

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 of the Commonwealth of Australia. (See No. 22, p. 670.)

§ 2. Progress of Agriculture.

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

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

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

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854. The 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 under crop in each of the States and Territories of Australia at decennial intervals since 1860 and during each of the last five seasons :—

AREA UNDER CROP.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania	Nor. Ter.	Aus. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	246,143	387,283	3,353	359,284	24,705	152,860	..	..	1,173,628
1870-1	385,151	692,840	52,210	801,571	54,527	157,410	..	..	2,143,799
1880-1	606,277	1,548,809	113,978	2,087,237	63,902	140,788	..	..	4,560,991
1890-1	852,704	2,031,955	224,993	2,093,515	69,678	157,376	..	..	5,430,221
1900-1	2,446,767	3,114,132	457,397	2,369,680	201,338	224,352	..	..	8,813,666
1910-11	3,386,017	3,952,070	667,113	2,746,334	855,024	286,920	360	..	11,893,838
1920-21	4,465,143	4,489,593	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
1932-33	6,332,716	5,115,745	1,245,638	5,166,656	4,261,047	279,117	1,045	6,525	22,408,489
1933-34	6,283,951	5,266,913	1,313,438	5,078,558	4,215,360	288,320	1,250	6,467	22,454,327
1934-35	5,687,988	4,677,683	1,296,610	4,629,393	3,838,618	292,000	1,132	5,456	20,428,799
1935-36	5,735,681	4,438,761	1,334,690	4,463,163	3,754,158	242,189	1,070	4,330	19,974,042
1936-37	5,957,520	4,407,312	1,506,423	4,577,707	3,884,349	263,251	1,303	4,728	20,602,595

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

difficulty of securing freight space during the war years. After the termination of hostilities the area again began to expand and rose steadily to a new maximum of 25,163,816 acres in 1930-31. Thereafter the slump in wheat prices seriously depressed the agricultural industry and the area under crop receded to less than 20 million acres in 1935-36. In 1936-37 there was an increase of more than half a million acres to 20,602,595 acres. Wheat is the most extensively grown crop in Australia and material changes in the total area under crop are largely a reflection of variations in the acreage sown to this cereal.

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

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

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

§ 3. Distribution, Production and Value of Crops.

1. **Distribution of Crops.**—The following table gives the areas in the several States under each of the principal crops for the season 1936-37:—

DISTRIBUTION OF CROPS, 1936-37.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Aus. Cap. Ter.	Aus-tralia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ..	3,982,864	2,343,827	283,648	3,058,457	2,575,283	21,317	..	1,466	12,316,862
Oats ..	235,817	381,069	7,932	414,723	403,129	21,953	..	238	1,524,861
Maize ..	116,286	20,115	181,266	..	38	..	..	5	317,710
Barley —									
Malting ..	6,448	83,802	4,319	264,286	28,412	6,530	..	..	393,797
Other ..	5,550	16,201	2,333	40,273	11,680	417	..	..	76,460
Beans and Peas ..	17	7,780	689	18,215	3,558	17,898	..	..	48,157
Rye ..	6,325	1,185	27	2,282	131	206	..	..	10,156
Other Cereals ..	23,357	..	..	98	79	330	..	..	23,864
Hay ..	747,927	1,181,612	62,758	539,127	478,099	89,394	..	1,959	3,100,876
Green Forage ..	645,713	102,744	429,782	136,548	284,676	24,742	..	836	1,625,041
Grass and other									
Seeds ..	(a)	9,406	8,089	4,359	220	1,811	..	..	23,885
Orchards and									
other Fruit									
Gardens ..	87,887	76,760	28,828	29,755	22,143	32,285	..	66	277,724

(a) Not available.

DISTRIBUTION OF CROPS 1936-37—continued.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Aus. Cap. Ter.	Australia.
Vines—	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Productive...	14,984	38,329	1,944	52,679	5,125	..	..	..	113,061
Unproductive	1,558	3,566	557	3,443	980	..	..	..	10,104
Market Gardens	7,335	20,790	1,105	1,499	3,399	752	..	48	34,928
Sugar Cane—									
Productive ..	10,231	..	245,918	..	..	..	..	..	256,149
Unproductive	10,190	..	92,768	..	..	..	..	..	102,958
Potatoes ..	24,909	45,627	13,448	4,657	4,324	36,967	..	88	130,020
Onions ..	112	5,969	1,046	507	94	7	..	6	7,741
Other Root Crops	3,679	4,795	5,313	729	296	7,055	..	4	21,876
Tobacco ..	851	5,492	3,973	102	1,041	113	..	..	11,572
Broom Millet ..	3,358	1,250	776	..	..	..	..	..	5,384
Pumpkins and Melons	4,486	1,469	21,211	367	624	40	..	5	28,202
Hops ..	..	142	..	..	14	962	..	..	1,118
Cotton ..	..	..	62,200	..	..	..	..	..	62,200
All other Crops	17,630	5,382	46,488	5,601	1,004	472	1,305	7	77,889
Total Area ..	5,957,520	4,407,312	1,506,423	4,577,707	3,884,349	263,251	1,305	4,728	20,602,595

2. **Relative Areas of Crops in States and Territories.**—Taking the principal crops, i.e., those cultivated to the extent of over 100,000 acres, the proportion of each in the various States and Territories on the total area under crop for the season 1936-37 is shown in the next table. In four of the States, viz., New South Wales, Victoria, South Australia and Western Australia, wheat-growing for grain is by far the most extensive whilst hay is second in extent. In Victoria, South Australia and Western Australia the oat crop occupies third position, while green forage ranks third in New South Wales. In Queensland the most extensive crops are green forage, sugar-cane, wheat and maize, and in Tasmania hay, potatoes, orchards and fruit gardens, and green forage occupy the greatest area.

As pointed out previously wheat is the main crop in Australia, the area thereunder for grain and hay representing 64 per cent. of the total area under cultivation in 1936-37.

RELATIVE AREAS UNDER CROP, 1936-37.

[illegible]

3. **Area under Chief Crops, Australia.**—The area under the chief crops during each of the last five seasons, together with the average for the decennial period 1918–27 is shown hereunder :—

AREA UNDER CHIEF CROPS.—AUSTRALIA.

Crop.	Average, 1918–27.	1932–33.	1933–34.	1934–35.	1935–36.	1936–37.
	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.	1,000 acres.
Barley (a)	234	400	410	395	486	391
Maize	309	228	304	295	298	318
Oats	924	1,027	1,374	1,502	1,504	1,525
Rice .. .. .	..	22	20	22	22	23
Wheat	9,499	15,766	14,901	12,514	11,957	12,317
Green Forage	758	1,087	1,121	1,234	1,423	1,625
Hay	2,956	2,727	3,081	3,178	3,007	3,101
Beans and Peas	44	52	71	51	52	48
Onions	7	9	8	7	7	8
Potatoes (b)	131	147	140	131	125	130
Sugar Beet	1.6	3	3	3	3	3
Vineyards	94	114	116	117	119	123
Hops	1.6	1	1	1	1	1
Sugar Cane	219	307	329	322	335	359
Cotton	28	56	87	78	55	62
Tobacco	2	26	16	8	11	12
Market Gardens (c)	43	46	51	53	55	62
Orchards	274	274	282	278	271	278
All Other Crops	102	116	139	150	183	214
Total	15,630	22,168	22,454	20,129	19,974	20,603

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

4. **Total and Average Production, Chief Crops, Australia.**—The following table shows the production of the chief crops for the five years ended 1936–37 and for the decennium 1918–1927 :—

TOTAL AND AVERAGE PRODUCTION, CHIEF CROPS.—AUSTRALIA.

Crop.	Unit of Quantity.	Average, 1918–27.	1932–33.	1933–34.	1934–35.	1935–36.	1936–37.
Barley (a)	1,000 bushel	4,397	7,837	7,614	6,991	8,413	6,383
Maize	7,996	5,066	7,484	8,101	7,468	7,246
Oats	14,052	16,160	16,922	16,906	18,721	16,662
Rice	294	1,901	2,172	1,888	2,164	2,277
Wheat	118,553	213,927	177,338	133,393	144,218	151,390
Hay	3,593	3,571	3,583	3,811	3,498	3,448
Beans and Peas	709	1,000	1,057	721	616	778
Onions	36	49	52	42	35	53
Potatoes (b)	346	384	328	286	323	461
Sugar (Beet)	2.0	5.7	5.3	5.0	5.1	4.2
Grapes	167	410	362	361	364	409
Wine	11,884	16,418	13,996	16,265	17,728	20,168
Raisins and Currants	583	1,340	1,370	1,335	1,281	1,469
Hops	2,197	1,669	1,953	2,065	2,493	2,376
Sugar (Cane)	314	533	666	641	647	508
Cotton, Unginned	6,303	6,270	17,718	26,924	20,785	19,109
Tobacco	1,790	9,723	4,348	3,113	5,557	5,108
Pumpkins and Melons	46	38	54	54	62	66

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

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

AVERAGE YIELD PER ACRE, CHIEF CROPS.—AUSTRALIA.

Crop.	Unit of Quantity.	Average, 1918-27.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
Barley (a)	bushel	18.80	19.60	17.09	17.69	17.31	16.20
Maize	"	25.91	22.20	24.67	27.46	25.09	24.56
Oats	"	15.21	15.73	12.32	10.83	11.97	10.93
Rice	"	49.87	86.30	107.36	88.84	99.64	97.36
Wheat	"	12.48	13.57	11.90	10.63	12.06	12.29
Hay	ton.	1.21	1.31	1.16	1.20	1.16	1.11
Beans and Peas	bushel	16.26	19.14	14.97	14.02	11.95	16.16
Onions	ton	5.13	5.53	6.35	5.97	4.95	6.81
Potatoes (b)	"	2.59	2.61	2.35	2.19	2.59	3.55
Sugar (Beet)	"	1.26	1.80	1.64	1.63	1.62	1.20
Grapes (c)	"	2.63	3.78	3.31	3.30	3.29	3.62
Wine (c)	gallon	313	341	296	342	364	411
Raisins and Currants (c)	cwt.	19.49	29.02	25.00	24.52	23.43	26.20
Hops (c)	lb.	1,490	1,753	2,001	2,173	2,388	2,243
Sugar (Cane) (c)	ton	2.23	2.50	2.80	2.83	2.71	3.06
Cotton, Unginned (c)	lb.	222	209	260	620	378	309
Tobacco	"	796	126	291	392	527	449
Pumpkins and Melons	ton	3.15	2.54	2.84	2.91	3.02	2.34

(a) Malting only.

(b) Not including Sweet Potatoes.

(c) Per acre of productive crops.

6. **Gross Value of Agricultural Production, Australia.**—The following table shows the gross value of recorded agricultural production at the principal markets in each State for the years 1931-32 to 1936-37 :—

GROSS VALUE OF AGRICULTURAL PRODUCTION.—AUSTRALIA.

Crops.	1931-32.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000
Barley (a)	829	911	884	934	1,036	1,326
Maize	1,193	1,234	1,277	1,298	1,619	1,785
Oats	1,448	1,550	1,853	1,940	2,136	2,282
Rice	297	352	392	383	409	458
Wheat	33,728	33,316	27,897	24,738	29,768	40,471
Green Forage	2,642	3,046	2,540	2,435	2,703	2,784
Hay	8,145	9,520	10,265	10,587	10,061	12,104
Beans and Peas	220	302	234	194	165	258
Onions	253	218	230	311	297	250
Potatoes (b)	2,073	1,791	1,905	2,191	2,561	2,165
Sugar Beet	86	73	91	76	77	65
Grapes	3,495	3,918	3,674	3,562	3,754	4,233
Hops	144	128	142	151	172	171
Sugar Cane	7,649	7,098	7,601	7,310	7,493	8,742
Tobacco	1,115	961	340	257	484	437
Cotton, Unginned	308	125	283	397	376	330
Market Gardens (c)	2,152	1,965	2,029	2,136	2,240	2,330
Orchards	7,030	7,414	7,082	7,343	7,702	8,508
Other Crops	1,682	1,640	2,013	1,994	2,335	2,704
Total, Gross Value	74,489	75,562	70,732	68,587	75,388	91,403

(a) Malting only.

(b) Not including Sweet Potatoes.

(c) Including Pumpkins and Melons.

7. **Value of Production—Gross and Net.**—In issues of the Official Year Book up to No. 27 the gross, local and net values of agricultural production were shown for each of the years 1926-27 to 1932-33, computed in accordance with resolutions of the several Conferences of Australian Statisticians. It was apparent, however, that the

methods used in the various States were not in complete harmony and at the Conference held in March, 1935, attention was directed to the elimination of any existing differences in computation. The success achieved at that Conference makes it possible to present the value of agricultural production for 1933-34 and subsequent years on a basis of uniformity not hitherto attained. Sufficient time has not elapsed to enable the State Statisticians to carry this revision back to 1925-26 as is intended and consequently it is possible to publish results for the last four years only. 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 Official Year Book, No. 30, p. 953.

In computing the net value of production no deduction has been made for the cost of maintenance of farm buildings and fences, or for the depreciation of farm machinery; consequently the figure stated is inflated to this extent.

GROSS, FARM AND NET VALUE OF AGRICULTURAL PRODUCTION.—AUSTRALIA, 1933-34 TO 1936-37.

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

State.	Gross Production valued at Principal Markets.	Marketing Costs.	Farm Costs.			Net Value of Production. (a)	Depreciation.
			Gross Production valued at Farm.	Seed used, and Fodder for Farm Stock.	Value of other Materials used in process of production.		
	£	£	£	£	£	£	£
New South Wales ..	28,079,000	4,663,000	23,416,000	3,325,000	727,000	19,364,000	904,000
Victoria ..	24,038,124	3,217,320	20,820,804	3,432,210	1,032,253	16,356,341	824,000
Queensland ..	13,557,000	1,006,000	12,551,000	1,030,000	815,000	10,706,000	610,000
South Australia ..	13,021,815	1,346,957	11,674,858	1,858,414	759,038	9,057,406	557,611
Western Australia ..	9,435,736	1,276,912	8,158,824	1,439,437	798,279	5,921,108	580,079
Tasmania ..	3,165,300	761,670	2,403,630	567,600	127,100	1,708,630	70,600
Total—							
1936-37 ..	91,296,075	12,271,859	79,025,116	11,652,661	4,258,970	63,113,485	3,546,290
1935-36 ..	75,102,654	11,565,632	63,537,022	10,769,940	4,328,089	48,438,993	3,514,894
1934-35 ..	68,439,685	11,842,411	56,597,274	9,003,817	4,457,259	43,136,198	3,497,623
1933-34 ..	70,670,428	13,606,575	57,063,853	8,459,625	4,911,958	43,692,270	3,374,295

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

§ 4. Wheat.

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

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

2. **Progress of Wheat-growing.**—(i) *Area and Production.* (a) *Seasons 1932-33 to 1937-38.* Wheat is the principal crop raised in Australia, and its progress since 1860 has been almost continuous. Prominent features in its early development were the increase in population following the discovery of gold and the redistribution of labour after the surface gold had been won. The economic depression of 1893 interrupted its

progress but its subsequent recovery was assisted by the invention of mechanical appliances, the recognition of superphosphate as an aid to production, and the introduction of new and more suitable varieties for Australian conditions. The establishment of closer settlement schemes and the settling of returned soldiers and others on the land were additional factors in its expansion. The continued progress was interrupted by the Great War and the recent economic depression. As previously mentioned, any change in area sown to this cereal dominates the changes in the total area under crop. The area and yield of wheat for grain are given below for each State for the five years ended 1936-37; the table includes an estimate for the 1937-38 crop and the average for the decennium ended 1936-37 is also inserted:—

WHEAT.—AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Aust. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1932-33 ..	4,803,943	3,230,955	250,049	4,066,782	3,389,352	20,985	3,438	15,765,504
1933-34 ..	4,584,092	3,052,931	232,053	3,821,795	3,183,216	24,097	3,087	14,901,271
1934-35 ..	3,892,768	2,458,583	221,729	3,188,225	2,764,373	16,656	1,844	12,544,178
1935-36 ..	3,851,373	2,323,753	239,031	2,989,490	2,540,696	10,404	1,619	11,956,966
1936-37 ..	3,982,864	2,393,827	283,648	3,058,457	2,575,283	21,317	1,466	12,315,862
1937-38 (u) ..	4,416,000	2,686,000	373,000	3,162,000	3,026,000	21,000	2,000	13,686,000
Average for ten seasons 1928-37..	4,102,704	3,197,533	238,547	3,540,932	3,147,785	19,311	1,866	14,248,678
PRODUCTION.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1932-33 ..	78,870,000	47,843,129	2,493,002	42,429,614	41,791,866	433,031	65,439	213,926,981
1933-34 ..	57,057,000	42,613,106	4,361,614	35,373,466	37,305,100	560,665	66,852	177,337,803
1934-35 ..	48,678,000	25,850,528	4,076,181	27,455,600	26,983,000	307,525	40,398	133,393,232
1935-36 ..	48,822,000	37,552,062	2,690,316	31,015,744	23,313,417	186,014	36,216	144,217,769
1936-37 ..	55,668,000	42,844,816	2,016,236	28,714,653	21,549,000	570,895	26,352	151,389,952
1937-38 (a) ..	56,000,000	48,173,000	3,749,000	43,423,000	36,091,000	551,000	26,000	188,018,000
Average for ten seasons 1928-37..	52,064,400	39,086,610	3,514,402	32,279,090	35,521,322	423,586	34,103	162,923,513

(u) Subject to revision.

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

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

Seasonal conditions under which the wheat crop of 1936-37 were grown were generally favourable in all States excepting Western Australia. In Victoria the average yield of 17.90 bushels per acre considerably exceeded the average for the decennium ending 1936-37 (12.22 bushels). In New South Wales the average of 13.98 bushels exceeded the ten yearly average by 1.29 bushels whilst in South Australia the yield was 0.27 bushels in excess of the ten yearly average. Seasonal conditions in Western Australia were not good; the average yield was only 8.37 bushels per acre or 2.91 bushels below the decennial average. The average yield per acre for Australia in 1936-37 amounted to 12.29 bushels, compared with 12.06 bushels for the previous year and 11.43 bushels, the average for the decennium ending 1936-37. The total production of grain

for 1936-37 amounted to 151.4 million bushels compared with 144.2 million bushels, the production of the previous year, and with 213.9 million bushels, the record harvest of 1932-33².

The annual production of wheat over the seventeen seasons ending with 1936-37 has exceeded 100 million bushels. It is the opinion of agricultural experts that, notwithstanding the vagaries of the weather, the improved methods of agriculture—seed selection, bare fallowing, application of fertilizers, etc.—will assure the wheat crop of Australia against total failure in the future.

Final figures are not yet available in respect of the 1937-38 wheat harvest, but the area sown according to the latest estimate was 13,686,000 acres, an increase of approximately 1,370,000 acres or 11 per cent. on that of the previous year, whilst the production was 188.0 million bushels, or 13.74 bushels per acre, compared with 151 million bushels or 12.29 bushels per acre for the previous year. The increase in acreage during 1936-37 was the first recorded since 1932-33, and the prospect of improved prices for the grain was responsible for the substantial gain in acreage during 1937-38.

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

WHEAT.—AVERAGE AREA, PRODUCTION AND WHOLESALE PRICE, AUSTRALIA.

