crop in Australia and material changes in the total area of crops are largely a reflection of variations in the acreage sown to this cereal.

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

4. **Australian Agricultural Council.**—Arising out of a conference of Commonwealth and State Ministers on agricultural and marketing matters held at Canberra in December, 1934, a permanent organization known as the Australian Agricultural Council was formed. The Council consists of the Commonwealth Minister for Commerce, the Commonwealth Minister in charge of Development and the State Ministers of Agriculture, with power to co-opt the services of other Commonwealth and State Ministers as required. The principle functions of the Council are (i) the promotion of the welfare and development of agricultural industries generally; (ii) the improvement of the quality of agricultural products and the maintenance of high grade standards; (iii) to ensure, as far as possible, balance between production and available markets; and (iv) organized marketing, etc.

In addition a permanent technical committee known as the Standing Committee on Agriculture was formed to act in an advisory capacity to the Council and to undertake the following duties:—(i) to secure co-operation and co-ordination in agricultural research throughout Australia; (ii) to advise the Commonwealth and State Governments, either directly or through the Council, on matters pertaining to the initiation and development of research on agricultural problems; and (iii) to secure co-operation between the Commonwealth and States and between the States themselves, with respect to quarantine measures relating to pests and diseases of plants and animals, and to advise the Commonwealth and State Governments with respect thereto. The personnel of this Committee consists of the permanent heads of the State Departments of Agriculture, members of the Executive Committee of the Council for Scientific and Industrial Research, and the Secretary of the Department of Commerce.

§ 3. Distribution, Production and Value of Crops.

1. **Distribution of Crops.**—The following table gives the areas in the several States of each of the principal crops for the season 1938-39:—

AREA OF PRINCIPAL CROPS, 1938-39.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ..	4,650,872	2,748,362	442,017	3,080,401	3,412,818	9,849	..	2,061	14,346,380
Oats ..	399,449	657,999	8,650	266,842	426,110	24,831	..	324	1,784,205
Maize ..	122,201	18,485	183,415	..	37	..	..	..	324,146
Barley—									
Malting ..	6,961	150,984	10,304	417,276	56,651	8,042	..	..	650,218
Other ..	7,233	24,907	3,685	39,763	18,277	652	..	2	94,519
Beans and Peas ..	66	5,669	546	16,570	4,185	16,095	20	..	43,151
Eye ..	10,403	1,109	65	3,273	657	228	..	52	17,787
Other Cereals ..	23,533	..	..	219	218	210	..	..	24,180
Hay ..	1,068,925	1,104,558	65,732	519,309	408,276	79,959	..	3,501	3,250,260
Green Forage ..	573,569	108,796	448,643	275,988	352,442	28,681	..	681	1,788,800
Grass and other ..									
Seeds ..	(a)	7,534	11,660	2,342	(a)	2,692	..	..	24,228
Orchards and other Fruit-gardens ..	85,398	71,300	32,641	28,943	22,029	31,580	50	97	272,238

(a) Not available.

3. Area of Principal Crops in Australia.—The area of the principal crops during each of the last five seasons, together with the average for the decennial period 1919–28 is shown hereunder :—

AREA OF PRINCIPAL CROPS : AUSTRALIA.

Crop.	Average, 1919–28.	1934–35.	1935–36.	1936–37.	1937–38.	1938–39.
	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.
Barley (a)	248	395	486	394	525	650
Maize	315	295	298	318	320	324
Oats	974	1,562	1,564	1,525	1,408	1,784
Rice	1.6	22	22	23	24	24
Wheat	9,750	12,544	11,957	12,317	13,735	14,346
Green Forage	859	1,234	1,423	1,625	1,640	1,789
Hay	2,998	3,178	3,007	3,101	2,982	3,250
Beans and Peas	46	51	52	48	41	43
Onions	7	7	7	8	8	7
Potatoes (b)	136	131	125	130	114	98
Sugar-beet	1.7	3	3	3	4	4
Vineyards	99	117	119	123	125	127
Hops	1.6	1	1	1	1	1
Sugar-cane	229	322	335	359	358	357
Cotton	31	78	55	62	53	66
Tobacco	2	8	11	12	11	8
Market Gardens (c)	44	53	55	62	66	66
Orchards	275	278	271	278	277	272
All Other Crops	104	150	183	214	260	282
Total	16,122	20,429	19,974	20,603	21,952	23,498

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

4. Total and Average Production of Principal Crops in Australia.—The following table shows the production of the principal crops for the five years ended 1938–39 and for the decennium 1919–1928 :—

TOTAL AND AVERAGE PRODUCTION OF PRINCIPAL CROPS : AUSTRALIA.

Crop.	Unit of Quantity.	Average, 1919–28.	1934–35.	1935–36.	1936–37.	1937–38.	1938–39.
		Barley (a)	1,000 bus.	4,541	6,991	8,413	6,383	10,802	9,704
Maize	" "	8,251	8,101	7,468	7,246	6,817	7,057
Oats	" "	14,221	16,006	18,721	16,662	17,165	15,555
Rice	" "	117	1,888	2,164	2,277	2,269	2,775
Wheat	" "	118,905	133,393	144,218	151,390	187,256	155,369
Hay	" tons	3,606	3,811	3,498	3,448	3,424	3,321
Beans and Peas	" bus.	714	721	616	778	625	495
Onions	" tons	38	42	35	53	56	18
Potatoes (b)	" "	358	286	323	461	345	274
Sugar (Beet)	" "	2.0	5.0	5.1	4.2	3.6	13
Grapes	" "	211	361	364	409	505	402
Wine	" gals.	12,028	16,265	17,728	20,168	20,430	14,958
Raisins and Currants	" cwt.	623	1,335	1,281	1,460	1,960	1,500
Hops	" lb.	2,276	2,065	2,403	2,376	2,277	2,402
Sugar (Cane)	" tons	332	641	647	783	810	
Cotton, Unginned	" lb.	6,907	26,924	20,785	19,199	11,793	13,688
Tobacco	" "	1,925	3,113	5,557	5,198	5,980	4,149
Pumpkins and Melons	" tons	48	54	62	66	82	81

(a) Malting only. (b) Not including Sweet Potatoes.

5. Average Yield per Acre of Principal Crops in Australia.—Details of the average yield per acre for Australia of the principal crops are shown hereunder for the periods indicated:—

AVERAGE YIELD PER ACRE OF PRINCIPAL CROPS : AUSTRALIA.

Crop.	Unit of Quantity.	Average, 1919-28.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
Barley (a)	Bushel	18.30	17.69	17.31	16.20	20.56	14.92
Maize ..	..	26.16	27.46	25.09	22.81	21.29	21.77
Oats ..	..	14.60	10.83	11.97	10.93	12.19	8.72
Rice ..	..	74.49	88.84	99.64	97.36	95.59	117.92
Wheat ..	..	12.20	10.63	12.06	12.29	13.63	10.83
Hay ..	Ton	1.20	1.20	1.16	1.11	1.15	1.02
Beans and Peas	Bushel	15.62	14.02	11.95	16.16	15.27	11.47
Onions ..	Ton	5.09	5.97	4.95	6.81	6.67	2.74
Potatoes (b)	..	2.63	2.19	2.59	3.55	3.02	2.80
Sugar (Beet)	..	1.21	1.63	1.62	1.20	1.39	3.15
Grapes (c)	..	2.80	3.30	3.29	3.62	4.40	4.02
Wine (c)	Gallon	..	342	364	411	412	300
Raisins and Currants (c)	Cwt.	..	24.52	23.43	26.20	32.60	25.20
Hops (c)	lb.	1,511	2,173	2,388	2,243	2,193	2,225
Sugar (Cane) (c)	Ton	2.20	2.83	2.71	3.06	3.17	3.14
Cotton, Unginned (c)	lb.	395	620	378	309	224	205
Tobacco ..	..	866	392	527	449	563	518
Pumpkins and Melons	Ton	3.33	2.91	3.02	2.34	2.57	2.65

(a) Malting only.

(b) Not including Sweet Potatoes.

(c) Per acre of productive crops.

6. Gross Value of Agricultural Production in Australia.—The following table shows the gross value of recorded agricultural production at the principal markets in each State for the years 1933-34 to 1938-39:—

GROSS VALUE OF AGRICULTURAL PRODUCTION : AUSTRALIA.

Crops.	1933-34.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
	£1,000	£1,000	£1,000	£1,000	£1,000.	£1,000.
Barley (a)	884	984	1,036	1,326	2,231	1,417
Maize ..	1,277	1,298	1,619	1,785	1,761	1,503
Oats ..	1,853	1,940	2,136	2,282	2,537	2,085
Rice ..	392	383	409	458	459	540
Wheat ..	27,897	24,738	29,768	40,471	37,000	21,989
Green Forage	2,540	2,435	2,703	2,784	3,043	2,999
Hay ..	10,265	10,587	10,061	12,104	13,629	12,704
Beans and Peas	234	194	163	258	222	253
Onions ..	230	311	297	250	255	306
Potatoes (b)	1,905	2,491	2,561	2,165	2,442	3,649
Sugar-beet ..	91	76	77	65	97	27
Grapes ..	3,674	3,562	3,754	4,233	4,865	3,924
Hops ..	142	151	172	171	190	183
Sugar-cane ..	7,601	7,310	7,493	8,742	9,065	9,178
Tobacco ..	340	257	484	437	513	360
Cotton, Unginned	283	397	376	330	205	230
Market Gardens (c)	2,029	2,136	2,240	2,330	2,395	2,473
Orchards ..	7,082	7,343	7,702	8,508	9,204	9,695
Other Crops	2,013	1,994	2,335	2,704	3,116	3,336
Total, Gross Value	70,732	68,587	75,388	91,403	93,229	76,851

(a) Malting only.

(b) Not including Sweet Potatoes.

(c) Including Pumpkins and Melons.

7. Value of Production—Gross and Net.—Uniform methods for arriving at the gross and net values of production in the various States were finally determined at a Conference of Statisticians held in March, 1935. The returns for the year 1933-34 and subsequent years have been valued on the new basis, and a revaluation was made for all years back to 1928-29. A more detailed reference to the value of production of agriculture and other industries in Australia as well as a brief explanation of the terms used will be found in Chapter XXVIII. "Miscellaneous".

In computing the net value of production no deduction has been made for the cost of maintenance of farm buildings and fences, nor for the depreciation of farm machinery; consequently the figure stated is inflated to this extent.

GROSS, FARM AND NET VALUES OF AGRICULTURAL PRODUCTION: AUSTRALIA, 1934-35 TO 1938-39.

(As Estimated by State Statisticians in Accordance with Conference Resolutions.)

State.	Gross Production valued at Principal Markets.	Marketing Costs.	Gross Production valued at Farm.	Farm Costs.		Net Value of Production. (a)	Depreciation. (estimated)
				Seed used, and Fodder for Farm Stock.	Value of other Materials used in process of production.		
	£	£	£	£	£	£	£
New South Wales ..	23,665,000	5,206,000	18,459,000	4,217,000	2,438,000	11,804,000	1,105,000
Victoria ..	14,378,841	2,350,670	12,028,171	4,919,144	1,489,262	5,619,765	875,000
Queensland ..	15,564,000	1,406,000	14,158,000	1,237,000	1,306,000	11,615,000	824,000
South Australia ..	10,003,798	1,511,553	8,492,245	1,645,117	1,357,900	5,489,228	609,233
Western Australia ..	8,538,688	1,992,929	6,545,759	992,830	1,487,313	4,065,616	503,013
Tasmania ..	4,580,061	827,880	3,752,181	511,480	155,730	3,084,971	78,960
Total—							
1938-39 ..	76,730,388	13,295,032	63,435,356	13,522,571	8,234,205	41,678,580	3,995,206
1937-38 ..	93,122,757	14,199,609	78,923,148	15,171,122	4,911,468	58,840,558	3,583,000
1936-37 ..	91,296,975	12,271,859	79,025,116	11,652,661	4,258,970	63,113,485	3,546,290
1935-36 ..	75,102,654	11,565,632	63,537,022	10,769,940	4,328,089	48,438,993	3,514,894
1934-35 ..	68,439,685	11,842,411	56,597,274	9,003,817	4,457,259	43,136,198	3,497,623

(a) No deduction has been made for depreciation and maintenance.

In the following table the net value of agricultural production is given by States for each year since 1928-29 as well as the net value per head of population:—

VALUE OF AGRICULTURAL PRODUCTION: AUSTRALIA.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
NET VALUE.(a)							
1928-29 ..	£ 15,631,000	£ 14,088,065	£ 10,394,896	£ 6,419,977	£ 7,229,708	£ 2,315,160	£ 56,078,806
1929-30 ..	11,373,600	8,680,082	11,044,930	5,260,716	6,298,557	1,403,766	44,061,645
1930-31 ..	9,776,000	6,314,177	10,211,044	2,183,945	2,534,495	1,294,660	32,314,261
1931-32 ..	12,969,000	11,489,164	9,682,821	8,340,631	5,550,466	1,681,650	49,713,732
1932-33 ..	15,124,000	11,130,699	8,944,145	6,282,382	4,973,710	1,231,950	47,686,886
1933-34 ..	11,724,000	10,077,018	9,703,968	5,909,760	4,598,144	1,679,380	43,692,270
1934-35 ..	12,787,000	8,735,776	9,018,187	6,375,538	4,268,547	1,951,150	43,136,198
1935-36 ..	13,285,000	11,716,768	9,699,000	7,335,655	4,678,390	1,723,180	48,438,993
1936-37 ..	19,364,000	16,356,341	10,706,000	9,057,406	5,921,108	1,708,630	63,113,485
1937-38 ..	14,829,100	14,962,112	11,264,000	9,159,941	6,142,705	2,482,500	58,840,558
1938-39 ..	11,804,000	5,619,765	11,615,000	5,489,228	4,065,616	3,084,971	41,678,580

NET VALUE PER HEAD OF MEAN POPULATION.(a)

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1928-29 ..	6 5 10	7 19 11	11 13 2	11 4 5	17 8 10	10 13 11	8 16 6
1929-30 ..	4 10 4	4 17 7	12 4 5	9 3 9	14 15 10	6 8 0	6 17 0
1930-31 ..	3 16 10	3 10 5	11 2 5	3 16 0	5 17 7	5 16 2	4 19 6
1931-32 ..	5 1 0	6 7 4	10 8 1	14 9 2	12 16 0	7 8 9	7 11 9
1932-33 ..	5 16 9	6 2 8	9 10 1	10 16 10	11 7 8	5 8 1	7 4 5
1933-34 ..	4 9 9	5 10 5	10 4 2	10 2 11	10 8 10	7 6 8	6 11 4
1934-35 ..	4 17 1	4 15 2	9 7 8	10 18 3	9 12 8	8 10 4	6 8 9
1935-36 ..	5 0 0	6 7 1	9 19 6	12 10 4	10 8 11	7 9 8	7 3 6
1936-37 ..	7 4 6	8 16 7	10 17 7	15 7 11	13 2 1	7 7 2	9 5 6
1937-38 ..	5 9 6	8 0 9	11 6 4	15 10 2	13 8 8	10 8 7	8 11 5
1938-39 ..	4 6 4	2 19 11	11 10 9	9 4 8	8 15 9	13 0 5	6 0 4

(a) No deduction has been made for depreciation and maintenance.

§ 4. Wheat.

1. Royal Commission on the Wheat Industry.—A Royal Commission was appointed in January, 1934, to inquire into and report upon the economic condition of the industries of growing, handling and marketing wheat, and the manufacturing, distributing and selling of flour and bread. A searching inquiry was made by the Commission and the results of its investigations were submitted in a series of five reports. The first and second reports covered the wheat-growing industry, the third, that of baking, the fourth, the flour-milling industry, while the fifth, completed in February, 1936, dealt with the history of the Commission's investigations and traversed the principal recommendations submitted.

Reference to the financial assistance to the wheat industry will be found in § 18, Bounties hereafter.

2. Progress of Wheat-growing.—(i) *Area and Production.* (a) *Seasons 1934-35 to 1939-40.* Wheat is the principal crop raised in Australia, and its progress since 1860 has been almost continuous. Prominent features in its early development were the increase in population following the discovery of gold and the redistribution of labour after the surface gold had been won. The economic depression of 1893 interrupted its progress but its subsequent recovery was assisted by the invention of mechanical appliances, the recognition of superphosphate as an aid to production, and the introduction of new and more suitable varieties for Australian conditions. The establishment of closer settlement schemes and the settling of returned soldiers and others on the land were additional factors in its expansion. The only serious interruptions in more recent years were those occasioned by the War of 1914-1919 and the economic depression. As previously mentioned, any variation in the acreage sown to this cereal is materially reflected in the total area of crops. The area and yield of wheat for grain in each State are given below for the five years ended 1938-39; the table also includes an estimate for the 1939-40 crop and the average for the decennium ended 1938-39:—

WHEAT: AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	A.C.T.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934-35 ..	3,892,768	2,458,583	221,729	3,188,225	2,764,373	16,656	1,844	12,544,178
1935-36 ..	3,851,373	2,323,753	239,631	2,989,490	2,540,696	10,404	1,619	11,956,966
1936-37 ..	3,982,864	2,393,827	283,648	3,058,457	2,575,283	21,317	1,466	12,316,862
1937-38 ..	4,464,664	2,686,057	372,935	3,161,739	3,026,420	21,081	2,055	13,734,931
1938-39 ..	4,650,872	2,748,362	442,017	3,080,401	3,412,818	9,849	2,061	14,346,380
1939-40 (a) ..	4,392,000	2,827,000	361,000	2,737,000	2,949,000	8,000	2,000	13,276,000
Average for ten seasons 1930-39 ..	4,302,255	3,062,668	276,728	3,526,453	3,157,503	17,202	2,082	14,344,891
PRODUCTION.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1934-35 ..	48,678,000	25,850,528	4,076,181	27,455,600	26,985,000	307,525	40,398	133,393,232
1935-36 ..	48,822,000	37,552,062	2,699,316	31,615,744	23,315,417	186,014	36,216	144,217,769
1936-37 ..	55,665,000	42,844,816	2,016,236	28,714,653	21,549,000	570,895	26,352	151,389,952
1937-38 ..	55,104,000	48,173,191	3,749,443	43,428,423	36,224,800	526,007	49,809	187,255,673
1938-39 ..	59,898,000	18,104,369	8,583,736	31,674,418	36,843,600	205,263	59,235	155,368,621
1939-40 (a) ..	76,551,000	45,054,000	6,585,000	40,985,000	40,860,000	75,000	50,000	210,160,000
Average for ten seasons 1930-39 ..	55,934,700	38,416,401	4,117,806	34,700,164	35,812,136	373,965	42,951	169,398,123

(a) Subject to revision.

The acreage of wheat for grain increased steadily until 1915-16, when, largely as the result of a special war effort, 12,484,512 acres were sown. After that year, however, there was a serious decline, brought about by war conditions and unfavourable seasons, and the area in 1919-20 fell to 6,419,160 acres, or only half that of 1915-16.

From 1920-21 onwards there was a rapid extension of the area of wheat until, in response to the urge of Commonwealth and State Governments, the maximum area of 18 million acres was sown in 1930-31. The acreage declined to 14½ million acres in the following year, and after expanding by more than one million acres in 1932-33 declined heavily in the next three years to slightly under 12 million acres. The reduction in acreage was of course brought about by unprofitable prices for the grain during the depression years. With improved prices the area of wheat again rose until more than 14.3 million acres were sown in 1938-39.

A graph showing the distribution of the area sown to wheat for grain in Australia during 1938-39 appears on page 333.

Seasonal conditions under which the wheat crop of 1938-39 was grown were extremely difficult. Moisture conditions were very low throughout the season and as a result a considerably reduced yield was anticipated. However, all States harvested a crop in excess of expectations and the result of the 1938-39 harvest may be regarded as satisfactory except in Victoria where the driest year was experienced since 1914-15. In this State the average yield of 6.59 bushels per acre was the worst recorded during the past quarter of a century. The average for the decennium ending 1938-39 was 12.54 bushels. In New South Wales the average of 12.88 bushels was lower than the ten-yearly average by 0.12 bushels whilst in South Australia the yield was nearly half a bushel in excess of the ten-yearly average. Seasonal conditions in Western Australia were not as favourable as in the previous year but much better than during the previous three years; the average yield was 10.79 bushels per acre or half a bushel below the decennial average. The average yield per acre for Australia in 1938-39 amounted to 10.83 bushels, compared with 13.63 bushels for the previous year and 11.81 bushels, the average for the decennium ending 1938-39. The total production of grain for 1938-39 amounted to 155.4 million bushels compared with 187.3 million bushels for the previous year, and with 213.9 million bushels, the record harvest of 1932-33.

For the last nineteen years the annual production of wheat has exceeded 100 million bushels, and in the opinion of agricultural experts the improved methods of agriculture practised by wheat-growers, such as seed selection, bare fallowing, application of fertilizers, etc., will assure the crop against total failure in the future.

Final figures are not yet available in respect of the 1939-40 wheat harvest, but the area sown according to the latest estimate was 13,276,000 acres, a decrease of more than 1 million acres or 7½ per cent. on that of the previous year, whilst the production was 210.2 million bushels, or 15.83 bushels per acre, compared with 155.4 million bushels or 10.83 bushels per acre for the previous year. More than average crops were harvested in practically all States. It is unusual for the whole of the wheat area of Australia to be favored with conditions so uniformly good. As an indication of the abundance of the harvest, the average yield of 15.83 bushels per acre has been exceeded on only three occasions during the past eighty years, namely, 15.91 bushels in 1860-61, 16.35 bushels in 1866-67, and 16.08 bushels in 1920-21. In Tasmania, however, conditions were very bad and the yield of 9.38 bushels per acre was the smallest ever recorded. The production of wheat in this State is relatively unimportant.

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

**WHEAT : AVERAGE AREA, PRODUCTION AND WHOLESALE PRICE,
AUSTRALIA.**

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

(a) Not available.

(ii) *Average Yield.* In the next table will be found the average yield of wheat per acre for specified periods :—

WHEAT : YIELD PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	A.C.T.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1933-34 ..	12.45	13.96	18.80	9.26	11.72	23.27	21.66	11.90
1934-35 ..	12.50	10.51	18.38	8.61	9.76	18.46	21.91	10.63
1935-36 ..	12.68	16.16	11.23	10.58	9.18	17.88	22.37	12.06
1936-37 ..	13.98	17.90	7.11	9.39	8.37	20.78	17.98	12.29
1937-38 ..	12.34	17.93	10.05	13.74	11.97	24.95	24.24	13.63
1938-39 ..	12.88	6.59	19.42	10.28	10.79	20.81	28.74	10.83
1939-40 (a)	17.43	15.93	18.27	14.97	13.86	9.38	25.00	15.83
Average 10 seasons, 1930-39	13.00	12.54	14.88	9.84	11.34	21.73	20.63	11.81

(a) Subject to revision.

