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CHAPTER XXIII

RURAL INDUSTRY

NOTE.—This chapter is divided into four major parts:—

- Introduction, dealing with general rural activity in Australia;
- Agricultural Production;
- Pastoral Production; and
- Other Rural Industries, which includes the dairying, poultry and bee industries.

For greater detail on the subjects dealt with in this chapter, see the annual bulletins *Primary Industries, Part I.—Rural Industries, Part II.—Non-Rural Industries and Value of Production*, and *Secondary Industries* (butter, cheese, etc., factories) issued by this Bureau. Current information on commodities produced is obtainable in the *Quarterly Summary of Australian Statistics, Monthly Review of Business Statistics, Monthly Bulletin of Production Statistics* and *Digest of Current Economic Statistics* (monthly). The series of bulletins *Classification of Rural Holdings by Size and Type of Activity, 1959–60*, shows particulars of rural holdings classified by size, nature and area of crops, and numbers of livestock, and also according to main type of activity. The mimeographed annual *Report on Food Production and the Apparent Consumption of Foodstuffs in Australia* contains details of the production and utilization of foodstuffs. The following mimeographed publications also contain considerable detail on the particular subjects dealt with.

General.—*Value of Production and Indexes of Price and Quantum of Farm Production* (annual), *Value of Primary Production (Preliminary Statement)* (annual), *Farm Machinery on Rural Holdings* (annual), *Tractors on Rural Holdings, 31st March, 1960* (detailed information), *New Tractors: Receipts, Sales and Stocks* (quarterly), and *New Agricultural Machinery* (quarterly).

Agricultural Production.—*Rural Land Use and Crop Production* (annual), *Agricultural Statistics (Preliminary Statement)* (annual), *The Wheat Industry* (two a year), *The Fruit Growing Industry* (annual), and *Fruit Statistics (Preliminary Statement)* (annual).

Pastoral Production.—*Livestock Statistics* (annual), *Livestock Numbers* (annual), *The Meat Industry* (monthly), *Wool Production* (annual), and *Wool Production and Utilization* (annual).

Other Rural Production.—*The Dairying Industry* (monthly and half-yearly), *Livestock Statistics* (annual), *Livestock Numbers* (annual), *Manufacturing Industries No. 20.—Bacon Curing and No. 21.—Butter, Cheese and Condensed, Concentrated, etc., Milk* (annual), *Production Summaries No. 36.—Preserved Milk Products and No. 55.—Butter and Cheese* (monthly), and *Bee-farming* (annual).

Values of Australian overseas trade shown throughout this chapter are expressed as £A. f.o.b. port of shipment.

INTRODUCTION: RURAL ACTIVITY.

§ 1. Number and Area of Rural Holdings.

1. **Number and Area.**—A holding in Australia has been defined by statisticians on a more or less uniform basis, and discrepancies which exist are not of sufficient importance to prevent comparisons. For the purpose of these statistics, a holding has been defined as land of one acre or more in extent, used in the production of agricultural produce, the raising of livestock or the products of livestock.

There are considerable fluctuations from time to time in the numbers of very small holdings, and it is very difficult to determine in some cases whether or not they are rural holdings within the definition.

In addition, in the very dry parts, such as the far west of New South Wales and Queensland and the remoter parts of South Australia and Western Australia, there are large areas of marginal lands sporadically occupied for extensive grazing under short-term lease or other arrangement, and the areas so occupied tend to fluctuate with the seasons. Similarly, there are rugged areas in the mountain country of some States which are also occasionally occupied.

The following table shows the recorded number and area of the holdings in each State for the seasons 1958–59 to 1962–63.

RURAL HOLDINGS: NUMBER AND AREA

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
NUMBER OF RURAL HOLDINGS									
1958-59	77,857	69,770	43,290	28,105	21,563	11,374	243	221	252,423
1959-60	77,499	69,778	42,912	28,527	21,832	11,202	269	224	252,243
1960-61	76,871	69,623	43,155	28,711	21,922	11,201	275	224	251,982
1961-62	76,949	69,866	43,287	28,886	22,082	11,117	284	217	252,688
1962-63	76,294	69,700	43,284	28,922	22,554	10,974	281	217	252,226

TOTAL AREA OF RURAL HOLDINGS
(⁰000 acres)

1958-59	172,978	37,755	370,240	152,312	238,264	6,573	156,897	381	1,135,400
1959-60	172,721	37,737	371,794	155,437	244,619	6,511	158,806	382	1,148,007
1960-61	172,697	37,934	373,995	156,456	247,737	6,510	161,099	374	1,156,802
1961-62	172,327	37,754	374,501	156,897	252,783	6,551	171,245	377	1,172,435
1962-63	172,038	37,709	376,788	156,697	262,660	6,422	164,955	376	1,177,645

2. *Classification by Size and Type of Activity.*—Some of the information obtained from the 1959-60 Agricultural and Pastoral Census was classified by size of principal characteristics (area of holdings, area of sown grasses and clovers, area of selected crops and numbers of livestock). In addition, all holdings were classified according to type of activity. Tables showing this information, for statistical divisions and States, and an outline of the methods used have been published in a series of bulletins, *Classification of Rural Holdings by Size and Type of Activity, 1959-60*. Similar information on size classification for each State was published in a series of bulletins for the year 1955-56.

§ 2. Employment on Rural Holdings

1. *Persons Engaged.*—The following table shows, for each State except Victoria, the recorded number of males working on rural holdings. Particulars for females are not available except for New South Wales. Additional particulars relating to the number of males employed in agriculture up to 1941-42 are shown in Year Book No. 36, page 852, and previous issues. Similar details for later years are not available.

MALES^(a) ENGAGED ON RURAL HOLDINGS AT 31st MARCH, 1963

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T. ^(b)	A.C.T.	Aust.
Permanent—									
Owners, lessees or share-farmers	64,214	(c)	44,994	23,748	20,537	7,457	232	162	} n.a.
Relatives of owner, lessee or share-farmer over 14 years of age, not receiving wages or salary	4,064		3,244	1,696	1,285	111	36	9	
Employees, including managers and relatives working for wages or salary	27,988		18,515	7,890	8,758	4,053	672	140	
Total, Permanent Males	96,266		66,753	33,334	30,580	11,621	940	311	
Temporary	24,965		10,699	14,106	3,387	5,135	1,414	42	
Total, Males	121,231		77,452	47,440	33,967	16,756	2,354	353	

(a) Details for females not available except for New South Wales. (b) 1,303 male full-blood Aborigines employed are included as temporary employees. (c) Not available; subject to investigation.

The next table shows the number of persons working full-time on rural holdings in Australia at 31st March of the five years 1954 to 1958. Data for subsequent years are the subject of investigation and are not available at this stage.

PERSONS ENGAGED ON RURAL HOLDINGS: AUSTRALIA(a)

Particulars	31st March—				
	1954(b)	1955(b)	1956	1957	1958
Permanent—					
Males—					
Owners, lessees or share-farmers ..	241,149	240,879	245,621	244,111	241,247
Relatives of owner, lessee or share-farmer over 14 years of age, not receiving wages or salary ..	22,736	23,529	21,232	21,734	21,535
Employees, including managers and relatives working for wages or salary	93,748	91,479	89,334	90,599	91,308
Total, Males	357,633	355,887	356,187	356,444	354,090
" Females	49,782	46,656	42,104	41,373	39,763
Total, Permanent ..	407,415	402,543	398,291	397,817	393,853
Temporary—					
Total, Males	86,644	87,400	84,607	86,267	93,142
" Females	8,365	9,238	9,638	11,324	12,986
Total, Temporary ..	95,009	96,638	94,245	97,591	106,128
Grand Total	502,424	499,181	492,536	495,408	499,981

(a) Australian totals for years subsequent to 1958 are not available. (b) Excludes Northern Territory.

2. Salaries and Wages Paid.—Particulars of salaries and wages paid to employees (including amounts paid to contractors) working full-time on rural holdings are shown below for the year 1962-63. Data for New South Wales and Victoria, and hence Australia, are not available.

EMPLOYEES ON RURAL HOLDINGS: SALARIES AND WAGES(a) PAID, 1962-63 (£'000)

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.	
Permanent—Males ..	(b)	(b)	14,982	6,054	6,943	3,242	612	182	} n.a.	
Females ..			1,169	230						79	52	19
Temporary(c)—Males ..			20,406	4,366	4,770	1,801	387	75		5
Females ..				417						
Total			36,557	11,067	11,713	5,524	1,051	281		

(a) Includes value of keep. (b) Not available; subject to investigation. (c) Includes amounts paid to contractors.

Similar information for Australia is given below for the years 1953-54 to 1957-58. Particulars for subsequent years are the subject of investigation and are not available at this stage.

**EMPLOYEES ON RURAL HOLDINGS: SALARIES AND WAGES(a) PAID,
AUSTRALIA(b)
(£'000)**

Particulars	1953-54(c)	1954-55(c)	1955-56	1956-57	1957-58
Permanent—Males	52,240	53,951	55,752	58,707	63,397
Females	2,406	2,468	2,456	2,456	2,793
Temporary(d)—Males	51,282	53,855	53,200	54,431	59,982
Females	1,190	1,323	1,476	1,498	1,656
Total	107,118	111,597	112,884	117,092	127,828

(a) Includes value of keep. (b) Australian totals for years subsequent to 1957-58 are not available. (c) Excludes Northern Territory. (d) Includes amounts paid to contractors.

3. Persons Residing Permanently on Holdings.—Particulars of persons (of all ages) residing permanently on rural holdings at 31st March, 1963, are shown below.

**PERSONS (OF ALL AGES) RESIDING PERMANENTLY ON RURAL HOLDINGS,
31st MARCH, 1963**

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Males	157,446	141,706	105,531	58,668	49,256	26,488	1,301	497	540,893
Females	136,025	124,822	86,270	51,825	40,375	23,673	621	437	464,048
Total	293,471	266,528	191,801	110,493	89,631	50,161	1,922	934	1,004,941

Similar particulars for Australia as a whole for the years 1959 to 1963 are shown below.

**PERSONS (OF ALL AGES) RESIDING PERMANENTLY ON RURAL HOLDINGS,
AUSTRALIA**

Particulars	31st March—				
	1959	1960	1961	1962	1963
Males	554,479	551,800	547,594	544,709	540,893
Females	470,177	469,601	467,539	465,238	464,048
Total	1,024,656	1,021,401	1,015,133	1,009,947	1,004,941

§ 3. Technical Aspects of Rural Industry

1. Farm Machinery on Rural Holdings.—The history of the development of large-scale field crops and sown pastures in Australia is essentially also the history of the mechanization of the rural industries. This may be divided into four phases.

The first phase extended from initial settlement to the mid-nineteenth century, when agriculture was primarily local and non-commercial, and confined by hand methods to small areas and low production per farm worker.

The invention of an effective wheat stripper in South Australia in 1843, and the extension of its use into Victoria and New South Wales, however, greatly increased the area which could be harvested in a season. This initiated the second phase, which continued with the development of stump-jump implements in the 1870's, and the scrub roller and mullenizer in the 1890's. These later developments made possible an extension of the wheat belt into the drier mallee lands of Victoria and South Australia. By the turn of the century, machinery had thus been developed to conduct all cropping operations on an extensive basis.

The third major change in farm machinery followed the 1914-18 War, when tractor power became increasingly available in a variety of models and sizes. The increase in numbers of tractors on rural holdings and higher operating speeds led in turn to new and improved types of farm machinery drawn by tractors. These trends were interrupted by the economic depression of the 1930's.

After the 1939-45 War, there was a widespread expansion of labour-saving machinery and devices in all sectors of rural industry. Clearing methods were extended with the bulldozer, log, chain and hi-ball units, and cultivation was improved by means of large disc ploughs and disc harrows, and seeding and harvesting machinery. These methods were extended to crops for which methods involving greater use of manpower (manual labour) had previously been employed. Milking machines almost entirely replaced hand milking on dairy farms, and labour-saving machinery was introduced into farm and station development and maintenance operations. These operations included fencing, bulk transport of grain and fodder, pasture treatments, fodder conservation and pasture improvement.

The table below shows data for the principal types of farm machinery on rural holdings in the several States and Territories at 31st March, 1963. A more detailed analysis of tractors on rural holdings according to horse-power, type of fuel used and age of tractor was published in the Statistical Bulletin: *Tractors on Rural Holdings—Australia, 31st March, 1960*, issued on 8th September, 1961.

FARM MACHINERY ON RURAL HOLDINGS, 31st MARCH, 1963

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.		
Cultivating—											
Ploughs (all types including disc cultivator ploughs)	(a)	(a)	(a)	(a)	27,464	(a)	(b) 202	(a)	(a)		
Rotary hoes—											
Self-contained power unit	9,591	6,254	3,728	4,001	1,880	1,127	} (b) 66	{ 37	} 38,896		
Tractor-drawn	4,049	3,645	1,657	988	1,247	610					
Seeding and planting—											
Grain drills—											
Combine type	26,356	19,155	11,536	15,251	12,804	1,265	..	70	86,437		
Other types	5,914	10,016	2,221	5,065	4,015	2,619	..	43	29,893		
Maize and cotton planters	8,215	(a)	7,261	..	..	..	(b) 27	6(c)	15,509
Fertilizer distributors and broadcasters	20,514	29,188	11,112	8,213	9,096	5,255	(a)	121	83,499		
Harvesting—											
Grain and seed headers, strippers and harvesters	19,031	14,646	7,183	12,677	11,374	687	..	30	65,628		
Mowers—											
Power-driven	} (a)	(a)	{ 8,316	(a)	{ 6,566	4,592	(a)	(a)	(a)		
Ground-drive										{ 5,654	{ 1,324
Hay rakes—											
Side delivery	} (a)	(a)	{ 3,086	(a)	(a)	{ 2,121	(a)	(a)	(a)		
Buck										{ 3,199	{ 1,005
Dump										{ 6,014	{ 1,161
Hay presses and balers—											
Stationary hay presses	(a)	(a)	383	(a)	(a)	(a)	} (a) 42	(a)	(a)		
Pick-up balers	8,510	10,107	1,876	3,791	2,994	1,405					
Potato diggers	(a)	(a)	1,160	(a)	(a)	995	..	(a)	(a)		
Forage harvesters	1,749	1,289	740	645	434	216	(a)	10	5,083		
Peanut pickers	(a)	..	254	..	..	..	(a)	..	(a)
Corn pickers	(a)	(a)	896	..	..	..	..	..	(a)
Other—											
Shearing machines (number of stands)	68,708	39,162	18,977	27,528	19,868	4,249	(d) 15	298	178,805		
Milking machines (number of units)	43,089	97,372	46,674	18,836	10,514	12,701	(a)	84	229,270		
Tractors—											
Wheel	68,020	66,479	51,202	28,472	25,612	9,605	172	196	249,758		
Crawler	4,785	1,936	6,684	3,183	3,606	1,022	65	5	21,286		
Hammer mills	(a)	(a)	6,250	(a)	(a)	343	..	(a)	(a)		

(a) Not available. June, 1963.

(b) At 30th September, 1962.

(c) Excludes Victoria.

(d) At 30th

The next table shows particulars of farm machinery on rural holdings in Australia at 31st March, 1959 to 1963.

FARM MACHINERY ON RURAL HOLDINGS: AUSTRALIA

Particulars	31st March—				
	1959	1960	1961	1962	1963
Cultivating—					
Ploughs (all types including disc cultivator ploughs)(a) ..	(b)	(b)	323,602	(b)	(b)
Rotary hoes	36,611	34,159	36,896	38,868	38,896
Seeding and planting—					
Grain drills—					
Combine type	81,493	81,795	82,277	84,743	86,437
Other types	27,422	29,394	28,776	29,191	29,893
Maize and cotton planters ..	17,970	17,081	(c) 15,567	(c) 16,050	(c) 15,509
Fertilizer distributors and broadcasters	76,714	78,181	80,654	82,821	83,499
Harvesting—					
Grain and seed headers, strippers and harvesters	61,361	64,070	63,158	64,891	65,628
Mowers(a)—					
Power-driven	58,624	} (b)	(b)	{ 71,585	} (b)
Ground drive	26,695			{ 23,076	
Hay rakes(a)—					
Side delivery	28,105	} (b)	(b)	{ 35,777	} (b)
Buck	11,613			{ 12,347	
Dump	22,472			{ 20,267	
Hay presses and balers—					
Stationery hay presses	8,734	7,769	7,411	6,611	(b)
Pick-up balers	(d) 20,472	22,496	25,264	26,647	28,725
Potato diggers(a)	5,739	} (b)	(b)	{ 6,223	} (b)
Forage harvesters	(d) 1,807			{ 4,073	
Peanut pickers(a)	192			{ 255	
Corn pickers(a)	(b)			{ 1,264	
Other—					
Shearing machines (number of stands)	167,767	170,847	172,697	177,579	178,805
Milking machines (number of units)	216,287	221,260	223,815	228,228	229,270
Tractors—					
Wheel	212,996	221,886	} 253,515	264,069	{ 249,758
Crawler	19,823	20,462			
Hammer mills(a)	10,591	(b)	(b)	17,508	(b)

(a) Details for all States are collected at triennial intervals only. (b) Not available. (c) Incomplete; particulars for Victoria are not available. (d) Details of pick-up balers and forage harvesters for each State classified according to type, mode of operation and age were published in the bulletin *Primary Industries* No. 53, 1958-59, Part I.—*Rural Industries*.

2. Fertilizers.—(i) *General*. In the early days of settlement in Australia, the principles of scientific cultivation were little understood. It was common for the land to be cropped continuously until the natural fertility was almost exhausted. More scientific methods have been adopted in recent decades, much of the improvement in this regard being due to the assistance and guidance offered to farmers by various State and Commonwealth departments and authorities.

Fertilizer is generally applied to pastures at the time of sowing, and periodical (usually annual) top-dressings are carried out afterwards to keep the pastures in good condition. 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 brought into production. With the rapid increase in the area of sown pastures, particularly since the 1939-45 War, large quantities of artificial fertilizers

have been used. In addition, increasing areas of native pastures have been top-dressed. The utilization of aircraft, in particular, has enabled the fertilizing of some areas which would otherwise be inaccessible. In 1962-63, pastures (sown and native) accounted for nearly 60 per cent. of both the total area fertilized and the total quantity of fertilizer used.

(ii) *Local Production.* The Australian output of prepared fertilizers is derived chiefly from imported rock phosphate. 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 1962-63 was 48, made up as follows:—New South Wales, 11; Victoria, 6; Queensland, 4; South Australia, 11; Western Australia, 8; and Tasmania, 8. The production of superphosphate in Australia during 1962-63 amounted to 2,861,580 tons.

(iii) *Quantities Used Locally.* Information regarding the area treated with artificial fertilizers and the quantity of artificial fertilizers (superphosphate, bonedust, nitrates, etc.) used in each State during the 1962-63 season is given in the following table.

AREA FERTILIZED AND QUANTITY OF ARTIFICIAL FERTILIZERS USED, 1962-63

State or Territory	Crops			Pastures			Total		
	Area fertilized	Super-phosphate used	Other artificial fertilizers used	Area fertilized	Super-phosphate used	Other artificial fertilizers used	Area fertilized	Super-phosphate used	Other artificial fertilizers used
	'000 acres	tons	tons	'000 acres	tons	tons	'000 acres	tons	tons
New South Wales ..	4,498	152,883	35,008	7,381	379,813	8,857	11,879	532,696	43,865
Victoria ..	4,530	184,610	42,302	9,940	561,333	34,243	14,470	745,943	76,545
Queensland ..	602	20,383	112,133	33	2,365	1,015	635	22,748	113,148
South Australia ..	4,415	209,135	11,875	3,750	207,519	2,032	8,165	416,654	13,907
Western Australia ..	7,308	348,693	23,348	7,002	335,459	5,567	14,310	684,152	28,915
Tasmania ..	205	19,890	9,389	1,165	91,914	3,330	1,370	111,804	12,719
Northern Territory ..	1	78	80	2	45	23	3	123	103
Australian Capital Territory ..	4	248	37	78	4,179	37	82	4,427	74
Total ..	21,563	935,920	234,172	29,351	1,582,627	55,104	50,914	2,518,547	289,276

Particulars of the quantity of artificial fertilizers used in each State and Territory during each of the seasons 1958-59 to 1962-63 are shown in the next table. These details include the quantity used for the top-dressing of pasture lands.

QUANTITY OF ARTIFICIAL FERTILIZERS USED

(Tons)

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Total
1958-59 ..	344,490	730,868	111,741	410,896	560,091	102,280	144	2,724	2,263,234
1959-60 ..	400,701	740,035	101,642	391,628	581,230	105,966	205	2,533	2,323,940
1960-61 ..	497,492	745,522	108,220	399,091	621,435	107,027	209	3,798	2,482,794
1961-62 ..	512,201	777,429	126,301	404,233	649,323	112,785	216	4,492	2,586,980
1962-63 ..	576,561	822,488	135,896	430,561	713,067	124,523	226	4,501	2,807,823

(iv) *Imports and Exports.* The chief sources of Australia's supplies of rock phosphate are Nauru, Christmas Island (Indian Ocean) and the Gilbert and Ellice Islands. Sodium nitrate is obtained chiefly from Chile.

The imports of artificial fertilizers during the five years ended 1962-63 are shown in the following table.

ARTIFICIAL FERTILIZERS: IMPORTS INTO AUSTRALIA

Fertilizer	1958-59	1959-60	1960-61	1961-62	1962-63
QUANTITY (Tons)					
Ammonium sulphate ..	19,979	11	110	18,636	37,458
Potassium fertilizers ..	43,912	36,204	52,212	74,789	58,327
Rock phosphate ..	1,353,739	1,322,173	1,647,928	1,950,834	1,694,916
Sodium nitrate ..	7,505	6,837	5,670	7,709	7,193
Other ..	16,951	17,282	26,361	37,888	35,001
VALUE (£A.'000 f.o.b.)					
Ammonium sulphate ..	497	(a)	3	381	622
Potassium fertilizers ..	710	499	756	1,277	924
Rock phosphate ..	3,750	3,654	4,315	4,975	4,937
Sodium nitrate ..	152	139	134	155	168
Other ..	496	519	745	1,048	921
Total ..	5,605	4,811	5,953	7,836	7,572

(a) Less than £500.

Exports of fertilizers (practically all of which were manufactured locally) amounted to 7,345 tons valued at £150,942 in 1962-63 compared with 1,955 tons valued at £56,054 in 1961-62.

3. Aerial Agriculture.—During recent years, an increasing use has been made of aircraft for top-dressing and seeding, for spraying and dusting of crops and pastures, and for pest and vermin extermination. For 1956-57 (the first year for which data are available), the total area treated was 1,466,000 acres; in 1962-63 the total area treated was 8,763,000 acres; almost six times as great.

The following table shows details of area treated and materials used for each State for the year ended 31st March, 1963.

AERIAL AGRICULTURE: OPERATIONS DURING 1962-63

Particulars	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	Total (a)
Top-dressing and seeding—							
Area treated with—							
Superphosphate alone acres	4,778,255	654,975	2,900	377,453	241,490	72,530	6,127,603
Seed alone	147,089	..	390,906	11,776	776	..	550,547
Superphosphate and seed together	56,410	3,200	..	..	101,050	13,480	174,140
Gypsum	193,420	..	..	..	1,680	..	195,100
Other	55,965	1,800	332	30	24,625	..	82,752
Total(a)	5,078,579	659,975	394,138	389,259	357,258	86,010	6,965,219
Materials used—							
Superphosphate .. tons	239,264	44,403	150	21,133	18,001	5,695	328,646
Seed on—							
Pasture lb.	303,593	2,128	531,783	55,807	75,177	3,580	972,068
Other	2,400	..	37,345	..	..	..	39,745
Spraying and dusting—							
Area treated—							
Pasture acres	30,822	28,580	13,387	2,426	10,594	..	85,809
Crops	357,003	172,634	124,563	78,270	894,494	140	1,627,104
Other	12,422	5,497	7,626	521	..	..	26,066
Total	400,247	206,711	145,576	81,217	905,088	140	1,738,979
Total Area Treated(a)	5,480,999	923,776	539,714	470,476	1,262,346	86,150	8,763,461
	(b)	(c)					(d)

(a) Areas treated with more than one type of material in one operation are counted once only.
 (b) Includes 2,400 acres baited for rabbit destruction. (c) Includes 57,090 acres baited for rabbit destruction. (d) Includes 59,490 acres baited for rabbit destruction. See footnotes (b) and (c).

NOTE.—The information contained in this table was collected by the Department of Civil Aviation.

4. **Pasture Improvement.**—An article on pasture improvement, which includes notes on indigenous and introduced species of grasses, and which traced the development of pasture research in Australia, appears on pp. 1001–2 of Year Book No. 49.

5. **Soil Conservation.**—Year Book No. 49 contained an article (pp.1003–4) on soil conservation which dealt with the following matters: land use and soil erosion, agents of erosion, prevention and control, and the activities of various Commonwealth and State authorities which promote and co-ordinate research into the problems of soil erosion and the initiation of preventive measures.

AGRICULTURAL PRODUCTION

NOTE.—In general, statistics in this chapter relating to agricultural production are derived from "census" returns supplied by approximately 250,000 farmers who utilize one acre or more of land for agricultural or pastoral purposes. The latest figures available are those for the year 1962–63. The returns are collected on a substantially uniform basis in all States at 31st March each year, and relate to areas sown and crops produced in the previous twelve months. Where harvests are not completed by March (e.g. potatoes), provision is made in some States for a special collection after the harvest is completed and in others for the inclusion of the total estimated yield expected from the complete harvest. In cases where additional data are available from marketing authorities or other sources, these are used in conjunction with the "census" returns. The statistics published in this chapter are therefore shown in "agricultural" years. For most purposes, there will be little error involved in considering them as applying to years ending 30th June.

Details of the weights and measures used in recording production of agricultural commodities appear in the introduction to the bulletin *Primary Industries, Part I.—Rural Industries*.

§ 1. Progress, Assistance and Control

1. **Early Development.**—The coastal districts of southern Australia are characterized to a large degree by leached soils of low fertility, with limited areas suitable for intensive crop cultivation. This, combined with an unfamiliar climate and problems associated with the clearance of scrub-land, severely checked early attempts to establish crops.

A brief reference to these 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 Year Book. (See No. 22, p. 670.)

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

The following details of crops were collected in 1808:—wheat, 6,874 acres; maize, 3,389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 37 acres.

By the year 1850, the area of crops had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania. At the end of 1850, the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres. The bulk of the arable land in this part of the colony was devoted to the extensive grazing of sheep.

The gold discoveries of 1851 (at Bathurst in New South Wales and later at Ballarat and Bendigo in Victoria) had at first a very disturbing effect on agricultural progress. The area of crops declined from 491,000 acres in 1850 to 458,000 acres in 1854, as landowners and rural labourers joined in the various gold rushes. 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. There was still a shortage of rural labour, and the increased acreage was due largely to the increasing mechanization of crop operations.

2. **Progress of Cultivation.**—The following table shows the area of crops in each of the States and Territories of Australia at ten-yearly intervals since 1860-61 and during each of the ten seasons 1953-54 to 1962-63. On page 993 of Year Book No. 49. there is a graph showing the area of crops in Australia from 1900-01 onward.

AREA OF CROPS
(^{'000 acres})

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
1860-61	246	387	4	359	25	153	..	..	1,174
1870-71	385	693	52	802	55	157	..	..	2,144
1880-81	606	1,549	114	2,087	64	141	..	..	4,561
1890-91	853	2,032	225	2,093	70	157	..	..	5,430
1900-01	2,447	3,114	458	2,370	201	224	..	..	8,814
1910-11	3,386	3,952	667	2,747	855	287	..	..	11,894
1920-21	4,465	4,490	780	3,231	1,805	297	..	2	15,070
1930-31	6,811	6,716	1,144	5,426	4,792	268	2	5	25,164
1940-41	6,375	4,467	1,734	4,255	4,027	254	..	6	21,118
1950-51	4,761	4,537	2,077	3,812	4,650	290	n.a.	6	20,133
1953-54	5,425	4,737	2,361	4,034	4,633	330	n.a.	7	21,527
1954-55	5,394	4,704	2,593	4,229	5,112	301	1	5	22,339
1955-56	5,660	4,812	2,604	4,220	5,342	327	1	7	22,973
1956-57	3,789	3,904	2,469	4,273	5,233	288	1	5	19,962
1957-58	5,000	4,431	2,600	4,233	5,615	292	1	5	22,177
1958-59	6,820	5,040	2,852	4,436	6,135	339	1	8	25,631
1959-60	7,137	4,817	2,926	4,400	6,495	322	1	7	26,105
1960-61	8,044	5,838	3,057	5,399	6,871	357	2	8	29,576
1961-62	8,288	5,626	3,216	5,024	7,112	364	2	7	29,639
1962-63	8,903	6,318	3,490	5,495	7,482	395	2	7	32,092

The progress of agriculture was practically uninterrupted from 1860-61 to 1915-16, when, as the result of a special effort to increase wheat production during the 1914-18 War, 18.5 million acres were cultivated in Australia. There was a temporary setback in later war years, but after the end of the war the area continued to expand, and increased steadily to the record area of 25.2 million acres in 1930-31. In the following years, the slump in wheat prices seriously depressed incomes in the agricultural industry, and the area of crops decreased to just under 20 million acres in 1935-36.

By 1938-39, the industry was recovering from the depression, and the total area under cultivation reached the high level of 23.5 million acres. Thereafter, as a result of war-time man-power shortages and shipping difficulties, the area declined to less than 16 million acres in 1943-44. After that year, production gradually increased again until, in 1947-48, 22.5 million acres were sown to crops. This upward trend was reversed after 1948-49, largely because many primary producers transferred from wheat to wool production as a result of the high prices of wool. Since 1951-52, however, when the area sown was 20.0 million acres, the area under crops has increased steadily, except for 1956-57, when excessively wet conditions caused reductions in the area sown to wheat. Since that year, the area of all crops has shown an upward trend in each year, reaching a record level of 32.1 million acres in 1962-63. As the area under wheat in Australia constitutes a large proportion of the total area cropped (47 per cent. during the five years ended 1962-63), fluctuations in the former have in the past been largely responsible for year to year variation in total crop area.

3. **Control and Assistance by Governmental Authorities.**—(i) *General.* The influence of governmental and semi-governmental authorities on Australian rural industry is most apparent in the fields of guaranteed prices, subsidies and controlled marketing. Many of these aspects of intervention at the national level take place indirectly through the Australian Agricultural Council.

(ii) *Australian Agricultural Council.* Arising out of a conference of Commonwealth and State Ministers on agricultural and marketing matters, held at Canberra in December, 1934, a permanent organization known as the Australian Agricultural Council was formed. The Council consists of the Commonwealth Ministers for Primary Industry and Territories and the State Ministers of Agriculture, with power to co-opt the services of other Commonwealth and State Ministers as required. The principal functions of the Council

are:—the promotion of the welfare and development of agricultural industries generally; the exchange of information on agricultural production and marketing; the improvement of the quality of agricultural products and the maintenance of high grade standards; to ensure, as far as possible, balance between production and available markets; and organized marketing.

In addition, a permanent Standing Committee on Agriculture was formed to advise the Council, to secure co-operation and co-ordination in agricultural research, to advise State and Commonwealth Governments on the initiation and development of agricultural research, and to secure co-operation between all Governments in respect of quarantine measures against pests and diseases of plants and animals.

(iii) *Bounties paid to Producers.* Direct financial assistance to primary producers by the Commonwealth Government takes the form of bounties, subsidies and other financial assistance. Brief details of some of the more important payments are given below.

(a) *Cotton Bounty.* The *Cotton Bounty Act 1951–1958* providing for payment of a bounty on seed cotton of a grade higher than “strict good ordinary” expired on 31st December, 1963. Under the *Raw Cotton Bounty Act 1963* which came into effect from 1st January, 1964, to operate for a period of five years, the Commonwealth will pay a bounty on raw cotton produced and sold for use in Australia. The level of bounty is 16.125d. per lb. for Middling 1” White raw cotton with premiums and discounts for grades and staple lengths above and below Middling 1” White. There is a ceiling on bounty payments of £2,000,000 in any one year.

(b) *Flax Fibre Bounty.* The period covered by the bounty terminated on 31st October, 1960. (See Year Book No. 47, p. 939, and previous issues, for details of the bounty.)

(iv) *Other Financial Assistance.* Other forms of assistance to producers include payments for cattle tick control, the Commonwealth Dairy Industry Extension Grant, Commonwealth Extension Service Grant, flood, drought and bush fire relief, fisheries research and farm mechanization research.

Over recent years, legislative research schemes, financed by matching contributions from the Commonwealth and industry and/or States, have been initiated in regard to wheat, wool, tobacco, dairy produce, beef cattle and wine. Non-legislative schemes, on a similar financial basis, have been operative in relation to brown rot, Australian plague locusts, tractor testing, peanut drying, sugar-cane harvesting mechanization, barley research, banana research and fruit fly research.

For further information on these matters, see Chapter XXII. Public Finance, pages 921–2 and 925–32.

(v) *Agricultural Training and Research.* Agricultural colleges have been established in all States except Tasmania. The primary function of these colleges is the training of students in the various phases of agriculture and livestock husbandry. Students are required to undertake a considerable amount of practical work in addition to lectures and theory. A secondary function of the colleges is agricultural research and experimentation. To a lesser degree, they carry out extension work in the form of public field days. Upon graduation, students receive diplomas in agriculture, dairying, etc., according to the course undertaken.

Experimental farms have been set up by State Departments of Agriculture in all States. They are primarily concerned with agricultural research and experimentation, each farm concentrating on problems specific to the district in which it is located. The results of the work undertaken are passed on to farmers at field days which are held at regular intervals, through publication in various agricultural or scientific journals, and through the agricultural extension services of the State Departments of Agriculture.

The Commonwealth Scientific and Industrial Research Organization has field stations in many parts of Australia, and sometimes undertakes research jointly with the appropriate State authorities. It also has regional laboratories in several States, conducting research into agronomic and livestock problems as they occur in each particular region (see also Chapter XIX. Education, Cultural Activities and Research). The State Departments of Agriculture study problems of particular significance within their own boundaries. In addition, the universities carry out valuable work in their laboratories and on their experimental farms.

§ 2. Distribution, Production and Value of Crops

1. **Distribution.**—(i) *General.* The wide range of climatic and soil conditions over the agricultural regions of Australia has resulted in a diversity of crops being grown throughout the Commonwealth. Generally, cereal crops (excluding rice and sorghum) are grown in all States over wide areas, while industrial crops are confined to specific locations in a few States.

(ii) *Area of Crops in States and Territories.* The following table shows the areas in the several States and Territories of each of the crops for the season 1962–63.

AREA OF CROPS, 1962-63

(Acres)

Crop	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
Cereals for grain—									
Barley—									
2-row	139,705	180,275	134,240	1,019,482	60,135	19,371	..	..	1,553,208
6-row	80,770	14,021	15,543	33,404	330,147	380	..	..	474,265
Maize	46,537	3,634	159,285	(a)	34	..	..	..	(b) 209,490
Oats	707,855	932,168	27,221	415,613	1,177,491	31,104	..	663	3,292,115
Panicum, millet and setaria	2,688	2,250	76,353	(a)	(a)	..	..	..	(b) 81,291
Rice	54,929 ⁽ⁱ⁾	(a)	..	(c)	..	(b) 54,929
Rye	1,747	17,551	588	29,254	8,765	149	..	..	58,054
Sorghum	80,255	(a)	311,068	..	11	..	(a)	..	(b) 391,334
Wheat	5,008,210	3,124,790	918,915	2,595,145	4,803,797	15,340	..	2,406	16,468,603
Hay	587,229	1,250,541	86,666	287,443	339,833	165,442	586	2,518	2,720,258
Green fodder ..	1,900,130	477,432	912,018	927,807	667,890	64,940	(d)	314	4,951,637
Other stock fodder ..	6,993	40,803	6,766	35,194	4,918	32,370	(e)	..	127,044
Grass seed—									
Lucerne	11,359	(f)	656	20,633	4	3	(a)	..	(b) 32,655
Clover	21,953	3,005	32	5,073	27,574	1,497	..	..	59,134
Other	12,414	20,178	16,225	8,515	8,773	(g)	3,797	(a)	597
Industrial crops—									
Broom millet ..	2,437	583	348	..	..	..	..	..	3,368
Canary seed ..	1,138	..	67,603	65	..	..	..	..	68,806
Cotton	2,359	(a)	35,330	..	(a)	..	(a)	..	(b) 37,689
Flax—									
For fibre .. ..	..	419	..	..	871	..	..	..	1,290
For linseed ..	11,493	25,232	58,493	1,220	626	..	..	..	97,064
Hops .. .. .	..	547	..	..	(a)	(h)	1,519	..	(b) 2,066
Peanuts	395	..	35,552	..	(a)	..	(a)	..	(b) 35,947
Sugar cane—									
For crushing ..	14,109	..	387,477	..	..	..	..	..	401,586
Stand-over and cut for plants ..	13,151	..	91,751	..	..	..	..	..	104,902
Sunflower seed ..	216	152	9,360	..	..	..	..	..	9,728
Tobacco	3,163	9,844	16,346	..	28	..	..	..	29,381
Other	(a)	903	5,929	306	(a)	419	..	..	(b) 7,357
Vegetables for human consumption—									
Onions	800	4,634	3,796	944	509	79	3	(f)	(b) 10,765
Potatoes	27,420	43,024	16,994	5,918	6,499	13,839	6	42	113,742
Other	44,951	40,017	39,666	10,225	8,071	20,809	140	110	163,989
Vineyards—									
Bearing	15,953	42,734	2,870	52,692	7,731	..	(a)	..	(b) 121,980
Not bearing ..	1,751	2,928	367	5,574	954	..	..	..	11,574
Fruit—									
Bearing	77,204	55,243	29,955	28,280	18,666	19,614	78	42	229,082
Not bearing ..	20,828	20,612	13,287	12,164	6,538	2,329	58	13	75,829
Nurseries and cut flowers	661	2,500	544	244	291	91	..	8	4,339
All other crops ..	1,965	2,224	8,820	46	1,473	1,595	565	7	16,693
Total Area	8,902,768	6,318,244	3,490,064	5,495,241	7,481,629	394,687	1,750	7,512	32,091,895

(a) Not available for publication. Included in All other crops. (b) Incomplete. See footnotes to individual States. (c) Not available for publication. Excluded from totals. (d) Not comparable with statistics for earlier years. (e) Less than half an acre. (f) Not available separately. Included in All other crops. (g) Excludes area sown simultaneously to oats. (h) Includes 67 acres not bearing. (i) Not available for publication. Included with Other vegetables.

(iii) *Relative Areas of Crops in States and Territories.* The proportion of each of the major crops cultivated in the various States and Territories to the total area of crops for the season 1962-63 is shown in the next table.

RELATIVE AREAS OF CROPS, 1962-63

(Per cent.)

Crop	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Wheat (grain) ..	56.2	49.4	26.3	47.2	64.2	3.9	..	32.1	51.3
Green fodder ..	21.3	7.6	26.1	16.9	8.9	16.5	17.9	14.7	15.4
Oats (grain) ..	8.0	14.8	0.8	7.6	15.7	7.9	..	8.8	10.3
Hay ..	6.6	19.8	2.5	5.2	4.5	41.9	33.5	33.5	8.5
Barley (grain)..	2.5	3.1	3.0	19.2	5.2	5.0	..	..	6.3
Sugar cane, crushed ..	0.2	..	11.1	..	..	..	..	..	1.3
Sorghum ..	0.9	(a)	8.9	..	(b)	..	(a)	..	c 1.2
Total, fruit ..	1.1	1.2	1.2	0.7	0.3	5.6	7.8	0.7	1.0
Maize (grain) ..	0.5	0.5	4.6	(a)	(b)	..	..	..	c 0.7
Total, vineyards ..	0.2	0.7	0.1	1.1	0.1	..	(a)	..	c 0.4
Potatoes ..	0.3	0.7	0.5	0.1	0.1	3.5	0.3	0.6	0.4
All other ..	2.2	2.2	14.9	2.0	1.0	15.7	40.5	9.6	3.2
Total ..	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Not available for publication. Included in All other.

(b) Less than 0.05 per cent.

(c) Incomplete. See footnotes to individual States.

(iv) *Area of Crops in Australia.* The area of crops during each of the five seasons ended 1962-63 is shown hereunder.

AREA OF CROPS: AUSTRALIA

('000 acres)

Crop	1958-59	1959-60	1960-61	1961-62	1962-63
Cereals for grain—					
Barley, 2- and 6- row ..	2,381	2,379	2,830	2,383	2,027
Maize ..	180	185	185	211	209
Oats ..	3,974	3,030	3,637	3,097	3,292
Rice ..	47	49	46	50	55
Wheat ..	10,399	12,172	13,439	14,723	16,469
Hay ..	3,018	2,105	2,973	2,274	2,720
Green fodder ..	3,578	4,094	4,408	4,702	4,952
Industrial crops—					
Cotton ..	10	20	37	29	38
Hops ..	2	2	2	2	2
Sugar cane ..	511	487	475	499	506
Tobacco ..	15	20	29	27	29
Vegetables for human consumption—					
Onions ..	9	9	9	9	11
Potatoes ..	105	108	92	94	114
Other vegetables ..	153	147	155	163	164
Vineyards ..	131	130	131	133	134
Fruit ..	287	289	289	294	305
All other crops ..	831	879	839	949	1,065
Total ..	25,631	26,105	29,576	29,639	32,092

(v) *Size Classification of Principal Crops.* In Australia there is, in many cases, a close correlation between the type of crop and the size of holdings upon which it is usually grown. A special series of tabulations relating to rural holdings in Australia was compiled for 1959-60 and has been published in full detail in a series of bulletins, *Classification of Rural Holdings by Size and Type of Activity, 1959-60.* Tables in these bulletins show a classification by area of holding and area of crop for wheat, oats and barley by States and statistical divisions. These tables thus provide a guide to the regional distribution of the holdings growing the major crops, sown grasses and clovers. Classifications of holdings according to major crops grown, livestock carried and type of activity are also shown.