Period.	Area.	Production.	Yield per Acre.	Average Wholesale Price.
	Acres.	Bushels.	Bushels.	s. d.
1861-70	831,457	10,621,697	12.77	(a)
1871-80	1,646,383	17,711,312	10.76	5 1
1881-90	3,257,709	26,992,020	8.29	4 7
1891-1900	4,086,701	29,933,993	7.32	3 8
1901-10	5,711,230	50,058,070	9.82	3 10
1911-20	8,927,974	95,479,866	10.69	5 0
1921-30	11,290,543	135,399,860	11.99	5 8

(a) Not available.

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

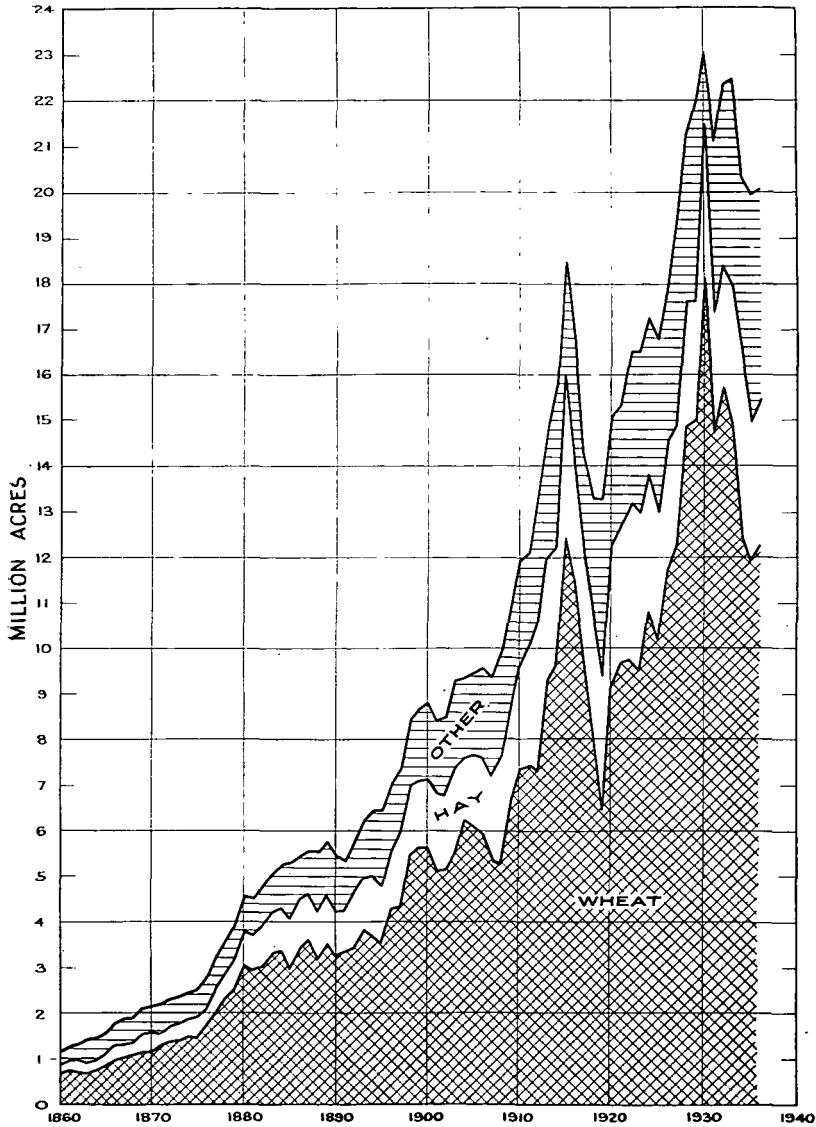
WHEAT.—YIELD PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Aus. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1931-32 ..	14.92	11.77	15.53	11.81	13.14	15.61	16.84	12.93
1932-33 ..	16.42	14.81	9.97	10.43	12.33	20.64	19.03	13.57
1933-34 ..	12.45	13.96	18.80	9.26	11.72	23.27	21.66	11.90
1934-35 ..	12.50	10.51	18.38	8.61	9.76	18.46	21.91	10.63
1935-36 ..	12.68	16.16	11.23	10.58	9.18	17.88	22.37	12.06
1936-37 ..	13.98	17.90	7.11	9.39	8.37	26.78	17.98	12.29
1937-38 (a)	12.68	17.93	10.05	13.73	11.93	26.50	17.33	13.74
Average 10 seasons, 1928-37	12.69	12.22	14.73	9.12	11.28	21.93	18.28	11.43

(a) Subject to revision.

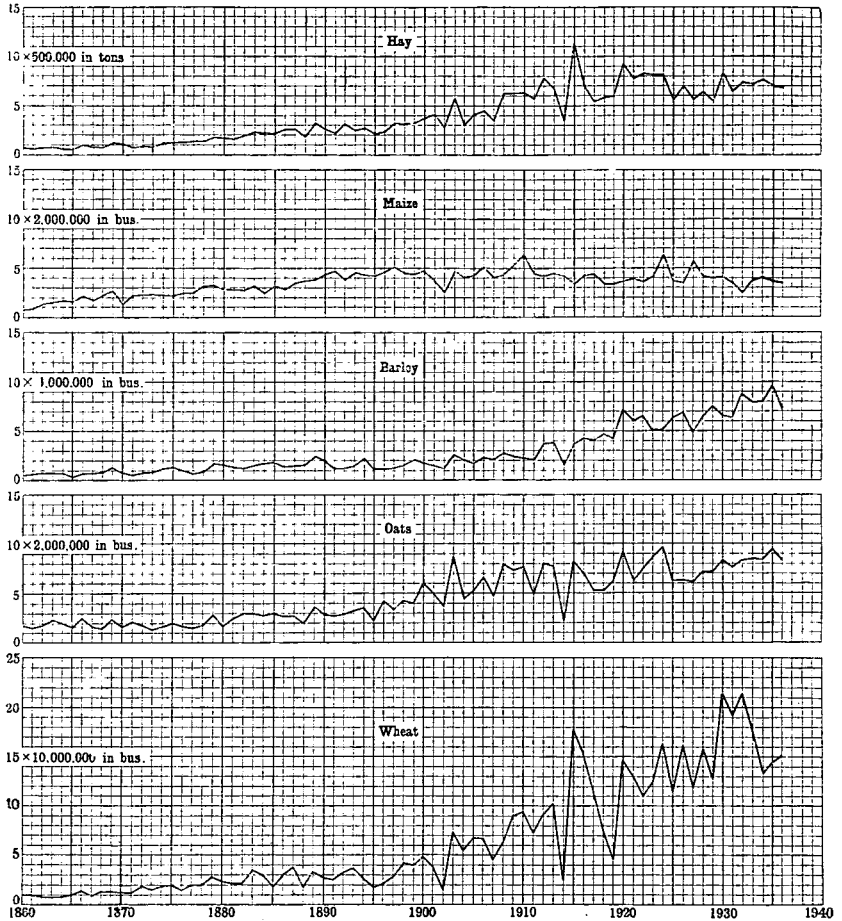
Variation in the average yields are chiefly due to the vagaries of the seasons. The best average yields for single seasons were obtained in 1924-25, 15.20 bushels; in 1920-21, 16.08 bushels; and in 1866, 16.35 bushels. In the last mentioned year less than 1,000,000 acres of relatively fertile land were sown. Annual averages for the past three decennia were 11.13, 12.48 and 11.43 bushels per acre.

AREA UNDER CROP—AUSTRALIA, 1860-61 TO 1936-37.



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

PRODUCTION OF PRINCIPAL CROPS—AUSTRALIA, 1860 TO 1936-37.



EXPLANATION.—A separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year, the vertical height of such square representing in the case of wheat, 10,000,000 bushels; oats, 2,000,000 bushels; barley, 1,000,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each curve above its base line denotes the aggregate yield in Australia of the particular crop during the successive seasons.

(iii) *Relation to Population.* The main wheat producing States of Australia are New South Wales, Victoria, South Australia and Western Australia. Queensland production closely approaches local demands, but Tasmania imports from the mainland to satisfy its needs though partly in exchange it ships flour made from local wheat which is particularly suitable for biscuits. Normally the production of wheat greatly exceeds Australian requirements, and from half to three-quarters of the crop is exported overseas. In the pre-war period 1909-1913 Australia ranked sixth on the list of exporting countries but the position has improved in recent years and its exports are now exceeded only by those of Canada and Argentine Republic. The quantity exported from Australia was approximately 20 per cent. of the total quantity shipped by exporting countries during the five years ended 1936.

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

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

State.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
	No.	No.	No.	No.	No.
New South Wales ..	17,040	16,312	15,099	14,923	15,425
Victoria ..	15,299	14,319	12,582	12,051	12,090
Queensland ..	1,655	2,188	1,957	1,847	2,211
South Australia ..	13,434	13,133	13,053	11,974	12,155
Western Australia ..	9,532	9,632	9,161	8,681	8,625
Tasmania ..	378	413	275	171	379
Total ..	57,338	55,997	52,127	49,647	50,885

(a) Total number of farms growing wheat for grain.

4. **Australian and Foreign Wheat Yields.**—(i) *Average Yield.* The next table gives the average return per acre in the principal wheat-growing countries of the world, ranging from a maximum in the Netherlands of 41 bushels per acre to a minimum in French Morocco of nearly 5 bushels per acre :—

WHEAT.—YIELD PER ACRE, VARIOUS COUNTRIES.

Country.	Average Yield in Bushels per acre.		Country.	Average Yield in Bushels per acre.	
	Average, 1934-1936.	1937.		Average, 1934-1936.	1937.
Netherlands ..	45.42	40.66	Brazil ..	14.38	(a) 14.39
Denmark ..	43.86	42.42	Portugal ..	14.31	13.31
Belgium ..	39.59	36.59	Argentine Republic ..	14.12	12.12
Ireland (Eire) ..	35.83	31.78	Spain ..	13.96	(a) 11.28
Sweden ..	34.98	35.05	Turkey ..	13.27	16.86
Great Britain and Northern Ireland ..	34.30	30.68	Syria ..	12.76	12.76
Switzerland ..	32.14	35.16	United States of America ..	12.40	13.56
Germany ..	31.72	33.63	Manchukyo ..	12.39	12.81
New Zealand ..	31.49	32.20	Greece ..	12.36	15.29
Norway ..	29.06	31.60	Rumania ..	12.27	15.74
Japan ..	28.89	28.49	Soviet Union ..	11.68	(b) 11.80
Egypt ..	28.89	31.94	Australia ..	11.65	13.74
Finland ..	25.09	26.10	Chosen ..	11.21	13.14
Czechoslovakia ..	24.06	24.44	Uruguay ..	10.78	12.58

WHEAT—YIELD PER ACRE, VARIOUS COUNTRIES—*continued.*

Country.	Average Yield in Bushels per acre.		Country.	Average Yield in Bushels per acre.	
	Average, 1934-1936.	1937.		Average, 1934-1936.	1937.
France ..	22.30	8.03	Canada ..	10.72	7.13
Italy ..	19.83	23.09	Colombia ..	10.49	(a) 11.33
Hungary ..	19.59	19.33	India ..	10.31	11.03
Latvia ..	19.54	18.61	Mexico ..	9.72	8.81
Lithuania ..	18.58	15.55	Algeria ..	8.58	7.70
Poland ..	17.66	16.92	Union of South Africa ..	8.12	5.80
Bulgaria ..	16.95	20.07	Tunisia ..	7.46	7.26
China ..	16.37	14.94	French Morocco ..	7.31	4.48
Estonia ..	16.29	16.58	Palestine ..	7.21	8.38
Iran ..	(c) 16.44	(d) 15.91	Iraq ..	5.56	6.56
Yugoslavia ..	15.77	16.37			
Chile ..	15.10	16.02			

(a) Year 1936. (b) Estimated. (c) Average 1933-34. (d) Year 1934.

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

WHEAT.—TOTAL PRODUCTION, VARIOUS COUNTRIES.

Country.	Yield in Bushels (,000 omitted).		Country.	Yield in Bushels (,000 omitted).	
	Average, 1934-1936.	1937.		Average, 1934-1936.	1937.
Soviet Union ..	1,070,101	1,200,000	Greece ..	25,436	32,375
China ..	818,659	636,456	Sweden ..	24,315	25,721
United States of America ..	593,076	874,008	French Morocco ..	23,953	13,547
India ..	354,977	366,390	Iran ..	23,647	(b) 70,941
France ..	292,308	253,539	Portugal ..	18,393	14,539
Canada ..	262,338	182,414	Union of South Africa ..	17,587	10,156
Italy ..	246,804	296,015	Netherlands ..	16,984	12,960
Argentine Republic ..	209,843	184,802	Syria and Lebanon ..	16,931	17,211
Germany ..	166,900	164,123	Belgium ..	16,337	15,500
Spain ..	155,439	(a) 121,493	Iraq ..	14,830	21,311
Australia ..	143,000	188,018	Denmark ..	12,969	13,522
Turkey ..	110,284	140,313	Tunisia ..	12,922	17,637
Rumania ..	100,571	138,160	Uruguay ..	12,089	15,142
Yugoslavia ..	82,951	86,252	Mexico ..	11,756	10,586
Hungary ..	78,597	72,157	Lithuania ..	9,504	8,109
Poland ..	76,228	70,776	Chosen ..	9,030	11,041
Great Britain and Northern Ireland ..	63,478	56,335	New Zealand ..	7,314	5,728
Czechoslovakia ..	55,898	51,268	Latvia ..	6,615	6,302
Bulgaria ..	48,941	64,911	Ireland (Eire) ..	6,109	6,989
Japan ..	47,191	50,412	Switzerland ..	5,427	6,081
Egypt ..	42,067	45,378	Brazil ..	5,377	(a) 5,512
Algeria ..	35,612	33,209	Finland ..	4,319	6,320
Chile ..	30,240	30,394	Colombia ..	3,973	(a) 4,530
Manchukuo ..	29,495	38,015	Palestine ..	3,226	4,681
			Estonia ..	2,603	2,785

NOTE.—The harvests reported above for 1937 relate to the year 1937 for the Northern, and 1937-38 for the Southern Hemisphere.

(a) Year 1936. (b) Year 1934.

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

WHEAT.—WORLD'S PRODUCTION.(a)

Year.		Area.	Production.	Yield per acre.
		Acres.	Bushels.	Bushels.
Average 1909-1913..	..	279,266,000	3,779,479,000	13.98
„ 1926-1930..	..	325,406,000	4,590,390,000	14.11
1932	..	346,285,940	4,599,944,000	13.28
1933	..	333,288,480	4,840,615,000	14.52
1934	..	330,619,800	4,620,153,000	13.97
1935	..	338,601,130	4,695,845,000	13.87
1936	..	345,223,410	4,476,740,000	12.97
Average 1932-1936	..	338,803,752	4,646,659,000	13.71

(a) From countries reporting including the Soviet Union.

The chief country excluded from the above table is China which in the year 1936 produced 848 million bushels of wheat from an area of 50.33 million acres or an average yield of 16.85 bushels per acre. It is stated by the International Institute, however, that these figures for China are largely conjectural and can be accepted only as approximate estimates. In addition they do not include all of the Territories embraced in the Chinese Republic. By the addition of the production of this country the world's total production for the year 1936 would exceed 5,326 million bushels.

The total area harvested in 1936 increased by 7 million acres. The Soviet Union with 4.5 million acres and the Argentine Republic with 4.0 million acres were chiefly responsible for this increase. With the exception of the United States, where the area was reduced by 2.4 million acres, there was little change in the areas harvested in the other producing countries of the world. In comparison with the average for the period 1926-30, areas sown to wheat throughout the world have increased considerably, the Soviet Union and European countries being the chief contributors.

The world's acreage under wheat in 1931 was the highest ever recorded, but the production was somewhat lower than that for the record year of 1930 when the production amounted to 4,882 million bushels. A succession of bountiful years commencing in 1928 led to very heavy accumulations of stocks, particularly in North America. These stocks reached their maximum between the years 1932 and 1934 but owing to reductions in world production during the three years ending in 1936, they were again reduced to normal dimensions. Heavy stocks are again accumulating with increases in production during the past two years.

Australia's contribution to the world's wheat during the last five years was 4 per cent. as to area and 3.5 per cent. in regard to production.

5. **Price of Wheat.**—The collapse in the price of wheat which occurred between 1928 and 1931 was chiefly due to the accumulation of stocks in exporting countries. The weighted average price of wheat (shippers' limits Sydney, Melbourne and Adelaide) fell from 5s. 1½d. in 1928 to 2s. 4½d. in 1931, a decline of 53 per cent. In 1932 the price increased to 3s. 0½d. but dropped to 2s. 9½d. in 1933 and to 2s. 7½d. in 1934. In September, 1935, prices increased to more than 3s. 4d. and fluctuated at about 3s. 6d. per bushel until August, 1936, when they again increased to more than 4s. 6d. In December, 1936, the average price was almost 5s. 3d. and from that month until October, 1937, the average exceeded 5s. The price receded to 4s. 6d. in November, and dropped further to 4s. 4d. in December, at which figure it remained until March, 1938, when it declined to 4s. Since March the price has fallen in successive stages to 2s. 6d. at

30th November, 1938. The table hereunder shows prices of Australian wheat during each of the last six years :—

PRICE OF WHEAT.—AUSTRALIA.

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

Item.	1932.	1933.	1934.	1935.	1936.	1937.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Price per bushel	3 0½	2 9½	2 7½	3 1½	4 1½	5 0½

6. Exports of Wheat and Flour.—(i) *Quantities.* The table appended shows the exports and net exports of wheat and flour from 1933-34 to 1937-38. 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 on only two occasions since 1900 to tide over lean seasons; in 1902-3 the wheat harvest was as low as 12,378,000 bushels and wheat and flour representing 12,468,000 bushels of wheat were imported, whilst an equivalent of 7,279,000 bushels was imported in 1914-15 to supplement the yield of 25 million bushels produced in that season. During the last five years exports in terms of wheat ranged between 87,635,144 bushels in 1933-34 and 124,764,585 bushels in 1937-38, the net exports for the period averaging 105,470,828 bushels :—

WHEAT AND FLOUR.—EXPORTS, AUSTRALIA.

Year.	Exports.			Net Exports.
	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bushels.(a)	Bushels.	Bushels.
1933-34 ..	61,598,528	26,039,616	87,638,144	87,635,144
1934-35 ..	75,959,690	33,502,608	109,462,298	109,457,913
1935-36 ..	76,993,133	29,619,888	106,613,021	106,610,518
1936-37 ..	71,778,020	27,109,344	98,887,364	98,885,980
1937-38 (b) ..	94,593,757	30,262,608	124,766,365	124,764,585

(a) Equivalent in bushels of wheat.

(b) Subject to revision.

(ii) *Destination.* The following table gives the exports of wheat to various countries for each of the five years ended 1936-37, together with averages for the pre-war period 1909-13 :—

EXPORTS OF WHEAT.—AUSTRALIA.