Variation in the average yield is chiefly due to the vagaries of the seasons. The best average yields for single seasons since 1901 were obtained in 1920-21, 16.08 bushels; in 1924-25, 15.20 bushels; and in 1939-40, 15.83 bushels. Annual averages for the past three decennia were 11.17, 12.20 and 11.81 bushels per acre.

(iii) *Relation to Population.* The main wheat-producing States of Australia are New South Wales, Victoria, South Australia and Western Australia. Queensland production closely approaches local demands, but Tasmania imports from the mainland to satisfy its needs, though partly in exchange it ships flour made from local wheat which is particularly suitable for biscuits. Normally the production of wheat greatly exceeds Australian requirements, and from half to three-quarters of the crop is exported overseas. In the pre-war period 1909-1913 Australia ranked sixth on the list of exporting countries but the position has improved in recent years and its exports are now exceeded only by those of Canada and the Argentine Republic. The quantity exported from Australia was approximately 18½ per cent. of the total quantity shipped by exporting countries during the five years ended 1938.

3. *Wheat Farms.*—Particulars of the number of farms growing wheat for grain on 20 acres and upwards during the past five years are shown in the following table. It should be noted that a farm worked on the share system or as a partnership is included as one holding only.

**NUMBER OF FARMS GROWING WHEAT FOR GRAIN ON 20 ACRES AND UPWARDS :
AUSTRALIA.**

State.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
	No.	No.	No.	No.	No.
New South Wales ..	15,099	14,923	15,425	16,287	16,550
Victoria ..	12,582	12,051	12,090	12,936	12,305
Queensland ..	1,957	1,847	2,211	2,809	3,190
South Australia ..	13,053	11,974	12,155	12,251	11,842
Western Australia ..	9,161	8,681	8,625	8,841	8,989
Tasmania ..	275	171	379	372	146
Total ..	52,127	49,647	50,885	53,496	53,022

4. *Australian and Foreign Wheat Yields.*—(i) *Average Yield.* The next table gives the average return per acre in the principal wheat-growing countries of the world, ranging from a maximum in the Netherlands of 45 bushels per acre to a minimum in Palestine of nearly 6 bushels per acre :—

WHEAT : YIELD PER ACRE IN VARIOUS COUNTRIES.

Country.	Average Yield in Bushels per acre.		Country.	Average Yield in Bushels per acre.	
	Average, 1936-1938.	1939.		Average, 1936-1938.	1939.
Netherlands ..	44.90	43.50	Chile ..	16.15	(a) 17.40
Denmark ..	44.68	(a) 52.17	China ..	(e) 15.05	(f) 14.93
Belgium ..	40.50	(b) 42.90	Argentine Republic	15.35	8.30
Sweden ..	35.41	38.00	Greece ..	15.21	14.80
Germany ..	35.30	(c) 34.30	Brazil ..	(d) 14.39	(d) 14.39
Switzerland ..	33.92	32.10	U.S.S.R. (Russia)	14.23	(a) 14.85
United Kingdom ..	33.22	33.90	Syria ..	13.97	(a) 16.54
New Zealand ..	32.08	(a) 29.40	U.S.A. ..	13.25	11.30
Eire ..	31.56	31.00	Australia ..	12.24	15.83
Egypt ..	31.47	32.70	Manchukuo ..	11.99	(a) 10.40
Norway ..	30.17	(a) 30.40	Uruguay ..	11.90	(a) 11.39
Finland ..	27.10	26.00	Korea ..	11.83	(a) 12.31
Japan ..	26.92	33.50	Portugal ..	11.52	(a) 14.00
Czechoslovakia ..	26.26	(a) 29.60	Iraq ..	11.36	(a) 12.26
France ..	22.55	23.60	Spain ..	11.28	12.70
Hungary ..	21.76	24.00	India ..	10.95	10.50
Italy ..	21.56	22.90	Mexico ..	9.98	(a) 10.20
Bulgaria ..	21.38	23.40	Canada ..	9.92	17.90
Yugoslavia ..	19.07	19.40	Algeria ..	7.71	10.40
Iran ..	(d) 18.81	(d) 18.81	Colombia ..	(e) 7.48	(f) 6.75
Latvia ..	18.52	(a) 20.26	Tunisia ..	7.47	8.90
Poland ..	17.86	19.10	Union of South Africa ..	7.28	(a) 8.36
Lithuania ..	16.78	18.40	French Morocco ..	6.11	12.20
Rumania ..	16.64	17.20	Palestine ..	5.80	10.00
Estonia ..	16.58	16.20			
Turkey ..	16.31	(a) 16.40			

(a) Year 1938.
(d) Year 1936.

(b) Includes Luxemburg.
(e) Subject to revision.

(c) Includes Austria and Sudeten area.
(f) Year 1937.

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

WHEAT : TOTAL PRODUCTION IN VARIOUS COUNTRIES.

Country.	Yield in Bushels (,000 omitted).		Country.	Yield in Bushels (,000 omitted).	
	Average, 1936-1938.	1939.		Average, 1936-1938.	1939.
U.S.S.R. (Russia)	1,418,307	a1,494,000	Chile	31,544	(a) 35,174
U.S.A.	810,433	739,400	Sweden	25,810	31,500
China	(b) 706,956	(c) 636,456	Iraq	21,015	(a) 22,046
India	373,756	371,000	Syria and Lebanon	18,961	(a) 23,674
France	284,128	276,000	French Morocco ..	18,767	38,800
Italy	272,641	294,000	Belgium	17,278	(f) 17,000
Argentine Republic	256,281	147,000	Netherlands	15,933	13,300
Canada	253,884	479,000	Union of South Africa	14,481	15,000
Germany	177,248	(d) 205,200	Denmark	13,949	14,000
Australia	163,470	210,160	Uruguay	13,702	(a) 15,461
Rumania	148,011	164,900	Tunisia	13,233	18,600
Turkey	144,970	158,000	Portugal	12,911	18,300
Spain	(e) 121,493	111,800	Mexico	12,539	13,000
Yugoslavia	101,669	105,400	Korea	9,867	12,300
Hungary	85,893	112,100	Lithuania	8,429	9,200
Iran	(e) 79,352	(e) 79,352	Eire	7,408	8,000
Poland	76,313	83,400	Finland	7,055	8,670
Bulgaria	67,722	71,200	New Zealand	6,262	(a) 5,910
United Kingdom ..	61,649	59,700	Latvia	6,208	6,500
Czechoslovakia ..	57,835	49,000	Switzerland	6,118	6,559
Japan	46,950	61,000	Brazil	(e) 5,512	(e) 5,512
Egypt	45,672	49,000	Colombia	(b) 3,734	(c) 3,336
Manchukuo	33,772	39,000	Palestine	3,936	5,000
Algeria	32,642	42,600	Estonia	2,786	3,010
Greece	32,321	35,300			

NOTE.—The harvests reported above for 1939 relate to the year 1939 for the Northern, and 1939-40 for the Southern Hemisphere.

(a) Year 1938. (b) Subject to revision. (c) Year 1937. (d) Includes Austria and Sudeten area. (e) Year 1936. (f) Includes Luxemburg.

A complete statement of the world's production of wheat is not possible owing to the failure of certain countries to supply the necessary information. The International Institute of Agriculture, Rome, has, however, compiled figures obtained from the countries reporting with the following results :—

WHEAT : WORLD'S PRODUCTION.(a)

Year.	Area.	Production.		Yield per acre.
		Bushels.	Bushels.	
Average 1909-1913	270,266,000	3,779,479,000	13.98	
„ 1928-1932	337,761,000	4,652,000,000	13.77	
1934	330,941,030	4,620,520,000	13.96	
1935	339,243,590	4,698,784,000	13.85	
1936	345,346,960	4,653,590,000	13.48	
1937	365,114,960	5,435,863,000	14.89	
1938	379,076,110	6,007,964,000	15.85	
Average 1934-1938	351,944,530	5,083,344,200	14.44	

(a) From countries reporting including the U.S.S.R. (Russia).

Australia's contribution to the world's wheat during the last five years was 3.69 per cent. as to area and 3.02 per cent. in regard to production.

The chief country excluded from the above table is China. Particulars for 1938 are not yet available but in the year 1937 this country produced 636 million bushels of wheat from an area of 42.6 million acres or an average yield of 14.93 bushels per acre. It is stated by the International Institute, however, that these figures for China are largely conjectural and can be accepted only as approximate estimates. In addition they do not include all of the Territories embraced in the Chinese Republic. By the addition of the production of this country the world's total production for the year 1937 would exceed 5,447 million bushels.

The total area harvested in 1938 increased by 14 million acres; Europe, North America, India and the Argentine Republic each contributed to this expansion. In comparison with the average for the period 1928-32, areas sown to wheat throughout the world have increased considerably.

The world's acreage and production of wheat in 1938 was the highest ever recorded. The former exceeded 379 million acres whilst the latter was slightly more than 6,000 bushels.

A succession of bountiful years commencing in 1928 led to very heavy accumulations of stocks, particularly in North America. These stocks reached their maximum in the years 1933 and 1934 but owing to reductions in world production during the three years ending in 1936, they were again reduced to normal dimensions. This led to an upward movement in price which, in turn, caused areas to again expand to the record level of 1938. Production, assisted by favourable seasonal conditions, reached record dimensions, stocks again accumulated and prices were depressed. In 1939 the position was aggravated by another abundant world harvest and prices during that year remained at the low levels reached in the depression years of 1931-34. Heavy accumulation of stocks of the dimensions reached in 1933 and 1934 are reported in surplus-producing countries.

5. **Price of Wheat.**—The collapse in the price of wheat which occurred between 1928 and 1931 was chiefly due to the accumulation of stocks in exporting countries. The weighted average price of wheat (shippers' limits Sydney, Melbourne and Adelaide) fell from 5s. 1½d. in 1928 to 2s. 4½d. in 1931, a decline of 53 per cent. In 1932 the price increased to 3s. 0½d. but dropped to 2s. 9½d. in 1933 and to 2s. 7½d. in 1934. In September, 1935, prices increased to more than 3s. 4d. and continued to rise until in December, 1936, the average price was almost 5s. 3d. From that month until October, 1937, the average exceeded 5s. The price receded to 4s. 6d. in November, and dropped further to 4s. 4d. in December, at which figure it remained until March, 1938, when it declined to 4s. After March, 1938, the price fell in successive stages to 2s. 6d. in November, 1938, and by August, 1939, had receded to 2s. 1d. per bushel. The table hereunder shows prices of Australian wheat during each of the five years ended 1938 and the average for the eight months ended 1939:—

PRICE OF WHEAT: AUSTRALIA.

(WEIGHTED AVERAGE OF SHIPPERS' LIMITS FOR GROWERS' BAGGED AND BULK LOTS, SYDNEY, MELBOURNE AND ADELAIDE.)

Item.	1935.	1936.	1937.	1938.	1939.	1940.
Price per bushel	s. d. 3 1½	s. d. 4 1½	s. d. 5 0½	s. d. 3 4½	s. d. 2 5½	s. d. 3 11½

Following the outbreak of war in September, 1939, the price of wheat rose in the world's markets. In Australia the price rose from 2s. 1d. in August to 2s. 6d. per bushel in September. Following the appointment of the Australian Wheat Board during the latter month, the open market for wheat ceased and prices of wheat both for export and for local consumption are now determined by the Australian Wheat Board. Although it is not possible in the circumstances to quote prices on the pre-war basis of shippers' limits, the approximate average price of wheat exported in 1940 was 3s. 11½d. per bushel.

6. Exports of Wheat and Flour.—(i) *Quantities.* The table appended shows the exports and net exports of wheat and flour from 1934-35 to 1938-39. 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. Wheat and flour have been imported to tide over lean seasons on only two occasions since 1900; in 1902-3 the wheat harvest was as low as 12,378,000 bushels and wheat and flour representing 12,468,000 bushels of wheat were imported, whilst an equivalent of 7,279,000 bushels was imported in 1914-15 to supplement the yield of 25 million bushels produced in that season. During the last five years exports in terms of wheat ranged between 98,182,472 bushels in 1938-39 and 124,764,585 bushels in 1937-38, the net exports for the period averaging 107,580,295 bushels:—

WHEAT AND FLOUR : EXPORTS FROM AUSTRALIA.

Year.	Exports.			Net Exports.
	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bushels.(a)	Bushels.	Bushels.
1934-35 ..	75,959,690	33,502,608	109,462,298	109,457,913
1935-36 ..	76,993,133	29,619,888	106,613,021	106,610,518
1936-37 ..	71,778,020	27,109,344	98,887,364	98,885,980
1937-38 ..	94,503,757	30,262,608	124,766,365	124,764,592
1938-39 ..	63,129,023	34,803,120	97,932,143	97,930,969

(a) Equivalent in bushels of wheat.

(ii) *Destination.* The following table gives the exports of wheat to various countries for each of the five years ended 1938-39, together with averages for the pre-war period 1909-13:—

WHEAT : EXPORTS FROM AUSTRALIA.

Country to which Exported.	Average, 1909-13.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
United Kingdom ..	30,305,384	41,198,166	46,776,049	44,244,213	61,522,285	32,234,617
India ..	(a)	168,697	486,535	200	734,572	6,921,638
Else ..	(a)	2,622,852	4,744,435	5,698,955	1,012,370	2,302,687
Union of South Africa ..	2,992,355	21,027	326,905	2,777	954,908	1,705,737
Other British Countries	(a)	438,727	1,446,725	957,367	4,567,005	3,880,438
Belgium ..	1,218,131	253,920	2,428,838	612,773	162,378	323,847
China ..	(a)	13,663,894	5,052,790	1,272,500	143,668	10,620,913
Egypt ..	135,377	1,605,768	562	30,945	490,548	388,683
France ..	1,681,918	..	40,613	775,791	3,875,697	..
Germany ..	286,822	..	..	797,100	..	376,240
Italy ..	581,309	18,838	1,736,663	10,166,855	3,837,228	111
Japan ..	339,131	15,530,335	11,043,610	2,507,307	2,844,940	431,570
Other Foreign Countries	4,465,847	437,466	2,909,408	4,712,137	14,418,163	3,942,492
Total ..	41,997,274	75,959,690	76,993,133	71,778,020	94,503,757	63,129,023

(a) Included with "Other Foreign Countries."

Exports of flour from Australia for the periods mentioned are given in the next table:—

FLOUR : EXPORTS FROM AUSTRALIA.

Country to which Exported.	Average, 1909-13.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom	27,699	99,332	130,998	177,329	187,943	118,957
Ceylon	3,389	18,821	17,090	16,210	14,305	18,147
Hong Kong	2,672	50,616	44,382	40,503	66,291	23,040
Malaya (British)	15,492	61,926	55,592	66,596	65,464	66,965
Union of South Africa	30,714	371	545	268	273	132
Other British Countries	(a)	46,158	60,314	65,758	76,623	86,494
China	(a)	814	951	2,113	31,544	216,878
Egypt	(a)	26,864	23,722	35,003	18,674	17,153
Manchuria (b)	(a)	240,181	112,789	9,422	11,941	..
Netherlands East Indies	26,099	82,147	82,077	74,928	83,079	96,524
Philippine Islands	13,680	27,437	40,491	35,522	27,280	32,722
Other Foreign Countries	47,367	43,304	48,130	41,184	47,054	48,053
Total	167,112	697,971	617,081	564,778	630,471	725,065

(a) Included with "Other Foreign Countries."

(b) Including Kwantung Peninsula.

7. Exports—Principal Countries.—The following table shows the net quantities of wheat exported from the chief exporting countries in recent years and during the period from 1909 to 1913. In the years before the War of 1914-19 the U.S.S.R. (Russia) was the outstanding contributor to the world's supply of wheat followed by the United States of America, but in recent years the net exports from both of these countries have been relatively unimportant. Canada now occupies the foremost position with the Argentine Republic and Australia coming next in order.

Although the local production of wheat is little more than 3 per cent. of the world's total, the exports from Australia represented just under 18½ per cent. of the quantities shipped during 1934 to 1938, and as an exporting country Australia has made the greatest relative advance since 1913.

WHEAT.(a) : NET EXPORTS, PRINCIPAL COUNTRIES.

Country.	Average 1909-13.		1937.	1938.	Average 1934-38.	
	'000 Bushels.	Per cent.	'000 Bushels.	'000 Bushels.	'000 Bushels.	Per cent.
U.S.S.R. (Russia)(b) ..	157,109	23.71	33,803	39,154	22,520	4.04
U.S.A.	100,864	15.22	36,416	105,540	43,648	7.83
Argentine Republic ..	95,041	14.34	147,493	75,413	122,739	22.01
Canada	89,919	13.57	112,462	125,195	175,407	31.45
British India	50,886	7.68	20,043	12,203	8,877	1.59
Australia	49,417	7.46	99,658	124,202	102,695	18.41
All Other Countries ..	119,351	18.02	108,431	99,303	81,839	14.67
Total	662,587	100.00	558,306	581,010	557,725	100.00
World's Production ..	3,779,479		5,435,863	6,007,964	5,083,344	
Percentage of Australian Net Exports on Total Net Exports	7.46		17.85	21.38	18.41	
Percentage of Australian Production on World's Production	2.39		3.46	2.51	3.02	

(a) Including flour expressed in terms of wheat. (b) The average for 1909-13 is not strictly comparable with the later years, owing to changes of frontiers during 1921.

3. *Imports—Principal Countries.*—The quantities of wheat and flour (expressed in terms of wheat) imported into the principal countries for the periods indicated are shown in the following table. The United Kingdom is easily the leading importing country. The quantities imported into certain European countries, particularly Germany, Netherlands, Belgium and Italy are both relatively and actually much smaller now than formerly owing to the encouragement given to the local wheat-growing industries in those countries. During recent years the imports of wheat into China and Japan have grown considerably, and a large share in this trade has been supplied by Australia :—

WHEAT.(a) : IMPORTS, PRINCIPAL COUNTRIES.(b)

Country Importing.	Average, 1909-13.		1937.	1938.	Average, 1934-38.	
	'000 Bushels.	Per cent.	'000 Bushels.	'000 Bushels.	'000 Bushels.	Per cent.
United Kingdom ..	219,365	30.42	202,058	208,854	208,749	33.80
Germany ..	89,732	12.44	47,161	48,253	25,606	4.15
Netherlands ..	76,340	10.59	24,058	27,009	22,584	3.66
Belgium ..	73,963	10.26	44,972	38,196	42,856	6.94
Italy ..	57,156	7.93	61,097	10,698	25,891	4.19
France ..	38,682	5.36	18,931	19,332	23,767	3.85
Brazil ..	20,774	2.88	36,226	7,146	29,812	4.83
Egypt ..	7,915	1.10	115	208	586	0.09
Union of South Africa	6,519	0.90	38	2,643	753	0.12
China (c) ..	5,526	0.77	6,914	24,242	27,471	4.45
Japan ..	3,714	0.52	7,555	2,617	11,551	1.87
All Other ..	121,409	16.83	187,599	202,295	198,051	32.05
Total ..	721,095	100.00	636,724	591,493	617,677	100.00

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

9. *Consumption of Wheat in Australia.*—The estimated consumption of wheat for food and the quantity used for seed in Australia during the last five years are shown hereunder :—

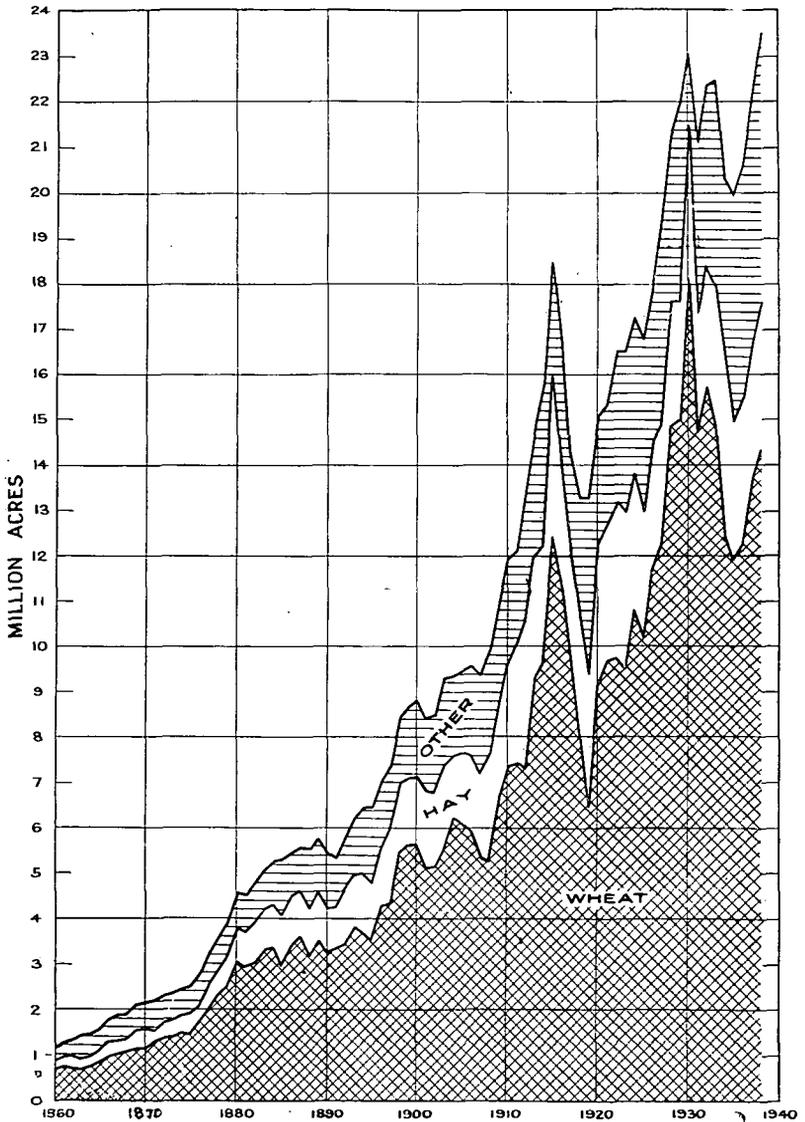
AVERAGE HUMAN CONSUMPTION, 1934-35 TO 1938-39.

Flour milled	1,303,769 tons
Less net exports of flour	647,887 tons
Less net exports of flour in biscuits	1,002 "
	648,889 ,
Change in flour stocks	+2,620 "
Net quantity consumed	657,500 "
Equivalent in terms of wheat	31,560,000 bushels
Net quantity consumed per head of population—	
As flour	193 lb.
As wheat	4.6 bushels

AVERAGE USED FOR SEED, 1934-35 TO 1938-39.