2. *Production.*—(i) *Production of Crops in States and Territories.* The following table shows production of crops in the various States and Territories for the season 1962-63.

PRODUCTION OF CROPS, 1962-63

Crop	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Cereals for grain—									
Barley—									
2-row '000 bus.	3,328	5,129	3,696	17,479	1,120	618	..	..	31,370
6-row " "	2,003	340	392	525	4,936	13	..	..	8,209
Maize " "	2,145	216	5,096	(a)	(b)	..	..	..	7,457
Oats " "	16,035	27,042	545	5,770	18,572	828	..	..	68,809
Panicum, millet and setaria " "	43	43	1,305	(a)	(a)	..	..	..	1,391
Rice " "	7,129	..	..	8	(a)	..	(a)	..	7,129
Rye " "	31	115	..	144	57	..	..	..	357
Sorghum " "	1,891	(a)	8,361	..	(b)	..	(a)	..	10,252
Wheat " "	109,002	67,899	18,683	38,339	72,500	419	..	70	306,912
Hay '000 tons	965	2,376	197	406	453	313	1	6	4,717
Grass seed—									
Lucerne cwt.	7,593	n.a.	525	24,831	1	1	(a)	..	(c) 32,951
Clover " "	36,154	2,929	3	4,784	58,288	961	..	..	103,119
Other " "	9,926	31,842	22,551	8,902	13,633	9,588	..	157	96,599
Industrial crops—									
Broom millet—									
Fibre cwt.	13,651	2,985	1,195	..	..	..	..	..	17,831
Grain bushels	23,100	1,601	n.a.	..	..	..	..	..	(c) 24,701
Canary seed '000 bus.	16	..	714	(b)	..	..	..	..	730
Cotton, unginned '000 lb.	2,993	(a)	12,769	..	(a)	..	(a)	..	(c) 15,762
Flax—									
Fibre tons	..	648	..	..	2,152	..	..	..	2,800
Linseed " "	2,634	8,108	14,577	290	136	..	..	..	25,745
Hops (dry weight) cwt.	..	8,079	..	..	(a)	25,550	..	..	(c) 33,629
Peanuts " "	4,258	..	315,144	..	(a)	..	(a)	..	(c) 319,402
Sugar cane for crushing '000 tons	637	..	12,099	..	..	..	..	..	12,736
Sunflower seed cwt.	1,208	750	50,540	..	..	..	..	..	52,498
Tobacco, dried leaf '000 lb.	2,885	9,447	14,787	..	29	..	..	..	27,148
Vegetables for human consumption—									
Onions tons	5,185	26,175	21,184	8,531	6,622	515	7	(a)	(c) 68,219
Potatoes " "	132,969	254,473	86,239	53,253	56,900	82,545	5	212	666,596
Vineyards—									
Grapes—									
For drying " "	36,092	192,669	..	47,688	5,100	..	..	..	281,549
" table " "	6,537	7,573	3,977	1,078	2,188	..	(a)	..	(c) 21,353
" wine " "	34,028	13,293	140	116,081	5,019	..	..	..	168,361

(a) Not available for publication. (b) Less than 500 bushels. (c) Incomplete; see footnotes to individual States.

(ii) *Production of Principal Crops in Australia.* The following table shows the production of the principal crops for the five years ended 1962-63.

PRODUCTION OF PRINCIPAL CROPS: AUSTRALIA

Crop	1958-59	1959-60	1960-61	1961-62	1962-63
Cereals for grain—					
Barley, 2- and 6-row '000 bus.	62,976	34,179	67,970	41,504	39,579
Maize "	6,717	6,725	6,245	7,307	7,457
Oats "	86,905	46,841	76,107	55,130	68,809
Rice "	6,619	6,732	6,001	7,045	7,129
Wheat "	215,121	198,501	273,716	247,178	306,912
Hay '000 tons	5,090	3,177	5,079	3,693	4,717
Industrial crops—					
Cotton, unginned '000 lb.	4,004	9,463	15,544	10,948	15,762
Hops (dry weight)(a) cwt.	36,499	31,790	33,099	32,936	33,629
Sugar cane for crushing .. '000 tons	10,213	9,002	9,166	9,577	12,736
Tobacco (dried leaf) '000 lb.	13,970	19,357	29,862	22,578	27,148
Vegetables for human consumption—					
Onions '000 tons	55	57	54	58	68
Potatoes "	575	579	451	526	667
Vineyards—					
Grapes "	537	445	527	628	471
Wine made(b) '000 gals.	32,538	28,396	33,762	41,736	29,893
Dried vine fruits '000 tons	87	70	82	96	71

(a) Excludes Western Australia. (b) Net factory and farm production of beverage and distillation wine. This excludes the liquid gallonage of spirits added in wine fortifying.

(iii) *Yield per Acre of Principal Crops in Australia.* The following table shows the yield per acre of the principal crops for Australia during the five years ended 1962-63.

YIELD PER ACRE OF PRINCIPAL CROPS: AUSTRALIA

Crop	1958-59	1959-60	1960-61	1961-62	1962-63
Cereals for grain—					
Barley, 2- and 6-row bushels	26.5	14.3	24.0	17.4	19.5
Maize "	37.4	36.4	33.8	34.7	35.6
Oats "	21.9	15.5	20.9	17.8	20.9
Rice "	141	138	130	140	130
Wheat "	20.7	16.3	20.4	16.8	18.6
Hay tons	1.69	1.51	1.71	1.62	1.73
Industrial crops—					
Cotton, unginned lb.	382	468	420	380	418
Hops (dry weight)(a) cwt.	19.5	16.7	17.8	17.1	16.8
Sugar cane for crushing(a) .. tons	27.6	28.7	26.9	24.8	31.7
Tobacco (dried leaf) lb.	922	985	1,022	848	924
Vegetables for human consumption—					
Onions tons	6.22	6.10	5.87	6.20	6.34
Potatoes "	5.49	5.34	4.91	5.57	5.86
Vineyards—					
Grapes(a) "	4.33	3.62	4.32	5.14	3.86

(a) Per acre of productive crops.

3. Value of Agricultural Production.—(i) *Gross Value of Agricultural Production in Australia.* The following table shows the gross value of principal crops and of total agricultural production in Australia for the five years ended 1962-63.

Further reference to the value of production of agriculture and other industries in Australia as well as a brief explanation of the terms used may be found in Chapter XXX. Miscellaneous.

GROSS VALUE^(a) OF AGRICULTURAL PRODUCTION: AUSTRALIA

(£'000)

Crop	1958-59	1959-60	1960-61	1961-62	1962-63
Cereals for grain—					
Barley	33,304	16,623	31,072	21,933	21,328
Maize	4,629	4,029	5,264	5,285	4,762
Oats	30,964	18,396	25,535	20,001	25,629
Rice	4,731	4,450	4,125	3,832	3,838
Wheat	144,087	137,762	195,678	186,172	224,532
Hay	46,503	34,433	50,181	37,746	46,479
Green fodder	6,966	7,572	9,647	8,743	9,612
Industrial crops—					
Cotton, unginned	249	556	917	647	938
Hops	1,273	1,159	1,179	1,242	1,285
Sugar-cane	47,276	44,774	50,580	49,608	65,519
Tobacco (dried leaf)	7,920	11,215	13,051	12,122	15,011
Vegetables for human consumption—					
Onions	1,920	2,841	1,833	2,547	1,814
Potatoes	13,109	13,460	19,365	20,697	13,980
Other vegetables for human consumption	25,243	26,611	29,718	28,743	28,776
Grapes	18,496	14,698	17,868	19,815	16,024
Fruit and nuts	54,025	51,763	59,773	63,363	64,430
All other crops	19,197	20,012	19,895	21,676	24,356
Total	459,892	410,354	535,681	504,172	568,313

(a) Includes amounts paid as bounty, relief, etc.

(ii) *Gross, Farm and Net Values in States and Territories.* Values of agricultural production in the various States and Territories are shown for 1962-63 in the following table.

In computing the net value of production, no deduction has been made for the cost of maintenance of farm buildings and fences, nor for the depreciation of farm plant.

GROSS, FARM AND NET VALUES OF AGRICULTURAL PRODUCTION, 1962-63

(£'000)

State	Gross production valued at principal markets	Marketing costs	Gross production valued at farm	Value of materials used in process of production	Net value of production (a)
New South Wales	154,130	30,935	123,195	(b) 10,159	113,036
Victoria	126,734	18,860	107,874	10,888	96,986
Queensland	126,239	15,230	111,009	18,145	92,864
South Australia	64,209	7,468	56,741	10,062	46,679
Western Australia	78,974	10,106	68,868	14,615	54,253
Tasmania	17,775	3,564	14,211	3,055	11,156
Northern Territory	84	n. a.	84	n. a.	84
Australian Capital Territory	168	12	156	7	149
Australia	568,313	86,175	482,138	66,931	415,207

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

(b) No allowance has been made for costs of power, power kerosene, petrol and other oils.

(iii) *Net Values of Agricultural Production, 1958-59 to 1962-63.* In the following table, the net value of agricultural production and the net value per head of population are shown by States for the years 1958-59 to 1962-63.

NET VALUE OF AGRICULTURAL PRODUCTION(a)

Year	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
NET VALUE (£'000)									
1958-59	82,472	73,661	68,716	50,571	42,746	10,496	59	222	328,943
1959-60	78,518	68,912	65,357	24,246	44,044	10,645	79	150	291,951
1960-61	98,171	104,031	73,471	58,323	46,708	10,939	80	138	391,861
1961-62	93,858	88,245	75,076	45,467	51,325	12,345	75	112	366,503
1962-63	113,036	96,986	92,864	46,679	54,253	11,156	84	149	415,207

NET VALUE PER HEAD OF POPULATION (£)

1958-59	22.1	26.8	47.4	55.7	60.6	31.0	2.6	5.1	33.1
1959-60	20.7	24.4	44.2	26.0	61.4	30.9	3.2	3.0	28.7
1960-61	25.4	36.0	48.9	60.9	64.0	31.2	3.1	2.5	37.7
1961-62	23.8	29.8	49.1	46.4	68.8	34.6	2.8	1.8	34.6
1962-63	28.2	32.1	59.9	46.7	71.0	30.8	3.0	2.2	38.4

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

4. *Indexes of Quantum and Price of Agricultural Production.*—Indexes of quantum and price of agricultural production are shown in the following table. The quantum indexes relate to gross output of farm products valued at constant prices. The quantities of each farm product produced each year have been re-valued at the unit gross value for the period 1936-37 to 1938-39. The price indexes relate to average "prices" of farm products realized at the principal markets of Australia. Average quantities of each product marketed in the period 1946-47 to 1950-51 have been used as fixed weights. Further details on weights used, etc., are to be found in Chapter XXX. Miscellaneous.

INDEXES OF QUANTUM(a) AND PRICE OF AGRICULTURAL PRODUCTION

(Base: Average 3 years ended June, 1939 = 100)

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
Quantum Produced—					
Wheat	131	121	166	150	186
Other crops	187	152	184	171	194
<i>Total, All Crops</i>	<i>165</i>	<i>140</i>	<i>177</i>	<i>163</i>	<i>191</i>
<i>Per head of population</i>	<i>114</i>	<i>95</i>	<i>117</i>	<i>106</i>	<i>121</i>
Price—					
Wheat	337	350	355	380	366
Other crops	310	313	344	323	309
<i>Total, All Crops</i>	<i>322</i>	<i>329</i>	<i>349</i>	<i>348</i>	<i>334</i>

(a) Indexes of value at constant prices, i.e. quantities revalued at average unit values of the base years (1936-37 to 1938-39).

§ 3. Cereal Crops

1. **Wheat.**—(i) *General.* Wheat is grown on a large scale in all States except Tasmania, and is the most important crop in Australia in terms of area, production and exports. The present limits of the wheat belt have been established after considerable fluctuation over the last four decades.

In January, 1934, a Royal Commission was appointed to inquire into and report upon the economic condition of the growing, handling and marketing of wheat, and the manufacturing, distributing and selling of flour and bread. The Report of this Royal Commission provides an authoritative description of all aspects of the industry up to that time.

Two of the aspects of governmental and semi-governmental assistance and control which have contributed to the development of the industry are the organization of oversea marketing and of research.

(ii) *The Australian Wheat Board.* The Australian Wheat Board was constituted in September, 1939, under National Security (Wheat Acquisition) Regulations, to purchase, sell, or dispose of, wheat or wheat products, and to manage and control all matters connected with the handling, storage, protection, shipment, etc. of wheat acquired, and such other matters as were necessary to give effect to the regulations.

Details of the operations of the Wheat Stabilization Board in licensing wheat grown during the seasons 1941–42 to 1948–49 will be found in Year Book No. 38, pages 940–1. The Board ceased to function on 31st December, 1948.

The Board was reconstituted for five years, with similar powers, under the *Wheat Stabilization Act* 1948, to administer the stabilization plan. The new Board commenced to function on 18th December, 1948. The Board has been continued in existence by the *Wheat Industry Stabilization Acts* 1954, 1958 and 1963 for the purpose of administering the second, third and fourth five-year stabilization plans.

(iii) *Marketing of Wheat.* (a) *Stabilized Marketing.* As a large proportion of the Australian wheat crop is normally exported, the marketing of wheat occupies an important part in the industry. A detailed survey of legislation relating to stabilization of the wheat industry, including controls exercised during the 1914–18 and 1939–45 Wars and legislation establishing the Wheat Stabilization Plan in 1948, is given in the Appendix to Year Book No. 37, pages 1295–9.

Details of more recent plans were published in Year Book No. 40, pages 841 and 842 (1947–48 to 1952–53 Plan), No. 44, page 861 (1953–54 to 1957–58), and No. 48, pages 903 and 904 (1958–59 to 1962–63).

(b) *Fourth Post-war Wheat Industry Stabilization Plan.* Following negotiations during 1962 and 1963, the fourth post-war Wheat Industry Stabilization Plan was enacted by the Commonwealth and States towards the end of 1963. The new plan will operate on very much the same lines as the previous ones. However, there are some important changes in detail to which reference is made in the main features of the plan set out below.

Period of the Plan. The plan will operate for five years. It commenced with the 1963–64 wheat crop and will end with the marketing of the 1967–68 crop.

Commonwealth Guarantee. The Commonwealth will guarantee a return of 14s. 5d. per bushel bulk basis f.o.r. ports to growers on up to 150 million bushels (previously 100 million bushels) of wheat exported from the crop in the first year of the plan. The guaranteed return of 14s. 5d. is based on the findings of a survey of the economic structure of the wheat industry conducted by the Bureau of Agricultural Economics. It will be adjusted in each of the following years of the plan in accordance with the movements in costs based on a cost index established from the survey.

Australian Wheat Board. The Australian Wheat Board will be maintained as the sole constituted authority for the marketing of wheat within Australia and for the marketing of wheat and flour for export from Australia for the period of the plan.

Stabilization Fund.

Export Tax. A tax will be collected on wheat exported which will be equivalent to the excess of the returns from export sales over the guaranteed return. However, the maximum rate of export tax will be 1s. 6d. per bushel.

Size of Fund. The ceiling of the Stabilization Fund is established at £30 million (previously £20 million); any excess beyond this figure will be returned to growers on the "first-in-first-out" principle.

Use of the Stabilization Fund. When the average export realizations fall below the guaranteed return, the deficiency will be made up, first by drawing upon the stabilization fund, in respect of up to 150 million bushels of wheat from each crop. When the fund is exhausted, the Commonwealth will meet its obligations under the guarantee.

Home Consumption Price. The home consumption base price for 1963-64, the first year of the new plan, was established at 14s. 5d. per bushel, bulk basis, f.o.r. ports plus 2d. per bushel loading to cover the cost of transporting wheat to Tasmania as outlined below. There is provision in the plan for annual adjustments in the following years in accordance with the guaranteed price as outlined above.

Freight on Wheat to Tasmania. Provision is made for a loading on the price of all wheat sold for consumption in Australia to the extent necessary to cover the cost of transporting wheat from the mainland to Tasmania in each season of the plan.

Premium on Western Australian Wheat. A premium will be paid from export realizations on wheat grown in Western Australia and exported from that State in recognition of the natural freight advantage enjoyed by Western Australia owing to its proximity to the principal overseas markets for wheat. In accordance with the terms of the new plan the premium has been altered from the previous flat rate of 3d. per bushel to the amount of the actual freight advantage enjoyed by Western Australia up to a maximum of 3d. per bushel.

(c) *Cost of Production.* The cost of production of wheat for the first season of the current Wheat Stabilization Plan, 1963-64, was fixed at 14s. 5d. a bushel by the legislation. The guaranteed price for the season 1963-64 was therefore 14s. 5d. per bushel, while the home consumption price was 14s. 7d. a bushel (see above). The guaranteed price for 1963-64 was a reduction of 1s. 5d. per bushel compared with the guaranteed price of 15s. 10d. for the 1962-63 season, the last year of the previous wheat stabilization plan.

(d) *F.A.Q. Standard of Wheat.* Sales and shipments of grain in bulk overseas are made on a "fair average quality" (f.a.q.) basis. Samples of wheat are obtained each year from the different wheat districts, and mixed to give a representative sample of the whole crop in each State. From this representative sample, the f.a.q. weight for each State is determined by the use of the Schopper 1-litre scale chondrometer. This standard is used as a basis for sales of each crop and it varies from year to year and from State to State. F.a.q. is an Australian term, and the method of selling differs from that of other countries, which sell according to sample, or (as in Canada) according to grades, which are fixed and do not vary from year to year. The f.a.q. method does not, however, take protein quantity and quality into account, and it gives no indication therefore of the baking strength of the resulting flour.

The f.a.q. weight of a bushel of wheat in each of the four main wheat-producing States for the 1962-63 season's crop was as follows:—New South Wales, north (predominantly semi-hard), 64½ lb., south and west (predominantly soft), 63½ lb.; Victoria, 64½ lb.; South Australia, semi-hard, 63½ lb., soft, 62½ lb.; and Western Australia, 65½ lb.

(e) *Bulk Handling and Storage of Wheat.* A detailed description of the bulk handling system, including its advantages and disadvantages compared with other methods of handling, appears on pages 954-8 of Year Book No. 39.

New South Wales, Victoria and Western Australia have operated bulk handling systems for a number of years, and in more recent years other States have also introduced bulk systems. The bodies concerned with the administration of bulk handling in the various States are:—Grain Elevators Board of New South Wales, Victorian Grain Elevators Board, State Wheat Board (Queensland), South Australian Co-operative Bulk Handling Ltd., Co-operative Bulk Handling Ltd. (Western Australia), and the Tasmanian Government.

The table below sets out the bulk handling capacities of the several States for the years 1959-60 to 1963-64.

WHEAT: TOTAL CAPACITY OF BULK HANDLING FACILITIES^(a)
(^{'000} bushels)

State	1959-60	1960-61	1961-62	1962-63	1963-64
New South Wales	73,420	73,440	75,270	79,486	85,246
Victoria	71,870	72,206	72,808	78,219	84,761
Queensland	4,196	6,216	7,486	8,730	10,606
South Australia	12,950	14,290	17,380	25,600	28,370
Western Australia	82,236	94,257	97,356	105,384	104,536
Tasmania	960	960	960	960	960
Australia	245,632	261,369	271,260	298,379	314,479

(a) Includes terminals, sub-terminals and country installations.

Particulars of the operation of the bulk handling and storage systems in each State are set out on pages 916 and 917 of Year Book No. 48.

(f) *International Wheat Agreements.* Details of the first and second International Wheat Agreements operative from 1st August, 1949, to 31st July, 1953, and from 1st August, 1953, to 31st July, 1956, respectively, were published in Year Book No. 42 (see pp. 840-1) and previous issues. Details of the third and fourth International Wheat Agreements which covered the period from 1st August, 1956, to 31st July, 1959, and 1st August, 1959, to 31st July, 1962, were published in Year Books Nos. 43 (p. 836) and 48 (p. 906), respectively.

A fifth International Wheat Agreement, ratified by the required number of wheat exporting and importing countries, came into force on 1st August, 1962. The new Agreement covers the three-year period from 1st August, 1962, to 31st July, 1965.

The new Agreement, negotiated at an international conference convened by the United Nations, continues the basic arrangements covered by previous Agreements. The Agreement seeks to obtain an element of stability in world wheat marketing by providing that a significant proportion of wheat entering international trade will be bought and sold at prices within a prescribed price range. The maximum and minimum prices fixed under the Agreement are expressed in terms of "Canadian currency per bushel, at the parity of the Canadian dollar determined for the purposes of the International Monetary Fund as at 1st March, 1949". Member exporting countries compete to supply at prices within the prescribed range, which is from 202.5 cents or about 18s. 3½d. Australian currency to 162.5 cents, or about 14s. 6d. per bushel. The maximum of the range is based on the price of Canada's No. 1 Northern Manitoba wheat in bulk in store at Fort William/Port Arthur. The minimum f.o.b. price for each exporter is the equivalent of the c. and f. price in the United Kingdom of the minimum price of Canada's No. 1 Northern Manitoba wheat in bulk in store at Fort William/Port Arthur, using currently prevailing transportation costs and exchange rates. In determining these prices, allowance is made for such differences in quality as may be agreed between the exporting and importing countries concerned.

Member importing countries have undertaken to buy each year from member exporting countries a stated percentage of their total commercial requirements at prices within the agreed range. For their part, exporting countries are obliged to make wheat available for purchase by importing countries in any crop year at prices within the price range in quantities sufficient to satisfy the commercial requirements of those countries; if the price goes to the maximum, exporters have undertaken to make available, at that maximum price, specified (datum) quantities based on their past trading record with member importers.

The new Agreement empowers the International Wheat Council to make an annual review of the world wheat situation, including the international implications of national policies in respect of wheat production, stocks and marketing, and the disposal of wheat surpluses on non-commercial terms.

Provision has also been made for the right of appeal against excessive discounts from the minimum price on the basis of differences in quality between the basic wheat—Canada's No. 1 Northern Manitoba wheat—and the wheat supplied by other member importing countries.

Member countries of the fifth International Wheat Agreement are as follows.

Exporters. Argentina, Australia, Canada, France, Italy, Mexico, Spain, Sweden, Union of Soviet Socialist Republics, and the United States of America.

Importers. Austria, Belgium and Luxembourg, Brazil, Costa Rica, Cuba, Dominican Republic, El Salvador, Federal Republic of Germany, Finland, Greece, Iceland, India, Indonesia, Ireland, Israel, Japan, Liberia, Libya, the Netherlands, New Zealand, Nigeria, Norway, Peru, Philippines, Portugal, Republic of Korea, Saudi Arabia, Sierra Leone, South Africa, Switzerland, Tunisia, United Arab Republic, United Kingdom, Vatican City, Venezuela, and Western Samoa.

(iv) *Research into the Wheat Industry.* The extension and growth of the wheat industry in the past has been made possible to a large extent through research into new varieties of seed, crop rotation and fertilizer treatments by governmental, university and private research organizations. In recent years, there has been a growing awareness of the value of this research, and funds are being raised by a direct levy on the growers' returns.

In 1957, the Commonwealth Parliament passed legislation providing for a levy of a farthing a bushel on wheat handled by the Australian Wheat Board. This money, contributed by the growers, is being spent by the Wheat Industry Research Committees set up in the wheat-growing States. These Committees, which consist of representatives of wheatgrowers, universities and State Departments of Agriculture, also received a total of £284,000 under the provisions of the *Wheat Acquisition (Undistributed Moneys) Act 1958*.

The Commonwealth Government has undertaken to supply additional funds for research (with a maximum of £1 for £1 against the growers' contribution) and has set up the Wheat Industry Research Council to make recommendations on the appropriate expenditure of the Commonwealth contribution.

The Council, at its inaugural meeting in February, 1958, considered that possible avenues of research would include the breeding of better varieties, cereal chemistry, soil fertility, mechanization, the industry's cost structure and marketing problems.

Up to the end of June, 1963, the Council and the State Committees have spent £1,852,446 including grants to the Commonwealth Scientific and Industrial Research Organization, State Departments of Agriculture, universities and agricultural colleges.

(v) *Wheat Farms: Number and Classification by Activity.* (a) *Number.* Particulars of the number of farms growing 20 acres and upwards of wheat for grain during each of the years 1958-59 to 1962-63, are shown in the following table. A farm worked on the share system or as a partnership is included as one holding only.

NUMBER OF FARMS GROWING 20 ACRES AND UPWARDS OF WHEAT FOR GRAIN

State or Territory	1958-59	1959-60	1960-61	1961-62	1962-63
New South Wales	14,997	16,798	16,959	17,489	18,286
Victoria	9,074	10,555	10,625	11,648	12,166
Queensland	4,791	4,526	4,257	4,483	5,095
South Australia	7,774	7,895	8,913	9,434	9,881
Western Australia	8,060	8,444	8,614	8,722	8,966
Tasmania	104	154	121	222	243
Australian Capital Territory	19	23	14	25	27
Australia	44,819	48,395	49,503	52,023	54,664

(b) *Size Classification of Wheat Holdings.* There is in Australia a widespread combination of wheat growing with other rural activities. This is illustrated, for the 1959-60 season, by a table on pages 1016 and 1017 of Year Book No. 49. The table, which provides a classification of rural holdings by the area of wheat grown and by type of activity, was derived from information published in the bulletin *Classification of Rural Holdings by Size and Type of Activity, 1959-60, No. 7*.

(vi) *Varieties of Wheat Sown.* (a) *General.* The breeding of wheat suitable to local conditions has long been established in Australia. Farrer (1845-1905) did invaluable work in pioneering this field, and the results of his labour and the continued efforts of those who have followed him have proved of immense benefit to the industry. Their efforts have resulted in the development of disease-resistant varieties, better average yields, and a greater uniformity of sample, with which have accrued certain marketing advantages, as well as an improvement in the quality of wheat grown. More than 1,000 different varieties of Australian wheats have been catalogued by the Commonwealth Scientific and Industrial Research Organization, but the number of principal varieties grown in any one season is restricted to about 45.

(b) *States, 1962-63.* The principal varieties of wheat sown and the percentage of each to the total area sown in the five main wheat-producing States of Australia in 1962-63 were as follows:—New South Wales, Glenwari (13.1), Olympic (9.2), Heron (9.1); Victoria, Insignia (48.0), Pinnacle (24.2), Olympic (14.8); Queensland, Mengavi (30.7), Spica (24.5); South Australia, Insignia (35.0), Gabo (18.9), Sabre (13.4); and Western Australia, Gabo (38.9), Insignia (16.0), Insignia 49 (11.2). A detailed table of wheat varieties sown appears in the annual bulletin: *The Wheat Industry*, No. 104, January, 1964.

(vii) *Area, Production and Yield per Acre. (a) Summary.* Prominent factors in the early development were the increase in population following the discovery of gold and the redistribution of labour after the surface gold had been won. The economic depression of 1893 interrupted its progress, but its subsequent recovery was assisted by the invention of mechanical appliances, the use of superphosphates as an aid to production, and the introduction of new and more suitable varieties of wheat 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 area, production and yield per acre of wheat for grain in each State are shown below for the years 1958-59 to 1962-63 in comparison with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59.

WHEAT FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
AREA ('000 ACRES)								
Average for three years ended—								
1938-39	4,366	2,609	366	3,100	3,005	18	2	13,466
1948-49	4,519	3,241	439	2,319	2,685	7	4	13,214
1958-59	2,392	1,737	508	1,392	3,005	5	1	9,040
Year—								
1958-59	3,178	1,810	704	1,407	3,292	7	1	10,399
1959-60	3,950	2,261	683	1,549	3,719	8	2	12,172
1960-61	4,076	2,672	693	1,969	4,021	7	1	13,439
1961-62	4,498	2,849	750	2,229	4,380	16	1	14,723
1962-63	5,008	3,125	919	2,595	4,804	15	3	16,469
PRODUCTION ('000 BUSHELS)(a)								
Average for three years ended—								
1938-39	56,890	36,374	4,783	34,606	31,539	434	45	164,671
1948-49	58,537	48,332	8,569	28,856	31,517	138	78	176,027
1958-59	35,178	36,705	9,938	26,126	40,950	135	15	149,047
Year—								
1958-59	66,441	42,697	16,097	32,032	57,650	164	40	215,121
1959-60	75,358	38,793	13,522	11,929	58,670	182	47	198,501
1960-61	84,657	67,587	10,999	46,395	63,900	148	30	273,716
1961-62	78,350	56,879	12,018	33,854	65,700	345	32	247,178
1962-63	109,002	67,899	18,683	38,339	72,500	419	70	306,912
YIELD PER ACRE (BUSHELS) (a)								
Average for three years ended—								
1938-39	13.0	13.9	13.1	11.2	10.5	24.1	22.5	12.2
1948-49	13.0	14.9	19.5	12.4	11.7	19.7	19.5	13.3
1958-59	14.7	21.1	19.6	18.8	13.6	24.7	15.0	16.5
Year—								
1958-59	20.9	23.6	22.9	22.8	17.5	25.4	28.1	20.7
1959-60	19.1	17.2	19.8	7.7	15.8	22.0	26.8	16.3
1960-61	20.8	25.3	15.9	23.6	15.9	21.4	28.5	20.4
1961-62	17.4	20.0	16.0	15.2	15.0	22.2	22.7	16.8
1962-63	21.8	21.7	20.3	14.8	15.1	27.3	29.3	18.6

(a) 60 lb. per bushel.

A graph showing the area sown to wheat for grain in Australia since 1900-1 appears in Year Book No. 49, and a map showing the distribution of areas growing wheat for grain throughout Australia in 1962-63 appears on page 1013. Similar maps showing the distribution of wheat areas in 1924-25, 1938-39, 1947-48 and 1954-55 appeared respectively in Year Books No. 22, page 695, No. 34, page 451, No. 39, pages 977-8, and No. 43, page 883.

(b) *Production.* Apart from the variations in the area sown, the size of the wheat harvest in Australia is largely determined by the nature of the season, resulting in considerable year-to-year fluctuations in production.

The main wheat-producing States of Australia are New South Wales, Victoria, South Australia and Western Australia. Queensland production normally approaches local demands, but Tasmania imports wheat from the mainland to satisfy its needs, though it exports flour made from local wheat which is particularly suitable for biscuits.

Production of wheat in 1962-63, 306,912,000 bushels, was a record, exceeding the previous record harvest of 1960-61 by 33,196,000 bushels (12 per cent.) and the production in 1961-62 by 59,734,000 bushels (24 per cent.). Compared with the previous season, the highest absolute increases were recorded in New South Wales, 30,652,000 bushels (39 per cent.) and Victoria, 11,020,000 bushels (19 per cent.). All States except South Australia and Tasmania had record harvests.

(c) *Yield per Acre.* Short-term variations in yield per acre are due chiefly to seasonal influences. High yields per acre for Australia for single seasons since 1901 were obtained in 1920-21, 16.1 bushels; in 1942-43, 16.8 bushels; in 1949-50, 17.8 bushels; in 1952-53, 19.1 bushels; in 1953-54, 18.4 bushels; in 1955-56, 19.2 bushels; in 1958-59, 20.7 bushels (a record); in 1959-60, 16.3 bushels; in 1960-61, 20.4 bushels; and in 1961-62, 16.8 bushels. The yield per acre in 1962-63 was 18.6 bushels.

(d) *Decennial Averages, 1861-70 to 1951-60.* The following table shows the average area, production and yield per acre for decennial periods since 1861 together with similar details for the latest season, 1962-63. Repeated cropping and short rotations (mainly in the eastern States) are believed to have led to the decline in yield to 1900, while fallowing and the widespread use of artificial fertilizers contributed to the increased yields in the decade following. The increase in yield since 1950 has been generally ascribed to the impact of improved pastures and ley-farming (broadly, the alternation of crops and pastures) upon soil fertility in wheat-growing areas.

WHEAT FOR GRAIN: AVERAGE AREA AND PRODUCTION, AUSTRALIA

Period	Area	Production	Yield per acre
	'000 acres	'000 bushels	bushels
Yearly average—			
1861-70	831	10,622	12.8
1871-80	1,646	17,711	10.8
1881-90	3,258	26,992	8.3
1891-1900	4,087	29,934	7.3
1901-10	5,711	56,058	9.8
1911-20	8,928	95,480	10.7
1921-30	11,291	135,400	12.0
1931-40	14,176	177,758	12.5
1941-50	11,358	145,599	12.8
1951-60	10,164	173,622	17.1
Year—			
1962-63	16,469	306,912	18.6

(viii) *Price of Wheat.* (a) *Home Consumption.* The prices charged by the Australian Wheat Board for wheat sold to millers for gristing into flour for consumption in Australia and for wheat sold as stock feed were as follows:—year ended 30th November, 1960, 15s. 0d.; 1961, 15s. 4d.; 1962, 15s. 10d.; 1963, 15s. 11½d.; and 1964, 14s. 7d. These prices include a loading to meet freight charges incurred on wheat shipped to Tasmania (2d. in 1960 and 1961; 1d. in 1962; 1½d. in 1963; and 2d. in 1964).

(b) *Export Wheat Prices.* The Wheat Board's monthly basic export selling prices for f.a.q. bulk wheat f.o.b. basis, both for wheat sold under the International Wheat Agreement and for "free" wheat sold on the open market, fell in the following ranges:—season ended 31st July, 1960, 13s. 3d. to 13s. 6d.; 1961, 13s. 5d. to 13s. 9d.; 1962, 13s. 10½d. to 14s. 10½d.; 1963, 14s. 2d. to 14s. 10½d. Actual selling prices have been lower than the basic prices in some cases, particularly where other exporting countries enjoy a geographical freight advantage.

The 1959 International Wheat Agreement set the maximum price at 200 cents a bushel and the minimum at 150 cents for f.a.q. wheat sold under the Agreement. Under the current 1962 Agreement operative from 1st August, 1962 (see paragraph 1 (iii) (f), p. 1004), the agreed price range is between 202.5 cents and 162.5 cents. Directly converted into Australian currency these limits are approximately 18s. 3½d. and 14s. 6d. a bushel respectively

Details of export wheat prices in previous years, including those received for wheat sold under the terms of the 1949-1953 International Wheat Agreement, are given in Year Book No. 40, pages 849-50, and statistical bulletin: *The Wheat Industry, Australia*, No. 99, March, 1961, and in previous issues of these publications.

(ix) *Value of the Wheat Crop.* The estimated gross value of the wheat crop in each State and in Australia during the season 1962-63 and the value per acre are shown below.

WHEAT FOR GRAIN: VALUE OF CROPS(a), 1962-63

Particulars		N.S.W.	Victoria	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
Aggregate value	£'000	79,290	49,455	13,775	28,143	53,512	308	49	224,532
Value per acre	£	15.8	15.8	15.0	10.8	11.1	20.1	20.4	13.6

(a) Gross value of total crop, including wheat used for seed and for stock feed on farms. Also includes payment of £11,317,000 by the Commonwealth Government.

(x) *Production and Disposal of Wheat in Australia.* In the following tables, details are given of Australian Wheat Board transactions and of total production and disposal of wheat during each of the years ended 30th November, 1959 to 1963. (For particulars of production and yield from 1935-36 see graphs, p. 994 of Year Book No. 49.)

(a) *Wheat Acquired.* Particulars of wheat acquired by the Australian Wheat Board from the 1958-59 to 1962-63 harvests are shown in the following table.

AUSTRALIAN WHEAT BOARD: WHEAT ACQUIRED

(*000 bushels)

Pool	Harvest	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Australia
22	1958-59	59,990	41,216	15,206	29,548	53,348	82	199,390
23	1959-60	67,073	37,099	11,832	9,112	54,132	91	179,339
24	1960-61	72,984	66,881	8,821	43,706	59,012	63	251,467
25	1961-62	67,784	55,121	9,981	30,737	60,459	208	224,290
26	1962-63	98,673	67,215	17,537	35,120	66,897	275	285,717

(b) *Stocks of Wheat and Flour.* Stocks of wheat (including flour in terms of wheat) held by the Australian Wheat Board in each State at 30th November for the years 1959 to 1963 are shown in the following table. These data relate to stocks held at mills, sidings, ports and depots as recorded by the Australian Wheat Board.

AUSTRALIAN WHEAT BOARD: STOCKS(a) OF WHEAT (INCLUDING FLOUR IN TERMS OF WHEAT), 30th NOVEMBER

(*000 bushels)

Year	N.S.W.	Victoria	Q'land	S. Aust.	W. Aust.	Tas.	Australia
1959	19,934	16,390	987	5,951	21,657	447	65,366
1960	19,878	16,639	451	2,203	20,995	535	60,701
1961	7,701	8,780	965	3,122	3,338	452	24,358
1962	5,574	6,021	1,333	1,831	2,449	491	17,699
1963	10,879	6,999	775	1,775	2,221	625	23,274

(a) Held at mills, sidings, ports and depots.

NOTE.—One short ton (2,000 lb.) of flour is taken to be equivalent to 46.3 bushels of wheat.

(c) *Wheat Disposal.* Particulars of the disposal of wheat during the years ended 30th November, 1959 to 1963, as recorded by the Australian Wheat Board, are shown in the following table.

AUSTRALIAN WHEAT BOARD: DISPOSAL OF WHEAT

('000 bushels)

Particulars	Year ended 30th November—				
	1959	1960	1961	1962	1963
Exported as wheat	70,940	97,645	202,027	152,818	203,707
Exported as flour(a)	25,248	26,147	29,438	25,123	24,907
Sold for local consumption as flour	40,174	42,713	39,814	40,736	40,389
Sold for other purposes	13,484	16,635	15,107	11,635	10,791

(a) Includes wheat equivalent of manufactured wheat products exported.

(d) *Production and Disposal.* A summary of all transactions in wheat for Australia, as distinct from those recorded for the Wheat Board above, appears in the following table. The particulars for local consumption are based on sales made by the Australian Wheat Board, whilst those relating to exports represent actual shipments.

WHEAT: PRODUCTION AND DISPOSAL, AUSTRALIA

(Million bushels)

Particulars	Year ended 30th November—				
	1959	1960	1961	1962	1963
Opening stocks (including flour)(a) ..	16.5	65.4	60.7	24.4	17.7
Production	215.1	198.5	273.7	247.2	306.9
Imports .. .. .	..	..	..	..	..
Total Available Supplies ..	231.6	263.9	334.4	271.6	324.6
Exports—					
Wheat	71.7	98.1	205.1	154.7	200.1
Flour(a)	26.8	26.7	31.6	26.6	25.1
Breakfast foods and other products(a) ..	0.4	0.6	0.5	0.6	0.7
Local consumption—					
Flour(a)	40.2	41.3	41.2	40.7	40.4
Stock feed	11.6	14.7	13.2	10.0	9.1
Seed	12.0	12.6	13.8	15.4	15.6
Breakfast foods and other products(a) ..	1.9	1.9	1.9	1.6	1.7
Balance retained on farm (excluding seed)	3.7	6.6	8.4	7.4	5.6
Closing stocks (including flour)(a) ..	65.4	60.7	24.4	17.7	23.3
Total Disposals	233.7	263.2	340.1	274.7	321.6
Excess (+) or Deficiency (-) of Disposals in respect of Available Supplies(b) ..	+2.1	-0.7	+5.7	+3.1	-3.0

(a) In terms of wheat. (b) Includes allowance for unrecorded movements in stocks, gain or loss in out-turn, etc.

NOTE.—One short ton (2,000 lb.) of flour is taken to be equivalent to 46.3 bushels of wheat.

(e) *Finance.* The *Wheat Industry Stabilization Act 1948* empowered the Minister to arrange with the Commonwealth Bank for advances to the Board, the advances being guaranteed by the Commonwealth Government. These provisions have been continued in the subsequent legislation, with the exception that advances are now arranged through the Reserve Bank.

AUSTRALIAN WHEAT BOARD: FINANCIAL OPERATIONS, POOLS Nos. 22 to 26
(£'000)

Particulars	No. 22 Pool	No. 23 Pool	No. 24 Pool	No. 25 Pool	No. 26 Pool(a)
	(1958-59 Harvest)	(1959-60 Harvest)	(1960-61 Harvest)	(1961-62 Harvest)	(1962-63 Harvest)
Paid to growers	117,336	108,641	152,685	144,207	135,295
Rail freight	13,687	12,999	18,715	16,943	22,686
Expenses	8,868	9,384	9,326	8,360	9,490
Total Payments ..	139,891	131,024	180,726	169,510	167,471
Value of sales delivered ..	(b) 133,598	(c) 123,187	(d) 172,103	(e) 162,455	(f) 199,167

(a) Incomplete. (b) Subject to additional £6,532,000 withdrawn from Wheat Prices Stabilization Fund and payment of £207,000 to Wheat Industry Research Fund. (c) Subject to additional £8,024,000 (of which the Commonwealth Government provided £3,022,000) withdrawn from Wheat Prices Stabilization Fund and payment of £187,000 to Wheat Industry Research Fund. (d) Subject to additional £8,884,000 provided by the Commonwealth Government and payment of £261,000 to Wheat Industry Research Fund. (e) Subject to additional £7,288,000 provided by the Commonwealth Government and payment of £233,000 to Wheat Industry Research Fund. (f) Subject to additional £11,317,000 provided by the Commonwealth Government and payment of £220,000 to Wheat Industry Research Fund.

NOTE.—Details of earlier pools will be found in previous issues of the Year Book.

