

CHAPTER XX.

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. 670.)

§ 2. Progress of Agriculture.

1. **Early Records.**—In an “Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797”, Governor Hunter gives the acreage 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 eight seasons ended 1945-46 :—

AREA OF CROPS.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-61	246,143	387,283	3,353	359,284	24,705	152,860	..	..	1,173,628
1870-71	385,151	692,840	52,210	801,571	54,527	157,410	..	..	2,143,709
1880-81	606,277	1,548,809	113,978	2,087,237	63,902	140,788	..	..	4,560,991
1890-91	852,704	2,031,955	224,993	2,093,515	69,678	157,376	..	..	5,430,221
1900-01	2,446,767	3,114,132	457,397	2,369,680	201,338	224,352	..	..	8,813,666
1910-11	3,386,017	3,952,070	667,113	2,746,334	855,024	286,920	360	..	11,893,838
1920-21	4,465,143	4,489,503	779,497	3,231,083	1,804,987	297,383	296	1,966	15,069,858
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
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
1939-40	6,381,531	5,002,362	1,726,091	4,541,614	4,331,299	258,038	340	8,119	22,249,394
1940-41	6,374,354	4,467,191	1,734,248	4,254,348	4,026,969	253,941	322	6,457	21,117,830
1941-42	5,929,553	4,734,613	1,671,336	3,976,232	3,852,092	280,970	..	5,549	20,450,345
1942-43	5,297,313	3,816,430	1,742,802	3,436,675	2,819,713	300,005	..	6,779	17,419,717
1943-44	4,797,385	3,402,537	1,757,396	2,760,778	2,782,414	334,933	..	6,769	15,902,212
1944-45	5,044,792	4,310,152	1,796,833	3,179,374	2,790,376	342,916	..	7,410	17,471,853
1945-46	6,087,566	5,327,122	1,822,108	3,824,128	2,944,879	411,824	..	8,846	20,426,473

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 1914-18 War, 18,528,234 acres were cultivated in Australia. Four years later the area of crops declined 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 just under 20 million acres in 1935-36. Subsequently the area increased, and reached a maximum of 23½ million acres in 1938-39. Thereafter it declined to under 16 million acres in 1943-44, then rose again to nearly 20½ million acres in 1945-46. These fluctuations approximated to changes in wheat areas. Following the outbreak of war in 1939, the area under crop declined with each successive year until 1944-45, when the areas started to increase. This movement was contrary to the experience of the 1914-18 War when the decline did not occur until the third war-year.

3. **Area under Sown Pastures.**—In all the States there are considerable areas of grasses mainly sown on land from which scrub has been cleared or on land which it is desired to rest from cultivation. These areas, which are not included in "area of crops" have expanded from 5½ million acres in 1929-30 to approximately 10 million acres in 1945-46.

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 and Agriculture 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. Its functions are :—(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 in respect of quarantine measures relating to pests and diseases of plants and animals, and to advise the Commonwealth and State Governments. 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, the Commonwealth Director-General

of Health, the Secretary, Department of Commerce and Agriculture, the Director-General of Agriculture and the Commonwealth Treasury. The membership of the Standing Committee was extended during the 1939-45 War to include the Department of Labour and National Service, the Department of Supply and Shipping and the Commonwealth Bureau of Census and Statistics. This war-time arrangement was terminated in 1947.

§ 3. Distribution, Production and Value of Crops.

1. *Distribution of Crops.*—The following table shows the areas in the several States and Territories of each of the principal crops for the season 1945-46. Similar details for the season 1944-45 appear in Part II. of *Production Bulletin* No. 39.

AREA OF PRINCIPAL CROPS, 1945-46.

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.
Barley (Grain)—									
2 Row ..	18,624	117,774	14,880	398,863	36,914	6,283	..	..	593,338
6 Row ..	10,269	16,358	6,169	42,967	29,472	463	..	78	105,776
Maize (Grain) ..	92,416	6,809	136,445	..	48	11	..	..	235,729
Oats (Grain) ..	617,070	511,483	40,007	369,733	396,285	13,976	..	493	1,949,047
Rice (Grain) ..	28,372	..	..	..	..	..	..	..	28,372
Rye (Grain) ..	456	7,698	43	33,311	1,490	656	..	..	43,654
Wheat (Grain) ..	3,773,901	3,251,393	392,502	2,165,004	1,835,780	4,982	..	1,822	11,425,384
Green Fodder ..	541,810	63,311	581,905	189,882	288,206	138,540	..	2,094	1,805,748
Hay ..	758,400	1,060,496	69,084	484,060	281,410	99,758	..	4,028	2,757,236
Other Stock Fodder ..	8,105	11,718	23,649	15,652	8,777	16,298	..	43	84,242
Grass and Other Seeds ..	7,456	8,058	2,216	11,933	7,571	1,192	..	..	38,426
Beans, Navy ..	8,550	58	2,420	..	..	30	..	..	11,058
Peas, Blue ..	..	416	..	86	..	23,278	..	..	23,780
Onions ..	747	8,170	2,537	511	383	52	..	8	12,408
Potatoes ..	22,865	63,000	15,216	3,854	9,781	56,245	..	118	176,079
Other vegetables for human consumption ..	70,898	49,424	45,873	8,721	10,835	10,743	..	57	196,551
Vines—									
Productive ..	14,931	41,468	2,507	55,902	8,622	..	..	3	123,433
Unproductive ..	1,052	1,375	496	1,538	961	..	..	..	5,422
Sugar-cane—									
Productive ..	5,943	..	229,736	..	..	..	..	..	235,679
Unproductive ..	9,123	..	92,158	..	..	..	..	..	101,281
Hops ..	..	153	..	..	15	1,191	..	..	1,359
Cotton ..	..	..	7,608	..	..	..	..	..	7,608
Tobacco ..	370	1,408	1,897	..	296	..	..	..	3,971
Broom Millet ..	3,704	1,195	240	..	50	..	..	..	5,189
Flax for Fibre ..	..	26,419	..	6,292	5,356	3,346	..	..	41,413
Orchards and other Fruit-gardens ..	84,062	69,479	34,946	27,223	21,730	32,284	..	99	269,823
All other Crops ..	8,442	9,459	119,484	3,596	897	2,496	..	3	144,377
Total Area ..	6,087,566	5,327,122	1,822,108	3,824,128	2,944,879	411,824	..	8,846	20,426,473

2. *Relative Areas of Crops in States and Territories.*—The proportion of each of the crops cultivated to the extent of over 100,000 acres in the various States and Territories on the total area of crops for the season 1945-46 is shown in the next table. Similar details for the season 1944-45 appear in Part II. of *Production Bulletin* No. 39. In four of the States, namely, New South Wales, Victoria, South Australia and Western Australia, wheat-growing for grain is by far the most extensive crop. In Queensland the most extensive crops are green fodder, wheat, sugar-cane and maize, and in Tasmania, green fodder, hay, potatoes, orchards and fruit-gardens, blue peas and oats.

As pointed out previously, wheat is the main crop in Australia, the area thereof for grain only representing more than half the total area of crops in 1945-46.

RELATIVE AREAS UNDER CROP, 1945-46.

Crop.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N.T. (a)	A.C.T.	Aust.
	%	%	%	%	%	%	%	%	%
Wheat (Grain) ..	61.99	61.04	21.54	56.62	62.33	1.21	..	20.60	55.94
Hay ..	12.46	19.91	3.79	12.66	9.56	24.22	..	45.54	13.50
Oats (Grain) ..	10.14	9.60	2.20	9.67	13.46	3.39	..	5.57	9.54
Green Fodder ..	8.90	1.19	31.94	4.97	9.79	33.64	..	23.67	8.84
Barley (Grain) ..	0.47	2.52	1.15	11.55	2.25	1.64	..	0.88	3.42
Sugar-cane ..	0.25	..	17.67	..	..	..	..	..	1.65
Orchards and Fruit-gardens ..	1.38	1.30	1.92	0.71	0.74	7.84	..	1.12	1.32
Maize (Grain) ..	1.52	0.13	7.49	..	..	..	..	..	1.16
Potatoes ..	0.38	1.18	0.83	0.23	0.33	13.66	..	1.33	0.86
Vineyards ..	0.26	0.80	0.16	1.50	0.33	..	..	0.03	0.63
All other ..	2.25	2.33	11.31	2.09	1.21	14.40	..	1.26	3.14
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	..	100.00	100.00

(a) Not available.

3. Area of Principal Crops in Australia.—The area of the principal crops during each of the four seasons ended 1945-46, the last pre-war season 1938-39 and the average for the decennium ended 1938-39 is shown hereunder:—

AREA OF PRINCIPAL CROPS: AUSTRALIA.

Crop.	Average ten years ended 1938-39.		1938-39.	1942-43.	1943-44.	1944-45.	1945-46.
	'000 acres.	'000 acres.	'000 acres.	'000 acres.	'000 acres.	'000 acres.	'000 acres.
Barley (a) ..	428	650	356	357	500	593	
Maize ..	295	324	285	283	257	236	
Oats ..	1,393	1,784	1,497	1,415	2,034	1,949	
Rice ..	22	24	34	41	25	28	
Wheat ..	14,345	14,346	9,280	7,875	8,463	11,425	
Green Fodder ..	1,272	1,789	2,112	2,265	2,043	1,806	
Hay ..	2,994	3,250	2,359	2,044	2,409	2,757	
Beans and Peas ..	49	43	77	57	37	35	
Onions ..	8	7	10	10	12	12	
Potatoes (b) ..	130	98	140	192	242	176	
Other Vegetables for human consumption ..	(c) 34	(c) 66	(c) 129	199	240	197	
Sugar-beet ..	3	4	1	1	..	..
Vineyards ..	118	127	130	129	129	129	
Hops ..	1	1	1	1	1	1	
Sugar-cane ..	332	369	329	336	326	337	
Cotton ..	43	66	56	41	17	8	
Tobacco ..	12	8	7	7	5	4	
Orchards ..	276	272	260	262	263	270	
All Other Crops ..	203	270	357	387	469	463	
Total ..	21,958	23,498	17,420	15,902	17,472	20,426	

(a) Malting only.

(b) Excludes Sweet Potatoes.

(c) Market Gardens.

4. Weights and Measures.—The production of agricultural commodities in Australia is recorded either in terms of capacity or weight. When measured in terms of capacity the unit is the bushel of 2,218.192 cubic inches or gallon of 277.274 cubic inches. When measured in terms of weight, the unit adopted is either the long ton of 2,240 lb. (except in the case of flour, bran and pollard, when the short ton of 2,000 lb. is used), the hundred-weight (cwt.) of 112 lb. or pound (lb.).

The production of cereals and fruit is recorded in bushels, the production of wine in gallons, while hay, vegetables, grapes and industrial crops are measured by weight, generally in terms of long tons or cwts.

In the following table the weights adopted per bushel are given for the more important cereals, fruits, etc. Several types of cases are used for fruits, but in determining the average weights shown below, that with a capacity of 2,223 cubic inches was adopted. The packed weight of a bushel of fruit also is subject to considerable variation according to the kind and variety of fruit.

Data compiled by the State Departments of Agriculture made available to this Bureau were used in determining these average fruit weights.

APPROXIMATE BUSHEL EQUIVALENTS.

Commodity.	Approximate Bushel Equivalent in lb.	Commodity.	Approximate Bushel Equivalent in lb.
Cereals—		Fruit— <i>continued.</i>	
Barley	50	Bananas	56
Canary Seed	56	Cherries	48
Maize	56	Citrus—	
Milletts	60	Oranges	48
Oats	40	Mandarins	48
Panicum	60	Lemons	48
Rice (Paddy)	42	Grape Fruit	42
Rye	60	Custard Apples	35
Sorghum	60	Figs	44
Wheat	60	Mangoes	40
Legumes—		Nectarines	50
Beans	60	Passion Fruit	34
Peas	60	Peaches	45
Other Crops—Flax Seed	56	Pears	45
Fruit—		Persimmons	44
Apples	42	Plums and Prunes	58
Apricots	48	Quinces	42

5. Production of Principal Crops in Australia.—The following table shows the production of the principal crops for the four years ended 1945-46, the year 1938-39 and for the decennium ended 1938-39 :—

PRODUCTION OF PRINCIPAL CROPS : AUSTRALIA.

Crop.	Unit of Quantity.	Average, ten years ended 1938-39.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.
Barley (a)	'ooo bus.	7,480	9,704	6,782	6,397	4,188	9,561
Maize	" "	7,228	7,057	6,885	7,433	6,463	5,729
Oats	" "	16,437	15,555	21,532	17,712	8,970	25,774
Rice	" "	2,005	2,775	3,084	4,015	1,693	2,735
Wheat	" "	169,398	155,369	155,728	109,720	52,880	142,410
Hay	" tons	3,490	3,321	3,116	2,717	1,994	3,493
Beans and Peas	bus.	734	495	(b)(d) 25	(b) 20	(b) 16	(b) 10
Onions	tons	43	18	55	47	67	67
Potatoes(c)	" "	351	274	484	599	381	646
Sugar (Beet)	" "	5	1.5	0.7	0.7	..	..
Grapes	" "	381	402	480	527	358	447
Wine made	gals.	16,330	14,958	19,864	19,865	14,419	25,858
Raisins and Currants	tons	70	75	91	103	69	74
Hops	lb.	2,127	2,402	2,779	2,999	2,594	2,222
Sugar (Cane)	tons	658	823	650	524	670	666
Cotton, Unginned	lb.	15,667	13,688	14,058	9,540	8,508	1,819
Tobacco (Dried leaf)	" "	5,336	4,046	4,969	4,633	2,844	2,505

(a) Malting only.

(b) Tons.

(c) Excludes Sweet Potatoes.

(d) Incomplete.

6. Average Yield per Acre of Principal Crops in Australia.—The following table shows the yield per acre for Australia of the principal crops for the four years ended 1945-46, for the year 1938-39 and the decennium ended 1938-39.

AVERAGE YIELD PER ACRE OF PRINCIPAL CROPS : AUSTRALIA.

Crop.	Unit of Quantity.	Average, ten years ended 1938-39.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.
Barley (a)	Bushel	17.49	14.92	19.03	17.89	8.38	16.15
Maize	"	24.53	21.77	24.19	26.29	25.15	24.30
Oats	"	11.80	8.72	14.38	12.52	4.41	13.22
Rice	"	93.00	117.92	90.11	98.67	68.82	96.40
Wheat	"	11.81	10.83	16.78	13.93	6.25	12.46
Hay	Ton	1.17	1.02	3.32	1.33	0.83	1.27
Onions	"	5.54	2.74	5.63	4.61	5.59	5.38
Potatoes (b)	"	2.71	2.80	3.45	3.12	3.64	3.67
Sugar (Beet)	"	1.40	0.35	0.71	0.84	"	"
Grapes (c)	"	3.45	3.43	3.86	4.26	2.89	3.62
Wine (c)	Gallon	349	300	397	402	290	4.71
Raisins and Currants (c)	Ton	1.28	1.26	1.39	1.57	1.05	1.23
Hops (c)	lb.	2,003	2,235	2,106	2,350	2,044	1,754
Sugar (Cane) (c)	Ton	2.76	3.14	2.70	2.29	2.96	2.83
Cotton, Unginned (c)	lb.	366	206	249	230	488	236
Tobacco (Dried leaf)	"	463	511	693	700	596	631

(a) Malting only.

(b) Excludes Sweet Potatoes.

(c) Per acre of productive crops.

7. Gross Value of Agricultural Production in Australia.—The following table shows the gross value of recorded agricultural production at the principal markets in Australia for the years 1938-39 and the five years ended 1945-46 :—

GROSS VALUE OF AGRICULTURAL PRODUCTION : AUSTRALIA.

Crops.	1938-39.	1941-42.	1942-43.	1943-44.	1944-45.	1945-46.
	£'000.	£'000.	£'000.	£'000.	£'000.	£'000.
Barley (a)	1,417	2,316	1,124	1,856	1,324	3,007
Maize	1,503	1,632	2,251	2,530	2,189	2,054
Oats	2,085	2,697	2,911	2,471	2,654	4,573
Rice	540	506	759	983	416	672
Wheat	21,989	32,385	34,400	28,387	17,409	46,531
Green Fodder	2,999	3,764	4,205	4,170	3,646	3,854
Hay	12,704	12,988	14,445	13,488	13,119	18,445
Beans and Peas	253	455	607	599	502	307
Onions	306	543	781	696	1,129	961
Potatoes (b)	3,649	4,312	5,961	7,233	10,969	7,989
Other Vegetables for Consumption	(c) 2,473	(c) 2,941	(d) 12,114	14,864	16,361	15,124
Sugar-beet	27	53	14	17	9	3
Grapes	3,924	5,377	6,031	7,384	5,248	6,505
Hops	183	233	219	238	230	226
Sugar-cane	9,178	9,607	9,282	8,521	10,334	10,400
Cotton, Unginned	230	304	320	212	186	42
Tobacco (Dried leaf)	360	822	577	536	316	328
Orchards	9,695	10,512	14,253	19,406	17,021	18,750
All Other Crops	3,336	4,625	2,335	2,978	3,964	4,436
Total, Gross Value	76,851	96,072	112,649	116,569	107,026	144,207

(a) Malting only. (b) Excludes Sweet Potatoes. (c) Market Gardens. (d) Incomplete. Includes some values of vegetables for stock fodder. (e) Excludes Western Australia.

8. Value of Production—Gross and Net.—(i) General. 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 the 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 plant; consequently the figure stated is inflated to that extent.

GROSS, FARM AND NET VALUES OF AGRICULTURAL PRODUCTION, 1944-45 AND 1945-46.

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.		
1944-45.							
	£	£	£	£	£	£	£
New South Wales ..	25,671,000	3,696,000	21,995,000	3,851,000	(b) 645,000	17,499,000	(c)
Victoria ..	23,911,774	2,313,681	21,598,093	5,386,218	1,311,913	14,899,962	900,000
Queensland ..	24,228,000	2,400,000	21,828,000	1,830,000	1,690,000	18,308,000	1,110,000
South Australia ..	13,620,624	1,114,963	12,505,661	2,480,804	1,026,993	8,997,864	594,493
Western Australia ..	10,232,878	1,173,081	9,059,797	804,042	1,176,446	7,079,309	571,634
Tasmania ..	9,288,920	1,608,750	7,680,170	1,581,250	(b) 246,800	5,852,000	145,000
Total ..	106,973,196	12,306,475	94,666,721	15,933,314	6,097,212	72,636,195	£3,321,127

1945-46.							
	£	£	£	£	£	£	£
New South Wales ..	47,972,000	6,941,000	41,031,000	4,597,000	(b) 777,000	35,657,000	(c)
Victoria (d) ..	33,156,746	3,841,301	29,315,445	7,535,996	1,452,611	20,326,838	900,000
Queensland ..	24,831,000	2,500,000	22,331,000	1,870,000	1,730,000	18,731,000	1,140,000
South Australia ..	18,862,880	1,785,462	17,077,418	2,252,839	1,043,666	13,780,913	594,493
Western Australia ..	11,745,265	1,307,129	10,438,136	978,831	1,360,345	8,098,960	573,207
Tasmania ..	7,550,670	1,446,260	6,104,410	1,513,520	(b) 246,450	4,344,440	130,500
Total ..	144,118,561	17,821,152	126,297,409	18,748,186	6,610,272	100,939,151	£3,338,200

(a) No deduction has been made for depreciation and maintenance. (b) No allowance made for costs of power, power kerosene, petrol and other oils. (c) Not available. (d) Subject to revision. (e) Incomplete.

(ii) States 1936-37 to 1945-46. In the following table the net value of agricultural production and the net value per head of population are given by States for the years 1936-37 to 1945-46 :-

VALUE OF AGRICULTURAL PRODUCTION.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
NET VALUE.(a)							
	£	£	£	£	£	£	£
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 ..	14,829,000	14,962,412	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
1939-40 ..	16,367,000	11,907,131	13,696,000	9,458,140	7,064,100	2,433,760	60,926,131
1940-41 ..	9,323,000	7,097,209	13,723,000	6,048,310	3,678,100	1,730,480	41,600,105
1941-42 ..	16,043,000	15,511,086	13,380,000	7,769,642	6,528,077	3,179,810	62,411,615
1942-43 ..	24,444,000	19,026,308	15,416,000	10,316,341	5,490,585	3,525,910	78,219,144
1943-44 ..	27,916,000	16,062,900	16,755,000	10,738,133	5,841,624	4,826,620	82,140,277
1944-45 ..	17,499,000	14,899,962	18,308,000	8,997,864	7,079,309	5,852,060	72,636,195
1945-46 ..	35,657,000	20,326,838	18,731,000	13,780,913	8,098,960	4,344,440	100,939,151

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

VALUE OF AGRICULTURAL PRODUCTION—*continued.*

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
NET VALUE PER HEAD OF MEAN POPULATION.							
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
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 11 3	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
1939-40 ..	5 18 7	6 6 0	13 8 5	15 16 1	15 1 7	10 3 5	8 14 2
1940-41 ..	3 7 0	3 13 11	13 5 11	10 1 10	7 15 7	7 3 11	5 17 9
1941-42 ..	5 14 7	7 18 11	12 17 11	12 16 0	13 14 7	13 5 3	8 15 0
1942-43 ..	8 12 10	9 13 3	14 15 10	16 16 10	11 8 11	14 12 5	10 17 6
1943-44 ..	9 5 9	8 1 9	15 17 0	17 7 5	12 2 6	19 16 4	11 6 4
1944-45 ..	6 1 6	7 8 9	17 2 0	14 7 11	14 10 6	23 15 4	9 18 1
1945-46 ..	12 4 0	10 1 2	17 5 0	21 15 8	16 9 3	17 8 4	13 12 4

§ 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.

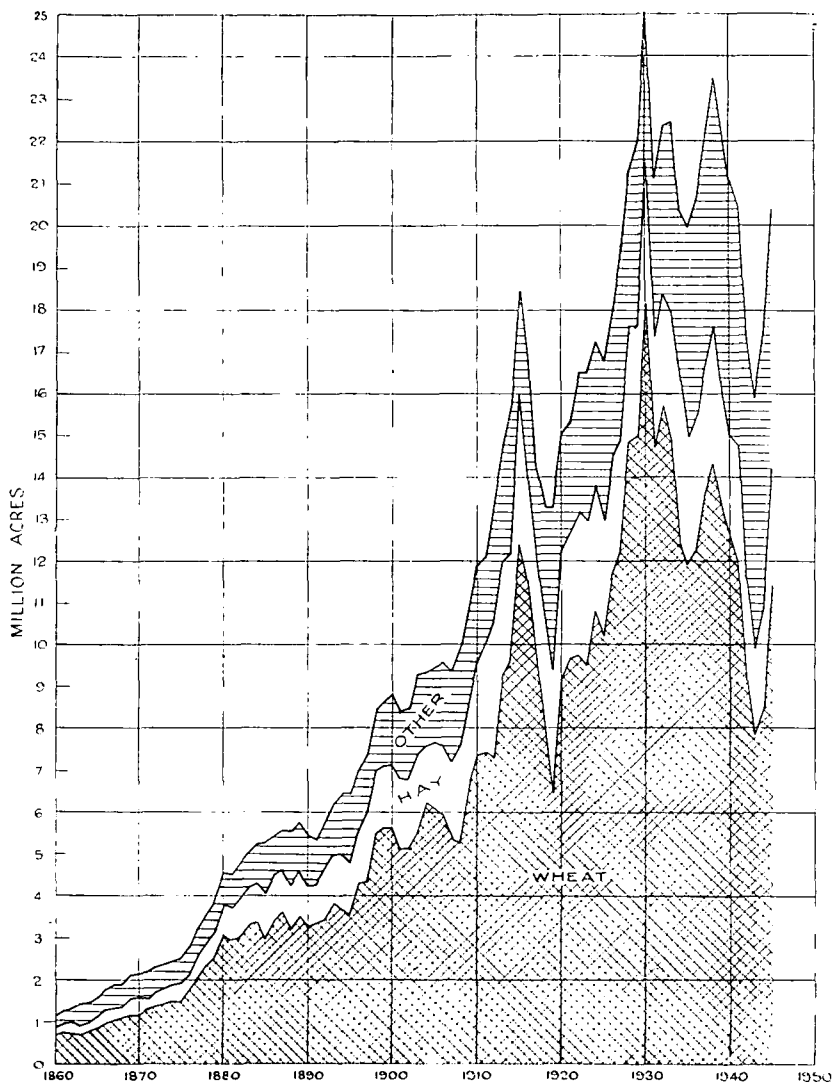
Reference to the financial assistance to the wheat industry will be found in § 20, Bounties, hereafter.

2. **Wheat Production Costs Committee.**—A Wheat Production Costs Committee was appointed by the Commonwealth Government in February, 1947, to enquire into and report upon:—(i) the reasonable costs of production of wheat per bushel in Australia's main wheat-growing districts, and (ii) whether basic items of costs could be established as an index to periodical variations in costs of the production of wheat. The Committee has submitted its report to the Commonwealth Government.

3. **Licensing of Areas Sown to Wheat, and Acreages Sown.**—The licensing of areas sown to wheat throughout Australia during each of the seasons 1941-42 to 1947-48 continued under the direction of the Wheat Stabilization Board. The area allotted to each grower is fixed in proportion to the average area normally sown by him, principally in the three years 1938-39 to 1940-41. Although licensing continued during the seasons 1945-46, 1946-47 and 1947-48, growers were permitted to plant without restriction in those years. In Western Australia growers' acreages during 1942-43 were restricted to a maximum of two-thirds of their basic acreage which restriction continued during the 1943-44 and 1944-45 seasons. During 1945-46 no such restriction was imposed but where growers voluntarily restricted the area sown to five-sixths or less of their basic acreage, compensation equal to one-sixth of their basic acreage was payable subject to the qualification that half of the area licensed for wheat was cropped for grain.

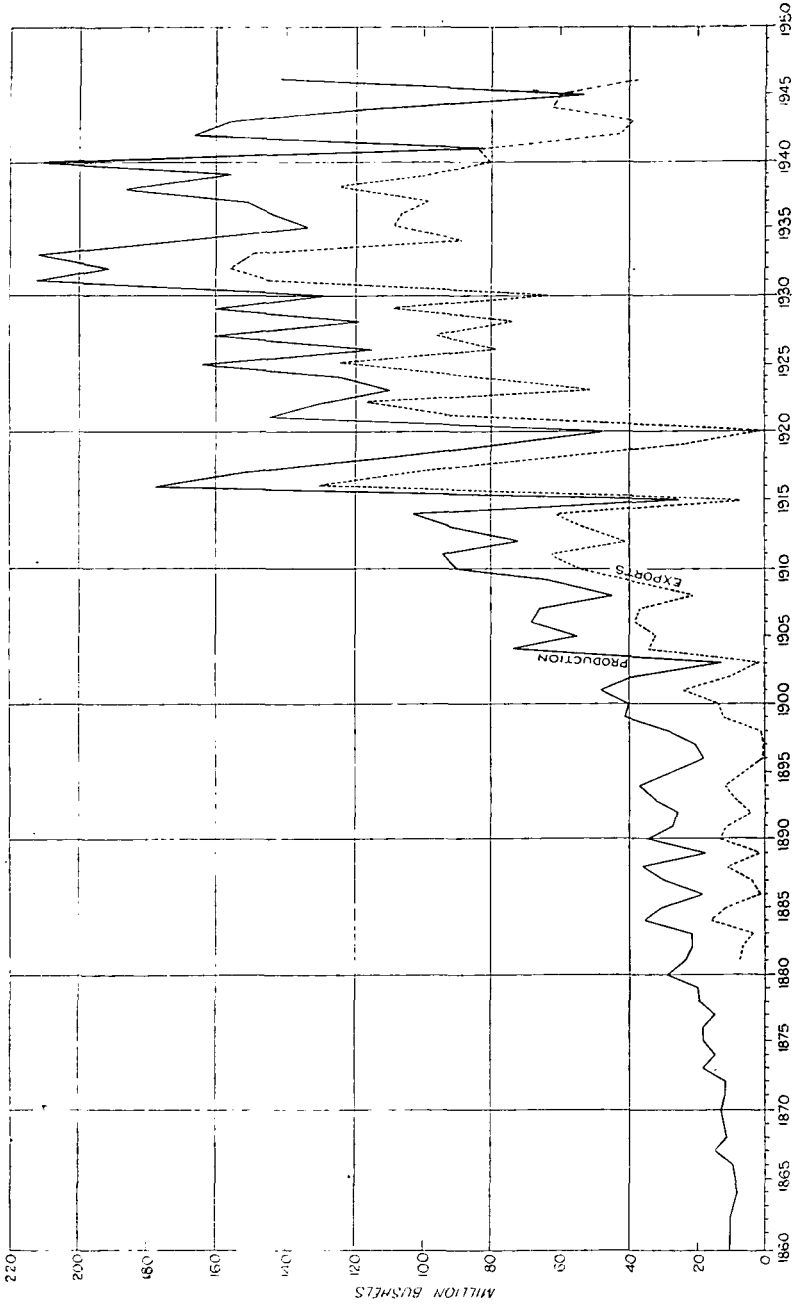
In the following table supplied by the Wheat Stabilization Board the basic acreage (i.e., the area normally sown by growers, principally in the three years 1938-39 to 1940-41) and the areas licensed to grow wheat for grain are shown for each State and the Australian Capital Territory for the years 1943-44 to 1947-48. Details of the area sown as well as the percentage that these areas bear to the area licensed are also given.