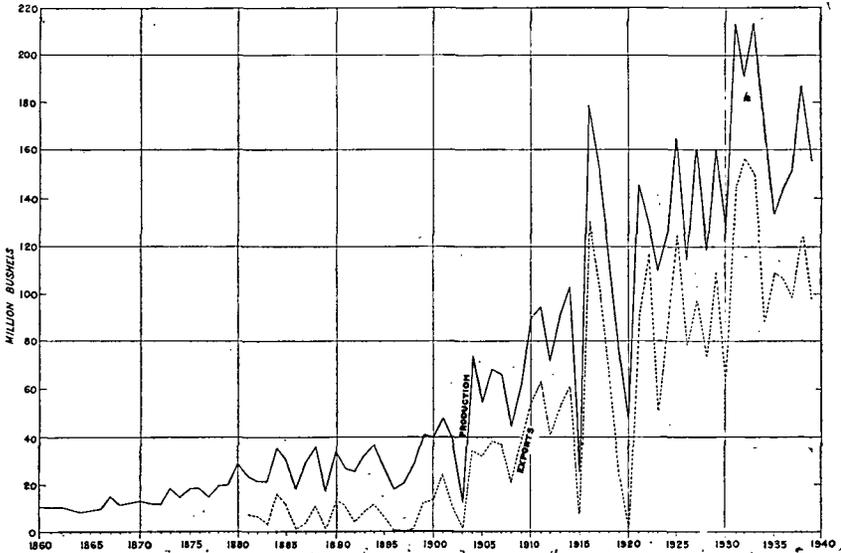
Average area sown for grain, hay and green forage ..	14,112,611 acres
Average quantity of seed used	13,903,118 bushels
Average quantity of seed used per acre	59 lb.
Average quantity per head of population	2.04 bushels

AREA OF CROPS—AUSTRALIA, 1860-61 TO 1938-39.



EXPLANATION.—The total area of crops is shown by the top curve in this graph, and the area of wheat by the bottom curve. The vertical distances between these curves and that in the centre indicate the areas of hay and other crops.

PRODUCTION AND EXPORTS OF WHEAT—AUSTRALIA, TO 1938-39.



NOTE.—The export figures for the years 1915-16 to 1920-21 do not represent the surplus available for export in each of these years because of the dislocation of shipping due to the War of 1914-1919. For these years the quantity consumed in Australia has been averaged and the balance taken as exports.

In addition to the above, allowance must be made for wheat fed to poultry and other live stock. The quantity so used, which varies according to the movement in prices, is estimated at 5,106,000 bushels or $\frac{3}{4}$ bushel per head of population for the five years ended 1938-39. Almost the whole of this quantity is used in the form of grain as feed for poultry, principally fowls, which numbered a little more than 15 million during the year 1938-39. The average quantity of flour consumed per annum for the five years under consideration was 193 lb. per head of population, which, expressed in terms of wheat, represents 4.6 bushels. The estimates of grain used for seed in Victoria, South Australia and Western Australia are based on data collected from growers. In the other States estimates supplied by the Agricultural Departments have been used. The average annual quantity used for the purposes indicated during the last five years was 2.04 bushels per head of population, or 59 lb. per acre sown. The consumption of wheat in Australia for all purposes during the period dealt with averaged 50,569,000 bushels, or 7.4 bushels per head of population.

10. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in Australia during the season 1938-39, including amounts paid as assistance to the wheat industry, is shown below. The amount of assistance quoted is that returned by the State Statisticians and includes, where applicable, State aid as well as that made available by the Commonwealth.

WHEAT: VALUE OF CROP(a), 1938-39.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value(b)	8,566,860	2,891,200	1,053,100	4,290,004	5,133,054	44,811	9,595	21,988,624
Value per acre (b)	£1/16/10	£1/1/0	£2/7/8	£1/7/10	£1/10/1	£4/9/1	£4/9/3	£1/10/8
Amount of Assistance—								
Total	1,329,180	515,002	149,336	650,824	641,051	3,761	1,033	3,290,187
Per acre	5/9	3/9	6/9	4/3	3/9	7/8	10/0	4/7
Per bushel	5½d.	6½d.	4½d.	5d.	4½d.	4½d.	4½d.	5d.

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

11. **Varieties of Wheat Sown.**—Particulars of the variations of wheat sown and the areas thereunder are collected from time to time. The following table shows particulars of the nine principal varieties sown in the four main producing States and the percentage each bears to the total area sown for the year 1938.

WHEAT: PRINCIPAL VARIETIES SOWN IN STATES, 1938.

New South Wales.		Victoria.		South Australia.		Western Australia.	
Variety.	Per-cent-age.	Variety.	Per-cent-age.	Variety.	Per-cent-age.	Variety.	Per-cent-age.
	%		%		%		%
Ford ..	19.4	Ghurka ..	47.8	Ranee ..	23.1	Bencubbin ..	36.7
Dundee ..	15.9	Ranee ..	20.4	Nabawa ..	9.9	Gludub ..	13.7
Nabawa ..	14.6	Dundee ..	10.6	Bencubbin ..	8.8	Merredin ..	8.6
Bencubbin ..	14.6	Free Gallipoli ..	8.1	Sword ..	8.8	Gluyas Early ..	5.8
Waratah ..	5.6	Bencubbin ..	2.9	Dundee ..	8.3	Totagin ..	5.7
Baringa ..	5.2	Sepoy ..	2.0	Waratah ..	5.3	Noongaar ..	5.5
Ranee ..	4.0	Bobin ..	1.2	Gluyas ..	5.1	Nabawa ..	4.8
Bobin ..	2.8	Rajah ..	1.1	Ford ..	3.9	Waratah ..	2.3
Pusa No. 4 ..	2.6	Nabawa ..	0.6	Ghurka ..	3.9	Ford ..	1.8
All Others ..	15.3	All Others ..	5.0	All Others ..	22.0	All Others ..	15.1
Total ..	100.0	Total ..	100.0	Total ..	100.0	Total ..	100.0

It is interesting to note the changes that have taken place in the leading varieties during recent years. In New South Wales, Nabawa, a variety relatively unimportant in 1929, became prominent in 1933. It occupied the leading position until 1936 when it was displaced by Ford. The leading variety sown in Victoria between 1929 and 1934 was Free Gallipoli, but since 1935 it has been supplanted by Ghurka, Raneë and Dundee. In South Australia, Nabawa came into prominence in 1933, but in 1936, though still relatively important, it ceded the leading position to Raneë. Nabawa was the principal variety in Western Australia until it was displaced by Bencubbin in 1934. While this latter variety had occupied only 7 per cent. of the total area in 1933, in the year following no less than 22.5 per cent. was sown to Bencubbin and in 1938 it retained its leading position with nearly 37 per cent. More than 1,000 different varieties of Australian wheat have been catalogued by the Council for Scientific and Industrial Research.

12. *Stocks of Wheat and Flour.*—Stocks of wheat and flour held by each State at 30th November, 1939, and the total held in Australia on the same date for the previous four years will be found in the following table. The figures have been compiled from information collected from millers, merchants, the Railway Departments and other sources, but are exclusive in certain instances of stocks held by farmers :—

WHEAT AND FLOUR : STOCKS AT 30th NOVEMBER, 1939.

State.	Wheat.		Flour.	Total in terms of wheat.(a)
		Bushels.	Tons.	Bushels.
New South Wales	5,059,320	34,875	6,733,320	
Victoria	3,435,783	27,350	4,748,584	
Queensland	304,199	5,292	558,215	
South Australia	4,945,444	21,479	5,976,436	
Western Australia	2,114,766	8,592	2,527,182	
Tasmania	162,251	1,695	243,611	
Total, 30th November, 1939	16,021,763	99,283	20,787,348	
" " 1938	9,639,443	89,502	13,935,539	
" " 1937	5,233,866	76,450	8,903,466	
" " 1936	3,505,469	101,063	8,356,493	
" " 1935	12,371,270	89,637	16,673,867	

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

13. *Voluntary Wheat Pools.*—Details of wheat pools operating in Australia are given in previous issues of the Official Year Book. These pools ceased to function when the Australian Wheat Board was created in September, 1939.

14. *War-time Marketing of Wheat.*—(i) *General.* At the outbreak of war in September, 1939, the wheat industry of Australia was experiencing a period of low prices. Wheat had fallen to 2s. 1d. per bushel in August, 1939, compared with 3s. 1d. in August, 1938, 5s. 1d. in August, 1937, and 2s. 2d. per bushel in the same month of 1931, which was the lowest monthly quotation during the economic depression of that period.

Apart from low prices, other difficulties created by war conditions were those of marketing and transport. There was also a large accumulation of surplus stocks in the chief exporting countries of the world and the natural disability of Australia's remoteness from the main centres of consumption was another factor adding to a most difficult position.

In view of these circumstances, the Commonwealth Government, under the Wheat Acquisition Regulations, constituted the Australian Wheat Board on the 21st September, 1939, to acquire, with certain exceptions, all wheat held in Australia. The harvest of 1939-40 was also acquired by notification published on 16th November, 1939.

(ii) *Australian Wheat Board.* Under the Wheat Acquisition Regulations, the Board was empowered, subject to directions of the Minister for Commerce, to purchase, sell or dispose of wheat or wheat products, manage and control all matters connected with the handling, storage, protection, shipment, etc., of wheat acquired, and such other matters necessary to give effect to the regulations under which it was created.

(iii) *Wheat Acquired and Disposed of. No. 1 Pool.* The total quantity of wheat of the 1938-39 season acquired amounted to 17,839,505 bushels, which was sold at an average price of 2s. 9.22d. per bushel, f.o.b. main shipping ports basis.

No. 2 Pool. The quantity of wheat acquired from the 1939-40 harvest and dealt with under No. 2 Pool amounted to 195,716,000 bushels. Of this quantity 101,663,000 bushels had been sold overseas prior to 31st August, 1940, 67,769,000 bushels of which had been shipped. Local sales amounted to 25,922,000 bushels. The stocks of unsold wheat remaining in this pool amounted to 68,131,000 bushels on 31st August, 1940.

Particulars of the quantities of wheat acquired and disposed of are given by States in the following table:—

AUSTRALIAN WHEAT BOARD.—STATEMENT OF QUANTITIES OF WHEAT ACQUIRED AND DISPOSED OF AS AT 31st AUGUST, 1940.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
NO. 1 POOL (BALANCE OF 1938-39 HARVEST).							
Wheat acquired ..	6,715,030	2,804,509	..	5,883,516	2,925,450	..	17,839,505
Wheat sold—							
Overseas (a) ..	2,210,529	..	..	4,898,916	2,379,752	..	9,489,197
Locally (b) ..	4,015,501	2,804,509	..	984,600	545,698	..	8,350,308
Total Sales ..	6,226,030	2,804,509	..	5,883,516	2,925,450	..	17,839,505
NO. 2 POOL (1939-40 HARVEST).							
Wheat acquired ..	66,697,000	47,203,000	6,255,000	38,140,000	37,380,000	41,000	195,716,000
Wheat delivered against Sales—							
Overseas (a) ..	26,170,000	16,637,000	562,000	11,072,000	13,328,000	..	67,769,000
Locally (b) ..	12,143,000	7,447,000	3,318,000	1,402,000	1,364,000	248,000	25,922,000
Total Delivered	38,313,000	24,084,000	3,880,000	12,474,000	14,692,000	248,000	93,691,000
Stocks on hand	28,384,000	23,119,000	2,375,000	25,666,000	22,688,000	-207,000	102,025,000

(a) Including wheat delivered for gristing and export as flour.

(b) Including wheat sold for gristing for local consumption.

Contracts made by the Board for the sale of wheat and flour include 63 million bushels to the United Kingdom Government and 12 million bushels to Japan, but the shipment of these quantities has not been completed.

(iv) *Finance.* Under the terms of the Wheat Acquisition Regulations the Minister is empowered to arrange with the Commonwealth Bank for the making of advances to the Board, such advances to be guaranteed by the Commonwealth Government.

The financial operations of the Board under No. 2 Pool disclose that, at the 31st August, 1940, the total payments amounted to £31,529,000, of which £28,793,000 represented the amounts paid to growers and £2,736,000 the cost of expenses. The

amount received from sales totalled £14,407,000, while the proceeds under the Flour Tax were £726,000, making total receipts £15,133,000. The overdraft with the Commonwealth Bank at that date was, therefore, £16,396,000.

Details of the amounts advanced to growers to 31st August, 1940, are given below :—

**AUSTRALIAN WHEAT BOARD.—ADVANCES MADE TO GROWERS AS AT
31st AUGUST, 1940.**

Particulars.	No. 1 Pool.		No. 2 Pool.	
	Amount disbursed (f.o.b. Basis).		Amount disbursed (Trucks, Terminal Ports Basis).	
	Per Bushel.	Total.	Per Bushel.	Total.
	s. d.	£,000.	s. d.	£,000.
Advances made to Growers—				
1st Payment (a) Bulk ..	2 0	1,784	2 8½	25,579
Bagged ..	2 0		2 10½	
2nd Payment Bulk ..	0 6	501	0 4	3,214
Bagged ..	0 8		0 4	
3rd Payment Bulk ..	(b) 0 1¾	130	..	..
Bagged ..	(b) 0 1¼		..	..
Final Payment Bulk ..	..	..	..	..
Bagged ..	..	..	..	..

(a) From which rail freight was deducted.
1940.

(b) Approved for distribution on 11th September,
1940.

15. **Special Tabulation of Wheat Holdings.**—(i) *General.* With the co-operation of the State Statisticians an extensive analysis was made of the returns collected at the annual agricultural census of 1935-36 in respect of all holdings growing wheat for grain in the principal producing States. The results are published in the following tables.

(ii) *Wheat Holdings: Number, Area and Production.* The areas of the holdings growing wheat for grain are shown in the following table together with the production of wheat thereon :—

WHEAT HOLDINGS : NUMBER, AREA AND PRODUCTION, 1935-36.

State.	Holdings.			Wheat.			
	Growing Wheat for Grain.	Total Area.	Average Area.	Area Sown.	Average Area Sown.	Production.	Average Pro- duction per Holding.
	No.	Acres.	Acres.	Acres.	Acres.	Bushels.	Bushels.
New South Wales ..	15,923	24,379,178	1,531	3,851,373	242	48,822,000	3,066
Victoria ..	13,780	12,482,336	906	2,323,753	169	37,552,062	2,725
South Australia ..	12,787	17,896,496	1,400	2,989,490	234	31,615,744	2,472
Western Australia ..	9,039	19,339,951	2,140	2,540,696	281	23,315,417	2,579
Total (Four States)	51,529	74,097,961	1,438	11,705,312	227	141,305,223	2,742

(iii) *Wheat Holdings and Sheep.* One of the objects of the analysis was to ascertain the extent to which certain other forms of farm production were combined with the growing of wheat. It will be seen from the table below that 75 per cent. of the wheat holdings carried sheep, the numbers depastured forming a considerable proportion of the sheep populations of the individual States.

WHEAT HOLDINGS AND SHEEP, 1935-36.

State.	Holdings.				Number of Sheep.	Total Number of Sheep in State. (a)	Percentage on Wheat Farms.
	Without Sheep.		With Sheep.				
	No.	%	No.	%			
New South Wales ..	2,296	14.42	13,627	85.58	13,393,541	51,936,000	25.78
Victoria ..	3,806	27.62	9,974	72.38	4,841,152	17,457,291	27.73
South Australia ..	4,115	32.18	8,672	67.82	3,750,864	7,945,745	47.21
Western Australia ..	2,295	25.39	6,744	74.61	4,482,667	11,082,972	40.45
Total (Four States)	12,512	24.28	39,017	75.72	26,468,224	88,422,008	29.93

(a) Including Sheep outside Wheat Areas.

(iv) *Wheat Holdings and Dairy Cows.* In addition to sheep, the great majority of holdings also carried dairy cows. As indicated in the footnote to the table below the particulars available for New South Wales refer only to those holdings which are registered as dairies and therefore an effective comparison cannot be made for the four States.

WHEAT HOLDINGS AND DAIRY COWS, 1935-36.

State.	Holdings.				Number of Dairy Cows.	Total Number of Dairy Cows in State. (a)	Percentage on Wheat Farms.
	Without Dairy Cows.		With Dairy Cows.				
	No.	%	No.	%			
New South Wales ..	(b)	..	(b)	..	(b)	(1,091,562)	(b)
Victoria ..	1,993	14.46	11,787	85.54	109,049	987,676	11.00
South Australia ..	1,080	15.48	10,807	84.52	79,159	173,706	45.57
Western Australia ..	1,791	19.01	7,248	80.19	32,243	130,132	24.78
Total (Three States)	5,764	16.19	29,842	83.81	220,451	1,291,514	17.07

(a) Including dairy cows outside wheat areas. (b) The particulars available for New South Wales refer to registered dairies only. These details show that of the 15,923 holdings growing wheat for grain, 1,775 were also registered as dairies and the number of dairy cows carried was 51,344.

(v) *Wheat Holdings and Pigs.* The extent to which pig-raising is conducted in conjunction with the growing of wheat for grain is indicated in the next table:—

WHEAT HOLDINGS AND PIGS, 1935-36.

State.	Holdings.				Number of Pigs.	Total Number of Pigs in State. (a)	Percentage on Wheat Farms.
	Without Pigs.		With Pigs.				
	No.	%	No.	%			
New South Wales ..	10,462	65.70	5,461	34.30	59,673	436,944	13.66
Victoria ..	8,298	60.22	5,482	39.78	41,100	314,301	13.08
South Australia ..	5,425	42.43	7,362	57.57	58,628	93,458	62.73
Western Australia ..	5,318	58.83	3,721	41.17	62,079	98,026	63.33
Total (Four States)	29,503	57.26	22,026	42.74	221,480	942,729	23.49

(a) Including Pigs outside Wheat Areas.

(vi) *Wheat Holdings: Area Sown and Yield per Acre.* The holdings growing wheat for grain were classified for each of the principal producing States according to areas sown and yields per acre. It is possible to show only the totals for the four States combined in this publication. Details for the States are published in *Production Bulletin* No. 30 issued by this Bureau. The classification according to areas sown is as follows:—

WHEAT HOLDINGS CLASSIFIED ACCORDING TO AREAS SOWN, 1935-36.
(PRINCIPAL PRODUCING STATES.)

Area of Wheat for Grain. Acres.	Holdings.		Area of Grain.		Production.	
	No.	%	'000 Acres.	%	'000 Bushels.	%
1-19	3,843	7.5	36	0.3	517	0.4
20-49	4,167	8.1	132	1.1	1,908	1.4
50-99	5,521	10.7	390	3.3	5,894	4.2
1-99	13,531	26.3	558	4.7	8,319	6.0
100-199	11,979	23.2	1,712	14.6	25,320	17.9
200-299	11,064	21.5	2,623	22.4	33,967	24.0
300-399	7,160	13.9	2,373	20.3	26,808	19.0
400-499	3,691	7.2	1,594	13.6	16,668	11.8
100-499	33,894	65.8	8,302	70.9	102,763	72.7
500-599	1,805	3.5	955	8.2	10,124	7.2
600-699	946	1.8	594	5.1	6,105	4.3
700-799	489	0.9	357	3.1	3,864	2.7
800-899	284	0.6	236	2.0	2,582	1.8
900-999	188	0.4	175	1.5	1,865	1.3
1,000-1,999	368	0.7	453	3.9	4,716	3.3
2,000 and over	24	..	75	0.6	967	0.7
500 and over	4,104	7.9	2,845	24.4	30,223	21.3
Total	51,529	100.0	11,705	100.0	141,305	100.0

Wheat is grown in the principal producing States on an extensive scale; more than 76 per cent. of the production in 1935-36 was sown on areas of 200 acres or more. Although 13,531 holdings grew wheat on small areas of under 100 acres the yield therefrom was only 6 per cent. of the total. At the other end of the scale less than 10 per cent. was reaped from the very large areas of 700 acres or over. The average area sown was 227 acres.

In the next table the classification according to average yields is shown:—

WHEAT HOLDINGS CLASSIFIED ACCORDING TO AVERAGE YIELDS, 1935-36.
(PRINCIPAL PRODUCING STATES.)

Average Yield per Acre. Bushels.	Holdings.		Area of Grain.		Production.	
	No.	%	'000 Acres.	%	'000 Bushels.	%
Under 3	5,404	10.5	1,445	12.3	1,998	1.4
3 and under 6	5,817	11.3	1,585	13.5	7,132	5.1
6 " " 9	6,672	12.9	1,751	15.0	13,085	9.3
9 " " 12	6,830	13.3	1,659	14.2	17,283	12.2
12 " " 15	6,180	12.0	1,405	12.0	18,828	13.3
15 " " 18	5,885	11.4	1,170	10.0	19,195	13.6
18 " " 21	4,929	9.6	906	7.7	17,629	12.5
21 " " 24	3,628	7.0	684	5.8	15,305	10.9
24 " " 27	2,994	5.8	544	4.7	13,852	9.8
27 " " 30	1,551	3.0	298	2.6	8,471	6.0
30 " " 33	1,109	2.2	182	1.6	5,700	4.0
33 " " 36	290	0.6	46	0.4	1,593	1.1
36 " " 39	172	0.3	23	0.2	867	0.6
39 " " 42	36	0.1	4	..	144	0.1
42 " " 45	13	..	2	..	79	0.1
45 " " 48	15	..	1	..	59	..
48 " " 54	4	..	..	..	25	..
Total	51,529	100.0	11,705	100.0	141,305	100.0

The most significant feature of the above tabulation is the very low returns obtained from considerable areas sown; more than 3 million acres, or one-quarter of the total sowings, yielded less than 6 bushels to the acre and practically one-half of this acreage returned yields of under 3 bushels. On the other hand the productivity of vast tracts of wheat country is indicated by the yields of 15 bushels or more over an area of 3.9 million acres, whilst nearly 1 million acres returned 25 bushels or over to the acre.

§ 5. Oats.

1. Progress of Cultivation.—(i) *Area and Production.* Oats are usually next in importance to wheat amongst the grain crops cultivated in Australia, but while wheat grown for grain accounted for 61.05 per cent., oats represented only 7.59 per cent. of the area of crops in 1938-39. The acreage and production of oats for the last five years are shown in the table hereunder.