(xi) *Imports of Wheat.* Wheat and flour have been imported in substantial quantities on three occasions since 1900; in 1902-3, the wheat harvest was only 12,378,000 bushels, and wheat and flour equivalent to 12,468,000 bushels of wheat were imported. An equivalent of 7,279,000 bushels was imported in 1914-15 to supplement the yield of 25 million bushels produced in that season. Owing to drought conditions in 1957-58, wheat supplies were insufficient for local requirements and, as a result, 1,485,000 bushels were imported from Canada in 1958. No wheat has since been imported.

(xii) *Exports of Wheat and Flour.* Statistics in this sub-paragraph relate to years ended 30th June. Export figures relate to the exports of Australian produce only.

(a) *Quantity and Value.* The following table shows particulars of the exports of wheat and flour and the total of both, in terms of wheat, for each of the years 1958-59 to 1962-63.

WHEAT AND FLOUR: EXPORTS FROM AUSTRALIA

Year	Quantity				Value		
	Wheat	Flour		Total (in terms of wheat)	Wheat	Flour(a)	Total
		As flour (a)	In terms of wheat					Wheat	Flour(a)	Total
	'000 bushels	short tons	'000 bushels	'000 bushels	£A.'000 f.o.b.	£A.'000 f.o.b.	£A.'000 f.o.b.
1958-59	54,626	467,697	21,654	76,280	38,381	14,001	52,382
1959-60	91,244	557,999	25,835	117,079	61,680	15,811	77,491
1960-61	152,981	679,179	31,446	184,427	102,426	19,637	122,063
1961-62	203,137	602,665	27,903	231,040	142,446	18,164	160,610
1962-63	151,971	544,441	25,208	177,179	108,452	16,330	124,782

(a) White flour (plain and self-raising), sharps and wheatmeal for baking.

NOTE.—One short ton (2,000 lb.) of flour is taken to be equivalent to 46.3 bushels of wheat.

(b) *Destination of Wheat.* The following table shows the exports of wheat to various countries for each of the five years ended 1962-63.

WHEAT: EXPORTS FROM AUSTRALIA

('000 bushels)

Country to which exported	1958-59	1959-60	1960-61	1961-62	1962-63
United Kingdom	21,225	20,983	27,408	23,280	16,318
India	1,317	11,705	4,910	21,164	7,145
New Zealand	8,228	7,903	6,107	6,251	6,088
Pakistan	720	3,875	3,873	18	5,597
Other Commonwealth countries	11,243	11,026	9,756	10,395	9,169
China (Mainland)	317	..	40,293	71,753	76,224
Japan	1,754	4,230	4,426	15,696	12,673
Spain .. .. .	..	..	1,258	14,482	3,031
Other foreign countries	9,822	31,522	54,950	40,098	15,726
Total	54,626	91,244	152,981	203,137	151,971

(c) *Destination of Flour.* The following table shows the exports of flour to various countries for each of the five years ended 1962-63. The figures relate to exports of white flour (plain and self-raising), sharps and wheatmeal for baking.

FLOUR: EXPORTS FROM AUSTRALIA

(Short tons)

Country to which exported	1958-59	1959-60	1960-61	1961-62	1962-63
United Kingdom	45,837	46,256	56,135	66,560	66,641
Aden	34,867	25,689	32,874	34,969	38,914
Ceylon	61,382	142,339	117,563	178,503	103,485
Fiji	24,972	27,995	28,071	30,157	28,987
Malaya	92,427	112,417	107,304	83,139	84,700
Singapore	40,735	36,658	41,790	52,872	51,756
Other Commonwealth countries	63,519	68,021	69,602	64,128	66,363
Saudi Arabia	2,340	3,691	4,777	11,551	16,211
Thailand	15,550	14,646	14,483	13,497	17,129
Other foreign countries	86,068	80,287	206,580	67,289	70,255
Total	467,697	557,999	679,179	602,665	544,441

(xiii) *World Area and Production of Wheat.* The figures in the following table of the world area and production of wheat by principal countries and by continents have been compiled from the statistics published by the Foreign Agricultural Service of the United States Department of Agriculture. Years shown refer to years of harvest in the northern hemisphere. Harvests of the northern hemisphere countries are combined with those of the southern hemisphere which immediately follow; thus, the crop harvested in the northern hemisphere in 1962 is combined with preliminary forecasts for the southern hemisphere harvests which began late in 1962 and ended early in 1963.

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

(Source: Foreign Crops and Markets—United States Department of Agriculture)

Continent and country	Area(a)			Production			Yield per acre		
	1960	1961	1962	1960	1961	1962	1960	1961	1962
	'000 acres	'000 acres	'000 acres	'000 bushels	'000 bushels	'000 bushels	bus.	bus.	bus.
North America—									
Canada ..	23,198	25,316	26,817	517,624	283,394	565,554	22.3	11.2	21.1
United States ..	51,896	51,551	43,576	1,357,272	1,234,743	1,092,562	26.2	24.0	25.1
<i>Total(b)</i> ..	<i>77,030</i>	<i>78,970</i>	<i>72,300</i>	<i>1,925,000</i>	<i>1,570,000</i>	<i>1,712,000</i>	<i>24.6</i>	<i>19.9</i>	<i>23.7</i>
Europe—									
France ..	10,769	9,876	11,294	405,000	351,800	516,380	37.6	35.6	45.7
Italy ..	11,300	10,738	11,257	250,000	305,000	349,830	22.1	28.4	31.1
Spain ..	10,230	9,610	10,507	130,000	126,100	176,700	12.7	13.1	16.8
<i>Total(b)</i> ..	<i>70,220</i>	<i>67,600</i>	<i>71,650</i>	<i>1,915,000</i>	<i>1,865,000</i>	<i>2,225,000</i>	<i>27.3</i>	<i>27.6</i>	<i>31.1</i>
U.S.S.R. (Europe and Asia)(c) ..	148,500	155,000	166,545	1,700,000	1,900,000	2,000,000	11.4	12.3	12.0
Africa(c) ..	18,220	16,850	16,570	210,000	160,000	210,000	11.5	9.5	12.7
Asia—									
China (Mainland)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
India ..	32,542	32,047	33,240	376,700	403,900	433,830	11.6	12.6	13.1
Pakistan ..	12,192	11,603	12,571	144,700	141,340	151,720	11.9	12.2	12.1
Turkey ..	15,600	15,500	16,000	260,000	225,000	250,000	16.7	14.5	15.7
<i>Total(b)</i> ..	<i>144,600</i>	<i>139,320</i>	<i>144,970</i>	<i>1,920,000</i>	<i>1,865,000</i>	<i>1,985,000</i>	<i>13.3</i>	<i>13.4</i>	<i>13.7</i>
South America—									
Argentina ..	8,893	10,374	n.a.	150,000	190,000	190,000	16.9	18.3	n.a.
<i>Total(b)</i> ..	<i>15,310</i>	<i>16,040</i>	<i>15,590</i>	<i>235,000</i>	<i>265,000</i>	<i>280,000</i>	<i>15.3</i>	<i>16.5</i>	<i>18.0</i>
Oceania—									
Australia ..	13,439	14,723	16,469	273,716	247,178	306,912	20.4	16.8	18.6
<i>Total(b)</i> ..	<i>13,626</i>	<i>14,909</i>	<i>16,600</i>	<i>283,000</i>	<i>254,000</i>	<i>317,000</i>	<i>20.8</i>	<i>17.0</i>	<i>19.3</i>
World Total(b) ..	487,510	488,690	504,230	8,188,000	7,880,000	8,730,000	16.7	16.1	17.3

(a) Figures refer to harvested areas as far as possible. For Australia, area sown is shown.
 (b) Estimated totals, which in the case of production are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown. (c) Estimated.

(xiv) *Principal Exporting and Importing Countries.* The following table shows the quantities of wheat traded by the chief exporting and importing countries for the years 1960-61 to 1962-63, based on statistics recently published by the Food and Agriculture Organization of the United Nations.

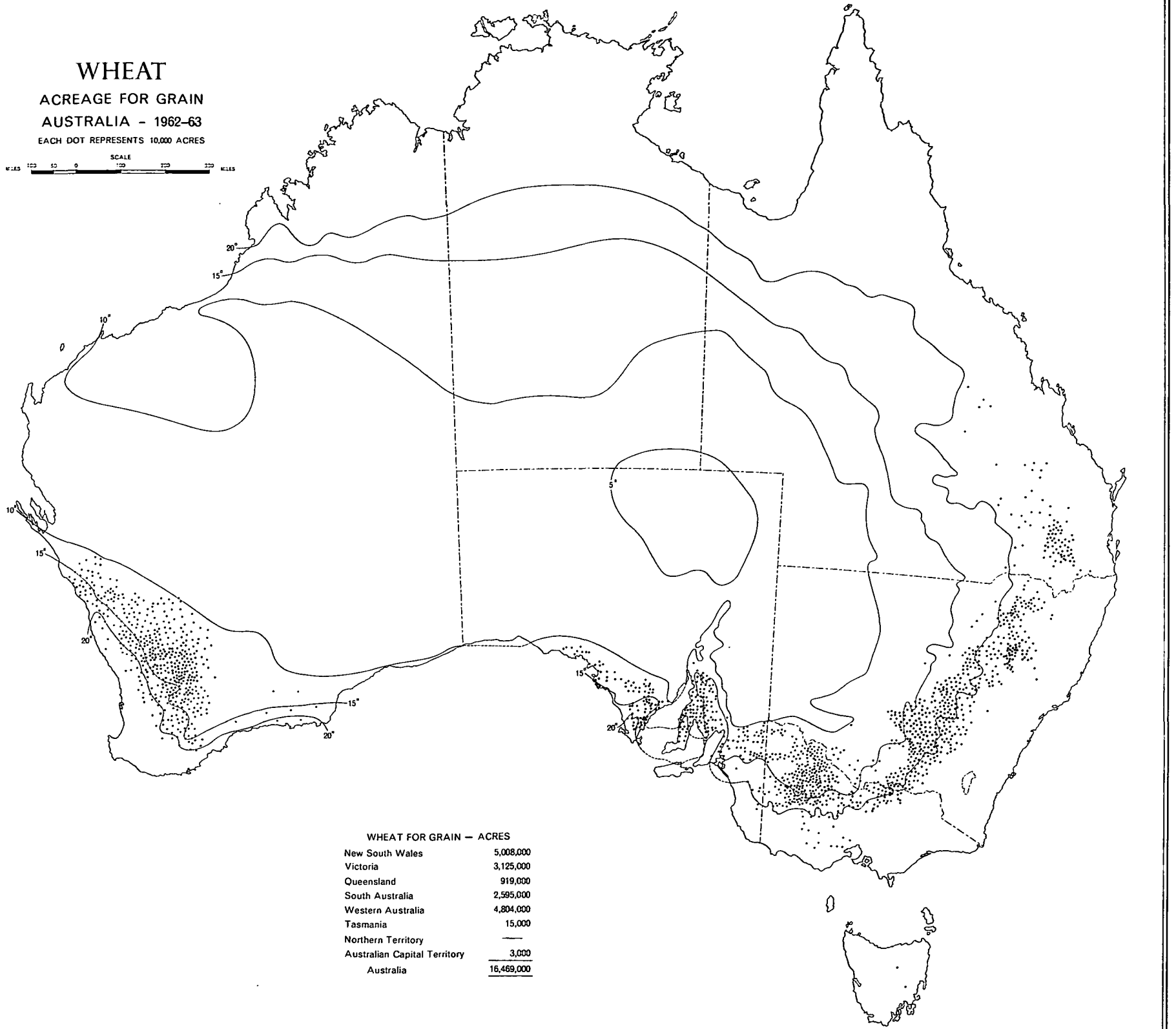
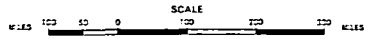
While Australia's production of wheat averages about 3 per cent. of the world' total, its exports account for a much higher proportion of the total quantities shipped. In 1962-63, for example, Australia's share of world wheat exports amounted to 12.0 per cent.

WHEAT

ACREAGE FOR GRAIN

AUSTRALIA - 1962-63

EACH DOT REPRESENTS 10,000 ACRES



WHEAT FOR GRAIN — ACRES

New South Wales	5,008,000
Victoria	3,125,000
Queensland	919,000
South Australia	2,595,000
Western Australia	4,804,000
Tasmania	15,000
Northern Territory	—
Australian Capital Territory	3,000
Australia	<u>16,469,000</u>

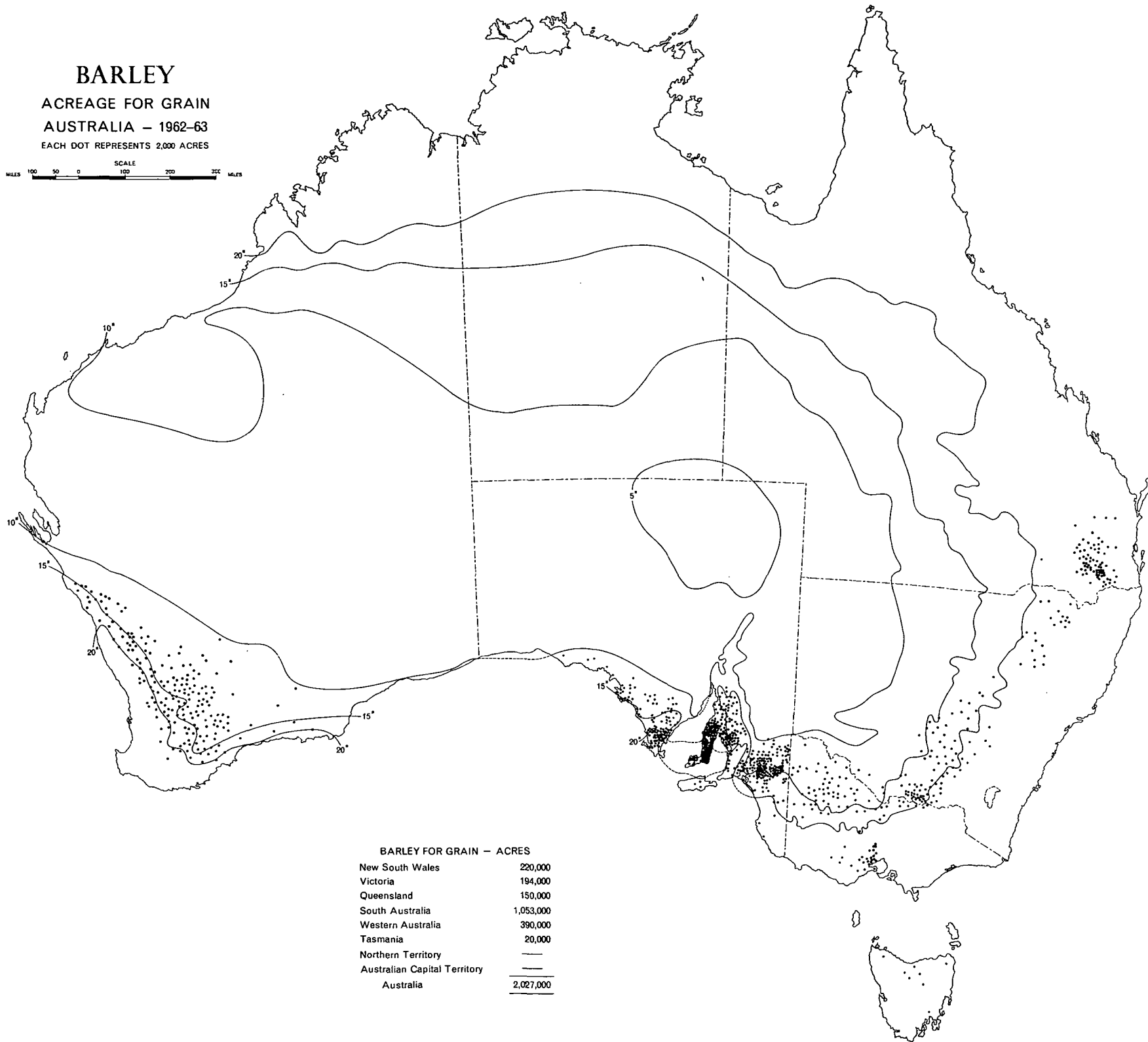
BARLEY

ACREAGE FOR GRAIN

AUSTRALIA - 1962-63

EACH DOT REPRESENTS 2,000 ACRES

SCALE
MILES 100 50 0 100 200 300



BARLEY FOR GRAIN - ACRES

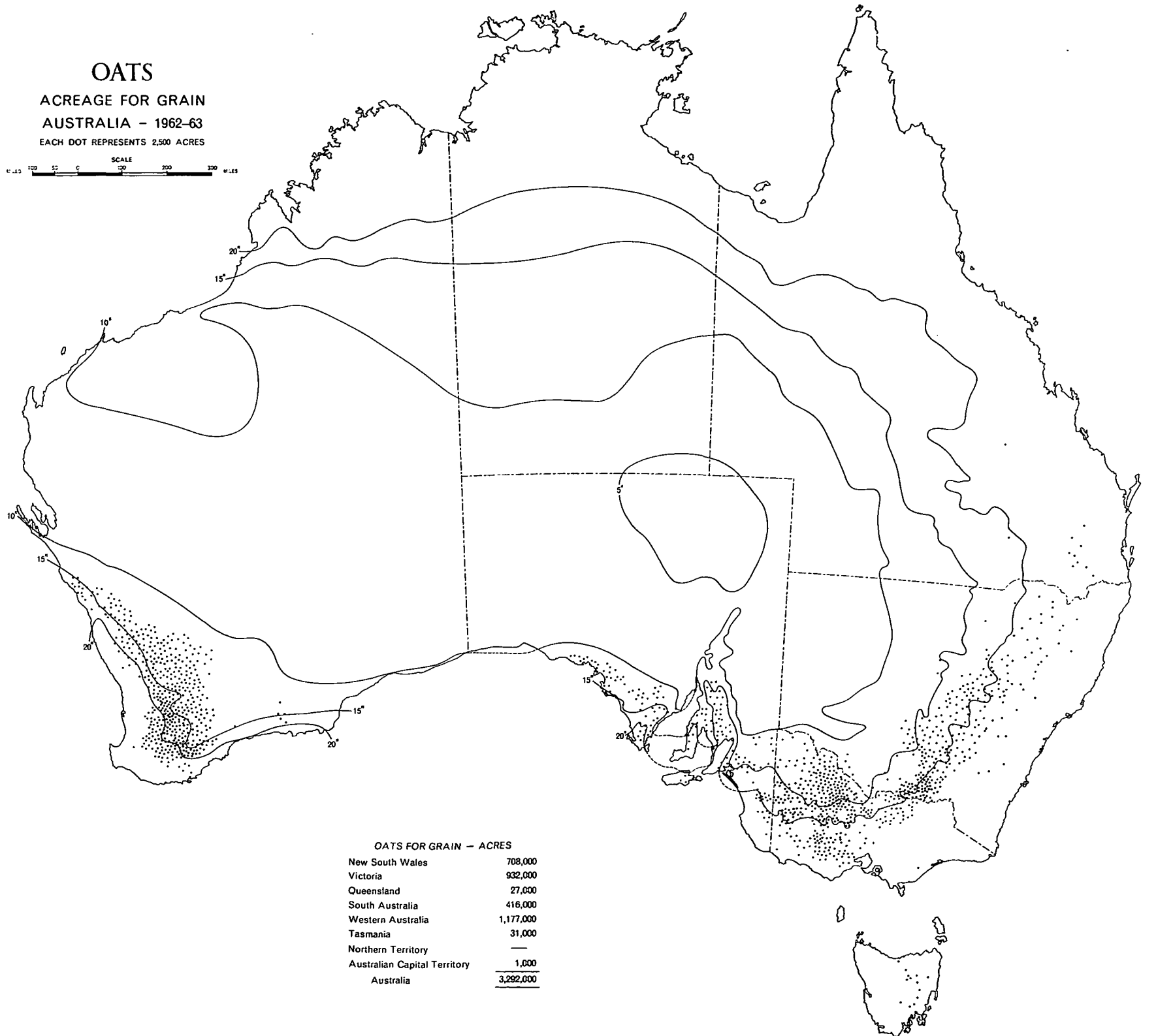
New South Wales	220,000
Victoria	194,000
Queensland	150,000
South Australia	1,053,000
Western Australia	390,000
Tasmania	20,000
Northern Territory	—
Australian Capital Territory	—
Australia	<u>2,027,000</u>

OATS

ACREAGE FOR GRAIN

AUSTRALIA - 1962-63

EACH DOT REPRESENTS 2,500 ACRES

SCALE
0 50 100 150 200 250 300 MILES

OATS FOR GRAIN - ACRES

New South Wales	708,000
Victoria	932,000
Queensland	27,000
South Australia	416,000
Western Australia	1,177,000
Tasmania	31,000
Northern Territory	—
Australian Capital Territory	1,000
Australia	<u>3,292,000</u>

**WHEAT (INCLUDING FLOUR IN TERMS OF WHEAT): PRINCIPAL
EXPORTING AND IMPORTING COUNTRIES**

(Source: World Grain Trade Statistics—Food and Agriculture Organization of the United Nations)

Country	1960-61		1961-62		1962-63(a)	
	Quantity	Proportion of world total	Quantity	Proportion of world total	Quantity	Proportion of world total

EXPORTING COUNTRIES

	million bushels	per cent.	million bushels	per cent.	million bushels	per cent.
United States of America	660.9	46.3	717.8	44.9	637.5	43.3
Canada	342.0	24.0	365.1	22.9	331.2	22.5
Australia	184.4	12.9	231.0	14.5	177.2	12.0
France	57.3	4.0	67.4	4.2	114.1	7.8
U.S.S.R.(b)	45.7	3.2	45.6	2.9	71.6	4.9
Argentina	71.5	5.0	87.4	5.5	66.3	4.5
Germany, Federal Republic of ..	30.3	2.1	43.3	2.7	23.1	1.6
All other	36.1	2.5	40.0	2.4	51.0	3.4
<i>Total(c)</i>	<i>1,428.2</i>	<i>100.0</i>	<i>1,597.6</i>	<i>100.0</i>	<i>1,472.0</i>	<i>100.0</i>

IMPORTING COUNTRIES

	million bushels	per cent.	million bushels	per cent.	million bushels	per cent.
China (Mainland)(b)	72.8	5.3	169.0	11.0	181.9	12.3
United Kingdom	173.1	12.5	172.4	11.2	156.5	10.6
India	140.5	10.2	105.5	6.8	142.4	9.6
Japan	104.1	7.5	101.9	6.6	97.8	6.6
Brazil	73.9	5.3	83.9	5.4	78.6	5.3
Germany, Federal Republic of ..	81.0	5.9	129.1	8.4	78.3	5.3
United Arab Republic	36.5	2.6	62.8	4.1	63.2	4.3
Pakistan	37.7	2.7	42.0	2.7	57.1	3.9
Yugoslavia	13.0	0.9	39.2	2.5	43.0	2.9
Korea, Republic of	11.0	0.8	10.7	0.7	33.5	2.3
Turkey	9.7	0.7	44.3	2.9	24.6	1.7
Netherlands	34.5	2.5	50.0	3.2	20.0	1.4
All other	593.8	43.1	531.7	34.5	500.9	33.8
<i>Total(c)</i>	<i>1,381.6</i>	<i>100.0</i>	<i>1,542.5</i>	<i>100.0</i>	<i>1,477.8</i>	<i>100.0</i>

(a) Preliminary. (b) Unofficial estimate. (c) Total exports do not necessarily agree with total imports because of the time lag between shipments and arrivals.

NOTE.—One short ton (2,000 lb.) of flour is taken to be equivalent to 46.3 bushels of wheat.

Estimates of exports to, and imports from, the U.S.S.R. and Mainland China in the table above are based entirely on available trade returns of the trading partners outside the Sino-Soviet bloc. No account is taken of trade within this bloc because of the incomplete nature of the data.

2. Oats.—(i) *General.* This cereal is widely grown in all agricultural areas which have autumn, winter and spring rainfall, and is tolerant of wet conditions and heavy soils. It has excellent feed value, and produces a higher yielding crop than other winter cereals. It needs less cultivation, but requires ample fertilizer. Oats has a variety of uses—as a pasture plant when rough sown into stubble or heavy clover pastures, as silage if cut before maturity, as a hay crop when mown and baled or cut for chaff, or as a grain when stripped (the stubble then being grazed off). The grain is sold on a “fair average quality” basis through voluntary pools in Victoria, South Australia and Western Australia. Excessive bulk in the husk and a fluctuating export price limit the extent of oversea trade.

(ii) *Area, Production and Yield per Acre.* Oats is usually next in importance to wheat among the grain crops cultivated in Australia. However, while wheat grown for grain in 1962-63 accounted for 51 per cent. of the area of all crops, oats grown for grain represented only 10 per cent. The area, production and yield per acre of oats in each State are shown below for the years 1958-59 to 1962-63 in comparison with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59.

OATS FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE

Period	N.S.W.	Victoria	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
AREA ('000 ACRES)								
Average for three years ended—								
1938-39	297	478	8	338	425	26	(a)	1,572
1948-49	515	548	21	282	484	17	1	1,868
1958-59	756	735	29	445	1,178	20	(a)	3,163
Year—								
1958-59	1,130	971	39	481	1,330	22	1	3,974
1959-60	567	673	22	506	1,240	22	(a)	3,030
1960-61	917	835	19	512	1,330	23	1	3,637
1961-62	713	774	27	324	1,231	27	1	3,097
1962-63	708	932	27	416	1,177	31	1	3,292

PRODUCTION ('000 BUSHELS) (b)

Average for three years ended—								
1938-39	4,065	4,781	65	2,575	4,159	810	6	16,461
1948-49	7,166	9,757	324	3,606	5,355	406	7	26,621
1958-59	12,619	14,140	547	7,911	15,606	409	10	51,242
Year—								
1958-59	27,638	23,339	832	11,992	22,585	491	28	86,905
1959-60	11,125	12,701	394	2,504	19,599	512	6	46,841
1960-61	21,466	20,666	285	11,478	21,810	391	11	76,107
1961-62	13,225	16,312	412	4,391	20,187	587	16	55,130
1962-63	16,035	27,042	545	5,770	18,572	828	17	68,809

YIELD PER ACRE (BUSHELS) (b)

Average for three years ended—								
1938-39	13.7	10.0	8.1	7.6	9.8	3.1	24.3	10.5
1948-49	13.9	17.8	15.4	12.8	11.1	2.4	11.8	14.3
1958-59	16.7	19.2	18.9	17.8	13.3	20.5	22.5	16.2
Year—								
1958-59	24.5	24.0	21.3	24.9	17.0	22.1	26.6	21.9
1959-60	19.6	18.9	18.4	5.0	15.8	23.2	24.8	15.5
1960-61	23.5	24.7	15.0	22.4	16.4	16.8	20.9	20.9
1961-62	18.5	21.1	15.4	13.6	16.4	21.8	18.7	17.8
1962-63	22.7	29.0	20.0	13.9	15.8	26.6	25.6	20.9

(a) Less than 500 acres.

(b) 40 lb. per bushel.

Graphs showing the area sown to oats and production of oats in Australia appear on pages 993 and 995 of Year Book No. 49, and a map showing the distribution of areas growing oats for grain throughout Australia in 1962-63 appears on page 1015.

In 1962-63, the production of oats was 68,809,000 bushels, 18,096,000 bushels (21 per cent.) below the record harvest of 86,905,000 bushels in 1958-59.

The yield per acre in 1962-63 was 20.9 bushels, compared with the record yield of 21.9 bushels per acre established in 1958-59. The lowest yield recorded was 4.4 bushels per acre in the abnormally dry season of 1944-45.

(iii) *Price of Oats.* The average wholesale price in the Melbourne market for oats of good milling quality was 7s. 4d. a bushel in 1962-63, compared with 7s. 0½d. in 1961-62.

(iv) *Value of Oat Crop.* The estimated gross value of the oat crop in each State for the 1962-63 season and the value per acre were as follows.

OATS: VALUE OF CROP, 1962-63

Particulars	N.S.W.	Victoria	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
Aggregate value £'000	6,882	9,205	279	1,969	6,976	313	5	25,629
Value per acre .. £	9.7	9.9	10.2	4.7	5.9	10.1	7.5	7.8

(v) *Exports.* The production of oats in Australia is sufficient to allow for an export trade which fluctuates with the incentive offered by overseas prices. The quantities and values of Australian-produced oats exported from Australia during the years 1958-59 to 1962-63 are shown below.

OATS: EXPORTS, AUSTRALIA

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
Quantity '000 bus.	17,557	11,969	19,005	19,064	17,744
Value £A.'000 f.o.b.	6,512	5,031	6,854	7,479	7,076

In 1962-63, the principal countries of destination were the Federal Republic of Germany (8,525,000 bushels), the Netherlands (3,153,000 bushels), China (Mainland) (1,481,000 bushels), and the United Kingdom (1,235,000 bushels). Imports of oats into Australia are not recorded separately.

(vi) *Oatmeal and Other Oat Products.* In 1962-63, the production of oatmeal was 15,098 tons for porridge and 21,442 tons for other purposes. This was equivalent to about 4,092,000 bushels of oats.

(vii) *World Production.* The world's production of oats for the year 1962, according to figures issued by the United States Department of Agriculture, amounted to 3,435 million bushels, harvested from 86.4 million acres, resulting in an average yield of 39.8 bushels an acre. This compared with an estimated production in the previous year of 3,410 million bushels from an area of 95.8 million acres and an average yield of 35.6 bushels an acre.

3. **Barley.**—(i) *General.* This cereal contains two main groups of varieties: 2-row and 6-row. The former is generally, but not exclusively, preferred for malting purposes.

Barley was formerly stubble-sown, but is now grown principally on pasture land worked up early in the year of sowing. In this way, it forms an important phase in the rotation of the land. Like oats, it may also be sown for fodder production or for grain. When sown for fodder, sowing may take place either early or late in the season, as it has a short growing period. It may thus provide grazing or fodder supplies when other sources are not available. Barley grain may be crushed to meal for stock (especially pigs) or sold for malting. Crops sown for malting purposes require well-worked, weed-free paddocks of even soil, and are thus restricted to specific districts.

The main barley-growing areas in Australia are situated in Victoria (Mallee, North Wimmera, Mt. Gambier region and Geelong) and South Australia (Eyre and Yorke Peninsulas). In Western Australia, it is grown in the higher rainfall areas on the western edge of the wheat belt.

(ii) *Barley Boards.* The bulk of the barley crop in the various States is acquired and marketed by grower-controlled boards. Pooled returns from sales are distributed to growers at standard rates for the individual grades and varieties delivered. The Victorian and South Australian crops are marketed by the Australian Barley Board (a joint board established by the two State Governments), and the Queensland and Western Australian Barley Boards, handle the crops of their respective States.

(iii) *Australian Barley Board Operations.* Particulars of the proportion of barley production which was received by the Australian Barley Board (for Victoria and South Australia), together with details of quantity sold, advances and total payments to growers, are presented below.

AUSTRALIAN BARLEY BOARD: BARLEY RECEIVED, SOLD, ETC.

Pool		Quantity received	Quantity sold(a)	Total advances made per bushel on 2-row No. 1 Grade less freight	Total net payments to growers
		'000 bushels	'000 bushels	s. d.	£'000
No. 20 (1958-59 Crop)	.. ..	42,550	42,560	10 10.1	19,617
„ 21 (1959-60 „ )	.. ..	11,773	11,797	10 0.51	4,904
„ 22 (1960-61 „ )	.. ..	44,624	44,680	9 3.26	16,989
„ 23 (1961-62 „ )	.. ..	20,081	20,059	11 7.28	9,707
„ 24 (1962-63 „ )	.. ..	17,195	17,285	11 6.76	8,333

(a) Includes surplus or shortage in out-turn.

(iv) *Area, Production and Yield per Acre.* There was a substantial increase in the area of barley sown for grain (particularly in Western Australia and Queensland) in the years up to 1960-61, and in that year the area sown reached the record level of 2,830,000 acres. However, the area sown in 1962-63, 2,027,000 acres, was 15 per cent. less than the area in 1961-62, and 28 per cent. less than the area in 1960-61. The production of barley for grain in 1962-63, 39,579,000 bushels, was 5 per cent. less than production in 1961-62, and 42 per cent. less than the record production of 67,970,000 bushels in 1960-61. The area, production and yield per acre of barley for grain in the several States for the years 1958-59 to 1962-63, compared with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59 are shown in the following table.

BARLEY FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
AREA ('000 ACRES)								
Average for three years ended—								
1938-39 ..	13	138	10	391	53	8	(a)	613
1948-49 ..	23	166	18	587	65	7	(a)	866
1958-59 ..	73	354	184	1,255	324	8	..	2,198
Year—								
1958-59 ..	106	363	249	1,332	322	9	..	2,381
1959-60 ..	118	278	260	1,290	421	12	..	2,379
1960-61 ..	190	309	219	1,556	541	15	..	2,830
1961-62 ..	201	225	177	1,271	490	19	..	2,383
1962-63—								
2-row ..	140	180	134	1,020	60	19	..	1,553
6-row ..	81	14	16	33	330	(a)	..	474
Total ..	221	194	150	1,053	390	19	..	2,027

PRODUCTION ('000 BUSHELS)(b)								
Average for three years ended—								
1938-39 ..	197	2,174	135	6,816	660	252	(c)	10,234
1948-49 ..	316	3,149	375	11,964	748	194	(c)	16,746
1958-59 ..	1,463	7,192	4,673	29,740	4,239	267	..	47,574
Year—								
1958-59 ..	2,922	8,581	8,103	37,665	5,410	295	..	62,976
1959-60 ..	2,581	5,593	6,650	11,857	7,080	418	..	34,179
1960-61 ..	4,786	7,718	4,393	42,233	8,496	344	..	67,970
1961-62 ..	4,137	4,654	3,532	21,292	7,282	607	..	41,504
1962-63—								
2-row ..	3,328	5,129	3,696	17,479	1,120	618	..	31,370
6-row ..	2,003	340	392	525	4,936	13	..	8,209
Total ..	5,331	5,469	4,088	18,004	6,056	631	..	39,579

YIELD PER ACRE (BUSHELS)(b)								
Average for three years ended—								
1938-39 ..	15.2	15.7	13.5	17.4	12.5	31.5	52.3	16.7
1948-49 ..	13.7	19.0	20.8	20.4	11.5	27.7	19.5	19.3
1958-59 ..	20.0	20.3	25.4	23.7	13.1	33.4	..	20.7
Year—								
1958-59 ..	27.6	23.6	32.6	28.3	16.8	31.6	..	26.5
1959-60 ..	21.8	20.1	25.6	9.2	16.8	33.8	..	14.3
1960-61 ..	25.3	25.0	20.0	27.1	15.7	22.5	..	24.0
1961-62 ..	20.6	26.6	20.0	16.8	14.8	32.4	..	17.4
1962-63—								
2-row ..	23.8	28.4	27.5	17.1	18.6	31.9	..	20.2
6-row ..	24.8	24.2	25.2	15.7	15.0	34.2	..	17.3
Total ..	24.2	28.1	27.3	17.1	15.5	31.9	..	19.5

(a) Less than 500 acres. (b) 50 lb. per bushel. (c) Less than 500 bushels.

For Australia, 77 per cent. of the area of barley for grain in 1962-63 was sown with 2-row barley, while the remainder consisted of 6-row varieties. The proportion, however, varied considerably in the several States. The utilization of barley during the season ended November, 1963, was as follows:—exports, 12,069,000 bushels; malting and distilling, 9,500,000 bushels; pearl barley, 150,000 bushels; seed and stock feed, 16,089,000 bushels.

The following table sets out the acreage and production of 2- and 6-row barley in Australia during the seasons 1958-59 to 1962-63 and the averages for the three years ended 1938-39, 1948-49 and 1958-59.

BARLEY, 2- AND 6-ROW: AREA AND PRODUCTION, AUSTRALIA

Period	Area ('000 acres)			Production ('000 bushels)(a)			Yield per acre (bushels)(a)		
	2-row	6-row	Total	2-row	6-row	Total	2-row	6-row	Total
Average for three years ended—									
1938-39 ..	523	90	613	8,963	1,271	10,234	17.1	14.1	16.7
1948-49 ..	769	97	866	15,142	1,604	16,746	19.7	16.5	19.3
1958-59 ..	1,809	389	2,198	41,633	5,941	47,574	23.0	15.3	20.7
Year—									
1958-59 ..	1,965	416	2,381	54,624	8,352	62,976	27.8	20.1	26.5
1959-60 ..	(b)1,868	(b) 499	2,379	b 25,676	(b)8,085	34,179	(b) 13.7	(b) 16.2	14.3
1960-61 ..	(b)2,157	(b) 658	2,830	b 55,691	b 11,935	67,970	(b) 25.8	(b) 18.1	24.0
1961-62 ..	(b)1,777	(b) 587	2,383	b 31,739	(b)9,158	41,504	(b) 17.9	(b) 15.6	17.4
1962-63 ..	1,553	474	2,027	31,370	8,209	39,579	20.2	17.3	19.5

(a) 50 lb. per bushel.

(b) Excludes Tasmania.

A graph showing the production of barley in Australia since 1935-36 appears on page 995 of Year Book No. 49, and a map showing the distribution of barley growing areas throughout Australia in 1962-63 appears on page 1014.

(v) *Prices.* The average wholesale price for 2-row English malting barley in the Melbourne market during 1962-63 was 15s. 1d. compared with 14s. 9d. in 1961-62.

(vi) *Value of Barley Crop.* The estimated gross value of the barley crop in each State for the 1962-63 season and the value per acre are shown in the following table.

BARLEY FOR GRAIN: VALUE OF CROP, 1962-63

Particulars		N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	Aust.
Aggregate value ..	£'000	3,236	2,655	2,385	9,576	3,038	438	21,328
Value per acre ..	£	14.7	13.7	15.9	9.1	7.8	22.2	10.5

(vii) *Exports.* South Australia was the principal exporting State in 1962-63, while the United Kingdom, Italy, the Netherlands and Greece were the principal countries to which barley was shipped. There was a substantial fall in exports in 1962-63 compared with 1961-62. Exports to China (Mainland) fell to zero, while there were also significant decreases in exports to the Federal Republic of Germany and the United Kingdom. Particulars of exports of Australian produced barley for the years 1958-59 to 1962-63 are shown in the following table.

BARLEY: EXPORTS, AUSTRALIA

Particulars		1958-59	1959-60	1960-61	1961-62	1962-63
Quantity ..	'000 bus.	29,924	25,013	33,900	31,435	10,322
Value ..	£A.'000 f.o.b.	16,898	11,541	14,329	14,954	5,229

Imports of barley into Australia are not recorded separately, but are considered to be negligible.

In addition to exports of barley grain, there are also exports of Australian pearl and Scotch barley, the total for 1962-63 amounting to 283,286 lb., valued at £9,951, consigned mainly to Malaya.

(viii) *Malt.* (a) *Production.* Details of the quantity of grain used and the production of barley malt in the years 1958-59 to 1962-63 are given in the following table.

BARLEY MALT: GRAIN USED AND MALT PRODUCED, AUSTRALIA

Particulars		1958-59	1959-60	1960-61	1961-62	1962-63
Grain used ..	'000 bus.(a)	8,198	8,539	9,020	10,312	10,338
Malt produced ..	'000 bus.(b)	8,108	8,435	9,015	10,207	10,209

(a) 50 lb. per bushel.

(b) 40 lb. per bushel.

(b) *Exports.* Since 1952-53, the production of malt in Australia has been sufficient to meet local requirements and to provide a margin for export. Exports of Australian produce amounting to 2,871,668 bushels (value £2,712,157) and 2,980,125 bushels (value £2,882,936) were recorded in 1961-62 and 1962-63 respectively.

(ix) *World Production.* In comparison with the barley production of other countries, that of Australia is extremely small. The main producers in 1962 were the United States of America, France, and the United Kingdom. China is also normally a major producer, but details for 1962 are not available. Australian production in that year was approximately one per cent. of the world total.

According to estimates made by the United States Department of Agriculture, world production of barley in the year 1962 amounted to 3,875 million bushels harvested from 149.0 million acres, equivalent to a yield per acre of 26.0 bushels. This compared with the production of 3,455 million bushels in the previous year from 141.8 million acres, and a yield per acre of 24.4 bushels.

4. *Sorghum for Grain.*—Grain sorghum is a summer-growing annual palatable to stock, and more drought- and frost-resistant than maize. It requires a summer rainfall. The growing of this crop for grain on an extensive scale is a comparatively recent development in Australia and, as with other cereals, operations are highly mechanized.

The climatic conditions of Queensland and northern New South Wales are particularly suited to the growing of sorghum, and development has so far been restricted mainly to these areas, more particularly to Queensland. The grain produced is fed to livestock and has become an important source for supplementing other coarse grains for this purpose. Other sorghums are grown in Australia mainly as green fodder, hay and silage (sweet sorghums and Sudan grass) and for the production of brush for broom manufacture (broom millet).

In Queensland, the growing of grain sorghum is concentrated in the Burnett, Dawson-Callide areas and in the central highlands. In New South Wales, the north western slopes and Murrumbidgee Irrigation Area are the main areas. This crop is also suitable for the semi-tropical areas of the Northern Territory and the Kimberleys.

Particulars of the area and production of sorghum grown for grain in recent years are given in the following table.

GRAIN SORGHUM: AREA, PRODUCTION AND YIELD PER ACRE

Season	Area			Production(a)			Yield per acre(a)		
	N.S.W.	Q'land	Aust. (b)	N.S.W.	Q'land	Aust. (b)	N.S.W.	Q'land	Aust. (b)
	Acres	Acres	Acres	Bushels	Bushels	Bushels	Bushels	Bushels	Bushels
1958-59 ..	41,899	210,371	252,419	943,359	6,365,880	7,309,645	22.5	30.3	29.0
1959-60 ..	51,195	220,094	271,553	1,451,967	6,630,369	8,086,405	28.4	30.1	29.8
1960-61 ..	41,145	213,761	255,109	577,473	5,417,571	5,996,101	14.0	25.3	23.5
1961-62 ..	70,134	292,397	362,666	1,307,508	8,053,590	9,361,244	18.6	27.5	25.8
1962-63 ..	80,255	311,068	391,334	1,890,849	8,360,715	10,251,577	23.6	26.9	26.2

(a) 60 lb. per bushel.