AREA OF CROPS—AUSTRALIA, 1860-61 TO 1945-46.



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 1945-46.



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 1914-1918 War. For these years the quantity consumed in Australia has been averaged and the balance taken as exports.

WHEAT FOR GRAIN: LICENSED AND SOWN ACREAGES.

('000 acres.)

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	A.C.T.	Aust.
Basic Acreage	5,014	3,333	461	3,058	3,243	12	1	15,142
1943-44—								
Area licensed	3,692	2,395	474	2,132	(c) 1,950	4	2	10,640
Area sown	2,693	1,793	281	1,534	(c) 1,567	5	2	7,875
Area sown as a percentage of area licensed	73	75	59	73	80	..	..	74
Number of licences issued No.	19,884	15,181	3,582	14,727	8,692	(a)	(a)	(b) 62,066
1944-45—								
Area licensed	3,992	2,562	523	2,215	(c) 1,980	3	2	11,277
Area sown	2,845	2,142	332	1,623	(c) 1,516	4	1	8,463
Area sown as a percentage of area licensed	71	84	63	73	76	..	75	75
Number of licences issued No.	21,566	15,810	3,675	14,743	8,683	(a)	(a)	(b) 64,477
1945-46—								
Area licensed	(e) 4,886	(e) 3,570	(e) 524	(e) 2,829	(d) 2,559	3	2	(e) 14,567
Area sown	3,774	3,251	392	2,165	(d) 1,836	5	2	11,425
Area sown as a percentage of area licensed	77	91	75	77	72	167	100	80
Number of licences issued No.	23,340	18,099	3,436	15,507	8,475	132	30	69,019
1946-47—								
Area licensed	(e) 5,340	(e) 4,087	(e) 618	3,240	(e) 3,364	4	(e) 3	(e) 16,856
Area sown (f)	4,475	3,501	248	2,519	2,419	8	3	13,172
Area sown as a percentage of area licensed	81	86	40	78	72	200	100	78
Number of licences issued No.	24,983	21,190	4,400	17,690	10,093	189	26	78,571
1947-48 (f)—								
Area licensed	(e) 6,100	(e) 3,723	(e) 671	3,050	(e) 3,477	6	(e) 5	(e) 17,032
Area sown	5,043	3,227	462	2,360	2,760	8	5	13,874
Area sown as a percentage of area licensed	83	87	69	78	79	133	100	81
Number of licences issued No.	26,494	20,354	4,785	17,732	9,679	213	32	79,289

(a) Not available. (b) Excludes Tasmania and Australian Capital Territory. (c) Compulsorily restricted by one-third. (d) Restriction not compulsory but compensation paid where area is voluntarily restricted. (e) Includes areas temporarily licensed on temporary wheat farms. (f) Subject to revision.

4. Survey of Legislation Relating to Wheat Industry.—A survey of legislation passed by the Commonwealth Government relating to the wheat industry of Australia will be found in the Appendix to this volume.

5. Wheat Farms.—Particulars of the number of farms growing wheat for grain on 20 acres and upwards during each of the five years ended 1940-41 and the year 1946-47 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.

State.	1936-37.	1937-38.	1938-39.	1939-40.	1940-41.	1946-47.
	No.	No.	No.	No.	No.	No.
New South Wales	15,425	16,287	16,550	16,175	15,831	15,971
Victoria	12,090	12,936	12,305	12,065	11,972	13,155
Queensland	2,211	2,309	3,190	2,542	2,169	2,006
South Australia	12,155	12,251	11,842	11,468	10,986	10,412
Western Australia	8,625	8,841	8,989	8,482	8,074	7,460
Tasmania	379	372	146	143	140	122
Total	50,885	53,496	53,022	50,875	49,172	49,126

6. Area, Production and Average Yield.—(i) Area. 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 use 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 most serious interruptions in more recent years were those occasioned by the two World Wars and the economic depression of the early thirties.

As previously mentioned, any variation in the acreage sown to this cereal materially affects the total area of crops. The area and yield of wheat for grain in each State are given below for 1938-39 and the five years ended 1946-47; the table also includes the averages for the ten year periods ended 1938-39 and 1945-46 :—

WHEAT FOR GRAIN : AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
AREA ('000 OMITTED).								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Average for ten seasons ended 1938-39 ..	4,302	3,063	277	3,526	3,158	17	2	14,345
1938-39 ..	4,651	2,748	442	3,080	3,413	10	2	14,346
1942-43 ..	3,033	2,145	335	2,009	1,753	4	1	9,280
1943-44 ..	2,693	1,794	281	1,534	1,567	5	1	7,875
1944-45 ..	2,845	2,142	332	1,623	1,516	4	1	8,463
1945-46 ..	3,774	3,251	392	2,165	1,836	5	2	11,425
1946-47 ..	4,475	3,501	248	2,519	2,419	7	3	13,172
Average for ten seasons ended 1945-46 ..	3,825	2,542	341	2,425	2,394	9	2	11,538

PRODUCTION ('000 OMITTED).

	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Average for ten seasons ended 1938-39 ..	55,935	38,416	4,118	34,700	35,812	374	43	169,398
1938-39 ..	59,898	18,104	8,584	31,675	36,844	205	59	155,360
1942-43 ..	51,693	41,803	5,005	36,526	20,600	73	28	155,728
1943-44 ..	47,500	19,733	5,084	20,697	16,550	122	39	109,719
1944-45 ..	17,134	3,497	6,981	9,244	15,929	93	2	52,880
1945-46 ..	62,520	29,634	8,188	21,034	20,929	67	38	142,410
1946-47 ..	15,682	48,971	705	27,906	23,800	139	59	117,262
Average for ten seasons ended 1945-46 ..	49,850	30,932	5,517	28,075	26,805	205	35	141,419

A graph showing the expansion of the area sown to wheat for grain in Australia since 1860 appears on page 897. A graph showing the distribution in 1924-25 is shown in Official Year Book, No. 22, p. 695 and the distribution of area for 1938-39 is shown in Official Year Book No. 34, p. 451.

(ii) *Production.* Apart from the variations in the area sown, the size of the wheat harvest in Australia is largely determined by the nature of the season and inconsistencies in this respect are reflected in the yearly production.

It should be noted, however, that with improved farming methods, which include the proper tillage of the soil, rotation of crops, the growing of suitable varieties and the application of fertilizers, average yields per acre during four decades to 1940 have shown a continued improvement, and fluctuations in production have become less pronounced.

Australia's wheat production in 1945-46 amounted to 142.4 million bushels representing an average yield of 12.46 bushels per acre. This was 90 million bushels more than in 1944-45 which was one of the worst seasons in the history of wheat-growing in this country. It approximates the average for the decennium ended 1945-46 but is 27 million bushels below that obtained during the ten years ended 1938-39.

Production for the season 1946-47 amounted to 117.3 million bushels whilst that for the season 1947-48 reached the record quantity of 220 million bushels.

(iii) *Decennial Averages, 1861-70 to 1937-46.* The following table shows 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 arithmetic mean of the annual averages at Melbourne (f.o.r. Williamstown), and may be accepted as fairly representative for Australia.

WHEAT FOR GRAIN : AVERAGE AREA, PRODUCTION AND WHOLESALE PRICE, AUSTRALIA.

Decennium.	Area.		Production.	Yield per Acre.	Average Wholesale Price.
	'000 Acres.	'000 Bushels.	Bushels.	Bushels.	s. d.
1861-70	831	10,622	12.77	(a)	
1871-80	1,646	17,711	10.76	5	1
1881-90	3,258	26,992	8.29	4	7
1891-1900	4,087	29,934	7.32	3	8
1901-10	5,711	56,058	9.82	3	10
1911-20	8,928	95,480	10.69	5	0
1921-30	11,291	135,400	11.99	5	8
1931-40	14,176	177,758	12.54	3	4½
1937-46	11,538	141,419	12.26	4	5

(a) Not available.

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

WHEAT FOR GRAIN : YIELD PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Average 10 seasons ended 1938-39	13.00	12.54	14.88	9.84	11.34	21.73	20.63	11.81
1938-39 ..	12.88	6.59	19.42	10.28	10.70	20.84	28.74	10.83
1942-43 ..	17.04	19.49	14.05	18.18	11.75	17.76	24.88	16.78
1943-44 ..	17.64	11.00	18.07	13.49	10.56	25.24	27.75	13.93
1944-45 ..	6.02	1.63	21.00	5.70	10.51	24.18	1.22	6.25
1945-46 ..	16.57	9.11	20.86	9.72	11.40	13.38	21.20	12.46
1946-47 ..	3.50	13.99	2.84	11.08	9.84	18.47	18.09	8.00
Average 10 seasons ended 1945-46	13.03	12.17	16.16	11.58	11.20	22.29	20.08	12.26

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 ; in 1939-40, 15.84 bushels ; and in 1942-43, 16.78 bushels.

(v) *Relation to Population.* The main wheat-producing States of Australia are New South Wales, Victoria, South Australia and Western Australia. Queensland production normally 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.

7. *Varieties of Wheat Sown.*—(i) *General.* The breeding of wheat suitable to local conditions has long been established in Australia. Farrar (1845–1905) did invaluable work in pioneering this field and the results of his labour and the continued efforts of those who have since followed him have proved of immense benefit to the wheat industry of Australia. Their efforts have resulted in better average yields, a greater uniformity of sample, with which has accrued certain marketing advantages, as well as an improvement in the quality of wheat grown. More than 1,000 different varieties of Australian wheats have been catalogued by the Council for Scientific and Industrial Research but the number of the principal varieties grown during each season is restricted to about 40.

(ii) *States.* 1940. Particulars of the varieties of wheat sown and the areas thereunder were collected annually up to 1940. The collection was then suspended but was resumed in 1946–47. Details of the nine principal varieties sown in 1946 in the four main producing States and the percentage each bears to the total area sown are given in the following table.

WHEAT : PRINCIPAL VARIETIES SOWN, 1946.

New South Wales.		Victoria.		South Australia.		Western Australia.	
Variety.	Per-centage.	Variety.	Per-centage.	Variety.	Per-centage.	Variety.	Per-centage.
	%		%		%		%
Bencubbin ..	45.7	Quadrat ..	26.9	Bencubbin ..	23.4	Bencubbin ..	33.5
Ford ..	10.8	Ghurka ..	20.3	Ranee ..	9.6	Bungulla ..	21.9
Dundee ..	4.7	Pindar ..	9.8	Waratah ..	5.8	Glucub ..	18.1
Eureka ..	4.1	Macnet ..	9.1	Sword ..	5.8	Ranee ..	4.3
Bordan ..	4.1	Ranee ..	8.8	Dundee ..	5.4	Merredin ..	3.8
Ranee ..	3.4	Bencubbin ..	8.4	Gluyas ..	4.8	Waratah ..	2.0
Waratah ..	3.2	Regalia ..	4.8	Bobin ..	3.8	Nabawa ..	1.5
Gular ..	2.7	Dundee ..	2.1	Marathon ..	3.6	Ford ..	1.2
Eureka 2 ..	2.1	Bobin ..	1.4	Nabawa ..	3.1	Dundee ..	1.2
All other ..	20.6	All other ..	8.4	All other ..	34.7	All other ..	12.5
Total ..	100.0	Total ..	100.0	Total ..	100.0	Total ..	100.0

Continued progress in the breeding of new and better wheats has resulted in many changes in the varieties sown. Bencubbin, previously a variety relatively unimportant outside Western Australia, was the leading wheat sown in 1946 in New South Wales, South Australia and Western Australia. In Victoria it holds only a minor place although the area sown to this variety has increased. Other important varieties sown in New South Wales in 1946 include Ford and Dundee which, as in 1940, occupy second and third position. The leading variety sown in Victoria in 1940 was Quadrat followed by Ghurka and Pindar compared with Ghurka, Ranee and Dundee in 1940. In South Australia, the next leading varieties after Bencubbin were Ranee and Waratah. In 1940 the three leaders in South Australia were Ranee, Bencubbin and Dundee. The principal variety in Western Australia since 1934 has been Bencubbin. The percentage sown to this variety, which in 1934 was 22.5, rose to nearly 36 in 1940, but declined to 33.5 in 1946. Bungulla, a variety not previously recorded, occupies second place in 1946, supplanting Glucub which is now in third position.

8. *F.A.Q. Standard of Wheat.*—The Chambers of Commerce in each of the four main wheat States each year determine the "f.a.q." standard for the State. "F.a.q." means "fair average quality", and the standard is used as the basis for sales of the season's crop. It represents the average quality for the season, and this average varies from year

to year, and from State to State. "F.a.q." is an Australian term, and the method differs from that of other countries which sell according to sample, or (as in Canada) according to grades which are fixed, and do not vary from year to year.

Samples of wheat are obtained by the Chambers of Commerce from the different wheat districts, and are mixed to give a representative sample of the whole crop. From this representative sample the f.a.q. weight is determined.

The following table sets out the f.a.q. weight of a bushel of wheat in each of the four main wheat-producing States from 1938-39 to 1946-47.

F.A.Q. STANDARD WEIGHT OF A BUSHEL OF WHEAT.

Year.	New South Wales.	Victoria.	South Australia.	Western Australia.
	lb.	lb.	lb.	lb.
1938-39	64½	64½	64½	63¾
1939-40	63¾	63½	64	63½
1940-41	62¾	64½	63½	63½
1941-42	64	63¾	62½	62¾
1942-43	63	64½	63	62½
1943-44	64½	65	64	61¾
1944-45	63	63½	63	63
1945-46	63½	62½	61½	63½
1946-47	62½	63½	61½	63

9. **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 f.o.r. ports Sydney, Melbourne and Adelaide) fell from 5s. 1¼d. in 1928 to 2s. 4¾d. in 1931, a decline of 53 per cent. Subsequent to 1931, prices fluctuated between 2s. 6d. and 3s. per bushel until 1936, when an upward movement coincided with the depletion of excess stocks following crop failures in North America. By December, 1936, prices exceeded 5s. per bushel and remained at that level during 1937. By the end of 1938 world exportable surpluses had again accumulated and prices receded to 2s. 1d. per bushel by August, 1939, the lowest level recorded in Australia.

On 21st September, 1939 the Australian Wheat Board was appointed under war-time legislation and the price of wheat for export or local consumption is determined by that authority. In consequence, the open market for wheat ceased and therefore a price comparison on a pre-war basis is no longer possible. The following table shows the price of wheat in Australia for the periods indicated. The price stated for 1940 and subsequent years represents the approximate average price of wheat exported during those years.

PRICE OF WHEAT : AUSTRALIA.

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

Item.	1939. (a)	1942. (b)	1943. (b)	1944. (b)	1945.	1946. (b)
Price per bushel	s. d. 2 4	s. d. 4 2	s. d. 4 3¾	s. d. 5 4	s. d. (c)	s. d. 9 10 10 10

(a) Average for eight months ended August. (b) Approximate export price. (c) Not available. The export wheat price for January and February, 1945 averaged 6s. 5d., and for December, 1945, averaged 9s. 8d. There were no sales for the other nine months of the year.

10. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in Australia during the seasons 1944-45 and 1945-46 is shown below. The values are on a gross basis at the principal market in each State and are based upon payments made to producers. Pending the finalizing of the accounts of the Australian Wheat Board these values are subject to revision.

WHEAT FOR GRAIN : VALUE OF CROP, (a) 1944-45 and 1945-46.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
1944-45.	£	£	£	£	£	£	£	£
Aggregate value ..	5,125,710	1,931,484	1,494,605	4,874,042	3,963,936	18,530	506	17,408,813
Value per acre ..	£1/16/0	£0/18/0	£4/9/11	£3/0/1	£2/12/4	£4/16/9	£3/6/10	£2/1/2
1945-46.	£	£	£	£	£	£	£	£
Aggregate value ..	20,419,830	9,913,133	2,254,560	7,391,004	6,525,456	15,530	11,264	46,530,777
Value per acre ..	£5/3/3	£3/1/0	£5/14/11	£3/8/3	£3/11/1	£3/2/4	£6/3/7	£4/1/5

(a) Gross value of total crop, including drought relief and also seed used on farm, but excluding value of straw.

11. **Consumption of Wheat in Australia.**—The estimated annual consumption of wheat for food and the quantity used for seed in Australia during the five years 1941-42 to 1945-46 were as follows:—

AVERAGE ANNUAL HUMAN CONSUMPTION, 1941-42 to 1945-46.

Flour milled .. .. .	..	..	..	..	..	1,222,552 tons
Less net exports of flour .. .. .	..	..	..	489,456 tons	..	
Less net exports of flour in biscuits .. .. .	..	..	..	10,174 ..	..
						499,630 ..
Change in flour stocks .. .. .	..	..	..	..	..	722,922 ..
						4,688 ..
Net quantity consumed .. .. .	..	..	..	..	..	727,610 ..
Equivalent in terms of wheat .. .. .	..	..	..	..	..	34,925,000 bushels
Net quantity consumed per head of population—						
As flour .. .. .	..	..	..	..	..	(a) 224.3 lb.
Equivalent in terms of wheat .. .. .	..	..	..	..	..	(a) 4.8 bushels

AVERAGE ANNUAL QUANTITY USED FOR SEED, 1941-42 to 1945-46.

Average area sown for grain, hay and green forage .. .. .	..	10,880,626 acres
Average quantity of seed used .. .. .	..	10,510,114 bushels
Average quantity of seed used per acre .. .. .	..	58 lb.
Average quantity of seed used per head of population	(a)	1.45 bushels

(a) Subject to revision.

In addition to the foregoing, allowance must be made for wheat fed to poultry and other live-stock. The average quantity so used for the five years ended 1945-46 is estimated at 35,873,931 bushels or 4.93 bushels per head of population. Because of the accumulation of wheat due to war-time shipping difficulties, the use of wheat as a stock fodder was encouraged. The objective was to obtain a greater output of eggs and pig meat to meet the increasing demands by the armed services and civilians. For this purpose the Commonwealth Government provided a subsidy of 8d. per bushel for wheat sold for fodder purposes.

Following the disastrous drought of 1944-45, however, the surpluses accumulated in earlier years had disappeared by the end of November, 1945. As a result, the quantities available as stock feed have been restricted in order to make greater quantities available for exports to meet urgent needs of the war-stricken areas of Europe and Asia.

Grain used for seed has been estimated on the basis of data collected from growers or from estimates supplied by the Departments of Agriculture. The average annual quantity used for seed during the five years ended 1945-46 was 1.45 bushels per head of population, or 53 lb. per acre sown.

The consumption of wheat in Australia for all purposes (human consumption, live-stock and seed) during the five years ended 1945-46 averaged 81,309,325 bushels, or 11.2 bushels per head of population.

12. **Production and Disposal of Wheat in Australia.**—In the following table details are given of the production of wheat and its disposal during each of the cereal years ended 30th November, 1943 to 1948. The particulars respecting local consumption refer to sales actually executed by the Australian Wheat Board whilst those respecting exports represent actual shipments. (For particulars of production and exports from 1860 see graph, p. 898.)

WHEAT : PRODUCTION AND DISPOSAL, AUSTRALIA.

(Million bushels).

Particulars.	Year ended 30th November—					
	1943.	1944.	1945.	1946.	1947.	1948.
Opening stocks (including flour as wheat)	104.5	154.0	77.9	11.5	20.2	13.5
Production	155.7	109.7	52.9	142.4	117.3	220.1
Total Available Supplies ..	260.2	263.7	130.8	153.9	137.5	233.6
Exports—						
Wheat	18.6	54.3	6.1	19.4	12.0	87.0
Flour as wheat	18.6	36.9	12.9	37.7	34.0	44.6
Local Consumption—						
Flour as wheat	34.3	34.5	33.1	32.2	33.5	33.6
Stock feed	20.3	40.7	44.9	24.4	22.2	20.7
Breakfast foods and other uses ..	1.0	3.2	3.1	3.0	4.2	4.2
Seed	8.3	9.0	12.0	13.2	13.8	13.2
Balance retained on farm (excluding seed)	5.1	7.2	7.2	3.8	4.3	3.9
Closing stocks (including flour as wheat)	154.0	77.9	11.5	20.2	13.5	26.4
Total Disposals	260.2	263.7	130.8	153.9	137.5	233.6

13. **Exports of Wheat and Flour.**—(i) *Quantities.* The following table shows the exports and net exports of wheat and flour for each of the years 1938-39 and 1942-43 to 1946-47. 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 five years ended 1946-47 exports in terms of wheat averaged 49,300,000 bushels compared with 97,932,000 bushels in 1938-39, the net exports for the period averaging 49,188,000 bushels :—

WHEAT AND FLOUR : EXPORTS FROM AUSTRALIA.

Year.	Exports.			Net Exports.
	Wheat.	Flour.	Total.	
	'000 Bushels.	'000 Eq. Bushels.(a)	'000 Bushels.	'000 Bushels.
1938-39 ..	63,129	34,803	97,932	97,931
1942-43 ..	22,544	16,402	38,946	38,928
1943-44 ..	33,658	28,346	62,004	62,004
1944-45 ..	32,391	26,868	59,259	59,259
1945-46 ..	12,484	24,906	37,390	36,848
1946-47 ..	12,176	36,725	48,901	48,901

(a) Wheat equivalent in bushels of wheat.

(ii) *Destination.* (a) *Wheat.* The following table shows the exports of wheat to various countries for 1938-39 and each of the four years ended 1946-47, and the average for the five years ended 1938-39.

WHEAT : EXPORTS FROM AUSTRALIA.

('000 omitted).

Country to which Exported.	Average Five Years ended 1938-39.	1938-39.	1943-44.	1944-45.	1945-46.	1946-47.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
United Kingdom ..	45,195	32,235	321	..	..	..
Ceylon ..	134	138	2,435	344	659	..
India ..	1,662	6,922	8,404	15,626	9,123	6,692
New Zealand ..	1,537	3,096	2,834	2,486	944	4,332
Rhodesia ..	1	..	81	342	331	868
Union of South Africa ..	602	1,706	813	276	286	38
Other British Countries ..	3,850	2,949	4,145	632	3	237
Belgium ..	756	324	..	..	..	..
China ..	6,151	10,621	..	..	639	..
Egypt ..	503	389	3,705	..	..	..
France ..	939	..	..	..	..	..
Germany ..	235	376	..	..	..	..
Italy ..	3,152	..	5,636	5,600	..	..
Japan ..	6,471	431	..	..	..	..
Other Foreign Countries ..	5,285	3,942	5,284	7,085	499	9
Total ..	76,473	63,129	33,658	32,391	12,484	12,176

(b) *Flour.* The following table shows the exports of flour to various countries for 1938-39 and each of the four years ended 1946-47, and the average for the five years ended 1938-39:—

FLOUR : EXPORTS FROM AUSTRALIA.
(In tons of 2,000 lb.)

Country to which Exported.	Average Five Years ended 1938-39.	1938-39.	1943-44.	1944-45.	1945-46.	1946-47.
United Kingdom	142,912	118,957	..	32,995	3,267	99,953
Ceylon	16,915	18,147	315,506	229,995	152,040	171,191
Hong Kong	44,966	23,040	..	..	28,231	33,050
India	2,732	591	28,698	84,105	95,115	49,581
Malaya (British)	63,309	66,965	..	..	117,749	194,036
Mauritius	54,960	13,525	40,709	42,470	22,969	42,243
New Zealand	3,187	554	137	3,570	16,183	17,047
Union of South Africa	306	132	258	1,585	2,556	9,024
Other British Countries	6,190	71,824	117,361	35,869	49,823	33,301
China	50,460	216,878	..	..	..	39,192
Egypt	24,284	17,153	56,880	84,807	149	37,545
French Dependencies—						
Indo-China	24,810	6,995	..	..	3,619	11,227
Society Islands	16,731	3,844	5,648	5,208	4,001	6,751
Other Foreign Countries	195,311	166,460	25,347	39,145	23,174	20,957
Total	647,073	725,065	590,544	559,749	518,876	765,098

14. *Stocks of Wheat and Flour.*—Stocks of wheat and flour held by each State at 30th November in each year 1939 and 1943 to 1947, and the total in terms of wheat are shown in the following table. The source of these data is the Australian Wheat Board, but, in order to maintain comparability with pre-war figures, adjustments have been made where possible to allow for stocks estimated to be held by merchants, bakers and farmers.

WHEAT AND FLOUR : STOCKS AT 30th NOVEMBER. (a)

30th November.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Wheat (bushels).							
1939	5,059,320	3,435,783	304,199	5,139,508	2,114,766	162,251	16,215,827
1943	24,862,000	37,943,000	307,000	47,200,000	38,942,000	505,000	149,759,000
1944	17,662,000	18,274,000	278,000	19,858,000	17,297,000	378,000	73,747,000
1945	695,000	1,848,000	175,000	900,000	2,191,000	238,000	6,047,000
1946	10,510,000	1,994,000	751,000	940,000	884,000	62,000	15,141,000
1947(b)	1,571,000	3,735,000	372,000	1,715,000	766,000	217,000	8,376,000
Flour (tons of 2,000 lb.).							
1939	34,875	27,350	5,292	21,479	8,592	1,695	99,283
1943	20,764	39,007	5,948	15,600	5,972	1,492	88,783
1944	29,747	22,614	3,578	11,300	18,418	385	86,042
1945	28,895	25,664	3,074	42,000	12,419	987	113,639
1946	28,000	35,997	5,521	20,000	15,287	726	105,531
1947(b)	30,244	47,242	4,001	9,400	15,132	1,089	107,108
Total in terms of wheat (bushels).							
1939	6,733,320	4,748,584	558,215	6,170,500	2,527,182	243,611	20,981,412
1943	25,858,672	39,815,344	592,504	47,948,800	39,228,656	576,616	154,020,592
1944	19,089,856	19,359,472	449,744	20,400,400	18,181,064	396,480	77,877,016
1945	2,081,960	3,079,872	351,352	2,916,000	2,787,112	285,376	11,501,672
1946	11,854,000	3,721,856	1,016,008	1,900,000	1,617,776	96,818	20,205,888
1947(b)	3,022,712	6,002,616	564,048	2,166,200	1,492,336	269,272	13,517,184

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

(b) Subject to slight revision.

15. **Flour Milling.**—Particulars of the grain-milling industry are given in some detail in Chapter XXIV. "Manufacturing Industry". The following table summarizes the operation of flour mills in Australia for the years 1938-39 and 1942-43 to 1945-46.

OPERATIONS OF FLOUR MILLS : AUSTRALIA.

Particulars.	Unit.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.
Number of mills	No.	172	159	167	168	170
Number of persons employed	"	3,783	3,343	3,993	4,175	4,099
Wheat milled	'000 bus.	66,999	51,169	69,559	75,210	63,191
Output of Flour	" tons	1,373	995	1,358	1,413	1,219
" " Bran	" "	289	199	278	280	238
" " Pollard	" "	284	210	280	286	256
" " Wheatmeal	" "	29	83	83	109	83

16. **Voluntary Wheat Pools.**—Details of voluntary wheat pools operating in Australia are given in issues of the Official Year Book prior to No. 33, 1940. These pools ceased to function when the Australian Wheat Board was created in September, 1939.

17. **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. The price of 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, 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 this, combined with 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 and Agriculture, 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.* (a) *Wheat Acquired.* Particulars of wheat acquired by the Australian Wheat Board up to 30th November, 1947 are shown in the following table :—

AUSTRALIAN WHEAT BOARD : WHEAT ACQUIRED TO 30th NOVEMBER, 1947.
('000 Bushels.)

Pool.	Harvest.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
1	1938-39 ^a	6,226	2,805	..	5,884	2,925	..	17,840
2 and 3	1939-40	66,688	46,960	6,255	38,130	37,370	41	195,444
4	1940-41	16,919	9,985	5,287	13,818	17,575	78	63,659
5	1941-42	41,235	48,135	2,680	27,728	34,078	78	153,944
6	1942-43	44,709	40,213	4,403	34,610	17,983	22	141,990
7	1943-44	40,880	17,227	4,599	18,111	13,853	57	94,757
8	1944-45	12,167	941	5,837	6,758	13,079	39	38,821
9	1945-46	54,889	25,621	7,492	18,161	17,742	23	123,928
10	1946-47	5,635	44,481	444	24,818	20,521	68	98,967
Total to 30th November, 1947.. ..		292,348	236,368	36,997	188,108	175,126	403	929,350

(a) Balance only.