OATS: AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	A.C.T.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934-35	237,405	506,638	4,566	367,192	408,810	36,611	331	1,561,553
1935-36	279,622	505,623	6,823	299,771	448,156	23,928	248	1,564,171
1936-37	235,817	381,069	7,932	414,723	463,129	21,953	238	1,524,861
1937-38	255,144	394,436	7,709	332,434	386,112	32,439	148	1,408,422
1938-39	399,449	657,999	8,650	266,842	426,110	24,831	324	1,784,205
Average 10 seasons, 1930-39	228,455	478,147	5,312	282,309	368,871	29,501	191	1,392,786
PRODUCTION.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1934-35	3,856,680	5,248,787	82,198	2,412,117	4,244,322	1,054,256	7,662	16,906,022
1935-36	4,735,740	6,365,056	119,459	2,380,908	4,557,774	556,776	5,061	18,720,774
1936-37	3,967,560	6,107,885	22,417	2,363,806	3,445,167	751,244	4,200	16,662,279
1937-38	3,395,130	5,327,199	79,323	2,960,944	4,364,370	1,032,173	5,922	17,165,061
1938-39	4,831,110	2,909,260	93,128	2,401,128	4,668,036	644,960	7,113	15,554,735
Average 10 seasons, 1930-39	3,577,551	5,750,344	67,808	2,232,883	3,973,338	830,554	4,267	16,436,745

The oat crop showed considerable variation during the past decennium, ranging from 14,424,186 bushels in 1929-30 to 18,720,774 bushels in 1935-36, with an average for the period of 16,436,745 bushels. For Australia as a whole the record yield of oats was obtained during 1924-25, when 19,393,737 bushels were harvested. The demand for the grain for oatmeal varies from 1½ million bushels to 2 million bushels annually. The cereal is mainly used as feed grain, and its value, particularly in good seasons, does not warrant an extension of area.

The principal oat-growing State is Victoria, which produces on the average more than one-third of the total quantity grown in Australia. Considerable quantities are produced in the other States. In Queensland, however, the area sown to this cereal is negligible.

(ii) *Average Yield.* The average yield per acre of oats varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Averages for each of the last five seasons, and for the decennium 1930 to 1939 are given in the table below :—

OATS : AVERAGE YIELD PER ACRE.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1934-35	16.25	10.36	18.00	6.57	10.38	28.80	23.14	10.83
1935-36	16.94	12.59	17.50	7.94	10.17	23.27	20.41	11.97
1936-37	16.82	16.03	2.83	5.70	7.44	34.22	17.65	10.93
1937-38	13.31	13.51	10.29	8.90	11.30	31.82	40.01	12.19
1938-39	12.09	4.42	10.77	8.99	10.95	25.97	21.95	8.72
Average for 10 seasons 1930-39	15.66	12.03	12.77	7.91	10.77	28.15	22.35	11.80

The smallest average yield per acre ever recorded for Australia was that experienced in the abnormally dry season 1914-15, namely, 5.60 bushels, while the largest in the last ten years was that of the season 1932-33, amounting to 15.73 bushels per acre.

2. *World's Production.*—The world's production of oats for the year 1938, as computed by the International Institute of Agriculture, amounted to 3,704 million bushels. This quantity was harvested from 136 million acres, and represents an average yield of 27.24 bushels per acre. In comparison with this average return per acre, that of Australia for the same period (8.72 bushels) appears very small. Yields in excess of 40 bushels per acre are not uncommon, and some European countries record averages in excess of 50 bushels per acre. The following table shows the world's production and average yield for the last six years, together with the average for the quinquennium 1928-32 :—

OATS : WORLD'S PRODUCTION.

Year.	Area.	Production.	Average Yield per Acre.
	Million Acres.	Million Bushels.	Bushels.
Average 1928-32	146	3,670	25.13
1933	139	3,365	24.09
1934	136	3,222	23.69
1935	146	3,732	25.56
1936	137	3,290	24.01
1937	138	3,605	26.12
1938	136	3,704	27.24

3. *Prices of Oats.*—The average wholesale prices in the Metropolitan markets for the year 1938-39 are given in the following table :—

OATS : AVERAGE WHOLESALE PRICES, 1938-39.

Particulars.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	3 3½	3 5½	4 4½	2 3½	2 1	3 10½

4. Imports and Exports.—The production of oats in Australia is sufficient to admit of a small regular export trade. The quantities and values of oats imported into and exported from Australia during the years 1934-35 to 1938-39 are given hereunder :—

OATS : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	Bushels.	£	Bushels.	£	Bushels.	£
1934-35 ..	7,302	1,728	576,062	61,581	568,760	59,853
1935-36 ..	3,790	1,065	244,698	28,783	240,908	27,718
1936-37 ..	11,828	1,676	258,703	35,923	246,875	34,247
1937-38 ..	5,268	1,777	234,990	37,136	229,722	35,559
1938-39 ..	10,428	2,762	117,347	18,866	106,919	16,104

(a) Australian currency values.

The quantity of oats imported into Australia is usually not very large, although in 1927-28 the net imports amounted to 460,581 bushels. New Zealand is the chief supplier. The principal countries to which oats were exported during the years quoted were the United Kingdom, New Zealand, Malaya (British), Ceylon, India and Mauritius.

5. Oatmeal, etc.—The production of oatmeal in Australia during 1938-39 amounted to 304,501 cwt., practically the whole of which is consumed locally, the quantity of oats used for oatmeal being 1,912,080 bushels, or about 12 per cent. of the total production. Oversea trade in this and similar products is small; the imports of oatmeal, wheatmeal and rolled oats during 1938-39 amounted to 1,747 cwt., and exports to 21,386 cwt.

6. Value of Oat Crop.—The estimated value of the oat crop for the season 1938-39 was as follows :—

OATS : VALUE OF CROP,(a) 1938-39.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value..	644,150	509,121	20,178	346,538	432,766	131,680	9,18	2,085,381
Value per acre ..	£1/12/3	£0/15/6	£2/6/7	£1/7/10	£1/0/4	£5/6/1	£2/18/6	£1/10/8

(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 1938-39 season being 305,616 acres, or 94 per cent. of the total for Australia. Of the balance, Victoria contributed 18,485 acres, South Australia 37 acres, and Western Australia 8 acres. The climate of Tasmania is unsuitable for the growing of maize for grain. In the States mentioned the crop is grown to a greater or lesser extent for green forage, particularly in connexion with the dairying industry.

2. Progress of Cultivation.—(i) Area and Production. Notwithstanding its extensive cultivation in other countries the area of maize in Australia has fluctuated around 294,000 acres during the past decennium. Compared with the previous year, the area in 1938-39 increased by 3,939 acres, but the acreage sown was considerably less than the comparatively large areas of 414,914 and 400,544 acres sown respectively in 1910-11 and 1927-28.

The area and production of maize for grain in each State for the last five years and the average for the decennium 1930-1939 are given in the following table.

MAIZE : AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	N.T.	A.C.T.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934-35 ..	115,570	18,727	160,607	30	34	..	13	294,981
1935-36 ..	119,849	20,377	157,370	3	..	..	17	297,616
1936-37 ..	116,286	20,115	181,266	..	38	..	5	317,710
1937-38 ..	125,049	20,879	174,243	22	1	..	13	320,207
1938-39 ..	122,201	18,485	183,415	37	8	..	..	324,146
Average 10 seasons								
1930-39 ..	114,881	18,413	161,380	12	15	..	7	294,708
PRODUCTION.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1934-35 ..	3,238,590	719,360	4,142,079	450	216	..	132	8,100,827
1935-36 ..	3,324,780	638,643	3,504,045	108	..	..	129	7,467,705
1936-37 ..	3,302,520	794,506	3,148,814	..	486	..	57	7,246,383
1937-38 ..	3,403,140	783,835	2,628,458	1,050	3	..	126	6,816,612
1938-39 ..	2,905,020	416,578	3,733,424	1,530	90	..	..	7,056,642
Average 10 seasons								
1930-39 ..	3,071,517	631,262	3,524,929	364	153	..	64	7,228,289

The greatest production of maize in Australia was recorded in 1910-11, when it amounted to over 13,000,000 bushels. A bountiful harvest in Queensland increased the Australian total to 12,400,000 bushels in 1924. The production in 1938-39 amounted to 7,056,642 bushels, and the average for the decennium ended 1938-39 was 7,228,289 bushels.

(ii) *Average Yield.* The following table gives particulars of the average yields per acre of the maize crops of the States for the seasons 1934-35 to 1938-39 and for the decennium 1930-1939 :—

MAIZE : AVERAGE YIELD PER ACRE.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Terr.	A.C.T.	Aust.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1934-35 ..	28.02	38.41	25.79	15.00	6.35	..	10.15	27.46
1935-36 ..	27.74	31.34	22.27	36.00	..	..	7.59	25.09
1936-37 ..	28.40	39.50	17.37	..	12.79	..	11.40	22.81
1937-38 ..	27.21	37.54	15.08	47.73	3.00	..	9.69	21.29
1938-39 ..	23.77	22.54	20.36	41.35	11.25	..	..	21.77
Average for 10 seasons 1930-39	26.74	34.28	21.84	29.84	10.02	..	8.48	24.53

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

(iii) *Production per Acre—Various Countries.* The average for Australia for the past 10 years was 25.43 bushels per acre. During the period 1928-32 the United States of America averaged 25.1 bushels, Argentine Republic 30.7 bushels, Rumania 17.7 bushels, and the U.S.S.R. (Russia) 14.0 bushels per acre.

3. **World's Production.**—The following table furnishes particulars of the world's acreage, production and average yield per acre of maize according to the data compiled by the International Institute of Agriculture :—

MAIZE : WORLD'S PRODUCTION.

Year.	Area.		Production.	Average Yield per Acre.
	Million Acres.	Million Bushels.	Million Bushels.	Bushels.
Average 1928-32	204	4,449		21.81
1934	201	3,669		18.25
1935	201	4,299		21.39
1936	200	3,700		18.50
1937	196	4,617		23.56
1938	196	4,547		23.20

The United States of America is the most important maize-producing country in the world. Approximately 100,000,000 acres are planted there annually, and in normal seasons more than 2,000 million bushels are reaped, representing about 50 per cent. of the world's production. About 85 per cent. of the production is fed to live stock on farms, 10 per cent. is used for human food, and only a very small fraction—less than 1 per cent.—is exported.

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

MAIZE : AVERAGE PRICE, SYDNEY.

Particulars.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
Average price per bushel ..	<i>s. d.</i> 3 5	<i>s. d.</i> 4 10½	<i>s. d.</i> 5 3	<i>s. d.</i> 5 2½	<i>s. d.</i> 4 6½

5. **Oversea Imports and Exports.**—The imports of maize into Australia during the five years ended 1938-39 were negligible, averaging 20,000 bushels compared with nearly 600,000 bushels during the five years ended 1929-30. Details of imports and exports for the years 1934-35 to 1938-39 are as follows :—

MAIZE : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	Bushels.	£	Bushels.	£	Bushels.	£
1934-35.. .. .	7	16	3,430	851	-3,423	-835
1935-36.. .. .	47,609	12,233	527	129	47,082	12,104
1936-37.. .. .	7,934	2,326	1,130	366	6,804	1,960
1937-38.. .. .	47,442	8,493	54	20	47,388	8,473
1938-39.. .. .	54	55	282,018	41,489	-281,964	-41,434

NOTE.—The minus sign (-) denotes net exports.

(a) Australian currency values.

6. **Maize Products.**—A small quantity of cornflour is imported annually into Australia, the principal countries of supply being the United Kingdom, Union of South Africa and the United States of America. During the year 1929-30 the imports amounted to 702,062 lb., and represented a value of £7,956, but since then they have been unimportant. Exports from Australia are small, and in 1938-39 were only 163,570 lb., valued at £1,317.

7. **Value of Crop.**—The value of the crop for the season 1938-39 was as follows:—

MAIZE : VALUE OF CROP, 1938-39.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Australia.
	£	£	£	£	£	£
Aggregate value ..	653,630	107,466	740,962	427	41	1,502,526
Value per acre ..	£5/7/0	£5/16/3	£4/0/10	£11/10/10	£5/2/6	£4/12/9

§ 7. Barley.

1. **Progress of Cultivation.**—(i) *Area and Production.* Despite wide annual fluctuations the area sown to barley has expanded considerably during the past ten years; the average annual area sown for the decennium 1930-39 amounted to 494,569 acres, compared with an average of 318,486 acres for the previous ten years. Victoria was originally the principal barley-growing State, but since 1913-14 South Australia has been the chief producing State, accounting for 61 per cent. of the Australian acreage in 1938-39. Victoria was next in importance with 24 per cent., leaving a small balance of about 15 per cent. distributed among the other States. The figures here given relate to the areas harvested for grain; small areas only are sown for hay, but more considerable quantities are cut for green forage. These, however, are not included in this section. The area and production of barley for grain in the several States for the last five years and the average for the decennium 1930-39 are shown in the following table:—

BARLEY : AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
AREA.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934-35 ..	9,480	87,599	9,604	316,807	26,589	5,779	(a) 455,921
1935-36 ..	11,583	116,371	6,380	393,741	31,568	5,227	564,870
1936-37 ..	12,004	100,003	6,652	304,559	40,092	6,947	470,257
1937-38 ..	11,542	139,777	8,655	411,288	44,930	9,296	(b) 625,495
1938-39 ..	14,194	175,891	13,989	457,039	74,928	8,694	(c) 744,737
Average 10 seasons 1930-39 ..	10,437	107,111	7,925	330,475	31,183	7,388	(d) 494,569
PRODUCTION.							
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1934-35 ..	168,990	1,609,518	156,604	5,682,923	237,765	175,503	(a) 8,032,455
1935-36 ..	214,866	2,314,427	91,366	6,493,983	417,627	92,714	9,624,977
1936-37 ..	205,890	2,143,109	37,378	4,260,462	449,235	240,693	7,336,767
1937-38 ..	166,860	2,708,519	121,021	8,647,043	584,055	306,164	(b) 12,531,082
1938-39 ..	217,680	1,671,809	245,629	7,541,090	946,287	208,168	(c) 10,830,714
Average 10 seasons 1930-39 ..	173,382	1,975,494	132,104	5,714,007	370,681	186,241	(d) 8,552,853
	(a) Including Australian Capital Territory, 63 acres, 1,152 bushels.						
	(b) " " " " " " 7 acres, 420 bushels.						
	(c) " " " " " " 2 acres, 51 bushels.						
	(d) " " " " " " 50 acres, 944 bushels.						

South Australia and Victoria were the only States producing more than 1,000,000 bushels on the average during the past decade, the yields being respectively 5,714,007 and 1,975,404 bushels.

(ii) *Malting and Other Barley.* (a) Year 1938-39. Particulars for the season 1938-39 are as follows:—

BARLEY-MALTING AND OTHER: AREA AND PRODUCTION, 1938-39.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley ..	6,961	150,984	10,304	417,276	56,651	8,042	650,218
Other barley ..	7,233	24,907	3,685	39,763	18,277	652	(a) 94,519
Total ..	14,194	175,891	13,989	457,039	74,928	8,694	(a)744,737
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Malting barley ..	111,780	1,411,139	183,625	7,061,778	745,332	190,753	9,704,407
Other barley ..	105,900	260,670	62,004	479,312	200,955	17,415	61,126,307
Total ..	217,680	1,671,809	245,629	7,541,090	946,287	208,168	10,830,714 (b)

(a) Including Australian Capital Territory, 2 acres.
 (b) " " " " " " 51 bushels.

Taking Australia as a whole, about 87 per cent. of the area of barley in 1938-39 was sown with malting or English barley while the remainder consisted of Cape and other varieties. The proportion, however, varied largely in the several States. The disposal of barley during the season 1938-39 was as follows: malt works, 3,729,730 bushels; flour and other grain mills, 143,087 bushels; distilleries, 73,737 bushels; exports, 2,618,168 bushels; leaving a balance of 4,265,992 bushels for feed and seed.

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

BARLEY-MALTING AND OTHER: AREA AND PRODUCTION, AUSTRALIA.

Season.	Acres.			Bushels.			Average Yield per Acre.		
	Malting.	Other.	Total.	Malting.	Other.	Total.	Malting.	Other.	Total.
1934-35 ..	395,243	60,678	455,921	6,990,756	1,041,699	8,032,455	Bus. 17.69	Bus. 17.17	Bus. 17.62
1935-36 ..	485,870	79,000	564,870	8,412,712	1,212,265	9,624,977	17.31	15.35	17.04
1936-37 ..	393,797	76,460	470,257	6,382,760	954,007	7,336,767	16.20	12.48	15.60
1937-38 ..	525,409	100,086	625,495	10,801,885	1,732,197	12,534,082	20.56	17.31	20.04
1938-39 ..	650,218	94,519	744,737	9,704,407	1,126,307	10,830,714	14.92	11.92	14.54
Average 10 seasons									
1930-39..	427,673	66,896	494,569	7,480,333	1,072,520	8,552,853	17.49	16.03	17.29

During the past ten seasons the area and production of malting barley have represented nearly seven 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 last ten-yearly period being slightly in favour of the malting variety.

(iii) *Average Yield.* The average yield of barley per acre varies considerably in the different States, being as a rule highest in Tasmania and Victoria, and lowest in Western Australia. Details for each State during the last five seasons, and for the decennium 1930-39, are given in the following table :—

BARLEY : YIELD PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1934-35	17.83	18.37	16.31	17.94	8.94	30.37	17.62
1935-36	18.55	19.89	14.32	16.49	13.23	17.74	17.04
1936-37	17.15	21.43	5.62	13.99	11.21	34.65	15.60
1937-38	14.44	19.38	13.98	21.02	13.00	32.94	20.04
1938-39	15.34	9.50	17.56	16.50	12.63	23.94	14.54
Average for 10 seasons 1930-39	16.62	18.44	16.67	17.29	11.89	25.21	17.29

2. *Comparison with Other Countries.*—In comparison with the barley production of other countries, that of Australia appears extremely small. Particulars for some of the leading countries during 1938 are as follows :—United States of America, 242 million bushels; Germany, 187 million bushels; Turkey, 106 million bushels; and Canada, 98 million bushels. Details of production in the U.S.S.R. (Russia) are not available but in 1935 production approximated 360 million bushels, whilst China produced 281 million bushels in 1937.

3. *World's Production.*—The following table shows the world's acreage of barley, together with the production and average yield per acre, according to the results compiled by the International Institute of Agriculture :—

BARLEY : WORLD'S PRODUCTION.

Period.	Area.	Production.	Average Yield per Acre.
	Million Acres.	Million Bushels.	Bushels.
Average 1928-32	91.1	1,809	19.85
1934	87.2	1,663	19.07
1935	94.0	1,845	19.63
1936	89.7	1,744	19.44
1937	91.7	1,820	19.85
1938	90.7	1,915	21.11

4. *Prices.*—The average prices in the Melbourne market during each of the last five years are given in the following table :—

BARLEY : AVERAGE MELBOURNE PRICES PER BUSHEL.

Particulars.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
	<i>s. d.</i>	s. d.	s. d.	s. d.	s. d.
Malting barley	2 11	2 10½	4 0½	4 1½	3 5½
Cape barley	2 5	2 5	3 7	3 7	2 11½

5. Imports and Exports.—Australian exports of barley during the last five years averaged 3,278,809 bushels. The grain was consigned mainly to the United Kingdom, New Zealand and Belgium, South Australia being the principal exporting State. Particulars of the Australian oversea imports and exports for the last five years are contained in the following table :—

BARLEY : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	Bushels.	£	Bushels.	£	Bushels.	£
1934-35	12	5	2,901,708	394,466	2,901,696	394,461
1935-36	2	3	3,472,084	369,391	3,472,082	369,388
1936-37	126	69	2,605,620	504,495	2,605,494	504,426
1937-38 .. ..	..	..	4,796,468	805,943	4,796,468	805,943
1938-39	44	24	2,618,168	341,935	2,618,124	341,911

(a) Australian currency values.

In some years there is an export of Australian pearl and scotch barley, the total for 1938-39 reaching 567,280 lb., valued at £2,640, consigned mainly to the United Kingdom.

6. Imports and Exports of Malt.—In the years before the War of 1914-1919 the imports of malt into Australia were fairly extensive, the supply being obtained principally from the United Kingdom. Since 1914, however, imports have practically ceased. The production of malt in Australia is more than sufficient to meet local requirements and the surplus is shipped chiefly to the East and New Zealand. Details of imports and exports for the five years ended 1938-39 are given in the next table :—

MALT : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	Bushels.	£	Bushels.	£	Bushels.	£
1934-35	152	74	55,990	17,209	55,838	17,135
1935-36	300	195	62,518	19,457	62,218	19,262
1936-37	395	217	123,463	40,352	123,068	40,135
1937-38	252	155	164,548	62,327	164,296	62,172
1938-39	140	91	137,473	49,552	137,333	49,461

(a) Australian currency values.

7. Value of Barley Crop.—The estimated value of the barley crop for the season 1938-39 and the value per acre are shown in the following table :—

BARLEY : VALUE OF CROP(a), 1938-39.

Value.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Total	32,390	272,118	49,387	1,022,842	134,879	39,686	b1,551,308
Per acre	£2/5/8	£1/10/11	£3/10/8	£2/4/9	£1/16/0	£4/11/4	£2/1/8

(a) Exclusive of the value of straw.

(b) Including Australian Capital Territory, £6.

§ 8. Rice.

Experimental rice cultivation was carried on at the Yanco Experimental Farm in New South Wales for a number of years, but it was not until 1924-25 that an attempt was made to grow the crop on a commercial basis. In that year production amounted to 16,240 bushels from 153 acres, or an average of 106 bushels per acre. Favoured by tariff protection and high average yields the development of rice culture in the Murrumbidgee Irrigation Area made rapid progress, and the production now exceeds the annual requirements of Australia.

The area which growers may plant is now subject to control. Each year representatives of the Rice Marketing Board, Rice Growers, the Department of Agriculture and the Water Conservation and Irrigation Commission of New South Wales meet to decide the maximum area which growers may plant in the following season. Since 1933-34, the area has been fixed at 80 acres per grower. During the past five years an annual average of 272,000 centals of cleaned and 9,000 centals of uncleaned rice has been exported from Australia, mainly to the United Kingdom, New Zealand, Canada and the Pacific Islands.

Figures relating to area, production, trade and price, since 1931-32 will be found in the following table:—

RICE : AREA, PRODUCTION, TRADE AND PRICE, AUSTRALIA.

Year.	No. of Growers. (a)	Area.	Production Paddy Rice.	Average Yield.	Imports.		Exports.		Weighted Average Retail Price.
					Un-cleaned.	Cleaned.	Un-cleaned.	Cleaned.	
		Acres.	Bushels.	Bushels.	Centals.	Centals.	Centals.	Centals.	Pence per lb.
1931-32 ..	277	19,589	1,349,869	68.91	..	40,363	40,968	92,157	3.48
1932-33 ..	280	22,034	1,901,476	86.30	..	44,063	29,623	79,860	3.24
1933-34 ..	292	20,226	2,171,544	107.36	..	41,368	7,556	209,348	3.24
1934-35 ..	290	21,746	1,888,445	88.84	67	37,725	28,613	235,872	3.22
1935-36 ..	304	21,715	2,163,580	99.64	993	41,697	9,820	215,793	3.27
1936-37 ..	320	23,384	2,276,575	97.36	26	32,605	2,137	320,893	3.07
1937-38 ..	319	23,737	2,268,907	95.59	9,535	33,315	2,825	308,844	3.09
1938-39 ..	313	23,533	2,774,987	117.92	29	46,019	3,386	277,851	3.24

(a) New South Wales.