(b) Includes small areas sown and quantities produced in other States.

5. *Maize for Grain.*—(i) *General.* Like sorghum, maize is a summer cereal demanding specific soil and climatic conditions. It is grown for grain, chiefly in the south-east and Atherton Tablelands of Queensland and the north coast and northern tablelands of New South Wales. The area so cropped in these States during the 1962-63 season was 98 per cent. of the total for Australia. On the Atherton Tablelands in Queensland, and generally in New South Wales and Victoria, it provides a stock feed for dairy cattle, fat stock and pigs. In times of drought, it is also used as a sheep feed. In all States, except South Australia, however, this crop is grown to some extent for green fodder and silage, particularly in connexion with the dairying industry. There is practically no difference between grain and fodder varieties.

There has been a considerable increase in recent years in the growing of maize from hybrid strains of seed. Varieties have been developed which are capable of producing yields per acre considerably in excess of the older open pollinated types. The expansion in areas sown to hybrid maize has led to a parallel development in the specialized industry of growing hybrid strains for seed.

(ii) *Area, Production and Yield per Acre.* The area, production and yield per acre of maize for grain in each State for the years 1958-59 to 1962-63 compared with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59 are given in the following table. Separate details for hybrid and other varieties are shown for all States except Western Australia for 1962-63.

MAIZE FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
AREA (ACRES)								
Average for three years ended—								
1938-39 ..	121,178	19,826	179,641	20	16	..	6	320,687
1948-49 ..	91,612	7,511	122,263	1	87	6	1	221,481
1958-59 ..	57,662	3,629	120,417	(a)	13	1	2	(b)181,724
Year—								
1958-59 ..	62,249	3,881	113,402	(a)	10	..	..	(b)179,542
1959-60 ..	51,738	3,383	129,803	(a)	4	..	..	(b)184,928
1960-61 ..	49,269	2,985	132,382	(a)	6	..	..	(b)184,642
1961-62 ..	51,434	3,309	155,780	..	17	..	..	210,540
1962-63—								
Hybrid ..	37,601	3,138	120,286	..	} 34	..	..	(b)209,490
Other ..	8,936	496	38,999	(a)		..	..	(b)209,490
Total ..	46,537	3,634	159,285	(a)	34	..	..	(b)209,490

PRODUCTION ('000 BUSHELS)(c)

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
PRODUCTION ('000 BUSHELS)(c)								
Average for three years ended—								
1938-39 ..	3,204	665	3,170	1	(d)	..	(d)	7,040
1948-49 ..	2,446	314	2,960	(d)	1	(d)	(d)	5,721
1958-59 ..	2,347	175	3,428	(a)	(d)	(d)	(d)	(b) 5,950
Year—								
1958-59 ..	2,860	203	3,654	(a)	(d)	..	..	(b) 6,717
1959-60 ..	2,485	180	4,060	(a)	(d)	..	..	(b) 6,725
1960-61 ..	2,227	171	3,847	(a)	(d)	..	..	(b) 6,245
1961-62 ..	2,349	192	4,766	..	(d)	..	..	7,307
1962-63—								
Hybrid ..	1,834	197	4,033	..	} (d)	..	..	(b) 7,457
Other ..	311	19	1,063	(a)		..	..	(b) 7,457
Total ..	2,145	216	5,096	(a)	(d)	..	..	(b) 7,457

YIELD PER ACRE (BUSHELS)(c)

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
YIELD PER ACRE (BUSHELS)(c)								
Average for three years ended—								
1938-39 ..	26.4	33.5	17.6	43.7	12.3	..	10.2	22.0
1948-49 ..	26.7	41.8	24.2	6.7	7.2	14.8	13.7	25.8
1958-59 ..	40.7	48.2	28.5	(a)	16.8	30.0	..	(b) 32.7
Year—								
1958-59 ..	45.9	52.4	32.2	(a)	25.5	..	..	(b) 37.4
1959-60 ..	48.0	53.3	31.3	(a)	25.5	..	..	(b) 36.4
1960-61 ..	45.2	57.3	29.1	(a)	1.0	..	..	(b) 33.8
1961-62 ..	45.7	58.0	30.6	..	21.9	..	..	34.7
1962-63—								
Hybrid ..	48.8	62.9	33.5	..	} 12.2	..	..	(b) 35.6
Other ..	34.9	37.9	27.2	(a)		..	..	(b) 35.6
Total ..	46.1	59.5	32.0	(a)	12.2	..	..	(b) 35.6

(a) Not available for publication. (b) Incomplete. See footnote (a). (c) 56 lb. per bushel. (d) Less than 500 bushels.

The average yield for Australia for the five-year period ended 1962-63 was 35.5 bushels per acre. Among principal producing countries, the United States of America averaged 64.2 bushels per acre and Italy 43.2 bushels for 1962.

(iii) *Price of Maize.* The average wholesale price of maize in the Melbourne market in 1962-63 was 16s. 10½d. a bushel compared with 18s. 1½d. in 1961-62.

(iv) *Value of Crop.* The estimated gross value of the crop in each State for the 1962-63 season and the value per acre were as follows.

MAIZE FOR GRAIN: VALUE OF CROP, 1962-63

Particulars	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	Aust.
Aggregate value .. £'000	1,600	143	3,018	(a)	1	..	4,762
Value per acre .. £	34.4	39.4	18.9	(a)	15.6	..	22.7

(a) Not available for publication.

(v) *Exports of Maize and Maize Products.* Details of exports of Australian-produced maize for the five years ended 1962-63 are shown on the next page.

MAIZE: EXPORTS, AUSTRALIA

Particulars			1958-59	1959-60	1960-61	1961-62	1962-63
Quantity	..	.. '000 bus.	15	22	3	2	552
Value..	..	.. £A.'000 f.o.b.	10	15	4	3	240

The increase in exports of maize in 1962-63 was due principally to the shipment of 474,000 bushels to Japan, a country to which there had been no previous exports.

Imports of maize into Australia are not recorded separately, but are considered to be negligible.

Exports of cornflour in 1962-63 were 130,100 lb., valued at £2,686, compared with 16,100 lb. valued at £1,033 in 1961-62. These figures include some quantities of "cornflour" made from wheat. Imports of cornflour into Australia are not recorded separately.

(vi) *World Production.* According to figures issued by the United States Department of Agriculture, world production of maize in the year 1962 amounted to 7,485 million bushels, harvested from 241 million acres, giving an average yield per acre of 31.1 bushels. This compared with production in the previous year of 7,460 million bushels from 240 million acres, and an average yield of 31.1 bushels per acre.

The United States of America is the most important maize-producing country in the world, and during the three years ended 1962 the area sown to maize in that country averaged 62 million acres or 26 per cent. of the world total. During the same period, production averaged 3,723 million bushels or about 50 per cent. of the world total.

6. Rice.—(i) *General.* The principal rice-growing areas of the world are confined almost entirely to Asia, although limited quantities are grown in other countries. In Australia, rice was first cultivated at the Yanco Experimental Farm in New South Wales, but it was not grown commercially until 1924-25, when 16,240 bushels were produced from 153 acres. Favoured by high average yields and protected by tariff, rice culture made rapid progress in the Murrumbidgee Irrigation Area until local requirements were met and a surplus became available for export. The acreage sown in this area is controlled, as the quantity of water available is limited.

Until recent years, rice-growing in Australia was practically confined to the Murrumbidgee Irrigation Area in New South Wales. However, there is now some experimental rice-growing in Western Australia and the Northern Territory, but particulars are not available for publication. Small quantities have also been produced in Queensland in some years.

(ii) *Area, Production and Exports.* Details relating to area, production, and Australian-produced exports for the years 1958-59 to 1962-63 are shown in the following table.

RICE: AREA, PRODUCTION AND EXPORTS, AUSTRALIA(a)

Season	No. of holdings growing rice(b)	Area	Production (paddy rice)		Average yield (paddy) per acre	Exports(c)	
			Quantity	Gross value(d)		Un-cleaned	Cleaned
			Acres	'000 bushels (e)	£'000	Bushels (e)	Cwt.
1958-59	775	47,054	6,619	4,731	140.7	182,583	704,360
1959-60	852	48,950	6,732	4,450	137.5	265,449	1,055,821
1960-61	787	46,117	6,001	4,125	130.1	359,441	876,175
1961-62	878	50,185	7,045	3,832	140.4	280,540	748,920
1962-63	956	54,929	7,129	3,838	129.8	239,820	905,580

(a) Particulars of area and production for Western Australia and Northern Territory are not available for publication, and are excluded. (b) Twenty acres or more in area. (c) Imports into Australia are not recorded separately, but are considered to be negligible. (d) Excludes the value of straw. (e) 42 lb. per bushel.

The bulk of Australia's exports of rice in 1962-63 was shipped to Papua and New Guinea, the Pacific Islands and the United Kingdom.

§ 4. Fodder Crops

1. Hay.—(i) *General.* Because of the comparatively unreliable nature of rainfall in Australian agricultural and pastoral areas, hay as a fodder crop occupies a position of importance. In 1962-63, hay represented 8 per cent. of the total area of crops.

Up to 1946-47, hay, in terms of area, was second only to wheat for grain, but in more recent years it has been supplanted by green fodder (for feeding-off) and oats for grain.

Hay is generally considered to include cereal hay, meadow hay and lucerne hay. Cereal crops cut early for hay contain a higher level of protein than those cut late.

In most European countries, hay is made almost entirely from meadow pastures, but in Australia a very large proportion is made from cereals and lucerne, the hay being stored loose, in sheaves or baled. Because of its bulk, hay is usually produced for individual or local use, except in times of drought, when large inter-regional transfers may take place.

Meadow hay requires greater care in preparation than cereal hay. Baling must be spaced carefully behind mowing to ensure that the bales are dry enough to prevent moulding, but not so dry as to result in excessive leaf loss. The leaves contain the bulk of the protein. Lucerne hay requires similar attention.

(ii) *Area and Production.* For a number of reasons, particularly the variations in the relative prices of grain and hay and whether the season is favourable or not for a grain crop, the area of hay is apt to fluctuate considerably. The area, production and yield per acre of hay of all kinds in the several States during the years 1958-59 to 1962-63 and the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59 are shown below.

HAY: AREA, PRODUCTION AND YIELD PER ACRE

Season	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
AREA ('000 ACRES)									
Average for three years ended—									
1938-39 ..	859	1,122	67	540	439	81	..	3	3,111
1948-49 ..	516	642	66	287	245	93	..	3	1,852
1958-59 ..	556	978	64	336	305	129	(a)	4	4,372
Year—									
1958-59 ..	747	1,282	78	419	333	154	(a)	5	3,018
1959-60 ..	482	848	81	245	319	127	(a)	3	2,105
1960-61 ..	750	1,286	84	393	284	171	1	4	2,973
1961-62 ..	594	922	95	209	294	157	1	2	2,274
1962-63 ..	587	1,251	87	287	340	165	1	2	2,720
PRODUCTION ('000 TONS)									
Average for three years ended—									
1938-39 ..	975	1,181	94	591	434	120	..	3	3,398
1948-49 ..	618	987	119	396	275	153	..	4	2,552
1958-59 ..	752	1,712	129	476	377	248	(b)	7	3,701
Year—									
1958-59 ..	1,183	2,299	169	672	455	302	(b)	10	5,090
1959-60 ..	779	1,351	179	207	433	221	(b)	7	3,177
1960-61 ..	1,243	2,338	167	616	380	326	1	8	5,079
1961-62 ..	923	1,585	212	286	396	286	(b)	5	3,693
1962-63 ..	965	2,376	197	406	453	313	1	6	4,717
YIELD PER ACRE (TONS)									
Average for three years ended—									
1938-39 ..	1.14	1.05	1.40	1.09	0.99	1.48	..	1.00	1.09
1948-49 ..	1.20	1.54	1.80	1.38	1.12	1.65	..	1.33	1.38
1958-59 ..	1.35	1.75	2.02	1.42	1.24	1.92	0.54	1.75	1.56
Year—									
1958-59 ..	1.58	1.79	2.17	1.60	1.37	1.96	0.47	1.98	1.69
1959-60 ..	1.62	1.59	2.21	0.84	1.36	1.75	0.91	2.15	1.51
1960-61 ..	1.66	1.82	1.98	1.57	1.34	1.91	0.78	2.12	1.71
1961-62 ..	1.55	1.72	2.22	1.37	1.35	1.82	0.76	2.17	1.62
1962-63 ..	1.64	1.90	2.27	1.41	1.33	1.89	1.21	2.38	1.73

(a) Less than 500 acres.

(b) Less than 500 tons.

A graph showing the area under hay since 1900-01 appears on page 993 of Year Book No. 49.

(iii) *Varieties Grown.* Information regarding areas cut for hay in 1962-63 is given in the following table.

HAY: AREA OF VARIOUS KINDS GROWN, 1962-63
(Acres)

State or Territory	Wheaten	Oaten	Lucerne	Other	Total
New South Wales	85,360	65,096	208,574	228,199	587,229
Victoria	37,139	217,328	75,897	920,177	1,250,541
Queensland	7,676	3,110	68,736	7,144	86,666
South Australia	44,278	116,351	30,224	96,590	287,443
Western Australia	43,915	170,892	1,197	123,829	339,833
Tasmania	302	14,113	635	150,392	165,442
Northern Territory .. ..	..	..	..	586	586
Australian Capital Territory ..	35	464	1,552	467	2,518
Australia	218,705	587,354	386,815	1,527,384	2,720,258

For all States and the Territories combined, the proportions of the areas sown to the principal kinds of hay in 1962-63 were 21.6 per cent. for oaten, 14.2 per cent. for lucerne, 8.0 per cent. for wheaten, and 56.2 per cent. for other hay.

(iv) *Value of Hay Crop.* The following table shows the estimated gross value, and the value per acre, of the hay crop of the several States for the 1962-63 season.

HAY: VALUE OF CROP, 1962-63

Particulars	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
Aggregate value .. £'000	10,197	22,434	3,395	3,518	4,647	2,216	60	46,479
Value per acre .. £	17.4	17.9	39.2	12.2	13.7	13.4	23.8	17.1

(a) Includes £12,000 in the Northern Territory.

(v) *Farm Stocks of Hay.* Particulars of stocks of hay held on farms at 31st March in each year 1959 to 1963 are given in the table below.

STOCKS OF HAY HELD ON FARMS
(Tons)

31st March—	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust. (a)
1959 ..	1,463,334	2,464,050	166,657	679,003	290,988	311,825	9,323	5,385,180
1960 ..	1,535,252	1,766,857	203,675	304,227	292,086	255,471	10,778	4,368,346
1961 ..	1,704,486	2,640,249	155,209	648,267	258,859	327,696	12,338	5,747,104
1962 ..	1,775,977	1,847,725	231,335	496,564	254,377	305,108	12,241	4,923,327
1963 ..	1,609,639	2,197,725	194,948	470,202	273,500	333,650	6,896	5,086,560

(a) Excludes the Northern Territory, for which particulars are not available.

(vi) *Exports.* Under normal conditions, hay, whether whole or in the form of chaff, is somewhat bulky for overseas trade, and consequently does not figure largely among Australian exports. During 1962-63, exports amounting to 2,386 tons, valued at £48,596, were made principally to Singapore, the Federation of Malaya, and Hong Kong. There were no imports of hay in 1962-63.

2. Green Fodder.—(i) *General.* Considerable areas are devoted to the growing of green fodder, usually as an adjunct to cereal operations or as a minor crop in irrigation areas. The areas recorded in respect of green fodder include areas of crops cut for feeding to live-stock as green fodder or ensilage, together with areas fed off to stock as green forage.

Statistics of green fodder exclude areas which may have been sown with the intention of harvesting for grain, but which, owing to adverse conditions, showed no promise of producing grain or even hay and were fed off to live-stock. The principal crops cut for green fodder are oats, wheat and lucerne, while small quantities of barley, sorghum, maize, rye and sugar cane are also used in this way. In 1962-63, the area under green fodder (4,951,637 acres) consisted of oats (2,072,287 acres), lucerne (1,915,126 acres), wheat (220,681 acres), barley (158,180 acres), sorghum (124,372 acres), maize (39,146 acres), rye (22,124 acres), sugar cane (1,249 acres) and other crops (398,472 acres). Particulars concerning the area of green fodder in the several States during each of the years 1958-59 to 1962-63 are given in the following table.

GREEN FODDER: AREA
(Acres)

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
1958-59 ..	1,238,314	319,150	638,667	550,366	769,199	61,322	273	667	3,577,958
1959-60 ..	1,578,759	422,237	725,155	595,713	708,793	62,229	240	968	4,094,094
1960-61 ..	1,691,408	430,920	874,702	743,538	606,039	59,563	144	1,247	4,407,561
1961-62 ..	1,829,867	539,020	864,461	787,388	622,067	57,000	588	1,197	4,701,388
1962-63 ..	1,900,130	477,432	912,018	927,807	667,890	64,940 (a)	314	1,105	4,951,637

(a) Not comparable with statistics for earlier years.

In the 1962-63 season, green fodder ranked second to wheat in area of crops throughout Australia. A graph showing the area sown to green fodder appears on page 993 of Year Book No. 49.

(ii) *Value of Green Fodder Crops.* The value of these crops is variously estimated in the several States, but the Australian total, excluding Western Australia, may be taken as approximately £8,700,000 for the 1961-62 season and £9,600,000 for the 1962-63 season.

3. *Ensilage.*—(i) *General.* Ensilage is produced from herbage compacted tightly to exclude air and kept from contact with air and extraneous moisture to avoid moulding. Fermentation results in a dark mass of high protein and lactic acid content. Molasses may be added to hasten fermentation. Ensilage may be stored in pits or stacks or in constructed silos. In recent years, production of ensilage has increased substantially.

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

(iii) *Production and Stocks.* Information regarding production and farm stocks of ensilage for the years ended 31st March, 1959 to 1963, is given in the following table.

ENSILAGE: PRODUCTION AND FARM STOCKS
(Tons)

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Total
Production during—								
1958-59 season ..	243,990	301,839	73,365	68,988	76,997	63,974	410	829,563
1959-60 ..	202,821	281,566	60,129	19,744	73,265	46,933	90	684,548
1960-61 ..	256,459	303,198	51,198	100,727	50,911	72,344	80	834,917
1961-62 ..	196,625	261,884	73,838	52,451	51,364	77,781	700	714,643
1962-63 ..	210,653	295,914	63,489	64,206	48,806	68,117	290	751,475
Farm stocks, at—								
31st March, 1959 ..	333,178	254,695	126,693	50,170	53,549	62,758	435	881,478
.. .. 1960 ..	404,777	201,584	136,317	21,773	51,807	50,671	330	867,259
.. .. 1961 ..	499,244	231,315	117,749	79,269	43,518	46,570	80	1,017,745
.. .. 1962 ..	567,801	181,383	139,788	68,614	37,224	60,157	1,305	1,056,272
.. .. 1963 ..	602,585	263,440	146,286	63,315	37,415	61,110	1,768	1,175,919

§ 5. Industrial Crops

1. **Sugar Cane.**—(i) *General.* The growing of sugar cane is restricted to those coastal areas in Queensland and northern New South Wales which have suitable climatic and soil conditions. Considerable areas in more southern coastal districts of New South Wales previously devoted to this crop are now used for dairying owing to the uncertainty of rainfall.

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

(ii) *Sugar Agreements and Marketing Arrangements.* (a) *In Australia.* Reference was made in Year Book No. 37, pages 940-1, to the agreement operating between the Commonwealth and Queensland Governments in respect of the sugar industry in Australia. Briefly, the agreement places an embargo on sugar importations and fixes the price of sugar consumed in Australia. The current agreement is for the period from 1st September, 1961 to 31st August, 1967. The Commonwealth Government appointed a Committee of Enquiry in 1960 to investigate all facets of the sugar and canned fruits industries. The Committee presented its report, publication of which was restricted to a summary of conclusions and recommendations, in 1961. There was no variation of the consequent Agreement.

Production is regulated by the limited export quotas allocated under the International Sugar Agreement (*see (b) below*). At the mill level, this is established by means of mill peaks. The central collecting system used considerably assists in controlling the industry.

The Queensland Government acquires the whole of the sugar production of that State and of New South Wales by legislation and private agreement respectively. The net proceeds of all sugar sold are pooled and a uniform price paid to mills.

(b) *International Sugar Agreement.* The International Sugar Agreement of 1937 was superseded by the International Sugar Agreements of 1953 and 1958. Details of the 1937 and 1953 Agreements were given in Year Books No. 40, pages 881-2, and No. 48, page 936, respectively.

The 1958 Agreement, which came into operation on 1st January, 1959, establishes basic export quotas for exporting countries. The British Commonwealth is allocated a total quota, the distribution of which remains a matter for internal arrangement by the countries and territories concerned (*see (c) below*). The Australian quota for 1960 and 1961 was approximately 651,000 tons.

The quota and price provisions of the International Sugar Agreement cover only the first three years to 31st December, 1961. A conference in Geneva in 1961 failed to reach agreement on quota provisions for 1962 and 1963. The conference adjourned with a resolution that it be reconvened if circumstances became favourable for an agreement on quotas.

The principal practical effect of the adjournment of the 1961 conference is that former export limitations on participating exporting countries, including Australia, do not apply until such time as agreement on this question is again reached at a resumed session of that conference, or at a newly convened conference.

The question of convening a United Nations conference to consider re-introduction of an Agreement with quota provisions was deferred at a meeting of the International Sugar Council in April, 1963. A preparatory committee is now studying the bases and possible framework of a new Agreement.

(c) *British Commonwealth Sugar Agreement.* On 1st January, 1953, the British Commonwealth Sugar Agreement became effective. This agreement, which has been extended to 1971, provides for Australia to export a maximum of 600,000 tons per annum, subject to annual review. Of the 600,000 tons, 315,000 tons are purchased by the United Kingdom Government at an annually negotiated price and the balance is sold at world market prices plus tariff preferences where applicable. The negotiated prices for 1962 and 1963 were £Stg.45 15s. 3d. and £Stg.46 0s. 10d. In 1960 and 1961, Australia had an additional quota of 51,000 tons as its share of the increased allocation to Commonwealth exporters under the current International Sugar Agreement. This tonnage was not to receive the benefit of tariff preferences. Export limitations under the International Sugar Agreement are not applicable from 1962 onwards (*see (b) above*).

(iii) *Fruit Industry Sugar Concession Committee and Sugar Rebates.* The Fruit Industry Sugar Concession Committee was established by agreement between the Commonwealth and Queensland Governments and administers a fund contributed by the Queensland Government on behalf of the sugar industry.

Until 15th May, 1960, a rebate of £2 4s. per ton of refined sugar used in processing approved fruit products was paid to Australian manufacturers, provided they bought the fresh fruit at prices not lower than those declared by the Committee as reasonable. This was increased to £5 per ton from 16th May, 1960.

An export sugar rebate is also paid by the Committee to exporters of approved fruit products to ensure that manufacturers do not pay higher prices for Australian sugar than the price for which the cheapest imported sugar could be landed duty free in Australia.

Under the Sugar Agreement for 1961-67, the Queensland Government contributes to the fund £264,000 annually and also reimburses the Committee for the actual expenditure on export sugar rebates. Any money remaining in the fund after the payment of rebates and administrative expenses may be used by the Committee for the promotion of the use and sale of fruit products, or for scientific research for the purpose of increasing the yield per acre of Australian fruit.

(iv) *Bulk Handling of Sugar.* The conversion of the Australian sugar industry to bulk handling and mechanized loading and unloading of raw sugar is well advanced. About 95 per cent. of raw sugar in Australia is now handled in bulk without being bagged at any stage.

Terminals for the bulk loading of sugar were opened at Mackay in 1957, at Lucinda and Bundaberg in 1958, at Townsville in 1959, and at Mourilyan in 1960. A second storage shed has been completed at Mackay, and additions have been commenced at Bundaberg. At Cairns, a new terminal was brought into operation in June, 1964. Approval has been given for the erection of a third storage shed at Mackay and second sheds at Townsville and Bundaberg.

Bulk receiving facilities are in operation at all Australian refineries.

(v) *Area.* A brief outline of the development of the industry was included in earlier issues of the Year Book (*see* No. 38, p. 985). The area of sugar cane in Australia for the seasons 1958-59 to 1962-63 and the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59 are shown in the following table.

SUGAR CANE: AREA(a)
(Acres)

Season	New South Wales			Queensland			Australia			Total
	Area crushed	Area of stand-over and newly-planted cane	Area cut for plants	Area crushed	Area of stand-over and newly-planted cane	Area cut for plants	Area crushed	Area of stand-over and newly-planted cane	Area cut for plants	
Average for three years ended—										
1938-39	10,468	10,366	n.a.	247,632	89,690	n.a.	258,100	100,056	n.a.	n.a.
1948-49	7,687	8,666	338	230,905	90,448	12,891	238,592	99,114	13,229	350,935
1958-59	11,094	9,462	619	360,709	110,786	12,596	371,803	120,248	13,215	505,266
Year—										
1958-59	13,368	9,727	616	356,210	118,200	12,391	369,578	127,927	13,007	510,512
1959-60	14,248	10,510	392	299,732	151,114	11,039	313,980	161,624	11,431	487,035
1960-61	13,657	11,385	568	327,246	110,704	11,574	340,903	122,089	12,142	475,134
1961-62	14,655	11,299	482	372,223	87,831	12,339	386,878	99,130	12,821	498,829
1962-63	14,109	12,656	495	387,477	80,438	11,313	401,586	93,094	11,808	506,488

(a) Excludes areas cut for green fodder.

The areas shown in the preceding table do not include the small acreage cut for green fodder, which in 1962-63 amounted to 1,249 acres. The whole area planted is not cut for crushing during any one season, there being always a considerable amount of young and "stand-over" cane as well as a small quantity required for plants.

(vi) *Production of Cane and Sugar.* The production of sugar cane in 1962-63 was at the record level of 12.7 million tons, which was 33 per cent. higher than production in 1961-62, and 25 per cent. higher than the previous record production, that for the 1958-59 season. A graph showing the production of sugar appears on page 995 of Year Book No. 49.

In the following table, production data relating to cane and raw sugar are shown for the seasons 1958-59 to 1962-63 together with averages for the three-year periods ended 1938-39, 1948-49 and 1958-59.

SUGAR CANE: PRODUCTION OF CANE AND RAW SUGAR
(Tons)

Season	New South Wales		Queensland		Australia	
	Cane	Sugar(a)	Cane	Sugar(a)	Cane	Sugar(a)
Average for three years ended—						
1938-39	324,531	43,419	5,215,217	760,994	5,539,748	804,413
1948-49	283,613	35,444	4,767,291	700,053	5,050,904	735,497
1958-59	356,324	43,881	9,221,497	1,260,564	9,577,821	1,304,445
Year—						
1958-59	471,798	58,870	9,740,795	1,353,543	10,212,593	1,412,413
1959-60	574,527	70,677	8,427,731	1,217,803	9,002,258	1,288,480
1960-61	480,147	62,978	8,685,426	1,319,633	9,165,573	1,382,611
1961-62	555,858	67,448	9,020,734	1,315,393	9,576,592	1,382,841
1962-63	637,310	79,733	12,098,582	1,770,084	12,735,892	1,849,817

(a) Raw sugar at 94 net titre.

(vii) *Average Production of Cane Sugar.* Owing to climatic variations, the crop in New South Wales matures in from 20 to 24 months, whereas in Queensland a period of from 12 to 16 months is sufficient. The average yields of cane and sugar per acre for the years 1958-59 to 1962-63 and for the three-year periods ended 1938-39, 1948-49 and 1958-59 are shown below. Allowance should be made in interpreting these figures for the disparity in maturing periods noted above.

SUGAR CANE AND SUGAR: YIELD PER ACRE
(Tons)

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
Average for three years ended—									
1938-39	31.00	4.15	7.47	21.06	3.07	6.85	21.46	3.12	6.89
1948-49	36.90	4.61	8.00	20.65	3.03	6.81	21.17	3.08	6.87
1958-59	32.12	3.96	8.12	25.57	3.49	7.32	25.76	3.52	7.34
Year—									
1958-59	35.29	4.40	8.01	27.35	3.80	7.20	27.63	3.82	7.23
1959-60	40.32	4.96	8.13	28.12	4.06	6.92	28.67	4.10	6.99
1960-61	35.16	4.61	7.62	26.54	4.03	6.58	26.89	4.06	6.63
1961-62	37.93	4.60	8.24	24.23	3.53	6.86	24.75	3.57	6.93
1962-63	45.17	5.65	7.99	31.22	4.57	6.84	31.71	4.61	6.88

(viii) *Production and Utilization.* Details of the production and utilization of sugar for the years 1958-59 to 1962-63 are shown below. Consumption is shown in terms of refined sugar, including that consumed in manufactured products.

SUGAR: PRODUCTION AND UTILIZATION, AUSTRALIA

Year	Changes in stocks (a)	Pro-duction (raw)	Exports (b)	Miscel-laneous uses(c)	Consumption in Australia(d)	
					Total	Per head
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	lb.
1958-59	+10.3	1,353.4	827.4	18.4	497.3	112.0
1959-60	+25.6	1,270.6	725.2	18.6	501.2	110.4
1960-61	-10.3	1,324.8	815.6	21.0	498.5	107.4
1961-62	- 2.4	1,404.2	862.5	18.0	526.1	111.1
1962-63	+110.4	1,831.6	1,175.8	17.8	527.6	109.3

(a) Includes allowance for estimated sugar content of imported foodstuffs. (b) Includes sugar content of manufactured products exported. (c) Includes refining losses and quantities used in golden syrup and treacle. (d) Includes sugar content of manufactured products consumed.

(ix) *Consumption in Factories.* The quantity of refined sugar used in factories in 1962-63 amounted to 308,665 tons compared with 309,577 tons in 1961-62 and 307,000 tons in 1960-61. Particulars of sugar used in establishments not classified as factories are not available, and consequently these quantities are deficient to that extent. In 1962-63, consumption by factories engaged in the production of jams, jellies and preserved fruit amounted to 99,307 tons, by those producing confectionery, ice cream, etc., to 34,368 tons, by breweries to 46,361 tons, and by factories producing aerated waters, cordials, etc., to 47,819 tons.

(x) *Sugar By-products.* Industrial chemicals, together with large quantities of molasses, are produced as by-products in sugar mills. Further, during the period 1939 to 1960, building boards were made from the residue of crushed fibre after removal of the sugar content from sugar cane. These boards possessed high insulating and sound absorbing properties which made them particularly suitable for use in walls and ceilings. Early in the period referred to, the boards were manufactured almost entirely from crushed fibre residue, the remaining component being non-millable pine, but gradually the pine content was increased until by 1960 fibre residue was no longer being used. The main purpose for which crushed cane fibre residue is now used is furnace fuel in sugar mills.

(xi) *Sugar Prices and Returns.* The prices of sugar in Australia, from 1958 to 1962 in the case of raw sugar, and from 1956 to 1963 in the case of refined sugar (as determined under the Sugar Agreement in Australia—see para. ii (a), p. 1029), are shown in the following table.

SUGAR: PRICES IN AUSTRALIA

Year	Raw sugar, 94 net titre			Refined sugar		
	Average return per ton received by millers and growers for—			Date of determination	Wholesale price to retailer per ton	Retail price, capital cities per lb.
	Home consumption	Exports(a)	Whole crop (a)			
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	d.	
1958 ..	54 15 0	39 8 2	45 9 11	14.5.56 to 15.5.60	82 1 0	10
1959 ..	56 8 6	40 6 2	47 9 11	16.5.60 to 31.12.63	90 5 2	11
1960 ..	62 10 6	39 19 6	49 2 1			
1961 ..	62 9 6	37 15 0	48 4 4			
1962 ..	62 11 0	41 1 10	47 19 10			

(a) Includes "excess" sugar.

Details of the disposal of the crop, net value of exports and the average price realized during each of the years 1958-59 to 1962-63 are shown in the following table.

RAW SUGAR(a): NET RETURNS, AUSTRALIA
(Source: The Queensland Sugar Board.)

Year	Proportion exported	Net value of exports per ton	Average price per ton for whole crop	Estimated value of crop
	Per cent.	£ s. d.	£ s. d.	£'000
1958-59	60.53	39 8 2	45 9 11	64,263
1959-60	55.42	40 6 2	47 9 11	61,131
1960-61	59.53	39 19 6	49 2 1	67,869
1961-62	57.66	37 15 0	48 4 4	66,653
1962-63	67.85	41 1 10	47 19 10	88,748

(a) 94 net titre.

The estimated value of the raw sugar produced has been based upon details taken from the audited accounts of the Queensland Sugar Board. The values stated comprise the gross receipts from sales in Australia and overseas, less refining costs, freight, administrative charges, etc., and export charges, but including concessions to the fruit industry and other rebates which in 1962-63 amounted to £1,280,000. The value thus obtained represents the net market value of all raw sugar sold, which, less the rebates, is divided between the growers and millers in the approximate proportions of 70 per cent. and 30 per cent. respectively.

(xii) *Exports of Sugar.* Particulars of the exports of Australian-produced cane sugar (raw and refined) for each year from 1958-59 to 1962-63 are as follows.

SUGAR: EXPORTS, AUSTRALIA

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
Quantity tons	802,971	701,319	796,496	843,528	1,145,958
Value £A.'000 f.o.b.	32,163	26,671	35,071	33,894	45,520

2. Peanuts.—(i) *General.* Peanuts, or groundnuts, are a sub-tropical legume (and hence summer growers), the pods of which mature beneath the surface of the soil. They thus require well drained, light textured soils. At harvest, the plant is pulled, wind-rowed, field-cured for two to four weeks and then threshed to recover the pods. The main products of the industry are nuts, peanut oil, oil cake and synthetic protein fibre.

The production of peanuts in Australia is confined mainly to Queensland, although small quantities are grown in New South Wales, Western Australia and the Northern Territory.

(ii) *Area and Production.* Details of the area and production of peanuts are given in the table below for the years 1958-59 to 1962-63.

PEANUTS: AREA AND PRODUCTION

Season	Area (acres)				Production (cwt.)			
	N.S.W.	Q'land	N.T.	Aust.(a)	N.S.W.	Q'land	N.T.	Aust.(a)
1958-59	867	59,279	211	60,357	11,623	621,687	2,412	635,722
1959-60	837	41,547	388	42,772	10,639	360,314	4,306	375,259
1960-61	788	41,659	335	42,782	9,578	446,215	1,215	457,008
1961-62	573	33,131	307	34,011	6,003	292,267	1,343	299,613
1962-63	395	35,552	(b)	c 35,947	4,258	315,144	(b)	c 319,402

(a) Excludes Western Australia, for which details are not available for publication.

(b) Not available for publication.

(c) Incomplete; excludes Northern Territory.

(iii) *Value, Consumption and Trade.* The gross value of the 1962-63 crop was £1,557,000 which was approximately £216,000 more than in 1961-62. All production is consumed in Australia.

In recent years, considerable quantities of peanut kernels have been imported, chiefly from India, for the extraction of oil. Total supplies available for consumption in Australia in 1962-63 were 513,100 cwt. (shell equivalent), after allowing for a decrease of 296,420 cwt. in stocks held by the Peanut Marketing Board. Supplies were made up of 139,500 cwt. from Australian production received into store by the Board and 77,180 cwt. imported.

3. **Hops.**—(i) *General.* Hops are grown from perennial rootstocks over deep, well-drained soils in localities sheltered from the wind. The hop-bearing vine shoots are carried upon wire and coir trellises, from which they are later harvested, principally by hand. The green hops are kiln-dried and bleached with sulphur dioxide fumes, following which the cured hops are pressed into bales.

Hop growing in Australia is confined to the Derwent, Huon and Channel areas of Tasmania and the Ovens and King Valleys in Victoria. A small area is also under hops in Western Australia, near Manjimup, but the details are not available for publication.

(ii) *Production and Imports.* The production of hops in Australia is insufficient to meet local requirements, and additional supplies are imported to meet the needs of the brewing industry. In the following table, details of the production and imports of hops and the quantity of hops used in breweries are shown for each of the years 1958-59 to 1962-63. Exports of hops are not recorded separately, but are negligible.

HOPS: PRODUCTION AND DISPOSAL, AUSTRALIA

Year	Production(a)		Imports	Net available supplies (b)	Quantity used in breweries
	Quantity	Gross value			
	Cwt.	£'000	Cwt.	Cwt.	Cwt.
1958-59	36,499	1,273	8,471	44,970	38,664
1959-60	31,790	1,159	..	31,790	40,357
1960-61	33,099	1,179	991	34,090	40,018
1961-62	32,936	1,242	5,569	38,505	39,000
1962-63	33,629	1,285	1,337	34,966	38,202

(a) Excludes production in Western Australia, for which details are not available for publication.
 (b) Disregards movements in stocks.

4. **Flax.**—(i) *Flax for Fibre.* This crop has a winter-growing season in Australia. The whole plant, after harvesting, is retted and scutched at local mills to recover the linen fibre and tow. The seeds may be sold to oil mills and the refuse used for stock feed.

Details of the area under flax and the production of fibre are given in the following table.

FLAX FOR FIBRE: AREA AND PRODUCTION

Season	Victoria	W. Aust.	Australia
AREA (ACRES)			
1958-59 .. .. .	..	2,015	2,015
1959-60 .. .. .	..	1,307	1,307
1960-61	430	736	1,166
1961-62	323	91	414
1962-63	419	871	1,290

FLAX FOR FIBRE: AREA AND PRODUCTION—*continued*

Season	Victoria	W. Aust.	Australia
PRODUCTION (TONS OF FIBRE)			
1958-59 .. .. .	..	3,665	3,665
1959-60 .. .. .	..	2,723	2,723
1960-61	592	1,176	1,768
1961-62	514	183	697
1962-63	648	2,152	2,800

(ii) *Flax for Linseed.* Fibre varieties are uneconomic for seed production, and prior to 1948-49, the growing of flax for linseed oil had not been developed extensively in Australia. Since then, however, action has been taken to develop this industry, the ultimate objective being the production of sufficient linseed to meet Australia's total oil requirements.

The question of assistance to the industry was investigated by the Commonwealth Tariff Board in 1953, and its conclusions are contained in its Report on *Linseed and Linseed Products* dated 23rd October, 1953.

The main producing areas are the Darling Downs in Queensland, the wheat belt of New South Wales, and the western and north-eastern districts of Victoria.

Details of the area and production of flax for linseed are shown in the following table for the seasons 1958-59 to 1962-63.

FLAX FOR LINSEED: AREA AND PRODUCTION

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Aust.
AREA (ACRES)						
1958-59	4,622	8,817	22,839	703	244	37,225
1959-60	11,933	24,850	60,837	1,687	186	99,493
1960-61	11,823	6,179	75,088	2,115	483	95,688
1961-62	7,266	17,711	34,390	1,513	1,253	62,133
1962-63	11,493	25,232	58,493	1,220	626	97,064
PRODUCTION (TONS OF LINSEED)						
1958-59	1,196	2,769	6,510	151	42	10,668
1959-60	2,922	7,391	16,247	191	48	26,799
1960-61	1,870	1,013	10,394	218	70	13,565
1961-62	856	6,093	5,187	275	178	12,589
1962-63	2,634	8,108	14,577	290	136	25,745

5. *Cotton.*—(i) *General.* This annual shrub requires a hot climate and inter-row weed control. Lint (long fibres) is extracted from the seed cotton in the ginneries, and is used for yarn. The residue, consisting of *linters* (short fibres), kernels and hulls (outer seed coat), is treated in oil mills. From linters and kernels are produced such items as short-fibred cotton, cotton-seed oil for human consumption and industrial purposes, and meal cakes for stock feed. The hulls may be used as fuel.

The production of cotton in Australia has, until recently, been restricted mainly to the coastal river valleys of Queensland. In recent years, however, it has been grown in some other States, namely along the Murray river in New South Wales and Victoria, at Narrabri in New South Wales, and in the Kimberleys in Western Australia.

Cotton spinning and weaving industries are referred to in Chapter VI. Manufacturing Industry.

(ii) *Cotton Bounty.* For particulars of the *Cotton Bounty Act* 1951, and amendments of 1952, 1955 and 1957, see page 1044 of Year Book No. 49.

Under the *Raw Cotton Bounty Act* 1963, the Commonwealth pays a bounty on raw cotton produced and sold for use in Australia at the rate of 16.125d. per lb. for Middling 1" white, with premiums and discounts on grades and staples above and below. The bounty is for a period of five years from 1st January, 1964.

(iii) *Area and Production.* In the five seasons 1958-59 to 1962-63, the area sown and quantity of unginned cotton produced have increased more than threefold. The yield per acre in the same period has risen by 9 per cent.

The area under cultivation and the production in Australia for the years 1958-59 to 1962-63 are shown hereunder.

COTTON: AREA AND PRODUCTION, AUSTRALIA(a)

Season	Area sown	Production of cotton			Average yield per acre sown	
		Unginned		Ginned(b)	Unginned	Ginned
		Quantity	Gross value			
	Acres	'000 lb.	£'000	'000 lb.	lb.	lb.
1958-59.. ..	10,493	4,004	249	1,492	382	142
1959-60.. ..	20,229	9,463	556	3,592	468	178
1960-61.. ..	37,048	15,544	917	5,540	420	150
1961-62.. ..	28,844	10,948	647	3,830	380	133
1962-63.. ..	37,689	15,762	938	5,403	418	143

(a) Incomplete; excludes Victoria, Western Australia and Northern Territory, for which particulars are not available for publication. (b) Source: Queensland Cotton Marketing Board.

(iv) *Consumption of Raw Cotton.* The following table shows details of the availability and actual consumption of raw cotton in Australian factories during each of the five years ended 1962-63.