(b) *Wheat Disposal.* Details relating to the disposal of this wheat are shown in the following table :—

**AUSTRALIAN WHEAT BOARD : DISPOSAL OF WHEAT
TO 30th NOVEMBER, 1947.**

('000 Bushels.)

Particulars.	To 31st December, 1942.	1943.	1944.	1945.	1946.	1947.	Total to 30th November, 1947.
Sold for export as wheat ..	119,641	20,053	54,619	2,742	19,820	13,314	230,189
Sold for export as flour ..	76,853	20,159	37,648	14,897	37,487	34,927	221,971
Sold for local consumption as flour ..	100,873	34,872	33,886	33,373	32,204	30,833	266,041
Sold for all other purposes..	38,731	20,919	46,969	45,104	26,283	25,071	203,077

Owing to war-time conditions, a great proportion of the sales of wheat and flour for export was made up of large quantities to the British Government. To 30th November, 1947, the Board had shipped a total of 230,189,000 bushels of wheat, and, in addition, had sold on its own account (i.e., not including millers' shipments), 221,971,000 bushels for export as flour, equivalent to a shipment of approximately 4,625,000 short tons of flour.

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

**AUSTRALIAN WHEAT BOARD : FINANCIAL OPERATIONS
TO 30th NOVEMBER, 1947.**

Particulars.	No. 5 Pool.	No. 6 Pool.	No. 7 Pool.	No. 8 Pool.	No. 9 Pool.	No. 10
	(a)	(a)	(a)	(a)	(b)	Pool.(b)
	£	£	£	£	£	£
Paid to growers	27,119,734	29,883,649	23,795,653	8,843,681	37,008,579	31,249,556
Rail freight	2,948,026	2,723,082	1,881,808	758,564	2,480,056	1,800,000
Expenses	3,676,160	3,882,109	2,862,250	1,103,715	1,985,248	1,907,170
Total Payments ..	33,743,920	36,488,840	28,539,711	10,705,960	48,458,948	43,877,648
Value of sales delivered ..	32,650,577	35,361,557	26,651,903	8,842,989	47,747,657	38,975,061
Value of flour tax	1,093,343	1,127,283	1,887,808	1,862,971	760,248	1,550,000

(a) Complete. (b) Incomplete. (c) Includes £6,985,065 (collected under Wheat Export Charge Act 1946) which was distributed to growers during 1948. (d) Includes £3,821,922 collected under Wheat Export Charge Act 1946 which was distributed to growers early in 1949. Details of earlier pools will be found in Official Year Book No. 36. p. 798.

(v) *Advances to Growers.* (a) *Pools Nos. 5 to 7.* The advances made to growers to 30th November, 1947 in each of pools Nos. 5 to 7 are shown in the following table :—

**WHEAT POOLS Nos. 5 TO 7 : ADVANCES MADE TO GROWERS TO
30th NOVEMBER, 1947.**

Particulars.	Amount Paid. (Trucks Terminal Port Basis).									
	No. 5 Pool.(a)		No. 6 Pool.(b)				No. 7 Pool.(b)			
			Per Bushel.		Total.		Per Bushel.		Total.	
	Per Bushel.	Total.	Quota.	Non-Quota.	Quota.	Non-Quota.	Quota.	Non-Quota.	Quota.	Non-Quota.
s. d.	£'000.	s. d.	s. d.	£'000.	£'000	s. d.	s. d.	£'000.	£'000.	
Advances made to Growers—										
1st Payment—										
Bulk ..	2 10	} 22,429	3 10	1 10	} 19,484	} 4,083	3 11½	1 11½	} 15,676	} 1,712
Bagged ..	3 0		4 0	2 0			4 1½	2 1½		
2nd Payment—										
Bulk ..	0 3	} 1,924	0 6½	1 0	} 2,904	} 2,126	1 0	1 0	} 3,973	} 845
Bagged ..	0 3		0 7½	1 0			1 0½	1 0		
3rd Payment—										
Bulk ..	0 4	} 2,566	0 1	0 6	} 414	} 1,063	0 3-9	0 7	} 1,265	} 493
Bagged ..	0 4		0 1	0 6			0 3-9	0 7		
4th Payment—										
Bulk ..	0 3	} 1,924	..	0 5	} ..	} 886	0 0½	0 5	} 162	} 352
Bagged ..	0 3		..	0 5			0 0½	0 5		
5th Payment—										
Bulk ..	0 1½	} 1,187	..	0 8½	} ..	} 1,598	..	1 0	} ..	} 862
Bagged ..	0 2½		..	0 9½			..	1 0½		
6th Payment—										
Bulk ..	..	..	..	..	..	..	0 3-9	..	..	275
Bagged ..	..	..	..	..	..	..	0 3-9	..	..	..
7th Payment—										
Bulk ..	..	..	..	..	..	..	0 0½	..	..	35
Bagged ..	..	..	..	..	..	..	0 0½	..	..	..
Total—										
Bulk ..	3 9½	} 30,030	4 5½	4 5½	} 22,802	} 9,756	5 3-73	5 3-73	} 21,076	} 4,574
Bagged ..	4 0½		4 8½	4 8½			5 6-23	5 6-23		

(a) Rail freight was deducted from 1st payment. (b) Rail freight was deducted from 2nd payment in respect of quota, and 5th payment in respect of non-quota wheat.

(b) *Pools Nos. 8 to 10.* The Wheat Acquisition Regulations, 1939 provide that the Minister for Commerce and Agriculture shall determine the compensation to be paid for wheat acquired by the Commonwealth. During the seasons 1939-40 to 1941-42 an initial payment of compensation was made as wheat was acquired and further payments were made as the realization of the various pools progressed. In August, 1942 the Government gave approval to the proposal to guarantee to wheat-growers compensation at a fixed rate on the first 3,000 bushels delivered by each grower (known as quota wheat), while on the remainder of deliveries (non-quota) compensation at a lower rate would be paid as the wheat was acquired and further payments made as warranted by realizations.

A quota was allotted to each wheat-grower by the Wheat Industry Stabilization Board, and, on the wheat delivered by him to the extent of his quota, the grower received the guaranteed payment.

The quota allotted to the majority of wheat-growers was for 3,000 bushels but, in certain instances, growers who operated under a share farming agreement, either as owners or share farmers, or who farmed under family arrangements, received a quota of less than 3,000 bushels.

For the 1942-43 season (No. 6 Pool) the guarantee at country stations was 4s. per bushel for bagged wheat and 3s. 10d. for bulk wheat, while deliveries in excess of quota received an initial payment of 2s. per bushel for bagged wheat and 1s. 10d. per bushel for bulk wheat. Since then, additional payments of compensation on non-quota wheat have been made.

Payment of initial compensation on wheat acquired for the 1943-44 season (No. 7 Pool) was on the same basis, although the payment on both quota and non-quota wheat was increased by 1½d. per bushel, this amount being the estimated increased cost for harvesting the 1943-44 crop due to the introduction of an industrial award for labour employed for this purpose.

For the 1944-45 season (No. 8 Pool) the initial compensation for quota wheat was the same as for the previous season while for non-quota wheat it was 10½d. per bushel more than that for the previous year.

In respect of 1945-46 and 1946-47 seasons (Nos. 9 and 10 Pools) the quota system was dispensed with, the initial payment made in each case being 4s. 1d. per bushel for bulk wheat and 4s. 4d. per bushel for bagged wheat.

For the 1947-48 season (No. 11 Pool) initial compensation was fixed at 4s. 6d. per bushel for bulk and 5s. per bushel for bagged wheat.

The advances made to growers to 30th November, 1947 in the 1944-45, 1945-46 and 1946-47 seasons were as follows :—

**WHEAT POOLS Nos. 8 TO 10 : ADVANCES MADE TO GROWERS TO
30th NOVEMBER, 1947.**

Particulars.	Amount Paid (Trucks Terminal Port Basis).							
	No. 8 Pool.(a)				No. 9 Pool.(b)		No. 10 Pool.(b)	
	Per Bushel.		Total.		Per Bushel.	Total.	Per Bushel.	Total.
	Quota.	Non-Quota.	Quota.	Non-Quota.				
s. d.	s. d.	£'000.	£'000.	s. d.	£'000.	s. d.	£'000.	
Advances made to								
Growers—								
1st Payment—								
Bulk ..	3 11½	2 10	6,605	877	4 1	26,044	4 1	20,649
Bagged ..	4 1½	3 0						
2nd Payment—								
Bulk ..	0 9	0 9	1,297	225	1 0	6,195	1 6	7,416
Bagged ..	0 10	0 9						
3rd Payment—								
Bulk ..	0 1½	0 4½	205	109	0 6	3,097	1 0	4,930
Bagged ..	0 1½	0 4½						
4th Payment—								
Bulk ..	..	0 9	..	238	0 6	3,096	..	..
Bagged ..	..	0 10						
5th Payment—								
Bulk ..	..	0 1½	..	38	0 1½	1,026	..	..
Bagged ..	..	0 1½						
Total—								
Bulk ..	4 9.834	9.83	8,107	1,487	6 2½	39,458	6 7	32,995
Bagged ..	5 0.835	0.83						

(a) Rail freight was deducted from 2nd payment in respect of quota, and 4th payment in respect of non-quota wheat. (b) Rail freight was deducted from 2nd payment.

18. **Special Tabulation of Wheat Holdings.**—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 Official Year Book No. 33, pp. 374 to 377.

19. **World Area and Production of Wheat.**—The details in the following table of the world area and production of wheat by countries and continents have been compiled from official sources so far as they are available, but more particularly from the records published by the Food and Agriculture Organization of the United Nations, and the United States Office of Foreign Agricultural Relations. The harvests shown for countries in the Northern Hemisphere are those garnered during the period March to October whilst those for the Southern Hemisphere cover the period November to February following. Figures in parenthesis are Office of Foreign Agricultural Relations estimates based on foreign service reports and other information.

WHEAT : AREA, PRODUCTION AND YIELD PER ACRE IN VARIOUS COUNTRIES.

Continent and Country.	Area.(a)			Production.			Yield per acre.		
	Average—		1945. (c)	Average—		1945. (e)	Average—		1945. (e)
	1930-34.	1935-39.		1930-34.	1935-39.		1930-1934.	1935-1939.	
	'000. acres.	'000. acres.	'000. acres.	'000. bushels.	'000. bushels.	'000. bushels.	bus.	bus.	bus.
North America—									
Canada ..	25,682	25,595	23,414	318,560	312,399	305,912	13.6	12.2	13.1
Mexico ..	1,237	1,214	1,237	14,364	14,282	13,651	11.6	11.5	11.0
United States	54,193	57,203	64,740	732,327	758,623	1,123,143	13.5	13.2	17.3
Total (c) ..	81,150	84,150	89,500	1,096,000	1,086,000	1,445,000	..	..	..
Europe—									
Austria ..	535	(d) 616	(b)	12,026	d 15,117	(b)	23.6	d24.5	(b)
Belgium ..	384	402	414	14,726	16,150	(14,500)	38.3	40.2	35.0
Bulgaria ..	3,078	3,080	3,102	52,864	64,228	41,818	17.2	20.9	13.5
Czechoslovakia	2,129	(d) 2,220	(b)	53,697	d 59,090	(b)	25.2	d26.6	(b)
Denmark ..	259	316	215	11,131	14,358	10,288	43.0	45.4	47.9
Eire ..	43	225	662	1,698	7,689	(21,000)	39.5	34.2	31.7
France ..	13,280	(d)12,721	(0,390)	305,318	d 292,568	(184,000)	23.0	d23.0	19.6
Germany ..	5,310	(d) 5,074	(b)	170,212	d 176,651	(b)	32.1	d34.8	(b)
Greece ..	1,612	2,150	(1,040)	18,414	30,205	(16,800)	11.4	14.0	10.2
Hungary ..	3,943	4,091	(b)	76,506	d 91,210	(b)	19.4	d22.3	(b)
Italy ..	12,089	12,635	11,070	252,604	279,519	154,542	20.9	22.1	14.0
Netherlands ..	267	338	295	11,802	15,209	10,288	44.2	45.0	34.9
Poland ..	4,280	4,303	(b)	74,267	77,245	(b)	17.1	18.0	(b)
Portugal ..	1,321	1,227	1,359	18,359	16,066	10,472	14.0	13.1	7.7
Rumania ..	7,703	0,053	(b)	103,477	140,816	(b)	13.4	15.6	(b)
Spain ..	11,236	10,220	8,896	158,081	d 113,905	(72,000)	14.1	d11.1	8.2
Sweden ..	697	740	731	23,214	26,351	23,255	33.3	35.6	31.8
United Kingdom ..	1,522	1,843	2,279	51,176	62,361	79,333	33.6	33.8	34.8
Yugoslavia ..	5,008	5,349	(b)	79,194	96,750	(34,000)	15.6	18.1	(b)
Total (c) ..	76,033	78,313	61,800	1,516,000	1,632,000	1,035,000	..	..	..
Soviet Union (e)	85,798	98,764	(b)	f 860,448	1,050,000	(b)	10.0	10.6	(b)
Africa—									
Algeria ..	3,893	4,184	3,170	32,571	35,201	11,023	8.4	8.4	3.5
Egypt ..	1,560	1,464	1,710	43,128	45,848	43,436	27.6	31.3	25.4
French Morocco	2,887	3,254	2,286	29,509	23,198	5,747	10.2	7.1	2.5
Tunisia ..	1,995	1,902	1,965	12,956	14,965	6,352	6.5	7.9	3.2
Union of South Africa (g) ..	1,516	1,926	(2,400)	12,301	16,259	10,220	8.1	8.4	4.3
Total (c) ..	12,630	13,720	12,800	135,000	142,000	85,000	..	..	..

See footnotes on next page.

WHEAT: AREA, PRODUCTION AND YIELD PER ACRE IN VARIOUS COUNTRIES—continued.

Continent and Country.	Area. (a)			Production.			Yield per acre.		
	Average—		1945. (e)	Average—		1945. (e)	Average—		1945. (e)
	1930-34.	1935-39.		1930-34.	1935-39.		1930-1934.	1935-1939.	
	'000. acres.	'000. acres.	'000. acres.	'000. bushels.	'000. bushels.	'000. bushels.	bus.	bus.	bus.
Asia—									
China ..	(d) 49,106	(d) 48,120	(b)	1 820,624	d 175,536	(b)	116.7	114.9	(b)
Korea ..	809	832	(b)	9,048	10,240	(b)	11.2	12.3	(b)
India ..	33,340	34,492	3,709	35,593	370,660	39,432	10.7	10.7	10.9
Japan ..	1,356	1,738	(b)	36,806	50,133	(b)	27.1	28.8	(b)
Manchuria ..	3,301	2,903	(b)	40,770	35,200	(b)	12.4	12.1	(b)
Syria and Lebanon ..	1,245	1,363	(2,100)	14,638	19,185	(21,000)	11.8	14.3	10.0
Turkey ..	7,023	8,952	(10,600)	94,796	135,690	82,158	13.5	15.2	7.8
Total(e)	102,300	105,900	110,000	1,456,000	1,442,000	1,480,000	..	..	..
South America—									
Argentina ..	17,709	15,834	10,030	243,932	221,769	149,545	13.8	14.0	14.9
Chile ..	1,763	1,963	1,803	27,355	35,562	32,358	15.5	16.1	17.9
Uruguay ..	1,055	1,210	929	9,876	13,256	9,370	9.4	11.0	10.1
Total (e)	21,800	20,500	14,300	295,000	280,000	205,000	..	..	..
Oceania—									
Australia ..	15,223	12,980	11,425	185,773	154,325	142,410	12.2	11.9	12.5
New Zealand	266	221	163	8,037	7,129	5,401	30.2	32.3	33.1
Total	15,489	13,201	11,588	193,810	161,454	147,811	..	..	..
World Total(e)	395,213	414,703	382,000	5,553,000	5,810,000	5,200,000	..	..	..
Totals—									
Northern Hemisphere(c)	356,507	378,866	354,016	5,051,164	5,351,186	4,839,280	14.2	14.1	13.7
Southern Hemisphere(c)	38,706	35,837	27,984	501,836	458,814	360,720	13.0	12.8	12.0
World Total(e)	395,213	414,703	382,000	5,553,000	5,810,000	5,200,000	..	..	..

(a) The figures of areas are, as far as possible, those of areas harvested. (b) Not available.
(c) Estimated total including the area and production of countries whose particulars are not shown separately. (d) Average of less than five years. (e) Preliminary. Subject to revision.
(f) Production estimates for the Soviet Union for the years 1933 and 1934 have been reduced 15 per cent. to take account of heavy harvesting losses. (g) Excludes native cultivation.

20. **Exports—Principal Countries.**—The following table shows the latest available statistics of net quantities of wheat exported from the chief exporting countries compared with the period from 1909 to 1913. In the years before the 1914-18 War the U.S.S.R. (Russia) was the outstanding contributor to the world's supply of wheat, followed by the United States of America. Owing to increased demands within their own borders, however, the net exports from U.S.S.R. have since become relatively unimportant, while those from the United States of America have become generally less important. The latter country had a net import of 89 million bushels in 1944, but was second principal wheat exporter in 1945. Canada now occupies the foremost position with Argentina and Australia usually coming next in order.

Although Australia's production of wheat is in normal times little more than 3 per cent. of the world's total, its exports represent between 15 and 20 per cent. of the quantities shipped and as an exporting country Australia, up to 1938, had made the greatest relative advance since 1913. During 1944 and 1945, however, Canada's net exports constituted 62 per cent. and 58 per cent. respectively of total world net exports.

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

Country.	Average 1909-13.		Average 1934-38.		1944.	1945.
	'000 Bushels.	Per cent.	'000 Bushels.	Per cent.	'000 Bushels.	'000 Bushels.
U.S.S.R (Russia) ..	157,109	23.71	22,520	4.04	(c)	(c)
U.S.A. ..	100,864	15.22	43,648	7.83	-88,633	165,220
Argentina ..	95,041	14.34	122,739	22.01	96,329	95,396
Canada ..	89,919	13.57	175,407	31.45	351,733	389,341
British India ..	50,886	7.68	8,877	1.59	-11,113	(c)
Australia ..	49,417	7.46	102,695	18.41	87,361	14,701
All Other Countries ..	119,351	18.02	81,839	14.67	134,231	7,408
Total ..	662,587	100.00	557,725	100.00	569,908	672,066
World's Production ..	3,779,479		5,083,344		5,650,000	5,200,000
Percentage of Australian Net Exports on Total Net Exports	7.46		18.41		15.33	2.19
Percentage of Australian Production on World's Production ..	2.39		3.02		0.92	2.74

(a) Includes flour expressed in terms of wheat. (b) In some instances the average for 1909-13 is not strictly comparable with the later years shown, owing to changes of frontiers. (c) Not available.
NOTE.—Minus (-) sign denotes net imports.

21. 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:—

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

Country Importing.	Average 1909-13.		Average 1934-38.		1944.	1945.
	'000 Bushels.	Per cent.	'000 Bushels.	Per cent.	'000 Bushels.	'000 Bushels.
United Kingdom ..	219,365	30.42	208,749	33.80	144,818	159,558
Germany ..	89,732	12.44	25,606	4.15	(c) 14,282	(d)
Netherlands ..	76,340	10.59	22,584	3.66	(d)	(d)
Belgium ..	73,903	10.26	42,856	6.94	1,715	28,855
Italy ..	57,156	7.93	25,891	4.19	(d)	(d)
France ..	38,682	5.36	23,767	3.85	185	24,471
Brazil ..	20,774	2.88	29,812	4.83	47,695	47,004
Egypt ..	7,915	1.10	586	0.09	52	5,577
Union of South Africa	6,519	0.90	753	0.12	780	4,200
China (e) ..	5,526	0.77	27,471	4.45	488	(d)
Japan ..	3,714	0.52	11,551	1.87	..	..
All Other ..	121,409	16.83	198,051	32.05	319,314	319,894
Total ..	721,095	100.00	617,677	100.00	529,329	589,559

(a) Includes 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) First half-year only. (d) Not available. (e) Includes Manchurian ports.

§ 5. Oats.

1. **Area, Production and Average Yield.**—(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 in 1945-46 accounted for 55.94 per cent., oats grown for grain represented only 9.54 per cent. of the area of crops, being less than hay. The acreage and production of oats for the years 1938-39, 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are shown in the following table :—

OATS FOR GRAIN : AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
AREA ('000 ACRES).								
Average 10 seasons ended 1938-39 ..	229	478	5	282	369	30	..	1,393
1938-39 ..	399	658	9	267	426	25	..	1,784
1942-43 ..	431	428	19	263	343	13	..	1,497
1943-44 ..	374	426	22	225	358	10	..	1,415
1944-45 ..	544	722	17	334	402	15	..	2,034
1945-46 ..	617	511	40	370	306	14	I	1,949
Average 10 seasons ended 1945-46 ..	380	494	15	332	406	20	I	1,648
PRODUCTION ('000 BUSHELS).								
Average 10 seasons ended 1938-39 ..	3,578	5,750	68	2,233	3,973	831	4	16,437
1938-39 ..	4,831	2,909	93	2,401	4,668	645	7	15,554
1942-43 ..	7,338	6,638	277	3,365	3,612	292	10	21,532
1943-44 ..	7,051	3,705	389	2,294	3,964	299	10	17,712
1944-45 ..	1,757	1,335	296	1,316	3,845	420	1	8,970
1945-46 ..	9,997	7,402	830	3,178	4,081	281	5	25,774
Average 10 seasons ended 1945-46 ..	5,136	5,248	233	2,757	4,185	551	6	18,116

The oat crop showed considerable variation during the past decennium, ranging from 8,970,000 bushels in 1944-45 to a record yield of 25,774,000 bushels in 1945-46, with an average for the period of 18,116,000 bushels.

The principal oat-growing States are New South Wales and Victoria, which produce, on the average, more than half the total quantity grown in Australia. Western Australia and South Australia also produce considerable quantities, but in Queensland and Tasmania the output is small.

Oats are mainly used in Australia as feed grain. The quantity consumed by stock averages about 12 million bushels annually, leaving a balance of about 4 million bushels for seed purposes, about 2 million bushels for oatmeal and a small quantity for the production of spirits and for malting.

(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 seasons 1938-39, 1942-43 to 1945-46 and for the ten-year periods ended 1938-39 and 1945-46 are given in the following table :—

OATS FOR GRAIN : 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.
Average 10 seasons ended 1938-39 ..	15.66	12.03	12.77	7.91	10.77	28.15	22.35	11.80
1938-39 ..	12.09	4.42	10.77	8.99	10.95	25.97	21.95	8.72
1942-43 ..	17.01	15.51	14.49	12.81	10.55	22.19	23.29	14.38
1943-44 ..	18.84	8.69	17.60	10.22	11.07	30.69	24.67	12.52
1944-45 ..	3.23	1.85	17.64	3.94	9.57	28.41	2.65	4.41
1945-46 ..	16.20	14.47	20.75	8.60	10.30	20.15	9.21	13.22
Average 10 seasons ended 1945-46 ..	13.50	10.62	15.62	8.31	10.20	27.69	15.34	10.99

The smallest average yield per acre ever recorded for Australia was that experienced in the abnormally dry season 1944-45, namely, 4.41 bushels, while the largest in the last ten years was that of the season 1941-42, amounting to 15.27 bushels per acre.

2. **Price of Oats.**—The average wholesale prices in the Melbourne market for oats of good milling quality for the years 1942-43 to 1946-47 in comparison with 1938-39 are shown in the following table:—

OATS : MELBOURNE AVERAGE WHOLESALE PRICES.

Particulars.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.	1946-47.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	3 5½	2 9	3 3	3 9¼	3 11½	4 3½

3. **Value of Oat Crop.**—The estimated values of the oat crop for the seasons 1944-45 and 1945-46 were as follows:—

OATS : VALUE OF CROP (a), 1944-45 and 1945-46.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
1944-45—	£	£	£	£	£	£	£	£
Aggregate value..	620,970	561,963	80,051	407,678	888,187	91,410	406	2,653,605
Value per acre ..	£1/3/3	£0/15/7	£1/15/6	£1/1/5	£2/1/2	£3/7/10	£0/18/8	£1/6/1
1945-46—	£	£	£	£	£	£	£	£
Aggregate value..	1,721,720	1,272,834	193,661	566,044	751,812	66,740	771	4,572,612
Value per acre ..	£2/15/0	£2/0/0	£1/16/10	£1/10/7	£1/17/11	£1/14/6	£1/11/3	£2/6/11

(a) Excludes the value of straw.

4. **Imports and Exports.**—The production of oats in Australia is sufficient to admit of a regular export trade. The quantities and values of oats imported into and exported from Australia during the years 1938-39 and 1942-43 to 1946-47 are shown hereunder:—

OATS : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exp rts.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	Bushels.	£	Bushels.	£	Bushels.	£
1938-39 ..	10,128	2,762	117,347	18,866	106,919	16,104
1942-43 ..	1,045	350	284,113	57,075	283,068	56,725
1943-44 ..	613	193	88,030	18,618	87,397	18,425
1944-45 ..	202	79	30,368	9,700	30,166	9,621
1945-46 ..	1,231,085	276,734	429,163	112,931	—801,922	—163,803
1946-47 ..	85	28	106,645	27,934	106,560	27,906

(a) Australian currency values.

NOTE.—Minus sign (—) denotes net imports.

The quantity of oats imported into Australia is usually not very large, although in 1945-46 imports exceeded exports by 801,922 bushels. Canada was the chief supplier. The previous year when imports exceeded exports was in 1927-28 (by 460,581 bushels) when New Zealand was the main supplier. The principal countries to which oats were exported during pre-war years were the United Kingdom, New Zealand, Malaya (British), Ceylon, India and Mauritius. In 1945-46 and 1946-47 the principal countries of destination were Union of South Africa, China, Hong Kong, Ceylon, Belgium and India.

5. **Oatmeal, etc.**—The production in Australia of oatmeal—much of which is consumed locally—amounted in 1945-46 to 401,613 cwt., the quantity of oats used for this purpose being 2,658,922 bushels, or about 10 per cent. of the total production. Oversea trade in this and similar products is small; the exports of oatmeal, including rolled oats, during 1945-46 and 1946-47 amounted to 68,394 cwt. and 247,599 cwt. respectively. Imports in 1945-46 were negligible, but in 1946-47 amounted to 301 cwt.

6. **World Production.**—The world's production of oats for the year 1945, as compiled by the International Institute of Agriculture, amounted to 4,240 million bushels. This quantity was harvested from 138 million acres, and represents an average yield of 30.72 bushels per acre. In comparison with this average return per acre, that of Australia for the same period (13.22 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 period 1935-39 and for each of the ten years ended 1945. The latter year is the latest for which particulars are available:—

OATS : WORLD PRODUCTION.

Year.	Area.	Production.	Average Yield
	Million Acres.	Million Bushels.	per acre.
			Bushels.
Average 1935-1939	139	4,3	31.26
1939	141	4,4	31.21
1940	143	4,545	31.78
1941	140	4,166	29.76
1942	141	4,648	32.96
1943	135	4,115	30.48
1944	134	4,045	30.19
1945(a)	138	4,240	30.72

(a) Preliminary. Subject to revision.

§ 6. Maize.

1. **States Growing Maize.**—Maize is grown for grain chiefly in Queensland and New South Wales, the area so cropped in these States during the 1945-46 season being 228,861 acres, or 97 per cent. of the total for Australia. Of the balance, Victoria contributed 6,809 acres and Western Australia 48 acres. The climate of Tasmania is generally unsuitable for the growing of maize for grain although 11 acres were sown in this State in 1945-46. In the States mentioned the crop is also grown to a greater or lesser extent for green fodder particularly in connexion with the dairying industry.

2. **Area, Production and Average Yield.**—(i) *Area and Production.* Although maize for grain is grown extensively in other countries, the area sown to maize for grain in Australia has averaged only 300,000 acres during the past decennium. Compared with the previous year, the area in 1945-46 decreased by 21,226 acres and was considerably less than the comparatively large areas of 414,914 and 400,544 acres sown in 1910-11 and 1927-28 respectively.