The production from several small experimental plots in States other than New South Wales is included in the foregoing figures, but the quantity is negligible.

§ 9. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the principal other grain and pulse crops grown in Australia are beans, peas and rye. The total area of the first two mentioned crops for the season 1938-39 was 43,151 acres, giving a yield of 495,018 bushels, or an average of 11.47 bushels per acre, which was less than the average yield for the decennium ended 1938-39, namely, 14.91 bushels per acre. Beans and peas are grown chiefly in Tasmania, South Australia and Victoria. Peas are exported in considerable quantities to the United Kingdom, the chief exporting State being Tasmania. The total area of rye in Australia during the season 1938-39 was 17,787 acres, yielding 165,375 bushels, or an average of 9.30 bushels per acre, as compared with the average of 11.54 bushels for the last ten seasons. Of the total area sown to rye in 1938-39, about 30 per cent. was located in South Australia, 58 per cent. in New South Wales, and 6 per cent. in Victoria.

§ 10. Potatoes.

1. Progress of Cultivation.—(i) *Area and Production.* Victoria possesses peculiar advantages for the growth of potatoes, as the rainfall is generally satisfactory, and the climate is unfavourable to the spread of Irish blight; consequently the crop is grown in nearly every district except in the wheat belt. Tasmania comes next in order of importance, followed by New South Wales. The area for these three States accounted for 80 per cent. of the total for Australia in 1938-39.

The area and production of potatoes in each State during the last five years and the average for the decennium 1930-39 are given hereunder :—

POTATOES : AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934-35 ..	19,662	54,214	11,666	4,664	4,050	36,358	15	130,629
1935-36 ..	22,743	44,287	13,620	4,612	4,946	34,719	62	124,989
1936-37 ..	24,909	45,627	13,448	4,657	4,324	36,967	88	130,020
1937-38 ..	21,372	41,105	10,817	4,387	4,202	32,468	34	114,385
1938-39 ..	16,866	34,396	10,389	4,290	5,355	26,696	56	98,048
Average 10 seasons								
1930-39..	19,199	54,658	11,039	5,042	4,953	34,684	30	129,605
PRODUCTION.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1934-35 ..	46,033	109,329	21,627	19,377	19,162	70,018	17	285,563
1935-36 ..	62,882	104,125	24,765	19,257	26,278	85,806	127	323,240
1936-37 ..	66,255	196,623	15,826	20,923	22,916	138,557	218	461,318
1937-38 ..	50,833	134,712	16,565	21,615	21,587	99,969	101	345,382
1938-39 ..	39,385	81,415	19,183	18,487	26,532	89,330	109	274,441
Average 10 seasons								
1930-39..	44,122	150,238	18,100	20,202	23,410	94,500	63	350,635

(a) Includes Northern Territory, 1 acre.

The area sown to potatoes fluctuated around 140,000 acres over a long term of years, but it has declined to an average of 130,000 acres during the past decade. Victoria was mainly responsible for this decline; the areas in the other States showed little movement except in New South Wales where the reduction in area amounted to 15 per cent.

The greatest yield during the past decade was 461,318 tons in 1936-37, compared with the record output of 507,153 tons in 1906-7.

(ii) *Average Yield.* Particulars for each State for the five seasons ended 1938-39 and for the decennium ended 1938-39 are given hereunder :—

POTATOES : AVERAGE YIELD PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1934-35 ..	2.34	2.02	1.82	4.15	4.73	1.92	1.13	2.19
1935-36 ..	2.76	2.35	1.82	4.18	5.31	2.47	2.05	2.59
1936-37 ..	2.66	4.31	1.18	4.49	5.30	3.75	2.48	3.55
1937-38 ..	2.38	3.28	1.53	4.93	5.14	3.08	2.97	3.02
1938-39 ..	2.34	2.37	1.85	4.31	4.95	3.35	1.95	2.80
Average for 10 seasons 1930-39..	2.30	2.75	1.64	2.50	4.73	2.72	2.09	2.71

Compared with the average yield per acre obtained in other countries, that returned for Australia is very low; the production in New Zealand, for example, in 1938-39 averaged 4.86 tons per acre from an area of 18,032 acres, as compared with 2.80 tons per acre from 98,048 acres in Australia.

(iii) *Relation to Population.* The average annual production of potatoes for the last five seasons was approximately 50 tons per 1,000 of population. 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 last five seasons it has averaged $8\frac{1}{2}$ cwt. Details for each State for the five seasons ended 1938-39 are as follows :—

POTATOES : PRODUCTION PER 1,000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1934-35 ..	17	59	23	33	43	306	2	43
1935-36 ..	24	56	25	33	59	373	13	48
1936-37 ..	25	106	16	35	51	596	22	68
1937-38 ..	19	72	17	37	47	420	10	50
1938-39 ..	14	43	19	31	57	377	9	40

(iv) *Consumption.* The consumption in Australia during the last five years averaged about 49 tons per 1,000 of population. These figures include the quantities used for seed. Omitting seed potatoes the consumption per 1,000 of population would be 43 tons or 96 lb. per head. From the figures shown above, therefore, it is apparent that New South Wales, Queensland and South Australia do not produce the quantities necessary for their requirements and must import from Tasmania and Victoria which have a surplus.

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

POTATOES : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value. (a)	Quantity.	Value. (a)	Quantity.	Value. (a)
	Tons.	£	Tons.	£	Tons.	£
1934-35 .. ..	..	18	1,165	12,510	1,165	12,492
1935-36	19	364	1,303	14,034	1,344	13,670
1936-37	1	13	1,368	12,641	1,367	12,628
1937-38 .. ..	..	3	4,269	26,565	4,269	26,562
1938-39	2	35	1,255	17,443	1,253	17,408

(a) Australian currency values.

3. *Value of Potato Crop.*—The estimated value of the potato crop of each State for the season 1938-39 is given in the following table :—

POTATOES : VALUE OF CROP, 1938-39.

Value.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	£	£	£	£	£	£	£	£
Total	497,560	1,095,032	211,013	260,224	309,453	1,274,070	1,377	3,648,729
Per acre	£29/10/0	£31/16/9	£20/6/3	£60/13/9	£57/15/9	£47/14/6	£24/11/10	£37/4/3

§ 11. Other Root and Tuber Crops.

1. *General.*—Root crops, other than potatoes, are not extensively grown in Australia, the total area of such crops for the season 1938-39 being only 37,958 acres. The most important were onions, mangolds, sugar-beet, turnips and sweet potatoes. Of these, onions and sugar-beet are most largely grown in Victoria, turnips in Tasmania, and mangolds and sweet potatoes in Queensland. The total area of onions in Australia

during the season 1938-39 was 6,708 acres, giving a yield of 18,372 tons, and averaging 2.74 tons per acre. The area in 1938-39 of root crops other than potatoes and onions was 31,250 acres, from which a production of 171,715 tons was obtained, or an average of 5.49 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," reference to which is made in § 17 par. 2.

2. Imports and Exports.—The only root crop, other than potatoes, in which any considerable overseas trade is carried on by Australia is that of onions. During the last five years 8,495 tons, valued at £A.124,814, were imported, principally from Japan, the United States of America, New Zealand and Egypt, while during the same period the exports, which amounted to 17,028 tons, valued at £A.123,505, were shipped mainly to New Zealand, the Pacific Islands, the Philippine Islands and Canada.

§ 12. Hay.

1. General.—(i) Area and Production. As already stated, the chief crop in Australia is wheat grown for grain. Next in importance is hay, which for the season 1938-39 averaged 13.83 per cent. of the total area cropped. In most European countries the hay consists almost entirely of meadow and other grasses, but in Australia a very large proportion consists of wheat, oats and lucerne. The area of hay of all kinds in the several States during the last five years is given hereunder.

HAY : AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	A.C.T.	Aust.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934-35 ..	757,414	1,261,552	86,477	561,071	413,138	96,019	2,502	3,178,173
1935-36 ..	658,810	1,140,361	71,309	566,064	494,495	74,741	1,690	3,007,470
1936-37 ..	747,927	1,181,612	62,758	539,127	478,099	89,394	1,959	3,100,876
1937-38 ..	759,562	1,079,039	73,629	562,057	432,399	73,047	2,732	2,982,465
1938-39 ..	1,068,925	1,104,558	65,732	519,309	408,276	79,959	3,501	3,250,260
Average 10 seasons								
1930-39 ..	757,010	1,110,616	67,850	541,265	432,217	83,118	2,338	2,994,414
PRODUCTION.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1934-35 ..	1,004,761	1,464,264	154,157	571,133	462,947	150,083	3,363	3,810,708
1935-36 ..	837,386	1,346,953	122,687	586,658	504,571	96,888	2,534	3,497,677
1936-37 ..	917,499	1,403,049	73,787	501,003	412,982	136,871	2,456	3,447,647
1937-38 ..	825,309	1,245,935	98,218	687,312	450,419	112,995	3,565	3,423,753
1938-39 ..	1,181,264	792,975	109,761	585,554	437,809	109,533	4,265	3,221,161
Average 10 seasons								
1930-39 ..	958,549	1,263,127	104,297	577,100	463,981	119,826	2,830	3,489,710

Owing to various causes, the principal being the variation in the relative prices of grain and hay and the favourableness or otherwise of the season for a grain crop, the area of hay is liable to fluctuate considerably. The area of hay in Australia during the season 1915-16, 3,597,771 acres, was the largest on record, whilst the average during the decennium ended 1938-39 amounted to 2,994,414 acres.

(ii) Average Production. During the last ten years Queensland and Tasmania show the highest average production per acre, although the area sown in these States is small. For the same period the lowest yield for Australia as a whole was that

of 21 cwt. per acre in 1929-30, while the highest was that of 26 cwt. in 1932-33. The average for the decennium was nearly 24 cwt. Particulars for the several States for the seasons 1934-35 to 1938-39 and the average for the ten years ended 1938-39 are given hereunder :—

HAY : PRODUCTION PER ACRE.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1934-35	1.33	1.16	1.78	1.02	1.12	1.56	1.34	1.20
1935-36	1.27	1.18	1.72	1.04	1.02	1.30	1.50	1.16
1936-37	1.23	1.19	1.18	0.93	0.86	1.53	1.25	1.11
1937-38	1.09	1.15	1.33	1.22	1.04	1.55	1.31	1.15
1938-39	1.11	0.72	1.67	1.13	1.07	1.37	1.22	1.02
Average for 10 seasons 1930-39.. ..	1.27	1.14	1.54	1.07	1.07	1.44	1.21	1.17

(iii) *Varieties Grown.* Information in regard to the crops cut for hay is now available for all States.

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

HAY : VARIOUS KINDS GROWN.

Varieties.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
	Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—					
Wheaten	271,272	224,632	293,854	348,339	559,437
Oaten	349,174	328,866	342,334	312,337	413,002
Barley	1,354	930	912	815	2,225
Lucerne	134,703	103,478	110,422	97,354	92,598
Other	911	904	405	717	1,663
Total	757,414	658,810	747,927	759,562	1,068,925
VICTORIA—					
Wheaten	117,436	77,795	72,837	90,244	258,839
Oaten	1,016,205	926,293	940,058	817,001	722,528
Lucerne, etc.	127,911	136,273	168,717	171,794	123,191
Total	1,261,552	1,140,361	1,181,612	1,079,039	1,104,558
QUEENSLAND—					
Wheaten	3,472	1,789	5,259	6,004	6,628
Oaten	3,426	2,928	3,218	4,187	4,901
Lucerne	75,538	62,779	42,526	51,084	50,228
Other	4,041	3,813	11,755	12,354	3,975
Total	86,477	71,309	62,758	73,629	65,732
SOUTH AUSTRALIA—					
Wheaten	264,373	213,703	243,561	194,196	227,604
Oaten	280,710	334,529	277,413	343,480	270,425
Lucerne	4,444	5,093	3,944	6,052	4,805
Other	11,544	12,739	14,209	18,329	16,475
Total	561,071	566,064	539,127	562,057	519,309
WESTERN AUSTRALIA—					
Wheaten	138,980	214,406	201,792	175,374	165,153
Oaten	251,288	250,039	241,485	220,922	204,610
Lucerne	238	63	120	335	..
Other	22,623	29,987	34,702	35,768	38,513
Total	413,138	494,495	478,099	432,399	408,276
TASMANIA—					
Wheaten .. ..	..	..	..	525	979
Oaten	136,291	88,075	121,288	60,479	64,310
Barley .. ..	..	..	..	920	533
Other	13,792	8,813	15,583	11,123	14,137
Total	150,083	96,888	136,871	73,047	79,959

Oats is generally the predominant hay crop throughout Australia except in Queensland where lucerne is the chief variety grown. For all States the proportions of the areas sown to the principal kinds of hay were 52 per cent. for oaten, 37 per cent. for wheaten, 6 per cent. for lucerne, and 5 per cent. for other hay.

2. **Comparison with Other Countries.**—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy prominent places. The statistics of hay production in these countries are not prepared on a uniform basis, consequently any attempt to furnish extensive comparisons would be misleading. It may be noted, however, that in Great Britain the production of hay from clover, sainfoin, etc., for the year 1937 amounted to 2,846,000 tons from 1,878,391 acres, while from permanent grasses a yield of 5,252,000 tons of hay was obtained from 4,856,651 acres, giving a total of 8,098,000 tons from 6,735,042 acres, or an average of about 24 cwt. per acre.

3. **Imports and Exports.**—Under normal conditions, hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not figure largely amongst the imports and exports of Australia. During 1938-39, 153 tons were imported, while the exports amounted to 2,213 tons, valued at £15,034, the principal purchases being made by Malaya (British), Philippine Islands, Korea, Ceylon, India 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 1938-39:—

HAY : VALUE OF CROP, 1938-39.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	£	£	£	£	£	£	£	£
Total Value ..	6,002,110	3,652,849	577,441	1,374,559	757,986	416,217	23,163	12,704,325
Value per acre ..	£5/12/4	£3/6/2	£8/15/8	£2/9/1	£1/17/1	£5/4/1	£6/13/3	£3/18/2

§ 13. Green Forage.

1. **Nature and Extent.**—A considerable area is devoted to the production of green forage, mainly in connexion with the dairying industry. Under normal conditions, the principal crops cut for green forage are maize, sorghum, rape and lucerne, while small quantities of sugar-cane also are so used. In certain circumstances the area sown to green forage may be supplemented by areas of cereals sown originally for grain. In an adverse season some cereal crops may show no promise of producing grain or even hay and consequently the area may be turned over to stock for grazing. Particulars concerning the area of green forage in the several States during each of the last five years are given in the following table:—

GREEN FORAGE : AREA.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934-35	477,060	115,037	338,312	91,783	186,233	24,941	548	1,233,914
1935-36	610,401	111,056	379,651	98,121	197,931	25,500	548	1,423,208
1936-37	645,713	102,744	429,782	136,548	284,676	24,742	836	1,625,041
1937-38	638,408	121,839	441,560	144,320	268,589	24,764	442	1,639,922
1938-39	573,569	108,796	448,643	275,988	352,442	28,681	681	1,788,800

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 1938–39 exclusive of Western Australia may be taken approximately as £2,999,046, or about £2 1s. 9d. per acre.

§ 14. Sugar-cane and Sugar-beet.

1. **Sugar-cane.**—(i) *Area.* Sugar-cane for sugar-making purposes is grown only in Queensland and New South Wales, and much more extensively in the former than in the latter State. Thus, of a total area of 368,429 acres of sugar-cane grown for this purpose in Australia for the season 1938–39, there were 347,199 acres, or about 94 per cent., in Queensland. This latter area is made up of 251,847 acres cut for crushing, 11,254 acres cut for plants, and 84,098 acres left to stand-over or young cane on areas not ready for cutting. Sugar-cane growing appears to have been started in Australia in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of 20 acres for the season 1862–63. In the following season the New South Wales returns show an area of 2 acres of this crop. The area of cane in New South Wales reached its maximum in 1895–96 with a total of 32,927 acres. Thenceforward, with slight variations, it gradually fell to 10,490 acres in 1918–19, but from that year it expanded until 1924–25, when about 20,000 acres were planted. Since 1924–25, the area has fluctuated between 15,000 acres and 20,000 acres, the average for the decennium ended 1938–39 amounting to 18,129 acres. In Queensland, although fluctuations in area are manifest, the general trend has been upwards. In 1938–39 the acreage of cane was the highest on record, namely, 347,199 acres. The area of sugar-cane in Australia from 1934–35 and the average for the decennium ended 1938–39 are given in the following table:—

SUGAR-CANE : AREA.

Season.	New South Wales.		Queensland.		Australia.		Total.
	Pro- ductive.	Unpro- ductive.	Pro- ductive.	Unpro- ductive.	Pro- ductive.	Unpro- ductive.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934–35	7,572	10,959	218,426	85,500	225,998	96,459	322,457
1935–36	10,416	9,794	228,515	86,185	238,931	95,979	334,910
1936–37	10,231	10,190	245,918	92,768	256,149	102,958	359,107
1937–38	10,716	10,137	245,131	103,709	255,847	113,846	369,693
1938–39	10,458	10,772	251,847	95,352	262,305	106,124	368,429
Average 10 seasons 1930–39	9,106	9,023	229,327	84,917	238,433	93,940	332,373

(ii) *Productive and Unproductive Cane.* The areas given in the preceding table do not include the small acreage cut for green forage which in 1938–39 amounted to 3,602 acres in Queensland. 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. Thus the season in which the highest acreage is recorded may not show the greatest area of productive cane cut for crushing.

(iii) *Production of Cane and Sugar.* For Queensland, statistics of the production of sugar-cane are not available prior to the season 1897–98. In that season the total for Australia was 1,073,883 tons, as against the maximum production of 5,678,894 tons in 1938–39. The average production of cane during the decennium ended 1938–39 was 4,703,390 tons. With the exception of 1932–33, the yield of sugar during each of the eight years ended 1938–39 has exceeded 600,000 tons. The average for the decennium

amounted to 657,106 tons. Particulars of the total production of cane and sugar for the last five years are as follows. The average for the ten seasons ended 1938-39 is also included for comparison :—

SUGAR-CANE : PRODUCTION OF CANE AND SUGAR.

Season.	New South Wales.		Queensland.		Australia.	
	Cane.	Sugar.	Cane.	Sugar.	Cane.	Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1934-35	227,424	29,428	4,271,380	611,161	4,498,804	640,589
1935-36	280,472	36,461	4,220,435	610,080	4,500,907	646,541
1936-37	275,169	38,158	5,170,571	744,676	5,445,740	782,834
1937-38	361,724	47,077	5,132,886	763,242	5,494,610	810,319
1938-39	336,701	45,022	5,342,193	778,064	5,678,894	823,086
Average 10 seasons 1930-39	241,402	30,317	4,461,988	626,789	4,703,390	657,106

The production of raw sugar in Australia in 1938-39 amounted to 823,086 tons manufactured from 5,678,894 tons of cane, and exceeded the previous highest recording of 810,319 tons in 1937-38. Official data are not available regarding the total number engaged in the sugar industry in Queensland, other than the number of separate holdings growing cane and employees in sugar mills which in 1938-39 totalled 7,855 and 4,631 respectively. In the report of the Sugar Inquiry Committee, 1931, however, it was stated that the number of persons employed in all branches of the industry was 28,737. In addition, there is the employment afforded in New South Wales, particulars of which are not available, but the number is probably in the vicinity of 2,000.

Final figures for the 1939-40 season are not yet complete, but latest estimates indicate a yield of 928,000 tons of raw sugar from 6,400,000 tons of cane crushed.

(iv) *Average Production of Cane and Sugar.* Owing to climatic variation, comparison between the average yields of cane per productive acre in Queensland and New South Wales cannot be accurately made except on an annual basis. In New South Wales the crop matures in from 20 to 24 months, whereas in Queensland a period of from 12 to 14 months is sufficient. Allowing for the disparity in maturing periods, the average annual yields of cane per productive acre during the decennium ending 1938-39 were 14.46 tons for New South Wales, and 17.96 tons for Queensland. Similarly, the yields of sugar per acre crushed for the same period were estimated at 1.82 tons and 2.52 tons respectively. Leaving aside the consideration mentioned above, the yields of cane and sugar per acre crushed for Australia for the ten years ended 1938-39 were 19.73 tons and 2.76 tons respectively, as compared with 18.03 tons and 2.27 tons for the decennium ended 1928-29.

SUGAR-CANE AND SUGAR : YIELD PER ACRE.

Season.	New South Wales.			Queensland.			Australia.		
	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1934-35	30.03	3.89	7.73	19.56	2.80	6.99	19.91	2.83	7.02
1935-36	26.93	3.50	7.69	18.47	2.67	6.92	18.84	2.71	6.96
1936-37	26.90	3.73	7.21	21.03	3.03	6.94	21.26	3.06	6.96
1937-38	33.76	4.39	7.63	20.94	3.11	6.73	21.48	3.17	6.78
1938-39	32.20	4.31	7.48	21.21	3.09	6.87	21.65	3.14	6.90
Average 10 seasons 1930-39	26.51	3.33	7.96	19.46	2.73	7.13	19.73	2.76	7.15

(v) *Quality of Cane.* The quantity of cane required to produce a ton of sugar varies with the variety planted, the district and the season. For the decennium ended 1938-39 it took 7.15 tons of cane to produce 1 ton of sugar or 13.99 per cent. of its total weight. As the result of the systematic study of cane culture in Queensland and improvements in field and mill methods the sugar content of the cane has been considerably increased, and in 1937-38 only 6.78 tons of cane were required to produce one ton of sugar. It is believed that this is the highest sugar content obtained anywhere in the world. During the ten years ended 1928-29 it required on the average 7.96 tons of cane to produce one ton of sugar in Australia, whereas the average figure for the decennium ended 1938-39 was reduced to 7.15 tons.

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

(vi) *Relation to Population.* The yield of raw sugar in Australia during the last five years was more than sufficient to supply local requirements, the average production during the period amounting to 244 lb. per head of population. Details for the period 1934-35 to 1938-39 are as follows:—

RAW SUGAR : PRODUCTION PER HEAD OF POPULATION.