RAW COTTON: PRODUCTION, IMPORTS AND CONSUMPTION, AUSTRALIA ('000 lb.)

Year	Production(a)	Imports	Total	Consumption of raw cotton
1958-59	1,492	43,984	45,476	47,323
1959-60	3,592	41,519	45,111	51,689
1960-61	5,540	41,842	47,382	45,432
1961-62	3,830	37,735	41,565	44,543
1962-63	5,403	42,543	47,946	47,930

(a) Source: Queensland Cotton Marketing Board.

6. *Tobacco.*—(i) *General.* This summer-growing annual requires a temperate to tropical climate, adequate soil moisture and a frost-free period of approximately five months. These requirements necessarily restrict its growth to particular areas. These include the Mareeba area (northern Queensland), the neighbourhood of Texas (Queensland and New South Wales border), and near Myrtleford (Victoria). Smaller quantities are grown also near Manjimup in Western Australia. The best quality Australian tobaccos are grown in Queensland.

In Australia, flue-curing is the main method of drying used.

(ii) *Marketing.* Between 9th May, 1941, and 24th September, 1948, all leaf was under the direct control of the Australian Tobacco Board, and prices were paid on leaf appraisal. Subsequently, sales have been by open auction through the Tobacco Leaf Marketing Board (Queensland and northern New South Wales) and the Victorian Tobacco Growers Association Ltd. (southern New South Wales and Victoria). The 1962-63 Western Australian crop was also marketed through the Victorian Association.

(iii) *Central Tobacco Advisory Committee.* The Australian Agricultural Council formed the Standing Advisory Committee on Tobacco during 1950. This Committee consisted of representatives of tobacco growers, tobacco manufacturers and the Commonwealth and State Governments. Its main functions were to review the industry and make recommendations on its problems.

The Committee was reconstituted by the Agricultural Council during 1952-53. The terms of reference of this committee are given in Year Book No. 47, page 935.

In 1955, the Committee formulated a programme for increased research and advisory activities. The capital costs of establishing this programme were estimated at £168,000, of which the Commonwealth Government and tobacco manufacturers each agreed to contribute half. Annual contributions are made to the fund by the Commonwealth and State Governments, tobacco growers and manufacturers. A Tobacco Industry Trust Account was established to receive these contributions. This programme commenced in 1956. During the first seven years of the operation of the Trust Account, £1,229,139 was paid to State and Commonwealth Departments. The allocation for 1963-64 was £237,158.

A sub-committee on curing was formed in 1960 to investigate new curing methods. A grant of up to £10,000 was made available for initial investigations. In 1961, a Research Sub-Committee was established to review annually scientific programmes and finance in relation to the Tobacco Industry Trust Account and make recommendations to the Central Tobacco Advisory Committee.

(iv) *Other Assistance and Research.* Details of the recommendations by the Tobacco Inquiry Committee and grants periodically approved by the Commonwealth Government up to 30th June, 1953, are given in Year Book No. 40, pages 895-6, and in previous issues. In 1962, the Commonwealth Government agreed to make available a further annual grant of £24,000 for additional tobacco extension services by State Departments of Agriculture.

The Commonwealth Scientific and Industrial Research Organization has been investigating many fundamental problems connected with tobacco culture. One of the major achievements of this organization was the development in the mid-1930's of a technique to control blue mould in the seed bed. State Departments of Agriculture are also carrying out investigations over a wide range of problems, being concerned mainly with variety trials, irrigation, disease and pest control, crop rotation and cultural practices.

(v) *Tobacco Factories.* Manufacturers of Australian cigarettes and tobacco are granted a lower rate of duty on imported tobacco leaf, provided it is blended with a prescribed minimum percentage of Australian leaf. These percentages were increased from 3 per cent. for cigarettes and 5 per cent. for tobacco in November, 1946, to 43 per cent. and 40 per cent. respectively from 1st July, 1962. The percentage to apply to both cigarettes and tobacco from 1st July, 1963, is 40 per cent. and from 1st July, 1964 to 30th June, 1966, is 41.5 per cent. In 1962-63, the quantity of cured leaf used in tobacco factories in Australia amounted to 51.0 million lb., of which 20.3 million lb. was of local origin. The balance was imported, chiefly from the United States of America and Rhodesia.

(vi) *Area and Production.* Both area and production of tobacco in 1962-63 were considerably higher than those in the previous year. Area, at 29,381 acres, was a record, exceeding by 0.6 per cent. the previous record established in 1960-61.

In the following table, particulars of the area and production of tobacco are given by States for each of the seasons 1958-59 to 1962-63, together with averages for the three-year periods ended 1938-39, 1948-49 and 1958-59.

TOBACCO: AREA AND PRODUCTION

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	Aust.
AREA (ACRES)								
Average for three years ended—								
1938-39 ..	697	4,262	3,842	77	1,055	134	(a)	10,067
1948-49 ..	415	1,046	1,948	..	609	..	..	4,018
1958-59 ..	1,257	3,478	7,479	..	1,295	..	(a)	13,509
Year—								
1958-59 ..	1,543	4,248	7,916	..	1,444	..	..	15,151
1959-60 ..	2,142	6,424	9,527	..	1,561	..	..	19,654
1960-61 ..	3,408	9,932	14,395	..	1,478	..	..	29,213
1961-62 ..	3,078	9,286	14,069	..	194	..	..	26,627
1962-63 ..	3,163	9,844	16,346	..	28	..	..	29,381

PRODUCTION OF DRIED LEAF ('000 lb.)

Average for three years ended—								
1938-39 ..	471	1,603	2,173	17	741	104	(b)	5,109
1948-49 ..	380	670	1,725	..	523	..	..	3,298
1958-59 ..	1,066	3,770	5,563	..	1,016	..	(b)	11,415
Year—								
1958-59 ..	1,158	4,885	6,729	..	1,198	..	..	13,970
1959-60 ..	1,437	7,401	9,149	..	1,370	..	..	19,357
1960-61 ..	3,538	9,728	15,308	..	1,288	..	..	29,862
1961-62 ..	3,116	6,515	12,751	..	196	..	..	22,578
1962-63 ..	2,885	9,447	14,787	..	29	..	..	27,148

(a) Less than half an acre.

(b) Less than 500 lb.

(vii) *Oversea Trade.* Imports of tobacco and tobacco manufactures into Australia during 1962-63 were valued at £12.1 million. This included 27.4 million lb. of unmanufactured tobacco valued at £9.7 million. Exports of tobacco and tobacco manufactures, including the re-exports of imported tobacco, during 1962-63 were valued at £801,906.

§ 6. Vegetables for Human Consumption

1. *Area, Production and Trade.*—(i) *General.* Vegetables were initially grown on a large scale near the main cities, where there was ready access to reliable water supplies and to markets. More recently, the expansion of irrigation areas and improvement in transport services have resulted in their production being extended into many other areas. At present, because of the wide diversity of climatic conditions across Australia, supplies for main city markets are drawn from widely different areas, depending upon the times of maturity of the various crops. Apart from potatoes and onions, which are sold in some States through marketing boards, the bulk of vegetable trading takes place at the metropolitan markets of the cities concerned.

(ii) *Area and Production of Fresh Vegetables.* Details of the areas planted and production of individual kinds of vegetables are shown below for the seasons 1960-61 to 1962-63. Certain particulars shown are incomplete in that details for specific vegetables in some States are either not available, or are not available for publication. For further information, see the bulletin *Primary Industries, Part I.—Rural Industries.*

FRESH VEGETABLES FOR HUMAN CONSUMPTION: AUSTRALIA

Vegetable	1960-61		1961-62		1962-63	
	Area sown	Production	Area sown	Production	Area sown	Production
	acres	tons	acres	tons	acres	tons
Asparagus	3,085	4,329	3,263	5,179	3,523	5,503
Beans, French and runner	17,493	26,774	18,239	30,641	18,429	32,373
Beans, navy	2,290	501	1,930	440	2,488	876
Beetroot	1,935	13,825	2,102	14,811	1,992	15,882
Cabbages and brussels sprouts	5,846	69,953	5,585	58,472	5,867	62,748
Carrots	4,810	47,887	5,212	51,796	5,204	55,380
Cauliflowers	6,382	77,002	6,404	72,786	6,659	76,811
Celery	637	9,017	679	9,987	735	10,849
Cucumbers	1,462	5,969	1,501	6,507	1,725	7,428
Lettuces	4,616	19,384	4,636	20,904	4,799	21,390
Onions	9,110	53,515	9,412	58,323	10,765	68,219
Parsnips	1,483	13,201	1,491	13,374	1,354	12,682
Peas, blue	3,365	1,228	3,956	2,830	5,710	3,407
Peas, green	52,286	53,984	58,399	88,025	52,926	79,046
Potatoes	91,805	450,793	94,443	525,981	113,742	666,596
Tomatoes	16,850	140,803	17,305	140,339	16,506	129,044
Turnips, swede and white	1,759	8,701	1,859	12,269	1,268	9,116
All other	30,939	..	30,734	..	34,804	..
Total	256,153	..	267,150	..	288,496	..

(iii) *Processed Vegetables.* Total production of canned vegetables in 1962-63 amounted to 129,236,000 lb., the principal types produced being green peas (including mint-pro peas), 30,780,000 lb.; green beans, 8,561,000 lb.; baked beans (including pork and bean), 27,350,000 lb.; asparagus, 9,146,000 lb.; beetroot, 18,026,000 lb.; and mushrooms, 5,456,000 lb.

The production of dehydrated vegetables during 1962-63 amounted to 612,000 lb., while the production of potato crisps, chips and flakes was 10,827,000 lb.

There has been rapid development in the quick-frozen vegetable industry. Data were collected for the first time in 1957-58, when 13,846,000 lb. of frozen vegetables were produced, made up primarily of 10,131,000 lb. of peas and 2,540,000 lb. of beans. In 1962-63, production had risen to 47,234,000 lb., of which 33,116,000 lb. were peas and 9,920,000 lb. were beans.

(iv) *Consumption of Vegetables.* Details of the estimated consumption of vegetables for a series of years ending 1962-63 are shown in Chapter XXX. Miscellaneous.

(v) *Imports and Exports of Vegetables (values in £A. f.o.b.).* The quantity and value of oversea exports of pulse and fresh vegetables during 1962-63 were respectively:—pulse, 12,452 tons, £462,454; onions, 7,097 tons, £208,328; potatoes, 15,819 tons, £424,523; other vegetables, 3,486 tons, £292,618. Imports of pulse amounted to 7,496 tons, valued at £539,760, while imports of fresh vegetables in total were 1,175 tons, valued at £212,944.

In 1962-63, exports of vegetables preserved in liquid consisted of:—asparagus, 2,056,295 lb., £273,157; beans (including baked), 166,113 lb., £12,476; peas, 227,312 lb., £17,550; tomatoes, 131,374 lb., £9,316; other vegetables, 544,606 lb., £51,091.

2. *Potatoes.*—(i) *General.* This crop requires deep friable soils, which in Australia are usually basaltic, alluvial, or swampy in origin. Fertilizer requirements, which are generally high, vary with the type of soil. Potatoes are killed by heavy frost, but require only moderate temperatures for growth. Mechanical planters and diggers are used to a variable extent depending upon a variety of factors including terrain, state of the soil and scale of operations.

Seed certification schemes, which operate in all States except Queensland, provide a supply of seed which is free from viral, fungal and bacterial diseases.

In Australia, potatoes are used almost entirely for human consumption and not for the production of starch or alcohol. They are rarely used as stock feed.

(ii) *Marketing.* Potato marketing boards were established in all States except Tasmania under separate State legislation after Commonwealth control of potato marketing under war-time legislation ceased at the end of 1948. The life of the Queensland Board was not extended when its term ended in 1954. The New South Wales Board was voted out by growers in 1956, and the Victorian Board also ceased functioning in that year. The boards in South Australia and Western Australia are the only statutory boards still in operation.

(iii) *Area, Production, and Yield per Acre.* Victoria possesses particular advantages for the growing of potatoes, as the rainfall is generally satisfactory and the climate is unfavourable to the spread of Irish blight; consequently, the crop is widely grown. The principal areas of that State are the central highlands and the south-western and Gippsland districts. Until 1958-59, Tasmania (where production is mainly in the north-west) came next in order of acreage sown, although production exceeded that of Victoria in some of the war years. Since 1958-59, however, New South Wales, which had previously occupied third position, has supplanted Tasmania as the second most important State in area sown. New South Wales production is chiefly in the tablelands districts.

The area sown, production, and yield per acre of potatoes in each State during the years 1958-59 to 1962-63 and the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59 are shown hereunder. A graph showing production since 1935-36 appears on page 996 of Year Book No. 49.

POTATOES: AREA, PRODUCTION AND YIELD PER ACRE

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
AREA (ACRES)									
Average for three years ended—									
1938-39 ..	21,049	40,376	11,551	4,445	4,627	32,044	..	59	114,151
1948-49 ..	20,440	53,862	10,795	6,084	6,753	38,643	..	103	136,680
1958-59 ..	16,589	45,225	12,980	6,035	7,977	19,002	4	94	107,906
Year—									
1958-59 ..	17,482	46,122	11,614	6,168	7,051	16,186	..	90	104,713
1959-60 ..	19,159	48,506	12,311	5,872	6,964	15,525	(a)	67	b 108,404
1960-61 ..	18,365	38,672	11,992	5,209	6,656	10,875	(a)	36	b 91,805
1961-62 ..	20,209	36,469	14,466	5,316	6,824	11,129	(a)	30	b 94,443
1962-63 ..	27,420	43,024	16,994	5,918	6,499	13,839	6	42	113,742
PRODUCTION (TONS)									
Average for three years ended—									
1938-39 ..	52,158	137,583	17,191	20,342	23,678	109,285	..	143	360,380
1948-49 ..	62,701	191,590	26,470	32,149	38,722	148,389	..	598	500,619
1958-59 ..	68,533	245,937	50,989	48,072	50,024	92,367	5	391	556,318
Year—									
1958-59 ..	84,450	259,346	46,999	50,587	47,103	85,900	..	152	574,537
1959-60 ..	81,908	242,548	51,468	48,923	56,000	98,000	(a)	360	b 579,207
1960-61 ..	85,182	180,819	59,311	40,797	45,500	39,050	(a)	134	b 450,793
1961-62 ..	83,301	196,032	70,675	48,479	55,700	71,560	(a)	234	b 525,981
1962-63 ..	132,969	254,473	86,239	53,253	56,900	82,545	5	212	666,596
YIELD PER ACRE (TONS)									
Average for three years ended—									
1938-39 ..	2.48	3.41	1.49	4.58	5.12	3.41	..	2.42	3.16
1948-49 ..	3.07	3.56	2.45	5.28	5.73	3.84	..	5.81	3.66
1958-59 ..	4.13	5.44	3.93	7.97	6.27	4.86	1.25	4.16	5.16
Year—									
1958-59 ..	4.83	5.62	4.05	8.20	6.68	5.31	..	1.69	5.49
1959-60 ..	4.28	5.00	4.18	8.33	8.04	6.31	(a)	5.37	(b) 5.34
1960-61 ..	4.64	4.68	4.95	7.83	6.84	3.59	(a)	3.72	(b) 4.91
1961-62 ..	4.12	5.38	4.89	9.12	8.16	6.43	(a)	7.80	(b) 5.57
1962-63 ..	4.85	5.91	5.07	9.00	8.76	5.96	0.83	5.05	5.86

(a) Not available for publication.

(b) Incomplete; excludes Northern Territory.

(iv) *Gross Value.* The estimated gross value of the potato crop of each State for the 1962-63 season and the value per acre are shown in the following table.

POTATOES: VALUE OF CROP, 1962-63

Particulars	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
Aggregate value £'000	4,614	3,306	2,027	1,195	1,795	1,039	4	13,980
Value per acre £	168	77	119	202	276	75	103	123

(v) *Consumption.* The annual consumption of potatoes in Australia during each of the three years 1960-61 to 1962-63 amounted to 400,713 tons, 459,572 tons and 590,511 tons respectively, or 86.4 lb., 97.1 lb. and 122.4 lb. respectively per head of population. These figures exclude the quantities used for seed, which averaged about 53,000 tons annually over this period.

(vi) *Exports.* Details showing exports for the years 1958-59 to 1962-63 are given in the following table.

POTATOES: EXPORTS, AUSTRALIA

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
Quantity tons	4,470	4,742	5,219	4,121	15,819
Value £A.'000 f.o.b.	151	134	195	160	425

The increase in exports in 1962-63 was due principally to an increase in shipments to Singapore and Ceylon. There were no imports of potatoes into Australia in 1962-63.

3. *Onions.*—(i) *Area, Production, and Yield.* Until recently Australia's onion supply came chiefly from Victoria. However, during the last five years, Victorian production has decreased until in one season, 1960-61, it was exceeded by that of Queensland. The Victorian crop consists almost entirely of brown onions, and the bulk of the crop is grown in a small section of the Western Division of the State, where the volcanic ash soils have been found to be particularly suitable for onion growing on a commercial scale. Most of Queensland's onion production is grown in the Lockyer Valley, and consists mainly of brown varieties. Details of the area, production and yield per acre are given in the following table for the years 1958-59 to 1962-63 together with averages for the three-year periods ended 1938-39, 1948-49 and 1958-59. A graph showing production since 1935-36 appears on page 996 of Year Book No. 49.

ONIONS: AREA, PRODUCTION AND AVERAGE YIELD

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
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AREA (ACRES)

Average for three years ended—								
1938-39 ..	126	5,634	1,187	521	122	8	6	7,604
1948-49 ..	433	6,245	2,234	534	468	26	4	9,944
1958-59 ..	491	4,614	3,655	635	413	29	9	9,846
Year—								
1958-59 ..	444	3,971	3,412	602	397	21	13	8,860
1959-60 ..	697	3,994	3,550	641	392	29	12	9,315
1960-61 ..	624	3,532	3,763	657	465	59	10	9,110
1961-62 ..	490	4,456	3,173	753	479	60	(a)	(b) 9,412
1962-63 ..	800	4,634	3,796	944	509	79	(a)	(b) 10,765

PRODUCTION (TONS)

Average for three years ended—								
1938-39 ..	324	34,039	3,040	3,904	915	42	21	42,285
1948-49 ..	1,703	41,156	10,489	5,032	3,831	153	24	62,388
1958-59 ..	2,496	31,982	15,505	5,625	4,599	132	71	60,410
Year—								
1958-59 ..	2,476	28,456	13,584	5,318	5,043	97	106	55,080
1959-60 ..	3,658	27,808	14,708	5,644	4,830	135	39	56,822
1960-61 ..	3,935	16,286	21,156	5,947	5,826	285	80	53,515
1961-62 ..	3,082	23,784	17,921	6,915	6,290	327	(a)	(b) 58,323
1962-63 ..	5,185	26,175	21,184	8,531	6,622	515	(a)	(b) 68,219

YIELD PER ACRE (TONS)

Average for three years ended—								
1938-39 ..	2.57	6.04	2.56	7.49	7.50	5.25	3.50	5.56
1948-49 ..	3.93	6.59	4.70	9.42	8.19	5.88	6.00	6.27
1958-59 ..	5.08	6.93	4.24	8.86	11.14	4.55	7.89	6.14
Year—								
1958-59 ..	5.58	7.17	3.98	8.83	12.70	4.62	8.15	6.22
1959-60 ..	5.25	6.96	4.14	8.80	12.32	4.66	3.25	6.10
1960-61 ..	6.31	4.61	5.62	9.05	12.52	4.83	8.00	5.87
1961-62 ..	6.29	5.34	5.65	9.18	13.13	5.45	(a)	(b) 6.20
1962-63 ..	6.48	5.65	5.58	9.04	13.01	6.52	(a)	(b) 6.34

(a) Not available for publication. (b) Includes a small area and production in Northern Territory but excludes Australian Capital Territory.

(ii) *Gross Value.* The estimated gross value of the onion crop and the value per acre are shown in the following table for the 1962-63 season.

ONIONS: VALUE OF CROP, 1962-63

Particulars	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
Aggregate value £'000	205	695	456	263	169	25	1	(a)	(b)1,814
Value per acre £	256	150	120	279	332	316	223	(a)	(b) 169

(a) Not available for publication.

(b) Incomplete; excludes Australian Capital Territory.

(iii) *Consumption.* The annual consumption of onions in Australia averaged 57,840 tons or 12.1 lb. per head of population during the three years ended 1962-63.

(iv) *Exports.* Onions are the only root crop, other than potatoes, in which any considerable overseas trade is carried on by Australia. In 1962-63, exports amounted to 7,097 tons, valued at £208,328, and were shipped mainly to Singapore, Hong Kong and Japan. The quantity of exports in 1961-62 was 2,370 tons, valued at £108,660. Imports of onions amounted to 260 tons, valued at £7,866 in 1961-62, and 59 tons, valued at £2,276 in 1962-63.

§ 7. Fruit and Vineyards

1. *Fruit.*—(i) *General.* The varieties of fruit grown differ in various parts of the States, ranging from pineapples, papaws and mangoes in the tropics, to strawberries, raspberries and currants in the colder parts of the temperate zone. In New South Wales, citrus fruit (oranges, lemons, etc.) and bananas are the principal crops, although apples, peaches, plums, pears and cherries are grown extensively. The principal varieties grown in Victoria are apples, pears, peaches, oranges and apricots. In Queensland, apples, pineapples, bananas, oranges, mandarins, peaches and plums are the varieties most largely cultivated. In South Australia, in addition to oranges, apples, peaches, apricots and pears, almonds and olives are grown extensively. In Western Australia, apples, oranges, plums and pears are the chief varieties. In Tasmania, apples occupy over three-quarters of the fruit-growing area, but small fruit, such as currants, raspberries and gooseberries, are grown extensively, the balance of the area being mainly taken up with pears and apricots.

(ii) *Overseas Marketing of Fruit.* (a) *Apples and Pears.* The *Apple and Pear Organization Act 1938-1960* provides for the establishment of an Australian Apple and Pear Board comprising representatives of growers, exporters, employees and the Commonwealth Government. A representative in London has also been appointed by the Board. An export levy to meet the expenses of the Board is provided for in the *Apple and Pear Export Charges Act 1938-1960*.

The function of the Board is the organization and control of exports of fresh apples and pears, and it has the power to regulate shipments, determine export quotas, allocate consignments from each State and recommend the licensing of exporters. The Board contributes to apple and pear publicity activities overseas.

(b) *Canned Fruit.* The *Canned Fruits Marketing Act 1963*, which was introduced in January, 1964, replaced the *Canned Fruits Export Control Act 1926-1959* under which the overseas marketing of canned fruit was initially organized (see Year Book No. 49, p. 1050). The Australian Canned Fruits Board, which is constituted under the Act, determines the terms and conditions for overseas sales. The Board exercises this control through a system of export licences. The Board, whose membership was increased from five to eleven members and which was granted greater powers under the 1963 Act, comprises representatives of the Commonwealth Government (one), canners of deciduous fruit (six), growers of deciduous fruit (three), and pineapple interests (one). The Board maintains a London office. The *Canned Fruits Export Charges Act 1926-1956* provides for a levy on exports to meet the Board's expenses, which include contributions to overseas publicity connected with the canned fruit industry. In 1963, an excise duty was imposed by the *Canned Fruits Excise Act 1963* on canned deciduous fruit entered for domestic consumption, and the proceeds of the duty are made available to the Board to assist in the promotion of overseas sales of deciduous fruit.

In 1959, the Australian Canned Fruits Sales Promotion Committee was established to promote the sale of canned deciduous fruits on the home market and overseas. The operations of the Committee are financed by a levy on fruit accepted by the canneries for the production of canned fruit. The Committee comprises representatives of growers and processors of canning fruit and a representative of the Commonwealth Government.

(iii) *Area and Production of Fruit.* The area under fruit in Australia has been increasing steadily in recent years, until record levels were reached in 1961-62 and again in 1962-63. Increases were recorded in all States in 1962-63. The following table sets out the area under fruit in the several States for the seasons 1958-59 to 1962-63.

FRUIT: AREA

(Acres)

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
1958-59 ..	92,780	66,746	43,911	37,237	22,903	23,168	86	89	286,920
1959-60 ..	93,870	68,567	42,587	37,355	23,757	22,713	98	57	289,004
1960-61 ..	92,962	71,415	41,067	37,711	23,913	22,194	120	55	289,437
1961-62 ..	94,246	72,712	41,872	38,548	24,487	21,859	136	65	293,925
1962-63 ..	98,032	75,855	43,242	40,444	25,204	21,943	136	55	304,911

The next table shows the acreage (bearing and not-bearing) of the principal kinds of fruit and the quantities produced in the 1962-63 season.

FRUIT, 1962-63

Fruit	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
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AREA, BEARING AND NOT-BEARING (ACRES)

Apples ..	18,193	22,726	12,299	5,879	14,849	17,383	..	51	91,380
Apricots ..	2,069	4,028	415	4,455	344	536	..	..	11,847
Bananas ..	24,191	..	5,861	..	305	..	35	..	30,392
Cherries ..	4,713	1,782	4	560	38	46	..	..	5,143
Citrus—									
Oranges ..	27,601	6,488	3,707	14,814	4,631	..	60	..	57,301
Mandarins ..	2,243	393	1,920	480	399	..	5	..	5,440
Lemons and limes ..	2,372	1,258	486	437	704	..	7	..	5,264
Other ..	536	305	73	432	131	..	5	..	1,482
Nuts ..	167	429	211	3,305	128	..	..	..	4,240
Peaches ..	8,068	14,464	1,891	4,803	940	60	..	(a)	(b)30,226
Pears ..	3,401	16,900	887	2,059	1,074	1,624	..	(a)	(b)25,945
Pineapples ..	163	..	10,321	..	..	..	11	..	10,495
Plums and prunes	4,808	2,205	1,438	1,209	1,084	84	..	(a)	(b)10,828
Small fruit ..	36	1,029	291	120	12	2,184	..	..	3,672
Other fruit ..	1,471	3,848	3,438	1,891	565	26	13	4	11,256
Total ..	98,032	75,855	43,242	40,444	25,204	21,943	136	55	304,911

PRODUCTION

Apples '000 bus.	3,246	4,059	1,305	1,496	1,977	6,262	..	4	18,349
Apricots " "	397	535	28	868	35	50	..	..	1,913
Bananas " "	4,024	..	730	..	76	..	2	..	4,832
Cherries " "	149	117	(c)	35	1	4	..	..	306
Citrus—									
Oranges ..	4,591	1,164	627	2,509	414	..	2	..	9,307
Mandarins ..	193	41	271	57	25	..	(c)	..	587
Lemons and limes ..	486	213	107	48	107	..	1	..	962
Peaches " "	1,154	1,812	114	841	79	3	..	(d)	(b) 4,003
Pears " "	724	3,849	95	412	172	415	..	(d)	(b) 5,667
Pineapples " "	24	..	4,101	..	..	..	1	..	4,126
Plums and prunes ..	586	166	88	102	90	11	..	(d)	(b) 1,043

(a) Not available for publication; included with Other fruit.
 Australian Capital Territory.

(c) Less than 500 bushels.

(b) Incomplete; excludes the
 (d) Not available for publication.

(iv) *Principal Fruit Crops.* The area and production of the principal fruit crops and the gross value of production during the seasons 1958-59 to 1962-63 are shown hereunder.

PRINCIPAL FRUIT CROPS: AREA, PRODUCTION AND GROSS VALUE OF PRODUCTION

Season	Apples	Apricots	Bananas	Oranges	Peaches	Pears	Plums and prunes
AREA, BEARING AND NOT-BEARING (ACRES)							
1958-59	83,614	12,103	31,798	48,453	25,215	23,014	10,385
1959-60	85,269	12,059	31,708	49,328	26,376	23,684	10,569
1960-61	86,882	11,945	29,870	50,626	26,883	23,935	10,665
1961-62	87,571	11,461	29,180	53,623	29,627	25,338	10,839
1962-63	91,380	11,847	30,392	57,301	30,226	25,945	10,828

PRODUCTION ('000 BUSHELS)							
1958-59	13,044	1,430	4,504	5,904	2,592	4,738	802
1959-60	14,069	1,546	4,915	7,450	2,916	5,268	904
1960-61	15,487	1,323	4,830	6,244	2,471	5,360	930
1961-62	17,127	1,859	4,876	8,168	3,962	6,567	961
1962-63	18,349	1,913	4,832	9,307	4,003	5,667	1,043

GROSS VALUE OF PRODUCTION (£'000)							
1958-59	16,539	2,054	8,588	8,918	3,194	4,916	1,479
1959-60	17,174	2,013	7,613	7,407	3,293	5,361	1,579
1960-61	20,643	1,935	7,715	9,470	3,470	6,592	1,828
1961-62	20,003	2,877	8,631	9,597	4,767	7,204	1,661
1962-63	21,003	2,648	9,177	9,876	4,774	6,380	1,613

(v) *Production of Jams and Jellies and Preserved Fruit.* In Australia, considerable quantities of fruit are used in the production of jams and jellies and for preserving. During 1962-63, output of jams, conserves, fruit spreads, etc., amounted to 92,175,000 lb., while output of preserved fruit amounted to 430,639,000 lb. Of the latter figure, pears accounted for 122,313,000 lb., peaches 154,262,000 lb. and pineapples 41,063,000 lb.

The recorded consumption of fruit in factories for all purposes, including that used for juice and cordial manufacture and for drying, was 287,000 tons in 1962-63.

(vi) *Consumption of Fruit and Fruit Products.* Details of the estimated consumption of fruit and fruit products per head of population for a series of years ending 1962-63 are shown in Chapter XXX. Miscellaneous.

(vii) *Imports and Exports of Fruit.* (a) *General.* The imports of fresh fruit into Australia are negligible, while those of dried fruit consist mainly of dates.

A considerable export trade in both fresh and dried fruit is carried on by Australia with overseas countries. The values (£A. f.o.b.) of the shipments in 1962-63 amounted to £14,985,000 and £9,552,000 respectively. Apples constitute the bulk of the fresh fruit exported, although exports of pears and citrus fruit are considerable.

(b) *Fresh Fruit.* Particulars of the Australian export trade in fresh and frozen fruit for each of the years 1958-59 to 1962-63 are shown in the following table.

FRESH AND FROZEN FRUIT: EXPORTS, AUSTRALIA

Year	Apples		Pears		Citrus		Total value(a)
	Quantity	Value	Quantity	Value	Quantity	Value	
	'000 bus.	£A.'000 f.o.b.	'000 bus.	£A.'000 f.o.b.	'000 bus.	£A.'000 f.o.b.	£A.'000 f.o.b.
1958-59	4,948	6,625	1,100	1,783	415	664	9,413
1959-60	4,889	6,123	1,328	1,970	589	918	9,294
1960-61	5,729	7,321	1,235	2,080	419	664	10,369
1961-62	7,083	9,396	1,639	2,575	673	1,086	13,363
1962-63	7,206	11,645	1,071	1,750	861	1,283	14,985

(a) Includes exports of all other fresh and frozen fruit.

(c) *Dried Tree Fruit.* The quantity and value of oversea imports and exports of dried fruit, other than raisins and currants, for the years 1958-59 to 1962-63 are shown below. Normally, the bulk of the imports consists of dates obtained almost entirely from Iraq and Iran. The export figures include particulars of some re-exported dried fruit.

DRIED TREE FRUIT(a): IMPORTS AND EXPORTS, AUSTRALIA

Year	Imports(b)		Exports	
	Quantity	Value	Quantity	Value
	'000 lb.	£A.'000 f.o.b.	'000 lb.	£A.'000 f.o.b.
1958-59	8,411	203	3,352	482
1959-60	10,791	310	6,221	703
1960-61	9,178	303	8,199	932
1961-62	8,266	314	5,961	782
1962-63	8,939	296	6,611	952

(a) Excludes raisins and currants dealt with separately under Vineyards (see p. 1048). (b) Dates and figs only.

(d) *James and Jellies.* Exports of jams and jellies in 1962-63 were 10,160,000 lb., valued at £A.705,000 f.o.b., compared with 6,671,000 lb., valued at £A.473,000 f.o.b. in 1961-62. Imports of jams and jellies in 1962-63 were 1,581,000 lb., valued at £A.138,000, compared with 1,617,000 lb. valued at £A.133,000 in 1961-62.

(e) *Preserved Fruit (values in £A. f.o.b.).* The total value of fruit preserved in tins or other airtight containers, or pulped, imported into Australia during 1962-63 was £141,652. Large quantities of fruit preserved in tins or other airtight containers are normally exported from Australia, the quantity recorded in 1962-63 being 76,830 tons valued at £10,632,932. Exports in 1962-63 were made up principally of pears (34,221 tons), peaches (24,098 tons), pineapples (7,012 tons) and apricots (4,039 tons). In addition, the exports of pulped fruits during 1962-63 amounted to 1,782 tons valued at £309,607.

2. *Vineyards.*—(i) *General.* Grapes require a warm to hot climate and a predominantly winter rainfall of seventeen inches or more. Freedom from late spring frosts is essential.

Grapes are grown for wine-making, table use and drying. In Australia, wine is generally produced from non-irrigated crops, and dried fruits from the inland irrigation areas, but table grapes and grapes for fortified wines may be produced in both areas. The main wine producing areas are the Barossa valley (South Australia), Hunter valley (New South Wales), Rutherglen and Stawell districts in Victoria, and the Swan valley (Western Australia). Nearly all the dried fruit is produced along the River Murray and its tributaries, with small localized areas in the other States.

(ii) *Area of Vineyards.* The area under vineyards in the 1962-63 season in Victoria and South Australia constituted 78 per cent. of the total area of vineyards. The total area of vines in the several States during each of the years 1958-59 to 1962-63 and the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59 are shown in the following table.

VINEYARDS: AREA

(Acres)

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Aust.(a)
Average for three years ended—						
1938-39	16,824	42,071	2,670	57,185	6,197	124,947
1948-49	16,482	44,114	3,099	58,971	9,965	132,631
1958-59	17,210	44,823	2,926	57,199	8,967	131,125
Year—						
1958-59	17,252	44,801	3,041	56,749	8,881	130,724
1959-60	17,236	44,129	3,083	56,853	8,951	130,252
1960-61	16,988	44,649	3,110	56,897	8,864	130,508
1961-62	17,607	45,105	3,203	57,836	9,017	132,768
1962-63—						
Wine	7,648	5,302	268	44,951	3,874	62,043
Table	2,652	2,648	2,969	287	1,398	9,954
Drying	7,404	37,712	..	13,028	3,413	61,557
Total	17,704	45,662	3,237	58,266	8,685	133,554

(a) Excludes particulars for Northern Territory and Australian Capital Territory, which are not available for publication.

NOTE.—There are no vineyards in Tasmania.

(iii) *Wine Industry.* (a) *General.* A large proportion of the wines produced in Australia are of the sweet fortified Spanish and Portuguese types, the remainder including Burgundy type wines and the light table wines, such as clarets and hocks.

Details of the Wine Research Trust Fund are given in Year Book No. 47, page 927.

(b) *Overseas Marketing of Wine.* The *Wine Overseas Marketing Act* 1929-1963 was introduced to place the overseas marketing of surplus wine on an orderly basis. The Australian Wine Board, consisting of representatives from wineries and distilleries, grape-growers and the Commonwealth Government, supervises the sale and distribution of Australian wine exported and recommends conditions under which export licences should be issued. The Board also engages in wine publicity and trade promotion activities both in Australia and overseas. In London, the Board maintains an office and an Australian Wine Centre, which is both a retail outlet for Australian wines and brandy and a medium for promoting interest in these products. The *Wine Grapes Charges Act* 1929-1961 provides for the imposition of a levy on all grapes used in Australia for the manufacture of wine, brandy and spirit used for fortifying wine. The proceeds of the levy are used to defray the administrative and other expenses of the Board, and provision is made for such exemptions from the levy as the Board may recommend.

(c) *Production and Consumption.* In 1962-63, the total production of wine (beverage and distillation) in Australia was 29.9 million gallons, while total consumption of beverage wine was 12.6 million gallons (1.16 gallons per head of population). Similar particulars for 1961-62 are 41.7 million gallons and 12.0 million gallons (1.13 gallons per head of population) respectively.

The quantity of wine produced in the several States during the 1958-59 to 1962-63 seasons, together with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59, are shown in the following table.

WINE: PRODUCTION^(a)
(*000 gallons)

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Aust.
Average for three years ended—						
1938-39	2,712	1,359	31	14,021	396	18,519
1948-49	4,178	3,040	31	25,906	689	33,844
1958-59	3,974	2,435	36	25,190	743	32,378
Year—						
1958-59	4,360	2,354	49	25,131	644	32,538
1959-60	3,835	2,147	37	21,576	801	28,396
1960-61	4,904	3,021	32	25,061	744	33,762
1961-62	6,442	3,605	36	30,831	822	41,736
1962-63	5,858	2,433	28	20,785	789	29,893

(a) Net factory and farm production of beverage and distillation wine excluding the liquid gallonage of spirits added in wine fortifying.

(d) *Exports and Imports of Wine (values in £A. f.o.b.)*. Imports for 1962-63 amounted to 90,598 gallons valued at £189,968 compared with 82,153 gallons valued at £176,013 in the previous year. During 1962-63, Italy supplied 39,964 gallons valued at £50,212, France supplied 19,588 gallons valued at £74,902, and the Federal Republic of Germany supplied 9,119 gallons valued at £25,168.

Exports in 1962-63 totalled 1,614,132 gallons, of which the United Kingdom received 1,102,169 gallons, Canada 287,489 gallons, New Zealand 79,060 gallons, Hong Kong 18,123 gallons, and other countries 127,291 gallons. Exports of Australian-produced wine for the five years ended 1962-63 are shown in the following table.

WINE: EXPORTS FROM AUSTRALIA

Year	Quantity (gallons)			Value (£A. f.o.b.)		
	Sparkling	Other	Total	Sparkling	Other	Total
1958-59	5,185	1,740,280	1,745,465	10,861	1,139,840	1,150,701
1959-60	6,436	1,738,616	1,745,052	19,625	1,245,241	1,264,866
1960-61	11,441	1,884,978	1,896,419	29,786	1,273,079	1,302,865
1961-62	5,145	1,664,984	1,670,129	17,100	1,368,930	1,386,030
1962-63	17,245	1,596,887	1,614,132	46,222	1,328,526	1,374,748

(iv) *Dried Vine Fruit Industry. (a) General.* The dry, frost-free November to March period of the lower Murray valley makes this an ideal area for dried vine fruit. Harvesting for drying takes place at the end of summer. The sun-drying process is often accelerated by using a dip of cold potash.

(b) *Overseas Marketing of Dried Vine Fruit. The Dried Fruits Export Control Act 1924-1953* was passed to organize overseas marketing of Australian dried vine fruit. The Dried Fruits Control Board, consisting of growers' representatives, members with commercial experience in marketing dried fruits, and a Government representative, controls the sale and distribution of dried fruit exports, recommends the licensing of exporters, and contributes to dried vine fruit publicity activity overseas. In conjunction with its London office, the Board has improved dried fruit marketing overseas by its system of appraisalment, regulation of shipments and advertising.

The Dried Fruits Export Charges Act 1924-1929 provides for a levy on exports of dried fruit to defray costs and expenses incurred by the Board.

For details of the agreements which were negotiated between the Governments of the United Kingdom and Australia during the period 1946-1953, see Year Book No. 40, page 888. From 1st December, 1953, exports have been made on a trader to trader basis.

(c) *Production and Disposal of Dried Vine Fruit.* As the production of dried vine fruit is far in excess of Australia's requirements, considerable quantities are available for export. Total production during the 1962-63 season amounted to 70,508 tons, while exports for the year ended December, 1963, were 54,729 tons, leaving an estimated 15,779 tons available for Australian consumption from that season's production. Australian consumption includes amounts delivered to biscuit manufacturers, bakeries, etc., as well as retail sales for household consumption.

The production of dried vine fruit during each of the seasons 1958-59 to 1962-63 and the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59 are shown in the following table.

DRIED VINE FRUIT: PRODUCTION
(Tons)

Season	N.S. Wales		Victoria		South Aust.		Western Aust.		Australia	
	Raisins (a)	Currants	Raisins (a)	Currants	Raisins (a)	Currants	Raisins (a)	Currants	Raisins (a)	Currants
Average for three years ended—										
1938-39 ..	5,464	1,163	39,810	8,953	13,215	9,009	723	2,179	59,212	21,304
1948-49 ..	5,429	994	40,027	7,380	8,811	5,243	580	3,179	54,847	16,796
1958-59 ..	10,300	705	53,178	4,294	11,115	4,432	118	1,746	74,711	11,177
Year—										
1958-59 ..	10,914	856	52,707	4,776	12,323	4,531	94	1,055	76,038	11,218
1959-60 ..	7,722	462	44,764	3,331	9,192	2,844	73	1,402	61,751	8,039
1960-61 ..	10,777	981	51,002	5,583	6,751	4,543	51	1,984	68,581	13,091
1961-62 ..	13,089	410	64,862	2,714	10,674	2,742	66	1,941	88,691	7,807
1962-63 ..	8,560	463	44,059	2,536	11,007	2,607	51	1,225	63,677	6,831

(a) Includes sultanas and lexias.

(d) *Exports.* The following table shows the exports of dried vine fruit during each of the years 1958-59 to 1962-63.

DRIED VINE FRUIT(a): EXPORTS, AUSTRALIA

Year	Raisins, sultanas and lexias		Currants		Total	
	Quantity	Value	Quantity	Value	Quantity	Value
	Tons	£A.'000 f.o.b.	Tons	£A.'000 f.o.b.	Tons	£A.'000 f.o.b.
1958-59 ..	68,240	11,213	7,580	1,050	75,820	12,263
1959-60 ..	45,634	7,726	4,540	637	50,174	8,363
1960-61 ..	48,805	7,133	7,838	1,032	56,643	8,165
1961-62 ..	60,169	8,955	4,564	620	64,733	9,575
1962-63 ..	56,696	8,029	4,208	571	60,904	8,600

(a) Excludes quantities exported as mincemeat.