The area and production of maize for grain in each State for the years 1938-39, 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are given in the following table:—

MAIZE FOR GRAIN : 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.
Average 10 seasons ended 1938-39 ..	114,881	18,413	161,380	12	15	..	7	294,708
1938-39	122,201	18,485	183,415	37	8	..	..	324,146
1942-43	103,591	7,131	173,816	..	46	..	8	284,592
1943-44	103,237	6,598	172,722	..	105	19	..	282,681
1944-45	94,107	4,544	158,170	..	125	9	..	256,955
1945-46	92,416	6,809	136,415	..	48	11	..	233,720
Average 10 seasons ended 1945-46 ..	113,215	12,850	173,668	13	53	4	3	290,806

Season.	PRODUCTION ('000 Bushels). (a)							
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Average 10 seasons ended 1938-39 ..	3,072	631	3,525	..	..	..	..	7,228
1938-39	2,905	417	3,733	2	..	..	..	7,057
1942-43	2,815	271	3,708	..	1	..	..	6,885
1943-44	2,769	151	4,512	..	1	..	..	7,433
1944-45	2,437	165	3,859	..	2	..	..	6,463
1945-46	2,561	3 ⁸	2,860	..	..	..	..	5,720
Average 10 seasons ended 1945-46 ..	3,021	428	3,632	..	1	..	..	7,082

(a) 56 lb. per bushel.

The greatest production of maize in Australia was recorded in 1910-11, when it amounted to over 13,000,000 bushels. The production in 1945-46 amounted to 5,729,000 bushels compared with 7,082,000 bushels, the average for the decennium ended 1945-46.

(ii) *Average Yield.* (a) *Australia.* The following table gives particulars of the average yields per acre of the maize crops of the States for the seasons 1938-39, 1942-43 to 1945-46, and for the ten year periods ended 1938-39 and 1945-46 :—

MAIZE FOR GRAIN : 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.
Average 10 seasons ended 1938-39 ..	26.74	34.28	21.84	29.84	10.02	..	8.48	24.53
1938-39	23.77	22.54	20.36	41.35	11.25	..	..	21.77
1942-43	27.17	38.05	21.85	..	16.24	..	6.00	24.19
1943-44	26.82	22.80	26.12	..	11.89	6.63	..	20.29
1944-45	25.90	36.39	24.40	..	12.34	14.11	..	25.15
1945-46	27.71	45.22	20.96	..	9.75	2.45	..	24.30
Average 10 seasons ended 1945-46 ..	26.66	33.30	20.91	29.07	12.95	7.18	8.88	23.62

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.

(b) *Various Countries.* The average for Australia for the past ten years was 23.62 bushels per acre. During the period 1935-39 the United States of America averaged 25.0 bushels, Argentine Republic 28.0 bushels, Rumania 16.8 bushels, and the U.S.S.R. (Russia) 18.9 bushels per acre.

3. *Price of Maize.*—The average wholesale price of maize in the Melbourne market is shown in the following table :—

MAIZE : AVERAGE PRICE, MELBOURNE.

Particulars.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.	1946-47.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Average price per bushel	(a) 4 6½	7 4½	8 0	8 4	8 5	8 6

(a) Sydney.

4. *Value of Crop.*—The values of the crop for the seasons 1944-45 and 1945-46 were as follows :—

MAIZE FOR GRAIN : VALUE OF CROP, 1944-45 and 1945-46.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£
1944-45—							
Aggregate value..	873,370	66,360	1,248,315	..	1,131	70	2,189,246
Value per acre ..	£9/5/7	£14/12/1	£7/17/10	..	£9/9/11	£7/15/6	£8/10/5
1945-46—							
Aggregate value..	928,250	126,015	999,748	..	374	20	2,054,407
Value per acre ..	£10/0/11	£18/10/2	£7/6/7	..	£7/15/10	£1/16/4	£8/14/4

5. *Maize Products.*—Imports of cornflour into Australia are negligible. Exports of cornflour, which prior to the war were very small, increased considerably during the war years, the principal countries of destination being New Zealand and the Pacific Islands. In 1945-46 2,290,372 lb., valued at £54,394 were exported, compared with an annual average of 36,761 lb., valued at £364, during the five years ended 1938-39.

6. **Oversea Imports and Exports.**—The imports of maize into Australia during the five years ended 1945-46 were negligible, averaging 2,003 bushels compared with nearly 600,000 bushels during the five years ended 1929-30. Details of imports and exports for the years 1938-39 and 1942-43 to 1946-47 are as follows :—

MAIZE : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	Bushels.	£	Bushels.	£	Bushels.	£
1938-39 ..	54	55	282,018	41,489	281,964	41,434
1942-43 ..	9,305	2,377	1,418	546	-7,887	-1,831
1943-44 ..	613	1,761	5,166	2,321	4,553	560
1944-45 ..	4	1	4,682	2,237	4,678	2,236
1945-46 ..	14	154	411	899	397	745
1946-47 ..	389	957	1,468	6,147	1,079	5,190

NOTE.—Minus sign (-) denotes net imports. (a) Australian currency values.

7. **World Production.**—The following table furnishes particulars of the world's acreage, production and average yield per acre of maize for the latest available period, according to records published by the Food and Agriculture Organization of the United Nations :—

MAIZE : WORLD PRODUCTION.

Year.	Area.	Production.	Average Yield
			per Acre.
	Million Acres.	Million Bushels.	Bushels.
Average 1935-1939 ..	216	4,725	21.88
1939 ..	218	5,107	23.43
1940 ..	214	5,000	23.36
1941 ..	209	5,040	24.11
1942 ..	210	5,250	25.00
1943 ..	220	5,380	24.45
1944 ..	215	5,240	24.37
1945(a)	215	5,050	23.49

(a) Preliminary. Subject to revision.

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.

§ 7. Barley.

1. **Area, Production and Average Yield.**—(i) *Area and Production.* The area sown to barley for grain has expanded considerably during the past ten years. Although a substantial decrease occurred during 1942-43 and 1943-44 the area increased again during 1944-45 and 1945-46 and the average annual area sown for the decennium ended 1945-46 amounted to 642,000 acres, compared with an average of 415,000 acres for the previous ten years. Victoria was originally the principal barley-growing State, but since 1913-14 its place has been taken by South Australia which accounted for 63 per cent. of the Australian acreage in 1945-46. Victoria was next in importance with 19 per cent.

leaving a balance of about 18 per cent. distributed among the other States. The totals here given relate to the areas harvested for grain; small areas 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 years 1938-39, 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are shown in the following table:—

BARLEY FOR GRAIN : AREA AND PRODUCTION.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
AREA ('000 Acres.)								
Average 10 seasons ended 1938-39	11	107	8	331	31	7	..	495
1938-39 ..	14	176	14	457	75	9	..	745
1942-43 ..	14	78	8	298	50	3	..	451
1943-44 ..	20	83	13	262	61	4	..	443
1944-45 ..	28	129	15	360	76	6	..	614
1945-46 ..	29	134	21	442	66	7	..	699
Average 10 seasons ended 1945-46	19	144	11	399	63	6	..	642
PRODUCTION ('000 Bushels). (a)								
Average 10 seasons ended 1938-39	173	1,976	132	5,714	371	186	1	8,553
1938-39 ..	218	1,672	246	7,541	946	208	..	10,831
1942-43 ..	223	1,274	165	6,020	533	63	..	8,278
1943-44 ..	380	1,078	250	5,057	723	95	6	7,589
1944-45 ..	122	359	319	3,185	884	159	1	5,029
1945-46 ..	496	1,744	520	7,566	666	123	2	11,117
Average 10 seasons ended 1945-46	275	2,070	217	6,873	744	165	1	10,345

(a) 50 lb. per bushel.

(ii) *Average Yield.* The average yield of barley per acre varies considerably in the different States, being as a rule highest in Tasmania and lowest in Western Australia. Details for each State during the seasons 1938-39, 1942-43 to 1945-46 and for the ten year periods ended 1938-39 and 1945-46 are given in the following table:—

BARLEY : 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.
Average 10 seasons ended 1938-39 ..	16.62	18.44	16.67	17.29	11.89	25.21	18.88	17.29
1938-39 ..	15.34	9.50	17.56	16.50	12.63	23.94	..	14.54
1942-43 ..	15.61	16.36	19.90	20.20	10.78	23.04	..	18.37
1943-44 ..	18.91	12.95	19.38	19.34	11.80	27.54	17.20	17.14
1944-45 ..	4.33	2.79	21.01	8.85	11.61	29.42	2.90	8.19
1945-46 ..	17.16	13.00	24.70	17.12	10.03	18.28	21.42	15.90
Average 10 seasons ended 1945-46 ..	14.20	14.41	18.91	17.24	11.81	26.73	14.08	16.13

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 6,873,000 and 2,070,000 bushels.

(iii) *Malting (2 Row) and Other (6 Row) Barley.* (a) *Season 1945-46.* In the following table details of the area sown to barley of the 2 row or malting variety and 6 row or feed variety, and production therefrom for the season 1945-46 are given by States :—

BARLEY, MALTING (2 ROW) AND OTHER (6 ROW) : AREA AND PRODUCTION, 1945-46.

('000 omitted.)

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.	Tas.	A.C.T.	Aust.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Barley—								
Malting (2 Row)	19	117	15	399	37	6	..	593
Other (6 Row) ..	10	17	6	43	29	1	..	106
Total ..	29	134	21	442	66	7	..	699
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Barley—								
Malting (2 Row)	339	1,481	356	6,922	369	114	..	9,581
Other (6 Row) ..	157	263	164	644	297	9	2	1,536
Total ..	496	1,744	520	7,566	666	123	2	11,117

Taking Australia as a whole, about 85 per cent. of the area of barley for grain in 1945-46 was sown with malting, or 2 row, barley while the remainder consisted of 6 row, or feed varieties. The proportion, however, varied considerably in the several States. The disposal of barley during the season 1945-46 was as follows: malt works, 3,734,780 bushels; flour and other grain mills, 429,083 bushels; distilleries, 203,734 bushels; exports, 702,104 bushels; leaving a balance of 6,047,137 bushels for feed, seed and other purposes.

(b) *Area, Production and Average Yield.* The following table sets out the acreage and production of malting and other barley in Australia during the seasons 1938-39, 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46.

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

Season.	'000 Acre.			'000 Bushels.			Average Yield per Acre.		
	Malting (2-row).	Other (6-row).	Total.	Malting (2-row).	Other (6-row).	Total.	Malting (2-row).	Other (6-row).	Total.
							Bus.	Bus.	Bus.
Average 10 seasons ended 1938-39 ..	428	67	495	7,480	1,073	8,553	17.49	16.03	17.29
1938-39 ..	650	95	745	9,705	1,126	10,831	14.92	11.92	14.54
1942-43 ..	357	94	451	6,782	1,496	8,278	19.03	15.88	18.37
1943-44 ..	357	86	443	6,397	1,192	7,589	17.89	13.96	17.14
1944-45 ..	500	114	614	4,188	841	5,029	8.38	7.38	8.19
1945-46 ..	593	106	699	9,581	1,536	11,117	16.15	14.52	15.90
Average 10 seasons ended 1945-46 ..	539	103	642	8,946	1,399	10,345	16.59	13.57	16.13

During the past ten seasons the area and production of barley of the malting, or 2 row class have been more than five times the corresponding figures for barley of the 6 row, or feed class. The average yield per acre for the last ten-yearly period for malting barley was 22 per cent. higher than that for 6 row barley.

2. **Australian Barley Board.**—Following the outbreak of war in 1939, the Australian Barley Board, representative of the industry, was formed, and the Commonwealth Government acceded to its request to acquire the entire 1939-40 barley crop, which was placed under the control of the Board. A pool was established from which proceeds were distributed with appropriate margins for different grades of barley.

The Board is responsible for the marketing and storage of barley, and, like the Australian Wheat Board, has appointed licensed receivers to receive grain on its behalf and to act as agents for all local and oversea sales.

Following the decision of the Commonwealth Government not to acquire barley in smaller producing States after 1941-42, the Governments of Western Australia and Queensland established State Barley Boards to control marketing in these States.

Particulars of the barley acquired and sold, and of advances made to growers in respect of the 1942-43 to 1946-47 crops are given in the following table.

AUSTRALIAN BARLEY BOARD : BARLEY ACQUIRED, SOLD, ETC., TO JANUARY, 1948.

Pool.	Quantity Acquired.	Quantity Sold.(a)	Total Advances made per Bushel on 2-row No. 1 Grade.		Total Payments to Growers.
			'000 bushels.	'000 bushels.		s. d.	£
No. 4 (1942-43 crop)	3,810	3,839	4 3	771,294
No. 5 (1943-44 ")	3,340	3,356	4 5.75	649,579
No. 6 (1944-45 ")	2,171	2,190	5 0	541,484
No. 7 (1945-46 ")	6,716	6,782	6 0.17	1,962,049
No. 8 (1946-47 ")	8,543 (b)	8,431	(b)7 3	3,079,722

(a) Includes surplus in out-turn.

(b) Subject to revision.

3. **Prices.**—The average prices in the Melbourne market during each of the years 1938-39 and 1942-43 to 1946-47 are given in the following table :—

BARLEY : AVERAGE MELBOURNE PRICES PER BUSHEL.

Particulars.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.	1946-47.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley	.. 3 5½	.. 4 11	.. 5 3	.. 5 7½	.. 6 1	.. 6 1
Cape barley	.. 2 11½	.. 4 3	.. 4 6	.. 4 10¼	.. 5 4	.. 5 4

4. **Value of Barley Crop.**—The estimated values of the barley crop for the seasons 1944-45 and 1945-46 and the value per acre are shown in the following table :—

BARLEY FOR GRAIN : VALUE OF CROP(a), 1944-45 and 1945-46.

Value.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	£	£	£	£	£	£	£	£
1944-45—								
Aggregate value	47,900	214,667	61,496	970,936	209,485	41,460	232	1,546,176
Value per acre	£1/14/1	£1/13/3	£4/1/0	£2/14/0	£2/15/0	£7/13/4	£1/2/9	£2/10/4
1945-46—								
Aggregate value	161,760	464,896	100,616	2,477,896	168,032	32,090	480	3,405,770
Value per acre	£5/12/0	£3/9/4	£4/16/7	£5/12/2	£2/10/7	£4/15/2	£6/3/1	£4/17/5

(a) Excludes the value of straw.

5. Imports and Exports.—Australian exports of barley during the five years ended 1946-47 averaged 933,000 bushels, South Australia being the principal exporting State. Particulars of the Australian oversea imports and exports for the years 1938-39 and 1942-43 to 1946-47 are shown in the following table:—

BARLEY : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	'000 Bushels.	£	'000 Bushels.	£	'000 Bushels.	£
1938-39	24	2,618	341,935	2,618	341,911
1942-43	511	63,846	511	63,846
1943-44	4	998	205,790	998	205,786
1944-45	199	57,277	199	57,277
1945-46	953	240,690	702	359,741	-251	119,051
1946-47	2,256	1,636,020	2,256	1,636,020

(a) Australian currency values.
NOTE.—Minus sign (-) denotes net imports.

In addition to barley grain, there is also an export of Australian pearl and scotch barley, the total for 1945-46 amounting to 2,601,428 lb., valued at £53,159, and consigned mainly to Hong Kong, Malaya and Ceylon.

6. Malt.—(i) *Production.* The production of malt in Australia is sufficient to meet local requirements and to provide a margin for export as indicated in the next section. Details of the quantity of grain used and the production of barley malt are given in the following table.

MALT : GRAIN USED AND MALT PRODUCED, AUSTRALIA.

Year.	Barley Malt.		Wheaten and Oaten Malt.	
	Grain used.	Malt produced.	Grain used.	Malt produced.
	Bushels.	Bushels.(a)	Bushels.	Bushels.(a)
1938-39	3,729,730	3,620,909	(b)	111,728
1942-43	3,613,086	3,586,422	172,956	149,948
1943-44	3,915,925	3,822,215	221,739	196,153
1944-45	3,568,981	3,512,957	291,909	286,844
1945-46	3,734,780	3,596,004	241,992	229,811

(a) 40 lb. per bushel. (b) Not available.

(ii) *Imports and Exports.* The surplus production of malt in Australia, after meeting local requirements, is shipped chiefly to the Far East and New Zealand. Details of imports and exports for the years 1938-39 and 1942-43 to 1946-47 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.	£
1938-39	140	91	137,473	49,552	137,333	49,461
1942-43	9,695	1,299	15,588	4,895	5,893	3,596
1943-44 .. ..	..	..	19,695	9,756	19,695	9,756
1944-45 .. ..	..	..	27,390	12,521	27,390	12,521
1945-46 .. ..	..	..	15,040	6,590	15,040	6,590
1946-47 .. ..	..	..	20,673	8,023	20,673	8,023

(a) Australian currency values.

7. **World Production.**—In comparison with the barley production of other countries, that of Australia is extremely small. Separate particulars for some of the leading countries during 1945 were not available at date of publication, but the United States of America produced 264 million bushels and Canada 158 million bushels during that year. Production in the U.S.S.R. (Russia) in 1935 approximated 360 million bushels, while China produced an average of 343 million bushels for the five years 1935 to 1939.

The following table shows the latest available details of the world's acreage of barley, together with the production and average yield per acre, according to the results compiled by the Food and Agriculture Organization of the United Nations :—

BARLEY : WORLD PRODUCTION.

Period.	Area.	Production.	Average Yield
			per Acre.
	Million Acres.	Million Bushels.	Bushels.
Average 1935-1939	114.2	2,338	20.47
1939	117.0	2,400	20.51
1940	119.0	2,350	19.75
1941	116.0	2,325	20.04
1942	120.0	2,515	20.96
1943	112.5	2,310	20.53
1944	108.6	2,180	20.07
1945(a)	106.2	2,030	19.11

(a) Preliminary. Subject to revision.

§ 8. Rice.

Rice growing is almost entirely concentrated in Asia and the extent to which this crop is grown in other countries is relatively small. In Australia experimental rice cultivation was carried on at the Yanco Experimental Farm in New South Wales for a number of years before 1924-25, but it was not until that year that an attempt was made to grow the crop on a commercial basis, 16,240 bushels being produced from 153 acres, or a 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 production soon equalled Australian requirements and later provided a margin for export.

The area which growers may plant is 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. Because of war-time demands the areas sown have been expanded, but the extent of any expansion is determined by the limits imposed by the quantity of water available.

Consequent upon the outbreak of war in the Pacific in 1941 and the enemy occupation of the rice producing countries north of Australia, the demand for rice was so great as to be beyond the capacity of the industry. From August, 1942 civilian consumption in Australia was prohibited, except in the case of invalids, hospitals, resident Asiatics and other priorities, and the total production was diverted to service needs and for the feeding of natives in the south-west Pacific area. This restriction still continues in order to meet, as far as possible, the needs of native populations in the Pacific area, whose diet consists chiefly of rice.

For the five years ended 1938-39 the area sown to rice in the Murrumbidgee Irrigation Area averaged 22,900 acres. No marked expansion occurred until after Japan's entry into the war in 1941. The area was increased to 34,300 acres in 1942-43 and to 36,500 acres in 1943-44. This expansion was not sufficient to meet the war-time demand and new areas in the Wakool and Berenembah Irrigation Districts of New South Wales were developed, bringing the total area for the State and for Australia to 40,690 acres in 1943-44. Owing to water shortage the area sown in 1944-45 fell to 24,596 acres, but rose to 28,372 acres in 1945-46.

The production of paddy rice reached its highest level in 1943-44 with more than 4 million bushels or an average yield of just under 100 bushels per acre. In 1944-45 it dropped to nearly 1.7 million bushels or 68.8 bushels per acre due to water shortage arising from severe drought conditions. In 1945-46 production recovered to 2.7 million bushels or an average of 96.4 bushels per acre.

Prior to 1938-39 the greater part of Australia's export of rice was consigned to the United Kingdom, but, because of shortages in Pacific areas arising from war damage in south-east Asia, exports from Australia have been diverted mainly to the islands in this region.

Details relating to area, production, and trade for the years 1938-39 and 1942-43 to 1945-46 are shown in the following table:—

RICE : AREA, PRODUCTION AND TRADE, AUSTRALIA.

Year.	No. of Growers. (a)	Area. (a)	Production (Paddy Rice). (a)		Average Yield (Paddy) per acre. (a)	Imports.		Exports.	
			Quantity.	Gross Value. (b)		Un-cleaned.	Cleaned.	Un-cleaned.	Cleaned.
1938-39	313	23,533	2,775	540	117.92	29	46,019	3,386	277,851
1942-43	348	34,232	3,084	759	90.11	..	1,800	37,085	209,628
1943-44	364	40,690	4,015	983	98.67	1	3,258	259,230	531,158
1944-45	330	24,596	1,693	416	68.82	..	..	262,429	188,815
1945-46	329	28,372	2,735	672	96.40	..	420	344,874	222,485

(a) New South Wales.

(b) Excludes the value of straw.

(c) 42 lb. per bushel.

§ 9. Sorghum for Grain.

The growing of sorghum for grain on an extensive scale is a recent development in Australia. No details of the area and production of this cereal are available prior to 1939-40 but the output was of little importance. The climatic conditions of Queensland and northern New South Wales are particularly suited for the growing of sorghum and the development so far has been restricted to these areas, but more particularly to Queensland which accounts for about 90 per cent. of the area sown. The grain produced is fed to live-stock and is becoming an important source of supply for supplementing other coarse grains for the feeding of live-stock. Other sorghums are grown in Australia

mainly as green fodder, hay and for the production of brush for broom manufacture. Details of these are included in § 14 and § 19 hereafter. Particulars of the area and production of sorghum grown for grain are given in the following table.

GRAIN SORGHUM : AREA, PRODUCTION AND YIELD, AUSTRALIA.

Year	Area.			Production.			Average Yield per Acre.		
	N.S.W.	Q'land.	Total.	N.S.W.	Q'land.	Total.	N.S.W.	Q'land.	Total.
	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1939-40 ..	(a)	4,397	b 4,397	(a)	57,936	b 57,936	(a)	13.17	b 13.17
1940-41 ..	(a)	9,852	b 9,852	(a)	193,978	b 193,978	(a)	19.69	b 19.69
1941-42 ..	(a)	25,340	b 25,340	(a)	361,984	b 361,984	(a)	14.28	b 14.28
1942-43 ..	(a)	40,630	b 40,630	(a)	693,347	b 693,347	(a)	17.06	b 17.06
1943-44 ..	(a)	54,685	b 54,685	(a)	1,333,073	b 1,333,073	(a)	24.30	b 24.30
1944-45 ..	8,393	54,709	63,102	126,372	1,110,477	1,236,849	15.06	20.30	19.60
1945-46 ..	6,248	49,451	55,699	100,182	918,780	1,018,962	16.03	18.58	18.29

(a) Not available. (b) Queensland only.

§ 10. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the principal other grain and pulse crops grown in Australia are navy beans, blue peas and rye.

The areas of crops of blue peas and navy beans for the season 1945-46 were 23,780 acres and 11,058 acres respectively, giving yields of 7,996 tons and 1,856 tons, or averages of 0.34 tons and 0.17 tons respectively per acre, which was less than the average yield for the decennium ended 1945-46. Navy beans are grown chiefly in New South Wales, Queensland and Victoria in that order, but in other States the quantity produced is negligible. The production of blue peas is almost entirely restricted to Tasmania which accounts for more than 80 per cent. of the total area and production for Australia. Blue 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 1945-46 was 43,654 acres, yielding 201,308 bushels, or an average of 4.61 bushels per acre, as compared with the average of 6.85 bushels for the last ten seasons. Of the total area sown to rye in 1945-46, about 76.3 per cent. was in South Australia, 17.6 per cent. in Victoria, and 3.4 per cent. in Western Australia.

§ 11. Potatoes.

1. *Area, Production and Average Yield.*—(i) *Area and Production.* Victoria possesses peculiar advantages for the growth of potatoes, as the rainfall is generally satisfactory and the climate is unfavorable to the spread of Irish blight; consequently the crop is widely grown. The principal areas are the central highlands, the south-western and Gippsland districts. Tasmania comes next in order of acreage sown, but the production has exceeded that of Victoria in recent years. New South Wales occupies third place in acreage and production. The area for these three States accounted for 80.71 per cent. of the total for Australia in 1945-46.

The area sown and production of potatoes in each State during the years 1938-39, 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are given hereunder :—

POTATOES : AREA SOWN AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia
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AREA SOWN.

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Average 10 seasons ended 1938-39	19,199	54,658	11,039	5,042	4,953	34,684	30	129,605
1938-39 ..	16,866	34,396	10,389	4,290	5,355	26,696	56	98,048
1942-43 ..	24,488	51,757	9,885	7,233	6,399	40,383	64	140,209
1943-44 ..	39,067	70,430	14,609	8,958	7,375	60,500	136	192,075
1944-45 ..	34,796	83,238	18,173	12,562	11,735	81,092	207	241,803
1945-46 ..	22,865	63,000	15,216	8,854	9,781	56,245	118	176,079
Average 10 seasons ended 1945-46	23,011	49,820	12,533	6,506	6,561	43,281	84	141,796

PRODUCTION.

	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Average 10 seasons ended 1938-39	44,122	150,238	18,100	20,202	23,410	94,500	63	350,635
1938-39 ..	39,385	81,415	19,183	18,487	26,532	89,330	109	274,441
1942-43 ..	64,728	195,138	22,438	32,866	32,246	135,930	215	483,561
1943-44 ..	65,655	217,380	30,717	35,991	30,552	217,800	960	599,055
1944-45 ..	80,587	305,216	33,644	64,154	51,190	345,232	1,026	881,049
1945-46 ..	61,768	230,749	33,605	35,097	47,672	236,140	575	645,606
Average 10 seasons ended 1945-46	55,876	177,858	23,407	30,011	32,027	160,125	361	479,665

The area sown to potatoes averaged 130,000 acres during the ten years ended 1935-36 and rose to 142,000 acres for the decennium ended 1945-46 after declining to 120,000 acres for the decennium ended 1942-43. Victoria, with a drop of 21,000 acres, was mainly responsible for the decline. After the outbreak of war in the Pacific in December, 1941, the area sown to potatoes rose rapidly, and in 1943-44 was 56 per cent. greater than in 1940-41. The greatest ever sown was 242,000 acres in 1944-45, when there were record areas in Victoria and Tasmania. The total area under potatoes declined to 176,000 acres in 1945-46.

The expansion during the war years was necessary in order to meet the large demand for potatoes by Australian and Allied Servicemen based upon Australia and to maintain supplies for civil needs. As a result, production rose to the record level of 881,049 tons in 1944-45. A decline of about 27 per cent. to 645,606 tons was recorded for 1945-46.

(ii) *Average Yield.* Average yields for each State for the seasons 1938-39, 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are shown hereunder :—

POTATOES : AVERAGE YIELD 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.
Average 10 seasons ended 1938-39 ..	2.30	2.75	1.64	2.50	4.73	2.72	2.09	2.71
1938-39 ..	2.34	2.37	1.85	4.31	4.95	3.35	1.95	2.80
1942-43 ..	2.04	3.77	2.27	4.54	5.04	3.37	3.36	3.45
1943-44 ..	2.18	3.09	2.10	4.02	4.14	3.60	7.06	3.12
1944-45 ..	2.32	3.67	1.85	5.11	4.36	4.26	4.96	3.64
1945-46 ..	2.70	3.66	2.21	3.96	4.87	4.20	4.87	3.67
Average 10 seasons ended 1945-46 ..	2.43	3.57	1.89	4.61	4.88	3.70	4.31	3.39

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 1945-46 averaged 6.04 tons per acre from an area of 23,228 acres, as compared with 3.67 tons per acre in Australia from 176,079 acres.

(iii) *Relation to Population.* The average annual production of potatoes for the last five seasons was 81 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 almost 17 cwt. due to an abnormal production of 1.4 tons per head in 1944-45. Details for each State for the 1938-39 and 1942-43 to 1945-46 seasons 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.
1938-39 ..	14	43	19	31	57	377	9	40
1942-43 ..	23	99	22	54	69	565	18	67
1943-44 ..	23	109	29	58	63	893	69	82
1944-45 ..	28	152	31	103	105	1,402	71	120
1945-46 ..	21	114	31	55	97	947	39	87

2. **Gross Value of Potato Crop.**—The estimated gross value of the potato crop of each State for the seasons 1944-45 and 1945-46 is given in the following table :—

POTATOES : VALUE OF CROP, 1944-45 and 1945-46.

Value.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
1944-45—								
Aggregate value	£ 1,238,020	£ 3,574,332	£ 532,607	£ 653,370	£ 639,875	£ 4,315,100	£ 15,759	£ 10,969,453
Value per acre	£35/11/7	£42/18/10	£29/6/3	£52/2/3	£54/10/7	£53/1/4	£7/2/7	£45/7/4
1945-46—								
Aggregate value	£ 889,160	£ 2,496,050	£ 532,079	£ 458,793	£ 599,883	£ 3,004,880	£ 8,280	£ 7,989,425
Value per acre	£38/18/0	£39/12/5	£34/19/4	£51/16/4	£61/6/8	£53/7/6	£70/3/5	£45/7/6

3. **Consumption.**—The annual civilian consumption of potatoes in Australia during each of the three years ended 1946 amounted to 334,000 tons, 359,000 tons and 408,600 tons respectively, or 113.7 lb., 119.6 lb. and 124.9 lb. per head of population respectively. These figures exclude the quantities used for seed, which averaged about 100,000 tons annually over this period. New South Wales, Queensland and, in some seasons, South Australia do not produce the quantities necessary for their requirements and must import from Tasmania and Victoria, which have a surplus.