Country to which Exported.	Average, 1909-13.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
United Kingdom ..	30,395,384	50,939,948	45,531,316	41,198,166	46,776,049	44,244,213
India ..	(a)	1,770,913	280,120	168,697	486,535	200
Ireland (Eire) ..	(a)	3,604,872	3,959,445	2,622,852	4,744,435	5,698,955
Union of South Africa ..	2,992,355	10,730	39,472	21,027	326,905	2,777
Other British Countries ..	(a)	1,907,342	404,546	438,727	1,446,725	957,367
Belgium ..	1,218,131	826,517	37,180	253,020	2,428,838	612,773
China ..	(a)	33,740,244	1,476,012	13,663,894	5,052,790	1,272,500
Egypt ..	135,377	1,019,218	203,760	1,605,768	562	30,045
France ..	1,681,918	..	..	..	40,613	775,791
Germany ..	286,822	46,125	..	..	..	797,100
Italy ..	581,309	3,656,230	699,225	18,838	1,736,663	10,166,855
Japan ..	330,131	17,896,367	7,720,102	15,530,335	11,043,610	2,507,307
Other Foreign Countries ..	4,465,847	4,128,432	1,247,350	437,466	2,909,408	4,712,137
Total ..	41,997,274	119,555,938	61,598,523	75,959,690	76,993,133	71,778,020

(a) Included with "Other Foreign Countries."

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

EXPORTS OF FLOUR.—AUSTRALIA.

Country to which Exported.	Average, 1909-13.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom	27,699	121,995	136,677	99,332	130,998	177,329
Ceylon	3,389	19,239	18,393	18,821	17,090	16,210
Hong Kong	2,072	50,874	27,903	50,016	44,382	40,503
Malaya (British)	15,492	43,965	50,834	61,926	55,592	66,596
Union of South Africa	39,714	228	436	371	545	208
Other British Countries	(a)	53,167	61,490	46,158	60,314	65,758
China	(a)	160,062	79,261	814	951	2,113
Egypt	(a)	28,589	27,766	26,864	23,722	35,005
Manchuria (b)	(a)	(c)	(c)	240,181	112,789	9,422
Netherlands East Indies	26,099	73,170	80,623	82,147	82,077	74,928
Philippine Islands	13,680	11,484	10,998	27,437	49,491	35,522
Other Foreign Countries	47,367	68,677	47,851	43,304	48,130	41,184
Total	167,112	631,459	542,492	697,971	617,081	564,778

(a) Included with "Other Foreign Countries."

(b) Including Kwantung Peninsula.

(c) Included with China.

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

Although the local production of wheat is less than 4 per cent. of the world's total, the exports from Australia represented just under 20 per cent. of the quantities shipped during 1932 to 1936, and as an exporting country Australia has made the greatest relative advance since 1913.

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

Country.	Average 1909-13.		1935.	1936.	Average 1932-36.	
	'000 Bushels.	Per cent.	'000 Bushels.	'000 Bushels.	'000 Bushels.	Per cent.
Soviet Union (b) ..	157,109	23.71	26,711	4,255	17,070	2.91
United States of America ..	100,864	15.22	..	..	22,150	3.77
Argentine Republic ..	95,041	14.34	146,171	63,082	133,866	22.82
Canada ..	89,919	13.57	186,431	263,794	221,223	37.70
British India ..	50,886	7.68	1,532	20,044	5,160	0.88
Australia ..	49,417	7.46	100,419	95,897	116,621	19.88
All Other Countries ..	119,351	18.02	85,541	98,069	70,620	12.04
Total ..	662,587	100.00	546,805	545,141	586,710	100.00
World's Production ..	3,779,479		4,695,845	4,476,740	4,646,659	
Percentage of Australian Net Exports on Total Net Exports	7.46		18.36	17.59	19.88	
Percentage of Australian Production on World's Production ..	2.39		3.07	3.38	3.53	

(a) Including flour expressed in terms of wheat.

(b) The average for 1909-13 is not strictly comparable with the later years, owing to changes of frontiers under the Peace Treaty.

8. 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. Great Britain and Northern Ireland is easily the leading importing country. The quantities imported into certain European countries, particularly Germany, Netherlands, Belgium and Italy are both relatively and actually much smaller now than formerly owing to the encouragement given to the local wheat-growing industries in those countries. During recent years the imports of wheat into China and Japan have grown considerably, and a large share in this trade has been supplied by Australia :—

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

Country Importing.	Average, 1909-13.		1935.	1936.	Average, 1932-36.	
	'000 Bushels.	Per cent.	'000 Bushels.	'000 Bushels.	'000 Bushels.	Per cent.
Great Britain and Northern Ireland ..	219,365	30.42	208,819	208,932	217,102	33.09
Germany ..	89,732	12.44	5,972	2,752	19,804	3.02
Netherlands ..	76,340	10.59	21,495	20,301	24,102	3.67
Belgium ..	73,963	10.26	38,922	43,993	44,417	6.77
Italy ..	57,156	7.93	20,319	19,698	23,011	3.51
France ..	38,682	5.36	28,617	21,929	38,326	5.84
Brazil ..	20,774	2.88	34,623	36,288	33,548	5.11
Egypt ..	7,915	1.10	1,612	158	1,421	0.22
Union of South Africa ..	6,519	0.90	80	66	451	0.07
China (c) ..	5,526	0.77	44,443	5,813	46,983	7.16
Japan ..	3,714	0.52	16,777	12,504	19,016	2.90
All Other ..	121,409	16.83	207,073	142,059	187,880	28.64
Total ..	721,095	100.00	628,752	514,493	656,061	100.00

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

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

AVERAGE HUMAN CONSUMPTION, 1932-33 TO 1936-37.

Flour milled	1,290,600 tons
Less net exports of flour	610,699 tons
Less net exports of flour in biscuits	1,037 ..
	611,736 ..
	678,864 ..
Change in flour stocks	9,208 ..
Net quantity consumed	669,656 ..
Equivalent in terms of wheat	32,143,488 bushels
Net quantity consumed per head of population—	
As flour	200 lb.
As wheat	4.8 bushels

AVERAGE USED FOR SEED, 1932-33 TO 1936-37.

Average area sown for grain, hay and green forage ..	14,434,034 acres
Average quantity of seed used	14,212,723 bushels
Average quantity of seed used per acre	59 lb.
Average quantity per head of population	2.12 bushels

In addition to the above, allowance must be made for wheat fed to poultry and other live stock. The quantity so used is estimated at 8,565,000 bushels or 1.28 bushels per head of population for the five years ended 1936-37. Almost the whole of this quantity is used in the form of grain as feed for poultry, principally fowls, which numbered about 16.7 million during the year 1936-37. The average quantity of flour consumed per annum for the five years under consideration was 200 lb. per head of population, which, expressed in terms of wheat, represents 4.8 bushels. The estimates of grain used for seed in Victoria, South Australia and Western Australia are based on data collected from growers. In the other States estimates supplied by the Agricultural Departments have been used. The average annual quantity used for the purposes indicated during the last five years was 2.12 bushels per head of population, or 63 lb. per acre sown. The consumption of wheat in Australia for all purposes during the period dealt with averaged 54,921,000 bushels, or 8.19 bushels per head of population.

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

**PER CAPITA CONSUMPTION OF WHEAT, EXCLUDING SEED, FOR PERIOD
1932-33 TO 1936-37.**

Country.	Used for human consumption.	Fed to Stock.	Total.
	Bushels.	Bushels.	Bushels.
Argentine Republic	5.6	0.4	6.0
Australia	4.8	1.3	6.1
Canada	4.0	3.0	7.0
New Zealand	4.2	1.2	5.4
Great Britain and Northern Ireland (a)	4.8	1.0	5.8
United States.. ..	3.6	1.0	4.6

(a) Period 1922-29.

10. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in Australia during the season 1936-37 is shown below.

WHEAT.—VALUE OF CROP(a), 1936-37.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value	14,612,850	11,693,065	580,000	7,477,413	5,950,936	149,860	6,917	40,471,041
Value per acre ..	£3/13/4	£4/17/8	£2/0/11	£2/8/11	£2/6/3	£7/0/7	£4/14/4	£3/5/9

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

11. **Varieties of Wheat Sown.**—Particulars of the variations of wheat sown and the areas thereunder are collected from time to time. The following table shows particulars of the nine principal varieties sown in the four main producing States and the percentage each bears to the total area sown for the year 1936.

PRINCIPAL VARIETIES OF WHEAT SOWN.—STATES, 1936.

New South Wales.		Victoria.		South Australia.		Western Australia.	
Variety.	Per-cent-age.	Variety.	Per-cent-age.	Variety.	Per-cent-age.	Variety.	Per-cent-age.
	%		%		%		%
Ford ..	20.9	Ghurka ..	45.1	Ranee ..	22.6	Bencubbin ..	31.9
Nabawa ..	20.7	Ranee ..	22.3	Nabawa ..	15.5	Gluchub ..	12.0
Dundee ..	12.3	Free Gallipoli ..	14.7	Sword ..	11.8	Merredin ..	9.8
Baringa ..	6.7	Sepoy ..	3.2	Waratah ..	5.4	Gluyas Early ..	8.3
Waratah ..	6.6	Dundee ..	2.8	Gluyas ..	5.4	Totadgin ..	7.0
Bobin ..	4.1	Nabawa ..	1.5	Ford ..	5.2	Nabawa ..	6.3
Ranee ..	4.1	Rajah ..	1.5	Gallipoli ..	3.0	Noongar ..	5.7
Yandilla King ..	2.4	Bencubbin ..	1.2	Ghurka ..	3.0	Waratah ..	3.1
Bencubbin ..	2.4	Major ..	1.0	Late Gluyas ..	2.3	Ford ..	2.0
All Others ..	19.8	All others ..	6.7	All Others ..	25.8	All Other- ..	13.9
			°				
Total ..	100.00	Total ..	100.00	Total ..	100.00	Total ..	100.00

It is interesting to note the changes that have taken place in the leading varieties during recent years. In New South Wales, Nabawa, a variety relatively unimportant in 1929, became prominent in 1933. It occupied the leading position until 1936 when it was displaced by Ford. The leading variety sown in Victoria between 1929 and 1934 was Free Gallipoli, but since 1935 it has been supplanted by Ghurka. In South Australia Nabawa came into prominence in 1933 but in 1936, though still relatively important, it ceded leading position to Ranee. Nabawa was the principal variety in Western Australia until it was displaced by Bencubbin in 1934. While this latter variety had occupied only 7 per cent. of the total area in 1933, in the year following no less than 22.5 per cent. was sown to Bencubbin and in 1936 it retained its leading position with 32 per cent. More than 1,000 different varieties of Australian wheat have been catalogued by the Council for Scientific and Industrial Research.

12. **Stocks of Wheat and Flour.**—Stocks of wheat and flour held by each State at 30th November, 1937, and the total held in Australia on the same date for the previous four years will be found in the following table. The figures have been compiled from information collected from millers, merchants, the Railway Departments and other sources, but are exclusive in certain instances of stocks held by farmers:—

STOCKS OF WHEAT AND FLOUR.—AUSTRALIA, 30th NOVEMBER, 1937.

State.	Wheat.		Flour.		Total in terms of wheat.(a)
		Bushels.		Tons.	Bushels.
New South Wales	1,913,919	..	28,300	3,272,319
Victoria	2,055,913	..	22,831	3,151,800
Queensland	133,577	..	4,933	370,361
South Australia	521,778	..	8,167	913,794
Western Australia	271,695	..	10,109	756,927
Tasmania	193,866	..	2,110	295,146
Total, 30th November, 1937	5,090,748	..	76,450	8,760,347
.. .. 1936	3,505,469	..	101,063	8,356,493
.. .. 1935	12,371,270	..	89,637	16,673,867
.. .. 1934	34,708,963	..	112,385	40,103,463
.. .. 1933	14,375,614	..	86,638	18,534,212

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

13. **Voluntary Wheat Pools.**—(i) *General.* Voluntary wheat pools operated in the States of Victoria, South Australia and Western Australia during the season 1936-37. In New South Wales the pool was inactive during the year. The system adopted in these States is somewhat similar, and is a co-operative one controlled by trustees, or committees appointed by the growers, the whole of the proceeds, less administrative

expenses, being distributed amongst contributors of wheat to the pool. The trading names of these organizations in the various States are as follows :—

New South Wales.—The Wheat Growers' Pooling and Marketing Co. Ltd.

Victoria.—Victorian Wheat-growers' Corporation Ltd.

South Australia.—South Australian Co-operative Wheat Pools Ltd.

Western Australia.—The Trustees of the Wheat Pool of Western Australia.

The marketing of wheat in Queensland is conducted on a compulsory basis by the State Wheat Board, consisting of four elected representatives and one member nominated by the Minister for Agriculture who represents the Queensland Government. The present Board was elected on 1st August, 1935, and holds office for three years from that date.

(ii) *Delivery of Wheat to Pools, Costs, etc.* The quantities of wheat received and the estimated average costs per bushel of rail freight and of administrative and other expenses are given hereunder. As the season's operations are not yet complete, the costs shown are subject to revision.

WHEAT RECEIVED BY VOLUNTARY POOLS, 1937-38.

Particulars.	Unit.	Victoria.	Queensland. (a)	South Australia.	Western Australia.
Wheat received	Bushel	57,853	3,565,381	876,490	9,035,000
Percentage on Total Market- able Wheat	%	0.00	.92	2½	28
Estimated average cost of rail freight to seaboard, per bushel	d.	4.9	5	3½	4½
Estimated average cost per bushel of Administration and other expenses ..	d.	4.1	(b)3	4½	3½

(a) Compulsory Pool.

(b) Approximate.

(iii) *Finance.* The requisite financial accommodation in Victoria and South Australia was furnished by the Commonwealth Bank. In Western Australia funds were made available by financial houses in London. Initial advances made available to growers on the delivery of their wheat at country stations are shown, together with subsequent payments, in the following table :—

WHEAT POOLS ADVANCES(a) PER BUSHEL MADE TO SEPTEMBER, 1938.

Particulars.	Victoria.	South Australia.	Western Australia.
	s. d.	s. d.	s. d.
1st Payment	3 7½	3 1	3 0
2nd Payment		4½	0 7½
3rd Payment		1½	0 2
4th Payment .. ..		..	(b)0 0½

(a) Less Rail Freight.

(b) Bulk wheat, ½d. for bagged wheat.

In Queensland the Commonwealth Bank provides the financial assistance necessary to make advances on wheat delivered, the State Government guaranteeing the Wheat Board's accounts with the bank. All wheat not required for consumption on the farm is delivered to the Board, which is the sole marketing agency. The crop in 1937-38 amounted to 3,865,324 bushels, of which 3,565,381 bushels, or 92 per cent., was delivered into the pool. Net advances made to growers on No. 1 quality wheat totalled 3s. 10d. per bushel; other grades bear the dockages ranging from ½d. to 4½d. per bushel assessed at the time of delivery according to quality. The dockages being a deduction from the first advance, subsequent advances are uniform on all grades.

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

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

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

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

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

WHEAT HOLDINGS AND SHEEP, 1935-36.

State.	Holdings.				Number of Sheep.	Total Number of Sheep in State. (a)	Percentage on Wheat Farms.
	Without Sheep.		With Sheep.				
	No.	%	No.	%	No.	No.	%
New South Wales ..	2,296	14.42	13,627	85.58	13,393,541	51,936,000	25.78
Victoria ..	3,806	27.62	9,974	72.38	4,847,152	17,457,291	27.73
South Australia ..	4,115	32.18	8,672	67.82	3,750,864	7,945,745	47.21
Western Australia ..	2,295	25.39	6,744	74.61	4,482,667	11,082,972	40.45
Total (Four States)	12,512	24.28	39,017	75.72	26,468,224	88,422,008	29.93

(a) Including Sheep outside Wheat Areas.

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

WHEAT HOLDINGS AND DAIRY COWS, 1935-36.

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

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

(b) Including dairy cows outside wheat areas.

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

WHEAT HOLDINGS AND PIGS, 1935-36.

State.	Holdings.				Number of Pigs.	Total Number of Pigs in State. (a)	Percentage on Wheat Farms.
	Without Pigs.		With Pigs.				
	No.	%	No.	%	No.	No.	%
New South Wales ..	10,462	65.70	5,461	34.30	59,673	436,944	13.66
Victoria ..	8,298	60.22	5,482	39.78	41,100	314,301	13.08
South Australia ..	5,425	42.43	7,362	57.57	58,628	93,458	62.73
Western Australia ..	5,318	58.83	3,721	41.17	62,079	98,026	63.33
Total (Four States)	29,503	57.26	22,026	42.74	221,480	912,729	23.49

(a) Including Pigs outside Wheat Areas.

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

**WHEAT HOLDINGS CLASSIFIED ACCORDING TO AREAS SOWN.
(PRINCIPAL PRODUCING STATES.)**

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

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

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

WHEAT HOLDINGS CLASSIFIED ACCORDING TO AVERAGE YIELDS.

PRINCIPAL PRODUCING STATES.

Average Yield per Acre.		Holdings.		Area under Grain.		Production.	
Bushels.		No.	%	'000 Acres.	%	'000 Bushels.	%
Under 3	..	5,404	10.5	1,445	12.3	1,998	1.4
3 and under 6	..	5,817	11.3	1,585	13.5	7,132	5.1
6	" " 9	6,672	12.9	1,751	15.0	13,085	9.3
9	" " 12	6,830	13.3	1,659	14.2	17,283	12.2
12	" " 15	6,180	12.0	1,405	12.0	18,828	13.3
15	" " 18	5,885	11.4	1,170	10.0	19,195	13.6
18	" " 21	4,929	9.6	906	7.7	17,629	12.5
21	" " 24	3,628	7.0	684	5.8	15,365	10.9
24	" " 27	2,994	5.8	544	4.7	13,852	9.8
27	" " 30	1,551	3.0	298	2.6	8,471	6.0
30	" " 33	1,109	2.2	182	1.6	5,700	4.0
33	" " 36	290	0.6	46	0.4	1,593	1.1
36	" " 39	172	0.3	23	0.2	807	0.6
39	" " 42	36	0.1	4	..	144	0.1
42	" " 45	13	..	2	..	79	0.1
45	" " 48	15	..	1	..	59	..
48	" " 54	4	..	..	..	25	..
Total	..	51,529	100.0	11,705	100.0	141,305	100.0

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

§ 5. Oats.

1. Progress of Cultivation.—(i) *Area and Production.* Oats are usually next in importance to wheat amongst the grain crops cultivated in Australia, but while wheat grown for grain accounted for 59.78 per cent., oats represented only 7.40 per cent. of the area under crop in 1936-37. The acreage and production of oats for the last five years are shown in the table hereunder.

OATS.—AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Aus. Cap. Ter.	Australia.
AREA.								
1932-33	Acres. 163,809	Acres. 368,846	Acres. 3,733	Acres. 174,244	Acres. 285,850	Acres. 30,682	Acres. 128	Acres. 1,027,262
1933-34	203,693	525,976	5,207	265,074	342,642	31,199	130	1,373,921
1934-35	237,495	506,638	4,566	367,102	408,810	36,611	331	1,561,553
1935-36	279,622	505,623	6,823	299,771	448,156	23,928	248	1,564,171
1936-37	235,817	381,069	7,932	414,723	463,129	21,953	238	1,524,861
Average 10 seasons, 1928-37 ..	187,169	460,545	3,995	262,810	343,778	31,829	194	1,290,320
PRODUCTION.								
1932-33	Bushels. 3,513,780	Bushels. 6,363,853	Bushels. 58,729	Bushels. 1,788,712	Bushels. 3,603,447	Bushels. 828,239	Bushels. 2,868	Bushels. 16,159,628
1933-34	3,178,470	6,778,754	69,534	2,087,772	3,949,905	854,239	3,357	16,922,031
1934-35	3,856,680	5,248,787	82,198	2,412,117	4,244,322	1,054,256	7,062	16,966,022
1935-36	4,735,740	6,365,056	119,459	2,380,908	4,557,774	1,556,776	5,061	18,720,774
1936-37	3,967,560	6,107,885	22,417	2,363,806	3,445,167	751,244	4,200	16,662,279
Average 10 seasons, 1928-37 ..	3,138,771	5,955,212	56,316	2,008,571	3,717,844	903,960	3,386	15,574,400

The oat crop showed considerable variation during the past decennium, ranging from 12,084,265 bushels in 1927-28 to 18,720,774 bushels in 1935-36, with an average for the period of 15,784,060 bushels. The demand for the grain for oatmeal varies from 1½ million bushels to 2 million bushels annually. The cereal is mainly used as feed grain, and its value, particularly in good seasons, does not warrant an extension of area.