The chief countries importing Australian dried vine fruit are the United Kingdom, Canada, New Zealand, and Japan. The quantities exported to these countries in 1962-63 were 29,145 tons, 18,806 tons, 5,203 tons, and 3,584 tons respectively.

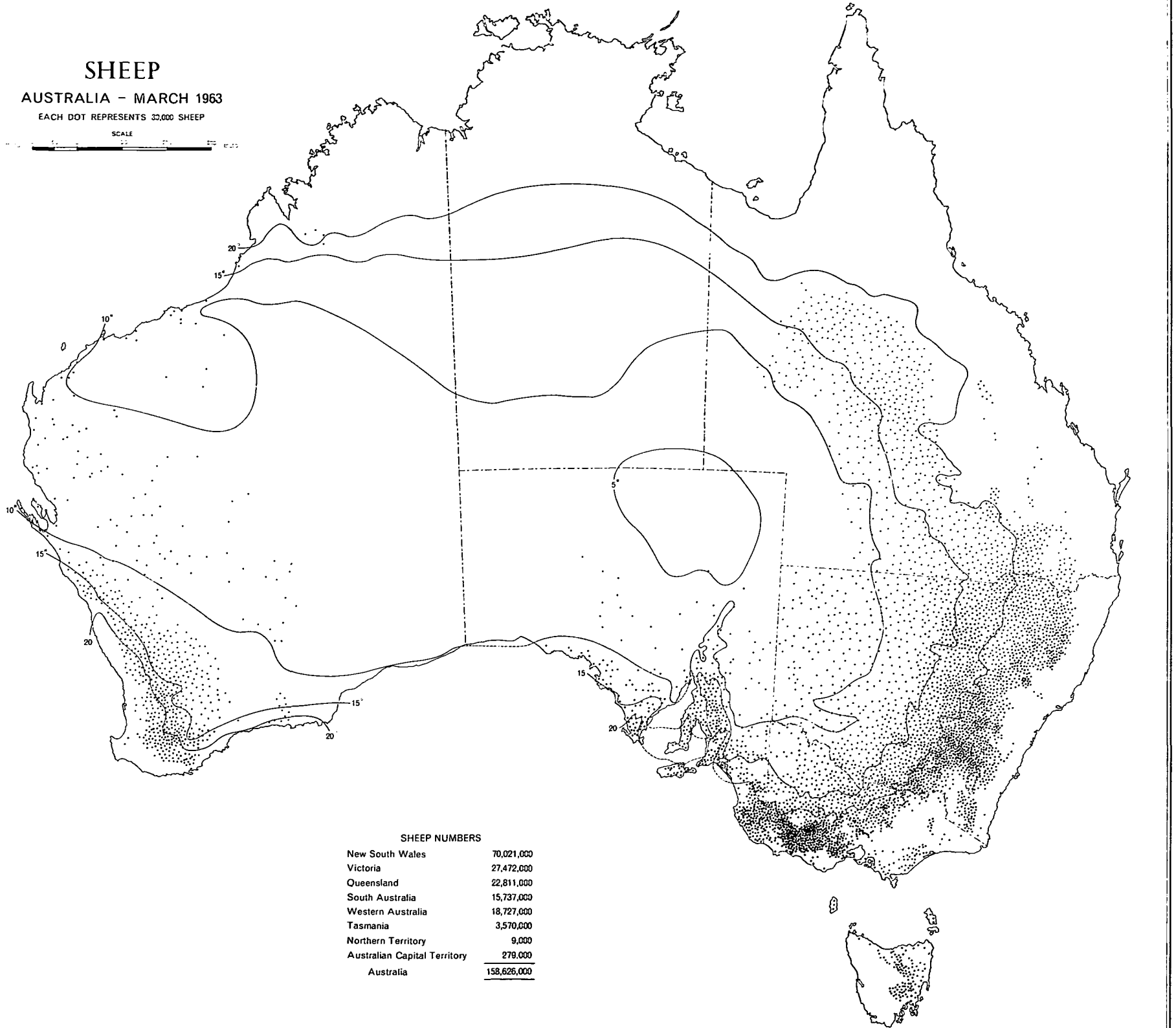
(v) *Table Grapes.* Grapes for table use are grown in all States except Tasmania, but the area of this type was only about 7 per cent. of the productive area of vines in 1962-63. The quantities of table grapes produced during the season 1962-63 in each State are shown in § 2, paragraph 2 (see p. 998).

SHEEP

AUSTRALIA - MARCH 1963

EACH DOT REPRESENTS 33,000 SHEEP

SCALE



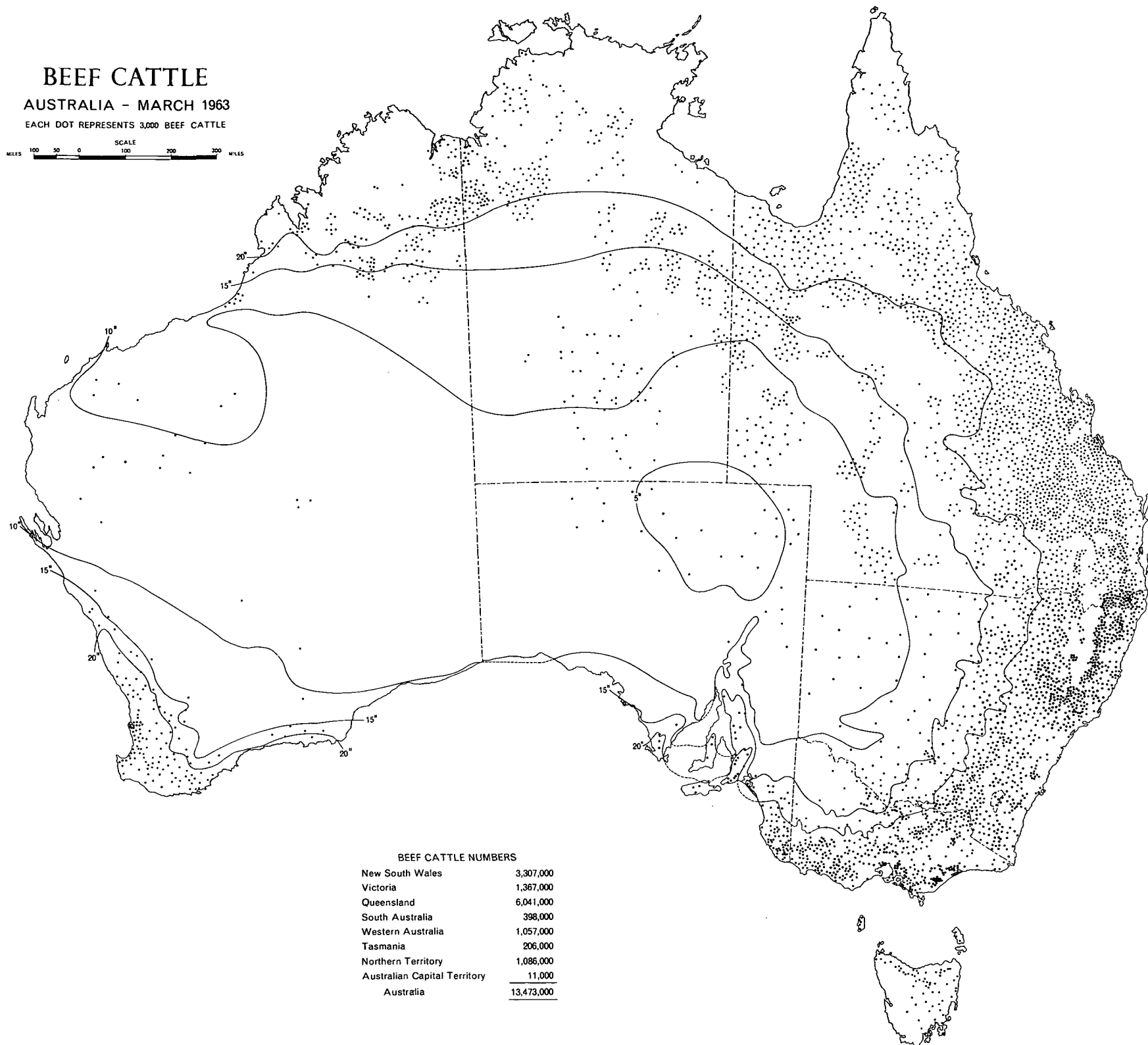
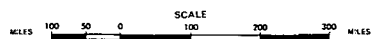
SHEEP NUMBERS

New South Wales	70,021,000
Victoria	27,472,000
Queensland	22,811,000
South Australia	15,737,000
Western Australia	18,727,000
Tasmania	3,570,000
Northern Territory	9,000
Australian Capital Territory	279,000
Australia	<u>158,626,000</u>

BEEF CATTLE

AUSTRALIA - MARCH 1963

EACH DOT REPRESENTS 3,000 BEEF CATTLE



BEEF CATTLE NUMBERS

New South Wales	3,307,000
Victoria	1,367,000
Queensland	6,041,000
South Australia	398,000
Western Australia	1,057,000
Tasmania	206,000
Northern Territory	1,086,000
Australian Capital Territory	11,000
Australia	<u>13,473,000</u>

PASTORAL PRODUCTION

§ 1. Introduction

1. **Livestock Numbers.**—A detailed account of the various enumerations of livestock in Australia made prior to 1860 was given on page 748 of Year Book No. 35. Since 1860, annual enumerations have been made, based, with few exceptions, on actual collections made through the agency of the State police or by post. Particulars concerning the numbers of each of the principal kinds of livestock in Australia at decennial intervals from 1860 to 1950, and from 1959 onwards in single years, are given in the following table, and are shown continuously since 1870 on the graph on page 1061 of Year Book No. 49.

LIVESTOCK: AUSTRALIA
(‘000)

Year	Horses	Cattle	Sheep	Pigs	Year	Horses	Cattle	Sheep	Pigs
1860 ..	432	3,958	20,135	351	1940 ..	1,699	13,080	119,305	1,455
1870 ..	717	4,276	41,594	543	1950 ..	1,057	14,640	112,891	1,123
1880 ..	1,069	7,527	62,184	816					
1890 ..	1,522	10,300	97,881	891	1959 ..	671	16,257	152,685	1,289
1900 ..	1,610	8,640	70,603	950	1960 ..	640	16,503	155,174	1,424
1910 ..	2,166	11,745	98,066	1,026	1961 ..	598	17,332	152,679	1,615
1920 ..	2,416	13,500	81,796	764	1962 ..	562	18,033	157,712	1,652
1930 ..	1,793	11,721	110,568	1,072	1963 ..	547	18,549	158,626	1,440

While livestock numbers (particularly sheep) have increased substantially since 1860, marked fluctuations have taken place during the period, mainly on account of widespread droughts which have from time to time left their impressions on the pastoral history of Australia. These occurred in 1868, 1877, 1883–84, 1892, 1893, 1895, 1901–02, 1912, 1914, 1918, 1919, 1922–23, 1925–26, 1927–28, 1929–30, 1940–41 and 1944–45 to 1946–47.

The years in which the numbers of livestock attained their peaks are as follows:—horses, 1919 (2,527,000); cattle, 1963 (18,549,000); sheep, 1963 (158,626,000); and pigs, 1941 (1,797,000).

The distribution throughout Australia of sheep, beef cattle, dairy cattle and pigs at 31st March, 1963, is shown in the maps on pages 1049, 1050 and facing pages 1082 and 1083.

The numbers of horses, beef cattle and sheep in each State and Territory are shown later in this chapter; similar information for dairy cattle and pigs appears in the division Other Rural Industries of this chapter.

2. **Carrying Capacity of Pastoral Holdings.**—The carrying capacity of pastoral holdings has been increased in recent years, owing in some measure to the succession of good seasons experienced since 1946 (with the exception of the 1957–58 season, when prevailing dry conditions caused a slight decline in cattle and sheep numbers). Other important factors contributing to the progressive increase over this period have been the increased attention given to pasture improvement and the reduction of rabbit infestation, principally due to the introduction, in 1950, of the disease myxomatosis. Some information on pasture improvement in Australia was given on pages 1001–2 of Year Book No. 49.

3. **Size Classification of Cattle Herds and Sheep Flocks.**—A special series of tabulations relating to rural holdings in Australia was compiled for 1959–60 and has been published in full detail in a series of bulletins, *Classification of Rural Holdings by Size and Type of Activity, 1959–60*. Tables in these bulletins relating to beef, dairy cattle, and sheep, show classifications according to size of herd or flock, area of holding, area of wheat for grain, area of sown pastures, and type of activity. These data are presented by statistical division. An earlier series, prepared for the year 1955–56, presents similar data, but only by State.

4. **Value of Pastoral Production.**—(i) *Gross, Local and Net Values, 1962–63.* Values of pastoral production for each State are shown for 1962–63 in the following table. Further details of the source of the information and an explanation of the terms used in this compilation will be found in Chapter XXX. Miscellaneous. Maintenance costs and depreciation have not been deducted; consequently the net values are inflated to the extent of these amounts.

GROSS, LOCAL AND NET VALUES OF PASTORAL PRODUCTION, 1962-63
(£'000)

State or Territory	Gross production valued at principal markets	Marketing costs	Gross production valued at farm	Value of materials used in process of production	Net value of production (a)
New South Wales	239,225	19,174	220,051	(b) 18,221	201,830
Victoria	159,457	16,868	142,589	10,026	132,563
Queensland	120,608	9,900	110,708	10,447	100,261
South Australia	63,693	4,183	59,510	7,515	51,995
Western Australia	53,640	4,059	49,581	8,291	41,290
Tasmania	13,768	933	12,835	5,293	7,542
Northern Territory	3,478	482	2,996	n.a.	2,996
Australian Capital Territory	1,011	63	948	76	872
Australia	654,880	55,662	599,218	59,869	539,349

(a) No deduction has been made for depreciation and maintenance. (b) No allowance has been made for costs of power, power kerosene, petrol and other oils.

(ii) *Net Values, 1958-59 to 1962-63.* The net value of pastoral production by State and the net value per head of population are shown below.

NET VALUE OF PASTORAL PRODUCTION(a)

Year	N.S.W.(b)	Vic.	O'land	S. Aust.	W. Austr.	Tas.	Aust.(c)
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NET VALUE
(£'000)

1958-59 ..	162,366	110,392	90,760	38,425	30,582	6,652	443,622
1959-60 ..	198,380	135,630	99,884	50,067	39,659	7,846	536,215
1960-61 ..	159,960	116,181	94,346	36,119	39,978	6,403	458,169
1961-62 ..	183,002	115,528	86,449	45,628	41,328	5,854	481,338
1962-63 ..	201,830	132,563	100,261	51,995	41,290	7,542	539,349

NET VALUE PER HEAD OF POPULATION
(£)

1958-59 ..	43.5	40.1	62.6	42.3	43.3	19.6	44.6
1959-60 ..	52.3	48.1	67.6	53.6	55.3	22.8	52.8
1960-61 ..	41.3	40.2	62.7	37.7	54.8	18.3	44.1
1961-62 ..	46.4	39.1	56.6	46.6	55.4	16.4	45.4
1962-63 ..	50.3	43.9	64.7	52.1	54.0	20.9	49.9

(a) No deduction has been made for depreciation and maintenance. Payments to woolgrowers of profits from the war-time wool disposal plan, which were virtually completed by 30th June, 1959, have been excluded. (b) No allowance has been made for costs of power, power kerosene, petrol and other oils. (c) Includes Northern Territory and Australian Capital Territory.

5. *Indexes of Quantum and Price of Pastoral Production, 1958-59 to 1962-63.*—The quantum indexes relate to gross output of farm products valued at constant prices. The quantities of each farm product produced each year have been re-valued at the unit gross value for the period 1936-37 to 1939. The price indexes relate to average "prices"

of farm products realized in the principal markets of Australia. Average quantities of each product marketed in the period 1946-47 to 1950-51 have been used as fixed weights. For further details of the methods of calculating these indexes and of the weights used, see Chapter XXX. Miscellaneous.

INDEXES OF QUANTUM(a) AND PRICE OF PASTORAL PRODUCTION: AUSTRALIA

(Base: Average 3 years ended June, 1939 = 100)

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
QUANTUM(a) PRODUCED					
Wool	164	172	165	174	170
Other products	152	153	136	144	154
<i>Total, Pastoral</i>	<i>159</i>	<i>163</i>	<i>152</i>	<i>160</i>	<i>163</i>
Per head of population	110	110	100	104	104
PRICE					
Wool	370	440	397	412	449
Other products	435	500	513	433	451
<i>Total, Pastoral</i>	<i>396</i>	<i>464</i>	<i>443</i>	<i>421</i>	<i>450</i>

(a) Index of value at constant prices, i.e. quantities revalued at average unit values of base years, 1936-37 to 1938-39.

§ 2. Sheep

1. *Distribution throughout Australia.*—With the exception of a short period in the early eighteen-sixties, when the flocks of Victoria outnumbered those of New South Wales, the latter State has occupied the premier position in sheep-raising, depasturing nearly one-half of the sheep of Australia.

A map showing the distribution of sheep in Australia at 31st March, 1963, appears on page 1049. Maps showing distribution in earlier years were published in previous issues of the Year Book (see No. 43, p. 911, for 1955; No. 39, p. 907, for 1948; No. 34, p. 452, for 1938-39; and No. 22, p. 659, for 1924-25). Graphs showing the number of sheep in Australia from 1870 onwards appear on pages 1061-2 of Year Book No. 49.

The numbers of sheep in the several States and Territories at 31st March of each year 1959 to 1963 compared with average numbers for the three-year periods ended 1939, 1949 and 1959 are shown in the following table.

SHEEP: NUMBER (‘000)

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
<i>Average for three years ended—</i>									
1939 ..	51,202	17,845	21,889	8,916	8,972	2,460	23	251	111,558
1949 ..	46,525	17,900	16,442	8,793	10,368	2,060	24	227	102,339
1959 ..	67,006	26,615	22,537	15,285	15,609	3,259	25	265	150,601
<i>Year—</i>									
1959 ..	67,936	26,925	22,148	15,634	16,215	3,536	19	272	152,685
1960 ..	71,000	26,597	23,332	14,025	16,412	3,494	15	299	155,174
1961 ..	68,087	26,620	22,135	14,952	17,152	3,439	16	278	152,679
1962 ..	69,498	27,533	22,125	16,415	18,314	3,531	10	286	157,712
1963 ..	70,021	27,472	22,811	15,737	18,727	3,570	9	279	158,626

Except when affected by drought, the relative numbers of sheep in the different States have remained fairly constant in recent years. The percentage distribution in 1963 was:— New South Wales, 44; Victoria, 18; Queensland, 14; South Australia, 10; Western Australia, 12; and Tasmania, 2.

2. Numbers of Sheep on Rural Holdings.—(i) *Size of Sheep Flocks.* Details of the size of sheep flocks on rural holdings in Australia for 1959–60 have been published in a series of publications entitled *Classification of Rural Holdings by Size and Type of Activity, 1959–60.*

(ii) *Sheep Numbers.* A record level of 158.6 million sheep was reached at 31st March, 1963. This figure is 0.9 million more than the previous maximum in 1962.

The following table shows the approximate movement in sheep numbers in Australia in each year 1958–59 to 1962–63.

SHEEP AND LAMBS: ANALYSIS OF MOVEMENT IN NUMBERS, AUSTRALIA

('000)

Season	Lambs marked	Excess of exports	Sheep and lambs slaughtered	Estimated number of deaths from disease, drought, etc.(a)	Number at 31st March (end of season)	Annual net increase (+) or decrease(—)
1958–59.. ..	38,748	136	26,963	8,279	152,685	+ 3,370
1959–60.. ..	44,150	(b) 226	32,088	9,347	155,174	+ 2,489
1960–61.. ..	39,792	(b) 148	32,582	9,557	152,679	— 2,495
1961–62.. ..	45,596	(b) 201	33,317	7,045	157,712	+ 5,033
1962–63.. ..	45,146	(b) 263	33,944	10,025	158,626	+ 914

(a) Balance figure. (b) No imports in this year.

3. Classification of Sheep According to Age, Sex and Breed.—In the following table, numbers of sheep in Australia are classified according to age and sex at 31st March.

SHEEP: AGE AND SEX, AUSTRALIA

('000)

Description	1959	1960	1961	1962	1963
Rams, 1 year and over ..	1,919	1,898	1,934	1,956	1,979
Breeding ewes (including ewes intended for mating) ..	69,470	68,455	69,662	70,693	70,936
Other ewes, 1 year and over ..	8,295	9,276	8,951	8,729	8,878
Wethers, 1 year and over ..	43,578	43,046	42,912	43,021	44,267
Lambs and hoggets, under 1 year	29,423	32,499	29,220	33,313	32,566
Total, Sheep and Lambs	152,685	155,174	152,679	157,712	158,626

Particulars of the principal breeds of sheep at 31st March, 1962, the latest date for which these data are available (details are collected on a triennial basis), are shown in the following table.

SHEEP: PRINCIPAL BREEDS, 31st MARCH, 1962
('000)

Breed	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
Merino ..	54,096	12,116	21,754	13,772	16,902	337	10	247	119,234
Other recognized breeds ..	7,203	6,990	48	1,149	587	1,959	..	11	17,947
Merino come-backs(a) ..	1,865	2,570	74	307	215	429	..	7	5,467
Crossbreds(b) ..	6,334	5,857	249	1,187	610	806	..	21	15,064
Total ..	69,498	27,533	22,125	16,415	18,314	3,531	10	286	157,712

(a) Merino comeback is the progeny of a crossbred Merino ewe and a Merino ram, i.e. finer than half-bred.
(b) Half-bred and coarser.

4. Imports and Exports of Sheep.—The oversea exports of live sheep from Australia are of comparatively minor importance. On 27th November, 1929, the export of stud Merino sheep was prohibited, except with the approval of the Minister for Primary Industry. Exports of sheep are now principally for slaughter overseas. Consignments for this purpose in recent years were made chiefly from Western Australia to Singapore. Since June, 1958, an embargo has been imposed on the import of sheep in order to prevent the introduction of the disease blue-tongue. The following table shows the imports and exports of all sheep for the years 1958–59 to 1962–63.

SHEEP: IMPORTS AND EXPORTS, AUSTRALIA

Year	Imports		Exports	
	No.	Value	No.	Value
		£A. '000 f.o.b.		£A. '000 f.o.b.
1958–59	5	1	135,720	393
1959–60	(a)	(a)	225,757	805
1960–61	(a)	(a)	147,592	461
1961–62	(a)	(a)	200,883	697
1962–63	(a)	(a)	263,145	892

(a) An embargo was placed on the import of sheep in June, 1958; see text above.

5. Comparison with other Countries.—In 1962–63, Australian flocks numbered 159 million sheep, compared with an estimate of 243 million for the U.S.S.R., China, and eastern Europe combined, about 50 million in New Zealand, and about 45 million in Argentina. World sheep numbers were estimated at about 912 million in 1962–63. These figures relate only to woolled sheep, non-woolled sheep accounting for about 5 per cent. of the world total of all types of sheep. Further details of sheep numbers in the principal wool producing countries of the world are given in the table on page 1067.

§ 3. Cattle

1. Objects of Cattle-raising.—Cattle-raising is carried out in all the States, the main object in certain districts being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. While dairy cattle are restricted mainly to coastal districts, beef cattle are more widely distributed, particularly in the eastern States, and are raised in areas unsuitable for dairy cattle, such as the tropical area of northern Queensland, the Northern Territory, and the Kimberley district in the north of Western Australia.

2. Distribution throughout Australia.—Although cattle numbers declined after 1957 because of drought conditions and heavy slaughterings, they began to rise again in 1960, and in 1963 reached a record level of 18,549,000.

A graph showing the number of cattle in Australia from 1870 onwards appears on page 1061 of Year Book No. 49.

The numbers of cattle (beef and dairy) in the several States and Territories in each year 1959 to 1963, compared with averages for the three-year periods ended 1939, 1949 and 1959, are shown below.

CATTLE: NUMBER
(^{'000})

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
Average for three years ended—									
1939 ..	3,040	1,861	6,002	324	767	260	882	8	13,144
1949 ..	3,122	2,153	5,971	443	830	244	1,006	9	13,778
1959 ..	3,770	2,722	7,177	598	985	367	1,173	10	16,802
Year—									
1959 ..	3,664	2,651	6,884	576	1,000	374	1,099	9	16,257
1960 ..	3,840	2,624	7,012	500	1,030	375	1,111	11	16,503
1961 ..	4,242	2,864	7,004	561	1,100	394	1,154	13	17,332
1962 ..	4,399	3,156	7,098	659	1,218	425	1,064	14	18,033
1963 ..	4,569	3,225	7,233	679	1,298	444	1,087	14	18,549

Although the proportion was not as high as it has been in some previous years, Queensland was carrying 39 per cent. of the cattle in Australia in 1963. The percentage in each State and Territory during that year was:—New South Wales, 25; Victoria, 17; Queensland, 39; South Australia, 4; Western Australia, 7; Tasmania, 2; and Northern Territory, 6.

Maps showing the distribution of beef and dairy cattle in Australia appear on pp. 1050 and 1082. Maps showing distribution in earlier years were published in previous issues of the Year Book (*see* No. 43, pp. 909–10, for 1955; No. 39, pp. 905–6, for 1948; No. 34, pp. 453–4, for 1938–39; and No. 22, p. 660, for 1924–25).

3. *Classification of Cattle.*—(i) *According to Purpose.* Of the total number of cattle in Australia in 1963, 13,473,000 (73 per cent.) were classified as beef cattle. The numbers classified as beef cattle in the several States and Territories during the years 1959 to 1963, compared with averages for the three-year periods ended 1949 and 1959, are shown in the following table.

BEEF CATTLE: NUMBER
(^{'000})

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
Average for three years ended—									
1949 ..	1,832	686	4,592	171	604	100	1,006	6	8,997
1959 ..	2,462	1,023	5,882	341	763	165	1,173	7	11,816
Year—									
1959 ..	2,382	998	5,643	328	784	171	1,099	6	11,411
1960 ..	2,562	946	5,757	260	814	168	1,111	8	11,626
1961 ..	2,961	1,147	5,790	313	876	180	1,155	9	12,431
1962 ..	3,127	1,332	5,890	385	983	196	1,063	11	12,987
1963 ..	3,307	1,367	6,041	398	1,057	206	1,086	11	13,473

Particulars relating to dairy cattle numbers will be found in the division Other Rural Industries of this chapter. (*See* pp. 1078–9.)

(ii) *According to Size of Cattle Herds.* Details of size of cattle herds on rural holdings in Australia for 1959–60 have been published in a series of publications entitled *Classification of Rural Holdings by Size and Type of Activity*.

4. *Cattle and Beef Research Schemes.*—In May, 1960, legislation was enacted to provide for a Commonwealth scheme for an expanded programme of research into the scientific, technical and economic problems connected with the Australian beef industry.

Funds are raised by a levy on all cattle weighing over 200 lb. dressed which are slaughtered for human consumption, and the Commonwealth provides a matching contribution on a £1 for £1 basis to meet expenditure on new research. The scheme is administered by the Australian Cattle and Beef Research Committee, whose main function is to formulate plans for projects on which the funds may be expended. The research is undertaken by existing bodies such as the universities, C.S.I.R.O. and State Departments of Agriculture.

The Minister for Primary Industry has approved a research programme of just over £1,000,000 for 1964-65.

At its first meeting in June, 1960, the Committee agreed to recommend to the Minister for Primary Industry that the levy be fixed at the maximum provided in the Act, namely 2s. a head. The levy was operative from 1st July, 1960. It was suspended in October, 1960, as a result of a High Court writ being issued by certain meat operators challenging the validity of the Act. Amending legislation was enacted in October, 1961, and the levy again became operative from the 14th October, 1961. The three Acts covering the research arrangements and collection of the levy are the *Cattle and Beef Research Act 1960-1961*, the *Cattle Slaughter Levy Collection Act 1960-1961*, and the *Cattle Slaughter Levy Act 1960*. The *Cattle Slaughter Levy (Suspension) Act 1961* covers the suspension of levy from 14th October, 1960, to 13th October, 1961.

5. Imports and Exports of Cattle.—In 1962-63, most of the cattle exported from Australia were sent to Hong Kong for slaughtering, the number exported thereto being 6,656 head valued at £138,515. The number of cattle imported is small and consists mainly of valuable animals for stud purposes. Since June, 1958, an embargo has been imposed on the import of cattle in order to prevent the introduction of the disease blue-tongue. Details for the years 1958-59 to 1962-63 are shown in the following table.

CATTLE: IMPORTS AND EXPORTS, AUSTRALIA

Year	Imports		Exports	
	No.	Value	No.	Value
1958-59	37	£A.'000 f.o.b. 62	13,900	£A.'000 f.o.b. 493
1959-60	(a)	(a)	13,602	456
1960-61	(a)	(a)	10,159	404
1961-62	(a)	(a)	7,304	303
1962-63	(a)	(a)	8,969	283

(a) An embargo was placed on the import of cattle in June, 1958; see text above.

6. Comparison with Other Countries.—The following table shows the number of cattle in Australia and in some of the principal cattle-raising countries of the world at the latest available date.

CATTLE: NUMBER IN VARIOUS COUNTRIES

(Source: (for countries other than Australia) *World Agricultural Production and Trade*, United States Department of Agriculture)

('000)

Country	Year and Month	Number(a)
India(b)	1962 (May)	236,000
United States of America	1964 (January)	106,488
U.S.S.R.	1964 (January)	85,000
Brazil	1963 (December)	81,115
China (Mainland)(b)	1960 (December)	65,400
Argentina	1964 (June)	41,500
Pakistan(b)	1961 (Estimate)	30,300
Mexico	1964 (Spring)	24,500
Ethiopia	1963 (Estimate)	22,000
France	1963 (October)	20,249
Australia	1963 (March)	18,549
Colombia	1963 (October)	15,800
Turkey(b)	1963 (December)	13,150
Germany, Federal Republic of	1963 (December)	13,014
South Africa	1959 (August)	11,300

(a) Subject to revision.

(b) Includes buffaloes.

§ 4. Horses

1. **Distribution throughout Australia.**—About 80 per cent. of the horses in Australia are in the States of New South Wales, Victoria and Queensland. In the following table, figures are shown for each State and Territory for the years 1959 to 1963.

HORSES: NUMBER
(’000)

Year	N.S.W.	Vic.	Q’land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
1959 ..	214	91	240	33	41	12	39	1	671
1960 ..	204	81	234	30	41	11	38	1	640
1961 ..	192	65	224	27	40	9	40	1	598
1962 ..	168	61	217	25	40	9	41	1	562
1963 ..	166	58	212	25	39	8	38	1	547

The number of horses in Australia reached a peak of 2,527,000 in 1919. Since then, it has declined, because of mechanization of transport and farming, at an average rate of 45,000 a year. A graph showing the number of horses in Australia since 1870 appears in Year Book No. 49.

The percentage distribution of the number of horses in each State and Territory for 1963 was:—New South Wales, 30; Victoria, 11; Queensland, 39; South Australia, 5; Western Australia, 7; Tasmania, 1; and Northern Territory, 7.

2. **Oversea Trade in Horses.**—Exports of horses in 1962–63 numbered 452, valued at £319,530 (Australian produce 394 for £219,309; re-exports 58 for £100,221), made up of horses for breeding (58 valued at £59,052), horses for racing (285 valued at £243,645, shipped principally to Singapore) and horses for other purposes (109 valued at £16,833).

The few horses imported into Australia are mainly stud animals from the United Kingdom and racehorses from New Zealand. The total number imported in 1962–63 was 537 valued at 599,248.

§ 5. Pastoral Products: Wool

1. **General.**—With about one-sixth of the world’s woolled sheep, Australia produces more than one-quarter of the world’s wool and more than half of the world’s fine-quality Merino wool. The bulk of the production is exported, mainly as greasy wool, although substantial amounts of scoured and carbonized wool, wool on sheep skins and small quantities of semi-manufactured wool are also shipped. The remainder, which is used by Australian manufacturers, has amounted to only about 7 per cent. of the total production (greasy basis) in recent years.

The important position held by Australia among the principal sheep and wool producing countries of the world is shown in the table on page 1067.

2. **Earlier Wool Marketing Schemes.**—Details of past marketing schemes and agreements, including the 1914–18 War Imperial Purchase Scheme, the British Australian Wool Realization Association Ltd., the 1939–45 War Acquisition Scheme, Joint Organization and Minimum Reserve Price Plan, are given in previous issues of the Year Book.

3. **Auction System.**—More than ninety per cent. of the Australian wool clip is disposed of at auction. (During both world wars, however, auction selling was suspended and replaced by bulk purchase schemes.)

There are fourteen recognized wool-selling centres, namely Sydney, Goulburn, Newcastle, Albury, Melbourne, Geelong, Ballarat, Portland, Brisbane, Adelaide, Perth, Albany, Hobart and Launceston. At these centres, wool-selling brokers operate large stores where wool received from growers is held awaiting sale.

Each year a wool-selling programme is drawn up jointly by the selling brokers and wool-buyers on the basis of the expected clip. Selling dates and the quantities to be offered are then determined for each centre.

Before each sale, the selling brokers, who act as agents for the woolgrowers, display a representative portion of the wool to be sold on show floors for buyers' inspection and valuation. Auction sales are attended by buyers purchasing on behalf of wool users in over fifty countries.

4. **Wool Marketing Committee of Inquiry.**—In 1961, the Commonwealth Government appointed an independent committee to inquire into the marketing and promotion of Australian wool and related matters (*see* Year Book No. 48, page 977, for further details). The Committee presented its report to the Government in 1962. Its most important recommendation was that wool promotion, research and testing should be brought under the control of a single body, which should also act as an advisory authority on wool marketing. This recommendation was implemented under the *Wool Industry Act* 1962, which set up the Australian Wool Board.

5. **Australian Wool Board.**—This Board consists of a chairman, six woolgrower representatives, three members with special qualifications and a representative of the Commonwealth Government. The first chairman of the Board was appointed by the Minister for Primary Industry after consultation with the Australian Wool Industry Conference (*see* p. 1060) but subsequent chairmen are to be appointed on the nomination of the Board. The six woolgrower representatives are appointed by the Minister on the nomination of the Wool Industry Conference, and the three members with special qualifications are appointed from a panel of names submitted by the Conference. The Act provides that the latter members must be experienced in one of the following fields: wool marketing and manufacturing, research, finance and commerce.

When the Board came into being on 1st May, 1963, it took over the functions of the Australian Wool Bureau. On 1st July, 1963, the Australian Wool Testing Authority became part of the Board, and on 1st January, 1964, the Board took over the functions of the Wool Research Committee. Information on these three former instrumentalities appears in Year Book No. 48, pages 977–81.

Following the organizational changes carried out under the Wool Industry Act, the functions of the Board embrace the following activities.

- (i) *Wool promotion in Australia and overseas by publicity and other means.* Promotion overseas is carried out through the International Wool Secretariat, which is maintained jointly by the Wool Boards of Australia, New Zealand and South Africa.
- (ii) *Provision of a testing service for wool and wool products.* This service is administered by a subsidiary board retaining the name Australian Wool Testing Authority.
- (iii) *Administration of wool research.* The Board is responsible for preparing annual programmes of research expenditure which are subject to the approval of the Minister for Primary Industry. Two committees established by the Board, the Wool Production Research Advisory Committee and the Wool Textile Research Advisory Committee, assist in this task.
- (iv) *Investigation into all aspects of wool marketing on a continuing basis.* The Wool Marketing Committee, an ancillary body appointed by the Board, assists in carrying out this function. The Board is required to report to the Australian Wool Industry Conference on its findings and advise it on measures which should be adopted to meet changing marketing conditions. However, the Board has no executive powers over marketing.
- (v) *Maintenance and administration of the wool stores which were entrusted to the Board by the Commonwealth Government.* Further details concerning these stores appear in Year Book No. 48, page 978.
- (vi) *Other activities approved by the Minister for the benefit of the wool industry, including the operation of the Wool Statistical Service and the registration of wool classers.* The Wool Statistical Service (described in more detail in Year Book No. 48, pp. 977–8) provides comprehensive statistics on the Australian wool clip, while the registration of wool classers is designed to improve the standards of wool classing in Australia.

At present the main source of finance for the various activities of the Board is a levy paid by woolgrowers (*see* para. 7 below).

6. The Australian Wool Industry Conference.—This body was formed by woolgrowers in October, 1962, to meet the need for an organization with sufficient authority to speak on behalf of the woolgrowing industry as a whole. It is not a statutory body and consists at present of 50 members and an independent chairman, 25 of the members being appointed by the Australian Woolgrowers' and Graziers' Council and 25 by the Australian Wool and Meat Producers' Federation.

The Conference makes recommendations to the Commonwealth Government on policy matters concerning the wool industry. Under the Wool Industry Act, it is the responsibility of the Conference to nominate woolgrower representatives for appointment to the Australian Wool Board and to prepare panels of names from which the three Board members with special qualifications are selected. Under the Wool Tax Acts (*see* para. 7) the Conference is also responsible for recommending to the Commonwealth Government what rates of levy should be paid by woolgrowers to finance the activities of the Wool Board.

7. Wool Levy.—Since 1936, a statutory levy has been collected from woolgrowers to finance wool promotion activities. The initial rate was 6d. a bale and this was increased at the request of woolgrowers to 2s. a bale in 1945 and 4s. a bale in 1952, the latter rate continuing until 1960. Further details regarding the operation of this levy prior to 1957 appear in Year Book No. 48, page 978.

Under legislation passed in 1957, provision was also made for the payment by woolgrowers of a contribution for wool research which was fixed at 2s. a bale.

In 1960, the wool promotion levy was raised to 5s. a bale, and the following year it was increased further to 10s. a bale. The operation of this rate was subsequently extended for 1962-63 and 1963-64. The wool research levy has remained unchanged at 2s. a bale since 1957.

The collection of the two levies from woolgrowers is governed by three complementary Acts, the *Wool Tax Acts* (No. 1 and No. 2) 1957-1963 and the *Wool Tax Assessment Act* 1936-1963.

Since 1945, the Commonwealth Government has contributed to wool research on a statutory basis. Originally the contribution was equivalent to 2s. a bale. This was increased to 4s. a bale in 1957.

8. Wool Production.—(i) *General.* Wool as shorn from the sheep contains an appreciable amount of grease, dirt and other extraneous matter, and is termed "greasy wool". The quantity of grease and other matter in a fleece differs not only between countries, but between districts in the same country. It fluctuates with the vagaries of the season, and with the breed and the condition of the sheep.

To allow for this factor, the weight of greasy wool is sometimes given on a "clean" basis, i.e. minus the estimated amount of impurities. The net wool fibre content of greasy wool, expressed as a percentage, is termed "clean yield".

From 1946-47 to 1952-53, the Australian Wool Realization Commission, and from 1953-54, the Wool Statistical Service, have assessed annually the clean yield of the Australian wool clip. During the period of assessment, the clean yield has shown a continuous rise up to 1951-52, when it reached 57.5 per cent. It has since fluctuated between 55.8 per cent. and 57.7 per cent.

Wool scoured, washed and carbonized in Australia before export, however, has a clean yield somewhat lower than for the whole clip, because the grade of greasy wool treated locally for export as scoured, washed or carbonized includes a large proportion of dirty and low-grade wool. In recent years, it has approximated 54 per cent. The quantity of this wool exported during 1962-63 was about 12 per cent. of the total raw wool exports (excluding wool exported on skins) in terms of greasy.

For the clean yield of Australian scoured wools, a standard factor of 93 per cent. is taken.

(ii) *Production.* The production of wool in the States and Territories varies broadly in accordance with the number of sheep depastured and with seasonal conditions which affect clip per head (see para. 8 (iii), p. 1062). In general, however, South Australia obtains from its large-framed Merinos a much heavier fleece per sheep than the Australian average, while Tasmania generally obtains from its predominantly non-Merino flocks a lighter fleece per sheep. In addition, as a result of better management (improved pastures, fodder conservation, better breeding, control of diseases, etc.), the long-term trend has been towards higher fleece weights.

The following table shows details of total wool (i.e. shorn, dead and fellmongered, and exported on skins) produced by each of the States and Territories during the years 1958-59 to 1962-63 compared with averages for the three-year periods ended 1938-39, 1948-49 and 1958-59. A graph showing the production of wool in relation to sheep numbers from 1870 onwards appears on page 1062 of Year Book No. 49.

PRODUCTION OF WOOL (GREASY BASIS)

('000 lb.)

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
Average for three years ended—									
1938-39 ..	478,595	169,256	169,325	88,699	73,141	15,728	35	1,822	996,601
1948-49 ..	439,363	200,229	151,679	108,126	95,031	16,272	305	1,927	1,012,932
1958-59 ..	633,938	298,302	217,062	187,225	160,402	30,141	277	2,371	1,529,718
Year—									
1958-59 ..	684,184	298,844	219,148	186,842	166,522	32,605	195	2,522	1,590,862
1959-60 ..	715,445	322,999	236,196	198,289	170,442	33,600	165	2,899	1,680,035
1960-61 ..	664,276	322,011	235,590	177,413	191,353	31,870	157	2,471	1,625,141
1961-62 ..	701,168	330,716	230,333	206,985	192,161	34,469	98	2,645	1,698,575
1962-63 ..	693,734	316,705	233,638	207,344	184,123	34,561	100	2,343	1,672,548

The bulk of the Australian wool production (about 91 per cent. in recent years) is shorn from live sheep. The remainder is obtained by fellmongering (about 2 per cent.), or is exported on skins (about 7 per cent.). The following table shows details of total wool production according to method of obtaining wool, and also the gross value of wool produced. Gross value is based, for shorn wool, upon the average price realized for greasy wool sold at auction, and, for skin wools, on prices recorded by fellmongers and skin exporters.