State.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
	lb.	lb.	lb.	lb.	lb.
New South Wales ..	25	31	32	39	37
Queensland	1,425	1,406	1,695	1,718	1,731
Australia	214	215	258	264	266

(vii) *Consumption.* The average annual consumption of raw sugar during the five years ended 1938-39 was estimated at 359,872 tons, equal to 118.37 lb. of raw sugar or 113.05 lb. of refined sugar per head of population. Sugar contained in jam, preserved fruit, milk, etc., exported during the period has been excluded in arriving at the figures quoted. The quantity of sugar used during the five years in factories is shown in the following table, the figures including, where necessary, estimates of consumption based on the sugar content of the finished product. Particulars of sugar used in establishments not classified as factories are not available, and consequently the quantities shown below are deficient to that extent.

SUGAR : CONSUMPTION IN FACTORIES, AUSTRALIA.

Factories.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
	Tons.	Tons.	Tons.	Tons.	Tons.
Aerated Waters and Cordials	6,490	7,786	8,905	10,744	11,810
Bacon Factories ..	66	165	276	281	267
Bakeries—including Cakes and Pastry	9,032	10,404	17,150	18,182	18,801
Biscuits	6,339	6,663			
Breweries	11,208	12,404	13,451	15,663	16,733
Cereal Foods	(a)	(a)	(a)	478	1,287
Condensed and Concentrated Milk	7,501	5,547	7,637	8,034	6,747
Confectionery, Ice Cream, &c.	20,356	21,123	24,809	25,644	26,926
Jams, Jellies and Preserved Fruit	28,022	31,930	(b)40,721	(b)42,218	(b)40,537
Jelly Crystals	699	665			
Total	89,713	96,687	112,949	121,244	123,108

(a) Not available.

(b) Including Condiments, Pickles, etc.

2. **Sugar-beet.**—(i) *Area and Production.* Victoria is the only State at present growing beets for sugar, and particulars in regard to acreage and production for the last four years and for the decennium 1930-39 are incorporated in the table below:—

SUGAR-BEET: AREA AND PRODUCTION, VICTORIA.

Particulars.		1935-36.	1936-37.	1937-38.	1938-39.	Average 10 seasons 1930-39.
Area harvested ..	acres	3,165	3,475	4,046	4,268	3,312
Production ..	tons	37,634	31,079	48,594	13,454	36,094
Average per acre ..	"	11.89	8.94	12.01	3.15	11.08
Sugar produced ..	"	5,115	4,180	5,625	1,507	4,642

As in the case of other agricultural production in this State, seasonal conditions were exceptionally adverse during 1938-39 and production dropped to the lowest level recorded since 1926-27. The quantity of beet required to produce one ton of sugar was 8.93 tons as compared with 8.64 tons for the previous year and 7.90 tons, the average for the decennium ended 1938-39.

(ii) *Encouragement of Beet-growing.* The irrigation scheme on the Macallister River has provided an assured water supply for the district and has enabled the industry to expand. 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.**—Reference is made to the various Acts in connexion with sugar bounties and sugar excise tariffs in early issues of the Official Year Book. (See No. 6, pp. 394-6.)

4. **Sugar Purchase by Commonwealth Government.**—The steps taken by the Commonwealth Government in connexion with this matter are also referred to in the Official Year Book. (See No. 18, p. 720.)

5. **Sugar Agreement in Australia—Embargo on Imports, etc.**—By agreement between the Commonwealth and Queensland Governments in 1925, the embargo on the importation of foreign sugar, which was first introduced in September, 1915, was extended for three years from 1st September, 1925. The price of raw sugar needed for home consumption was fixed at £27 per ton, £1 of which was to defray administrative and general expenses of the Sugar Board and to provide special concessions to certain consumers of sugar. The embargo was later extended for a further period of three years until 1st August, 1931, on practically the same terms as previously.

In response to representations, the Commonwealth Government appointed a Committee of Inquiry on the 23rd August, 1930, to report on the industry. The Committee consisted of eight members, representing the various interests concerned. The reports of the Committee were made available in March, 1931, and the renewal of the sugar agreement with certain modifications was recommended. The terms of the new agreement closely followed those previously in force, particularly as regards the embargo on imports and the fixation of prices. The assistance to the fruit industry was increased from an average of £180,000 per annum to £315,000 by way of grant from the sugar industry. The agreement was signed on 1st June, 1931, and was to remain in force for a period of five years from 1st September, 1931. In 1932, however, conferences arranged between the Commonwealth Government and representatives of the industry agreed to a reduction of $\frac{1}{4}$ d. per lb. in the retail price of sugar from 1st January, 1933, until the end of the period of the agreement (31st August, 1936). It was also decided to reduce the amount of the assistance to the fruit industry to £200,000. A renewal of the agreement for a period of five years commencing 1st September, 1936, was negotiated between the Commonwealth and Queensland Governments in July, 1935, and in May, 1946, the agreement was extended for a further period of five years to 31st August, 1946. The wholesale and retail price of sugar remains unaltered but the concession to the fruit industry was increased to £216,000 in 1936.

6. **International Sugar Agreement.**—Delegates of 21 Nations representing 90 per cent. of producers met in London and entered into an agreement on 6th May, 1937, providing for the regulation of the production and marketing of sugar in the world during a period of five years from 1st September, 1937. The object of the agreement is to assure an adequate supply of sugar at a price not exceeding the cost of production, including a reasonable profit, to efficient producers. For this purpose, each country was given a basic annual export quota, which will be increased in proportion to any expansion in sugar consumption. By this means, and by limitations on stocks and measures to encourage more consumption it is expected that the International Sugar Council, which has been established to administer the agreement, will be able to hold in proper balance the supplies and requirements of sugar. The export quota originally allotted to Australia was 400,000 long tons. This figure may be increased, however, where the delivery from any British Colony falls short of its quota. In such circumstances, the deficiency may be allocated among other producing countries of the Empire including Australia.

7. **Net Return for Sugar Crop.**—Calculations by the Sugar Board regarding the disposal of the crop, net value of exports and the average price realized during each of the last five years will be found in the following table:—

SUGAR : NET RETURNS, AUSTRALIA.

Year.	Percentage Exported.	Net Value of Exports per Ton.	Average Price per Ton for Whole Crop.	Estimated Value of Crop.
	(a)	(a)	(a)	
	Per cent.	£ s. d.	£ s. d.	£
1934-35	50.56	7 11 3	15 13 9	10,791,092
1935-36	47.97	7 18 9	16 5 11	11,010,892
1936-37	54.97	7 19 0	15 7 4	12,203,675
1937-38	54.94	8 6 0	15 7 6	12,748,348
1938-39	55.78	8 4 3	15 3 11	12,806,376

(a) As supplied by the Queensland Sugar Board.

The estimated value of the raw sugar produced has been taken from the audited accounts of the Queensland Sugar Board. The values stated represent the gross receipts from sales in Australia and overseas less refining costs, freight, administrative charges, etc., and export charges, but not deducting concessions to the fruit industry and other rebates which in 1938-39 amounted to £323,901. The value thus obtained represents the net market value of all raw sugar sold, and since 1933 is divided between the growers and millers in the approximate proportions of 70 per cent. and 30 per cent. respectively. Prior to that year the distribution was about two-thirds to the grower and one-third to the miller.

8. **Imports and Exports of Sugar.**—Owing to the embargo and the increased production of sugar in Australia imports have practically ceased. Particulars concerning the imports and exports of cane sugar for the last five years are as follows:—

SUGAR : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	(a) £	Tons.	(a) £	Tons.	(a) £
1934-35	1	38	311,513	2,733,190	311,512	2,733,152
1935-36	22	415	300,680	2,758,170	300,658	2,757,755
1936-37	33	620	406,250	3,707,360	406,217	3,706,740
1937-38	47	817	427,184	4,026,698	427,137	4,025,881
1938-39	42	705	443,021	4,177,741	442,979	4,177,036

(a) Australian currency values.

9. **Sugar By-products.**—Large quantities of molasses are produced as a by-product in the sugar mills. Details for a series of years of the quantities produced and the proportions used for distilling, fuel, manure and other purposes will be found in Chapter XVIII. "Manufacturing Industry". A distillation plant erected at the Plane Creek Central Sugar Mill, Mackay, was opened during 1927 and produces power alcohol of excellent quality. Another distillery was erected in Melbourne after the outbreak of war in 1939, and production began in 1940.

Boards are now being made from the residuum of crushed fibre after the removal of the sugar content from the sugar-cane. These boards are used in the building industry for walls and ceilings and possess high insulating and sound-absorbing properties.

10. **Sugar Prices.**—The prices of sugar in Australia from 1915 to 1946 are shown in the following table. During recent years the prices were fixed in accordance with the agreements referred to on page 395.

SUGAR : PRICES FOR CONSUMPTION IN AUSTRALIA.

Date of Determination.	Raw Sugar.	Refined Sugar.	
	Price to Grower and Miller per Ton.	Wholesale Price per Ton.	Retail Price per lb.
	£ s. d.	£ s. d.	d.
19.7.15 to 15.1.16	18 0 0	25 10 0	3
16.1.16 to 30.6.17	18 0 0	29 5 0	3½
1.7.17 to 24.3.20	21 0 0	29 5 0	3½
25.3.20 to 30.6.20	21 0 0	49 0 0	6
1.7.20 to 31.10.22	30 6 8	49 0 0	6
1.11.22 to 30.6.23	30 6 8	42 0 0	5
1.7.23 to 21.10.23	27 0 0	42 0 0	5
22.10.23 to 31.8.25	26 0 0	37 11 4	4½
1.9.25 to 31.8.31	(a)26 10 0	37 6 8	4½
1.9.31 to 4.1.33	26 0 0	37 6 8	4½
5.1.33 to 31.8.36	24 0 0	33 4 0	4
1.9.36 to 31.8.41	24 0 0	33 4 0	4
1.9.41 to 31.8.46	24 0 0	33 4 0	4

(a) The price of raw sugar for the years 1925 to 1937 was estimated at from £24 to £26 10s. per ton, but as the result of the values received for the surpluses exported, the actual price obtained in 1925-26 was £19 10s. 7d.; in 1926-27, £24 10s. 10d.; in 1927-28, £22 0s. 4d.; in 1928-29, £20 17s. 11d.; in 1929-30, £20 8s. 2d.; in 1930-31, £19 12s. 11d.; in 1931-32, £18 2s. 11d.; in 1932-33, £18 17s. 9d.; in 1933-34, £16 6s. 3d.; in 1934-35, £15 13s. 9d.; in 1935-36, £16 5s. 11d.; in 1936-37, £15 7s. 4d.; in 1937-38, £15 7s. 6d.; and in 1938-39, £15 3s. 11d.

11. **War-time Contract.** At the outbreak of war in September, 1939, the British Ministry of Food concluded arrangements with the Queensland Government for the purchase of Australia's surplus production of raw sugar for the season 1939. The quantity involved amounted to 332,500 tons. Prior to this arrangement, about 200,000 tons of the 1939 crop had already been shipped, so the total exports for that season were expected to be about 530,000 tons, the greatest quantity ever shipped from Australia in any single year. The price was fixed at £Stg.7 10s. per ton at United Kingdom ports plus the existing tariff preference on dominion sugar of £Stg.3 15s. per ton. This was expected to give a net return in Australia of £A.10 7s. 6d. per ton compared with £A.8 4s. 3d. per ton in 1938.

An official statement announced that the conditions under which the 1940 season's crop will be disposed of were not unfavourable. It is forecast that 400,000 tons will be taken from Australia, of which 300,000 tons will be shipped to the United Kingdom and the balance will go to Canada and New Zealand. This is 100,000 tons less than was shipped during the 1939 season, when about 300,000 tons went to the United Kingdom, 120,000 tons to Canada and 80,000 tons to New Zealand.

§ 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 of 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 of 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 (a) for wine-making, (b) for table use, and (c) for drying. The total area of vines in the several States during each of the last five years and the average for the decennium ended 1938-39 are given in the following table:—

VINEYARDS : AREA.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934-35.. ..	15,143	41,180	1,926	53,361	5,737	..	117,347
1935-36.. ..	15,158	41,081	2,470	54,219	6,051	..	118,979
1936-37.. ..	16,542	41,895	2,501	56,122	6,105	..	123,165
1937-38.. ..	16,950	41,883	2,716	57,414	6,208	..	125,171
1938-39.. ..	16,979	42,436	2,793	58,020	6,277	..	<i>a</i> 126,507
Average 10 seasons							
1930-39	15,777	40,563	2,142	54,156	5,666	..	118,304

(a) Includes Australian Capital Territory 2 acres.

The total area of vines in Australia has shown a substantial expansion since 1860. This development has been interrupted from time to time, decreases occurring in 1896, the years between 1904 and 1910, and in 1914. Since the latter year the area increased without interruption from about 61,000 acres to more than 114,000 acres in 1924-25, due largely to the planting of varieties suitable for drying. Subsequently the area fluctuated somewhat but increased again to the record area of 126,507 acres in 1938-39.

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

(iii) *Wine Production, Bounties, etc.* The production of wine has not increased as rapidly as the suitability of soil and climate would appear to warrant, owing chiefly to two causes. In the first place Australians are not a wine-drinking people; it is estimated that they consume approximately 2½ million gallons only or 0.3 gallons per head per annum and consequently the local market is restricted. Secondly, the comparatively new and unknown wines of Australia must compete in the markets of the old world with the well-known and long-established brands from other countries. Continued efforts are being made to bring the Australian wines under notice, and with the assistance of a Commonwealth bounty on the export of fortified wine of specified strength, the industry has been greatly stimulated. Particulars of the Wine Export Bounty are shown in § 18 hereafter. The Wine Export Bounty Act 1930 which provided for payment at the rate of 1s. 9d. per gallon was replaced by a new Act in

1934 which fixed the rate at 1s. 3d. per gallon for the two years ending 28th February, 1937, and thereafter at a reduction of 1d. per gallon for each succeeding year until 1940. The payment of a bounty at the rate of 1s. per gallon for a period of five years to 28th February, 1945, was provided for under the Wine Export Bounty Act of 1939.

At the Imperial Economic Conference at Ottawa in 1932, a margin of preference was granted by the Government of the United Kingdom on Australian wines. The rates of duties on foreign and Empire wines have since been increased as a war-time measure.

The quantity of wine produced in the several States during the last five seasons together with the average for the decennium ended 1938-39 are given in the table hereunder :—

WINE : PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
1934-35 ..	1,539,274	1,276,176	38,050	12,914,905	496,252	..	16,264,657
1935-36 ..	2,567,812	1,683,049	22,569	13,023,587	430,941	..	17,727,958
1936-37 ..	2,944,494	1,818,917	29,121	15,026,502	348,960	..	20,167,994
1937-38 ..	2,690,315	1,433,637	16,909	15,888,878	400,292	..	20,430,031
1938-39 ..	2,501,747	825,056	44,594	11,147,046	438,894	..	14,957,537
Average 10 seasons 1930-39	2,099,171	1,448,711	35,688	12,349,550	396,798	..	16,329,938

(a) Includes Australian Capital Territory 200 gallons.

(b) Includes Australian Capital Territory 20 gallons.

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

WINE : IMPORTS INTO AUSTRALIA.

Year.	Quantity.			Value.(a)		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1934-35 ..	7,936	20,367	28,303	26,577	17,422	43,999
1935-36 ..	5,701	24,214	29,915	19,017	18,258	37,275
1936-37 ..	7,197	27,039	34,236	20,721	20,799	41,520
1937-38 ..	9,002	40,759	49,761	21,598	26,926	48,524
1938-39 ..	10,759	30,451	41,210	23,303	22,792	46,095

(a) Australian currency values.

(ii) *Exports.* Practically all of the wine exported from Australia is sent to the United Kingdom; approximately 190,000 gallons are sent to other countries. New Zealand absorbs the major portion of this quantity although exports to Canada have increased under the Canadian Australian Trade Treaty; the former took 107,642 gallons valued at £42,662 while the latter imported 73,409 gallons valued at £28,808, during 1938-39.

Wine was not included among the commodities sold by contract to the Government of the United Kingdom as a war-time emergency. On account of the prior claims of other commodities to shipping space, the wine industry is facing a most difficult position.

Exports for the last five years are given in the following table.—

WINE : EXPORTS FROM AUSTRALIA.

Year.	Quantity.			Value.(a)		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1934-35 ..	4,111	3,392,570	3,396,681	5,854	806,334	812,188
1935-36 ..	4,070	3,705,557	3,709,627	5,649	928,955	934,604
1936-37 ..	3,400	4,085,563	4,088,963	6,231	1,038,198	1,044,429
1937-38 ..	4,908	3,893,549	3,898,457	5,760	938,916	944,676
1938-39 ..	2,369	3,718,135	3,720,504	3,507	978,570	982,077

(a) Australian currency values.

3. **Other Viticultural Products.**—(i) *Table Grapes.* Grapes for table use are grown in all the States except Tasmania, but the area cultivated to this variety is only about 7¹/₂ per cent. of the productive area of grapes. The greatest development in the industry has taken place in the drying of raisins and currants, particularly in Victoria and South Australia. The quantities of table grapes grown during the last five seasons are as follows:—

TABLE GRAPES : PRODUCTION.

Season.	N.S.W.		Victoria.		Q'land.		S. Aust.		W. Aust.		Australia.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1934-35	3,638	3,113	1,900	646	3,214	12,511						
1935-36	4,376	4,215	2,184	547	2,676	13,998						
1936-37	5,107	3,754	2,058	582	2,720	14,221						
1937-38	5,076	4,372	2,259	657	2,918	15,282						
1938-39	4,034	4,089	2,313	985	3,139	14,560						

(ii) *Raisins and Currants.* The quantities of raisins (sultanas and lexias) and currants dried during each of the last five seasons are given in the following table. The production for the 1939-40 season is estimated at the record quantity of 94,000 tons, of which 69,500 tons are raisins and 18,000 tons are currants.

RAISINS(a) AND CURRANTS : PRODUCTION.

Season.	N. S. Wales.		Victoria.		South Aust.		Western Aust.		Australia.	
	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1934-35	3,381	755	29,637	8,801	12,234	9,259	646	2,037	45,898	20,852
1935-36	4,158	864	35,486	4,421	10,508	5,871	778	1,958	50,930	13,114
1936-37	5,416	1,094	37,267	7,610	11,381	8,093	707	1,887	54,771	18,684
1937-38	6,139	1,155	48,504	8,948	16,609	9,367	725	1,837	71,977	21,357
1938-39	4,837	1,239	33,659	10,301	11,656	9,569	737	2,762	50,889	23,871
Average 10 seasons 1930-39	4,234	796	35,235	7,995	11,494	8,007	697	1,789	51,660	18,587

(a) Sultanas and Lexias.

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

RAISINS AND CURRANTS : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value. (a)	Quantity.	Value. (a)	Quantity.	Value. (a)
RAISINS.						
	Tons.	£	Tons.	£	Tons.	£
1934-35 ..	(b)104	(b)5,988	40,041	1,447,686	39,937	1,441,698
1935-36 ..	(c)	20	37,998	1,501,146	37,998	1,501,126
1936-37 ..	(c)	51	40,875	1,540,909	40,875	1,540,858
1937-38 ..	..	..	47,490	1,968,450	47,490	1,968,450
1938-39 ..	(c)	6	49,550	1,974,045	49,550	1,974,039
CURRANTS.						
	(c)	15	14,562	583,422	14,562	583,407
1934-35 ..	(c)	35	9,945	375,923	9,945	375,888
1935-36 ..	(b)14	(b)678	11,739	440,734	11,725	440,056
1936-37 ..	..	..	15,266	571,143	15,266	571,143
1937-38 ..	..	..	23,759	772,966	23,759	772,966

(a) Australian currency values.

(b) Reimports.

(c) Quantity negligible.

Since 1912 Australia has not only produced sufficient raisins and currants for home consumption, but has been able to maintain a large export trade. The average annual production for the decennium ended 1938-39 was 70,000 tons, of which 53,500 tons were exported and about 16,500 tons were available for local requirements. The chief countries importing Australian raisins and currants are the United Kingdom, Canada and New Zealand, the quantities exported thereto in 1938-39 being, 51,265, 16,422 and 4,803 tons or 70, 22 and 7 per cent. respectively. Exports to Canada have increased from 4,600 tons in 1928-29 to 16,422 tons in 1938-39.

5. War-time Contract. All unsold stocks of dried vine fruits in Great Britain and afloat were acquired by the Government of the United Kingdom. These stocks included 14,343 tons of Australian origin harvested during the 1939 season.

The surplus production of the 1940 season after providing for the Canadian and New Zealand requirements was also sold to the United Kingdom, the quantities involved being 18,000 tons of currants and 33,000 tons of raisins.

§ 16. Orchards and Fruit-Gardens.

1. Progress of Cultivation.—The greatest area of orchards and fruit-gardens was attained in 1933-34 when 281,989 acres were planted. The total area of orchards and fruit-gardens in the several States during the last five years is given in the following table :—

ORCHARDS AND FRUIT-GARDENS : AREA.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934-35 ..	87,035	76,254	30,646	29,167	20,811	33,779	70	277,762
1935-36 ..	82,702	75,788	28,544	29,122	21,667	33,372	76	271,271
1936-37 ..	87,887	76,760	28,828	29,755	22,143	32,285	66	277,724
1937-38 ..	87,293	75,067	31,136	29,874	21,976	31,677	98	277,121
1938-39 ..	85,598	71,300	32,641	28,943	22,029	31,580	97	272,238

(a) Includes 50 acres Northern Territory.

2. Varieties of Crops.—(i) *General.* The varieties grown differ in various parts of the States, ranging from such fruits as the pineapple, paw-paw, mango and guava of the tropics to the strawberry, the raspberry and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, peach, pear, orange, plum and apricot. In New South Wales, citrus fruits (oranges, lemons, etc.) occupy the leading position, although apples, peaches, plums, pears, cherries and bananas are extensively grown. In Queensland, the banana, pineapple, apple, orange, peach, plum, and coco-nut are the varieties most largely cultivated. In South Australia, in addition to the apple, orange, apricot, plum, peach and pear, the almond and the olive are extensively grown. In Western Australia, the apple, orange, pear, plum, peach, apricot and fig are the chief varieties. In Tasmania, the apple occupies nearly four-fifths of the fruit-growing area, but small fruits, such as the currant, raspberry and gooseberry are extensively grown, while the balance of the area is taken up with the pear, apricot, plum and cherry. The following tables give the acreage—bearing and non-bearing—of the principal kinds of fruit, and the quantity and value of fruit produced.

(ii) *Area.* The table hereunder shows the total acreage for 1938–39 :—

ORCHARDS AND FRUIT-GARDENS : AREA, 1938–39.