4. **Australian Potato Committee.**—This Committee was set up under National Security (Potatoes) Regulations on 27th April, 1942, to ensure that adequate supplies of potatoes would be available in Australia to meet the needs of the Defence Forces and the civilian population during the war.

War-time control covered production of quantities needed for all purposes, the regulation of marketing and distribution to meet service and civilian needs, and the spreading of supplies over the season.

A guaranteed minimum price was assured for the first season, any excess of market return above the minimum going to growers. For later seasons there was a fixed contract price, allowing supplies to be directed according to needs rather than market prices.

Production was arranged through State Departments of Agriculture, which supervised controls of grading. Distribution was arranged through trade channels, which marketed the Commonwealth-owned potatoes.

The Committee worked through an Executive Member, with State Deputies, assisted by Advisory Committees of State officers, growers and merchants.

Supplies from growers were controlled by delivery quotas to regulate the flow on to the market. Quotas for merchants to market applied when supplies were scarce.

The retail price was subsidized under the price stabilization policy, and was less than the growers' contract price.

The system gave favourable conditions to growers, and their organizations are moving for stabilization of the industry on similar lines in the post-war period.

The Commonwealth has continued contracts for the 1947-48 season. State Boards have been formed in Western Australia, New South Wales and Victoria, and action to constitute them is being taken in Tasmania and Queensland. Marketing from 1948 onward is therefore likely to be under control of State Boards in most States.

In the following table details of the quantities of potatoes received and the manner of their distribution are given for the years ended 31st October, 1944, 1945 and 1946. The quantities shown are those recorded by the Committee and therefore exclude a quantity which does not come within the Committee's control.

**AUSTRALIAN POTATO COMMITTEE : RECEIVALS AND DISPOSALS OF POTATOES,
AUSTRALIA.**

Particulars.	Year ended 31st October—					
	1944.		1945.		1946.	
	Tons.	Per cent.	Tons.	Per cent.	Tons.	Per cent.
Quantity received from current crop	441,435	100	619,710	100	477,980	89.7
Carry-over from previous year .. ..	..	..	..	..	55,166	10.3
Total	441,435	100	619,710	100	533,146	100
Distribution—						
Civilian consumption	317,801	72.0	342,676	55.3	389,135	73.0
Service consumption	76,859	17.4	69,548	11.2	25,608	4.8
Exports	5,226	1.2	25,005	4.0	22,287	4.2
Canning including Meat Packs	16,473	3.7	19,490	3.2	7,078	1.3
Dehydration	21,758	4.9	59,025	9.5	29,270	5.5
Loss in weight, stock feed and waste	3,318	0.8	48,800	7.9	11,397	2.1
Carried to next year, including quantities in transit .. ..	..	..	55,166	8.9	48,371	9.1
Total	441,435	100	619,710	100	533,146	100

5. 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. Details showing the trade for the years 1938-39 and 1942-43 to 1946-47 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.	£
1938-39	2	35	1,255	17,443	1,253	17,408
1942-43	1,705	27,064	1,705	27,064
1943-44	2,956	43,932	2,956	43,932
1944-45	5	8,152	135,545	8,152	135,540
1945-46	23	44,645	861,023	44,645	861,000
1946-47	3	25,852	504,658	25,852	504,655

(a) Australian currency values.

§ 12. Onions.

1. **Area, Production and Average Yield.**—Australia's supply of onions comes chiefly from Victoria which accounted for 66 per cent. of the total area and 69 per cent. of the quantity produced in 1945-46. Queensland came next with nearly 20 per cent. of the area and 15 per cent. of the production, leaving a balance of about 14 per cent. of area and 16 per cent. of production distributed among the remaining four States. Details of the area, production and average yield per acre are given in the following table for the years 1938-39 and 1942-43 to 1945-46, together with averages for the ten year periods ended 1938-39 and 1945-46.

ONIONS : AREA, PRODUCTION AND AVERAGE YIELD.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.	Tas.	A.C.T.	Aust.
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AREA.

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Average 10 seasons ended 1938-39 ..	124	6,159	840	450	109	5	3	7,690
1938-39	105	4,898	1,001	542	149	7	6	6,708
1942-43	1,096	5,741	1,843	495	400	133	8	9,716
1943-44	876	6,151	1,934	702	445	62	5	10,175
1944-45	835	7,905	2,124	635	330	50	9	11,888
1945-46	747	8,170	2,537	511	383	52	8	12,408
Average 10 seasons ended 1945-46 ..	514	5,887	1,529	568	264	43	5	8,810

PRODUCTION.

	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Average 10 seasons ended 1938-39 ..	354	35,431	2,548	3,414	814	20	11	42,592
1938-39	316	10,404	2,831	3,892	874	37	18	18,372
1942-43	3,288	36,500	7,480	4,059	2,946	373	42	54,688
1943-44	2,774	27,994	7,665	5,274	2,945	237	33	46,922
1944-45	2,587	47,277	8,677	5,429	2,377	137	28	66,512
1945-46	2,939	46,338	9,939	4,779	2,720	54	24	66,793
Average 10 seasons ended 1945-46 ..	1,510	33,606	5,055	4,510	1,864	117	22	46,684

AVERAGE YIELD PER ACRE.

	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Average 10 seasons ended 1938-39 ..	2.85	5.75	3.03	7.59	7.47	4.00	3.67	5.54
1938-39	3.01	2.12	2.83	7.18	5.87	5.29	3.00	2.74
1942-43	3.00	6.36	4.06	8.20	7.37	2.80	5.25	5.63
1943-44	3.17	4.55	3.96	7.51	6.62	3.82	6.60	4.61
1944-45	3.10	5.98	4.09	8.55	7.20	2.74	3.11	5.59
1945-46	3.93	5.67	3.92	9.35	7.10	1.04	3.00	5.38
Average 10 seasons ended 1945-46 ..	2.94	5.71	3.31	7.94	7.06	2.72	4.07	5.30

Details of the area and production of fresh vegetables other than potatoes and onions are given in § 18.

2. **Gross Value of Onion Crop.**—The gross value of the onion crop is shown in the following table for the years 1938-39 and 1942-43 to 1945-46.

ONIONS : GROSS VALUE, AUSTRALIA.

Year.	Total Production.	Gross Value of Crop.	Average value per ton.	Average value per acre.
	Tons.	£	£ s. d.	£ s. d.
1938-39	18,372	305,744	16 12 10	45 11 7
1942-43	54,688	781,398	14 5 9	30 8 6
1943-44	46,922	695,909	14 16 7	68 7 2
1944-45	66,512	1,129,246	16 19 7	94 19 10
1945-46	66,793	961,111	14 7 9	77 9 2

3. **Consumption.**—During the war years the onion requirements of Australian and Allied Services based upon Australia were the first to be met, the balance of production being available for civilian consumption and for exports. Throughout these years, however, production was such that civilian supplies were not seriously limited. The following table furnishes details of the quantity available for consumption by Services and civilians for the years 1938-39 and 1942-43 to 1945-46.

PRODUCTION AND CONSUMPTION OF ONIONS, AUSTRALIA.

Particulars.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.
	Tons.	Tons.	Tons.	Tons.	Tons.
Production	18,372	54,688	46,922	66,512	66,793
Less net exports	+3,548	439	3,239	1,106	6,443
Balance available for Civilian and Service consumption.. .. .	21,920	54,249	43,683	65,406	60,350

Plus sign (+) signifies net imports.

4. **Imports and Exports.**—Onions are the only root crop, other than potatoes, in which any considerable oversea trade is carried on by Australia. During the five years ended 1945-46 1,296 tons, valued at £A19,984 were imported, principally from New Zealand, while during the same period the exports, which amounted to 11,934 tons, valued at £A193,763, were shipped mainly to the Pacific Islands.

§ 13. 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 1945-46 constituted 13.50 per cent. of the total area cropped. A graph showing the area sown to hay since 1860 appears on page 897. In most European countries the hay consists almost entirely of meadow and other grasses, but in Australia a very large proportion consists of oats, wheat and lucerne. The area and production of hay of all kinds

in the several States during the years 1938-39 and 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are shown below :—

HAY : AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
AREA.								
Average 10 seasons ended	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1938-39 ..	757,010	1,110,616	67,850	541,265	432,217	83,118	2,338	2,994,414
1938-39 ..	1,068,925	1,104,558	65,732	519,309	408,276	79,959	3,501	3,250,260
1942-43 ..	736,157	788,792	70,025	425,505	253,150	82,062	3,424	2,359,115
1943-44 ..	534,470	740,672	71,992	312,277	282,614	99,283	2,806	2,044,114
1944-45 ..	585,829	901,983	64,783	428,173	328,729	96,012	3,174	2,408,683
1945-46 ..	758,400	1,060,496	69,084	484,060	281,410	99,758	4,028	2,757,236
Average 10 seasons ended								
1945-46 ..	732,764	974,290	65,074	476,342	360,407	88,450	3,076	2,701,303
PRODUCTION.								
Average 10 seasons ended	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1938-39 ..	958,549	1,263,127	104,297	577,100	463,981	119,826	2,830	3,489,710
1938-39 ..	1,181,264	892,975	109,761	585,554	437,809	109,533	4,265	3,321,161
1942-43 ..	985,743	1,050,107	118,195	568,529	277,957	109,956	5,568	3,116,055
1943-44 ..	735,641	963,103	138,080	407,078	314,359	153,834	4,777	2,716,872
1944-45 ..	371,153	704,246	115,263	316,802	338,912	145,911	1,231	1,993,518
1945-46 ..	990,747	1,444,250	126,258	521,957	287,476	117,079	5,208	3,492,975
Average 10 seasons ended								
1945-46 ..	830,530	1,154,828	109,728	537,600	378,485	127,030	3,940	3,142,240

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 under hay in Australia during the season 1915-16, 3,597,771 acres, was the largest on record, whilst the average for the decennium ended 1945-46 was 2,701,303 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 16.6 cwt. per acre in 1944-45, while the highest was that of 27.8 cwt. in 1939-40. The average for the decennium was 23.2 cwt. Particulars for the several States for the seasons 1938-39, 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are given hereunder :—

HAY : PRODUCTION PER ACRE.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
Average 10 seasons ended 1938-39 ..	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1938-39 ..	1.27	1.14	1.54	1.07	1.07	1.44	1.21	1.17
1938-39 ..	1.11	0.72	1.67	1.13	1.07	1.37	1.22	1.02
1942-43 ..	1.34	1.33	1.69	1.34	1.10	1.34	1.63	1.32
1943-44 ..	1.38	1.30	1.92	1.30	1.11	1.55	1.70	1.33
1944-45 ..	0.63	0.78	1.75	0.74	1.03	1.52	0.39	0.83
1945-46 ..	1.31	1.36	1.83	1.08	1.02	1.17	1.29	1.27
Average 10 seasons ended 1945-46 ..	1.13	1.19	1.66	1.13	1.05	1.44	1.28	1.16

(iii) *Varieties Grown.* Information regarding areas cut for hay is available for all States, and details for 1938-39 and the four seasons ended 1945-46 are given in the following table:—

HAY : AREA UNDER VARIOUS KINDS GROWN.

Varieties.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.
	Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—					
Wheaten	559,437	287,470	198,066	279,120	389,918
Oaten	413,002	351,985	252,300	237,834	289,720
Lucerne	92,598	91,671	82,179	66,820	69,745
Other	3,888	5,031	1,925	2,055	9,017
Total	1,068,925	736,157	534,470	585,829	758,400
VICTORIA—					
Wheaten	258,839	67,759	71,467	104,488	114,165
Oaten	722,528	518,040	448,315	602,300	667,451
Lucerne	(a) 36,838	36,123	36,040	32,674	44,416
Other	86,353	166,870	184,850	162,521	234,464
Total	1,104,558	788,792	740,672	901,983	1,000,496
QUEENSLAND—					
Wheaten	6,628	10,678	6,891	10,377	13,015
Oaten	4,901	6,085	6,889	5,944	6,817
Lucerne	50,228	51,715	50,391	42,427	45,645
Other	3,975	1,547	7,821	6,035	3,607
Total	65,732	70,025	71,992	64,783	69,084
SOUTH AUSTRALIA—					
Wheaten	227,604	152,589	120,129	208,667	224,170
Oaten	270,425	230,901	157,352	184,603	211,361
Lucerne	4,805	4,424	4,157	3,079	8,902
Other	16,475	37,591	30,639	31,824	39,627
Total	519,309	425,505	312,277	428,173	484,060
WESTERN AUSTRALIA—					
Wheaten	165,153	100,947	117,149	153,441	104,798
Oaten	204,610	118,000	126,093	137,606	138,706
Lucerne .. ..	..	239	104	75	128
Other	38,513	33,964	39,268	37,607	37,778
Total	408,276	253,150	282,614	328,729	281,410
TASMANIA—					
Wheaten	979	1,962	3,879	3,719	4,779
Oaten	64,310	61,542	69,002	65,651	70,988
Lucerne	3	694	663	475	499
Other	14,667	17,864	25,739	26,167	23,492
Total	70,959	82,062	99,283	96,012	99,758

(a) Includes barley and rye hay.

For all States combined the proportions of the areas sown to the principal kinds of hay in 1945-46 were 50 per cent. for oaten, 31 per cent. for wheaten, 6 per cent. for lucerne, and 13 per cent. for other hay. In that year, oaten hay predominated in the States of Victoria, Western Australia and Tasmania, wheaten hay in New South Wales and South Australia, and lucerne in Queensland.

2. *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 seasons 1944-45 and 1945-46:—

HAY : VALUE OF CROP, 1944-45 and 1945-46.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	£	£	£	£	£	£	£	£
1944-45—								
Aggregate value	3,174,350	4,717,788	1,239,732	1,888,221	1,277,911	809,810	10,951	13,118,763
Value per acre	£5/8/4	£5/4/7	£10/2/9	£4/8/2	£3/17/9	£8/8/8	£3/9/0	£5/8/11
1945-46—								
Aggregate value	6,792,280	6,098,709	1,383,751	2,470,384	1,032,389	632,230	35,646	18,445,389
Value per acre	£8/19/1	£5/15/0	£20/0/7	£5/2/1	£3/13/5	£6/6/9	£8/17/0	£6/13/10

3. **Farm Stocks of Hay.**—Details of stocks of hay held on farms are now collected at the annual census of farm production. Particulars of stocks so held at 31st March in each year 1943 to 1946 are given in the table below.

STOCKS OF HAY HELD ON FARMS.

31st March—	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1943 ..	698,332	1,107,137	114,131	499,475	188,740	74,277	2,201	2,684,293
1944 ..	522,294	859,302	107,375	403,002	140,494	89,010	2,246	3,123,723
1945 ..	189,986	460,369	71,162	200,790	184,321	82,736	606	1,189,970
1946 ..	504,521	1,026,581	86,722	307,494	156,841	78,414	2,123	2,162,696

The decrease in stocks at 31st March, 1945 resulted from the disastrous drought which occurred during 1944-45.

4. **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 1945-46 3,418 tons were imported, while the exports amounted to 522 tons, valued at £6,574.

§ 14. Green Fodder.

1. **Nature and Extent.**—Considerable areas are devoted to the growing of green fodder mainly in connexion with the dairying industry. These crops may be cut for feeding to live-stock as green fodder or may be fed off to stock as green forage. Included with the latter are areas which may have been sown with the intention of harvesting for grain, but which, due to adverse seasonal conditions, showed no promise of producing grain or even hay and were fed off to live-stock. The principal crops cut for green fodder are oats, wheat and lucerne, while small quantities of barley, sorghum, maize, rye and sugar cane also are so used. In 1945-46 the area under green fodder (1,805,748 acres) consisted of oats (806,021 acres), lucerne (219,443 acres), wheat (175,348 acres), barley (89,918 acres), sorghum (85,329 acres), maize (75,058 acres), rye (26,366 acres), sugar cane (5,452 acres) and other crops (322,813 acres). Particulars concerning the area of green fodder in the several States during each of the years 1938-39 and 1942-43 to 1945-46 are given in the following table:—

GREEN FODDER : AREA.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1938-39 ..	573,569	108,796	448,643	275,988	352,442	28,681	681	1,788,800
1942-43 ..	728,404	103,598	578,452	285,587	351,509	62,751	1,518	2,111,819
1943-44 ..	782,265	112,880	600,121	269,045	446,803	51,592	1,436	2,264,802
1944-45 ..	647,187	73,159	622,268	262,394	388,466	48,087	1,679	2,043,240
1945-46 ..	541,810	63,311	581,905	189,882	288,206	138,540	2,094	1,805,748

2. **Value of Green Fodder Crops.**—The value of these crops is variously estimated in the several States, and the Australian total for the season 1945-46, excluding Western Australia, may be taken approximately as £3,854,000.

§ 15. 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 336,960 acres of sugar-cane grown for this purpose in Australia for the season 1945-46, there were 321,894 acres or about 96 per cent.

in Queensland. This latter area is made up of 229,736 acres cut for crushing, 12,151 acres cut for plants, and 80,007 acres left to stand-over or young cane on areas not ready for cutting. Sugar-cane growing appears to have commenced 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 fell gradually 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 21,000 acres, the average for the ten seasons ended 1945-46 amounting to 18,689 acres. In Queensland, although fluctuations in area are manifest, the general trend has been upwards, but, because of the contingencies arising from war, the area under sugar in that State has declined since 1940-41. In 1939-40 Queensland's acreage under cane reached its highest level, namely, 353,996 acres. The area of sugar-cane in Australia for the seasons 1938-39 and 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are shown in the following table:—

SUGAR-CANE : AREA.

(Acres.)

Season.	New South Wales.			Queensland.			Australia.			Total.
	Area crushed.	Area of stand-over and newly-planted cane.	Area cut for plants.	Area crushed.	Area of stand-over and newly-planted cane.	Area cut for plants.	Area crushed.	Area of stand-over and newly-planted cane.	Area cut for plants.	
Average 10 seasons ended 1938-39 ..	9,106	9,023	140	229,327	75,409	9,368	238,433	84,432	9,508	332,373
1938-39 ..	10,458	10,772	163	251,847	84,098	11,254	262,305	94,870	11,417	368,592
1942-43 ..	9,732	8,958	239	231,256	67,247	11,610	240,988	76,205	11,858	329,051
1943-44 ..	8,240	7,092	281	220,032	86,312	13,563	229,172	93,404	13,844	336,420
1944-45 ..	6,771	6,702	270	219,652	80,177	12,406	226,423	86,879	12,676	325,978
1945-46 ..	5,943	8,860	263	229,736	80,007	12,151	235,679	88,867	12,414	336,960
Average 10 seasons ended 1945-46 ..	9,126	9,322	241	241,602	80,449	11,759	250,728	89,771	12,000	352,499

(ii) *Productive and Unproductive Cane.* The areas shown in the preceding table do not include the small acreage cut for green fodder which in Queensland in 1945-46 amounted to 4,673 acres. The whole area planted is not 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 6,313,369 tons in 1939-40.

The average production of cane during the ten seasons ended 1945-46 was 5,130,554 tons, and of raw sugar 740,388 tons. Particulars of the total production of cane and sugar for the years 1938-39, 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are as follows:—

SUGAR-CANE ; PRODUCTION OF CANE AND SUGAR.

Season.	New South Wales.		Queensland.		Australia.	
	Cane.	Sugar.	Cane.	Sugar.	Cane.	Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Average 10 seasons ended 1938-39 ..	241,402	30,317	4,461,988	626,789	4,703,390	657,106
1938-39	336,701	45,022	5,342,193	775,064	5,678,894	820,086
1942-43	338,013	44,290	4,353,488	605,609	4,691,501	649,899
1943-44	290,364	37,442	3,397,617	486,423	3,687,981	523,865
1944-45	200,050	26,423	4,308,268	643,520	4,598,318	660,943
1945-46	166,069	21,220	4,551,971	644,661	4,718,040	665,881
Average 10 seasons ended 1945-46 ..	294,462	39,195	4,836,092	701,199	5,130,554	740,394

The production of raw sugar in Australia in 1945-46 amounted to 665,881 tons manufactured from 4,718,040 tons of cane, the maximum production being 928,676 tons recorded in 1939-40. This decline in production arises from war-time contingencies such as labour shortage and insufficient fertilizers. In addition, variations in seasonal conditions were contributing factors.

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 (6,418 in 1945-46) and of employees in sugar mills (4,948 in 1945-46).

According to data obtained from the Occupation Survey of 1st June, 1945, the number of persons engaged in the growing and harvesting of sugar cane in New South Wales and Queensland was as follows:—

SUGAR-CANE : NUMBER OF PERSONS ENGAGED IN GROWING AND HARVESTING, OCCUPATION SURVEY, 1st JUNE, 1945.

Particulars.	New South Wales.	Queensland.
Sugar-grower (including Manager)	No. 222	No. 6,842
Cane-cutter	90	2,636
Foreman, Overseer	4	38
Labourer	147	5,492
Total	463	15,008

(iv) *Average Production of Cane 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 ten years ended 1945-46 were 17.60 tons for New South Wales, and 18.48 tons for Queensland. Similarly, the yields of sugar

per acre crushed for the same period were estimated at 2.34 tons and 2.68 tons respectively. Apart from the consideration mentioned above, the yields of cane and sugar per acre crushed for Australia for the ten years ended 1945-46 were 20.46 tons and 2.95 tons respectively, as compared with 18.37 tons and 2.50 tons for the decennium ended 1935-36.

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.
Average 10 seasons ended 1938-39 ..	26.51	3.33	7.96	19.46	2.73	7.13	19.73	2.76	7.15
1938-39 ..	32.20	4.31	7.48	21.21	3.09	6.87	21.65	3.13	6.92
1942-43 ..	34.73	4.55	7.63	18.83	2.62	7.19	19.47	2.70	7.22
1943-44 ..	35.24	4.54	7.76	15.38	2.21	6.99	16.09	2.29	7.04
1944-45 ..	29.55	3.90	7.57	20.02	2.93	6.83	20.31	2.96	6.86
1945-46 ..	27.94	3.57	7.83	19.81	2.81	7.06	20.02	2.83	7.09
Average 10 seasons ended 1945-46 ..	32.27	4.29	7.51	20.02	2.90	6.89	20.46	2.95	6.93

(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 ten years ended 1945-46 it required on the average 6.93 tons of cane to produce 1 ton of sugar, or 14.43 per cent. of its total weight, as compared with 7.34 tons for the ten years ended 1935-36. 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.

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 recent years was more than sufficient to supply local requirements, the average annual production during the last five years amounting to 201 lb. per head of population. Details for the years 1938-39 and 1942-43 to 1945-46 are as follows :—

RAW SUGAR : PRODUCTION PER HEAD OF POPULATION.

State.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.
	lb.	lb.	lb.	lb.	lb.
New South Wales ..	37	35	29	21	16
Queensland ..	1,731	1,302	1,031	1,346	1,330
Australia ..	266	202	162	205	201

(vii) *Consumption.* The average annual consumption of raw sugar in Australia during the five years ended 1945-46 was estimated at 503,358 tons, equal to 155.18 lb. of raw sugar or 148.20 lb. of refined sugar per head of population. The sugar content of jam, preserved fruit, milk, etc., exported during the period has been deducted in arriving at the figures quoted. The quantity of sugar used in factories during 1938-39 and each of the four years ended 1945-46 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.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.
	Tons.	Tons.	Tons.	Tons.	Tons.
Aerated Waters and Cordials	11,810	21,167	24,593	25,757	26,115
Bacon Factories ..	267	356	357	367	310
Biscuits and Bakeries, including Cakes and Pastry	18,801	24,881	26,648	25,959	25,538
Breweries ..	16,733	19,612	20,132	20,404	21,081
Cereal Foods ..	1,287	1,267	1,422	1,413	1,112
Condensed and Concentrated Milk ..	6,889	12,605	12,973	13,611	15,922
Confectionery, Ice Cream, etc.	26,926	33,023	38,979	39,193	41,493
Jams, Jellies and Preserved Fruit (a) ..	40,537	71,041	71,610	67,625	70,026
Wineries and Distilleries (b) ..	..	19,265	49,479	30,925	25,073
Other ..	633	2,942	944	1,007	(c) 4,271
Total ..	123,883	206,159	247,137	226,261	230,941

(a) Includes Condiments, Pickles, etc. (b) Raw Sugar. (c) Includes sugar consumed in the industrial and heavy chemicals and dehydrated fruit and vegetables industries.

(viii) *Control of Cane Production in Queensland.* Agreements between the Commonwealth and Queensland Governments have fixed the price of sugar in Australia from time to time. Under the latest agreement, the wholesale price of refined sugar in each of the capital cities was fixed at £33 4s. per ton or 4d. per lb. retail for the five years ended 1951. On the 3rd December, 1947, the wholesale price fixed under this agreement was increased to £37 6s. 8d. per ton or 4½d. per lb. retail. The net proceeds of all sugar sold in Australia and sugar sold abroad are pooled and a uniform price per ton is paid to the mills. This pooling is made possible by the acquisition by the Queensland Government of all sugar produced in the State, under legislation which has been in force since 1915. The small New South Wales production (about 5 per cent. of the whole) is also acquired by the Queensland Sugar Board by private agreement.

Sugar production, which in 1923 had scarcely been sufficient to cover Australian requirements, grew very rapidly in subsequent years. In 1925 the Queensland Government took steps to prevent, as a general rule, new land from being opened up for cane production. At that date 56 per cent. of the sugar production was consumed in Australia and 44 per cent. exported. After 1925 production remained stable for some years. In 1929 the operations of the pool, which had hitherto received at a uniform price all sugar offered it by the mills, were re-organized. After 1929, mills received the full pool price for sugar up to the amount of their previous maximum production only. Any further supplies were acquired at export price only.

Between 1929 and 1939 the export price was generally less than half the pool price. In spite of this, production increased by 72 per cent. during that period. In 1939, in view of the fact that the International Sugar Agreements imposed certain restrictions on the volume of Australian exports, the Queensland Parliament passed further legislation limiting the pool to 737,000 tons. Any production in excess of this was to be acquired at a penalty price of 10s. per ton. This tonnage was divided up in quotas between the mills, on the understanding that the mills would allocate quotas of production to individual farmers. Proclamations issued by the Queensland Government, however, permitted the harvesting of the whole of the 1939 and 1940 crops. Crops for subsequent years have been similarly treated.

2. **Sugar-beet.**—Victoria is the only State growing beet for sugar, although 5 tons of sugar-beet were produced from 1 acre in Tasmania during 1942-43. Particulars of acreage and production for Victoria for the years 1938-39 and 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are shown in the following table :—

SUGAR-BEET : AREA AND PRODUCTION, VICTORIA.

Particulars.	Average Ten Seasons ended 1938-39						Average Ten Seasons ended 1945-46.
		1938-39.	1942-43.	1943-44.	1944-45.	1945-46.	
Area sown .. acres	3,312	4,268	955	836	485	108	2,486
Production .. tons	36,694	13,454	5,997	6,975	3,200	975	20,475
Average yield per acre .. "	11.08	3.15	6.28	8.34	6.60	9.03	8.24
Sugar produced .. "	4,642	1,507	678	704	..	..	2,499

During the 1939-45 War the area under sugar-beet declined steadily from 4,268 acres in 1938-39 to 108 acres in 1945-46 but increased to more than 600 acres in 1946-47. Much of this decline was due to the diversion, as a war-time measure, of many areas to the production of vegetables. The mill at Maffra ceased operations at the end of 1943 but re-opened to treat the 1946-47 crop.

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, on practically the same terms as previously, for a further period of three years until 1st August, 1931.

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 ¼d. 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, 1940 the agreement was extended for a further period of five years to 31st August, 1946. The wholesale and retail prices of sugar remained unaltered but the concession to the fruit

industry was increased to £216,000 in 1936. The agreement was extended in April, 1946 for a further five years to 31st August, 1951, but in December, 1947, it was amended, the wholesale and retail prices of sugar being increased in response to representations made by a delegation of the sugar industry.

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 was to ensure 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 would 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.

This agreement, which normally would have expired on 31st August, 1942, has proved of great benefit to Australia. In 1943 fourteen of the original 21 Nations signed a protocol continuing the agreement for another two years ending 31st August, 1944. Three further protocols have since been signed, each extending the agreement for a period of one year. After the outbreak of war in September, 1939, certain clauses of the agreement were declared inoperative because of the difficulties arising therefrom.