QUANTITY (GREASY BASIS) AND VALUE OF WOOL PRODUCED: AUSTRALIA

Period	Shorn (incl. crutchings)	Dead and fell- mongered	Exported on skins	Total production	
				Quantity	Value
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	£'000
Average for three years ended—					
1938-39 ..	889,338	49,280	57,983	996,601	53,425
1948-49 ..	902,007	50,660	60,265	1,012,932	152,536
1958-59 ..	1,411,424	36,804	81,490	1,529,718	394,145
Year—					
1958-59 ..	1,456,759	41,795	92,308	1,590,862	311,415
1959-60 ..	1,529,362	38,929	111,744	1,680,035	389,761
1960-61 ..	1,472,092	37,509	115,540	1,625,141	340,430
1961-62 ..	1,546,318	36,192	116,065	1,698,575	372,554
1962-63 ..	1,515,932	32,854	123,762	1,672,548	400,262

(iii) *Average Fleece Weight.* The average weights of sheep and lamb fleeces shorn in each of the States of Australia and in the Australian Capital Territory are shown in the following table for each season 1958-59 to 1962-63.

AVERAGE WEIGHT OF FLEECES SHORN (SHEEP AND LAMBS)
(lb.)

State or Territory	1958-59	1959-60	1960-61	1961-62	1962-63
SHEEP					
New South Wales	9.88	10.10	9.48	10.06	9.94
Victoria	9.47	10.06	10.24	10.17	9.59
Queensland	9.75	10.09	9.93	9.89	9.83
South Australia	11.87	12.31	12.12	12.86	12.29
Western Australia	10.49	10.32	11.37	10.90	10.09
Tasmania	9.37	9.10	8.89	9.39	9.44
Northern Territory	8.74	9.39	9.00	8.50	10.94
Australian Capital Territory ..	10.41	10.53	9.18	9.87	8.88
Australia	10.03	10.31	10.12	10.41	10.11
LAMBS					
New South Wales	3.08	3.22	3.31	3.30	3.34
Victoria	2.70	2.73	2.95	2.92	2.82
Queensland	3.84	3.95	4.16	3.89	3.85
South Australia	3.52	3.39	3.55	3.81	3.63
Western Australia	2.60	2.56	2.84	2.84	2.55
Tasmania	2.31	2.13	2.30	2.23	2.35
Northern Territory	2.21	..	..	2.33	5.00
Australian Capital Territory ..	1.45	1.56	1.56	1.66	1.80
Australia	3.03	3.10	3.27	3.25	3.20

(iv) *Classification of Wool According to Quality.* The following table provides a detailed analysis of wool sold at auction, according to quality, for the years 1958-59 to 1962-63. These data are compiled by the Wool Statistical Service on the basis of catalogues of auction sales. "Quality" ("64's, 60's, 58's," etc.) is a measure of the fineness and texture of wool for spinning purposes. Broadly, it means the maximum number of hanks of yarn, each of 560 yards length, which can be spun from 1 lb. of combed wool. For instance, wool of 64's quality is of a fineness and texture which will produce 64 hanks, each of 560 yards, from 1 lb. of tops (combed wool) of that particular wool.

CLASSIFICATION OF GREASY WOOL SOLD AT AUCTION^(a): AUSTRALIA
(Bales of approximately 300 lb.)

Pre-dominating quality	1958-59		1959-60		1960-61		1961-62		1962-63	
	Quantity	Per cent.	Quantity	Per cent.	Quantity	Per cent.	Quantity	Per cent.	Quantity	Per cent.
70's and finer	112,966	2.5	113,234	2.4	122,534	2.7	115,434	2.4	138,238	3.0
64/70's ..	442,019	9.5	453,823	9.5	462,764	10.0	381,683	8.0	413,195	8.9
64's ..	607,653	13.1	659,126	13.8	633,919	13.8	572,549	12.1	582,315	12.5
64/60's ..	477,054	10.3	506,001	10.6	451,905	9.8	475,487	10.0	469,010	10.1
60/64's ..	1,021,139	21.9	1,071,961	22.4	947,627	20.5	1,048,912	22.1	1,043,674	22.4
60's and 60/58's ..	837,338	17.9	839,919	17.5	829,601	18.0	915,501	19.3	854,771	18.4
Total, 60's and finer	3,498,169	75.2	3,644,064	76.2	3,448,350	74.8	3,509,566	73.9	3,501,203	75.3
58's ..	519,238	11.2	491,277	10.3	555,237	12.0	578,588	12.2	527,493	11.3
56's ..	363,968	7.8	375,391	7.9	354,287	7.7	383,238	8.1	353,344	7.6
50's ..	149,356	3.2	152,056	3.2	140,457	3.0	146,657	3.1	135,256	2.9
Below 50's ..	44,292	1.0	46,429	1.0	43,552	0.9	49,875	1.1	45,631	1.0
Oddments ..	74,385	1.6	68,202	1.4	73,246	1.6	75,708	1.6	86,058	1.9
Grand Total	4,649,408	100.0	4,777,419	100.0	4,615,129	100.0	4,743,632	100.0	4,648,985	100.0

(a) All greasy wool sold at auction except "wool re-offered account buyer".

9. *Price and Value.*—(i) *Price.* During 1962-63, the price of greasy wool sold in the selling centres of Australia averaged 59.0d. per lb. compared with the average price of 54.1d. per lb. in 1961-62 and 52.1d. in 1960-61.

The prices quoted above are as compiled by the National Council of Wool Selling Brokers and represent the average price realized for all greasy wool, of whatever type or quality, marketed during the years indicated.

(ii) *Value.* Fluctuation in Australian wool prices has a marked effect on the nation's rural and national income. In 1945-46, the gross value of wool production was £58,597,000, representing 17.4 per cent. of the gross value of production of all rural industries, while in 1950-51, when prices reached a peak, wool was valued at £651,902,000 or 55.6 per cent. of the total value of production for all rural industries. The value of wool production fell in subsequent years even though the quantity produced increased substantially, and in 1962-63 was £400,262,000. This figure represented 26.6 per cent. of the gross value of production of rural industries.

Details of the value of wool production for the years 1958-59 to 1962-63 are shown in the following table.

ESTIMATED GROSS VALUE OF TOTAL WOOL PRODUCTION(a)
(£'000)

Season	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.(b)	A.C.T.	Aust.
1958-59 ..	134,764	59,471	45,075	33,797	30,915	6,844	36	513	311,415
1959-60 ..	168,112	75,952	54,573	42,691	39,334	8,254	35	810	389,761
1960-61 ..	138,881	69,265	50,859	35,242	38,312	7,229	28	614	340,430
1961-62 ..	154,920	74,219	50,637	42,900	41,260	7,876	18	724	372,554
1962-63 ..	166,170	79,006	57,731	46,257	41,494	8,886	20	698	400,262

(a) Includes shorn, dead and fellmongered wool and wool exported on skins.

(b) Estimated.

10. *Stocks of Wool.*—Stocks of raw wool held in Australia at 30th June, 1963, amounted to 222.4 million lb. (greasy basis), of which 54.4 million lb. (35.0 million lb. as greasy and 19.4 million lb. as scoured and carbonized) were held by woollen mills, wool scourers and fellmongers, and 168.0 million lb., assumed to be all greasy, were held by brokers. Of the wool held by brokers, 50.5 million lb. were unsold wool and 117.5 million lb. were sold wool held awaiting shipment. These stocks exclude wool on skins, since this wool is not recorded as production until fellmongered in Australia or exported on skins.

11. *Consumption of Wool.*—(i) *Consumption of Raw Wool.* Statistics of raw wool consumption published in recent years for the purposes of broad international comparisons are based on the quantities of scoured or carbonized wool used on the woollen and worsted systems (mill consumption), plus quantities used in such processes as felting. Consumption estimates compiled on this basis have obvious defects, as they disregard overseas trade in semi-processed wool (e.g. tops and yarns) as well as woollen goods. Estimates of raw wool used on the woollen and worsted systems and by felt manufacturers in Australia are shown in the following table for the years 1958-59 to 1962-63.

ESTIMATED CONSUMPTION OF RAW WOOL IN AUSTRALIA
(⁰⁰⁰ lb.)

Year	Greasy basis			Clean equivalent		
	Used on woollen and worsted systems	Used for felt manufacture (including hats)	Total	Used on woollen and worsted systems	Used for felt manufacture (including hats)	Total
1958-59 ..	103,180	3,992	107,172	62,834	1,896	64,730
1959-60 ..	123,529	5,092	128,621	75,226	2,419	77,645
1960-61 ..	104,801	3,896	108,697	63,414	1,851	65,265
1961-62 ..	117,555	4,328	121,883	70,682	2,056	72,738
1962-63 ..	124,525	2,346	126,871	74,872	1,376	76,248

(ii) *Consumption of Locally Processed Wool.* As considerable quantities of tops, noils and yarn are exported from Australia, the series on raw wool consumption shown above is over-stated to this extent. The series entitled "Estimated Consumption of Locally Processed Wool in Australia" provides a more reliable indication of wool consumption in Australia, as allowance has been made for exports of wool in semi-processed form. This series is shown in the following table for the years 1958-59 to 1962-63. Briefly, the series measures consumption of wool in terms of yarn used in Australian mills and other factories to produce woollen cloth and other woollen goods, yarn used for hand knitting purposes, and scoured wool used for felt manufacture. No allowance has been made for oversea trade in woollen piece goods, clothing, etc., because of the obvious difficulties of estimating accurately the wool content of these products.

ESTIMATED CONSUMPTION OF LOCALLY PROCESSED WOOL IN AUSTRALIA
(⁰⁰⁰ lb.)

Year	Greasy basis				Clean equivalent			
	Worsted yarn used (a)(b)	Woollen yarn used (b)	Scoured wool used for felt manufacture (including hats)	Total	Worsted yarn used (a)(b)	Woollen yarn used (b)	Scoured wool used for felt manufacture (including hats)	Total
1958-59 ..	37,972	29,272	3,992	71,236	22,811	18,520	1,896	43,227
1959-60 ..	44,314	36,327	5,092	85,733	26,390	22,723	2,419	51,532
1960-61 ..	40,315	32,268	3,896	76,479	24,516	20,034	1,851	46,401
1961-62 ..	45,173	28,885	4,328	78,386	26,543	17,876	2,056	46,475
1962-63 ..	46,875	34,980	2,346	84,201	27,541	21,646	1,376	50,563

(a) Includes hand knitting yarns used.

(b) Includes wool content of yarns containing a mixture of wool and other fibres.

12. *Exports of Wool.*—(i) *Quantities.* (a) *Greasy.* Of the total shipments in 1962-63 30 per cent. went to Japan, 16 per cent. to the United Kingdom, 10 per cent. to France, 9 per cent. to Italy, and 8 per cent. to Belgium-Luxembourg. The following table shows the quantities of greasy and slip wool exported, and the principal countries of consignment.

EXPORTS OF GREASY AND SLIPE WOOL: AUSTRALIA
(⁰⁰⁰ lb. actual weight)

Country of consignment	1958-59	1959-60	1960-61	1961-62	1962-63
Japan	273,503	335,296	411,782	416,970	386,956
United Kingdom	305,888	266,297	217,318	207,675	204,412
France	157,871	161,844	155,378	138,483	131,769
Italy	113,156	130,516	105,790	146,369	119,409
Belgium-Luxembourg	103,261	105,974	105,023	108,699	98,572
Germany, Fed. Rep. of	60,070	70,223	60,931	66,773	74,474
U.S.S.R.	325	39,254	1,212	38,753	49,445
United States of America	28,299	24,323	17,234	35,024	46,314
Other	144,616	160,623	184,472	169,389	167,617
Total	1,186,989	1,294,350	1,259,140	1,328,135	1,278,968

(b) *Scoured and Washed and Carbonized.* The exports of "scoured and washed" wool, whether carbonized or not, are shown in the following table according to principal countries of destination.

**EXPORTS OF WOOL—SCOURED AND WASHED AND CARBONIZED:
AUSTRALIA**

('000 lb. actual weight)

Country of consignment	1958-59	1959-60	1960-61	1961-62	1962-63
United States of America ..	14,815	14,482	19,345	20,564	25,469
United Kingdom	24,597	24,661	20,234	15,344	17,497
Italy	7,117	8,668	7,691	9,640	8,582
Germany, Fed. Rep. of ..	8,692	9,406	8,470	8,267	7,314
Japan	4,325	4,345	6,105	7,055	5,796
China (Mainland)	4,942	10,268	4,588	7,814	4,524
India	1,313	1,520	1,186	2,221	4,292
France	3,732	3,842	4,659	5,089	4,251
Turkey	760	3,091	3,602	2,533	3,232
Canada	4,803	5,375	5,339	5,470	2,981
Other	15,455	14,868	16,053	15,307	17,975
Total	90,551	100,526	97,272	99,304	101,913

(c) *Tops, Noils and Waste.* Particulars of the exports of tops, noils and waste are shown in the following table.

EXPORTS OF WOOL TOPS, NOILS AND WASTE: AUSTRALIA

('000 lb. actual weight)

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
Tops	20,203	22,743	16,694	21,438	21,641
Noils	4,355	4,017	4,372	3,957	4,794
Waste—Soft wool	7,742	5,607	2,322	2,580	3,121
Hard wool	4,388	3,193	3,088	2,154	3,181

(d) *Total Quantity of Exports.* The following table shows the estimated greasy and clean weights of exports of raw and semi-processed wool for the years 1958-59 to 1962-63. As the figures in the following table are in terms of "greasy" or "clean" basis, they differ from those in the preceding tables which represent actual weight shipped.

EXPORTS OF WOOL—GREASY AND CLEAN BASES: AUSTRALIA

('000 lb.)

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
GREASY BASIS					
Raw wool—					
Greasy and stipe	1,187,399	1,294,598	1,259,448	1,330,329	1,279,334
Scoured and washed and carbonized	169,021	186,217	182,668	184,237	189,618
Exported on skins	92,308	111,744	115,539	116,065	124,700
Total	1,448,728	1,592,559	1,557,655	1,630,631	1,593,652
Semi-processed wool—					
Tops	36,365	41,620	30,049	40,089	40,435
Yarn	128	89	340	425	420
Grand Total	1,485,221	1,634,268	1,588,044	1,671,145	1,634,507

EXPORTS OF WOOL—GREASY AND CLEAN BASES: AUSTRALIA—*continued*

('000 lb.)

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
CLEAN EQUIVALENT					
Raw wool	827,418	911,389	892,824	935,245	913,239
Semi-processed wool	21,690	24,841	17,890	24,039	24,242
Total	849,108	936,230	910,714	959,284	937,481

(ii) *Total Value of Exports.* The value of wool (other than wool on sheepskins) exported from Australia during 1962-63 was 36 per cent. of the total value of exports of merchandise of Australian origin, while the proportion for the five years ended 1962-63 averaged 38 per cent. The value for the five years ended 1962-63, together with the principal countries to which wool was exported, is shown in the following table.

VALUE OF WOOL EXPORTS: AUSTRALIA^(a)

(£'000)

Country of consignment	1958-59	1959-60	1960-61	1961-62	1962-63
Japan	68,923	95,626	105,918	114,566	111,117
United Kingdom	73,102	75,947	55,559	53,291	57,002
France	34,162	40,040	35,125	32,451	33,269
Italy	28,181	38,556	27,097	38,527	32,630
United States of America	11,270	12,436	10,708	16,866	22,932
Belgium-Luxembourg	15,417	20,733	15,916	20,294	20,470
Germany, Fed. Rep. of	16,479	19,774	18,343	17,457	18,953
U.S.S.R.	99	12,018	7,743	11,449	14,571
Other	54,578	71,002	58,033	67,626	63,392
Total	302,211	386,132	334,442	372,527	379,356

(a) Excludes wool exported on sheepskins.

13. *World Sheep Numbers, Wool Production and Trade.*—(i) *Numbers and Production.* The following table shows particulars of the woolled sheep numbers and total production of wool, in terms of greasy, in the principal wool-producing countries of the world, together with estimates of world production of Merino, crossbred, and carpet type wool for the latest available years.

In 1962-63, Australia produced 29 per cent. of the world total of all types of wool, the share of all British Commonwealth countries combined representing approximately 45 per cent. The principal wool producers, other than Australia, were New Zealand with 11 per cent. of the world total, Argentina, 7 per cent., Republic of South Africa, 6 per cent., and United States of America, 5 per cent. Production in the U.S.S.R., China and eastern European countries together amounted to 20 per cent. World production of wool (all types) in 1962-63 exceeded the pre-war average for the years 1934 to 1938 by approximately 1,862 million lb. or 49 per cent.

Australia's wool clip is predominantly Merino. New Zealand and Argentina produce mainly crossbred wool, while the clip of the U.S.S.R. is largely of the carpet type. World production of Merino wool in 1962-63 was 42 per cent. above the average for the years 1934 to 1938, and the production of crossbred types has risen by about 72 per cent. Carpet wool production has risen by about 31 per cent.

ESTIMATED WORLD WOOLLED SHEEP NUMBERS AND PRODUCTION OF WOOL

(Source: Reports published by Commonwealth Economic Committee, London)

Country	Sheep numbers (million)			Wool production (million lb.—greasy basis)		
	1960-61	1961-62	1962-63 (a)	1960-61	1961-62	1962-63 (a)
British Commonwealth—						
Australia	153	158	159	1,625	1,699	1,673
New Zealand	49	48	50	588	587	620
Other Commonwealth countries	81	83	82	259	269	268
Total	283	289	291	2,472	2,555	2,561
Foreign—						
U.S.S.R., China, eastern						
Europe(b)	235	241	243	1,120	1,144	1,147
Argentina	46	45	45	431	413	408
South Africa, Republic of (c)	34	34	34	317	337	322
United States of America ..	33	31	30	323	320	300
Uruguay	22	22	22	181	185	190
Other foreign countries ..	257	253	247	759	759	763
Total	627	626	621	3,131	3,158	3,130
Grand Total	910	915	912	5,603	5,713	5,691
Type of Wool—						
Apparel type—						
Merino				2,250	2,310	2,289
Crossbred				2,105	2,149	2,166
Carpet type				1,248	1,254	1,236

(a) Provisional. (b) Comprises Albania, Bulgaria, China and Dependencies, Czechoslovakia, East Germany, Hungary, Outer Mongolia, Poland, Romania, Tibet and U.S.S.R. (c) Basutoland and S.W. Africa Territory are excluded from sheep numbers but included in wool production.

(ii) *Principal Importing Countries and Sources of Supply.* The following table, prepared from information published by the Commonwealth Economic Committee, furnishes, in respect of the principal importing countries, details of their production and imports of wool for 1962 together with the chief sources of supply. The quantities imported refer to the actual weight of wool, without distinguishing between greasy and scoured, except in the case of the United States of America, where estimated clean content of raw wool is quoted.

WOOL: PRINCIPAL IMPORTING COUNTRIES AND SOURCES OF SUPPLY, 1962

(Source: Information published by Commonwealth Economic Committee, London)

(Million lb.)

Importing country	Pro-duction of importing country (a)	Quantity imported from— (b)					Total imports
		Australia	New Zealand	Republic of South Africa	Argentina	Other countries	
United Kingdom ..	131	238.1	163.4	39.6	62.6	122.5	626.2
Japan	(c)	393.9	18.8	23.5	23.5	12.2	471.9
France	56	161.8	109.6	57.8	41.0	18.0	388.2
Italy	32	141.8	40.3	36.8	25.6	65.8	310.3
United States of America(d) ..	320	52.1	65.5	30.1	57.4	64.0	269.1
Belgium	(c)	110.7	53.5	10.9	29.7	37.5	242.3
Germany, Federal Republic of ..	(c)	73.7	32.6	37.6	22.8	56.0	222.7

(a) Greasy basis, 1961-62. (b) Actual weight of greasy and scoured wool. (c) Not available. (d) Imports are in terms of estimated clean content of greasy and scoured wool. Actual weight of total United States of America imports was 362.0 million lb.

As a considerable transit trade exists between European countries, it must not be assumed that the whole of the imports recorded by these countries is retained for their own consumption. The countries chiefly concerned with the transit trade are the United Kingdom and Belgium.

§ 6. Pastoral Products: Meat

1. General.—(i) *Australian Meat Board.* The Australian Meat Board, consisting of representatives of producers, processors, exporters and the Commonwealth Government, is responsible for the control of all exports of Australian meat and meat products. Further information on the powers, etc., conferred on the Board under the *Meat Export Control Act 1935–1960* is given on page 801 of Year Book No. 40.

(ii) *United Kingdom Long-term Purchase Agreements.* Details of the long-term meat contracts with the United Kingdom Government from the outbreak of the 1939–45 War up to 30th June, 1952, and of the Fifteen Year Meat Agreement (1952–67) are given on page 710 of Year Book No. 41 and in earlier issues.

The Fifteen Year Meat Agreement (1952–67) between the United Kingdom and Australian Governments has as its objectives the promotion of meat production in Australia, enabling increased exports to be made to the United Kingdom, and the provision of a satisfactory market in the United Kingdom for such meat. It covers beef and veal, and mutton and lamb.

(iii) *Reversion to Private Trading.* Following the announcement in September, 1953, that the United Kingdom Ministry of Food would cease bulk purchasing of meat, arrangements were made between the Australian Meat Board and the Ministry for the reversion to private trading in the United Kingdom. The main features of the arrangements were given in previous issues of the Year Book (*see* No. 47, p. 960).

Details of the minimum prices operating in recent years under private trading agreements, and an outline of the Acts relevant to the administration of the scheme, appear in Year Book No. 48, page 973.

(iv) *Minimum Prices and Deficiency Payments.* From 1st October, 1955, until April, 1958, beef prices in the United Kingdom were consistently below the level of the guarantee and consequently Australia "earned" deficiency payments which enabled the Australian Meat Board to make substantial bounty payments on beef exported to the United Kingdom. The rates of payment made during the 1954–55 and 1955–56 seasons are given on pages 888–9 of Year Book No. 43 and those for 1956–57 on pages 920–1 of Year Book No. 44. No deficiency payments have been received for beef since 1956–57, but a deficiency payment was earned on lamb for the first time during the 1960–61 season, and as a result a bounty was paid at the rate of 2s. per carcass and $\frac{3}{4}$ d. per lb. for piece lamb entered into cold stores for export to the United Kingdom during the period 1st August, 1961, to 28th April, 1962. A further deficiency payment was earned during the 1961–62 season.

During the 1962–63 and 1963–64 lamb export seasons, the Australian Meat Board guaranteed exporters a minimum price of 18d. per lb. f.o.b. on all lambs 36 lb. and under shipped to the United Kingdom during the period September to November; and 16.5d. per lb. for the following three months, December to February. The higher guaranteed price for the initial period was aimed at stimulating early shipments, because normally the most opportune time for selling Australian lamb on the United Kingdom market is early in the export season. Any commitment by the Board is payable from moneys accrued in the Lamb Deficiency Payments Account under the Fifteen Year Meat Agreement.

(v) *United States-Australia Meat Agreement.* In February, 1964, the Governments of Australia and the United States concluded an agreement for the regulation of beef, veal and mutton exports from Australia to the United States with the object of promoting the orderly development of the trade in these classes of meat between the two countries. The agreement seeks to preserve approximately the present pattern of trade in beef and mutton and permits Australia to obtain a reasonable share of the expected market growth. Under the agreement Australia is to limit its exports of beef, veal and mutton to the United States to 242,000 tons in 1964, 251,000 tons in 1965 and 260,000 tons in 1966.

The agreement is subject to review every three years and, as appropriate, the established annual rate of increase will be adjusted to apply to the succeeding three years.

2. **Beef and Veal.**—(i) *Cattle Slaughtered.* The numbers of cattle slaughtered during each of the years ended June, 1959 to 1963, compared with averages for the three-year periods ended June, 1939, 1949 and 1959, are shown in the following table.

CATTLE (INCLUDING CALVES) SLAUGHTERED
(’000)

Period	Slaughterings passed for human consumption									Total slaughterings including boiled down
	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.	
Average for three years ended—										
1938–39 ..	1,169	881	1,178	163	131	49	5	3	3,579	3,628
1948–49 ..	1,094	759	1,119	168	146	42	14	4	3,346	3,378
1958–59 ..	1,745	1,313	1,689	274	216	116	24	11	5,388	5,463
Year—										
1958–59 ..	1,894	1,397	1,883	287	249	128	24	10	5,872	5,960
1959–60 ..	1,499	1,277	1,527	238	243	145	24	9	4,962	5,024
1960–61 ..	1,267	1,010	1,469	174	209	115	28	6	4,278	4,327
1961–62 ..	1,609	1,311	1,584	201	241	136	25	8	5,115	5,167
1962–63 ..	1,809	1,562	1,804	254	308	158	24	12	5,931	5,995

(ii) *Production of Beef and Veal.* Details of the production of beef and veal during each of the years ended June, 1959 to 1963, compared with averages for the three-year periods ended June, 1939, 1949 and 1959, are shown in the following table.

PRODUCTION OF BEEF AND VEAL (CARCASS WEIGHT)
(’000 tons)

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Average for three years ended—									
1938–39..	181	123	199	26	28	10	1	1	569
1948–49..	160	106	206	27	30	9	3	1	542
1958–59..	248	176	305	41	41	19	5	2	837
Year—									
1958–59..	275	189	328	42	45	20	5	2	906
1959–60..	217	159	267	33	46	23	5	2	752
1960–61..	168	125	247	27	42	17	6	1	633
1961–62..	234	176	278	30	47	20	4	2	791
1962–63..	263	214	314	36	56	24	5	2	914

(iii) *Consumption of Beef and Veal.* The highest post-war consumption of beef and veal was 132.7 lb. per head in 1956–57. With the buoyant oversea market for beef and the high prices ruling in Australia during the following four years, consumption per head fell substantially, and in 1960–61 amounted to only 88.3 lb. In 1962–63 there was a considerable rise in consumption per head to 104.3 lb., consisting of 100.5 lb. carcass weight and 3.8 lb. (carcass equivalent) of canned meat. There has been a marked substitution of mutton and lamb for beef in Australia since 1956–57.

The figures quoted in the preceding paragraph include the consumption of canned beef and veal, and differ on that account from the figures shown in the last column of the next table.

In the following table, details of the production and disposal of beef and veal are shown for the years 1958-59 to 1962-63, compared with the averages for the three years ended 1938-39, 1948-49 and 1958-59.

**PRODUCTION AND DISPOSAL OF BEEF AND VEAL (CARCASS WEIGHT):
AUSTRALIA**

Period	Net change in stocks	Production	Exports (a)	For canning	Apparent consumption in Australia	
					Total	Per head per annum
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	lb.
Average for three years ended—						
1938-39	n.a.	569	121	18	430	140.3
1948-49	+ 1	542	101	67	373	109.1
1958-59	+ 5	837	209	85	538	123.8
Year—						
1958-59	+ 8	906	296	80	522	117.6
1959-60	- 11	752	262	55	446	98.4
1960-61	+ 4	633	190	43	396	85.4
1961-62	+ 6	791	299	45	441	93.1
1962-63	(b)	914	385	44	485	100.5

(a) Includes carcass equivalent of boneless beef exported and all fresh and frozen meat shipped as ships' stores. (b) Less than 500 tons.

(iv) *Exports of Beef and Veal.* In 1962-63, chilled beef exports were 2,543,000 lb. valued at £247,000, while frozen beef exports amounted to 573,961,000 lb. valued at £77,981,000.

While beef and veal were previously shipped largely in carcass form, there has been in recent years a substantial increase in the amount of boneless beef exported. From 1958-59 to 1962-63, the quantity of boneless beef shipped exceeded that exported in carcass form. The trade in boneless beef has been developed principally with the United States of America.

Since 1958-59, the United States has surpassed the United Kingdom as the principal market for Australian beef exports, the United Kingdom now occupying second place. The total value of beef and veal shipped to these two countries during 1962-63 was £67,032,000 and £5,623,000 respectively.

The quantity and value of Australian frozen beef and veal exported from Australia in each year 1958-59 to 1962-63 are shown in the following table. Figures in this table represent actual weight shipped, not carcass equivalent.

EXPORTS OF FROZEN AND CHILLED BEEF AND VEAL: AUSTRALIA

Year	Exports of frozen and chilled beef		Exports of frozen veal	
	Quantity	Value	Quantity	Value
	'000 lb.	£A.'000 f.o.b.	'000 lb.	£A.'000 f.o.b.
1958-59	499,371	54,154	10,869	1,331
1959-60	414,749	54,568	6,827	897
1960-61	295,686	39,447	4,506	663
1961-62	444,762	58,086	5,834	754
1962-63	576,504	78,228	7,624	1,037

3. *Mutton and Lamb.*—(i) *Sheep Slaughtered.* The following table shows the numbers of sheep slaughtered in the several States during each of the years ended June, 1959 to 1963, compared with averages for the three-year periods ended June, 1939, 1949 and 1959.

SHEEP (INCLUDING LAMBS) SLAUGHTERED

('000)

Period	Slaughterings passed for human consumption									Total slaughterings including boiled down
	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.	
Average for three years ended—										
1938-39 ..	6,520	7,891	1,088	1,762	1,216	364	..	25	18,866	18,925
1948-49 ..	6,367	6,413	1,066	1,863	1,458	396	3	47	17,613	17,650
1958-59 ..	7,857	9,058	1,429	2,917	2,059	775	3	71	24,169	24,278
Year—										
1958-59 ..	8,861	10,514	1,633	3,145	2,415	909	4	71	27,552	27,646
1959-60 ..	10,753	12,511	2,113	3,899	2,650	1,166	5	76	33,173	33,373
1960-61 ..	11,718	11,363	2,924	2,784	2,658	1,076	4	77	32,604	32,697
1961-62 ..	11,526	12,467	2,417	3,140	2,489	1,160	3	86	33,288	33,373
1962-63 ..	11,719	12,830	2,125	3,466	2,467	1,095	3	108	33,813	33,910

(ii) *Production of Mutton and Lamb.* Details of the production of mutton and lamb in each State and Territory in the years 1958-59 to 1962-63, compared with averages for the three-year periods ended June, 1939, 1949 and 1959, are shown in the following table.

PRODUCTION OF MUTTON AND LAMB

(Tons)

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
Average for three years ended—									
1938-39 ..	103,884	136,927	20,121	30,574	20,928	6,129	2	413	318,978
1948-49 ..	109,084	111,677	18,587	34,772	23,846	7,214	64	839	306,083
1958-59 ..	135,256	164,580	25,845	50,415	35,373	14,077	77	1,240	426,863
Year—									
1958-59 ..	156,020	193,379	29,286	55,001	40,875	16,403	93	1,269	492,326
1959-60 ..	184,600	223,519	35,886	62,760	44,385	20,780	111	1,292	573,333
1960-61 ..	196,417	210,245	48,529	52,242	46,560	18,925	98	1,292	574,308
1961-62 ..	196,844	229,722	40,339	55,390	42,697	20,229	65	1,427	586,713
1962-63 ..	198,873	237,645	35,483	58,919	41,236	19,386	68	1,849	593,459

(iii) *Consumption of Mutton and Lamb.* In 1959-60, consumption of mutton and lamb, at 105 lb. per head of population, exceeded that of beef and veal for the first time on record. A small decline followed in 1960-61, when the amount of mutton and lamb consumed per head was estimated as 103 lb. There was a further decline in 1962-63 when the estimated consumption per head was 95 lb. This figure is about nine lb. per head less than the consumption per head of beef and veal in 1962-63. Figures quoted in this paragraph include the consumption of canned mutton, and differ on that account from the figures in the last column of the table following.

The following table gives details of the production and disposal of mutton and lamb for the years 1958-59 to 1962-63, compared with the averages for the three years ended 1938-39, 1948-49 and 1958-59.

**PRODUCTION AND DISPOSAL OF MUTTON AND LAMB (CARCASS WEIGHT):
AUSTRALIA**

Period	Net change in stocks (^{'000} tons)	Pro-duction (^{'000} tons)	Exports (^{'000} tons)	For canning (^{'000} tons)	Apparent consumption in Australia	
					Total (^{'000} tons)	Per head per annum (lb.)

MUTTON

Average for three years ended—										
1938-39	..	..	..	..	201	17	..	184	60.0	
1948-49	..	..	..	..	177	15	8	154	45.1	
1958-59	..	..	..	..	268	27	19	222	51.0	
Year—										
1958-59	..	..	..	..	-3	310	49	19	245	55.1
1959-60	..	..	..	..	..	370	47	33	290	63.8
1960-61	..	..	..	..	+1	368	60	14	293	63.2
1961-62	..	..	..	..	+1	368	83	23	261	55.3
1962-63	..	..	..	..	-2	363	107	9	249	51.5

LAMB

Average for three years ended—										
1938-39	..	..	..	..	118	72	..	46	15.0	
1948-49	..	..	..	..	-1	130	45	..	86	25.2
1958-59	..	..	..	..	..	159	31	..	128	29.3
Year—										
1958-59	..	..	..	..	-1	182	41	..	142	31.9
1959-60	..	..	..	..	..	203	26	..	177	39.0
1960-61	..	..	..	..	+1	207	29	..	177	38.2
1961-62	..	..	..	..	-1	219	17	..	203	43.0
1962-63	..	..	..	..	+1	231	27	..	203	42.1

(a) Includes carcass equivalent of boneless mutton exported.

(iv) *Exports of Frozen Mutton and Lamb.* The quantities and values of exports of Australian frozen mutton and lamb in each year from 1958-59 to 1962-63 are shown in the following table.

EXPORTS OF FROZEN MUTTON AND LAMB: AUSTRALIA

Year	Exports of frozen mutton		Exports of frozen lamb		Exports of frozen mutton and lamb	
	Quantity	Value	Quantity	Value	Quantity	Value
	^{'000} lb.	£A. ^{'000} f.o.b.	^{'000} lb.	£A. ^{'000} f.o.b.	^{'000} lb.	£A. ^{'000} f.o.b.
1958-59	74,650	5,851	91,192	8,151	165,842	14,002
1959-60	71,763	4,719	59,264	4,389	131,027	9,108
1960-61	83,075	7,437	64,430	5,790	147,505	13,227
1961-62	109,113	8,156	37,399	2,624	146,512	10,780
1962-63	136,741	11,652	56,615	5,181	193,356	16,833

The principal customer for Australian frozen mutton and lamb was formerly the United Kingdom, although the United States of America has become a major buyer of mutton in recent years. In 1962-63, exports of mutton and lamb to the United Kingdom represented 11 per cent. and 66 per cent., respectively, of the total quantities exported. Fifty-two per cent. of the mutton exported went to the United States of America, largely in the form of boneless meat, and the proportion of lamb exported to that country was 15 per cent.

4. Consumption of Meat and Meat Products.—The apparent consumption of meat (including cured and canned meat) and edible offal per head of population in Australia is shown in the table below for the years 1958-59 to 1962-63 in comparison with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59.

MEAT (INCLUDING CURED AND CANNED) AND EDIBLE OFFAL AVAILABLE FOR CONSUMPTION: AUSTRALIA

(lb. per head per year)

Period	Beef and veal (a)	Mutton (a)	Lamb (a)	Pork (a)	Offal	Canned meat (b)	Bacon and ham (c)	Carcass equivalent of meat and meat products (d)
Average for three years ended—								
1938-39 ..	140.3	60.0	15.0	8.5	8.4	2.1	10.2	250.9
1948-49 ..	109.1	45.1	25.2	7.1	8.9	2.6	11.7	215.7
1958-59 ..	123.8	51.0	29.3	10.1	11.4	4.1	7.1	242.4
Year—								
1958-59 ..	117.6	55.1	31.9	10.6	12.1	4.7	7.2	245.0
1959-60 ..	98.4	63.8	39.0	10.3	11.6	4.1	7.1	238.6
1960-61 ..	85.4	63.2	38.2	11.4	10.9	4.2	6.8	224.2
1961-62 ..	93.1	55.3	43.0	13.6	11.2	3.8	6.9	231.5
1962-63 ..	100.5	51.5	42.1	11.8	12.0	3.9	7.3	234.0

(a) Carcass weight.
offal.

(b) Canned weight.

(c) Cured carcass weight.

(d) Includes

§ 7. Other Pastoral Products

1. Tallow.—(i) *Marketing*. Reference is made in Year Book, No. 47, page 976, to the now inoperative contracts relating to the sale of tallow to the United Kingdom.

(ii) *Consumption in Factories*. Details of consumption are collected from the principal factories using tallow. Consumption of inedible tallow in these factories (soap and candle, chemical and woolscouring works) for the five years 1958-59 to 1962-63 was as follows:—1958-59, 1,216,668 cwt.; 1959-60, 1,278,546 cwt.; 1960-61, 1,196,137 cwt.; 1961-62, 1,007,627 cwt.; 1962-63, 874,128 cwt. These figures are, however, deficient to the extent that no allowance has been made for small unrecorded amounts used in other types of establishments. Details of edible tallow consumed in factories are not available.

(iii) *Exports*. Particulars of exports of edible and inedible tallow of Australian produce are shown in the following table for the five years 1958-59 to 1962-63.

TALLOW: EXPORTS, AUSTRALIA

(cwt.)

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
Edible	73,056	118,848	50,436	130,015	120,944
Inedible	1,022,844	1,533,734	1,079,191	1,853,161	2,229,230
Total	1,095,900	1,652,582	1,129,627	1,983,176	2,350,174

2. **Oversea Trade in Hides and Skins.**—(i) *Values.* The value of cattle and horse hides, sheep and other skins, and skin pieces, sent overseas during 1962-63 amounted to £36,710,000, compared with a total of £32,044,000 in 1961-62 and £27,077,000 in 1960-61.

(ii) *Sheepskins with Wool.* Of the total exports of sheepskins with wool during 1962-63, amounting to 183,045,000 lb. valued at £27,742,000, 113,595,000 lb. valued at £16,987,000 (61 per cent. of total value) were shipped to France, 25,081,000 lb. valued at £4,361,000 (16 per cent.) to Italy, and 13,148,000 lb. valued at £1,783,000 (6 per cent.) to the United Kingdom. In the previous year, France received about 66 per cent. (by value) of all sheepskins with wool exported, Italy 15 per cent. and the United Kingdom 7 per cent. The exports of sheepskins with wool during each of the years 1958-59 to 1962-63 were as follows.

EXPORTS OF SHEEPSKINS WITH WOOL: AUSTRALIA

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
Number '000	20,180	25,560	25,883	26,237	26,796
Value £'000	14,768	23,238	21,429	24,208	27,742

(iii) *Sheepskins without Wool.* Up to 1943-44, sheepskins without wool were exported chiefly to the United States of America which, during 1943-44, accounted for 97 per cent. of the total shipments. In subsequent years, however, this proportion has declined markedly. In 1962-63, skins to the value of £87,684 (32 per cent.) were shipped to Spain; £65,975 (24 per cent.) to France; £46,215 (17 per cent.) to the United States of America; £31,876 (12 per cent.) to United Kingdom; and £10,614 (4 per cent.) to Italy. In 1962-63, a total of 1,341,000 sheepskins without wool were exported, valued at £274,000. Since 1954-55, the number exported has exceeded two million once only (in 1958-59), and the value has averaged about £350,000.

(iv) *Hides.* The export trade in cattle hides and calfskins during 1962-63 was distributed amongst the main importing countries as follows:—Japan, £4,518,000; Netherlands, £339,000; Italy, £232,000; Germany (Federal Republic), £226,000; and United Kingdom, £103,000. The total quantity exported was 91,071,000 lb., valued at £6,103,000.

(v) *Furred Skins.* The exports of furred skins in 1962-63 were valued at £1,345,000, of which rabbit and hare skins constituted £819,000. This is considerably less than the highest total value of £2,013,000, recorded in 1955-56, when rabbit and hare skins accounted for £1,711,000. In 1961-62, they accounted for £900,000 out of a total of £1,342,000.

Skins were shipped principally to the United States of America, the United Kingdom, Italy, Belgium and Luxembourg, the values shipped to each in 1962-63 being:—United States of America, £1,077,000; United Kingdom, £92,800; Italy, £73,400; and Belgium-Luxembourg, £11,300.

Imports of cattle hides and calfskins are fairly substantial, the chief sources of supply being New Zealand and the Pacific Islands. The quantity of cattle hides, including calfskins, imported into Australia during the year 1962-63 amounted to 5,883,000 lb. valued at £548,000.

OTHER RURAL INDUSTRIES: DAIRYING, POULTRY AND BEE-FARMING

§ 1. The Dairying Industry

1. **Introduction.**—(i) *General.* The introduction of cattle into Australia and the early history of the dairying industry are treated in some detail in earlier issues of this Year Book.

Australian dairy cattle have shown steady improvement in quality, as demonstrated by yield, over the years. This is attributable to improved breeding, associated with herd recording and better feeding, resulting from the use of improved pastures. Better farming methods, arising from the development of modern farm machinery and the application of the results of research, have also played a part in the increased yields.

The Australian dairying industry is conducted under conditions ranging from tropical to temperate and Mediterranean type climates, and nowhere is it necessary to house cattle in the winter months. Most Australian dairy cattle are fed only on pasture and pasture products, and this accounts for average yields being somewhat lower than in those countries where stock are fed heavily on concentrated feed.

In general, dairy farming is confined to the coastal and near coastal regions where rainfall and topography are favourable. These conditions are found in parts of the eastern, southern and south-western coasts. Inland districts include the lower north-east of Victoria, the south-western slopes of New South Wales, the fertile Darling Downs in Queensland, and the irrigated districts of the Riverina in New South Wales and northern Victoria.

The manufacturing and processing sections of the industry are highly organized and are well advanced technologically. Certain techniques and equipment, developed in Australia, are being adopted overseas.