Fruit.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	A.C.T.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Apples ..	17,601	27,780	5,578	9,906	13,012	23,411	63	97,351
Apricots ..	1,903	4,296	245	3,112	659	1,401	4	11,620
Bananas ..	13,871	..	8,781	..	243	..	..	22,895
Cherries ..	3,513	1,299	5	1,073	61	102	2	6,055
Citrus—								
Oranges ..	20,273	4,374	4,344	4,490	3,023	..	..	} 40,406
Mandarins ..	3,726	(a)	(a)	(a)	176	..	..
Lemons ..	2,873	1,545	413	429	492	..	..
Other ..	616	(a)	25	58	73	..	..
Nectarines and								
Peaches ..	8,456	13,617	1,417	1,834	1,112	93	7	26,536
Nuts ..	933	517	156	2,716	378	..	5	4,705
Pineapples ..	233	..	7,049	..	5	..	..	7,287
Pears ..	4,074	12,001	360	1,770	1,034	2,343	5	21,587
Plums and Prunes	5,535	3,655	1,216	2,210	1,078	416	9	14,119
Small Fruits ..	18	610	417	363	28	3,741	..	5,177
Other Fruits ..	1,973	1,606	2,635	982	655	73	2	7,926
Total ..	85,598	71,300	32,641	28,943	22,029	31,580	97	272,188

(a) Included with oranges, etc.

(iii) *Production.*—(a) *Quantities.* The production in 1938–39 is shown in the next table :—

ORCHARDS AND FRUIT-GARDENS : PRODUCTION, 1938–39.

Fruit.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	A.C.T.	Australia.					
Apples .. bushel	936,766	1,574,916	282,158	808,020	1,797,490	5,724,000	2,190	11,125,540					
Apricots .. "	153,685	251,028	10,457	343,509	67,053	161,000	88	986,880					
Bananas .. "	1,582,706	..	879,449	..	32,170	..	..	2,494,331			
Cherries .. "	127,459	40,888	301	43,478	876	3,800	24	216,826					
Citrus—													
Oranges .. "	2,478,140	683,705	} 354,052	{ 815,460	322,350	..	..	} 4,994,064			
Mandarins .. "	305,753	17,285							(a)	17,319	
Lemons .. "	256,462	161,920							30,458	55,862	63,139
Other .. "	68,504	508							1,548	8,663	3,248
Nectarines and													
Peaches .. "	611,613	1,672,163	86,269	155,189	88,278	7,000	130	2,620,642					
Nuts .. lb.	283,978	195,777	17,120	1,205,464	68,694	..	80	1,771,113					
Pineapples .. dozen	43,133	..	1,847,673	..	20	..	..	1,890,826			
Pears .. bushel	338,467	1,204,340	27,596	195,995	157,349	376,000	97	2,299,841					
Plums and Prunes	260,549	146,247	60,622	134,030	85,849	84,000	93	771,390					
Small Fruits .. cwt.	392	9,014	7,702	6,810	648	121,631	..	146,197					

(b) *Gross Values.* The gross value of production for the various classes of fruit for the year 1938-39 is given in the following table:—

ORCHARDS AND FRUIT-GARDENS : VALUE OF PRODUCTION, 1938-39.

Fruit.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	A.C.T.	Australia.
	£	£	£	£	£	£	£	£
Apples	378,690	452,788	112,521	187,575	654,258	1,574,100	885	3,357,817
Apricots	78,210	69,033	6,223	115,190	29,056	30,860	45	328,617
Bananas	840,810	..	343,724	..	22,345	..	..	1,206,879
Cherries	106,710	33,733	361	33,152	1,768	1,900	20	177,644
Citrus—								
Oranges	891,660	243,998	116,636	183,875	106,107	..	..	1,695,483
Mandarins	87,020	6,122						
Lemons	82,520	62,744	5,593	19,370	15,785	..	..	188,922
Other	28,820	197	310	2,178	1,002	..	..	32,507
Nectarines and Peaches	267,030	399,665	32,954	53,954	29,059	1,490	61	784,213
Nuts	12,510	7,404	513	32,526	2,719	..	2	55,674
Pineapples	10,240	..	392,340	..	17	..	..	402,597
Pears	139,620	316,139	8,508	50,535	61,345	98,700	40	674,887
Plums and Prunes	111,960	29,936	24,156	28,923	26,112	11,550	44	232,681
Small Fruits	1,620	21,143	18,048	9,520	2,065	176,400	..	229,696
Other Fruits	64,670	146,673	77,667	16,177	21,126	1,300	37	327,650
Total	3,102,090	1,789,575	1,143,364	784,453	978,351	1,896,300	1,131	9,695,267

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

PRINCIPAL FRUIT CROPS : AREA, BEARING AND NON-BEARING, AUSTRALIA.

Year.	Apples.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums.(a)
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1913-14	56,577	7,778	24,840	13,645	9,657	8,410
1934-35	102,414	26,593	49,247	22,990	20,578	15,741
1935-36	102,003	21,801	47,506	22,876	20,316	15,290
1936-37	103,507	21,126	48,520	23,858	21,298	15,647
1937-38	100,647	23,134	47,416	25,705	22,154	14,727
1938-39	97,351	22,895	46,930	25,054	21,587	14,119

(a) Includes Prunes.

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

PRINCIPAL FRUIT CROPS : PRODUCTION IN AUSTRALIA.

Year.	Apples.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums.(a)
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1913-14	5,000,178	835,868	1,638,961	930,144	951,277	621,525
1934-35	9,569,161	2,550,693	5,307,146	2,011,542	1,934,975	1,004,821
1935-36	9,771,290	2,500,791	5,057,081	1,762,673	2,458,087	905,936
1936-37	10,998,866	2,369,175	4,971,761	2,132,654	2,692,207	1,115,129
1937-38	10,958,868	2,630,624	5,106,061	2,639,722	2,595,954	1,077,082
1938-39	11,125,540	2,494,331	5,644,376	2,522,767	2,299,841	771,390

(a) Includes Prunes.

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

PRINCIPAL FRUIT CROPS : VALUE OF PRODUCTION, AUSTRALIA.

Year.	Apples.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums.(a)
	£	£	£	£	£	£
1913-14 ..	1,132,427	157,710	719,808	306,433	258,235	135,654
1934-35 ..	2,581,568	900,657	1,444,203	572,643	499,937	269,626
1935-36 ..	2,500,361	915,409	1,575,662	554,094	639,429	268,669
1936-37 ..	2,794,633	1,114,025	1,686,569	640,433	669,782	333,186
1937-38 ..	2,826,451	1,455,355	1,717,270	754,929	675,887	333,041
1938-39 ..	3,357,817	1,206,879	1,916,912	737,791	674,887	232,681

(a) Includes Prunes.

4. *Imports and Exports of Fruit.*—(i) *General.* A considerable export trade in both fresh and dried fruits is carried on by Australia with oversea countries. The import trade in fresh fruits declined heavily when a Customs duty of 1d. per lb. was imposed in 1920-21 on imported bananas, which had previously been the chief variety of fresh fruit imported into Australia. Under the terms of the agreement reached at Ottawa in 1932, however, 40,000 cents of bananas may be admitted annually from Fiji at the rate of duty of 2s. 6d. per cental. The imports of dried fruits at present consist mainly of dates. The export trade in fresh and dried fruits has grown to considerable dimensions, the value of the shipments in 1938-39 amounting to £2,022,936 and £2,864,819 respectively. Apples constitute the bulk of the fresh fruit exported although the exports of citrus fruits and pears are fairly considerable, and experiments are being conducted in regard to the dispatch of other fruits. Shipments of raisins and currants have increased greatly since 1914-15, and are mainly responsible for the growth in the dried fruits exports. Dried apricots also figure amongst the exports.

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

FRESH FRUITS : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	lb.	£	lb.	£	lb.	£
1934-35 ..	4,212,300	20,247	228,463,300	1,821,967	224,251,000	1,801,720
1935-36 ..	3,720,500	18,910	251,762,400	2,027,222	248,041,900	2,008,312
1936-37 ..	3,704,000	19,986	249,329,200	1,980,102	245,625,200	1,960,116
1937-38 ..	4,251,800	22,469	255,622,600	2,055,186	251,370,800	2,032,717
1938-39 ..	6,988,300	29,843	275,243,700	2,022,936	268,255,400	1,993,093

(a) Australian currency values.

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

APPLES, PEARS AND CITRUS FRUITS : EXPORTS FROM AUSTRALIA.

Year.	Apples.		Pears.		Citrus Fruits.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Cental.	£	Cental.	£	Cental.	£
1934-35 ..	1,745,337	1,307,791	254,978	240,836	242,932	212,170
1935-36 ..	2,008,656	1,494,524	275,860	270,262	190,094	188,255
1936-37 ..	1,847,189	1,344,885	336,812	320,325	256,784	228,356
1937-38 ..	1,929,088	1,399,773	258,433	245,505	313,649	317,793
1938-39 ..	2,111,139	1,433,440	294,930	264,805	274,229	221,184

(iv) *Dried Fruits.* The quantity and value of oversea imports and exports of dried fruits, other than raisins and currants, for the last five years are shown below; approximately 90 per cent. of the total imports consisted of dates obtained almost entirely from Iraq:—

DRIED FRUITS(a) : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(b)	Quantity.	Value.(b)	Quantity.	Value.(b)
	lb.	£	lb.	£	lb.	£
1934-35..	13,187,250	94,903	5,507,100	134,426	7,680,150	39,523
1935-36..	11,912,272	86,590	4,144,611	110,423	7,767,661	23,833
1936-37..	10,917,696	76,653	2,660,332	78,553	8,257,364	1,900
1937-38..	13,744,312	94,445	5,331,569	144,892	8,412,743	50,447
1938-39..	11,096,736	80,752	3,926,958	117,814	7,169,778	37,062

(a) Excluding raisins and currants referred to separately under Vineyards, § 15 par. 4. (b) Australian currency values.

(v) *Jams and Jellies.* Jams and jellies were exported in large quantities during the War of 1914-1919 and in 1918-19 the record shipment of 79,277,560 lb., valued at £1,847,970 was dispatched from Australia. Since that year, however, the trade has dwindled, the value of the exports in 1938-39 amounting to only £262,486. Particulars relative to imports and exports during each of the last five years are as follows:—

JAMS AND JELLIES : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	lb.	£	lb.	£	lb.	£
1934-35..	30,322	1,265	2,949,105	63,425	2,918,783	62,160
1935-36..	50,010	1,910	7,019,191	134,796	6,969,181	132,886
1936-37..	59,852	2,333	5,541,620	106,433	5,481,768	104,100
1937-38..	125,604	4,461	6,206,248	121,395	6,080,644	116,934
1938-39..	80,749	3,253	13,872,059	262,486	13,791,310	259,233

(a) Australian currency values.

(vi) *Preserved Fruit.* Details concerning the quantities and values of preserved fruit imported into Australia cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables preserved or partly preserved in liquid, or pulped, imported into Australia during 1938-39 was £59,781, or £74,876 in Australian currency. Oversea exports in 1938-39 were as follows:—Apricots, 9,484,118 lb., £161,358; peaches, 44,382,980 lb., £627,748; pears, 20,858,179 lb., £332,668; pineapples, 3,449,221 lb., £72,499; and other, 10,922,692 lb., £218,702; or a total shipment valued at £1,412,975.

5. *Apple and Pear Acquisition.* The development of the apple and pear industry is dependent upon the expansion of exports; normally, little more than half of Australia's production is needed to meet the local demand. The interruption to exports due to the war imposed a severe strain on the industry and, as a result of representations made, the Commonwealth Government introduced legislation to minimize the disorganization thus created. Committees were formed to assist in the marketing and administration

of the scheme while financial arrangements were made with the Commonwealth Bank. The following table shows details of the quantities acquired, and marketed and the stocks held on the 31st May, 1940:—

APPLES AND PEARS : AUSTRALIA.

QUANTITIES ACQUIRED AND MARKETED AND STOCKS HELD ON 31ST MAY, 1940.

Particulars.					Apples.	Pears.
					Bushels.	Bushels.
Quantity sold in Australia .. .. .	..	..	..	..	1,405,359	280,394
Quantity exported overseas .. .. .	..	..	..	..	1,436,611	126,141
Quantity used in factories .. .. .	..	..	..	..	307,102	..
Quantity unmarketable .. .. .	..	..	..	..	350,000	..
Stocks on hand .. .. .	..	..	..	..	3,331,406	271,175
Total acquired .. .. .	..	..	..	..	6,830,478	677,710

§ 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 received considerable attention in the tropical portions of Queensland, and the prospects of establishing this industry are hopeful. The total area in Australia during the season 1938–39 devoted to crops not dealt with in previous sections was 282,208 acres, the major portion of which consisted of cotton, market gardens, grass seed, pumpkins and melons, canary seed and tobacco.

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 of market gardens during each of the last five seasons is given hereunder:—

MARKET GARDENS : AREA.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Aus- tralia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1934–35	6,696	20,728	801	1,994	3,024	869	13	34,125
1935–36	7,026	20,633	950	1,555	3,074	812	52	34,102
1936–37	7,335	20,790	1,105	1,499	3,399	752	48	34,928
1937–38	7,268	19,819	947	1,546	3,497	584	34	33,695
1938–39	7,528	21,059	1,546	1,691	3,292	508	41	35,665

3. **Grass and Other Seed.**—Particulars of the area of crops grown for seed cannot be accurately determined as seed is obtained from certain crops such as clover, lucerne, etc., at a second cutting. The production of seed recorded in 1938–39 was 574,550 bushels, but no particulars are available for New South Wales.

4. Tobacco.—Tobacco-growing some years ago promised to occupy an important place amongst the agricultural industries of Australia. Thus, as early as the season 1888-89, the area of this crop amounted to 6,641 acres, of which 4,833 were in New South Wales, 1,685 in Victoria, and 123 in Queensland. This promise was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2,000 acres, and that in Queensland to over 1,000 acres, the total area declined considerably.

In all the States in which its cultivation has been tried, the soil and climate appear to be suitable for the growth of the plant, and the large import of tobacco in its various forms is an index of the market for a satisfactory product. The total net imports of tobacco into Australia during the year 1938-39 were valued at £A.1,982,913, while the net quantity of unmanufactured tobacco imported was 22,237,334 lb. valued at £A.2,171,186.

In the following table particulars of the area and production of tobacco are given by States for each year since 1930-31. In the table previously published, there was some confusion regarding the seasons to which the figures related. In the table below, however, the figures are comparable throughout and consistently reflect the movement from season to season :—

TOBACCO : AREA AND PRODUCTION, AUSTRALIA.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	Total.
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AREA IN ACRES.

1930-31 ..	547	2,650	382	83	3	3,665
1931-32 ..	2,869	12,191	3,817	959	348	72	10	20,266
1932-33 ..	4,105	13,418	4,004	859	466	171	..	(a) 23,037
1933-34 ..	1,187	8,900	2,081	467	291	100	..	13,026
1934-35 ..	560	4,765	3,117	151	313	55	..	8,961
1935-36 ..	934	5,840	3,973	141	426	80	..	11,394
1936-37 ..	851	5,492	3,812	102	1,041	113	..	11,411
1937-38 ..	610	4,736	3,740	90	1,216	159	..	10,551
1938-39 ..	629	2,559	3,554	39	908	130	1	7,820

PRODUCTION OF DRIED LEAF.

	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1930-31 ..	229,376	1,269,520	260,670	33,936	2,464	..	..	1,795,966
1931-32 ..	2,613,632	6,658,512	2,303,861	374,416	201,488	51,520	(b)	12,203,429
1932-33 ..	2,807,392	4,073,552	2,079,754	180,880	334,768	22,624	..	9,498,970
1933-34 ..	425,600	1,470,826	1,025,049	113,680	199,284	59,820	..	3,294,259
1934-35 ..	229,824	1,501,350	1,555,083	23,072	289,460	44,560	..	3,043,349
1935-36 ..	666,736	2,879,075	2,005,031	31,024	352,435	72,951	..	6,007,252
1936-37 ..	606,032	1,753,096	2,317,066	23,823	666,572	143,198	..	5,510,387
1937-38 ..	408,688	2,336,320	2,197,240	13,821	788,559	115,175	..	5,859,803
1938-39 ..	397,600	720,384	2,094,000	13,328	766,752	53,450	360	4,045,874

(a) Includes Australian Capital Territory, 14 acres. No leaf was produced from this area.
 (b) No leaf produced.

In 1929 a Select Committee was appointed by the House of Representatives to report on the tobacco industry in Australia. The report of the Committee was submitted on 1st July, 1930, and among the recommendations made was one for the formation of a Tobacco Investigation Committee. This Committee was formed, and was financed jointly by the Commonwealth Government and the British-Australasian Tobacco Company, the Company undertaking to contribute up to £3,000 on a £ for £ basis. In 1933 another Committee was appointed. The recommendation of this Committee, which

reported on 16th November, 1933, that the sum of £20,000 should be provided annually for five years to assist the States to continue economic and scientific investigations, was adopted and this amount was distributed during the succeeding five years. The annual allocation was £5,000 to the Council for Scientific and Industrial Research, £3,750 to each of the States of New South Wales, Victoria and Queensland, and £1,250 each to South Australia, Western Australia and Tasmania. At the end of this period, the Commonwealth Government made a further grant for another five-year term. Commencing with 1939 the amount allotted was £15,000. This sum decreases annually by £1,250 until, in 1943, the amount will be £10,000. The total for the five years amounts to £62,500 and is allocated as follows:—Council for Scientific and Industrial Research, £25,000; New South Wales, £5,250; Victoria, £7,500; Queensland, £9,750; South Australia, £3,000; Western Australia, £9,000; and Tasmania, £3,000. The Council for Scientific and Industrial Research is investigating diseases affecting the tobacco plant, including work on disease-resisting varieties, and is making tests of smoking quality. The Council has been successful in discovering effective means of preventing blue mould, and consequently the development of the industry should proceed on much sounder lines than hitherto. The States are carrying out field investigations on disease resistance, selection, yield and quality improvement, and are conducting instructional, demonstrational and field experimental work.

In 1938–39, the quantity of stemmed leaf used in tobacco factories in Australia amounted to 20 million lb. of which 4.5 million was of local origin and the balance was imported chiefly from the United States of America.

An expansion of the tobacco-growing industry is hoped for as a war-time measure. This development is expected eventually to reach an area of 15,000 acres and a production of about 9 million lb. With this end in view a conference of growers, Government technical experts and manufacturers was held in 1940 at which the latter undertook to increase their purchases of suitable Australian leaf to double the present quantities.

5. **Pumpkins and Melons.**—The total area of this crop in Australia during 1938–39 was 30,677 acres, of which 5,153 acres were in New South Wales, 1,429 acres in Victoria, 23,266 acres in Queensland, 410 acres in South Australia, 407 acres in Western Australia, 10 acres in Tasmania and 2 acres in the Australian Capital Territory. The production for Australia amounted to 81,101 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 1938–39 being 1,105 acres, of which 951 acres were in Tasmania, 135 acres in Victoria and a small area of 19 acres in Western Australia. The Tasmanian area, though still small, has increased during the present century, the total for the season 1901–2 being 599 acres. In Victoria the area, which in 1901–2 was 307 acres, dwindled to 71 acres in 1918–19, then rose to 312 acres in 1925–26 and dropped to 135 in 1938–39. The cultivation of hops was much more extensive in Victoria some 50 years ago than at present, the area in 1883–84 being 1,758 acres. During the year 1938–39 the imports of hops exceeded the exports by 175,047 lb., valued at £A.11,232. New Zealand supplied the whole of the quantity imported.

7. **Flax.**—For many years flax was grown intermittently in the Gippsland district of Victoria, and attempts were made to introduce its cultivation into Tasmania and New South Wales, but without success. About the end of 1917 the shortage of flax fibre was acute, and endeavours were made by the Commonwealth Government to encourage local cultivation. The acreage in Victoria increased from 419 acres in 1917–18 to 1,611 acres in 1919–20, but fell to 179 acres in 1928–29. As the result of a bounty introduced in 1930 the area increased to 1,216 acres in 1930–31, but this expansion was not maintained during the years following. In 1938–39, however, another attempt was made to establish the industry and 1,358 acres were planted in this State compared with 1,167 acres in the previous year. In South Australia, 4 acres producing 6 cwt. of seed valued at £7 was also recorded.

The linseed flax industry has been the subject of two investigations during recent years, namely, in 1933 and in 1936 (see Official Year Book, No. 32, p. 658).

Bounty was paid on flax and linseed grown in Australia between the years 1907 and 1918 and again for a period of five years ending 28th February, 1935. During these periods the total amounts disbursed as bounty were £2,376 and £2,839 respectively.

As a war-time measure, a rapid expansion of the flax-growing industry is now taking place. Owing to the failure of supplies from European countries, the British Empire is experiencing a shortage of flax necessary for war and civil needs. Arrangements have been made to increase the area sown to flax in Australia to 8,000 acres and a further 13,000 acres is contemplated. Fibre and tow produced will be sold to the Government of the United Kingdom at prices already arranged.

8. *Millet*.—Millet figures in the statistical returns of three of the States. The total area devoted thereto in 1938-39 was 4,057 acres, of which 2,868 acres were in New South Wales, 624 in Victoria, and 565 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. Figures in regard to acreages under flowers, fruit-trees, etc., are available for New South Wales, Victoria, South Australia, Western Australia, and Tasmania. During 1938-39 the areas in these States were 842, 1,229, 177, 190, and 330 acres respectively.

10. *Cotton*.—(i) *General*. The production of cotton in Australia is restricted to Queensland where cultivation began in 1860, and ten years later the area cropped had increased from 14 acres to over 14,000 acres. The reappearance 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 until 1888, when only 37 acres were planted. Later on the industry was revived, and manufacturing on a small scale was undertaken on two separate occasions at Ipswich, but low prices over a term of years checked development.

(ii) *Bounties, etc.* 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. The rise in price enabled the Government to offer a guarantee of 5½d. per lb. for seeded cotton of good quality for the three years ended 31st July, 1923, and the area picked increased from 166 acres in 1920 to 50,186 acres in 1924. Guarantees were continued until 1926, when the Commonwealth Government granted a bounty varying from ¾d. to 1½d. per lb. according to grade. In addition, the cotton-manufacturing industry received a graduated bounty on all cotton yarn manufactured in Australia which contained 50 per cent. of home-grown cotton. This bounty, however, ceased to operate after 30th June, 1932. The cotton-growing industry was further assisted by the Bounty Act of 1934, which extended the period to 1940 as well as varying the rate of bounty.

The Raw Cotton Bounty Act 1940 provided an extension of assistance for a further period of five years ended 31st December, 1945.

(iii) *Expansion of the Cotton-growing Industry*. The increased demand for raw cotton to meet Australia's war and civil needs has stimulated production. At present Australia is only producing one-third of its requirements and efforts are being directed to reduce the nation's dependence upon imported raw cotton obtained chiefly from the United States of America and India. Production is to be increased by means of an extension of area and the introduction of irrigation methods. The expansion of the industries connected with the spinning and weaving of cotton is referred to in Chapter XVIII. "Manufacturing Industry".