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

(ii) *Average Yield.* The average yield per acre of oats varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Averages for each of the last five seasons, and for the decennium 1928 to 1937 are given in the table below :—

OATS.—AVERAGE YIELD PER ACRE.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Aus- tralia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1932-33	21.45	17.25	15.73	10.27	12.61	27.02	22.41	15.73
1933-34	15.60	12.89	13.35	7.88	11.53	27.38	25.82	12.32
1934-35	16.25	10.36	18.00	6.57	10.38	28.80	23.14	10.83
1935-36	16.94	12.59	17.50	7.94	10.17	23.27	20.41	11.97
1936-37	16.82	16.03	2.83	5.70	7.44	34.22	17.65	10.93
Average for 10 seasons 1928-37	16.77	12.93	14.10	7.64	10.81	28.40	17.45	12.23

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

2. *World's Production.*—The world's production of oats for the year 1936, as computed by the International Institute of Agriculture, amounted to 3,178 million bushels. This quantity was harvested from 136 million acres, and represents an average yield of 23.40 bushels per acre. In comparison with this average return per acre, that of Australia for the same period (10.93 bushels) appears very small. Yields in excess of 40 bushels per acre are not uncommon, whilst in Belgium, Netherlands and Ireland (Eire) the average exceeded 50 bushels per acre during 1936. The following table shows the world's production and average yield for the last five years, together with the average for the quinquennium 1927-1931 :—

OATS.—WORLD'S PRODUCTION.

Year.	Area.	Production.	Average Yield per Acre.
	Million. Acres.	Million Bushels.	Bushels.
Average 1927-31	147	3,288	22.30
1932	142	3,556	25.20
1933	139	3,365	24.09
1934	136	3,210	23.64
1935	146	3,719	25.43
1936	136	3,178	23.40

3. **Prices of Oats.**—The average wholesale prices in the Metropolitan markets for the year 1936–37 are given in the following table :—

OATS.—AVERAGE WHOLESALE PRICES, 1936–37.

Particulars.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	2 9½	2 7½	3 5½	2 5½	2 11½	2 7½

4. **Imports and Exports.**—The production of oats in Australia has not yet reached sufficient proportions to admit of a regular export trade. During the year 1927–28 there was a net import of 460,581 bushels. The quantities and values of oats imported into and exported from Australia during the years 1932–33 to 1936–37 are given hereunder :—

OATS.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	Bushels.	£	Bushels.	£	Bushels.	£
1932–33 ..	4,443	981	245,178	26,311	240,735	25,330
1933–34 ..	3,542	772	87,275	12,789	83,733	12,017
1934–35 ..	7,302	1,728	576,062	61,581	568,760	59,853
1935–36 ..	3,790	1,065	244,698	28,783	240,908	27,718
1936–37 ..	11,828	1,676	258,703	35,923	246,875	34,247

(a) Australian currency values.

The quantity of oats imported into Australia is not very great and is obtained chiefly from New Zealand, while the principal countries to which oats were exported during the years quoted were New Zealand, Malaya (British), Ceylon, India and Mauritius. During 1934–35, 1935–36 and 1936–37 the United Kingdom has taken 457,000, 107,000 and 150,000 bushels respectively.

5. **Oatmeal, etc.**—The production of oatmeal in Australia during 1936–37 amounted to 358,529 cwt., practically the whole of which is consumed locally, the quantity of oats used for oatmeal being 1,841,574 bushels, or about 11 per cent. of the total production, Oversea trade in this and similar products is small; the imports of oatmeal, wheatmeal and rolled oats during 1936–37 amounted to 366 cwt., and exports to 30,548 cwt.

6. **Value of Oat Crop.**—The estimated value of the oat crop for the season 1936–37 was as follows :—

OATS.—VALUE OF CROP, (a) 1936–37.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value ..	529,010	814,385	3,735	330,921	498,831	104,700	559	2,282,141
Value per acre ..	£2/4/10	£2/2/9	£0/9/5	£0/15/11	£1/1/7	£4/15/5	£2/7/0	£1/9/11

(a) Exclusive of the value of straw.

§ 6. Maize.

1. **States Growing Maize.**—Maize is grown for grain chiefly in New South Wales and Queensland, the area so cropped in these States during the season 1936–37 being 297,552 acres, or 94 per cent. of the total for Australia. Of the balance, Victoria contributed 20,115 acres, Western Australia 38 acres and the Australian Capital Territory 5 acres. The climate of Tasmania is unsuitable for the growing of maize for grain. In the States mentioned the crop is grown to a greater or lesser extent for green forage, particularly in connexion with the dairying industry.

2. Progress of Cultivation.—(i) *Area and Production.* Notwithstanding its extensive cultivation in other countries the area under maize in Australia has fluctuated around 300,000 bushels during the past decennium. Compared with the previous year, the area in 1936-37 increased by 20,100 acres, but the acreage sown was considerably less than the comparatively large areas of 414,914 and 400,544 acres sown respectively in 1910-11 and 1927-28.

The area and production of maize for grain in each State for the last five years and the average for the decennium 1928-1937 are given in the following table.

MAIZE.—AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Nor. Ter.	Aus. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1932-33..	113,333	16,425	98,487	5	8	..	2	228,260
1933-34..	117,231	19,538	166,948	18	14	..	12	303,761
1934-35..	115,570	18,727	160,607	30	34	..	13	294,981
1935-36..	119,849	20,377	157,370	3	..	..	17	297,616
1936-37..	116,286	20,115	181,266	..	38	..	5	317,710
Average 10 seasons 1928-37	115,720	17,849	168,232	6	26	1	7	301,841
PRODUCTION.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1932-33..	2,935,140	477,145	1,653,853	135	42	..	6	5,066,321
1933-34..	3,133,890	644,033	3,715,764	150	183	..	60	7,494,080
1934-35..	3,238,590	719,360	4,142,079	450	216	..	132	8,100,827
1935-36..	3,324,780	638,643	3,504,045	108	..	..	129	7,467,705
1936-37..	3,302,520	794,506	3,148,814	..	486	..	57	7,246,383
Average 10 seasons 1928-37	3,084,405	654,979	4,072,654	106	337	..	59	7,812,540

The greatest production of maize in Australia was recorded in 1910-11, when it amounted to over 13,000,000 bushels. A bountiful harvest in Queensland increased the Australian total to 12,400,000 bushels in 1924. The production in 1936-37 amounted to 7,246,383 bushels, and the average for the decennium ended 1936-37 was 7,812,540 bushels.

(ii) *Average Yield.* The following table gives particulars of the average yield per acre of the maize crops of the States for the seasons 1932-33 to 1936-37 and for the decennium 1928-1937 :—

MAIZE.—AVERAGE YIELD PER ACRE.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	Aus. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1932-33 ..	25.90	29.05	16.79	27.00	5.25	..	3.00	22.20
1933-34 ..	26.73	32.96	22.26	8.33	13.07	..	5.00	24.67
1934-35 ..	28.02	38.41	25.79	15.00	6.35	..	10.15	27.46
1935-36 ..	27.74	31.34	22.27	36.00	..	..	7.59	25.09
1936-37 ..	28.40	39.50	17.37	..	12.79	..	11.40	22.81
Average for 10 seasons 1928-37	26.65	36.70	24.21	17.67	12.96	..	8.43	25.88

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 for Queensland.

(iii) *Production per Acre—Various Countries.* The average for Australia for the past 10 years was 25.9 bushels per acre. During the period 1927–31 the United States of America averaged 25.0 bushels, Argentine Republic 31.9 bushels, Rumania 16.4 bushels, and the Soviet Union 14.5 bushels per acre.

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

MAIZE.—WORLD'S PRODUCTION.

Year.				Area.	Production.	Average Yield per Acre.
				Million Acres.	Million Bushels.	Bushels.
Average 1927–31	..	..	..	200	4,354	21.78
1932 ..	..	..	..	217	4,925	22.78
1933 ..	..	..	..	213	4,334	20.39
1934 ..	..	..	..	203	3,697	18.16
1935 ..	..	..	..	203	4,283	21.03
1936 ..	..	..	..	201	3,775	18.79

The United States 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 one per cent.—is exported.

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

MAIZE.—AVERAGE PRICE, SYDNEY.

Particulars.	1933–34.	1934–35.	1935–36.	1936–37.	1937–38.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Average price per bushel ..	3 6 $\frac{1}{4}$	3 5	4 10 $\frac{1}{2}$	5 3	5 2 $\frac{1}{4}$

5. *Overseas Imports and Exports.*—The imports of maize into Australia during the five years ended 1934–35 were negligible, averaging less than 2,000 bushels compared with nearly 600,000 bushels during the five years ended 1929–30. In 1935–36 there was a comparatively large import into New South Wales from South Africa, but in 1936–37 imports were again small. Details of imports and exports for the years 1932–33 to 1936–37 are as follows :—

MAIZE.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	Bushels.	£	Bushels.	£	Bushels.	£
1932–33 ..	5,064	878	1,370	377	3,694	501
1933–34 ..	23	26	3,120	731	–3,097	–705
1934–35 ..	7	16	3,430	851	–3,423	–835
1935–36 ..	47,009	12,233	527	129	47,082	12,104
1936–37 ..	7,934	2,326	1,130	366	6,804	1,960

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

(a) Australian currency values.

7. **Value of Crop.**—The value of the crop for the season 1936-37 was as follows :—

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	A.C.T.	Australia.
Aggregate value ..	£ 853,150	£ 216,764	£ 714,570	£ ..	£ 15	£ 21,784,716
Value per acre ..	£7/6/9	£10/15/6	£3/18/10	£ ..	£3/0/0	£5/12/4

§ 7. Barley.

BARLEY.—AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
AREA.							
	Acre.	Acre.	Acre.	Acre.	Acre.	Acre:	Acre.
1932-33.. ..	7,736	93,555	4,790	314,286	13,772	8,595	(a) 442,833
1933-34.. ..	10,006	106,339	3,765	307,423	24,534	7,840	(b) 464,959
1934-35.. ..	9,480	87,599	9,604	316,807	26,589	5,779	(c) 455,921
1935-36.. ..	11,583	116,371	6,380	393,741	31,568	5,227	564,870
1936-37.. ..	12,004	100,003	6,652	304,559	40,092	6,947	470,257
Average 10 seasons							
1928-37 ..	8,925	90,766	6,748	290,327	21,854	6,561	(d) 425,232

	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1932-33.. ..	154,530	1,995,446	101,933	6,070,161	135,243	211,570	(a) 8,670,077
1933-34.. ..	165,120	1,888,981	152,480	5,254,280	324,846	172,267	(b) 7,959,018
1934-35.. ..	168,090	1,609,518	156,604	5,682,923	237,765	175,503	(c) 8,032,455
1935-36.. ..	214,860	2,314,427	91,366	6,493,983	417,627	92,714	9,624,077
1936-37.. ..	205,890	2,143,109	37,378	4,260,462	449,235	240,693	7,336,767
Average to seasons 1928-37	149,604	1,848,284	113,438	4,553,707	249,286	158,857	(d) 7,374,109

(d) " " " " 51 acres, 933 bushels.

South Australia and Victoria were the only States producing more than 1,000,000 bushels on the average during the past decade, the yields being respectively 4,853,707 and 1,848,284 bushels, the higher return per acre in the latter State tending to diminish the advantage held by South Australia in regard to acreage.

(ii) *Malting and Other Barley.* (a) Year 1936-37. Particulars for the season 1936-37 are as follows :—

BARLEY, MALTING AND OTHER.—AREA AND PRODUCTION, 1936-37.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting Barley ..	6,448	83,802	4,319	264,286	28,412	6,530	393,797
Other Barley ..	5,556	16,201	2,333	40,273	11,680	417	76,460
Total ..	12,004	100,003	6,652	304,559	40,092	6,947	470,257
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Malting barley ..	114,090	1,782,931	27,302	3,878,095	352,050	228,292	6,382,760
Other barley ..	91,800	360,178	10,076	382,367	97,185	12,401	954,007
Total ..	205,890	2,143,109	37,378	4,260,462	449,235	240,693	7,336,767

Taking Australia as a whole, about 84 per cent. of the area under barley in 1936-37 was sown with malting or English barley while the remainder consisted of Cape and other varieties. The proportion, however, varied largely in the several States. The disposal of barley during the season 1936-37 was as follows: malt works, 2,818,519 bushels; distilleries, 65,118 bushels; exports, 2,605,620 bushels; leaving a balance of approximately 1,847,510 bushels for feed, pearling and seed.

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

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

Season.	Acres.			Bushels.			Average Yield per Acre.		
	Malting.	Other.	Total.	Malting.	Other.	Total.	Malting.	Other.	Total.
1932-33 ..	399,731	43,102	442,833	7,837,111	832,966	8,670,077	19.60	19.33	19.58
1933-34 ..	410,478	54,481	464,959	7,013,769	945,249	7,959,018	17.09	17.35	17.12
1934-35 ..	395,243	60,678	455,921	6,990,756	1,041,699	8,032,455	17.69	17.17	17.62
1935-36 ..	485,870	79,000	564,870	8,412,712	1,212,265	9,624,977	17.31	15.35	17.04
1936-37 ..	393,797	76,460	470,257	6,382,760	954,007	7,336,767	16.20	12.48	15.60
Average 10 seasons									
1928-37 ..	368,474	56,758	425,232	6,402,969	971,140	7,374,109	17.38	17.11	17.34

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

(iii) *Average Yield.* The average yield of barley per acre varies considerably in the different States, being as a rule highest in Tasmania and Victoria, and lowest in Western Australia. Details for each State during the last five seasons, and for the decennium 1928-37, are given in the following table :—

BARLEY.—YIELD PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1932-33	19.98	21.33	21.09	19.31	9.82	24.62	19.58
1933-34	16.50	17.76	17.40	17.09	13.34	21.97	17.12
1934-35	17.83	18.37	16.31	17.94	8.94	30.37	17.62
1935-36	18.55	19.89	14.32	16.49	13.23	17.74	17.04
1936-37	17.15	21.43	5.62	13.99	11.21	34.65	15.60
Average for 10 seasons 1928-37	16.76	20.37	17.51	16.72	11.41	24.21	17.34

2. *Comparison with Other Countries.*—In comparison with the barley production of other countries, that of Australia appears extremely small. Particulars for some of the leading countries during 1936 are as follows :—China, 359 million bushels ; Germany, 150 million bushels ; United States, 142 million bushels ; India, 104 million bushels ; Turkey, 95 million bushels ; and Canada, 69 million bushels. Details of production in the Soviet Union are not available for 1936 but in 1935 production approximated 360 million bushels.

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

BARLEY.—WORLD'S PRODUCTION.

Period.	Area.	Production.	Average Yield per Acre.
	Million Acres.	Million Bushels.	Bushels.
Average 1927-31	89.5	1,771	19.77
1932	90.4	1,797	19.81
1933	87.3	1,774	20.34
1934	88.2	1,678	19.09
1935	95.1	1,861	19.63
1936	87.3	1,606	18.40

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

BARLEY.—AVERAGE MELBOURNE PRICES PER BUSHEL.

Particulars.	1933-34.	1934-35.	1935-36.	1936-37.	1937-38.
	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley	2 8	2 11	2 10½	4 0½	4 1½
Cape barley	2 3½	2 5	2 5	3 7	3 7

5. **Imports and Exports.**—Australian exports of barley during the last five years averaged 2,946,500 bushels. The grain was consigned mainly to the United Kingdom, New Zealand and Belgium, South Australia being the principal exporting State. Particulars of the Australian overseas imports and exports for the last five years are contained in the following table:—

BARLEY.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	Bushels.	£	Bushels.	£	Bushels.	£
1932-33	1,396	470	3,051,138	352,152	3,049,742	351,682
1933-34	134	59	2,701,908	305,359	2,701,774	305,300
1934-35	12	5	2,901,708	394,466	2,901,696	394,461
1935-36	2	3	3,472,084	369,391	3,472,082	369,388
1936-37	126	69	2,605,620	504,495	2,605,494	504,426

(a) Australian currency values.

In some years there is an export of Australian pearl and scotch barley, the total for 1936-37 reaching 18,330 lb., valued at £183, consigned mainly to the Pacific Islands.

6. **Imports and Exports of Malt.**—In pre-war times the imports of malt into Australia were fairly extensive, the supply being obtained principally from the United Kingdom. Since 1914, however, imports have practically ceased. The production of malt in Australia is more than sufficient to meet local requirements and the surplus is shipped chiefly to the East and New Zealand. Details of imports and exports for the five years ended 1936-37 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.	£
1932-33 .. ..	..	..	9,950	3,358	9,950	3,358
1933-34	178	197	24,472	8,259	24,294	8,062
1934-35	152	74	55,990	17,209	55,838	17,135
1935-36	300	195	62,518	19,457	62,218	19,262
1936-37	395	217	123,463	40,352	123,068	40,135

(a) Australian currency values.

7. **Value of Barley Crop.**—The estimated value of the barley crop for the season 1936-37 and the value per acre are shown in the following table:—

BARLEY.—VALUE OF CROP. (a), 1936-37.

Value.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Total	46,150	450,871	8,297	883,218	85,685	47,830	1,522,051
Per acre	£3/16/11	£4/10/2	£1/4/11	£2/18/0	£2/2/9	£6/17 8	£3/4/9

(a) Exclusive of the value of straw.

§ 8. Rice.

Experimental rice cultivation was carried on at the Yanco Experimental Farm for a number of years, but it was not until 1924-25 that an attempt was made to grow the crop on a commercial basis. In that year production amounted to 16,240 bushels from 153 acres, or an average of 106 bushels per acre. Favoured by tariff protection and high average yields the development of rice culture in the Murrumbidgee Irrigation Area made rapid progress, and the production now exceeds the annual requirements of Australia. During the past five years an annual average of 543,000 bushels of cleaned and uncleaned rice has been exported from Australia, mainly to the United Kingdom, New Zealand, Canada and the Pacific Islands.