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 years 1938-39 and 1942-43 to 1945-46 will be found in the following table:—

SUGAR : NET RETURNS, AUSTRALIA.

Year.	Percentage Exported. (a)	Net Value of Exports per Ton. (a)	Average Price per ton for Whole Crop. (a)	Estimated Value of Crop.
	Per cent.	£ s. d.	£ s. d.	£
1938-39	55.78	8 4 3	15 3 11	12,806,376
1942-43	31.92	10 16 3	18 18 5	11,762,432
1943-44	17.12	13 2 6	20 18 4	12,554,579
1944-45	32.19	15 0 6	19 16 3	12,417,262
1945-46	31.53	16 17 9	20 6 5	13,674,661

(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 1945-46 amounted to £216,000. The value thus obtained represents the net market value of all raw sugar sold, which, since 1933, has been 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.—Particulars showing the imports and exports of cane sugar for the years 1938-39 and 1942-43 to 1946-47 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.
1938-39..	42	883	443,021	4,177,741	442,979	4,176,858
1942-43..	..	5	66,332	1,001,353	66,332	1,001,348
1943-44..	95,826	1,523,786	95,826	1,523,786
1944-45..	..	4	114,011	1,853,628	114,011	1,853,624
1945-46..	..	3	150,972	3,059,599	150,972	3,059,596
1946-47..	..	25	117,379	2,717,252	117,379	2,717,227

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 XXIV. "Manufacturing Industry". A distillation plant erected at Sarina, near Mackay, was opened in 1927 for the production of power alcohol.

Boards are now being made from the residuum of crushed fibre after the removal of the sugar content from 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 are shown in the following table. These prices have been fixed in accordance with the agreements referred to on pages 940-1.

SUGAR : PRICES IN AUSTRALIA.

Year.	Raw Sugar .94 Net Titre.			Refined Sugar.		
	Average Price per Ton received for—			Date of Determination.	Wholesale Price per ton.	Retail Price per lb.
	Home Consumption.	Exports. (a)	Whole Crop. (a)			
	£ s. d.	£ s. d.	£ s. d.		£ s. d.	d.
1931 ..	26 19 0	9 7 0	18 2 11	19.7.15 to 15.1.16	25 10 0	3
1932 ..	25 2 3	8 5 9	18 17 9	16.1.16 to 30.6.17	29 5 0	3½
1933 ..	23 18 6	8 0 6	16 6 3	1.7.17 to 24.3.20	29 5 0	3½
1934 ..	24 0 0	7 11 3	15 13 9	25.3.20 to 30.6.20	49 0 0	6
1935 ..	24 0 0	7 18 9	16 5 11	1.7.20 to 31.10.22	49 0 0	6
1936 ..	24 2 0	7 19 0	15 7 4	1.11.22 to 30.6.23	42 0 0	5
1937 ..	24 0 0	8 6 0	15 7 6	1.7.23 to 21.10.23	42 0 0	5
1938 ..	24 0 0	8 4 3	15 3 11	22.10.23 to 31.8.25	37 11 4	4½
1939 ..	23 12 6	10 7 6	15 17 7	1.9.25 to 31.8.31..	37 6 8	4½
1940 ..	23 1 0	11 5 6	17 2 11	1.9.31 to 4.1.33 ..	37 6 8	4½
1941 ..	22 13 0	10 18 9	17 18 11	5.1.33 to 31.8.36..	33 4 0	4
1942 ..	22 14 6	10 16 3	18 18 5	1.9.36 to 31.8.41..	33 4 0	4
1943 ..	22 10 6	13 2 6	20 18 4	1.9.41 to 31.8.46..	33 4 0	4
1944 ..	22 2 0	15 0 6	19 16 3	1.9.46 to 3.12.47	33 4 0	4
1945 ..	21 18 0	16 17 9	20 6 5	4.12.47 to 31.8.51	37 6 8	4½

(a) Including "Excess" Sugar.

11. War and Post-war Arrangements.—After 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 price was fixed at £Stg. 7 10s. per ton at United Kingdom ports plus the preference on dominion sugar of £Stg. 3 15s. per ton under the existing tariff.

Similar agreements were negotiated for the disposal of the surplus raw sugar in subsequent seasons, the price in sterling currency per ton c.i.f. United Kingdom ports, basic 96° polarization being as follows:—1940 and 1941, £12 12s. 6d.; 1942, £13 15s.; 1943, £14 5s.; 1944, £15 5s. and 1945, £17 5s., inclusive of the existing preference of £3 15s. From the 1st January, 1946 the price was further increased by £Stg. 2 5s. per ton and the United Kingdom agreed to absorb an additional 12s. 6d. per ton on the freight cost.

The United Kingdom is to continue the bulk purchase of exportable sugar from Dominions and Colonies up to and including 1949. From 1947 an increase of £Stg. 4 15s. per ton operated, bringing the export price up to £Stg. 24 5s.

§ 16. 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 New South Wales in the area of this crop. In Western Australia an expansion of area under vineyards has occurred in recent years, but in Queensland, where vine-growing has been carried on for many years, little progress has been made. 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 years 1938-39 and 1942-43 to 1945-46 and the averages for the ten-year periods ended 1938-39 and 1945-46 are shown in the following table:—

VINEYARDS : AREA.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	A.C.T.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Average 10 seasons ended 1938-39 ..	15,777	40,563	2,142	54,156	5,666	..	118,304
1938-39	16,979	42,436	2,793	58,020	6,277	2	126,507
1942-43	16,302	42,634	3,040	58,202	10,126	3	128,307
1943-44	16,001	42,711	2,998	57,261	10,240	2	129,213
1944-45	15,891	42,914	3,032	56,925	10,117	2	128,881
1945-46	15,983	42,843	3,003	57,440	9,583	3	128,855
Average 10 seasons ended 1945-46 ..	16,455	42,570	2,959	57,606	8,297	2	127,889

The total area of vines in Australia has shown a substantial expansion since 1860. This development has been interrupted periodically, decreases occurring in 1896, in 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 around 114,000 acres but commenced to increase again in 1933-34. Since then the expansion has continued, reaching the record area of 130,307 acres in 1942-43. A slight decline has occurred in each of the years 1943-44 to 1945-46, the acreage in the latter year being 128,855 acres.

(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.

During 1944 the Minister for Trade and Customs referred a number of matters to the Tariff Board for inquiry and report. Subsequently four reports were issued during 1944-45 which dealt with the following subjects, viz. :—Use of cane sugar in sauterne, spirit for fortification of wine, prices for grapes and fortifying spirit and control of liquor order.

(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. Production for the ten years ended 1945-46 averaged 18.2 million gallons compared with 16.4 million gallons produced during the ten years ended 1935-36. This seems to arise from two causes. In the first place, Australians are not a wine-drinking people; it is estimated that prior to the 1939-45 War they consumed approximately 4.1 million gallons only or 0.6 gallons per head per annum and consequently the local market is restricted. On this point, however, the quantity of wine released annually for home consumption during the war years increased to 7 million liquid gallons or the equivalent of about 1 gallon per head of population. 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 both here and abroad and with the assistance of a Commonwealth bounty on the export of fortified wine of specified strength, the industry has been greatly stimulated. Further development, however, was interrupted by the war. The loss of the United Kingdom market due to the lack of shipping space placed the wine industry of Australia in a most difficult position, but this was partly offset by the increase in local consumption due to the availability of supplies, the restriction on the production of beer and the presence of large numbers of defence personnel.

Particulars of the Wine Export Bounty are shown in § 20 hereafter. The Wine Export Bounty Act 1930 which provided for payment at the rate of 1s. 9d. per gallon was replaced in 1934 by a new Act 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, subsequently extended to 28th February, 1947, was provided for under the Wine Export Bounty Act of 1939-1944.

The quantity of wine produced in the several States during the 1938-39 and 1942-43 to 1945-46 seasons, together with the averages for the ten year periods ended 1938-39 and 1945-46, is shown in the following table :—

WINE : PRODUCTION.

('000 omitted.)

Season.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Australia.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
Average 10 seasons ended 1938-39 ..	2,099	1,449	36	12,349	397	16,330
1938-39 ..	2,502	825	45	11,147	439	14,958
1942-43 ..	2,721	1,382	44	15,203	514	19,864
1943-44 ..	3,530	1,320	27	14,435	553	19,865
1944-45 ..	2,579	785	22	10,573	460	14,419
1945-46 ..	2,068	1,916	35	20,213	726	25,858
Average 10 seasons ended 1945-46 ..	2,836	1,298	32	13,606	464	18,238

2. *Imports and Exports of Wine.*—(i) *Imports.* The principal countries of origin of wine imported into Australia were, before the War, France, Spain, Portugal and Italy, the bulk of the sparkling wines coming from France. The imports for the five years ended 1946-47 compared with 1938-39 are shown hereunder :—

WINE : IMPORTS INTO AUSTRALIA.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£A.	£A.	£A.
1938-39 ..	10,759	30,451	41,210	23,303	22,792	46,095
1942-43 ..	3	59	62	63	82	145
1943-44 ..	..	755	755	..	1,319	1,319
1944-45 ..	100	..	100	145	..	145
1945-46 ..	40	479	519	234	1,574	1,808
1946-47 ..	1,719	1,585	3,304	8,690	3,340	12,030

(ii) *Exports.* Before the 1939-45 War practically all wine exported was sent to the United Kingdom, only 200,000 gallons (approximately) being sent elsewhere. Exports in 1946-47 totalled 2,720,599 gallons of which the United Kingdom received 2,041,804 gallons; Canada, 186,725 gallons; New Zealand, 152,194 gallons; New Caledonia, 94,522 gallons; and other countries 245,354 gallons.

Exports for the years 1938-39 and 1942-43 to 1946-47 are shown in the following table :—

WINE : EXPORTS FROM AUSTRALIA.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£A.	£A.	£A.
1938-39 ..	2,369	3,718,135	3,720,504	3,507	978,570	982,077
1942-43 ..	9,918	807,097	817,015	12,136	284,907	297,043
1943-44 ..	10,306	1,235,095	1,245,401	6,966	415,966	422,932
1944-45 ..	6,254	1,544,714	1,550,968	7,735	587,563	595,298
1945-46 ..	7,984	1,776,452	1,784,436	10,619	729,969	740,588
1946-47 ..	3,244	2,717,355	2,720,599	4,975	1,176,626	1,181,601

3. *Overseas Marketing of Wine.*—(i) *The Wine Overseas Marketing Act 1929-1945.* This Act was introduced at the request of the viticultural interests in Australia with the object of placing the overseas marketing of Australia's surplus wine on an orderly basis. The Wine Overseas Marketing Board was appointed to supervise the exports, and the sale and distribution after export, of Australian wine.

The name of the Board was changed to the Australian Wine Board in 1936. An amendment to the Act in 1945 made provision for eleven members on the Board, comprising five representatives of proprietary and privately-owned wineries and distilleries, two representatives of co-operative wineries and distilleries, three representatives of grape-growers supplying to wineries and distilleries, and one representative of the Commonwealth Government. No wine may be exported except by means of a licence which is issued under conditions recommended to the Minister by the Board; these include the withholding of shipments as directed by the Board. The Board has a London agency which advises on marketing conditions. The methods of marketing adopted by the Board have resulted in the widening of the distribution of Australian wines overseas.

(ii) *The Wine Grapes Charges Act 1929-1941.* This Act provides for the imposition of a levy on all grapes used in Australia for the manufacture of wines or spirit used for fortifying wine. The proceeds of the levy are used to defray the administrative and other expenses of the Board, and provision is made for such exemptions from the levy as the Board may recommend.

4. *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 7 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 seasons 1938-39 and 1942-43 to 1945-46 and the averages for the ten year periods ended 1938-39 and 1945-46 are as follows:—

TABLE GRAPES : PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Average 10 seasons ended 1938-39 ..	4,354	3,884	2,060	738	2,874	13,910
1938-39	4,034	4,089	2,313	985	3,139	14,560
1942-43	5,186	4,123	2,621	1,218	3,194	16,342
1943-44	5,325	4,067	2,606	1,150	3,240	16,478
1944-45	4,363	5,255	2,237	917	2,903	15,675
1945-46	4,817	4,133	3,120	1,036	2,342	15,448
Average 10 seasons ended 1945-46 ..	4,732	4,182	2,515	1,032	2,782	15,243

(ii) *Raisins and Currants.* The quantities of raisins (sultanas and lexias) and currants dried during each of the seasons 1938-39 and 1942-43 to 1945-46 and the averages for the ten-year periods ended 1938-39 and 1945-46 are shown in the following table. The production of 103,410 tons for the 1943-44 season represents the greatest output recorded in any year. Due to adverse seasonal conditions, heavy crop losses occurred during the three succeeding years. Production in 1944-45 amounted to 68,857 tons, to 73,840 tons in 1945-46 and to 65,197 tons in 1946-47.

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.
Average 10 seasons ended 1938-39 ..	4,234	796	35,235	7,995	11,494	8,007	697	1,789	51,660	18,587
1938-39	4,837	1,239	33,659	10,301	11,656	9,569	737	2,762	50,889	23,871
1942-43	7,528	1,360	46,439	8,620	15,263	9,253	674	2,329	60,004	21,562
1943-44	7,719	1,488	48,851	9,987	20,739	10,457	835	3,334	78,144	25,266
1944-45	5,053	1,064	33,076	6,858	12,344	6,896	674	2,892	51,147	17,710
1945-46	6,859	922	42,995	6,435	8,819	4,467	815	2,528	59,488	14,352
Average 10 seasons ended 1945-46 ..	6,496	1,226	42,698	8,477	14,321	8,411	685	2,548	64,200	20,662

(a) Sultanas and lexias.

5. **Production and Disposal of Dried Vine Fruit.**—As the production of dried vine fruit is far in excess of Australia's requirements, considerable quantities are available for export overseas. Details of the quantities disposed of in Australia and overseas are given in the table below. The quantities disposed of to civilians include amounts delivered to biscuit manufacturers, bakeries, etc., as well as retail sales for household consumption.

DRIED VINE FRUIT : QUANTITIES DISPOSED OF, AUSTRALIA.

Season ended December—	Australia.			Overseas.					Grand Total.
	Civilians.	Services.	Total.	United King- dom.	Canada.	New Zea- land.	Other Coun- tries.	Total.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
1942..	16,500	5,000	21,500	44,000	20,000	5,650	1,050	70,700	92,200
1943..	20,921	4,283	25,204	42,810	15,830	5,770	761	65,171	90,375
1944..	29,951	5,120	35,071	44,570	16,000	6,756	1,820	69,146	104,217
1945..	20,779	3,636	24,415	21,500	15,000	5,548	1,569	43,617	68,032
1946..	(a)	(a)	20,549	32,000	14,000	5,000	844	51,844	72,393
1947(b)	(a)	(a)	19,000	21,262	10,988	4,250	500	37,000	56,000

(a) Not available separately. (b) Estimated. Subject to revision.

6. **Exports of Raisins and Currants.**—The following table shows the overseas exports of raisins and currants during each of the five years ended 1946-47 compared with 1938-39. As the quantities of imports were practically negligible they have been omitted.

RAISINS AND CURRANTS : EXPORTS, AUSTRALIA.

Year.	Raisins.		Currants.		Total Raisins and Currants.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£A.	Tons.	£A.	Tons.	£A.
1938-39	49,550	1,974,045	23,759	772,966	73,309	2,747,011
1942-43	46,731	1,813,713	11,240	358,039	57,971	2,171,752
1943-44	56,039	2,449,050	18,994	714,315	75,033	3,163,365
1944-45	56,418	2,647,719	20,994	828,330	77,412	3,476,049
1945-46	30,022	1,547,688	9,307	403,645	39,329	1,951,333
1946-47	35,248	1,913,574	5,606	243,508	40,854	2,157,082

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 chief countries importing Australian raisins and currants are the United Kingdom, Canada and New Zealand, the quantities exported thereto in 1946-47 being respectively 24,163, 10,880 and 4,763 tons or 59, 26 and 12 per cent. respectively. Exports to Canada increased from 4,600 tons in 1928-29 to 16,944 tons in 1939-40 and to 25,955 tons in 1944-45, but decreased to 10,880 tons in 1946-47.

7. **War-time Contract.**—At the outbreak of war in 1939 the Government of the United Kingdom purchased all available surpluses after provision had been made for Canadian and New Zealand requirements. During the 1944 and 1945 seasons prices fixed under these contracts represented a substantial increase over pre-war prices.

8. **Post-war Contract.**—A long term agreement has been negotiated between the Governments of the Commonwealth and the United Kingdom for the purchase of the exportable surplus of the dried vine fruit crop for the 1946, 1947 and 1948 seasons. The contract prices for currants, sultanas and lexias sold to the United Kingdom during the war years 1942 to 1945, as well as the prices fixed under the post-war contract covering the years 1946 to 1948, are shown in the following table.

DRIED VINE FRUITS : CONTRACT PRICES PER TON TO UNITED KINGDOM.
(Basis : F.o.b. Australian Ports.)

Fruit.	Grade.	1942.	1943.	1944.	1945.	1946 to 1948.
		£A. s. d.	£A. s. d.	£A. s. d.	£A. s. d.	£A. s. d.
Currants ..	1 Crown and upwards ..	35 0 0	37 16 3	41 11 3	43 2 6	50 0 0
Sultanas ..	1 Crown and upwards ..	47 3 9	51 5 0	55 0 0	56 11 3	63 0 0
Lexias ..	4 and 5 Crown ..	49 7 6	50 12 6	54 7 6	55 18 9	64 7 6

9. Overseas Marketing of Dried Fruits.—(i) *The Dried Fruits Export Control Act 1924-1938*. This Act was passed by the Commonwealth Parliament at the request of the dried fruits industry to organize the overseas marketing of Australian dried vine fruits. The Dried Fruits Control Board, consisting of eight members—including five growers' representatives, two members with commercial experience and one Government nominee—was appointed to control the export, and the sale and distribution after export, of Australian sultanas, currants and lexias. In conjunction with its London agency, the Board has improved the marketing of Australian dried fruits overseas, and has increased the demand for the product. Its system of appraisalment has resulted in more satisfactory realizations. Its methods of ensuring continuity of supply and regulating shipments and its participation in the advertising campaign of the Australian Overseas Trade Publicity Committee have benefited the industry considerably. No dried fruits may be exported except by means of a licence, which is issued subject to conditions recommended by the Board.

(ii) *Dried Fruits Export Charges Act 1924-1929*. This Act provides for the imposition of a levy on all sultanas, currants and lexias exported from Australia for the purpose of defraying the administrative expenses of the Board and the cost of advertising, etc. The rate of the levy is fixed by regulation. Under an amendment made in 1927 provision was made for the exemption of sultanas, currants and lexias from the levy upon recommendations by the Board.

(iii) *The Dried Fruits Act 1928-1935*. In previous issues of the Official Year Book reference has been made to the Dried Fruits Act and its provisions have been outlined (see p. 894 of Official Year Book, No. 28).

§ 17. Orchards and Fruit-Gardens.

1. Area.—The greatest area of orchards and fruit-gardens was attained in 1933-34 when 281,989 acres were planted. From that year until 1942-43, when 260,384 acres were under fruit, there was a gradual decline. Since 1942-43 there has been an upward movement to 269,823 acres in 1945-46. The total area of orchards and fruit-gardens in the several States during the years 1938-39 and 1942-43 to 1945-46 is shown in the following table :—

ORCHARDS AND FRUIT-GARDENS : AREA.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	Tas.	N. Terr.	A.C.T.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1938-39..	85,598	71,300	32,641	28,943	22,029	31,580	50	97	272,238
1942-43..	79,363	69,776	29,029	29,478	21,266	31,337	..	135	260,384
1943-44..	81,283	70,024	31,878	25,521	21,154	32,135	..	105	262,100
1944-45..	82,230	68,245	32,133	26,484	21,060	32,350	..	97	262,599
1945-46..	84,062	69,479	34,946	27,223	21,730	32,284	..	99	269,823

2. Varieties of Crops.—(i) *General.* The varieties grown differ in various parts of the States, ranging from such fruits as the pineapple, papaw, mango and guava of the tropics to the strawberry, the raspberry and the currant of the colder parts of the temperate zone. In New South Wales, citrus fruits (*oranges, lemons, etc.*) occupy the leading position, although apples, peaches, plums, pears, cherries and bananas are extensively grown. The principal varieties grown in Victoria are the apple, peach, pear, orange, plum and apricot. In Queensland, the banana, pineapple, apple, orange, mandarin, peach, and plum 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, lemon, pear, plum, peach, apricot and fig are the chief varieties. In Tasmania, the apple occupies over two-thirds 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 mainly taken up with the pear, apricot and plum. The following table shows 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 1945-46 :—

ORCHARDS AND FRUIT-GARDENS : AREA, 1945-46.

Fruit.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Apples	13,803	21,721	5,385	8,130	12,940	22,240	68	84,377
Apricots	1,821	4,719	320	3,577	505	1,499	4	12,445
Bananas	16,938	..	9,432	..	217	..	..	26,587
Cherries	2,614	1,454	5	1,052	9	123	1	5,238
Citrus—								
Oranges	21,656	4,964	3,163	4,283	3,364	..	..	37,430
Mandarins	2,500	120	1,791	120	205	..	..	4,736
Lemons	3,381	2,259	457	408	578	..	..	7,083
Other	965	277	386	159	181	..	..	1,968
Nuts	870	615	275	2,077	325	..	2	5,073
Peaches	8,215	14,493	1,474	1,445	838	117	6	26,588
Pears	3,704	13,163	390	1,811	1,030	2,512	6	22,616
Pineapples	202	..	7,703	..	..	..	..	7,905
Plums and Prunes	4,620	3,415	1,183	1,906	914	359	7	12,413
Other Small Fruits	14	586	138	335	27	5,390	..	6,490
Other Fruits	2,651	1,693	2,844	1,080	597	64	5	8,934
Total	84,062	69,470	34,946	27,223	21,730	32,284	99	269,823

(iii) *Production.* (a) *Quantities.* The production in 1945-46 is shown in the next table :—

ORCHARDS AND FRUIT-GARDENS : PRODUCTION, 1945-46.

Fruit.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
Apples .. bushel	1,180,442	2,597,618	473,537	1,001,237	1,547,658	8,522,210	4,512	15,267,214
Apricots	233,107	336,871	22,012	414,321	35,920	64,520	117	1,106,868
Bananas	1,960,381	..	645,684	..	15,423	..	..	2,621,488
Cherries	160,286	44,064	38	35,511	352	6,970	17	247,238
Citrus—								
Oranges	1,968,745	594,888	233,370	836,242	315,432	..	..	3,048,677
Mandarins	179,175	12,072	164,185	24,643	14,747	..	..	394,822
Lemons	332,450	109,463	75,807	28,523	97,487	..	..	643,730
Other	125,434	48,602	41,343	26,607	19,778	..	..	261,764
Nuts lb.	211,024	109,579	61,214	1,345,680	44,964	..	27	1,862,488
Peaches .. bushel	701,367	1,086,841	85,844	148,057	61,294	11,270	140	2,094,813
Pears	323,981	1,464,075	40,871	193,357	66,993	524,370	127	2,643,774
Pineapples .. dozen	15,051	..	1,642,696	..	..	..	..	1,667,747
Plums and Prunes bushel	370,236	228,703	85,862	139,802	79,345	45,180	117	949,245
Other Small Fruits cwt.	24	9,751	2,467	5,449	287	117,998	..	135,076

(b) *Gross Values.* The gross value of production for the various classes of fruit for the year 1945-46 is shown in the following table :—

ORCHARDS AND FRUIT-GARDENS : GROSS VALUE OF PRODUCTION, 1945-46.

Fruit.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia.
	£	£	£	£	£	£	£	£
Apples	905,690	1,039,047	422,229	551,506	444,080	1,470,250	3,497	4,836,299
Apricots	390,340	168,436	36,757	228,249	47,893	22,580	199	894,454
Bananas	2,496,420	..	713,675	..	44,427	..	..	3,256,522
Cherries	507,850	66,066	143	71,022	2,006	4,010	55	651,182
Citrus—								
Oranges	1,634,120	510,397	194,620	668,307	154,379	..	..	3,161,823
Mandarins	152,250	12,525	136,699	27,005	10,661	..	..	339,140
Lemons	241,100	93,044	46,186	20,441	44,029	..	..	447,800
Other	58,250	25,314	25,118	16,385	11,040	..	..	136,107
Nuts	14,850	13,699	2,295	63,479	2,913	..	2	97,238
Peaches	524,350	516,249	85,847	102,119	62,315	2,540	158	1,293,578
Pears	256,090	658,834	21,647	74,242	25,652	131,090	116	1,167,671
Pineapples	8,550	..	792,017	..	..	..	..	800,567
Plums and Prunes	378,420	87,526	96,386	64,234	64,357	10,530	128	701,581
Other Small Fruits	70	40,404	37,550	32,027	4,974	250,040	..	365,065
Other Fruits	202,220	52,627	218,800	85,565	40,375	1,180	90	600,857
Total	7,773,570	3,284,198	2,831,969	2,004,581	959,101	1,802,220	4,245	18,749,884

3. *Principal Fruit Crops.*—(i) *Area.* The area in Australia of the principal fruit crops for each of the years 1938-39 and 1942-43 to 1945-46 is shown hereunder :—

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

Year.	Apples.	Apricots.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums and Prunes.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1938-39 ..	97,351	11,620	22,900	46,955	25,054	21,587	14,119
1942-43 ..	87,672	12,137	20,158	50,311	25,109	22,196	12,443
1943-44 ..	86,069	12,353	20,504	50,053	26,996	22,425	12,742
1944-45 ..	83,968	12,300	23,564	49,534	26,464	22,569	12,357
1945-46 ..	84,377	12,445	26,587	51,217	26,588	22,616	12,413

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

PRINCIPAL FRUIT CROPS : PRODUCTION IN AUSTRALIA.

(‘000 omitted.)

Year.	Apples.	Apricots.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums and Prunes.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1938-39 ..	11,126	987	2,494	5,644	2,523	2,300	771
1942-43 ..	9,851	1,111	2,408	4,180	2,036	2,837	927
1943-44 ..	14,523	1,433	2,262	5,332	2,573	2,684	1,171
1944-45 ..	10,468	881	2,129	5,657	2,173	2,922	729
1945-46 ..	15,267	1,107	2,621	5,249	2,095	2,644	949

(b) *Values.* The gross value of the principal fruit crops during the periods 1938-39 and 1942-43 to 1945-46 is shown in the following table :—

PRINCIPAL FRUIT CROPS : GROSS VALUE OF PRODUCTION, AUSTRALIA.

Year.	Apples.	Apricots.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums and Prunes.
	£	£	£	£	£	£	£
1938-39 ..	3,357,817	328,617	1,206,879	1,916,912	737,791	674,887	232,681
1942-43 ..	3,364,691	690,332	2,131,309	3,281,856	1,084,036	1,098,863	595,374
1943-44 ..	4,869,367	899,892	3,016,013	4,698,099	1,357,242	1,114,797	817,065
1944-45 ..	3,528,787	600,115	3,035,460	4,406,520	1,241,020	1,305,727	559,236
1945-46 ..	4,836,299	894,454	3,256,522	4,084,870	1,293,578	1,167,671	701,581

4. *Imports and Exports of Fruit.*—(i) *General.* The imports of fresh fruits into Australia are negligible whilst those of dried fruits consist mainly of dates.

A considerable export trade in both fresh and dried fruits is carried on by Australia with overseas countries. The values of the shipments in 1946-47 amounted to £1,549,890 and £2,430,584 respectively. Apples formerly constituted the bulk of the fresh fruit exported although the exports of citrus fruits and pears were fairly considerable. Shipments of raisins and currants have increased greatly since 1914-15, and are mainly responsible for the growth in the dried fruits exports although dried tree fruits also figure amongst the exports.

(ii) *Fresh Fruits.* Particulars of the Australian overseas trade in fresh fruits are shown in the following table :—

FRESH FRUITS : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Centals.	£A.	Centals.	£A.	Centals.	£A.
1938-39 ..	69,883	29,843	2,752,437	2,022,936	2,682,554	1,993,093
1942-43 ..	1,959	2,370	133,284	191,129	131,325	188,759
1943-44 ..	596	1,118	135,081	315,329	134,485	314,211
1944-45 ..	789	1,895	179,297	318,351	178,508	316,456
1945-46 ..	1,088	3,417	813,179	1,264,681	812,091	1,261,264
1946-47 ..	5,459	4,068	673,485	1,549,890	668,026	1,545,822

(iii) *Exports of fresh Apples, Pears and Citrus Fruits.* The quantity and value of fresh apples, pears and citrus fruits exported during each of the years 1938-39 and 1942-43 to 1946-47 are shown in the following table :—

FRESH APPLES, PEARS AND CITRUS FRUITS : EXPORTS FROM AUSTRALIA.