The area under cultivation and the production in Queensland since the year 1929 are shown hereunder:—

COTTON : AREA AND PRODUCTION IN QUEENSLAND.

Season Ended September.	Area Harvested.	Production of Cotton.			Average Yield per Acre Harvested.	
		Unginned.	Ginned.	Ginned Equivalent in Bales.(a)	Unginned.	Ginned.
		Acres. lb.	lb.	Bales.	lb.	lb.
1929 ..	15,003	8,024,502	2,535,743	5,044	535	169
1930 ..	22,652	17,022,897	5,600,533	11,051	752	247
1931 ..	22,452	15,244,644	4,908,775	9,689	679	219
1932 ..	29,995	6,270,116	2,018,977	3,989	209	67
1933 ..	68,203	17,718,306	5,545,830	10,974	260	81
1934 ..	43,397	26,924,179	8,777,282	17,471	620	202
1935 ..	54,947	20,785,418	7,067,042	14,515	378	129
1936 ..	62,200	19,198,600	6,653,973	13,504	309	107
1937 ..	52,692	11,792,828	4,113,684	8,519	224	78
1938 ..	66,470	13,687,872	4,773,936	9,654	206	72

(a) Bales of 500 lb.

11. **Coffee.**—Queensland is the only State in which coffee has been grown to any extent, and the results have not been satisfactory. The area of this crop reached its highest point in the season 1901-2 with 547 acres. Thereafter the acreage fluctuated, but on the whole with a downward tendency, and in 1938-39 only 19 acres were recorded with a production of 9,980 lb.

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

§ 18. Bounties.

1. **Bounties.**—The bounties paid by the Commonwealth Government during the year ended 30th June, 1940, amounted to £289,107. This amount refers only to bounties paid under the Bounties Acts and does not include financial assistance given to wheat-growers and other primary producers under other Acts. Particulars of the assistance so rendered by the Commonwealth Government are furnished hereafter. Details of the amounts paid as bounty during the years 1935-36 to 1939-40 are as follows:—

BOUNTIES : AUSTRALIA.

Articles on which Bounty was Paid.	Rate of Bounty Payable.	Date of Expiry of Bounty.	Amount Paid.				
			1935-36.	1936-37.	1937-38.	1938-39.	1939-40.
			£	£	£	£	£
Iron and Steel Products Bounty Act— *Wire Netting ..	12s. per ton (a) ..	23rd Oct., 1939.	10,659	8,467	6,741	5,736	4,451
Traction Engines .. * Manufactured from Materials pro- duced and manu- factured in Aus- tralia	According to capacity, £40-£90 per tractor less 10 per cent. from 9th July, 1930, increased to 16 per cent. from 7th November, 1930, and to 40 per cent. from 11th July, 1931. Restored to original rate from 4th December, 1933(a)	23rd Oct., 1939.	9,814	20,503	25,556	17,313	6,052

(a) Subject to 20 per cent. reduction under Financial Emergency Act.

BOUNTIES: AUSTRALIA—continued.

Articles on which Bounty was paid.	Rate of Bounty Payable.	Date of Expiry of Bounty.	Amount Paid.				
			1935-36.	1936-37.	1937-38.	1938-39.	1939-40.
Wire Netting Bounty Act 1939	9s. 7d. per ton ..	23rd Oct., 1944.	£ ..	£ ..	£ ..	£ ..	£ 83
Tractor Bounty Act 1939	According to capacity, £32-£72	23rd Oct., 1944.	..	..	..	..	6,400
Motor Industry Bounty Act— Radiator Assembly ..	10s. each ..	6th Dec., 1940.	..	..	..	..	2,396
Sulphur Bounty Act— Sulphur from Australian Pyrites and other Sulphide Ores or Concentrates	£2 5s. per ton(a) ..	23rd Oct., 1939.	74,282	68,011	83,144	87,575	55,036
Wine Export Bounty Act 1934-35— Fortified Wine, containing not less than 34 per cent. of proof spirit, exported from Australia from 1st March, 1935, to 29th February, 1940	1s. 3d. per gallon	29th Feb., 1940.	194,467	214,886	184,693	167,872	..
Wine Export Bounty Act 1939	1s. per gallon from 1st March, 1940	28th Feb., 1945.	..	..	..	..	146,592
Raw Cotton Bounty Act—(a) Raw cotton produced in Australia and graded as prescribed	5½d. per lb. to 30th November, 1935, 4½d. to 30th November, 1936, and 4¼d. per lb. to 30th November, 1940, fluctuating according to variations in Liverpool price	30th Nov., 1940.	77,089	50,643	95,044	115,012	60,391
Papua and New Guinea Bounties Act—(a) Cocoa Beans ..	1½d. per lb. ..	31st Dec., 1947.	1,166	1,285	1,774	2,885	3,595
Bamboos and Rattans (Unmanufactured)	£4 per ton ..	" "	..	..	..	27	..
Manila, Sisal and Other Hemp Fibres	£6 per ton ..	" "	..	..	..	2	..
Coir Fibre ..	£3 per ton ..	" "	..	..	..	45	239
Fruit Exported— Oranges ..	2s. per export case	(b)	7,886	..	..	..	..
Oranges, Lemons, Grape Fruit and Mandarins	Varies from 1s. to 2s. per case	(b) 31st Dec., 1940.	..	7,431	..	..	..
Apples and Pears ..	4d. per bushel case	(b)	81,047	..	..	..	..
Prunes ..	4½d. " " "	(b)	..	104,045	..	..	..
	2½ " " "	(b)	..	..	54,643	..	..
	¾d. per lb. "	(b)	6,707	..	..	..	..
	½d. " "	(b)	..	2,200	..	..	..
Total .. ..	.. ..	..	6463,179	477,471	461,402	406,287	289,107

(a) Subject to 20 per cent. reduction under Financial Emergency Act on production prior to 1st January, 1938. (b) Acts passed in respect of each year. (c) Including £62 Flax and Linseed Bounties Act, 1930.

2. **Other Financial Assistance.**—In addition to the payment of bounties mentioned in the preceding paragraph financial assistance has been granted by the Commonwealth Government for the relief of wheat-growers, fruit-growers and other primary producers. The amounts shown, however, do not include such items as the expenditure on cattle tick control, banana industry, tobacco investigation and apple and pear research, which indirectly benefits the industries concerned. The distribution as bounty, relief or subsidy has been made in the following manner :—

AMOUNTS PAID BY THE COMMONWEALTH GOVERNMENT TO ASSIST PRIMARY PRODUCERS : AUSTRALIA.

Amounts paid to—	Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Total.
		£	£	£	£	£	£	£	£
Wheat-growers as—									
Bounty (a) ..	1931-32	950,546	820,635	64,620	874,630	716,826	2,057	..	3,429,314
Relief ..	1932-33	570,902	442,421	40,744	507,138	436,145	2,342	308	2,000,000
Relief ..	1933-34	911,094	603,586	76,455	764,543	639,493	(b)57,024	805	3,053,000
Bounty (a) ..	1934-35	531,593	285,000	45,717	300,687	296,652	2,543	222	1,462,414
Special Relief	1934-35	100,000	192,000	12,000	127,000	137,000	5,250	..	573,250
Relief ..	1934-35	590,000	400,000	42,740	503,545	434,527	(b)33,906	226	2,004,944
Relief ..	1935-36	565,327	441,948	42,835	432,146	392,850	(b)40,403	360	1,915,869
Relief (c) ..	1938-39	558,489	307,564	70,824	398,559	421,296	(b)51,961	..	1,808,693
Relief (d) ..	1939-40	910,839	415,110	109,805	436,667	497,888	114,716	1,033	2,486,067
Total ..	..	5,688,790	3,908,273	505,740	4,344,915	3,972,677	310,202	2,954	18,733,551
Fruit-growers as—									
Relief (e) ..	1933-34	8,225	36,321	478	5,258	10,918	63,800	..	125,000
Relief (e) ..	1934-35	12,538	22,299	2,103	13,116	14,713	70,231	..	135,000
Total ..	..	20,763	58,620	2,581	18,374	25,631	134,031	..	260,000
Primary Producers (other than wheat-growers)—									
Manure subsidy ..	1932-33	19,903	88,697	32,588	34,930	59,823	17,711	32	244,684
Manure subsidy ..	1934-35	23,000	95,000	21,000	46,000	52,000	13,000	..	250,000
Manure subsidy ..	1935-36	56,211	203,324	40,944	99,610	105,821	28,127	94	534,131
Manure subsidy ..	1936-37	40,058	129,637	25,144	59,136	58,327	14,610	88	327,000
Manure subsidy ..	1937-38	30,048	99,746	18,828	48,000	53,028	12,450	66	262,166
Manure subsidy ..	1938-39	18,290	76,500	19,020	36,400	43,260	12,400	90	206,020
Manure subsidy (f) ..	1939-40	4,297	17,100	4,320	783	320	250	..	23,200
Total ..	..	187,937	710,004	161,844	324,859	363,579	98,608	370	1,847,201
Grand Total ..	..	5,897,490	4,676,897	670,165	4,688,148	4,361,887	542,841	3,324	20,840,752

(a) Rate of Bounty 4½d. per bushel in 1931-32 and 3d. per bushel in 1934-35. (b) Includes special grant to Tasmania.
 (c) Including the unexpended balance (£23,892) and without deducting refunds and expenses (£14,862). (d) Including refunds and administrative expenses. (e) Growers of apples, pears and mandarins. (f) Subject to revision.

The moneys granted for the assistance of wheat-growers in 1932-33 and 1933-34 were paid through the Governments of the States on an acreage basis. In 1934-35, in accordance with the recommendations of the Royal Commission on the wheat industry, assistance took the form of a bounty of 3d. per bushel, supplemented by a further relief payment of 3s. per acre. Further special relief was given to those farmers who were adversely affected by the weather conditions of the 1934-35 season. Altogether, the amount paid during 1934-35 for the benefit of wheat-growers exceeded £4 million. For the year 1935-36 the amount paid by the Commonwealth Government as relief was £1,915,869. No financial assistance was made to wheat-growers by the Commonwealth Government during the years 1936-37 and 1937-38. In 1938-39, however, a sum of £1,808,693, collected through the medium of a flour tax, was allocated for distribution as relief to wheat-growers. From the same source, a sum of £2,486,067 was allocated to the States for the same purpose during 1939-40.

The relief granted to fruit-growers was paid to growers of apples, pears and mandarins. Assistance has been given to primary producers, other than wheat-growers, in the form of a manure subsidy; the rate was 15s. for each ton of artificial manure

used in the production of primary produce, but in 1936-37 this was reduced to 10s. per ton. The payment of this subsidy ceased on 30th June, 1939. Since 1932-33 more than £1,847,000 has been distributed in this manner.

In addition to the assistance outlined above the Loan (Farmers' Debt Adjustment) Act 1935 made provision for grants, totalling £12 million, to be made available to the States for the adjustment of farmers' debts. Of this amount £10 million was allocated as follows:—New South Wales, £3,450,000; Victoria, £2,500,000; Queensland, £1,150,000; South Australia, £1,300,000; Western Australia, £1,300,000; and Tasmania, £300,000. The remaining £2 million is to be allocated in the same proportion, but is subject to review at a later date.

§ 19. Fertilizers.

1. **General.**—In the early days of settlement in Australia scientific cultivation was little understood. It was common, as in other new countries, for the land to be cropped continuously to a degree of exhaustion. The divergent character of the soils presented a difficulty in the proper use of fertilizers for different crops and the outstanding development of wheat-growing made a system of crop rotation impracticable. The importance of fallowing and the application of suitable fertilizers in adequate quantities is, however, now widely appreciated by farmers. The introduction of the modern seed-drill acting also as a fertilizer-distributor has greatly facilitated the use of artificial manures and much land formerly regarded as useless for cultivation has now been made productive.

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

3. **Imports.**—The Australian production of prepared fertilizers is sufficient for local requirements. Imports consist chiefly of rock phosphate, which is used in making superphosphate, a valuable fertilizer for cereals. During 1938-39 the value of rock phosphate imported represented 65 per cent of the total imports of fertilizers. Nauru, Cocos Island and Gilbert and Ellice Islands Colony supplied the whole of the shipments. Sodium nitrate is obtained chiefly from Chile.

The imports of manures during the last five years are given in the following table. Although considerable quantities of manufactured superphosphate were imported up to the year 1914-15, imports have now dwindled to negligible quantities:—

FERTILIZERS: IMPORTS INTO AUSTRALIA.

Australian Currency Values.

Fertilizer.		1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
Ammonium Sulphate	cwt.	229,200	491,208	573,979	604,566	710,065
" "	£	104,809	216,671	240,089	279,949	336,872
Potash Salts	cwt.	149,701	209,379	269,476	212,308	223,202
" "	£	59,841	75,120	115,925	97,989	102,794
Rock Phosphate	cwt.	8,201,296	10,488,165	13,259,884	15,551,909	16,008,437
" "	£	610,092	735,962	893,252	984,313	1,038,399
Sodium Nitrate	cwt.	83,548	110,273	134,311	188,129	203,666
" "	£	39,431	49,580	71,885	84,664	103,074
Superphosphate	cwt.	51,360	40	20	..	..
" "	£	3,449	9	4	..	..
Other	cwt.	7,712	116,549	38,425	3,357	125,551
" "	£	3,431	13,598	6,075	3,275	12,237
Total	cwt.	8,722,817	11,415,614	14,276,095	16,560,269	17,270,921
	£	821,053	1,090,940	1,327,230	1,450,190	1,593,377

4. Exports.—The subjoined table shows the exports of manures for the years 1934-35 to 1938-39. Practically all these fertilizers are manufactured locally, the quantities exported being consigned chiefly to the Pacific Islands, New Zealand and Japan :—

FERTILIZERS : EXPORTS FROM AUSTRALIA.

Fertilizer.		1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
Ammonium sulphate	cwt.	2,553	4,061	5,011	2,613	2,097
" "	£	1,074	1,569	974	1,094	940
Bone-dust	cwt.	41	2,576	2,865	3,224	5,238
" "	£	17	1,396	1,597	1,809	2,931
Rock phosphate	cwt.	..	..	1	220	61
" "	£	..	..	7	60	143
Sodium nitrate	cwt.	1	..	59	10	22
" "	£	1	..	59	17	42
Superphosphate	cwt.	31,116	36,454	41,254	33,924	37,002
" "	£	5,590	6,261	7,136	5,875	6,182
Other	cwt.	18,188	29,300	68,817	102,664	53,197
" "	£	1,703	11,665	34,104	52,484	27,323
Total	cwt.	51,899	72,391	118,007	142,655	97,677
	£	8,385	20,891	43,877	61,339	37,561

5. Quantities Locally Used.—Information regarding the area manured and the quantity used in each State during the year 1938-39 is given in the following table. The details are not complete as the area manured and the quantity used in the top-dressing of pasture lands in Queensland are not available. This omission, however, does not seriously impair the value of the table. Details of the area manured with natural manure (stableyard, etc.) have been omitted; in 1938-39 the area and quantity involved amounted to 112,979 acres and 608,403 loads :—

AREA MANURED AND QUANTITY OF MANURE USED, 1938-39.

State or Territory.	Artificial Manure (Superphosphates, Bone-dust, Nitrates, etc.)				Total Area Manured.	Total Artificial Manure Used.
	Area of Crops Manured.		Pasture Lands Top-dressed.			
	Acres.	Tons.	Acres.	Tons.		
New South Wales	4,670,693	148,646	823,430	37,923	5,494,132	186,569
Victoria	4,380,947	184,866	3,974,938	210,297	8,355,885	395,163
Queensland	238,489	61,300	(a)	(a)	(b)238,489	(b)61,300
South Australia	4,281,419	179,118	1,095,120	56,325	5,376,539	235,443
Western Australia	4,613,482	216,735	1,259,347	63,649	5,872,829	280,384
Tasmania	208,212	19,433	261,787	14,495	469,999	33,933
Northern Territory	..	..	..	..	..	..
Australian Capital Territory	7,300	366	1,571	66	8,871	432
Total	18,400,542	810,469	7,416,202	382,755	25,816,744	1,193,224

(a) Not available.

(b) Excluding Pasture Lands. Quantity considered to be negligible.

Particulars of the quantity of artificial manure used in each of the States and Territories during the past ten years are included in the next table. These details include the quantity used in the top-dressing of pasture lands except where indicated by the

ootnote. The omission of Queensland, as previously mentioned, does not detract from the value of the table as the area involved is considered to be negligible :—

QUANTITY OF ARTIFICIAL MANURE USED : AUSTRALIA.

Year.	N.S.W.		Victoria.		Q'land. (a)		S. Aust.		W. Aust.		Tas.		N.T.		A.C.T.		Total. (b)	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1929-30	129,076	269,967	22,925	196,746	231,128	24,810	137	874,789										
1930-31	132,619	274,420	28,783	205,110	236,146	24,870	131	902,079										
1931-32	70,374	163,234	31,255	148,707	178,509	22,050	92	614,221										
1932-33	89,955	199,557	35,505	157,995	199,337	24,335	128	706,712										
1933-34	98,313	217,251	42,517	158,989	203,848	25,844	120	746,882										
1934-35	101,885	211,657	44,279	157,189	196,741	25,824	135	737,710										
1935-36	123,472	251,897	40,393	174,593	202,325	27,104	166	819,952										
1936-37	151,088	306,846(c)	40,392	208,053	224,473	31,364	304	962,525										
1937-38	178,369	364,281	66,889	227,547	249,640	33,131	357	1,120,214										
1938-39	186,569	395,163	61,300	235,443	280,384	33,933	432	1,193,224										

(a) Exclusive of quantity used in top-dressing pasture lands. (b) Incomplete. See Note (a).

(c) 1935-36.

As mentioned in § 18 the Commonwealth Government has encouraged the use of artificial manure by subsidizing primary producers, other than wheat-growers, at the rate of 15s. per ton up to 1936-37 when the subsidy was reduced to 10s. per ton. The payment of this subsidy ceased on 30th June, 1939. The expansion in the use of artificial manure since 1932-33, when the subsidy was introduced, is indicated in the table above.

6. Local Production.—Complete information regarding local production of fertilizers is not available. The number of firms engaged in the manufacture of chemical fertilizers in Australia for the year 1938-39 was 36, made up as follows :—New South Wales, 5 ; Victoria, 7 ; Queensland, 6 ; South Australia, 6 ; Western Australia, 5 ; and Tasmania, 7. The production of superphosphates in Australia during 1938-39 amounted to 1,199,444 tons, the largest producing States being Victoria, Western Australia and South Australia.

§ 20. Ensilage.

1. Government Assistance in Production.—The various State Governments devote a considerable amount of attention to the education of the farming community in regard to the value of ensilage. Monetary aid is afforded in the erection of silos, and expert advice is supplied in connexion with the design of the silos and the cutting and packing of the ensilage.

2. Quantity Made.—Information regarding the number of holdings on which ensilage was made and the quantity made during the seasons 1934-35 to 1938-39 is given in the following table.

ENSILAGE MADE.

State.	1934-35.		1935-36.		1936-37.		1937-38.		1938-39.	
	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	1,068	88,991	1,311	109,731	1,350	113,542	1,399	109,628	1,476	124,496
Victoria	369	22,145	326	22,346	549	32,902	841	46,860	549	28,716
Queensland	105	7,566	86	5,644	(b) 86	(b) 5,644	291	14,831	291	17,772
South Australia	109	6,794	124	9,160	118	9,270	160	11,183	103	6,056
Western Australia	423	16,996	332	14,896	306	13,197	379	17,650	328	16,156
Tasmania	52	2,473	29	1,341	17	619	20	648	12	490
Australia	2,126	144,965	2,208	163,118	2,426	175,174	3,090	200,800	2,759	193,686

(a) No. of holdings on which ensilage was made. (b) 1935-36.

The drought of 1902-3 drew increased attention to the value of stocks of ensilage and during the four seasons ended 1909-10 there was an increase both in the number of holdings on which ensilage was made and in the quantity produced. The following five seasons, however, showed a falling off, but the reduction was due to the fact that stocks had not been drawn upon to any great extent during the previous seasons. The accumulated stocks proved of great value during the 1914 drought, though far below what would have been the case if more attention had been paid to production during the

previous years, when there was a surplus of green forage. The quantities made since that date have fluctuated considerably, but the output has increased during recent years. In 1938-39, the production amounted to 193,686 tons, which was slightly under the record quantity of 200,800 tons recorded in 1937-38.

§ 21. Agricultural Colleges and Experimental Farms.

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

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

2. **Agricultural Colleges and Experimental Farms.**—In previous issues of this publication detailed information is given regarding agricultural colleges, experimental farms and agricultural education generally (see Official Year Book No. 11, pp. 393-5). A summary in respect of the year 1938-39 will be found in the *Production Bulletin* No. 33, Part II., issued by this Bureau.

3. **Agricultural and Stock Departments.**—A synopsis of the activities and operations of the Agricultural and Stock Departments of the several States on 30th June, 1920, will be found in Official Year Book No. 14, pp. 1180-91.

§ 22. Employment in Agriculture.

Information relating to the number of persons employed is furnished annually by landholders of one acre and upwards. The particulars furnished refer to the owner, occupier or manager, those members of his family, and other employees who are permanently engaged throughout the year in the work of the farm. Casual labour, such as harvesters and fruit-pickers, is excluded. In the collection of statistics of this nature difficulty is experienced in correctly determining whether the duties of female employees are more domestic than rural and on that account it is considered advisable to leave females out of the table.

MALES EMPLOYED IN AGRICULTURE.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
1913-14 ..	61,525	51,932	33,362	34,111	18,210	11,789	210,929
1923-24 ..	48,176	49,740	38,186	31,532	22,153	12,905	202,692
1933-34 ..	42,084	38,514	46,097	30,329	24,925	13,945	195,894
1934-35 ..	42,135	37,294	47,242	30,177	23,775	13,353	193,976
1935-36 ..	42,204	35,926	45,878	30,096	22,585	12,731	189,420
1936-37 ..	43,648	35,575	(a)45,878	30,273	22,317	12,138	189,829
1937-38 ..	43,279	35,592	(a)45,878	30,365	22,527	11,929	189,570
1938-39 ..	44,627	35,548	(a)45,878	28,981	19,653	11,676	186,363

(a) 1935-36.

Although the area of crops has expanded considerably during the past two decades there has been a decrease in the numbers employed in agriculture owing to the increasing use of machinery both in the cultivation of the soil and in the harvesting of the crops. For a number of years prior to the economic depression the value of machinery employed in agricultural pursuits steadily increased until it reached nearly £39 million in 1928-29. After 1929-30 machinery values declined each year to £30 million in 1934-35, but thereafter rose again to £37 million in 1938-39.