Figures relating to area, production, etc., since 1931-32 will be found in the following table :—

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

Year.	Area.	Production Paddy Rice.	Average Yield.	Imports.	Exports.	Retail Price.
	Acres.	Bushels.	Bushels.	Bushels.	Bushels.	Pence per lb.
1931-32 ..	19,589	1,349,869	68.91	96,101	292,453	3.48
1932-33 ..	22,034	1,901,476	86.30	104,846	260,245	3.24
1933-34 ..	20,226	2,171,544	107.36	98,495	516,437	3.24
1934-35* ..	21,746	1,888,445	88.84	89,981	629,738	3.22
1935-36 ..	21,715	2,163,580	99.64	101,571	537,174	3.27
1936-37 ..	23,384	2,276,575	97.36	77,693	769,119	3.07

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

§ 9. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the principal other grain and pulse crops grown in Australia are beans, peas and rye. The total area under the first two mentioned crops for the season 1936-37 was 48,157 acres, giving a yield of 778,113 bushels, or an average of 16.16 bushels per acre, which was more than the average yield for the decennium ended 1936-37, viz., 14.73 bushels per acre. Beans and peas are grown chiefly in Tasmania, South Australia and Victoria. Peas are exported in considerable quantities to the United Kingdom, the chief exporting State being Tasmania. The total area under rye in Australia during the season 1936-37 was 10,156 acres, yielding 126,011 bushels, or an average of 12.41 bushels per acre, as compared with the average of 13.03 bushels for the last ten seasons. Of the total area sown to rye in 1936-37, about 62 per cent. was located in New South Wales, 22 per cent. in South Australia and 12 per cent. in Victoria.

§ 10. Potatoes.

1. Progress of Cultivation.—(i) *Area and Production.* Victoria possesses peculiar advantages for the growth of potatoes, as the rainfall is generally satisfactory, and the climate is unfavourable to the spread of Irish blight; consequently the crop is grown in nearly every district except in the wheat belt. Tasmania comes next in order of importance, followed by New South Wales.

The area and production of potatoes in each State during the last five years and the average for the decennium 1928-37 are given hereunder :—

POTATOES.—AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1932-33 ..	20,739	69,783	9,743	6,454	4,971	35,769	11	147,485
1933-34 ..	20,089	60,856	11,936	5,824	4,462	36,518	7	139,692
1934-35 ..	19,662	54,214	11,666	4,604	4,050	36,358	15	130,629
1935-36 ..	22,743	44,287	13,620	4,612	4,946	34,719	62	124,989
1936-37 ..	24,909	45,627	13,448	4,657	4,324	36,967	88	130,020
Average 10 seasons ..	19,016	61,714	10,737	5,057	5,007	36,933	25	138,492
PRODUCTION.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1932-33 ..	42,403	182,471	14,017	24,814	22,309	98,232	25	384,271
1933-34 ..	43,532	142,132	20,123	19,501	21,204	81,274	9	327,775
1934-35 ..	46,033	109,329	21,627	19,377	19,162	70,018	17	285,563
1935-36 ..	62,882	104,125	24,765	19,257	26,278	85,806	127	323,240
1936-37 ..	66,255	196,623	15,826	20,923	22,916	138,557	218	461,318
Average 10 seasons ..	42,474	165,676	17,385	19,352	22,151	96,976	48	364,062

(a) Includes Northern Territory, 15 acres.

(b) " " " " 3 acres.

The acreages sown during the last ten years were fairly uniform, except in 1927-28, when the area was increased to 163,231, chiefly owing to larger plantings in Victoria and Tasmania. Owing to excellent yields in Victoria and Tasmania the production in 1936-37 amounted to 461,318 tons, as compared with an average of 364,062 tons for the ten years ended 1936-37 and 345,779 tons for the previous decennial period. The record production of 507,153 tons was obtained in 1906-7.

(ii) *Average Yield.* Particulars for each State for the five seasons ended 1936-37 and for the decennium ended 1936-37 are given hereunder :—

POTATOES.—AVERAGE YIELD PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1932-33 ..	2.04	2.61	1.44	3.84	4.49	2.77	2.27	2.61
1933-34 ..	2.17	2.34	1.69	3.35	4.75	2.23	1.29	2.35
1934-35 ..	2.34	2.02	1.82	4.15	4.73	1.92	1.13	2.19
1935-36 ..	2.76	2.35	1.82	4.18	5.31	2.47	2.05	2.59
1936-37 ..	2.66	4.31	1.18	4.49	5.30	3.75	2.48	3.55
Average for 10 seasons 1928-37 ..	2.23	2.68	1.62	3.83	4.42	2.63	1.92	2.63

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 1936-37 averaged 5.62 tons per acre from an area of 22,500 acres, as compared with 3.55 tons per acre from 130,000 acres in Australia.

(iii) *Relation to Population.* The average annual production of potatoes per head of the population of Australia for the last five seasons was approximately 119 lb. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906-7 was nearly a ton, while for the last five seasons it has averaged $8\frac{1}{2}$ cwt. Details for each State for the five seasons ended 1936-37 are as follows :—

POTATOES.—PRODUCTION PER 1,000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1932-33 ..	16	101	15	43	51	431	3	58
1933-34 ..	17	78	21	34	48	355	1	49
1934-35 ..	17	59	23	33	43	306	2	43
1935-36 ..	24	56	25	33	59	373	13	48
1936-37 ..	25	106	16	35	51	596	22	68

(iv) *Consumption.* The consumption in Australia during the last five years averaged about 44 tons per 1,000 of population, or about 99 lb. per head. From the figures shown above, therefore, it is apparent that New South Wales, Queensland and South Australia do not produce the quantities necessary for their requirements and must import from Tasmania and Victoria which have a surplus.

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

POTATOES.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value. (a)	Quantity.	Value. (a)	Quantity.	Value. (a)
	Tons.	£	Tons.	£	Tons.	£
1932-33	47	753	1,859	12,484	1,812	11,731
1933-34	29	348	1,940	12,639	1,911	12,291
1934-35 .. ..	..	18	1,165	12,510	1,165	12,492
1935-36	19	364	1,363	14,034	1,344	13,670
1936-37	1	13	1,368	12,641	1,367	12,628

(a) Australian currency values.

3. *Value of Potato Crop.*—The estimated value of the potato crop of each State for the season 1936-37 is given in the following table :—

POTATOES.—VALUE OF CROP, 1936-37.

Value.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Total	514,300	614,447	170,130	105,137	210,302	549,030	1,692	2,165,038
Per acre	£20/12/11	£13/9/4	£12/13/0	£22/11/6	£48/12/6	£14/17/0	£19/4/6	£16/13/0

§ 11. Other Root and Tuber Crops.

1. *General.*—Root crops, other than potatoes, are not extensively grown in Australia, the total area under such crops for the season 1936-37 being only 29,622 acres. The most important were onions, mangolds, sugar beet, turnips and sweet potatoes. Of these, onions, sugar beet and mangolds are most largely grown in Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in Australia during the season 1936-37 was 7,741 acres, giving a yield of 52,732 tons, and averaging

6.81 tons per acre. The area in 1936-37 under root crops other than potatoes and onions was 21,881 acres, from which a production of 144,687 tons was obtained, or an average of 6.61 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," reference to which is made in § 17 par. 2.

2. **Imports and Exports.**—The only root crop, other than potatoes, in which any considerable oversea trade is carried on by Australia is that of onions. During the last five years 4,673 tons, valued at £A.32,253, were imported, principally from Japan, the United States of America and New Zealand, while during the same period the exports, which amounted to 11,441 tons, valued at £A.79,085, were shipped mainly to New Zealand, the Pacific Islands, the Philippine Islands and Canada.

§ 12. Hay.

1. **General.**—(i) *Area and Production.* As already stated, the chief crop in Australia is wheat grown for grain. Next in importance is hay, which for the season 1936-37 averaged 15 per cent. of the total area cropped. In most European countries the hay consists almost entirely of meadow and other grasses, but in Australia a very large proportion consists of wheat, oats and lucerne. The area under hay of all kinds in the several States during the last five years is given hereunder.

HAY.—AREA AND PRODUCTION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Aus. Cap. Ter.	Aus- tralia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1932-33 ..	645,609	1,044,523	64,076	461,332	417,435	92,668	1,765	2,727,408
1933-34 ..	724,538	1,196,259	92,943	507,248	479,768	77,625	2,299	3,080,680
1934-35 ..	757,414	1,261,552	86,477	561,071	413,138	96,019	2,502	3,178,173
1935-36 ..	658,810	1,140,361	71,309	566,064	494,495	74,741	1,690	3,007,470
1936-37 ..	747,927	1,181,612	62,758	539,127	478,099	89,394	1,959	3,100,876
Average 10 seasons								
1928-37 ..	710,726	1,083,643	66,005	536,140	425,342	84,413	1,961	2,908,230
PRODUCTION.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1932-33 ..	908,931	1,386,028	82,104	565,589	485,368	141,138	1,889	3,571,047
1933-34 ..	920,480	1,353,796	144,250	539,846	512,439	109,397	2,540	3,582,748
1934-35 ..	1,004,761	1,404,264	154,157	571,133	462,947	150,083	3,363	3,810,708
1935-36 ..	837,386	1,346,953	122,687	586,658	504,571	96,888	2,534	3,497,677
1936-37 ..	917,499	1,403,049	73,787	501,003	412,982	136,871	2,456	3,447,647
Average 10 seasons								
1928-37 ..	912,635	1,286,104	101,564	545,004	458,976	122,008	2,344	3,428,638

Owing to various causes, the principal being the variation in the relative prices of grain and hay and the favourableness or otherwise of the season for a grain crop, the area under hay is liable to fluctuate considerably. The area under hay in Australia during the season 1915-16, 3,597,771 acres, was the largest on record, whilst the average during the last decennium amounted to 2,908,230 acres.

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

of 21 cwt. per acre in 1929-30, while the highest was that of 26 cwt. in 1932-33. The average for the decennium was nearly 24 cwt. Particulars for the several States for the seasons 1932-33 to 1936-37 and the average for the ten years ended 1936-37 are given hereunder :—

HAY.—PRODUCTION PER ACRE.

Season.	N.S.W.	Vic.	Q'land.	S. Ausg.	W. Aust.	Tas.	Aus. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1932-33	1.41	1.33	1.28	1.23	1.16	1.52	1.07	1.31
1933-34	1.27	1.13	1.55	1.06	1.07	1.41	0.92	1.16
1934-35	1.33	1.16	1.78	1.02	1.12	1.56	1.34	1.20
1935-36	1.27	1.18	1.72	1.04	1.02	1.30	1.50	1.16
1936-37	1.23	1.19	1.18	0.93	0.86	1.53	1.25	1.11
Average for 10 seasons 1928-37.. ..	1.28	1.19	1.54	1.02	1.08	1.45	1.20	1.18

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

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

HAY.—VARIOUS KINDS GROWN.

Varieties.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
	Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—					
Wheaten	290,556	324,129	271,272	224,632	293,854
Oaten	248,222	275,493	349,174	328,866	342,334
Barley	955	933	1,354	930	912
Lucerne	105,246	123,280	134,703	103,478	110,422
Other	630	703	911	904	405
Total	645,609	724,538	757,414	658,810	747,927
VICTORIA—					
Wheaten	89,549	155,688	117,436	77,795	72,837
Oaten	860,854	945,855	1,016,205	926,293	940,058
Lucerne, etc.	94,120	94,716	127,911	136,273	168,717
Total	1,044,523	1,196,259	1,261,552	1,140,361	1,181,612
QUEENSLAND—					
Wheaten	5,498	6,058	3,472	1,789	5,259
Oaten	2,724	4,280	3,426	2,928	3,218
Lucerne	52,925	77,473	75,538	62,779	42,526
Other	2,929	5,132	4,041	3,813	11,755
Total	64,076	92,943	86,477	71,309	62,758
SOUTH AUSTRALIA—					
Wheaten	205,372	246,999	264,373	213,703	243,561
Oaten	243,015	247,879	280,710	334,529	277,413
Lucerne	3,704	3,572	4,444	5,093	3,944
Other	9,241	8,798	11,544	12,739	14,209
Total	461,332	507,248	561,071	566,064	539,127
WESTERN AUSTRALIA—					
Wheaten	173,327	216,688	138,989	214,406	201,792
Oaten	224,006	238,718	251,288	250,039	241,485
Lucerne	106	179	238	63	120
Other	19,996	24,183	22,623	29,987	34,702
Total	417,435	479,768	413,138	494,495	478,099

Wheat is most largely used for hay in South Australia, oats in New South Wales, Victoria, Western Australia and Tasmania, and lucerne in Queensland. For all States the proportions of the principal kinds of hay produced averaged 57.7 per cent. for oaten, 25.5 per cent. for wheaten, 8.6 per cent. for lucerne, and 8.2 per cent. for other hay.

2. **Comparison with Other Countries.**—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy prominent places. The statistics of hay production in these countries are not prepared on a uniform basis, consequently any attempt to furnish extensive comparisons would be misleading. It may be noted, however, that in Great Britain the production of hay from clover, sainfoin, etc., for the year 1936 amounted 2,252,000 tons from 1,735,528 acres, while from permanent grasses a yield of 4,976,000 tons of hay was obtained from 4,839,134 acres, giving a total of 7,228,000 tons from 6,574,662 acres, or an average of about 22 cwt. per acre.

3. **Imports and Exports.**—Under normal conditions, hay, whether whole or in the form of chaff, is somewhat bulky for overseas trade, and consequently does not in such circumstances figure largely amongst the imports and exports of Australia. During 1936-37, 241 tons were imported, while the exports amounted to 3,708 tons, valued at £21,858, the principal purchases being made by Malaya (British), India, Ceylon and Hong Kong.

4. **Value of Hay Crop.**—The following table shows the value, and the value per acre, of the hay crop of the several States for the season 1936-37:—

HAY.—VALUE OF CROP, 1936-37.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Australia.
Total Value ..	£ 4,410,760	£ 4,002,901	£ 452,000	£ 1,491,085	£ 1,269,679	£ 465,360	£ 12,294	£ 12,104,079
Value per acre ..	£5/17/11	£3/7/9	£7/4/1	£2/15/4	£2/13/1	£5/4/1	£6/5/6	£3/18/1

§ 13. Green Forage.

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

GREEN FORAGE.—AREA.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1932-33	405,206	107,732	392,762	46,232	115,785	18,522	953	1,087,192
1933-34	444,946	121,737	311,462	70,147	146,402	25,689	699	1,121,082
1934-35	477,060	115,937	338,312	91,783	186,233	24,941	548	1,233,914
1935-36	610,401	111,056	379,651	98,121	197,931	25,500	548	1,423,208
1936-37	645,713	102,744	429,782	136,548	284,676	24,742	836	1,625,041

2. **Value of Green Forage Crops.**—The value of these crops is variously estimated in the several States, and the Australian total for the season 1936-37 may be taken approximately as £2,783,614, or about £1 14s. 3d. per acre.

§ 14. Sugar-cane and Sugar-beet.

1. **Sugar-cane.**—(i) *Area.* Sugar-cane for sugar-making purposes is grown only in Queensland and New South Wales, and much more extensively in the former than in the latter State. Thus, of a total area of 359,107 acres under sugar-cane in Australia for the season 1936-37, there were 338,686 acres, or about 94 per cent., in Queensland. Sugar-cane growing appears to have been started in Australia in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of 20 acres for the season 1862-63. In the following season the New South Wales returns show an area of 2 acres under this crop. The area under cane in New South Wales reached its maximum in 1895-96 with a total of 32,927 acres. Thenceforward, with slight variations, it gradually fell to 10,490 acres in 1918-19, but from that year it expanded until 1924-25, when about 20,000 acres were planted. Since 1924-25, the area has fluctuated between 15,000 acres and 20,000 acres, the average for the decennium ended 1936-37 amounting to 17,150 acres. In Queensland, although fluctuations in area are manifest, the general trend has been upwards, the acreage under cane for the season 1936-37 being the highest on record. The area under sugar-cane in Australia from 1932-33 and the average for the decennium ended 1936-37 are given in the following table :—

SUGAR-CANE.—AREA.

Season.	New South Wales.		Queensland.		Australia.		Total.
	Pro- ductive.	Unpro- ductive.	Pro- ductive.	Unpro- ductive.	Pro- ductive.	Unpro- ductive.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
1932-33	7,796	8,349	205,046	86,090	212,842	94,439	307,281
1933-34	10,015	6,914	228,154	83,756	238,169	90,670	328,839
1934-35	7,572	10,959	218,426	85,500	225,998	96,459	322,457
1935-36	10,416	9,794	228,515	86,185	238,931	95,979	334,910
1936-37	10,231	10,190	245,918	92,768	256,149	102,958	359,107
Average 10 seasons 1928-37	8,522	8,628	221,571	80,051	230,093	88,679	318,772

(ii) *Productive and Unproductive Cane.* The areas given in the preceding table do not include the small acreage cut for green forage which in 1936-37 amounted to 6,316 acres in Queensland. The whole area was not necessarily cut for crushing during any one season, there being always a considerable amount of young and "stand-over" cane, as well as a small quantity required for plants. Thus the season in which the highest acreage is recorded may not show the greatest area of productive cane cut for crushing.

(iii) *Production of Cane and Sugar.* For Queensland, statistics of the production of sugar-cane are not available prior to the season 1897-98. In that season the total for Australia was 1,073,883 tons, as against the maximum production of 5,445,740 tons in 1936-37. The average production of cane during the decennium ended 1936-37 was 4,350,856 tons. With the exception of 1932-33, the yield of sugar during each of

the six years ended 1936-37 has exceeded 600,000 tons. The average for the decennium amounted to 598,432 tons. Particulars relative to the total production of cane and sugar for the last five years are as follows. The average for the ten seasons ended 1936-37 is also included for comparison :—

SUGAR-CANE.—PRODUCTION OF CANE AND SUGAR.

Season.	New South Wales.		Queensland.		Australia.	
	Cane.	Sugar.	Cane.	Sugar.	Cane.	Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1932-33	156,818	18,567	3,546,370	514,027	3,703,188	532,594
1933-34	230,918	27,586	4,667,122	638,559	4,898,040	666,145
1934-35	227,424	29,428	4,271,380	611,161	4,498,804	640,589
1935-36	280,472	36,461	4,220,435	610,080	4,500,907	646,541
1936-37	275,169	38,158	5,170,571	744,676	5,445,740	782,834
Average 10 seasons						
1928-37	207,162	25,137	4,143,694	573,295	4,350,856	598,432

The production of raw sugar in Australia in 1936-37 amounted to 782,834 tons manufactured from 5,445,740 tons of cane, and was greatly in excess of the previous highest recording of 666,145 tons in 1933-34. Official data are not available regarding the total number engaged in the sugar industry in Queensland, other than the number of growers and employees in sugar mills which in 1936-37 totalled 7,784 and 4,634 respectively. In the report of the Sugar Inquiry Committee, 1931, however, it was stated that the number of persons employed in all branches of the industry was 28,737. In addition, there is the employment afforded in New South Wales, particulars of which are not available, but the number is probably in the vicinity of 2,000.

Final figures for the 1937-38 season are not yet complete, but latest estimates indicate a yield of 795,000 tons of raw sugar from 5,410,000 tons of cane crushed.

(iv) *Average Production of Cane and Sugar.* Owing to climatic variation, comparison between the average yields of cane per productive acre in Queensland and New South Wales cannot be accurately made except on an annual basis. In New South Wales the crop matures in from 20 to 24 months, whereas in Queensland a period of from 12 to 14 months is sufficient. Allowing for the disparity in maturing periods, the average annual yields of cane per productive acre during the decennium ending 1936-37 were 13.26 tons for New South Wales, and 17.26 tons for Queensland. Similarly, the yields of sugar per acre crushed for the same period were estimated at 1.61 tons and 2.39 tons respectively. Leaving aside the consideration mentioned above, the yields of cane and sugar per acre crushed for Australia for the ten years ended 1936-37 were 18.91 tons and 2.60 tons respectively, as compared with 17.70 tons and 2.23 tons for the decennium ended 1926-27.