Year.	Apples.		Pears.		Citrus Fruits.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Centals.	£A.	Centals.	£A.	Centals.	£A.
1938-39 ..	2,111,139	1,433,440	294,930	264,805	274,229	221,184
1942-43 ..	10,434	19,024	1,073	1,974	117,908	165,830
1943-44 ..	21,401	45,503	2,988	7,594	107,386	255,703
1944-45 ..	70,257	98,704	179	316	103,804	210,356
1945-46 ..	698,185	1,010,243	20,938	54,412	68,468	135,027
1946-47 ..	387,458	766,007	80,736	176,490	167,910	438,627

(iv) *Dried Fruits.* The quantity and value of overseas imports and exports of dried fruits, other than raisins and currants, for the five years ended 1946-47 compared with 1938-39 are shown below. Normally, the bulk of the imports consists of dates obtained almost entirely from Iraq. This trade was prohibited during the war years but has since been resumed.

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

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	'000 lb.	£A.	'000 lb.	£A.	'000 lb.	£A.
1938-39 ..	11,097	80,752	3,927	117,814	-7,170	37,062
1942-43 ..	23	323	2,428	105,265	2,405	104,942
1943-44 ..	24	725	3,631	131,188	3,607	130,463
1944-45 ..	6,626	156,009	1,860	95,239	-4,766	-60,770
1945-46 ..	7,556	164,912	3,078	198,087	-4,478	33,175
1946-47 ..	7,070	165,621	4,214	273,502	-2,856	107,881

(a) Excludes raisins and currants referred to separately under Vineyards, § 16, par. 6.
NOTE.—Minus sign (-) denotes net imports.

(v) *Jams and Jellies.* Jams and jellies were exported in large quantities during the 1914-18 War, the record shipment of 79,277,560 lb., valued at £1,847,970, being dispatched from Australia during 1918-19. Exports during the 1939-45 War did not reach the record dimensions obtained during the 1914-18 War. Australian and Allied Services based upon Australia had prior claims upon Australia's output of jam, with the result that the exportable surplus, after meeting civil needs, was much reduced. Exports reached their highest level in 1940-41, before the outbreak of war in the Pacific, when nearly 45 million lb. of jam were exported. Peak production occurred in 1943-44 and amounted to 171 million lb. compared with the peak of the 1914-18 War of 136 million lb. in 1918-19. Particulars of imports and exports during each of the years 1938-39 and 1942-43 to 1946-47 are as follows:—

JAMS AND JELLIES : IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	'000 lb.	£A.	'000 lb.	£A.	'000 lb.	£A.
1938-39 ..	81	3,253	13,872	262,486	13,791	259,233
1942-43 ..	42	1,359	18,276	498,097	18,234	496,738
1943-44 ..	..	5	21,638	557,161	21,638	557,156
1944-45 ..	..	1	27,661	692,056	27,661	692,055
1945-46 ..	..	..	42,183	1,310,412	42,183	1,310,412
1946-47 ..	..	4	65,434	2,206,696	65,434	2,206,692

(vi) *Preserved Fruit.* The total quantity of fruit preserved in liquid, or partly preserved in liquid or pulped, imported into Australia during 1946-47 was £A.537. Large quantities of fruit preserved in liquid are normally exported from Australia, the value of shipments in 1938-39 amounting to £A.1,271,525. Exports were considerably reduced during the recent war owing to the prior claims on Australia's output by the Australian and Allied Services based on Australia, but in 1946-47 the value of exports had increased to £A.2,114,248. In addition, the exports of pulped fruits during 1946-47 amounted to

£446,335. Particulars of the quantities and value of fruit preserved in liquid exported from Australia in 1938-39 and each year 1942-43 to 1946-47 are shown in the following table:—

FRUIT PRESERVED IN LIQUID : EXPORTS FROM AUSTRALIA.

Year.	Apricots.	Peaches.	Pears.	Other.	Total.
QUANTITIES ('000 lb.)					
1938-39.. .. .	9,484	44,383	20,858	6,753	81,478
1942-43.. .. .	231	3,835	1,171	8,211	13,446
1943-44.. .. .	1,204	8,351	4,817	6,797	21,169
1944-45.. .. .	2,274	11,662	3,008	4,763	21,707
1945-46.. .. .	2,999	18,208	7,404	8,171	36,782
1946-47.. .. .	5,645	43,331	10,259	3,454	71,689

VALUES (£A.)					
1938-39.. .. .	161,358	627,748	332,668	149,751	1,271,525
1942-43.. .. .	5,619	79,687	25,228	179,091	289,625
1943-44.. .. .	30,968	210,075	122,714	166,586	530,343
1944-45.. .. .	50,036	256,766	61,985	139,321	508,108
1945-46.. .. .	72,323	393,467	154,393	272,677	892,860
1946-47.. .. .	167,100	1,190,687	636,130	120,031	2,114,248

5. Marketing of Apples and Pears.—(i) *Apple and Pear Organization Act 1938-1947*. This Act, which was passed by the Commonwealth Parliament at the request of the apple and pear industry, provides for the establishment of an Australian Apple and Pear Board for the purpose of organizing and controlling the export trade in fresh apples and pears.

The Board originally comprised sixteen members but by an amendment of the Act in 1947 the members were reduced to twelve, representative of the following interests:—one member to represent the Commonwealth Government; seven members to represent growers of apples and pears on the basis of two for Tasmania and one each for the other States; three members to represent exporters of apples and pears on the basis of one each for Tasmania and Western Australia and one for the other States; and one member to represent the employees engaged in the apple and pear industry.

The Board has power to regulate the shipment of apples and pears from Australia by licensing exporters and issuing permits to export. Power is also given to determine export quotas and to allocate the consignments from each State. The Board may appoint persons to represent it overseas.

The Apple and Pear Publicity and Research Act 1938 and the related Apple and Pear Tax Acts, referred to in earlier issues of the Official Year Book, have now been repealed by the 1947 amendment to the Apple and Pear Organization Act.

(ii) *Apple and Pear Export Charges Act 1938-1947*. This Act provides for the imposition of a levy on all apples and pears exported from Australia for the purpose of providing the funds necessary to meet the administrative and other expenses of the Board.

(iii) *Apple and Pear Acquisition*. Exports of apples and pears have been seriously curtailed as a result of the war and during the 1940 to 1948 seasons crops were acquired and marketed under the National Security (Apple and Pear Acquisition) Regulations and Regulations issued under the Defence (Transitional Provisions) Act 1946. During the 1940 season the scheme was supervised by a Marketing Committee attached to the Australian Apple and Pear Board with committees operating in each State, but from 1941 the operations of the Australian Apple and Pear Board were suspended and the Australian

Apple and Pear Marketing Board was constituted under the National Security (Apple and Pear Acquisition) Regulations to handle and market all apples and pears acquired. The Regulations provide for the acquisition and orderly marketing of apple and pear crops, growers being paid guaranteed advances on fruit acquired. During the 1940, 1941 and 1942 seasons, the acquisition applied to all States but from 1943 to 1948 the scheme has operated only in respect of crops grown in Tasmania and Western Australia. The following table gives details of the total quantity of fruit acquired and the amounts paid to growers as advances on the basis of "bare" fruit in the orchard for the seasons 1942 to 1946. All packing and marketing costs such as cases, packing, transport, cool storage, selling, etc. were paid by the Board :—

State.	1942—No. 3 Acquisition.		1943—No. 4 Acquisition.		1944—No. 5 Acquisition.		1945—No. 6 Acquisition.		1946—No. 7 Acquisition.	
	Quantity.	Growers Advances.	Quantity.	Growers Advances.	Quantity.	Growers Advances.	Quantity.	Growers Advances.	Quantity.	Growers Advances.
APPLES.										
N.S.W.(a)	'000. bus.	£'000.	'000. bus.	£'000.	'000. bus.	£'000.	'000. bus.	£'000.	'000. bus.	£'000.
Vic.	576	111	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Q'land	1,428	219	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
S. Aust.	98	23	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
W. Aust.	270	36	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Tas.	1,161	156	2,127	327	1,567	239	1,297	240	1,543	223
Total	6,354	758	5,738	778	8,027	1,108	6,685	1,036	8,522	1,170
Total	69,887	1,303	7,865	1,105	9,594	1,347	7,982	1,276	10,065	1,393

PEARS.
(Other than Canning.)

N.S.W. (a)	'000. bus.	£'000.	'000. bus.	£'000.	'000. bus.	£'000.	'000. bus.	£'000.	'000. bus.	£'000.
Vic.	158	35	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Q'land	597	117	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
S. Aust.	9	2	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
W. Aust.	97	17	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Tas.	93	17	141	25	77	14	116	26	77	14
Total	359	69	387	86	534	104	616	105	521	97
Total	1,313	257	528	111	611	118	752	131	598	111

(a) Includes Australian Capital Territory.
110,154 bushels sold privately by growers.

(b) Acquisition scheme did not apply.

(c) Excludes

(d) Excludes 6,861 bushels sold privately by growers.

6. Overseas Marketing of Canned Fruit.—(i) *The Canned Fruits Export Control Act 1926—1938.* This legislation was introduced at the request of canners and representative organizations of fruit-growers with the object of organizing the oversea marketing of canned fruit. The original Act referred to canned apricots, peaches and pears only, but canned pineapples and canned fruit salads consisting of not less than 75 per cent. of specified fruits were subsequently brought within the scope of the Board's operations. The personnel of the Australian Canned Fruits Board consists of one representative each from proprietary and privately owned canneries, co-operative canneries, State-controlled canneries, pineapple interests and the Commonwealth Government. No canned fruits to which the Act applies are permitted to be exported except under a licence issued in accordance with conditions recommended by the Board. The system of marketing adopted by the Board, including the fixation of minimum selling prices overseas, the appointment of a London agency and the engaging in oversea trade publicity, has resulted in the satisfactory disposal of the annual exportable surplus of canned fruits. The distribution of canned fruits has been widened and the exporting side of the industry placed on a sounder basis through the Board's operations.

(ii) *The Canned Fruits Export Charges Act 1926-1938.* This Act provides for the imposition of a levy on the export of canned fruits to meet the administrative and other commitments of the Board. The rate of the levy is fixed by regulation from time to time. An amendment in 1929 provided for certain exemptions from payment of the levy when recommended by the Board.

(iii) *War-time Contracts.* The exportable surplus from the 1940 pack was subject to an arrangement between the Commonwealth and United Kingdom Governments under which the British Ministry of Food agreed to purchase canned apricots, peaches, and pears at prices fixed on an f.o.b. basis, Australian ports.

In 1941 further purchases were made by the British Ministry of Food for shipment to destinations other than the United Kingdom.

From 1942 onwards, the requirements of the Defence Services and other Governmental orders expanded rapidly and necessitated official control of disposals to ensure that these priority demands were fully met. Commercial shipments of canned fruits virtually ceased and the quantities available for civilian consumption were considerably below normal requirements. Approximately 70 per cent. of the 1945 pack was allocated to meet service and other Governmental demands.

In 1946 commercial shipments were resumed and approximately one million cases of canned fruits were exported to the United Kingdom under an official arrangement which was virtually on a merchant to Government basis. A similar arrangement is in operation in respect of 1947 exports to the United Kingdom.

§ 18. Vegetables for Human Consumption.

1. *Area and Production of Fresh Vegetables.*—The pre-war production of vegetables in Australia, which had been sufficient to meet the needs of the population was, generally speaking, supplied by growers whose holdings were adjacent to centres of consumption. These areas were classified for statistical purposes as market gardens and were tabulated as such. Details of the areas planted and production respecting individual kinds of vegetables were not collected.

Following the outbreak of war in the Pacific in December, 1941 and the establishment of Australia as a base for Australian and Allied Services in the South-West Pacific Area it was evident that the production of fresh vegetables under the conditions then existing would be insufficient to meet the additional demand from the Services. Consequently extensive development of vegetable-growing in Australia was undertaken, resulting in an expansion from the peace-time need of about 100,000 acres to more than 200,000 acres exclusive of potatoes, onions, navy beans and blue peas. details of whose production are referred to in §§ 10, 11 and 12 of this Chapter.

This development was achieved by continuing supplies of vegetables to the civil population from the market gardens already established, by extending production to areas which previously had not grown these crops and by the mechanization of the industry. Farming operations were thus able to be undertaken in many cases on a scale larger than that normally adopted in Australia. In addition, the letting of contracts at guaranteed prices proved an attraction, and the vegetable-growing industry was able to produce the additional quantities necessary to meet the war-time needs of the services as well as those of the civil population.

Details of the area and production of vegetables for the seasons 1943-44 to 1945-46 are given in the following table. Owing to the difference in collection already referred to, comparable figures prior to 1942-43 are not available.

FRESH VEGETABLES(a) FOR HUMAN CONSUMPTION : AUSTRALIA.

Vegetable.	1943-44.		1944-45.		1945-46.	
	Area Sown.	Production.	Area Sown.	Production.	Area Sown.	Production.
	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.
Beans, French ..	18,376	15,291	20,278	16,533	19,873	15,291
Beetroot ..	4,009	21,781	4,687	27,074	4,095	20,995
Cabbages ..	12,030	127,175	13,487	136,937	10,417	104,688
Carrots ..	13,493	74,379	12,740	83,576	7,044	46,870
Cauliflowers ..	5,737	69,527	6,938	79,705	7,107	77,757
Cucumbers ..	3,003	5,679	3,471	5,637	2,402	3,446
Lettuces ..	3,461	12,536	4,825	16,242	4,509	15,566
Parsnips ..	2,207	13,265	2,256	15,598	1,902	13,438
Peas, Green ..	51,581	28,849	74,581	37,928	60,918	30,697
Potatoes, Sweet ..	3,343	11,723	2,453	7,756	1,071	5,584
Pumpkins ..	29,874	66,234	38,451	84,812	31,227	78,621
Tomatoes ..	23,731	106,931	25,642	113,950	22,586	91,502
Turnips, Swede ..	11,647	40,442	13,247	49,067	8,251	33,059
All Other ..	16,116	..	17,226	..	14,521	..
Total ..	198,608	..	240,282	..	196,523	..

(a) Excludes potatoes, onions, blue peas and navy beans.

2. **Production of Canned Vegetables.**—As a corollary to the development mentioned above a considerable expansion occurred in the processing of vegetables. New canning factories were established in many parts of the Commonwealth, and a new industry for the processing of vegetables by the dehydration method was commenced. Since the close of hostilities there has been a sharp decline in the output of canned vegetables, but preliminary figures indicate that the quantity canned in 1946-47 (approximately 46 million lb.) was considerably greater than in 1938-39.

The development in the vegetable canning industry is indicated in the table below :—

PRODUCTION OF CANNED VEGETABLES : AUSTRALIA.

Vegetable.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.	1946-47. (d)
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Asparagus ..	2,150	2,844	2,752	2,555	2,178	2,307
Beans ..	2,491	10,508	6,137	12,590	10,058	9,056
Beetroot ..	(a)	(a)	7,734	16,203	10,903	2,361
Cabbages ..	(a)	(a)	13,278	1,009	1,919	175
Carrots ..	(a)	(a)	12,789	38,883	18,312	2,989
Cauliflower ..	198	276	201	(a)	(a)	1,039
Peas ..	1,861	3,590	9,353	16,751	23,033	18,929
Silver Beet ..	(a)	(a)	1,794	7,493	2,453	11
Tomatoes ..	1,578	9,019	7,124	7,417	4,097	5,345
Other (c) ..	(b) 1,977	(b) 46,331	34,192	(b) 16,248	(b) 34,009	3,944
Total ..	10,255	72,568	95,354	119,149	106,962	46,156

(a) Included in "Other Vegetables". (b) Includes particulars of vegetables marked (a)
(c) Includes Parsnips, Potatoes, Turnips, Sweet Corn, etc. (d) Subject to revision.

3. **Production of Dehydrated Vegetables.**—The dehydration of vegetables was not undertaken in Australia until after the outbreak of war in the Pacific towards the close of 1941. The demand for vegetables in this form by Australian and Allied Services made this development a necessity and as a result 33 dehydration plants were erected in all

States except Queensland, in areas where adequate supplies of suitable vegetables were assured. With the termination of Commonwealth contracts for dehydrated vegetables in October, 1946, a number of plants ceased to operate and output for commercial purposes in the remaining plants was drastically curtailed.

In the following table details, as recorded by the Department of Commerce and Agriculture, are given of the quantities of fresh vegetables processed and the output in dehydrated form since the industry was established.

DEHYDRATED VEGETABLES: QUANTITY OF FRESH VEGETABLES USED AND PRODUCTION, AUSTRALIA.

Particulars.	1942-43.	1943-44.	1944-45.	1945-46.	1946-47.
Quantity Used—	Tons.	Tons.	Tons.	Tons.	Tons.
Beetroot	(a)	392	1,840	1,406	..
Carrots	(a)	9,336	18,984	8,136	..
Cabbages	(a)	10,181	20,213	15,781	220
Onions	(a)	2,295	4,852	5,015	78
Parsnips	(a)	1,042	782	381	9
Potatoes	(a)	18,054	48,979	61,116	8,617
Quantity Produced—	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Beetroot	(b)	70	261	183	..
Carrots	280	1,432	2,831	1,147	..
Cabbages	(b)	891	1,745	1,338	31
Onions	275	472	1,027	875	15
Parsnips	(b)	266	188	85	2
Potatoes	2,092	5,657	14,450	17,979	2,267
Other.. ..	101	..	..	15	..
Total	2,748	8,788	20,502	21,622	2,315

(a) Not available. (b) Included with "Other".

4. Imports and Exports of Vegetables.—Oversea exports of pulse and fresh vegetables during 1946-47 consisted of:—pulse, 7,893 tons. £343,915; onions, 7,248 tons, £170,125; potatoes, 25,852 tons, £504,658; other vegetables, 7,038 tons, £222,017. Imports totalled 4,063 tons, valued at £279,974, of which pulse comprised 3,971 tons, valued at £275,898.

The export trade in dehydrated and preserved vegetables has shown remarkable expansion since 1938-39. In 1946-47 exports of dehydrated vegetables amounted to 13,702,324 lb., valued at £1,162,426 and exports of preserved vegetables consisted of:—Peas, 3,895,478 lb., £145,091; tomatoes, 1,700,285 lb., £63,027; other vegetables 22,502,942 lb., £738,535.

Exports of both canned and dehydrated vegetables during the war years were mainly for the purpose of supplying the Australian, British and Allied Services overseas.

§ 19. Minor Crops.

1. General.—There are many other crops which do not occupy so prominent a position as those already enumerated. Some of the more important of these are included under the headings—Tobacco, Hops, Flax, Peanuts, Cotton and Sorghum.

2. Grass Seed.—Particulars of the area of grass 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 1945-46 was clover, 15,288 cwt.; lucerne, 7,444 cwt.; other grass seed, 23,763 cwt., or a total of 46,495 cwt.

3. Other Grains from Sorghums.—In addition to the grass seed referred to in paragraph 2 above and grain sorghum in § 9, considerable expansion has occurred in the area sown to Japanese Millet, Panicum and Setaria. Particulars of the area and production for the years 1941-42 to 1945-46 are given in the table below.

SORGHUMS : AREA AND PRODUCTION OF GRAIN, AUSTRALIA.

Year.	Japanese Millet.(a)		Panicum, Millet and Setaria.(b)	
	Area.	Production.	Area.	Production.
	Acres. (c)	Tons. (c)	Acres.	Tons.
1941-42			14,042	5,497
1942-43	406	149	9,319	3,115
1943-44	1,083	460	15,948	8,044
1944-45	2,948	964	16,570	4,784
1945-46	2,628	1,526	22,172	8,711

(a) Victoria only.

(b) Queensland only.

(c) Not available.

4. **Tobacco.**—(i) *General.* Tobacco-growing years ago promised to occupy an important place amongst the agricultural industries of Australia. 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.

(ii) *States, Area and Production.* The expansion of the tobacco-growing industry was hoped for as a war-time measure but, although the acreage planted increased slightly during the first three war years, it has since decreased considerably, being in 1945-46 only 35 per cent. of the annual average for the ten years ended 1938-39 and the production of dried leaf only 47 per cent. of the pre-war average. The area of 3,971 acres and production of 2,505,000 lb. represented a decrease on 1941-42 of 4,849 acres and of more than 4,535,000 lb.

In the following table particulars of the area and production of tobacco are given by States for each of the years 1938-39 and 1942-43 to 1945-46, together with averages for the ten year periods ended 1938-39 and 1945-46:—

TOBACCO : AREA AND PRODUCTION.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	Total.
AREA IN ACRES.								
Average 10 seasons ended 1938-39 ..	1,274	6,237	2,865	292	502	89	1	11,260
1938-39 ..	629	2,559	3,653	39	908	130	1	7,919
1942-43 ..	823	1,850	3,149	..	1,347	..	..	7,169
1943-44 ..	657	2,000	2,348	..	1,611	..	..	6,616
1944-45 ..	410	1,500	1,862	..	1,003	..	..	4,775
1945-46 ..	370	1,408	1,897	..	296	..	..	3,971
Average 10 seasons ended 1945-46 ..	701	2,572	3,351	24	1,104	53	3	7,808

PRODUCTION OF DRIED LEAF.
'000 lb.

Average 10 seasons ended 1938-39 ..	860	2,393	1,590	83	361	56	..	5,343
1938-39 ..	398	720	2,094	13	767	54	..	4,046
1942-43 ..	772	1,017	1,843	..	1,337	..	..	4,969
1943-44 ..	515	1,544	1,770	..	795	..	..	4,633
1944-45 ..	348	375	1,314	..	607	..	..	2,844
1945-46 ..	365	431	1,411	..	298	..	..	2,505
Average 10 seasons ended 1945-46 ..	574	1,289	2,077	5	805	33	1	4,784

(iii) *Australian Tobacco Board.* The Australian Tobacco Board was constituted in May, 1941 for the purpose of regulating the marketing of Australian-grown tobacco leaf, which must be submitted to the Board for appraisalment.

(iv) *Tariff Board Inquiries.* The tobacco industry has been the subject of a number of investigations. The Tariff Board inquired into the industry in 1926, 1931 and 1940 and reports were issued.

(v) *Tobacco Inquiry Committee.* The Tobacco Inquiry Committee, which was appointed by the Commonwealth Government to investigate certain aspects of the industry in North Queensland, presented its report in 1933. Recommendations included that for payment of a sum of £20,000 annually for a period of five years to assist the States to continue economic and-scientific investigations. This recommendation was adopted and the distribution was spread between the years 1934-1938 as follows:—£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.

A further grant of £62,500, which was increased by £11,250 in 1941, was allotted by the Commonwealth Government to be paid periodically between the years 1939 to 1943. The amount of £73,750 was allocated as follows:—Council for Scientific and Industrial Research, £25,000, and £10,000 annually among the States for the years 1939 and 1941 to 1943, and £8,750 for 1940. In August, 1946, the Commonwealth Cabinet approved a grant of £10,000 per annum for five years on a £ for £ basis to be allocated among producing States for experimental and demonstration work in connexion with tobacco leaf production; particularly in regard to control and elimination of diseases and pests. The annual grant of £10,000 has been allocated to States on the following basis:—Queensland, £3,750; New South Wales, £1,500; Victoria, £2,250; Western Australia, £2,500.

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. In spite of delays due to the war, the Council has been successful in discovering effective means of preventing blue mould, which has seriously retarded the development of the industry. The States are carrying out field investigations on disease resistance, selection, yield and quality improvement, and are conducting instructional, demonstrational and field experimental work.

(vi) *Tobacco Factories.* In 1945-46 the quantity of stemmed leaf used in tobacco factories in Australia amounted to 15.5 million lb. of which 4.7 million was of local origin and the balance was imported, chiefly from the United States of America.

(vii) *Imports.* The total net imports of tobacco into Australia during the years 1945-46 and 1946-47 were valued at £A.5,126,802 and £A.4,376,147 respectively. These figures include net imports of unmanufactured tobacco valued at £A.5,829,636 in 1945-46 and £A.4,082,081 in 1946-47.

5. *Hops.*—Hop-growing in Australia is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for 1945-46 being 1,359 acres. of which 1,191 acres were in Tasmania, 153 acres in Victoria and a small area of 15 acres in Western Australia. The Tasmanian area, though still small, has increased during the present century, the total for 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 173 in 1939-40. The cultivation of hops was much more extensive in Victoria some 60 years ago than at present, the area in 1883-84 being 1,758 acres.

In the following table details of the production, imports and exports of hops and the quantity of hops used in breweries are shown for each of the years 1938-39 and 1942-43 to 1945-46 :—

HOPS : PRODUCTION AND DISPOSAL, AUSTRALIA.

Year.	Production.		Imports.	Exports.	Net Available Supplies. (a)	Quantity used in Breweries.
	Quantity.	Gross Value.				
	Cwt.	£	Cwt.	Cwt.	Cwt.	Cwt.
1938-39	21,450	182,550	1,565	2	23,013	20,991
1942-43	24,810	219,480	82	499	24,393	21,549
1943-44	26,348	238,162	1,021	401	26,968	21,710
1944-45	23,160	230,400	177	60	23,277	22,156
1945-46	19,835	225,946	2,402	55	22,182	22,436

(a) Disregarding movements in stocks.

The Tariff Board conducted an inquiry into the hop-growing industry and issued a report on 12th June, 1945.

6. Flax.—For many years flax was grown intermittently in parts of Victoria and unsuccessful attempts were made to introduce its cultivation in some of the other States.

During the 1914-18 War there was an acute shortage of flax fibre and expansion of production was encouraged by the Commonwealth Government. Bounties were paid on production during the years 1907 to 1918 and again for each of the five years ended 1935. The amounts distributed as bounty during these periods totalled £2,376 and £2,839 respectively. However, the maximum area, which was sown in 1919-20, was only slightly more than 1,600 acres. The area subsequently declined to less than 200 acres in 1928-29. A further attempt to establish the industry was made in 1935 and as a result the area in Victoria had increased to 1,358 acres by 1938-39. Following the outbreak of the 1939-45 War the area sown increased rapidly, reaching over 54,000 acres in 1941-42 and over 61,000 acres in 1944-45. In 1945-46, however, the area shown fell by 32 per cent. to 41,413 acres. Victoria is the chief producing State, but South Australia, Western Australia and Tasmania have also contributed to this war-time expansion which was necessary to ensure Australia's supplies of flax and, in accordance with an agreement negotiated between the two Governments, to provide an export to assist in meeting the urgent needs of the United Kingdom. The arrangement concluded on 31st October, 1946, and action is being taken to effect financial adjustment between the two countries.

Details of the area under flax and the production of straw are given in the following table :—

FLAX : AREA AND PRODUCTION.

Year.	Victoria.	S. Australia.	W. Aust.	Tasmania.	Total.
AREA (Acres).					
1938-39.. ..	1,358	..	..	..	1,358
1942-43.. ..	26,173	9,818	8,785	11,964	56,740
1943-44.. ..	31,567	9,511	7,642	6,911	55,631
1944-45.. ..	38,459	10,537	8,278	3,803	61,077
1945-46.. ..	26,419	6,292	5,356	3,346	41,413
PRODUCTION. (Tons of Straw.)					
1938-39.. ..	950	..	..	..	950
1942-43.. ..	27,529	8,361	6,159	5,462	47,511
1943-44.. ..	40,937	10,450	6,618	4,456	62,461
1944-45.. ..	17,035	3,315	3,907	4,088	28,345
1945-46.. ..	18,798	6,969	4,229	1,360	31,356

Although the growing of flax on a large scale was established as a war-time measure, it is proposed to continue the industry at a level sufficient to meet local requirements providing that it can be efficiently maintained in competition with other countries. It has been estimated that about 30,000 acres are required to produce flax for the peacetime needs of Australia.

The industry is under the control of the Flax Production Committee appointed under the Supply and Development (Flax Production) Regulations. The Committee has, amongst other things, organized the growing and harvesting of the crop, and the processing of the flax as well as disposing of the resultant products to spinners and others in Australia and overseas. In 1943-44 in the four producing States there were 31 mills under the control of the Committee. Some of these mills have since been closed.

The growing of flax for oil has not been developed extensively in Australia, the area devoted to this purpose in 1945-46 being 383 acres from which 51 tons of linseed were obtained. Action is being taken to develop this industry.

The flax industry was the subject of two investigations, one in 1933 and the other in 1936 (see Official Year Book No. 32, p. 658).

7. Peanuts.—The production of peanuts, or groundnuts, in Australia is mainly confined to Queensland although small quantities are grown in New South Wales and Western Australia. Details of the area and production are given in the table below.