(v) *Quality of Cane.* The quantity of cane required to produce a ton of sugar varies with the variety planted, the district and the season. For the decennium ended 1936-37 it took 7.27 tons of cane to produce 1 ton of sugar or 13.76 per cent. of its total weight. As the result of the systematic study of cane culture in Queensland and improvements in field and mill methods the sugar content of the cane has been considerably increased in recent years, and in 1930-31 only 6.83 tons of cane were required to produce one ton of sugar. It is believed that this is the highest sugar content obtained anywhere in the world. During the ten years ended 1926-27 it required on the average 7.92 tons of cane to produce one ton of sugar in Australia, whereas the average figure for the decennium ended 1936-37 was reduced to 7.27 tons.

SUGAR-CANE AND SUGAR.—YIELD PER ACRE.

Season.	New South Wales.			Queensland.			Australia.		
	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1932-33	20.12	2.38	8.45	17.30	2.51	6.90	17.40	2.50	6.95
1933-34	23.06	2.75	8.37	20.46	2.80	7.31	20.57	2.80	7.35
1934-35	30.03	3.89	7.73	19.56	2.80	6.99	19.91	2.83	7.02
1935-36	26.93	3.50	7.69	18.47	2.67	6.92	18.84	2.71	6.96
1936-37	26.90	3.73	7.21	21.03	3.03	6.94	21.26	3.06	6.96
Average 10 seasons									
1928-37	24.30	2.95	8.24	18.70	2.59	7.23	18.91	2.60	7.27

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

(vi) *Relation to Population.* The yield of raw sugar in Australia during the last five years was more than sufficient to supply local requirements, the average production during the period amounting to 218 lb. per head of population. Details for the period 1932-33 to 1936-37 are as follows:—

RAW SUGAR.—PRODUCTION PER HEAD OF POPULATION.

State.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
	lb.	lb.	lb.	lb.	lb.
New South Wales ..	16	24	25	31	32
Queensland	1,221	1,505	1,425	1,406	1,695
Australia	181	224	214	215	258

(vii) *Consumption.* The average annual consumption of raw sugar during the five years ended 1936-37 was estimated at 349,895 tons, equal to 116.92 lb. of raw sugar or 111.66 lb. of refined sugar per head of population. Sugar contained in jam, preserved fruit, milk, etc., exported during the period has been excluded in arriving at the figures quoted. The quantity of sugar used during the five years in factories is shown in the following table, the figures including, where necessary, estimates of consumption based on the sugar contents 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.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
	Tons.	Tons.	Tons.	Tons.	Tons.
Aerated Waters and Cordials	5,639	5,779	6,490	7,786	8,905
Bacon Factories ..	50	60	66	165	276
Bakeries—including Cakes and Pastry	5,789	8,110	9,032	10,404	17,150
Biscuits	5,158	5,710	6,339	6,663	
Breweries	9,117	10,023	11,208	12,404	13,451
Condensed and Concentrated Milk	6,796	6,620	7,501	5,547	7,637
Confectionery, Ice Cream, &c.	18,101	17,685	20,356	21,123	24,809
Jams, Jellies and Preserved Fruit	28,667	26,108	28,022	31,930	40,849
Jelly Crystals	541	649	699	665	
Total	79,858	80,744	89,713	96,687	113,077

2. **Sugar-beet.**—(i) *Area and Production.* Victoria is the only State at present growing beets for sugar, and particulars in regard to acreage and production for the last four years and for the decennium 1917-26 are incorporated in the table below :—

SUGAR-BEET.—AREA AND PRODUCTION, VICTORIA.

Particulars.		Average 10 seasons 1917-26.	1933-34.	1934-35.	1935-36.	1936-37.
Area harvested ..	acres	1,516	3,234	3,062	3,165	3,475
Production ..	tons	17,450	50,625	40,788	37,634	31,079
Average per acre ..	"	11.51	15.65	13.32	11.89	8.94
Sugar produced ..	"	2,073	5,303	4,998	5,115	4,180

Seasonal conditions were not so favourable during 1936-37 and consequently reduced yields were recorded ; the production from 3,475 acres amounted to 31,079 tons of beet which yielded 4,180 tons of sugar. The quantity of beet required to produce one ton of sugar was 7.43 tons as compared with 7.36 tons for the previous year. The average production of beets per acre was 8.94 tons, and the average for the ten years ended 1936-37 was 11.80 tons.

(ii) *Encouragement of Beet-growing.* The irrigation scheme on the Macallister River has provided an assured water supply for the district and has enabled the industry to expand. A fine grade of white sugar is manufactured at Maffra, and considerable quantities of beet pulp and molasses are distributed for stock feed.

3. **Sugar Bounties.**—Reference is made to the various Acts in connexion with sugar bounties and sugar excise tariffs in early issues of the Official Year Book. (See No. 6, pp. 394 to 396.)

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

5. **Sugar Agreement in Australia—Embargo on Imports, etc.**—By agreement between the Commonwealth and Queensland Governments in 1925, the embargo on the importation of foreign sugar, which was first introduced in September, 1915, was extended for three years from 1st September, 1925. The price of raw sugar needed for home consumption was fixed at £27 per ton, £1 of which was to defray administrative and general expenses of the Sugar Board and to provide special concessions to certain consumers of sugar. The embargo was later extended for a further period of three years until 1st August, 1931, on practically the same terms as previously. In response to representations, the Commonwealth Government appointed a Committee of Inquiry on the 23rd August, 1930, to report on the industry. The Committee consisted of eight members, representing the various interests concerned. The reports of the Committee were made available in March, 1931, and the renewal of the sugar agreement with certain modifications was recommended. The terms of the new agreement followed largely on those previously in force, particularly as regards the embargo on imports and 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 fruit industry agreed to a reduction of $\frac{1}{4}$ d. per lb. in the retail price of sugar from 1st January, 1933, until the end of the period of the agreement (31st August, 1936). It was also decided to reduce the amount of the assistance to the fruit industry to £200,000. A renewal of the agreement for a period of five years commencing 1st September, 1936, was negotiated between the Commonwealth and Queensland Governments in July, 1935. No alteration was made in the wholesale or retail price of sugar, but an increase of £16,000 per annum was granted to the fruit 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 is to assure an adequate supply of sugar at a price not exceeding the cost of production, including a reasonable profit, to efficient producers. For this purpose, each country was given a basic annual export quota—Australia was allotted 400,000 long tons—which will be increased in proportion to any expansion in sugar consumption. By this means, and by limitations on stocks and measures to encourage more production, 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.

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

SUGAR.—NET RETURN, ETC., FOR CROP, 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.	£
1933-34	47.89	8 0 6	16 6 3	10,640,318
1934-35	50.56	7 11 3	15 13 9	10,791,092
1935-36	47.97	7 18 9	16 5 11	11,010,892
1936-37	54.07	7 19 0	15 7 4	12,203,675
1937-38	54.94	8 6 0	15 7 6	(b)

(a) As supplied by the Queensland Sugar Board. (b) Not available.

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 1936-37 amounted to £319,006. The value thus obtained represents the net market value of all raw sugar sold, and since 1933 is divided between the growers and millers in the approximate proportions of 70 per cent. and 30 per cent. respectively. Prior to that year the distribution was about two-thirds to the grower and one-third to the miller.

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

SUGAR.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	(a)	(a)	(a)	(a)	(a)	(a)
	Tons.	£	Tons.	£	Tons.	£
1932-33	13	265	187,061	1,490,036	187,048	1,489,771
1933-34	3	48	307,980	2,295,203	307,977	2,295,155
1934-35	1	38	306,497	2,195,893	306,496	2,195,855
1935-36	22	415	299,902	2,175,504	299,880	2,175,089
1936-37	33	575	405,771	2,887,589	405,738	2,887,014

(a) Australian currency values.

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

A material known as "megass board" can be made from the residuum of crushed fibre after the removal of the sugar content from the sugar cane, and the possibility of the manufacture of artificial silk from the same material has also been considered. Up to the present, however, there is no record of commercial production of artificial silk, but a fibre board suitable for insulation and lining is now being produced.

10. **Sugar Prices.**—The prices of sugar in Australia from 1915 to 1941 are shown in the following table. During recent years the prices were fixed in accordance with the agreements referred to on page 710.

SUGAR.—PRICES FOR CONSUMPTION IN AUSTRALIA.

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

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

§ 15. Vineyards.

1. **Progress of Cultivation.**—(i) *Area of Vineyards.* The date of introduction of the vine into Australia has been variously set down by different investigators, the years 1815 and 1828 being principally favoured. It would seem, however, that plants were brought out with the first fleet in 1788, consequently the Australian vine is as old as Australian settlement. As already mentioned, a report by Governor Hunter gives the area under vines in 1797 as 8 acres. From New South Wales the cultivation spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area under this crop. In Queensland and Western Australia also, vine growing has been carried on for many years, but little progress has been made. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz. :—(a) for wine-making, (b) for table use, and (c) for drying. The total area under vines in the several States

during each of the last five years and the average for the decennium ended 1936-37 are given in the following table :—

VINEYARDS.—AREA.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1932-33 ..	15,444	39,144	1,868	52,479	5,511	There are no vineyards in Tasmania.	114,446
1933-34 ..	15,243	40,485	1,963	52,880	5,700		116,271
1934-35 ..	15,143	41,180	1,926	53,361	5,737		117,347
1935-36 ..	15,158	41,081	2,470	54,219	6,051		118,979
1936-37 ..	16,542	41,895	2,501	56,122	6,105		123,165.
Average 10 seasons							
1928-37 ..	15,392	40,387	1,946	52,859	5,407		115,991

The total area under vines in Australia has shown a substantial expansion since 1860. This development has been interrupted from time to time, decreases occurring in 1896, the years between 1904 and 1910, and in 1914. Since the last named year the area increased without interruption from about 61,000 acres to more than 114,000 acres in 1924-25, due largely to the planting of varieties suitable for drying. Subsequently the area fluctuated somewhat but increased again to the record area of 123,165 acres in 1936-37.

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

(iii) *Wine Production, Bounties, etc.* The production of wine has not increased as rapidly as the suitability of soil and climate would appear to warrant, owing chiefly to two causes. In the first place Australians are not a wine-drinking people; it is estimated that they consume approximately 5 million gallons or 0.8 gallons per head per annum and consequently the local market is restricted. Secondly, the comparatively new and unknown wines of Australia must compete in the markets of the old world with the well-known and long-established brands from other countries. Continued efforts are being made to bring the Australian wines under notice, and with the assistance of a Commonwealth bounty on the export of fortified wine of specified strength, the industry has been greatly stimulated. Particulars of the Wine Export Bounty are shown in § 18 hereafter. The Wine Export Bounty Act 1930 which provided for payment at the rate of 1s. 9d. per gallon was replaced by a new Act in 1934 which fixed the rate at 1s. 3d. per gallon for the two years ending 28th February, 1937, and thereafter at a reduction of 1d. per gallon for each succeeding year until 1940 when it will be 1s. per gallon.

At the Imperial Economic Conference at Ottawa in 1932, the margin of preference granted by the Government of the United Kingdom was 2s. per gallon on Australian wines not exceeding 27 degrees of proof spirit. Hitherto the duties imposed were as follows :—Empire wines not exceeding 27 degrees, 2s. per gallon, foreign wines not exceeding 25 degrees, 3s. per gallon, a margin of preference of 1s. per gallon. The margin of 2 degrees in the strength of Empire wines is also considered a measure of preference. The bulk of the wine exported from Australia contains more than 27 degrees of proof spirit, and, under the duties in force in the United Kingdom in 1932, Australian wines of a strength exceeding 27 but under 42 degrees enjoy a preference of 4s. per gallon.

The quantity of wine produced in the several States during the last five seasons together with the average for the decennium ended 1936-37 is given in the table hereunder:—

WINE.—PRODUCTION.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No production of wine in Tasmania.	Gallons.
1932-33 ..	2,075,737	1,610,649	35,301	12,260,971	435,003		16,417,661
1933-34 ..	1,813,034	1,691,391	31,796	10,032,012	427,458		13,995,691
1934-35 ..	1,539,274	1,276,176	38,050	12,914,905	496,252		16,264,657
1935-36 ..	2,567,812	1,683,049	22,569	13,023,587	430,941		17,727,958
1936-37 ..	2,944,494	1,818,917	29,121	15,026,502	348,960		20,167,994
Average 10 seasons 1928-37	1,957,652	1,591,068	37,116	12,410,928	384,703		16,381,467

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

WINE.—IMPORTS, AUSTRALIA.

Year.	Quantity.			Value. (a)		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1932-33 ..	2,402	12,411	14,813	8,042	12,015	20,057
1933-34 ..	5,469	18,772	24,241	16,612	16,137	32,749
1934-35 ..	7,936	20,367	28,303	26,577	17,422	43,999
1935-36 ..	5,701	24,214	29,915	19,017	18,258	37,275
1936-37 ..	7,197	27,039	34,236	20,721	20,799	41,520

(a) Australian currency values.

(ii) *Exports.* Practically all of the wine exported from Australia is sent to the United Kingdom; approximately 200,000 gallons are sent to other countries. New Zealand absorbs the major portion of this quantity although exports to Canada have increased under the Canadian-Australian Trade Treaty; the former took 131,499 gallons valued at £53,629 while the latter imported 59,202 gallons valued at £25,185, during 1936-37. Exports for the last five years are given in the following table:—

WINE.—EXPORTS, AUSTRALIA.

Year.	Quantity.			Value. (a)		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1932-33 ..	1,656	3,096,114	3,097,770	2,392	788,409	790,801
1933-34 ..	5,289	3,063,449	3,068,738	6,683	796,705	803,388
1934-35 ..	4,111	3,392,570	3,396,681	5,854	806,334	812,188
1935-36 ..	4,070	3,705,557	3,709,627	5,649	928,955	934,604
1936-37 ..	3,400	4,085,563	4,088,963	6,231	1,038,198	1,044,429

(a) Australian currency values.

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

TABLE GRAPES.—PRODUCTION.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1932-33	5,401	4,008	2,165	957	2,679	15,210
1933-34	4,469	3,837	2,050	695	2,602	13,653
1934-35	3,638	3,113	1,900	646	3,214	12,511
1935-36	4,376	4,215	2,184	547	2,676	13,998
1936-37	5,107	3,754	2,058	582	2,720	14,221

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

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.
1932-33	4,909	670	42,568	7,814	12,434	6,390	704	1,536	60,615	16,410
1933-34	3,922	721	33,962	7,476	12,480	8,018	595	1,323	50,959	17,538
1934-35	3,381	755	29,637	8,801	12,234	9,259	646	2,037	45,898	20,852
1935-36	4,158	864	35,486	4,421	10,508	5,871	778	1,958	50,930	13,114
1936-37	5,416	1,094	37,267	7,610	11,381	8,093	707	1,887	54,771	18,684
Average 10 seasons 1928-37	3,591	628	32,885	7,386	9,994	7,186	694	1,577	47,164	16,777

(a) Sultanas and Lexias.

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

RAISINS AND CURRANTS.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value. (b)	Quantity.	Value. (b)	Quantity.	Value. (b)
RAISINS.						
	tons.	£	tons.	£	tons.	£
1932-33	2	276	35,439	1,728,581	35,437	1,728,305
1933-34	5	570	46,825	1,867,134	46,820	1,866,564
1934-35	(c)104	(c)5,988	40,041	1,447,686	39,937	1,441,698
1935-36	(a)	20	37,998	1,501,146	37,998	1,501,126
1936-37	(a)	51	40,875	1,540,909	40,875	1,540,858
CURRANTS.						
	(a)					
1932-33	(a)	35	11,134	450,502	11,134	450,467
1933-34 .. ..	..	..	15,659	632,978	15,659	632,978
1934-35	(a)	15	14,562	583,422	14,562	583,407
1935-36	(a)	35	9,945	375,923	9,945	375,888
1936-37	(c)14	(c)678	11,739	440,734	11,725	440,056

(a) Quantity negligible.

(b) Australian currency values.

(c) Re-imports.

Since 1912 Australia has not only produced sufficient raisins and currants for home consumption, but has been able to maintain a large export trade. The average annual production for the decennium ended 1936-37 was slightly under 64,000 tons, of which 48,640 tons were exported and about 15,360 tons were available for local requirements. The chief countries importing Australian raisins and currants are the United Kingdom, Canada and New Zealand, the quantities exported thereto in 1936-37 being, 57, 33 and 9 per cent. respectively. Exports to Canada have increased from 4,600 tons in 1928-29 to 16,804 tons in 1936-37. Under the terms of the agreement reached at the Imperial Economic Conference at Ottawa in 1932, the tariff in the United Kingdom on dried fruits imported from foreign countries was increased from 7s. per cwt. to 10s. 6d. per cwt. As already stated, the United Kingdom absorbs 57 per cent. of Australia's exports, and the preference given should prove of considerable benefit to the Australian grower. The existence of the Anglo-Grecian Trade Treaty, however, precludes any immediate prospect of an advance in the present rate of preference—2s. per cwt.—being secured on Australian currants imported into Great Britain.

§ 16. Orchards and Fruit Gardens.

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

ORCHARDS AND FRUIT GARDENS.—AREA.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Per.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1932-33 ..	83,909	77,173	30,578	29,109	20,026	32,774	58	273,627
1933-34 ..	90,227	76,945	31,511	28,899	20,658	33,679	70	281,989
1934-35 ..	87,035	76,254	30,646	29,167	20,811	33,779	70	277,762
1935-36 ..	82,702	75,788	28,544	29,122	21,667	33,372	76	271,271
1936-37 ..	87,887	76,760	28,828	29,755	22,143	32,285	66	277,724

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

(ii) *Area.* The table hereunder shows the total acreage for 1936-37:—

ORCHARDS AND FRUIT GARDENS.—AREA, 1936-37.

Fruit.	New South Wales.	Victoria.	Queens-land.	South Australia.	Western Australia.	Tasmania.	Aus-tralian Capital Territory.	Australia.
	Acres.		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Apples ..	18,409	30,954	5,358	10,941	13,031	24,770	44	103,507
Apricots ..	2,045	4,141	304	3,173	702	1,371	3	11,739
Bananas ..	13,573	..	7,305	..	248	..	..	21,126
Cherries ..	3,778	1,397	13	958	50	102	1	6,299
Citrus—								
Oranges ..	20,750	5,367	3,534	4,694	3,059	..	..	41,920
Mandarins ..	4,345					..	..
Lemons ..	2,872					..	..
Other ..	585					..	..
Nectarines and								
Peaches ..	8,316	12,416	1,465	1,875	1,089	75	6	25,242
Nuts ..	1,018	536	..	1,851	358	..	..	3,763
Pineapples ..	225	..	6,314	..	15	..	..	6,554
Pears ..	4,039	11,563	388	1,862	1,030	2,412	4	21,298
Plums and Prunes	5,718	4,468	1,249	2,527	1,136	543	6	15,647
Small fruits ..	23	801	175	379	45	2,939	..	4,362
Other fruits ..	2,191	3,418	2,339	989	655	73	2	9,667
Total ..	87,887	76,760	28,828	29,755	22,143	32,285	66	277,724

(a) Included with oranges, etc.

(iii) *Production.*—(a) *Quantities.* The production in 1936-37 is shown in the next table:—

ORCHARDS AND FRUIT GARDENS.—PRODUCTION, 1936-37.

Fruit.	New South Wales.	Victoria.	Queens-land.	South Australia.	Western Australia.	Tasmania.	Aus-tralian Capital Territory.	Australia.
Apples .. bushel	1,410,685	2,873,327	215,279	841,504	1,045,369	4,611,000	1,702	10,998,866
Apricots ..	127,672	179,824	7,343	357,022	63,669	94,700	50	830,280
Bananas ..	1,615,402	..	723,622	..	30,151	..	..	2,369,175
Cherries ..	132,139	39,509	116	40,687	1,236	5,000	12	218,699
Citrus—								
Oranges ..	2,170,997	564,734	307,439	654,889	302,235	..	..	4,351,351
Mandarins ..	320,284	15,792				..	..
Lemons ..	244,916	181,171				..	..
Other ..	47,907	749				..	..
Nectarines and								
Peaches ..	599,828	1,282,397	78,714	170,048	84,548	4,300	53	2,219,888
Nuts .. lb.	429,744	190,180	..	1,135,232	71,805	..	6	1,826,967
Pineapples .. dozen	34,293	..	1,227,734	..	832	..	..	1,262,859
Pears .. bushel	399,046	1,657,763	21,491	242,336	101,472	270,000	99	2,692,207
Plums and Prunes	412,210	285,448	64,663	168,017	86,593	98,000	198	1,115,129
Small Fruits .. cwt.	239	17,777	3,389	10,019	689	130,035	..	162,148

(b) *Values.* The value of production for the various classes of fruit for the year 1936-37 is given in the following table:—

ORCHARDS AND FRUIT GARDENS.—VALUE OF PRODUCTION, 1936-37.

Fruit.	New South Wales.	Victoria.	Queens-land.	South Australia.	Western Australia.	Tasmania.	Australian Capital Territory.	Australia
	£	£	£	£	£	£	£	£
Apples ..	558,630	618,159	70,196	150,173	407,701	989,100	674	2,794,633
Apricots ..	73,360	49,452	5,085	114,671	26,529	19,700	29	288,826
Bananas ..	807,700	..	282,850	..	23,475	..	..	1,114,025
Cherries ..	121,480	27,656	185	20,852	2,396	2,000	11	174,580
Citrus—								
Oranges ..	701,980	209,512	109,637	210,641	120,422	..	..	1,470,943
Mandarins ..	107,010	5,593				..	..
Lemons ..	84,560	64,165				..	..
Other ..	18,970	265				..	..
Nectarines and Peaches	250,800	305,679	35,708	49,154	39,656	910	23	681,930
Nuts ..	12,657	7,060	..	36,743	2,693	..	..	59,153
Pineapples ..	8,790	..	245,230	..	552	..	..	254,572
Pears ..	131,560	357,375	6,180	55,689	49,445	69,500	33	669,782
Plums and Prunes	173,180	50,020	25,450	38,889	27,565	18,000	82	333,186
Small Fruits ..	1,060	32,062	10,440	15,733	2,856	150,820	..	212,971
Other Fruits ..	51,603	84,847	58,574	19,947	21,166	1,400	17	237,554
Total ..	3,103,640	1,811,845	856,951	728,373	754,673	1,251,430	860	8,507,781

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

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

Year.	Apples.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums.(a)
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1913-14 ..	56,577	7,778	24,840	13,645	9,657	8,410
1932-33 ..	100,309	21,893	52,407	22,321	19,922	16,418
1933-34 ..	101,812	28,440	52,724	22,392	19,751	16,210
1934-35 ..	102,414	26,593	49,247	22,990	20,578	15,741
1935-36 ..	102,003	21,801	47,506	22,876	20,316	15,290
1936-37 ..	103,507	21,126	48,520	23,858	21,298	15,647

(a) Includes Prunes.

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

PRINCIPAL FRUIT CROPS.—PRODUCTION, AUSTRALIA.

Year.	Apples.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums.(a)
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1913-14 ..	5,000,178	835,868	1,638,961	930,144	951,277	621,525
1932-33 ..	10,798,538	2,256,520	4,920,419	2,090,584	2,152,887	1,183,700
1933-34 ..	10,500,288	2,636,288	5,159,524	1,762,923	1,914,118	943,102
1934-35 ..	9,569,161	3,027,168	5,307,146	2,011,542	1,934,975	1,004,821
1935-36 ..	9,771,290	3,367,480	5,057,081	1,762,673	2,458,087	905,936
1936-37 ..	10,998,866	2,369,175	4,971,761	2,132,654	2,692,207	1,115,129

(a) Includes Prunes.

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

PRINCIPAL FRUIT CROPS.—VALUE OF PRODUCTION, AUSTRALIA.

Year.	Apples.	Bananas.	Citrus Fruits.	Peaches.	Pears.	Plums.(a)
	£	£	£	£	£	£
1913-14 ..	1,132,427	157,710	719,808	306,433	258,235	135,654
1932-33 ..	2,266,713	907,820	1,528,067	699,296	504,634	327,172
1933-34 ..	2,249,108	1,013,812	1,540,767	455,021	465,875	243,549
1934-35 ..	2,581,568	900,657	1,444,203	572,643	499,937	269,626
1935-36 ..	2,500,361	915,409	1,575,662	554,094	639,429	268,669
1936-37 ..	2,794,633	1,114,025	1,686,569	640,433	669,782	333,186

(a) Includes Prunes.

4. **Imports and Exports of Fruit.**—(i) *General.* A considerable export trade in both fresh and dried fruits is carried on by Australia with overseas countries. The import trade in fresh fruits declined heavily during recent years owing to the imposition of a Customs duty of 1d. per lb. on imported bananas, which had previously been the chief variety of fresh fruit imported into Australia. Under the terms of the agreement reached at Ottawa in 1932, however, 40,000 centals of bananas may be admitted annually from Fiji at the rate of duty of 2s. 6d. per cental. The imports of dried fruits at present consist mainly of dates. The export trade in fresh and dried fruits has expanded greatly during recent years, the value of the shipments in 1936-37 amounting to £1,980,102 and £2,060,196 respectively. Apples constitute the bulk of the fresh fruit exported although the exports

of citrus fruits and pears are fairly considerable, and experiments are being conducted in regard to the dispatch of other fruits. Shipments of raisins and currants have increased greatly since 1914-15, and are mainly responsible for the growth in the dried fruits exports. Dried apricots also figure amongst the exports.

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

FRESH FRUITS.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.(a)	Quantity.	Value.(a)	Quantity.	Value.(a)
	lb.	£	lb.	£	lb.	£
1932-33 ..	5,186,400	34,462	275,080,400	2,417,982	269,894,000	2,383,520
1933-34 ..	6,219,200	33,592	240,290,800	2,011,731	234,071,600	1,978,139
1934-35 ..	4,212,300	29,247	226,132,000	1,777,331	221,919,700	1,757,084
1935-36 ..	3,720,500	18,910	248,865,300	1,969,580	245,144,800	1,950,670
1936-37 ..	3,704,000	19,986	249,329,200	1,980,102	245,625,200	1,960,116

(a) Australian currency values.

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

APPLES, PEARS AND CITRUS FRUITS.—EXPORTS, AUSTRALIA.

Year.	Apples.		Pears.		Citrus Fruits.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Cental.	£	Cental.	£	Cental.	£
1932-33 ..	2,273,724	1,951,994	283,397	252,134	136,634	124,354
1933-34 ..	2,058,965	1,654,241	171,753	163,585	132,666	132,303
1934-35 ..	1,745,337	1,307,791	254,978	240,836	242,932	212,170
1935-36 ..	2,008,656	1,494,524	275,860	270,262	190,094	188,255
1936-37 ..	1,847,189	1,344,885	336,812	320,325	256,784	228,356

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

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

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value. (b)	Quantity.	Value. (b)	Quantity.	Value. (b)
	lb.	£	lb.	£	lb.	£
1932-33	9,415,551	62,281	2,093,159	51,764	7,322,392	10,517
1933-34	8,302,384	71,594	5,674,846	151,573	2,627,538	— 79,979
1934-35	13,187,250	94,903	5,507,100	134,426	7,680,150	— 39,523
1935-36	11,912,272	86,590	4,144,611	110,423	7,767,661	— 23,833
1936-37	10,917,696	76,653	2,660,332	78,553	8,257,364	— 1,900

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

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

(v) *Jams and Jellies.* Jams and jellies were exported in large quantities during the war years and in 1918-19 the record shipment of 79,277,560 lb., valued at £1,847,970, was dispatched from Australia. Since that year, however, the trade has dwindled, the value of the exports in 1936-37 amounting to only £106,433. Particulars relative to imports and exports during each of the last five years are as follows :—

JAMS AND JELLIES.—IMPORTS AND EXPORTS, AUSTRALIA.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lb.	(a) £	lb.	(a) £	lb.	(a) £
1932-33	24,492	1,186	1,886,344	47,682	1,861,852	46,502
1933-34	16,159	909	2,245,262	55,958	2,229,103	55,049
1934-35	30,322	1,265	2,949,105	63,425	2,918,783	62,160
1935-36	50,010	1,910	7,019,191	134,796	6,969,181	132,886
1936-37	59,852	2,333	5,541,620	106,433	5,481,768	104,100

(a) Australian currency values.

(vi) *Preserved Fruit.* Details concerning the quantities and values of preserved fruit imported into Australia cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables preserved or partly preserved in liquid, or pulped, imported into Australia during 1936-37 was £27,530, or £38,481 in Australian currency. Overseas exports in 1936-37 were as follows—Apricots, 5,968,764 lb., £98,721; peaches, 28,241,127 lb., £406,190; pears, 26,379,322 lb., £417,345; pineapples, 1,941,370 lb., £39,347; and other, 7,102,564 lb., £130,093; or a total shipment valued at £1,091,696.

§ 17. Minor Crops.

1. **General.**—In addition to the crops previously dealt with, there are many others which, owing either to their nature, or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are included under the headings—Market Gardens, Pumpkins and Melons, Nurseries, Grass Seed, Tobacco and Millet. Cotton growing has received considerable attention in the tropical portions of Queensland, and the prospects of establishing this industry are hopeful. The total area in Australia during the season 1936-37 devoted to crops not dealt with in previous sections was 245,178 acres, the major portion of which consisted of cotton, market gardens, grass seed, pumpkins and melons, canary seed and tobacco.

2. **Market Gardens.**—Under this head are included all areas on which mixed vegetables are grown. Where considerable areas are devoted to the production of one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., the figures are usually not included with market gardens, but are shown either under some specific head, or under some general head as "Other Root Crops," or "All Other Crops." The area under market gardens during each of the last five seasons is given hereunder :—

MARKET GARDENS.—AREA.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Aus- tralia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1932-33 ..	6,047	18,249	992	1,896	3,807	804	55	31,850
1933-34 ..	5,664	20,010	833	2,105	3,281	779	61	32,733
1934-35 ..	6,696	20,728	801	1,994	3,024	869	13	34,125
1935-36 ..	7,026	20,633	950	1,555	3,074	812	52	34,102
1936-37 ..	7,335	20,790	1,105	1,499	3,399	752	48	34,928

3. **Grass Seed.**—The area under this crop during 1936–37, exclusive of New South Wales, for which complete figures as to area are not available, was 23,885 acres, of which 9,406 acres were in Victoria, 8,089 acres in Queensland, 4,359 acres in South Australia, 220 acres in Western Australia and 1,811 acres in Tasmania. The production for these States was 375,125 bushels. In addition to the areas planted above there were 16,976 acres sown to canary seed in Queensland, 3,753 acres in South Australia, 1,314 acres in Victoria and 303 acres in New South Wales, returning a yield of 67,434 bushels. This quantity, however, omits the production of New South Wales, particulars of which are not available.

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

In all the States in which its cultivation has been tried, the soil and climate appear to be suitable for the growth of the plant, and the large import of tobacco in its various forms is an index of the market for a satisfactory product. The total net imports of tobacco into Australia during the year 1936–37 were valued at £A.1,886,188, while the net quantity of unmanufactured tobacco imported was 20,710,554 lb. valued at £A.2,013,401. The area under this crop in 1936–37 amounted to 11,572 acres which produced 5.2 million lb. Victoria with 5,492 acres and Queensland with 3,973 acres were the chief producing States.

It has been proved that suitable leaf can be grown, and efforts are now being directed to the elimination of disease, and to improving the quality and aroma of the finished product. As the result of an agreement with the Commonwealth Government, the Australian Tobacco Manufacturers agreed to purchase 7.2 million lb. of suitable leaf in 1931–32 at an average price of 2s. 3d. per lb.; actually more than 10.5 million lb. was purchased at an average of 2s. 1½d. per lb. The agreement was not renewed and the area declined from 26,272 acres in 1932–33 to 11,572 acres in 1936–37.

The following table furnishes details of the average area, production, etc., in quinquennial periods from 1901 to 1935, and annually from 1931–32 to 1936–37:—

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

Period.	Area.		Production.		Value.	Number of Producers Registered.
	Acres.	Lb.	£	No.		
1901–05	1,412	1,172,976	(a)	387		
1906–10	1,678	1,419,040	41,581	518		
1911–15	2,496	2,106,100	65,615	479		
1916–20	1,648	1,449,616	104,978	487		
1921–25	2,677	1,962,576	158,748	925		
1926–30	2,478	1,632,243	121,589	666		
1931–35	15,856	6,580,566	631,038	..		
1931–32	17,738	10,160,192	1,114,737	2,774		
1932–33	26,272	9,723,056	960,565	5,527		
1933–34	16,304	4,348,964	339,663	5,081		
1934–35	8,429	3,113,315	256,655	4,205		
1935–36	10,538	5,557,304	483,571	3,501		
1936–37	11,572	5,198,352	437,446	3,168		

(a) Not available.

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

another Committee was appointed. The recommendation of this Committee, which reported on 16th November, 1933, that the sum of £20,000 should be provided annually for five years to assist the States to continue economic and scientific investigations, was adopted and this amount has been included in the Budget for each year since 1933–34. £5,000 was allotted to the Council for Scientific and Industrial Research, and the balance was distributed among the States to provide additional services, £3,750 being allocated to each of the States of New South Wales, Victoria and Queensland, and £1,250 each to South Australia, Western Australia and Tasmania. The Council for Scientific and Industrial Research is investigating diseases affecting the tobacco plant, including work on disease-resisting varieties, and is making tests of smoking quality. The Council has been successful in discovering effective means of preventing blue mould, and consequently the development of the industry should proceed on much sounder lines than hitherto. The States are carrying out field investigations on disease resistance, selection, yield and quality improvement, and are conducting instructional, demonstrational and field experimental work.

5. **Pumpkins and Melons.**—The total area under this crop in Australia during 1936–37 was 28,202 acres, of which 4,486 acres were in New South Wales, 1,469 acres in Victoria, 21,211 acres in Queensland, 367 acres in South Australia, and 624 acres in Western Australia. The production for Australia amounted to 65,970 tons.

6. **Hops.**—Hop growing in Australia is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1936–37 being 1,118 acres, of which 962 acres were in Tasmania, 142 acres in Victoria and a small area of 14 acres in Western Australia. The Tasmanian area, though still small, has increased during the past 33 years, the total for the season 1901–2 being 599 acres. In Victoria the area, which in 1901–2 was 307 acres, dwindled to 71 acres in 1918–19, then rose to 312 acres in 1925–26 and dropped to 142 in 1936–37. The cultivation of hops was much more extensive in Victoria some 50 years ago than at present, the area in 1883–84 being 1,758 acres. During the year 1936–37 the imports of hops exceeded the exports by 107,714 lb., valued at £A.8,046. New Zealand supplied the whole of the quantity imported.

7. **Flax.**—For many years flax was grown intermittently in the Gippsland district of Victoria, and attempts were made to introduce its cultivation into Tasmania and New South Wales, but without success. About the end of the year 1917 the shortage of flax fibre was acute, and endeavours were made by the Commonwealth Government to encourage local cultivation. The acreage in Victoria increased from 419 acres in 1917–18 to 1,611 acres in 1919–20, but fell to 179 acres in 1928–29. As the result of a bounty introduced in 1930 the area increased to 1,216 acres in 1930–31, but this expansion was not maintained during the years following. In 1936–37, 927 acres were planted in this State compared with 1,068 acres in the previous year.

The linseed flax industry has been the subject of two investigations during recent years. In 1933, the Development Branch of the Prime Minister's Department examined the industry and recommended in its report that any aggressive policy of expansion should be avoided. A second investigation was made under the direction of the Council for Scientific and Industrial Research in 1936. The report issued in that year indicated the possibility of developing the flax industry in Australia and that further investigation and experiment appeared to be justified. A special vegetable fibre section of the Council was established to carry out further studies of the problem. Largely as a result of the efforts of the Council, private enterprise is again attempting the development of the industry in Victoria.

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

8. **Millet.**—Millet figures in the statistical returns of three of the States. The total area devoted thereto in 1936–37 was 5,384 acres, of which 3,358 acres were in New South Wales, 1,250 in Victoria, and 776 in Queensland. The particulars here given relate to millet grown for grain and fibre, the quantity for green forage being dealt with in the section relating thereto.

9. **Nurseries.**—In all the States fairly large areas are occupied as nurseries. Figures in regard to acreages under flowers, fruit trees, etc., are available for New South Wales, Victoria, South Australia, Western Australia, and Tasmania. During 1936-37 the areas in these States were 944, 1,339, 193, 160, and 145 acres respectively.

10. **Cotton.**—The cultivation of cotton was begun in Queensland in 1860, and ten years later the area cropped had increased from 14 acres to over 14,000 acres. The 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 till 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. In 1913 the Queensland Government made an advance of 1½d. per lb. on seed cotton, and ginned it on owner's account, the final return being equal to about 1¾d. per lb. The rise in price enabled the Government to offer a guarantee of 5½d. per lb. for seeded cotton of good quality for the three years ended 31st July, 1923, and the area picked increased from 166 acres in 1920 to 50,186 acres in 1924. Guarantees were continued until 1926, when the Commonwealth Government granted a bounty of 1½d. per lb. on the better grades and ¾d. on the lower grades of seed cotton grown in Australia. In addition to this direct assistance to the growers the Government subsidized the cotton-manufacturing industry by granting a graduated bounty, varying from ½d. to 1s. per lb., on all cotton yarn manufactured in Australia which contained 50 per cent. of home-grown cotton. This bounty, however, ceased to operate after 30th June, 1932. The Raw Cotton Bounty Act of 1934, which repealed the previous Acts, provided, *inter alia*, that a bounty of 5½d. per lb. to 30th November, 1935, 4¾d. per lb. to 30th November, 1936, and 4½d. per lb. to 30th November, 1939, fluctuating according to variation in the Liverpool price, shall be payable on raw cotton produced in Australia from Australian grown seed. The amount of raw cotton for the purpose of the bounty was limited to the requirements of Australia plus 20 per cent. With the change over to the bounty system, a cotton pool was formed in Queensland under the Primary Products Pools Act, and a Cotton Board was elected to control the handling, financing and marketing of all cotton grown in the State.

The area under cultivation and the production in Queensland since the year 1926 are shown hereunder:—

COTTON.—AREA AND PRODUCTION, QUEENSLAND.