PEANUTS : AREA AND PRODUCTION, AUSTRALIA.

Year.	Area.				Production.			
	N.S.W.	Q'land.	W. Aust.	Total.	N.S.W.	Q'land.	W. Aust.	Total.
	Acres.	Acres.	Acres.	Acres.	Tons.	Tons.	Tons.	Tons.
Average 10 years ended 1938-39	29	8,320	100	8,449	(d) 11	3,715	24	3,750
1938-39 ..	3	21,220	145	a 22,408	(b)	7,690	27	ac 7,934
1942-43 ..	4	15,849	25	15,878	4	6,387	10	6,401
1943-44 ..	..	18,415	25	18,440	..	9,614	1	9,615
1944-45 ..	7	18,936	42	18,985	3	10,225	14	10,242
1945-46 ..	17	25,203	13	25,233	7	13,298	4	13,309
Average 10 years ended 1945-46	5	11,450	29	11,484	(e) 4	5,714	14	5,730

(a) Includes 1,040 acres, 217 tons in Northern Territory. (b) Not available. (c) Excludes New South Wales. (d) Average for five years. (e) Average for six years.

The gross value of the 1945-46 crop was £494,488.

In addition to the production shown above, considerable quantities of peanut kernels are imported annually, chiefly from India, for oil expression purposes. Details of Australia's available supplies in terms of kernels are given for the years 1938-39 and 1942-43 to 1946-47.

PEANUTS (IN TERMS OF KERNELS): AVAILABLE SUPPLIES, AUSTRALIA.

Particulars.	1938-39.	1942-43.	1943-44.	1944-45.	1945-46.	1946-47.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Production(a) ..	3,500	4,092	4,268	6,410	6,828	8,878
Imports ..	2,270	6,567	4,369	11,022	764	..
Total ..	5,770	10,659	8,637	17,432	7,592	8,878

(a) Crop harvested in April-May of the preceding year and available for consumption during year shown.

8. **Broom Millet.**—The total area devoted to broom millet in 1945-46 was 5,189 acres, of which 3,704 acres were in New South Wales, 1,195 in Victoria, 240 in Queensland and 50 in Western Australia. The total production from these areas was 32,673 bushels of grain and 31,719 cwt. of fibre.

9. **Nurseries.**—In all the States fairly large areas are occupied as nurseries. The acreages under flowers, fruit-trees, etc., in 1945-46 in the various States were as follows:—New South Wales, 603 acres; Victoria, 2,246 acres; Queensland, 67 acres; South Australia, 137 acres; Western Australia, 162 acres; and Tasmania, 83 acres; a total for Australia of 3,298 acres.

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, &c.* In 1913 the Queensland Government made an advance of 1½d. per lb. on seed cotton and ginned it on owner's account, the final return being equal to about 1½d. per lb. The rise in price enabled the Government to offer a guarantee of 5½d. per lb. for seeded cotton of good quality for the three years ended 31st July, 1923, and the areas 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 at varying rates of bounty.

The Raw Cotton Bounty Act 1940 provided an extension of assistance until 31st December, 1946. The Act was amended in August, 1946 to provide a guaranteed net average return to cotton-growers of 15d. per lb. of raw cotton for five years from 1st January, 1947.

The Tariff Board carried out an investigation into the cotton-growing industry in 1945.

(iii) *Expansion of the Cotton-growing Industry.* Australia produces less than its requirements of raw cotton, the balance being obtained chiefly from the United States of America and India. Efforts have been directed towards increasing production by an extension of area and the introduction of irrigation methods, but the results so far have not met with much success. Production was increased during the war years but has since fallen away. The expansion of the industries connected with the spinning and weaving of cotton is referred to in Chapter XXIV. "Manufacturing Industry".

The area under cultivation and the production in Queensland for the years 1939 and 1943 to 1946 are shown hereunder :—

COTTON : AREA AND PRODUCTION IN QUEENSLAND.

Season ended September—	Area Sown.	Production of Cotton.				Average Yield per Acre Sown.	
		Unginned.		Ginned.	Ginned- Equivalent in Bales. (a)	Unginned.	Ginned.
		Quantity.	Gross Value.				
Average 10 sea- sons ended 1939	Acres.	'000 lb.	£	'000 lb.	Bales.	lb.	lb.
1939	58,436	16,617	291,106	5,564	11,181	284	95
1939	41,212	17,528	301,180	6,183	12,447	424	150
1943	41,389	9,540	212,485	3,346	6,814	230	81
1944(c)	17,424	8,508	186,085	2,946	6,055	488	169
1945	7,698	1,819	41,818	651	1,305	236	85
1946	7,902	3,022	65,552	1,139	2,372	382	144
Average 10 sea- sons ended 1946	39,385	10,793	207,159	3,784	7,694	274	96

(a) Bales of approximately 500 lb. (b) Includes governmental assistance. (c) Includes 7,221 lb. of unginned cotton and the equivalent of ginned cotton, grown in New South Wales.

(iv) *Consumption of Raw Cotton.* The following table shows the expansion which has taken place in the consumption of raw cotton in Australia since 1938-39.

RAW COTTON : PRODUCTION, IMPORTS AND CONSUMPTION, AUSTRALIA.

Year.	Production.	Imports.	Total.	Consumption.
	'000 lb.	'000 lb.	'000 lb.	'000 lb.
1938-39	4,774	11,790	16,564	14,117
1939-40	6,183	17,826	24,009	18,332
1940-41	4,128	33,853	37,981	26,540
1941-42	5,631	31,959	37,590	29,766
1942-43	4,925	29,634	34,559	31,713
1943-44	3,346	20,805	24,151	30,955
1944-45	2,946	28,567	31,513	27,758
1945-46	651	26,494	27,145	25,329

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 1945-46 only 5 acres were recorded with a production of 8,044 lb.

12. *Other Crops.*—Miscellaneous small crops grown in Australia include chicory, cut flowers, herbs, ginger, liquorice and vegetable seeds.

§ 20. Bounties, etc.

1. Bounties.—The bounties paid by the Commonwealth Government during the year ended 30th June, 1946 amounted to £76,116. 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 1941-42 to 1945-46 are as follows:—

BOUNTIES : AUSTRALIA.

Articles on which Bounty was Paid.	Rate of Bounty Payable.	Date of Expiry of Bounty.	Amount Paid.				
			1941-42.	1942-43.	1943-44.	1944-45.	1945-46.
			£	£	£	£	£
Wire Netting Bounty Acts 1939-1944	9s. 7d. per ton ..	23rd Oct., 1917	369	421	447	496	349
Tractor Bounty Act 1939-1944	According to capacity, £32-£72	23rd Oct., 1947	1,108	850	5,652	13,317	10,095
Wine Export Bounty Act 1939-1944	1s. per gallon from 1st March, 1940	28th Feb., 1947.	38,610	15,049	22,506	34,613	53,649
Raw Cotton Bounty Act 1940-1946	(b)	31st Dec., 1951	38,439	a 93,135	..	..	b 11,887
Superphosphate Bounty Act 1947	25s. per ton ..	31st D.c., 1945	779,816	77,442	..	..	..
Cable and Wire Bounty Act 1941— Rubber insulated cable and wire	4d. per lb. of copper wire used	30th June, 1942.	8,822	3,502	..	..	..
Papua and New Guinea Bounties Act— Cocoa Beans ..	14d. per lb. ..	31st Dec., 1947.	4,862	13	..	..	136
Bambos and Rattans (Unmanufactured)	£4 per ton ..	" "	9	..	..	..	..
Manila, Sisal and Other Hemp Fibres	£6 ..	" "	..	..	..	..	..
Cocir Fibre ..	£3 ..	" "	..	..	..	..	..
Kapok ..	2d. per lb. ..	" "	17	..	..	..	..
Total .. ..	.. ..	.. ..	872,122	190,413	28,605	48,426	76,116

(a) Year ended December, 1942.

(b) Rates subject to variation as prescribed.

2. Other Financial Assistance to Primary Producers.—(i) *General.* 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 exclude such items as the expenditure on cattle tick control, banana industry, tobacco investigation and apple and pear research, which indirectly benefits the industries concerned, and exclude loans made to States to alleviate hardship suffered by primary producers in consequence of drought. The distribution as bounty, relief or subsidy has been made in the following manner.

Details of payments made prior to 1938-39 are given on page 847 of Official Year Book No. 36.

AMOUNTS PAID BY THE COMMONWEALTH GOVERNMENT AS ASSISTANCE FOR RELIEF OF PRIMARY PRODUCERS.

Amounts paid to—	Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.	Tas.	A.C.T.	Total.
		£	£	£	£	£	£	£	£
Wheat-growers as—									
Assistance ..	1938-39	558,489	307,564	70,824	398,559	421,206	(a)51,961	..	1,808,693
" ..	1939-40	910,839	415,110	109,805	436,067	497,888	a114,716	1,033	2,486,067
" ..	1940-41	477,810	246,326	47,876	413,661	263,015	(a)49,292	..	1,498,593
Relief (Drought)	"	320,000	250,000	..	200,000	200,000	..	..	970,000
Assistance ..	1941-42	521,513	392,335	29,789	359,614	294,332	(a)54,133	..	1,651,716
Relief (Drought)	"	..	..	15,000	..	..	623	..	15,623
Assistance ..	1942-43	447,593	424,584	40,009	470,817	(c)804,053	(a)55,587	..	2,243,543
" ..	1943-44	1,167,345	710,434	159,989	806,042	e1,098,812	(a)47,207	..	4,289,829
" ..	1944-45	644,034	164,420	231,717	378,621	e1,113,386	(a)50,561	..	2,582,739
Relief (Drought)	"	475,000	725,000	..	330,000	40,100	..	..	1,570,000
Assistance ..	1945-46	1,132,251	602,938	183,518	448,553	(c)630,225	(a)68,914	..	3,075,402
Relief (Drought)	"	Cf. 1,146	76,000	..	101,110	..	..	..	169,964
Assistance ..	1946-47	331,996	560,244	47,108	417,590	(c)340,966	(a)50,026	..	1,750,932
Relief (Drought)	"	315,092	150,000	..	66,847	..	..	..	531,939
Total 1931-32 to 1946-47	..	11,823,287	8,204,556	1,260,745	8,337,776	8,767,971	686,545	2,954	39,083,831
Fruit-growers—									
Total 1933-34 and 1934-35(b)	..	20,763	58,620	2,581	18,374	25,631	134,031	..	260,000
Primary Producers (other than wheat-growers)—									
Artificial Fertilizer subsidy	1938-39	18,290	76,501	19,020	36,490	43,260	12,460	90	206,020
" ..	1939-40	427	17,100	4,320	785	320	250	..	23,200
" ..	1941-42	118,930	255,755	21,660	166,219	197,201	20,103	..	779,817
" ..	1942-43	92,138	174,195	18,923	168,245	131,811	28,595	..	553,910
" ..	1943-44	163,813	405,600	20,600	255,290	374,152	83,657	..	1,303,152
" ..	1944-45	303,516	697,955	41,435	456,065	500,000	145,521	..	2,214,388
" ..	1945-46	393,053	935,304	70,001	690,907	1,028,612	152,910	..	3,286,443
" ..	1946-47	431,702	952,257	168,271	646,544	880,191	155,000	..	3,174,047
Total 1932-33 to 1946-47	..	1,696,988	4,131,160	443,334	2,658,097	3,544,549	684,460	370	13,158,958
Dairying industry	1942-43	277,079	430,100	365,532	49,529	42,275	21,701	..	1,186,306
" ..	1943-44	1,832,317	2,614,280	2,145,747	338,267	285,266	130,232	..	7,346,120
" ..	1944-45	1,495,116	2,716,807	1,878,750	314,600	260,287	146,542	..	6,812,197
" ..	1945-46	1,523,680	2,383,696	1,745,454	322,503	273,763	124,415	..	6,373,511
" ..	1946-47	1,069,287	2,353,084	1,111,112	322,140	238,453	228,664	..	6,523,469
Relief (Drought)	"	143,800	23,803	24,996	4,322	333	..	..	197,257
Total	..	6,342,059	10,521,779	7,271,603	1,351,376	1,100,379	551,664	..	27,138,860
Grand Total 1931-32 to 1946-47	..	19,883,097	22,916,115	3,078,266	12,355,617	13,438,530	2,056,700	3,324	79,641,649

(a) Includes special grant to Tasmania. (b) Growers of apples, pears and mandarins. (c) Includes Wheat Acreage Restriction Grant. (d) Includes payment of £1,659,325 received in London. (e) Includes £3,484,729 recovered from the United Kingdom Government. (f) Includes subsidy payments of £186,649 on nitrogenous fertilizers.

(ii) *Wheat-growers.* Details of payments made prior to 1938-39 will be found in Official Year Book No. 36. In 1938-39 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 £1,708,543 was allocated to the States for the same purpose during 1942-43, £1,940,481 in 1943-44, £1,995,775 in 1944-45, £1,779,238, in 1945-46 and £1,747,383 in 1946-47.

In addition to the foregoing amounts paid from flour tax, compensation was paid to wheat-growers in Western Australia where acreage restrictions have applied since 1942-43. The amounts so paid during each year 1942-43 to 1946-47 were £535,000, £599,348, £586,964, £243,828 and £2,619.

(iii) *Artificial Fertilizers Subsidy.* Assistance has been given to primary producers other than wheat-growers in the form of a subsidy on artificial fertilizers; 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, but was resumed one year later.

Because of the substantial increases in the price of superphosphate and their effect on the efficiency of the farming industry, the Commonwealth Government introduced a bounty on superphosphate produced and sold in Australia after 1st July, 1941. The rate of bounty was fixed at 25s. per ton, payable to manufacturers, who were required to adjust their prices so that consumers received the full benefit of the subsidy. For 1942-43 and subsequent years subsidy has been paid under the Primary Producers Relief (Superphosphate) Act 1943, the rates of subsidy being determined in accordance with variations in costs from 1943 basic costs. For 1946-47 the actual rate of subsidy was £2 11s. 11d. Details of the amounts paid are given in the table above.

(iv) *Dairy Industry.* The war-time demand for butter, cheese and processed milk products was such as to necessitate production being increased to the limit of existing resources. With this object in view the Commonwealth has subsidized production and so encouraged dairy farmers to maintain output at the highest level possible. The amounts paid since the introduction of the subsidy are shown above. These do not include the subsidies paid on the production of whole milk which is consumed directly and which amounted to £319,000 in 1943-44, £1,786,000 in 1944-45, £2,520,000 in 1945-46 and £2,249,000 in 1946-47.

(v) *Farmers' Debt Adjustment.* 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 was allocated in the same proportion, and was subject to review at a later date.

§ 21. 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. This practice is very much less in evidence now than in the early days of Australian agricultural development. Under the guidance of the State Departments of Agriculture, scientific farming is now much more widely practised. The importance of fallowing, crop rotation, and the application of suitable fertilizers in adequate quantities is now 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 fertilizers, 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 is given in Official Year Book No. 12, p. 378.

3. **Imports.**—The Australian output of prepared fertilizers is derived chiefly from imported rock phosphates and is sufficient for local requirements.

The chief source of Australia's normal supplies of rock phosphate was Nauru and the Gilbert Islands group. The war in the Pacific interrupted supplies from these sources and the bulk of the imports since 1941-42 came from Algeria, Egypt and the Makatea Islands. Sodium nitrate is obtained chiefly from Chile.

The imports of manures during 1938-39 and the four years ended 1946-47 are shown in the following table:—

FERTILIZERS : IMPORTS INTO AUSTRALIA.

Australian Currency Values.

Fertilizer.		1938-39.	1943-44.	1944-45.	1945-46.	1946-47.
Ammonium sulphate	cwt.	710,065	27	113,459	647,110	551,730
	£	336,872	217	108,638	504,102	504,140
Potash salts	cwt.	223,202	66,590	90,547	145,049	126,941
	£	102,794	67,164	96,818	171,329	161,531
Rock phosphate	cwt.	16,008,437	6,042,101	9,468,506	13,285,672	14,466,308
	£	1,038,399	605,254	1,333,960	2,085,712	2,299,128
Sodium nitrate	cwt.	203,666	735,954	327,426	..	66,759
	£	103,074	431,050	186,497	..	51,103
Other	cwt.	125,551	5,526	4,942	106,938	85,364
	£	12,237	10,273	9,190	20,872	23,347
Total	cwt.	17,270,921	6,850,198	10,004,880	14,184,769	15,297,102
	£	1,593,376	1,113,958	1,735,103	2,782,015	3,039,249

4. **Exports.**—The following table shows the exports of fertilizers (practically all of which are manufactured locally) during the same periods:—

FERTILIZERS : EXPORTS FROM AUSTRALIA.

Fertilizer.		1938-39.	1943-44.	1944-45.	1945-46.	1946-47.
Ammonium sulphate	cwt.	2,097	423	4,636	3,484	2,471
	£	940	397	4,469	6,125	1,996
Bone-dust	cwt.	5,238	..	..	9	..
	£	2,931	..	..	7	..
Rock phosphate	cwt.	61	375	27	..	..
	£	143	804	65	..	..
Sodium nitrate	cwt.	22	100	84	11,243	104
	£	42	141	85	12,927	374
Superphosphate	cwt.	37,062	975	990	951	4,946
	£	6,182	565	634	570	2,061
Other	cwt.	53,197	10,008	4,582	3,198	10,674
	£	27,323	13,566	6,581	6,389	7,076
Total	cwt.	97,677	11,881	10,319	18,885	18,195
	£	37,561	15,473	11,834	26,018	11,507

5. **Quantities Locally Used.**—Information regarding the area fertilized with artificial fertilizers and the quantity of artificial fertilizers (superphosphate, bonedust, nitrates, etc.) used in each State during the year 1945-46 is given in the following table. Details of the area manured with natural manure (stableyard, etc.) are no longer collected.

AREA FERTILIZED AND QUANTITY OF FERTILIZERS USED, 1945-46.

State or Territory.	Area Fertilized.			Fertilizers Used.		
	Crops.	Pasture Lands.	Total.	Crops.	Pasture Lands.	Total.
	Acres.	Acres.	Acres.	Tons.	Tons.	Tons.
New South Wales	2,913,654	462,959	3,376,613	87,163	19,044	106,207
Victoria	3,383,072	2,708,379	6,091,451	114,541	133,484	248,025
Queensland	254,667	2,277	256,944	46,623	210	46,833
South Australia	3,035,536	853,699	3,889,235	109,548	37,599	147,147
Western Australia	2,821,864	1,537,658	4,359,522	123,818	66,820	190,638
Tasmania	223,505	218,024	441,529	24,894	9,326	34,220
Australian Capital Territory ..	4,693	2,801	7,494	193	125	318
Total	12,636,991	5,785,797	18,422,788	506,780	256,608	773,388

Particulars of the quantity of artificial fertilizers used in each State and Territory during each of the years 1938-39 and 1942-43 to 1945-46 are included in the next table. These details include the quantity used in the top-dressing of pasture lands.

The serious diminution in the output of superphosphate during the war caused by the interruption of imports of rock phosphate necessitated the introduction of a system of rationing of supplies which adversely affected the yields from those crops which are dependent upon the use of superphosphate and other fertilizers.

QUANTITY OF ARTIFICIAL FERTILIZERS USED.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.	Tas.	N.T.	A.C.T.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1938-39 ..	186,569	395,163	61,300	235,443	280,384	33,933	..	432	1,193,224
1942-43 ..	95,060	184,795	24,749	135,116	162,776	24,618	..	379	627,493
1943-44 ..	82,200	163,600	33,677	86,456	114,572	25,306	..	290	506,191
1944-45 ..	79,432	186,458	41,162	102,976	137,211	36,199	..	235	583,667
1945-46 ..	106,207	248,025	46,833	147,147	190,638	34,220	..	318	773,388

As mentioned in § 20 the Commonwealth Government has encouraged the use of artificial fertilizers 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, but was re-introduced as from 1st July, 1941 at the rate of 25s. per ton. For the purpose of stabilizing the price of superphosphate the Primary Producers Relief (Superphosphate) Act 1943 was passed and subsidy payments have been made under this Act since 1942-43.

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 1945-46 was 38, made up as follows:—New South Wales 6; Victoria, 8; Queensland, 6; South Australia, 7; Western Australia, 6; and Tasmania, 5. The production of superphosphate in Australia during 1945-46 amounted to 1,105,304 tons, the largest producing States being Victoria, Western Australia and South Australia.

§ 22. 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 each of the seasons 1938-39 and 1942-43 to 1945-46 is given in the following table :—

ENSILAGE MADE.

State.	1938-39.		1942-43.		1943-44.		1944-45.		1945-46.	
	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.
	(a) No.	Tons.	No.	Tons.	No.	Tons.	(a) No.	Tons.	(a) No.	Tons.
New South Wales ..	1,476	124,496	(b)	71,801	(b)	58,143	(b)	39,830	1,110	73,598
Victoria ..	549	28,716	(b)	32,099	(b)	27,108	454	19,993	(b)	31,376
Queensland ..	291	17,772	(b)	20,825	(b)	13,021	(b)	11,519	258	12,775
South Australia ..	103	6,056	(b)	9,847	(b)	5,315	(b)	2,749	(b)	4,664
Western Australia ..	328	16,156	(b)	15,019	(b)	9,828	(b)	19,328	(b)	13,888
Tasmania ..	12	490	(b)	967	(b)	866	(b)	1,325	(b)	2,567
Australian Capital Territory ..	..	..	(b)	473	(b)	496	(b)	..	(b)	1,465
Australia ..	2,756	103,686	(b)	151,631	(b)	111,777	(b)	91,744	(b)	110,533

(a) Number of holdings on which ensilage was made.

(b) Not available.

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 accumulated stocks proved of great value during the 1914 drought, though far less than would have been the case if more attention had been paid to production during the previous years when there was a surplus of green fodder. The quantities made since that date have fluctuated considerably, but the output increased up to 1939-40 in which year the production of 303,495 tons was the highest yet recorded. During subsequent seasons output has declined noticeably. The production in 1945-46 was 140,533 tons, 162,962 tons less than the 1939-40 record production.

3. **Stocks Held on Farms.**—Details of farm stocks of ensilage, which were collected for the first time as at 31st March, 1943, are shown in the following table :—

ENSILAGE : FARM STOCKS.

31st March—	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A.C.T.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1943 ..	127,434	32,097	23,264	7,723	11,063	1,646	415	203,642
1944 ..	100,859	24,319	18,676	4,944	6,634	882	890	157,204
1945 ..	54,268	15,226	14,688	2,151	5,591	899	155	92,978
1946 ..	73,371	27,675	16,926	3,186	3,832	3,925	1,740	130,655

§ 23. Agricultural Colleges and Experimental Farms.

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.

§ 24. Employment in Agriculture.

Particulars relating to the number of males employed in agriculture are available up to 1941-42 in Official Year Book No. 36, page 852, and also in previous issues. Similar details for later years are not available, but statistics of permanent employment on rural holdings may be found in § 25 following.

§ 25. Number and Area of Rural Holdings and Permanent Employment Thereon.

1. **Genera.**—The statistical data included in the chapters relating to agricultural, pastoral and dairying activities are obtained at an annual census taken in each State under the direction of the State Statisticians. This census is taken as early as practicable after the conclusion of the main harvest and covers every holding within the boundaries of each State.

A holding in Australia has been defined by the States on a more or less uniform basis and discrepancies which exist are not of sufficient importance to vitiate any comparisons. For the purpose of these statistics, a holding may be defined as land of one acre or more in extent, used in the production of agricultural produce, the raising of live stock or the products of live stock.

With the exception of Queensland, particulars of the number of holdings included in these censuses are available for all States over a series of years. It was not until 1938-39, however, that a complete tabulation became available for Queensland.

2. **Number and Area.**—The following table shows the number and area of the holdings in each State for the years 1938-39 and 1941-42 to 1945-46.

RURAL HOLDINGS : NUMBER AND AREA.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australian Capital Territory.	Total.
NUMBER OF RURAL HOLDINGS.								
1938-39 ..	75,365	72,452	41,503	31,280	21,052	11,680	204	253,536
1941-42 ...	73,973	72,027	42,500	30,565	20,395	11,500	208	251,168
1942-43 ..	73,579	71,489	42,748	27,934	18,351	11,532	209	245,842
1943-44 ..	73,074	70,961	42,457	27,826	18,345	11,438	202	244,393
1944-45 ..	74,566	70,856	42,615	27,867	18,737	12,173	201	247,015
1945-46 ..	74,173	70,652	42,511	27,635	18,400	11,991	221	245,583

TOTAL AREA OF RURAL HOLDINGS.

	'000. acres.	'000. acres.	'000. acres.	'000. acres.	'000. acres.	'000. acres.	'000. acres.	'000. acres.
1938-39 ..	174,660	40,791	317,782	144,682	211,720	6,778	371	896,784
1941-42 ..	173,554	41,292	350,000 ^a	145,634	212,198	6,791	397	929,866
1942-43 ..	171,054	41,035	348,866	145,443	208,886	6,525	386	922,195
1943-44 ..	171,878	41,275	348,830	144,526	204,030	6,393	363	917,295
1944-45 ..	170,080	40,830	348,648	137,386	207,987	6,664	382	911,977
1945-46 ..	169,380	40,523	354,944	142,505	206,001	6,479	376	920,208

(a) Estimated.

3. Analysis of Holdings.—(i) *General.* It is not possible to classify these holdings according to the purpose for which they are used. This arises from a number of factors, the chief of which is mixed farming. The general trend in Australia is for farmers to diversify their activities and consequently it is very difficult to determine whether the purpose of many holdings is mainly agricultural, pastoral or dairying, or any of these in combination.

(ii) *New South Wales.* Such an analysis is made in New South Wales but, as pointed out by the Statistician, it should be regarded as an approximation. It is compiled from the description of purpose given by the occupier of the holding at the time of the Census. This tabulation reveals that there were 71,743 holdings so classified in New South Wales during 1940-41. Of this number 9,938 described their main purposes as agricultural only, 20,897 as pastoral only, 14,098 dairying only, 2,558 as poultry, pig or bee farming while the main purpose of the remaining 24,252 holdings was stated to be a combination of two or more of these activities. Holdings used mainly for residential or other purposes but which were used partly for the production of rural products have been omitted. These numbered 2,752 during 1940-41.

4. Permanent Employment on Rural Holdings.—The following table shows for each State of Australia the number of persons permanently engaged full-time on rural holdings as at 31st March, 1947.

RURAL HOLDINGS: PERMANENT FULL-TIME EMPLOYMENT AS AT
31st MARCH, 1947.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	A. C.T.	Total.
MALES.								
Owners, Lessees or Sharefarmers	74,384	66,033	41,812	26,849	18,548	12,993	134	240,753
Relatives of Owner, Lessee or Sharefarmer over 14 years of age, not receiving wages or salary ..	9,168	9,440	6,917	2,898	2,397	1,393	20	32,233
Employees, including Managers and Relatives working for wages or salary	25,772	17,060	20,170	8,381	8,579	4,232	106	84,300
Total	109,324	92,533	68,899	38,128	29,524	18,618	260	357,286

FEMALES.								
Owners, Lessees, etc. } Relatives of Owner, Lessee } etc.	9,516	7,483	12,469	4,309	5,479	1,527	39	40,822
Employees, including } Managers and Relatives } working for wages or } salary	1,871	1,301	2,987	665	949	239	10	8,022
Total	11,387	8,784	15,456	4,974	6,428	1,766	49	48,844

TOTAL PERSONS ENGAGED.

Owners, Lessees, etc. } Relatives of Owner, } Lessee, etc.	93,068	82,956	61,198	34,056	26,424	15,913	193	313,808
Employees, including } Managers and Relatives } working for wages or } salary	27,643	18,361	23,157	9,046	9,528	4,471	116	92,322
Total	120,711	101,317	84,355	43,102	35,952	20,384	309	406,130

The next table shows for Australia as a whole the number of persons permanently engaged full-time on rural holdings as at 31st March of the five years 1943 to 1947 for which this information was collected.

RURAL HOLDINGS : PERMANENT FULL-TIME EMPLOYMENT, AUSTRALIA.

Particulars.	As at 31st March—				
	1943.	1944.	1945.	1946.	1947.
Owners, Lessees or Sharefarmers	205,906	220,013	227,796	233,593	240,753
Relatives of Owner, Lessee or Sharefarmer over 14 years of age, not receiving wages or salary	33,552	34,980	37,760	34,241	32,233
Employees, including managers and relatives working for wages or salary	75,698	75,040	73,816	82,582	84,300
Total, Males	315,156	330,033	339,372	350,416	357,286
„ Females (a)	68,000	60,142	58,979	54,513	48,844
Total Persons engaged ..	383,156	390,175	398,351	404,929	406,130

(a) Total permanently engaged, full-time.