Year.						Area.	Yield of Unginned Cotton.
						Acres.	lb.
1926	..	..	..	..	..	18,743	9,059,907
1927	..	..	..	..	..	14,975	7,060,756
1928	..	..	..	..	..	20,316	12,290,910
1929	..	..	..	..	..	15,003	8,024,502
1930	..	..	..	..	..	22,652	17,022,897
1931	..	..	..	..	..	22,452	15,244,644
1932	..	..	..	..	..	29,995	6,270,116
1933	..	..	..	..	..	68,203	17,718,306
1934	..	..	..	..	..	43,397	26,924,179
1935	..	..	..	..	..	54,947	20,785,418
1936	..	..	..	..	..	62,200	19,198,600

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 under crop reached its highest point in the season 1901-2 with 547 acres. Thereafter the acreage fluctuated, but on the whole with a downward tendency, and in 1936-37 only 20 acres were recorded with a production of 9,230 lb.

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

§ 18. Bounties.

1. **Bounties.**—The bounties paid by the Commonwealth Government during the year ended 30th June, 1938, amounted to £461,402. 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 1933–34 to 1937–38 are as follows :—

BOUNTIES.—AUSTRALIA.

Articles on which Bounty was Paid.	Rate of Bounty Payable. (a)	Date of Expiry of Bounty.	Amount Paid.				
			1933–34.	1934–35.	1935–36.	1936–37.	1937–38.
Iron and Steel Products Bounty Act—			£	£	£	£	£
*Fencing Wire ..	£2 12s. per ton (d) ..	(e) 6th Nov., 1930	..	..	..	..	..
*Galvanized Sheets ..	£2 12s. per ton (b) ..	(c) 27th Mar., 1931	..	..	..	..	..
*Wire Netting ..	£3 8s. per ton (c) ..	..	9,838	10,644	10,659	8,467	6,711
Traction Engines ..	According to capacity, £40–£90 per tractor less 10 per cent. from 9th July, 1930, increased to 16 per cent. from 7th November, 1930, and to 40% from 11th July, 1931. Restored to original rate from 4th December, 1933	..	5,152	6,192	9,814	20,503	25,556
Sulphur Bounty Act— Sulphur from Australian Pyrites and other Sulphide Ores or Concentrates	£2 5s. per ton ..	..	47,955	50,831	74,282	68,011	83,144
Flax and Linseed Bounties Act 1930 ..	Rates vary according to year	28th Feb., 1935	205	599	62	..	..
Wine Export Bounty Act 1934–35— Fortified Wine, containing not less than 34 per centum of proof spirit, exported from Australia from 1st March, 1935, to 29th February, 1940	1s. 3d. per gallon from 1st March, 1935, to 28th February, 1937, reduced by 1d. per annum from 1938 to 1s. per gallon in 1940	29th Feb., 1940	183,981	184,330	194,467	214,886	184,693

(a) All bounties are subject to 20 per cent. reduction from 20th July, 1931, excepting those paid on gold, wine, wheat, fruit exported and raw cotton produced subsequent to 31st December, 1937.

(b) Amount of Bounty raised to £3 12s. per ton on 1st January, 1928; to £4 10s. per ton from 1st January, 1930; reduced to £3 10s. on 21st June, 1930; and to £3 3s. on 10th July, 1930. Bounty ceased on 27th March, 1931, owing to increase in Customs duty.

(c) Amount of Bounty reduced to £2 14s. per ton on 10th July, 1930; to £2 5s. 6d. per ton on 7th November, 1930; and to 12s. per ton from 11th July, 1931.

(d) Amount of Bounty reduced to £2 6s. on 10th July, 1930. Bounty ceased on 6th November, 1930, owing to increase in Customs duty.

(e) Date Bounty ceased.

BOUNTIES.—AUSTRALIA—continued.

Articles on which Bounty was paid.	Rate of Bounty Payable.(c)	Date of Expiry of Bounty.	Amount Paid.				
			1933-34.	1934-35.	1935-36.	1936-37.	1937-38.
Cotton Bounty Act— Seed Cotton grown in Australia and delivered and graded as prescribed	Varies on Higher Grades from 1½d. per lb. up to 1932, to ¾d. per lb. in 1936 Varies on Lower Grades from ¾d. per lb. up to 1932, to ¼d. per lb. in 1936	31st Jan., 1935	£ 87,268	£ 21,729	£ ..	£ ..	£ ..
Cotton Yarn manufactured in Australia	Varies according to count and year	(e) 30th June, 1932	2,287	..	..	..	..
Raw Cotton Bounty Act— Raw cotton produced in Australia and graded as prescribed	5½d. per lb. to 30th November, 1935, 4½d. to 30th November, 1936, and 4¼d. per lb. to 30th November, 1939, fluctuating according to variations in Liverpool price	30th Nov., 1939	..	96,752	77,089	50,643	95,044
Papua and New Guinea Bounties Act— Cocoa and Coffee Beans (a) produced in these Territories imported into Australia for home consumption	1½d. per lb. ..	31st Dec., 1937	(b) 844	1,430	1,166	1,285	1,774
Gold Bounty Act— Gold produced in Australia as prescribed	Varies according to production (d)	(e) 30th Sept, 1932	1,216	..	..	..	..
Wheat Bounty Act ..	..	..	(f)	(f)	(f)	(f)	(f)
Fruit Exported— Oranges	6d. per case .. 2s. per export case ..	(g) (g) (g)	.. .. ..	5,227 .. ..	.. 7,886 ..	.. .. 7,431	.. .. 9,807
Oranges, Lemons, Grape Fruit and Mandarins	Varies from 1s. to 2s. per case	(h)	..	..	..	..	..
Apples and Pears ..	4d. per bushel case 4½d. " " " 2½d. " " "	(g) (g) (g)	.. .. ..	.. .. ..	£1,047 .. ..	.. 104,045 ..	.. .. 54,643
Prunes	¾d. per lb. " ¾d. " "	(g) (g)	.. ..	.. ..	6,707 ..	.. 2,200	....
Total .. ..	.. ..	..	338,746	377,734	463,179	477,471	461,402

(a) Other goods are scheduled in the Act, see Note (b). (b) Including 17s. 2d., being amount of bounty paid on 172 lb. of spices in 1932-33; and £13 on 2,007 lb. of Kapok in 1933-34. (c) All Bounties are subject to 20 per cent. reduction from 20th July, 1931, excepting those paid on gold, wine, wheat, fruit exported, and raw cotton produced subsequent to 31st December, 1937. (d) Rate of Bounty on gold produced for the nine months ending September, 1932, was 4.056s. per fine ounce. (e) Date Bounty ceased. (f) For details of other financial assistance see next table. (g) Acts passed in respect of each year.

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

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

Amounts paid to—	Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus. Cap. Ter.	Total.
		£	£	£	£	£	£	£	£
Wheat-growers as—									
Bounty (a) ..	1931-32	950,546	820,635	64,620	874,630	716,826	2,057	..	3,429,314
Relief ..	1932-33	570,902	442,421	40,744	507,138	436,145	2,342	308	2,000,000
Relief ..	1933-34	911,094	603,586	76,455	764,543	639,493	(d)57,024	805	3,053,000
Bounty (a) ..	1934-35	531,593	285,000	45,717	300,687	296,652	2,543	222	1,462,414
Special Relief	1934-35	100,000	192,000	12,000	127,000	137,000	5,250	..	573,250
Relief ..	1934-35	590,000	400,000	42,740	503,545	434,527	(d)33,906	226	2,004,944
Relief (b) ..	1935-36	565,327	441,948	42,835	432,146	392,850	(d)40,403	360	1,915,869
Total ..	..	4,219,462	3,185,590	325,111	3,509,689	3,053,493	143,525	1,921	14,438,791
Fruit-growers as—									
Relief (c) ..	1933-34	8,225	36,321	478	5,258	10,918	63,800	..	125,000
Relief (c) ..	1934-35	12,538	22,299	2,103	13,116	14,713	70,231	..	135,000
Total ..	..	20,763	58,620	2,581	18,374	25,631	134,031	..	260,000
Primary Producers (other than wheat-growers)—									
Manure subsidy ..	1932-33	19,903	88,697	32,588	34,930	50,823	17,711	..	244,652
Manure subsidy ..	1934-35	23,000	95,000	21,000	46,000	52,000	13,000	..	250,000
Manure subsidy ..	1935-36	56,211	203,324	40,944	99,610	105,821	28,127	..	534,037
Manure subsidy ..	1936-37	40,500	130,000	25,000	59,000	57,500	15,000	..	327,000
Manure subsidy (b)	1937-38	32,500	100,000	22,000	50,000	45,000	12,000	..	261,500
Total ..	..	172,114	617,021	141,532	289,540	311,144	85,838	..	1,617,189
Grand Total ..	..	4,412,339	3,861,231	469,224	3,817,603	3,390,268	363,394	1,921	16,315,980

(a) Rate of Bounty 4½d. per bushel in 1931-32 and 3d. per bushel in 1934-35. (b) Subject to revision.
 (c) Growers of apples, pears and mandarins. (d) Includes special grant to Tasmania.

The moneys granted for the assistance of wheat-growers in 1932-33 and 1933-34 were paid through the Governments of the States on an acreage basis. In 1934-35, in accordance with the recommendations of the Royal Commission on the wheat industry, assistance took the form of a bounty of 3d. per bushel, supplemented by a further relief payment of 3s. per acre. Further special relief was given to those farmers who were adversely affected by the weather conditions of the season 1934-35. Altogether, the amount paid during 1934-35 for the benefit of wheat-growers exceeded £4 million. For the year 1935-36 the amount paid by the Commonwealth Government as relief was £1,915,869. This also was paid through the State Governments. The relief granted to fruit-growers was paid to growers of apples, pears and mandarins. Assistance has been given to primary producers, other than wheat-growers, in the form of a manure subsidy; the rate was 15s. for each ton of artificial manure used in the production of primary produce, reduced in 1936-37 to 10s. per ton. Since 1932-33 more than £1,617,000 has been distributed in this manner. In addition to the assistance outlined above the Loan (Farmers' Debt Adjustment) Act 1935 made provision for grants, totalling £12 million to be made available to the States for the adjustment of farmers' debts. Of this amount

£10 million was allocated as follows:—New South Wales, £3,450,000; Victoria, £2,500,000; Queensland, £1,150,000; South Australia, £1,300,000; Western Australia, £1,300,000; and Tasmania, £300,000. The remaining £2 million is to be allocated in the same proportion, but is subject to review at a later date.

§ 19. Fertilizers.

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

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

3. **Imports.**—The Australian production of prepared fertilizers is sufficient for local requirements. Imports consist chiefly of rock phosphate, which is used in making superphosphate, a valuable fertilizer for cereals. During 1936–37 the value of rock phosphate imported represented more than 67 per cent. of the total imports of fertilizers. Nauru and Gilbert and Ellice Islands Colony supplied the whole of the shipments. Sodium nitrate is obtained chiefly from Chile.

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

FERTILIZERS.—IMPORTS, AUSTRALIA.

Fertilizer.			1932–33. (a)	1933–34. (a)	1934–35. (a)	1935–36. (a)	1936–37. (a)
Ammonium Sulphate	cwt.		314,798	305,972	229,200	491,208	573,979
„ „	£		106,926	127,015	104,809	216,671	240,089
Potash Salts	cwt.	..	145,209	124,871	149,701	209,379	269,476
„ „	£	..	98,767	66,290	59,841	75,120	115,925
Rock Phosphate	cwt.	..	9,569,006	7,480,378	8,201,296	10,488,165	13,259,884
„ „	£	..	731,454	593,971	610,092	735,962	893,252
Soda Nitrate	cwt.	..	64,388	59,534	83,548	110,273	134,311
„ „	£	..	40,604	30,899	39,431	49,580	71,885
Superphosphate	cwt.	..	..	..	51,360	40	20
„ „	£	..	..	..	3,449	9	4
Other	cwt.	..	7,787	120,382	7,712	116,549	38,425
„ „	£	..	3,808	20,313	3,431	13,598	6,075
Total	cwt.	..	10,101,188	8,091,137	8,722,817	11,415,614	14,276,095
	£		981,559	838,488	821,053	1,090,940	1,327,230

(a) Australian currency values.

4. **Exports.**—The subjoined table shows the exports of manures for the years 1932-33 to 1936-37. Practically all these fertilizers are manufactured locally, the quantities exported being consigned chiefly to the Pacific Islands, New Zealand and Japan :—

FERTILIZERS.—EXPORTS, AUSTRALIA.

Fertilizer.		1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
Ammonium sulphate	cwt.	1,035	279	2,553	4,061	5,011
" "	£	423	121	1,074	1,569	974
Bonedust	cwt.	5,470	25	41	2,576	2,865
" "	£	770	10	17	1,396	1,597
Rock phosphate	cwt.	..	..	..	..	1
" "	£	..	..	..	..	7
Soda nitrate	cwt.	65	6	1	..	59
" "	£	49	7	1	..	59
Superphosphate	cwt.	294	633	31,116	36,454	41,254
" "	£	89	155	5,590	6,261	7,136
Other	cwt.	11,811	21,445	18,188	29,300	68,817
" "	£	1,664	8,493	1,703	11,665	34,104
Total						
	cwt.	18,675	22,388	51,899	72,391	118,007
	£	2,995	8,786	8,385	20,891	43,877

5. **Quantities Locally Used.**—Information regarding the area manured and the quantity used in each State during the year 1936-37 is given in the following table. Hitherto the area of pasture lands top-dressed and the quantity of manure used thereon were not available separately for Victoria and Western Australia, the particulars being included with the area of crops manured. The particulars are now available and the table has been extended to include these additional data for the year 1936-37. Details of the area manured with natural manure (stableyard, etc.) have been omitted; in 1936-37 the area and quantity involved amounted to 108,558 acres and 544,209 loads :—

AREA MANURED AND QUANTITY OF MANURE USED, 1936-37.

State or Territory.	Artificial Manure (Superphosphates, Bonedust, Nitrates, etc.)				Total Area Manured.	Total Artificial Manure Used.
	Area under Crop Manured.		Pasture Lands Top-dressed.			
	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.
New South Wales	3,783,381	120,179	677,879	30,909	4,461,260	151,088
Victoria	3,657,432	157,865	2,911,181	148,981	6,568,613	306,846
Queensland (c)	162,734	40,393	(a)	(a)	(b) 162,734	(b) 40,393
South Australia	4,001,172	161,054	903,530	46,399	4,904,702	208,053
Western Australia	3,794,338	175,705	974,487	48,768	4,768,825	224,473
Tasmania	220,740	21,132	191,728	10,232	412,468	31,364
Northern Territory	20	4	..	..	20	4
Australian Capital Territory ..	3,713	169	2,612	135	6,325	304
Total	15,623,530	677,101	5,661,417	285,424	21,284,947	962,525

(a) Not available.

(b) Excluding Pasture Lands.

Quantity considered to be negligible.

(c) Information not collected, figures for previous year shown.

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

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

QUANTITY OF ARTIFICIAL MANURE USED.—AUSTRALIA.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Total. (b)
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1927-28 ..	113,705	240,715 (a)	21,855	168,576	169,552	24,427	..	33	738,923
1928-29 ..	126,946	257,498 (a)	36,644	184,994	201,022	23,500	14	116	830,734
1929-30 ..	129,076	269,967 (a)	22,925	196,746	231,128	24,810	..	137	874,789
1930-31 ..	132,619	274,420 (a)	28,783	205,110	236,146	24,670	..	131	902,079
1931-32 ..	70,374	163,234 (a)	31,255	148,707	178,509	22,050	..	92	614,221
1932-33 ..	89,955	199,557 (a)	35,505	157,995	199,337	24,235	..	128	706,712
1933-34 ..	98,313	217,251 (a)	42,517	158,989	203,848	25,844	..	120	746,882
1934-35 ..	101,885	211,657 (a)	44,279	157,189	196,741	25,824	..	135	737,710
1935-36 ..	123,472	251,897 (a)	40,393	174,593	202,325	27,104	2	166	819,952
1936-37 ..	151,088	306,846 (c)	40,393	208,053	224,473	31,364	4	304	962,257

(a) Exclusive of quantity used in top-dressing pasture lands.

(b) Incomplete. See Note (a).

(c) 1935-36:

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

6. **Local Production.**—Complete information regarding local production of fertilizers is not available. The number of firms engaged in the manufacture of chemical fertilizers in Australia for the year 1936-37 was 33, made up as follows:—New South Wales, 4; Victoria, 5; Queensland, 5; South Australia, 9; Western Australia, 5; and Tasmania, 6; The production of superphosphates in Australia during 1936-37 amounted to 1,090,225 tons, the largest producing States being Victoria, Western Australia and South Australia.

§ 20. Ensilage.

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

2. **Quantity Made.**—Information regarding the number of holdings on which ensilage was made and the quantity made during the seasons 1932-33 to 1936-37 is given in the following table.

ENSILAGE MADE.

State.	1932-33.		1933-34.		1934-35.		1935-36.		1936-37.	
	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.
	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.
New South Wales ..	738	62,435	892	70,835	1,068	88,991	1,311	109,731	1,350	113,542
Victoria ..	197	11,642	214	11,900	369	22,145	326	22,346	549	32,902
Queensland ..	112	6,305	134	8,515	105	7,566	86	5,644	(b) 86	(b) 5,644
South Australia ..	132	9,470	92	5,098	109	6,794	124	9,160	113	9,270
Western Australia ..	469	21,655	433	19,974	423	16,996	332	14,396	306	13,197
Tasmania ..	37	1,336	58	2,301	52	2,473	29	1,341	17	619
Australia ..	1,685	112,843	1,823	118,623	2,126	144,965	2,208	163,118	2,426	175,174

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

(b) 1935-36.

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

previous years, when there was a surplus of green forage. The quantities made since that date have fluctuated considerably, but the output has increased during recent years, the production of 175,174 tons in 1936-37 being the greatest yet recorded in any year.

§ 21. Agricultural Colleges and Experimental Farms.

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

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

2. **Agricultural Colleges and Experimental Farms.**—In previous issues of this volume detailed information was given regarding agricultural colleges, experimental farms and agricultural education generally. See Year Book No. 11, pages 393-5, and a summary in respect of the year 1936-37 will be found in the Production Bulletin No. 31 issued by this Bureau.

3. **Agricultural and Stock Departments.**—A synopsis of the activities and operations of the Agricultural and Stock Departments of the several States on 30th June, 1920, will be found in Official Year Book No. 14, pages 1180 to 1191.

§ 22. Employment in Agriculture.

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

MALES EMPLOYED IN AGRICULTURE.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
1913-14 ..	61,525	51,932	33,362	34,111	18,210	11,789	210,929
1923-24 ..	48,176	49,740	38,186	31,532	22,153	12,905	202,692
1931-32 ..	39,382	40,994	45,496	30,587	25,576	12,736	194,771
1932-33 ..	42,556	41,845	46,203	30,457	26,079	13,199	200,339
1933-34 ..	42,084	38,514	46,097	30,329	24,925	13,945	195,894
1934-35 ..	42,135	37,294	47,242	30,177	23,775	13,353	193,976
1935-36 ..	42,204	35,926	45,878	30,096	22,585	12,731	189,420
1936-37 ..	43,648	35,575	(a) 45,878	30,273	22,317	12,138	189,829

(a) 1935-36.

Although the area under crop has expanded considerably during the past two decades there has been a decrease in the numbers employed in the agricultural branch of the rural industry owing to the increasing use of machinery in the cultivation of the soil and the harvesting of the crops. For a number of years prior to the depression the value of machinery employed in agricultural pursuits increased on the average by approximately £2 million per annum. After 1929-30 machinery values declined each year until 1935-36, when an increase of £1½ million was recorded, followed by a further rise of £700,000 in 1936-37.