(ii) *Official Supervision.* Dairy experts of the various State agricultural departments give instruction in approved methods of production, and inspect animals, buildings and marketable produce, with the result that a high standard of cleanliness and technology prevails in the industry.

The export trade is regulated by the terms of the Commonwealth *Customs Act* 1901–1954 and the Commonwealth *Commerce (Trade Descriptions) Act* 1905–1950, and regulations thereunder. This legislation requires that the true trade description, etc., be marked on all produce intended for export, while official inspection ensures the maintenance of purity and quality. Upon request of the exporter, the goods are given a certificate by the inspector.

(iii) *Marketing of Dairy Products.* (a) *Dairy Produce Export Control Act* 1924–1962. Details of this Act, and of the Australian Dairy Produce Board constituted under it, were given in earlier issues of the Year Book (see No. 48, pp. 999–1000).

(b) *Dairy Produce Export Charges Act*, 1962. This Act provides for the imposition of a levy on all butter, cheese and other specified dairy produce exported from Australia to cover the administrative expenses of the Australian Dairy Produce Board and for advertising and other purposes. The rate of the levy is fixed by the Act.

(iv) *Equalization Schemes.* (a) *Butter and Cheese.* Reference is made to these schemes in Year Book No. 48, pp. 998–9.

Para. 2 (ix) on page 1085 gives particulars of the returns realized on local and oversea sales and of the average equalization rate for the years ended June, 1959 to 1963. Details are also given in para. 2 (vii) of the wholesale prices of butter and cheese for home consumption as determined by the Commonwealth Dairy Produce Equalization Committee Ltd.

(b) *Casein.* An equalization scheme for casein similar to that for butter and cheese has been operated since 1952 by the Commonwealth Dairy Produce Equalization Committee Ltd. Average realizations per cwt. under the scheme were 171s. 7.9d. in 1958-59, 175s. 7.5d. in 1959-60, 174s. 10.9d. in 1960-61 and 163s. 3.4d. in 1961-62. The interim equalization value for 1962-63 has been fixed at 159s. and for 1963-64 at 156s. per cwt.

(v) *Commonwealth Subsidies and Stabilization Plans.* (a) *Butter, Cheese and Processed Milk Products.* Under the provisions of the various Dairy Industry Assistance Acts, the first of which was passed in 1942, the Commonwealth Government has provided subsidies on milk supplied for the manufacture of butter and cheese. Subsidies were paid on a seasonal basis prior to 1st April, 1946, but from that date have been on a flat rate basis. Subsidies are distributed by the Commonwealth Dairy Produce Equalization Committee Ltd. through factories to milk producers by payments on butter and cheese manufactured. Subsidy on milk supplied for the manufacture of processed milk products was also payable from 1942 until 30th June, 1948, and again from 1st July, 1949, to 30th June, 1952. The Commonwealth Government provided, under the *Processed Milk Products Bounty Act* 1962, for the payment of a maximum amount of £350,000 as a bounty on exports of processed milk products in 1962-63. The bounty was continued for the year ended 30th June, 1964, the maximum amount being increased to £500,000.

Details of the three five-year stabilization plans which operated up to 30th June, 1962, will be found in Year Book No. 49, page 1084.

Under the five-year stabilization plan which came into operation on 1st July, 1962, a fixed bounty of £13,500,000 has been provided for each year of the plan. The bounty is payable on butter, cheese and butterfat products containing 40 per cent. or more of butterfat. Bounty is payable on the production of these commodities provided they are taken into equalization.

The Commonwealth Government extended for the full period of the plan the provision whereby it underwrites the final minimum equalized return to butter and cheese factories each year. The actual level at which returns are to be underwritten is to be decided prior to the commencement of each year of the plan. Returns to producers have been underwritten at 40d. per lb. on commercial butter each year since the inception of the underwriting arrangement in 1958. The principal value underlying this guarantee is that it enables the Commonwealth Dairy Produce Equalization Committee Ltd. to make a higher initial payment to factories than would otherwise be possible without risk of overpayment.

Under the current plan the Dairy Industry Investigation Committee has been disbanded. This Committee was responsible, during the last five-year plan, for the determination of the cost of efficient production of butterfat. However, this determination is not required for the current plan.

The Australian Dairy Industry Council assumes responsibility for determining domestic wholesale prices of butter and cheese. Under the previous plan it was the responsibility of the Minister for Primary Industry to determine local prices, after consultation with the Council.

Amounts realized on exports of butter and cheese in excess of the f.o.b. equivalent of the guaranteed return have been credited to the Dairying Industry Stabilization Fund, which was established in July, 1948, for the purpose of stabilizing returns from exports. During 1951-52, the Stabilization Fund met the deficiency in respect of all exports which did not return sufficient to meet the basic return to the factory. From 1st July, 1952, to 30th June, 1957, it was available to the industry to be used, in whatever manner it considered desirable, to make good any deficiency in respect of all exports other than the 20 per cent. provided for under the Commonwealth Government's Five-year Stabilization Plan.

The Act was amended in 1957 to enable the Board to use the fund for such other purposes as are approved by the Minister for Primary Industry. After allowing for outstanding debits, the amount standing to the credit of the Dairying Industry Stabilization Fund at 30th June, 1963, totalled approximately £1,800,000.

(b) *Whole Milk.* In addition to the subsidies referred to above, the Commonwealth Government subsidized the production of whole milk consumed directly from 1943-44 to 1948-49. Details of the amounts distributed during each year will be found in Year Book No. 38, page 1031.

(vi) *Extension, Research and Promotion.* (a) *Dairy Industry Extension Grant.* An annual grant of £250,000, to be expended by State Governments for the purpose of promoting improved farming practices in the dairying industry, was first made by the Commonwealth Government for the five years from 1st July, 1948. This assistance was continued for further periods of five years from 1st July, 1953, and from 1st July, 1958, at the same rate. For the five years from 1st July, 1963, the amount of the annual grant has been increased to £350,000.

(b) *Dairy Industry Research and Sales Promotion.* At the request of the Australian Dairy Industry Council, legislation was enacted in 1958 to provide for a sales promotion campaign for butter and cheese in Australia and also for research into industry problems. The legislation provides for a statutory levy (the Dairy Produce Levy) to be imposed on all butter and cheese manufactured in Australia. The maximum rates of levy are $\frac{3}{8}$ d. per lb. on butter and $\frac{3}{8}$ d. per lb. on cheese, but the initial rates which commenced in November, 1958, were $\frac{1}{4}$ d. per lb. on butter and $\frac{1}{8}$ d. per lb. on cheese. Until November, 1959, the proceeds from the levy were divided equally between research and sales promotion, but after that date one-third was allocated to research and two-thirds to sales promotion. The rates of levy operative from November, 1959, were increased to the maximum provided under the Act, the increase being utilized solely for the purposes of intensifying the sales promotion campaign.

The Commonwealth Government agreed to contribute one half of the costs incurred on approved projects included in the programme of research, with a maximum contribution of £1 for £1 against funds raised by way of levy and allocated to research. The sales promotion programme is financed solely by the levy. The following table lists the amounts of levies collected, and the amounts allocated to research and sales promotion, during the four years 1959-60 to 1962-63.

DAIRY PRODUCE LEVY: AMOUNTS COLLECTED AND ALLOCATED
(£)

Particulars	1959-60	1960-61	1961-62	1962-63
Allocated to—				
Research(a)	126,519	116,591	130,000	131,750
Sales promotion	206,918	233,181	260,000	263,500
Total Collected(a) ..	333,437	349,772	390,000	395,250

(a) Excludes amounts contributed by the Commonwealth Government.

The scheme is administered by the Australian Dairy Produce Board, which, in respect of research, is advised by a statutory committee, the Dairy Produce Research Committee.

2. **Dairy Cattle and Dairy Products.**—(i) *Dairy Herds.* Lack of uniformity in the forms used by the various States in the collection of livestock statistics makes it impossible to measure with complete accuracy the growth of dairy herds prior to 1943. Statistics of dairy cows—which form the largest part of herds—are, however, available on a comparable basis for a much longer period of years. The number of dairy cows in Australia at 31st March, 1963, was 3,263,000, compared with 3,230,000 in the previous year. A record level of 3,451,000 was attained in 1957.

There is a preponderance of dairy cattle in Victoria and Tasmania, while in New South Wales and South Australia the proportion of dairy to all cattle is high. In Queensland, the Northern Territory, and Western Australia, other cattle predominate, the main use of cattle in these areas being for the production of beef. The numbers of dairy cattle in Australia are shown in the following tables.

NUMBER OF DAIRY CATTLE: AUSTRALIA

At 31st March	Dairy cows (in milk and dry)	Dairy heifers 1 year and over	Dairy calves under 1 year	Dairy bulls	Total dairy cattle
Average for three years ended—					
1939	3,210,324	n.a.	n.a.	n.a.	n.a.
1949	3,133,266	827,609	712,688	107,708	4,781,271
1959	3,365,390	839,048	670,956	110,656	4,986,050
Year—					
1959	3,283,147	830,116	628,710	104,317	4,846,290
1960	3,243,472	781,862	752,107	99,925	4,877,366
1961	3,162,449	857,642	776,829	103,852	4,900,772
1962	3,229,587	875,103	836,882	104,543	5,046,115
1963	3,263,289	897,197	813,001	102,717	5,076,204

The following table shows the total dairy cattle in each State and Territory for the same periods as in the previous table, with the exception of the three years ended 31st March, 1939, for which details are not available.

NUMBER OF DAIRY CATTLE: STATES

At 31st March	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T. (a)	A.C.T.	Aust.
Average for three years ended—									
1949	1,289,846	1,467,100	1,379,172	272,073	226,340	143,809	n.a.	2,931	4,781,271
1959	1,307,834	1,699,301	1,295,141	257,569	221,694	201,383	n.a.	3,128	4,986,050
Year—									
1959	1,281,726	1,653,493	1,240,779	248,425	215,369	203,482	n.a.	3,016	4,846,290
1960	1,278,051	1,678,359	1,255,009	239,603	216,508	206,770	n.a.	3,066	4,877,366
1961	1,280,823	1,716,840	1,213,391	247,556	224,273	214,382	n.a.	3,507	4,900,772
1962	1,271,797	1,823,835	1,208,177	274,418	235,631	228,637	n.a.	3,620	5,046,115
1963	1,262,262	1,858,215	1,193,230	280,405	240,338	238,084	378	3,292	5,076,204

(a) At 30th September of preceding year.

A map showing the distribution of dairy cattle in Australia at 31st March, 1963, appears facing p. 1082. Maps showing distribution at 31st March, 1955 and 1948, appear on page 910 of Year Book No. 43 and page 906 of Year Book No. 39, respectively.

(ii) *Growth of the Dairying Industry.* The following table gives an indication of the growth of some features of the dairying industry since 1916-17.

DAIRYING INDUSTRY: AUSTRALIA

Period	Number of dairy cows(a)			Production of—			Milking machines (no. of units)(a)(b)
	In milk	Dry	Total	Whole milk for all purposes	Butter (factory and farm)	Cheese (factory and farm)	
Average for three years ended—				million gallons	tons	tons	
1918-19..	1,281,820	569,611	1,851,431	565.1	84,043	11,403	n.a.
1928-29..	1,689,887	626,180	2,316,067	791.2	122,750	13,159	n.a.
1938-39..	2,552,092	658,232	3,210,324	1,142.0	190,827	24,848	n.a.
1948-49..	2,278,043	855,223	3,133,266	1,153.2	157,064	42,343	135,137
1958-59..	2,333,147	1,032,243	3,365,390	1,330.9	187,393	41,567	213,555
Year—							
1958-59..	2,363,569	919,578	3,283,147	1,370.2	193,568	43,509	216,287
1959-60..		3,243,472		1,406.5	197,552	44,854	221,260
1960-61..		3,162,449		1,339.3	181,654	46,924	223,814
1961-62..		3,229,587		1,443.6	198,621	55,306	228,228
1962-63..		3,263,289		1,471.0	c 202,420	(c) 58,022	229,270

(a) Particulars are at 31st March of second year shown. (b) "Number of units" indicates the number of cows that can be milked simultaneously—i.e. the cow capacity of installed milking machines. (c) Subject to revision.

(iii) *Size of Dairy Herds.* Information on the size of dairy herds is published in a series of bulletins *Classification of Rural Holdings by Size and Type of Activity*, 1959-60.

(iv) *Production of Milk.* (a) *Production per Cow.* The quantity of milk produced by a dairy cow can be as high as 1,000 gallons a year, and varies greatly with breed, locality and season. For all dairy cows and for all seasons for the whole of Australia prior to 1916, production averaged considerably less than 300 gallons per annum. Largely owing to an improvement in the quality of the cattle, and the increased application of scientific methods, the 300-gallon average was exceeded in each year since 1924. In the last five years, an average of 433 gallons per cow per annum has been obtained. In 1962-63, the average yield was 453 gallons. The annual average yields per cow shown in the following table are obtained by dividing the total production of whole milk for the year ended June by the mean of the number of dairy cows (in milk and dry) at 31st March of that year and of the preceding year. They are, in effect, based on the approximate number of dairy cows which were in milk during any part of the year. The average shown is, therefore, less than that for cows which were yielding during the greater part of the year, but it may be accepted as sufficiently reliable to show the general trend.

AVERAGE MILK PRODUCTION PER DAIRY COW
(Gallons)

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.(a)
Average for three years ended—								
1938-39	315	439	298	442	353	349	349	354
1948-49	310	506	267	565	370	419	328	371
1958-59	322	522	267	513	406	537	420	393
Year—								
1958-59	352	523	302	509	395	524	453	412
1959-60	382	544	301	518	452	554	447	431
1960-61	355	548	263	574	468	505	447	418
1961-62	387	571	306	614	462	562	471	452
1962-63	364	589	312	586	442	570	479	453

(a) Excludes Northern Territory, for which particulars are not available.

(b) *Total Production of Whole Milk.* In the following table, particulars of the production of whole milk in the various States are shown for the years 1958-59 to 1962-63 compared with the averages for the three years ended 1938-39, 1948-49 and 1958-59. Victoria is the principal milk-producing State, and in 1962-63 the output from that State, 670.8 million gallons, represented 46 per cent. of total production. Output from New South Wales in 1962-63 was 324.1 million gallons (22 per cent. of the total) and that of Queensland 245.1 million gallons (17 per cent.). Production in the remaining States accounted for 15 per cent.

TOTAL PRODUCTION OF WHOLE MILK
(*000 Gallons)

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.(a)
Average for three years ended—								
1938-39	319,003	403,152	275,898	68,429	42,358	32,803	363	1,142,006
1948-49	280,460	445,517	252,469	92,587	49,004	32,638	573	1,153,248
1958-59	307,514	578,529	240,446	84,185	54,218	65,032	929	1,330,853
Year—								
1958-59	327,679	582,948	258,174	82,071	52,167	66,178	980	1,370,197
1959-60	348,389	598,323	252,562	78,483	57,549	70,226	969	1,406,501
1960-61	319,410	596,706	212,749	87,030	58,544	63,858	1,005	1,339,302
1961-62	344,724	630,948	239,823	95,504	58,240	73,206	1,117	1,443,562
1962-63	324,113	670,788	245,067	95,378	56,029	78,518	1,090	1,470,983

(a) Excludes Northern Territory, for which particulars are not available.

(v) *Utilization of Whole Milk.* The utilization of whole milk and the production of butter and cheese in 1962-63 is given in the table below.

UTILIZATION OF WHOLE MILK, PRODUCTION OF BUTTER AND CHEESE, 1962-63

Particulars	N.S.W.	Victoria	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Australia (a)
MILK (*000 GALLONS)								
Used for—								
Butter	b 176,222	c 471,600	d 162,282	31,782	32,053	61,322	6	935,267
Cheese	10,541	58,229	23,565	33,492	3,175	1,501	..	130,503
Preserved milk products ..	14,693	53,050	10,619	..	756	4,049	..	83,167
Other purposes	122,637	87,909	48,601	30,104	20,045	11,646	1,084	322,046
Total ..	324,113	670,788	245,067	95,378	56,029	78,518	1,090	1,470,983
BUTTER (TONS)								
In factories(e) ..	f 36,006	g 101,429	(g) 36,456	7,319	6,965	13,097	..	201,272
On dairy and other farms ..	344	429	151	95	32	96	1	1,148
Total(e) ..	36,350	101,858	36,607	7,414	6,997	13,193	1	202,420
CHEESE (TONS)								
In factories(e) ..	5,304	25,264	10,200	15,028	1,467	643	..	57,906
On dairy and other farms ..	..	87	..	..	2	27	..	116
Total(e) ..	5,304	25,351	10,200	15,028	1,469	670	..	58,022

(a) Excludes Northern Territory, for which particulars are not available. (b) Includes 7,107,000 gallons of milk, the produce of New South Wales, sent as cream to factories in Victoria and Queensland. (c) Includes 187,000 gallons of milk, the produce of Victoria, sent as cream to New South Wales. (d) Includes 180,000 gallons of milk, the produce of Queensland, sent as cream to New South Wales. (e) Subject to revision. (f) Includes butter made from cream, the produce of Victoria and Queensland. (g) Includes butter made from cream, the produce of New South Wales.

There has been a gradual decline over the years in the proportion of milk used for butter-making. In 1962-63, 63 per cent. of the total milk supply was used for butter, 9 per cent. for cheese, 6 per cent. for preserved milk products and 22 per cent. for other purposes.

Details of the production of whole milk for various purposes are shown in the following table for each of the years 1958-59 to 1962-63 compared with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59.

PRODUCTION AND UTILIZATION OF WHOLE MILK: AUSTRALIA

('000 Gallons)

Period	Total production	Quantity used for—			
		Butter (factory and farm)	Cheese (factory and farm)	Preserved milk products	Other purposes (a)
Average for three years ended—					
1938-39	1,142,006	891,742	54,934	33,226	162,104
1948-49	1,153,248	738,377	91,642	78,739	244,490
1958-59	1,330,853	865,347	90,561	79,687	295,258
Year—					
1958-59	1,370,197	893,626	94,900	81,074	300,597
1959-60	1,406,501	912,271	100,856	82,636	310,738
1960-61	1,339,302	839,596	104,470	76,619	318,617
1961-62	1,443,562	919,301	122,340	78,028	323,893
1962-63	1,470,983	935,267	130,503	83,167	322,046

(a) Principally fluid milk for domestic purposes.

(vi) *Production of Butter, Cheese and Preserved Milk Products. (a) General.* The establishment of large central butter factories, either on a co-operative or independent basis, has resulted in a considerable reduction in the cost of manufacture. The product is also of a more uniform quality, and whereas formerly the average quantity of milk used per pound of hand-made butter was about three gallons, factory butter requires only about two gallons. In addition, subsidy payments by the Commonwealth Government are made only on factory-produced butter. As a result, the production of farm-made butter has declined substantially, and in 1962-63 represented only about 0.6 per cent. of all butter made. A similar position exists in the cheese-making industry where a negligible amount is now made on farms.

In 1962-63, factories in Australia engaged in the processing of milk into butter or cheese or the various preserved milk products numbered 348 and were distributed among the States as follows:—New South Wales, 72; Victoria, 126; Queensland, 70; South Australia, 41; Western Australia, 18; and Tasmania, 21. More details regarding numbers of factories, output, etc., are given in Chapter VI. Manufacturing Industry (*see* p. 201).

(b) *Production of Butter.* Production in 1962-63 at 202,420 tons was 3,799 tons (1.9 per cent.) more than the amount produced in 1961-62, but 6,491 tons (3.1 per cent.) less than the record post-war production of 1955-56. The foregoing figures include butter produced on farms, which has shown a steady decline from about 4,000 tons in the early 1950's to 1,148 tons in 1962-63.

The following table shows production of butter in factories and on farms in each State for the years 1958-59 to 1962-63 compared with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59.

BUTTER PRODUCTION IN FACTORIES AND ON FARMS
(Tons)

Period	Factory production							Factory and farm production, Aust.(a)
	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	Aust.	
Average for three years ended—								
1938-39	49,665	61,566	52,637	7,977	5,803	3,934	181,582	190,827
1948-49	31,394	58,715	42,243	9,028	6,632	4,484	152,496	157,064
1958-59	33,832	87,659	38,131	7,509	6,812	10,618	184,561	187,393
Year—								
1958-59	37,733	88,143	41,022	7,054	6,166	10,805	190,923	193,568
1959-60	41,373	89,388	38,932	6,194	7,376	11,744	195,007	197,552
1960-61	33,996	89,356	31,081	6,858	7,661	10,256	179,208	181,653
1961-62	38,994	95,649	35,643	7,424	7,483	12,063	197,256	198,621
1962-63(b)	36,006	101,429	36,456	7,319	6,965	13,097	201,272	202,420

(a) Includes small quantities produced in the A.C.T. There is no recorded production in the Northern Territory. (b) Subject to revision.

(c) *Production of Cheese.* In 1962-63, production reached a record figure of 58,022 tons which was 2,495 tons (4.5 per cent.) greater than the previous record of 55,527 tons in 1961-62.

The following table shows production of cheese in factories and on farms in each State in the years 1958-59 to 1962-63 compared with the averages for the three years ended 1938-39, 1948-49 and 1958-59.

CHEESE PRODUCTION IN FACTORIES AND ON FARMS
(Tons)

Period	Factory production							Factory and farm production, Aust.(a)
	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	Aust.	
Average for three years ended—								
1938-39	3,280	7,206	5,277	6,866	427	1,424	24,480	24,848
1948-49	2,385	17,378	8,916	11,984	969	641	42,273	42,343
1958-59	4,368	17,607	6,844	11,218	1,127	335	41,499	41,567
Year—								
1958-59	5,044	17,441	8,220	11,200	1,181	345	43,431	43,509
1959-60	4,348	19,217	8,492	10,930	1,443	328	44,758	44,854
1960-61	5,296	19,978	7,222	12,609	1,351	348	46,804	46,924
1961-62	5,953	23,919	8,973	14,659	1,364	605	55,473	55,306
1962-63(b)	5,304	25,264	10,200	15,028	1,467	643	57,906	58,022

(a) Northern Territory and Australian Capital Territory: nil. (b) Subject to revision.

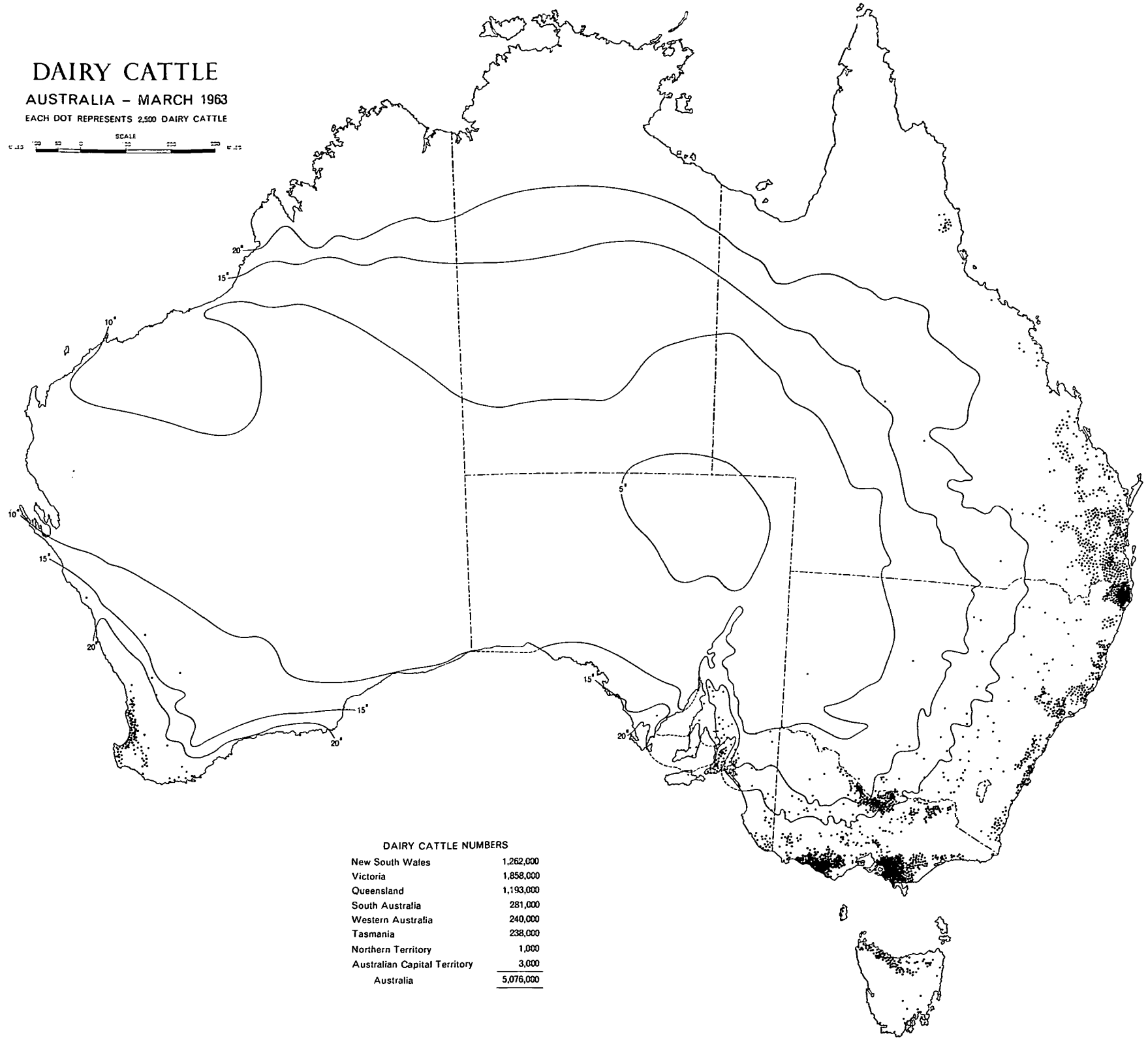
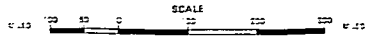
(d) *Production of Preserved Milk Products.* The production in 1962-63 of all full-cream milk products and milk by-products, with the exception of condensed, concentrated and evaporated unsweetened full-cream milk, and powdered full-cream milk, increased in comparison with 1961-62. Between the same years the quantity of whole milk used in the manufacture of preserved milk products increased from 78.0 million gallons in 1961-62 to 83.2 million gallons in 1962-63.

Preserved milk products are manufactured mainly in Victoria, which produced 63.8 per cent. of the total (in terms of whole milk equivalent) in 1962-63. New South Wales accounted for 17.7 per cent. and the remaining States for 18.5 per cent.

DAIRY CATTLE

AUSTRALIA - MARCH 1963

EACH DOT REPRESENTS 2,500 DAIRY CATTLE



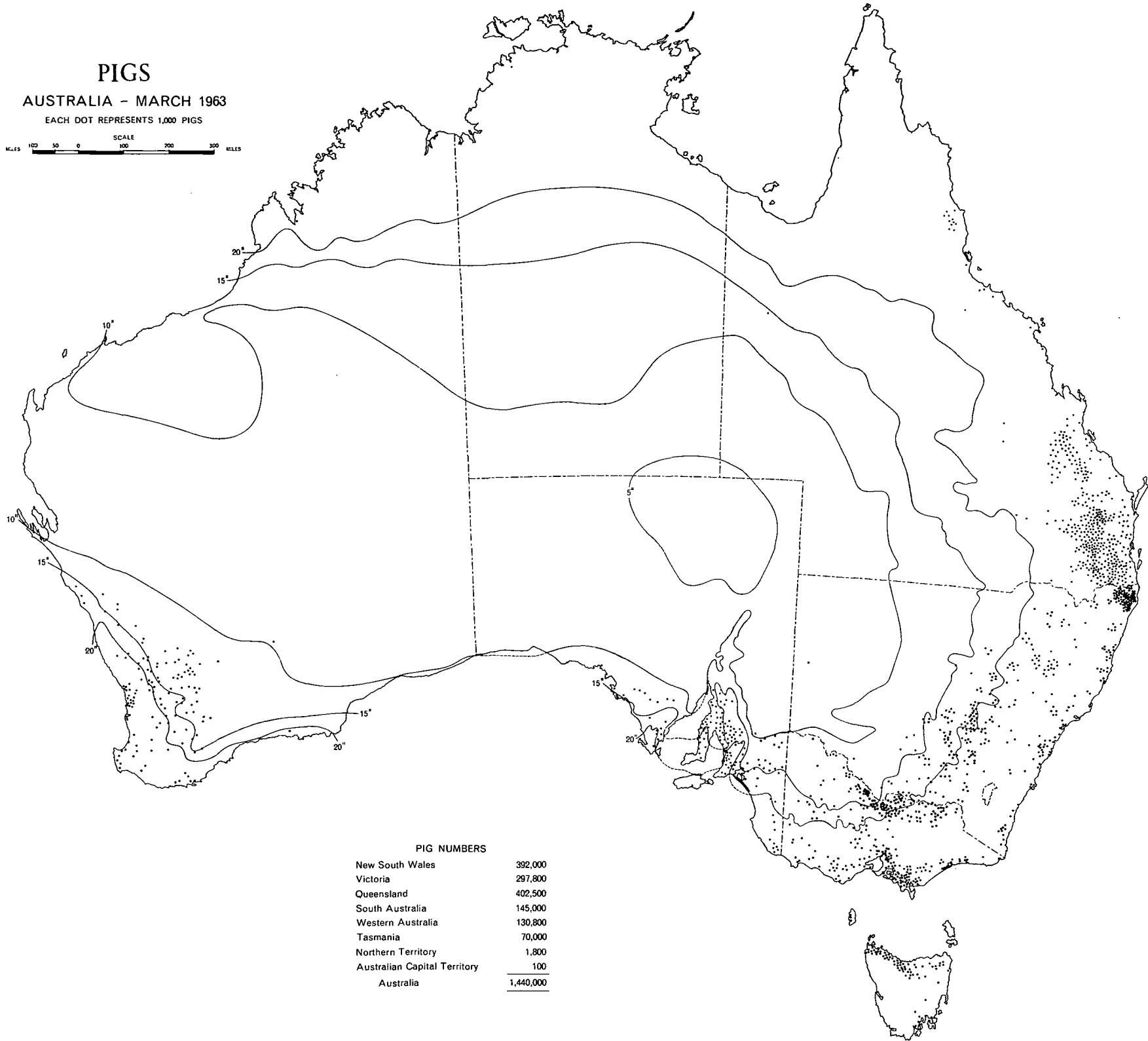
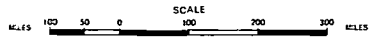
DAIRY CATTLE NUMBERS

New South Wales	1,262,000
Victoria	1,858,000
Queensland	1,193,000
South Australia	281,000
Western Australia	240,000
Tasmania	238,000
Northern Territory	1,000
Australian Capital Territory	3,000
Australia	<u>5,076,000</u>

PIGS

AUSTRALIA - MARCH 1963

EACH DOT REPRESENTS 1,000 PIGS



PIG NUMBERS

New South Wales	392,000
Victoria	297,800
Queensland	402,500
South Australia	145,000
Western Australia	130,800
Tasmania	70,000
Northern Territory	1,800
Australian Capital Territory	100
Australia	<u>1,440,000</u>

The following table shows details of the output of preserved milk products during the years 1958-59 to 1962-63, compared with the averages for the three years ended 1938-39, 1948-49 and 1958-59.

PRODUCTION OF PRESERVED MILK PRODUCTS: AUSTRALIA

Particulars	Average for three years ended—			1958-59	1959-60	1960-61	1961-62	1962-63 (a)
	1938-39	1948-49	1958-59					
PRODUCTION (TONS)								
Full cream milk products—								
Condensed, concentrated and evaporated full cream milk—								
Sweetened(h) ..	} 18,702	28,452	36,322	31,627	33,867	29,534	28,125	35,076
Unsweetened(c) ..			29,137	30,872	33,074	32,067	34,328	34,256
Powdered full cream milk ..	9,464	16,650	18,373	19,183	19,592	18,555	19,855	17,578
Infants' and invalids' foods(d) ..	1,131	10,182	13,846	13,993	15,985	16,257	17,050	18,192
Milk by-products—								
Condensed, concentrated and evaporated skim milk ..	(e)	(f)	5,649	4,943	4,689	4,651	5,861	8,594
Powdered skim milk ..	(f)	4,782	29,758	34,128	41,204	36,952	37,618	42,580
Powdered buttermilk, mixed skim and buttermilk and whey	(g) 701	3,078	5,748	6,024	7,215	7,828	8,139	9,052
Casein ..	(h)	(h)	9,907	11,328	10,433	11,761	13,552	15,715

WHOLE MILK EQUIVALENT (f) ('000 GALLONS)

Preserved milk products ..	33,226	78,739	79,687	81,074	82,636	76,619	78,028	83,167
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(a) Subject to revision. (b) Includes coffee and milk. (c) Includes (i) whole (10% butterfat or more), (ii) less than 10% butterfat, and (iii) liquid ice-cream mix. (d) Includes malted milk and milk sugar (lactose). (e) Not available separately—included in condensed, concentrated, and evaporated full cream milk. (f) Not available separately—included in powdered full cream milk. (g) Excludes powdered whey. (h) Not available. (i) That is, the estimated quantity of whole milk used to produce preserved milk products. Quantities of milk used to produce two or more products (for example, initially as full cream milk and subsequently as skim milk) are counted once only.

(vii) *Wholesale Prices of Butter and Cheese in Australia.* Details of prices operating in each of the States since 1st July, 1952, are shown in the following table. The prices presented are those determined by the Commonwealth Dairy Produce Equalization Committee Ltd. for choicest grade bulk butter and cheese.

WHOLESALE PRICES OF BUTTER AND CHEESE: AUSTRALIA

(s. d. per cwt.)

Date from which prices became effective	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania
BUTTER						
26th July, 1955 ..	452 8	452 8	451 6	450 4	452 8	452 8
1st July, 1956 ..	466 8	466 8	465 6	464 4	466 8	466 8
1st July, 1958 ..	485 4	485 4	484 2	484 2	485 4	485 4
1st July, 1960 ..	501 8	501 8	500 6	501 8	501 8	501 8
19th June, 1964 ..	518 0	518 0	518 0	518 0	518 0	518 0

WHOLESALE PRICES OF BUTTER AND CHEESE: AUSTRALIA—continued
(s. d. per cwt.)

Date from which prices became effective	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania
CHEESE						
26th July, 1955 ..	275 4	275 4	275 4	274 2	275 4	275 4
1st July, 1956 ..	282 4	282 4	282 4	281 2	282 4	282 4
1st July, 1958 ..	291 8	291 8	291 8	291 8	291 8	291 8
1st July, 1960 ..	296 4	296 4	296 4	296 4	296 4	296 4
19th June, 1964 ..	305 8	305 8	305 8	305 8	305 8	305 8

(viii) *Local Consumption of Butter and Cheese.* Following the cessation of butter rationing after the 1939-45 War, consumption per head rose to 31.2 lb. in 1951-52. However, in later years it gradually declined, and in 1961-62, and again in 1962-63, it reached its lowest level since the war. At 24.0 lb. per head in both of these years, it was 4 per cent. below the level of 1960-61.

Consumption of cheese per head in 1962-63 was 6.6 lb., the third highest figure recorded. The highest figure recorded was 6.8 lb. per head in 1957-58.

The following table shows details of the production and disposal of butter and cheese for each of the years 1958-59 to 1962-63 compared with the averages for the three years ended 1938-39, 1948-49 and 1958-59.

PRODUCTION AND DISPOSAL OF BUTTER AND CHEESE: AUSTRALIA

Period	Change in stocks (a)	Production	Exports (b)	Apparent consumption in Australia	
				Total (c)	Per head per annum (lb.)
BUTTER					
Average for three years ended—					
1938-39 .. .. .	..	190.8	90.0	100.8	32.9
1948-49	-3.5	157.1	75.9	84.7	24.8
1958-59	-0.7	187.4	69.7	118.4	27.2
Year—					
1958-59	-0.4	193.6	78.9	115.1	25.9
1959-60	+0.2	197.6	78.7	118.7	26.2
1960-61	+2.0	181.7	63.4	116.3	25.1
1961-62	+4.7	198.6	80.1	113.8	24.0
1962-63	+6.2	202.4	80.6	115.6	24.0
CHEESE					
Average for three years ended—					
1938-39 .. .. .	..	24.9	11.5	13.4	4.4
1948-49	-0.8	42.3	24.3	18.8	5.5
1958-59	+2.8	41.6	13.8	25.0	5.7
Year—					
1958-59	+6.1	43.5	14.4	23.0	5.2
1959-60	-2.4	44.9	18.5	28.8	6.4
1960-61	-1.0	46.9	18.1	29.8	6.4
1961-62	+2.2	55.3	22.4	30.7	6.5
1962-63	(c)	58.0	26.0	32.0	6.6

(a) Balance figure. (b) Includes ships' stores; figures for butter include ghee and butter concentrate expressed as butter. (c) Less than 50 tons.

(ix) *Average Returns from Butter and Cheese Sold.* The table below shows rates realized on local, interstate and oversea sales and the average equalization and subsidy rates in operation for the years ended June, 1959 to 1963.

BUTTER AND CHEESE: RATES REALIZED ON SALES, AVERAGE EQUALIZATION RATES AND RATES OF COMMONWEALTH SUBSIDY UNDER DAIRY INDUSTRY ASSISTANCE ACTS

(Source: Commonwealth Dairy Produce Equalization Committee Ltd.)

(s. d. per cwt.)

Year	Rates realized on sales			Average equalization rate	Rate of subsidy	Rate of overall return to manufacturers
	Local	Interstate	Overseas			
BUTTER						
1958-59.. ..	468 8.1	448 7.3	334 3.2	412 11.1	64 10.9	477 10.0
1959-60.. ..	468 8.8	453 3.8	343 6.9	417 5.5	63 6.0	480 11.5
1960-61.. ..	481 4.5	462 7.9	261 11.7	399 8.3	68 11.3	468 7.6
1961-62.. ..	479 4.9	466 8.0	290 11.8	398 5.2	62 6.7	460 11.9
1962-63.. ..	(a)	(a)	(a)	b395 6.0	61 6.0	b457 0.0

CHEESE						
1958-59.. ..	279 0.2	274 0.4	277 1.1	29 7.5	306 8.6	
1959-60.. ..	279 7.9	204 11.1	247 10.7	29 1.4	277 0.1	
1960-61.. ..	283 10.9	211 6.0	256 1.2	28 5.6	284 6.8	
1961-62.. ..	283 10.7	189 6.0	241 2.7	24 4.6	265 7.3	
1962-63.. ..	(a)	(a)	b236 4.0	23 4.0	b259 8.0	

(a) Not yet available. (b) Interim rates.

The distribution between factory and farm of the overall return to manufacturers for butter is shown in the following table.

COMMERCIAL BUTTER: AVERAGE OVERALL RETURNS

(Source: Commonwealth Dairy Produce Equalization Committee Ltd.)

(Pence per lb.)

Year	Average overall returns on commercial butter		
	Rate of overall return to manufacturer	Estimated manufacturing cost	Return to dairy farmer
1958-59	51.196	4.826	46.370
1959-60	51.531	4.965	46.566
1960-61	50.210	5.339	44.871
1961-62	49.392	5.339	44.053
1962-63	(a) 48.964	5.339	43.625

(a) Interim rates.

(x) *Oversea Trade in Dairy Products. (a) General.* The production of butter and cheese in Australia is considerably in excess of local requirements, and consequently a substantial surplus is available for export overseas. In normal circumstances, the extent of this surplus is chiefly dependent upon seasonal conditions.

Exports of butter in 1962-63 amounted to 77,413 tons, compared with 78,005 tons in 1961-62. Exports of cheese in these years were 25,939 tons and 22,378 tons respectively. As in previous years, the principal importing country for Australian butter and cheese was the United Kingdom. In 1962-63, 84 per cent. of butter and 53 per cent. of cheese exported was consigned to the United Kingdom.

Total quantities and values of exports of butter, cheese and preserved milk products of Australian origin are shown in the table at the foot of the page.

(b) *Butter and Cheese Exports graded according to Quality.* All butter and cheese exported comes under the provisions of the Exports (Dairy Produce) Regulations and is subject to supervision, inspection and examination by officers appointed for that purpose. These commodities are graded according to quality which has been fixed by regulation as follows:—flavour and aroma, 50 points; texture, 30 points; and condition, 20 points. Butter and cheese graded at 93 to 100 points is of choicest quality; at 90 to 92 points, first quality; at 86 to 89 points, second quality; and at 80 to 85 points, pastry or cooking quality or, in the case of cheese, third quality.

In the following table, particulars are given of the relative proportions of butter and cheese graded for export according to quality. Further details, which include actual quantities by States, are to be found in *Primary Industries, Part I.—Rural Industries, 1961-62, Bulletin No. 56.*

BULK BUTTER AND CHEESE GRADED FOR EXPORT: AUSTRALIA
(Per cent.)

Grade	Butter			Cheese		
	1960-61	1961-62	1962-63	1960-61	1961-62	1962-63
Choicest	66.0	65.4	70.7	11.8	8.4	5.9
First quality	25.9	26.0	21.4	76.7	82.6	82.1
Second and third quality(a)	8.1	8.6	7.9	11.5	9.0	12.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

(a) Includes rejected.

(c) *Exports of Dairy Products.* Exports of butter, cheese and other milk products of Australian origin are shown in the following table.

EXPORTS OF DAIRY PRODUCTS: AUSTRALIA

Particulars	Quantity ('000 lb.)			Value (£A.'000 f.o.b.)		
	1960-61	1961-62	1962-63	1960-61	1961-62	1962-63
Butter	136,948	174,731	173,405	19,651	23,537	23,594
Cheese	40,400	50,124	58,101	4,607	5,203	6,094
Milk—						
Condensed, preserved, etc.—						
Sweetened full cream	38,188	36,028	54,432	2,553	2,378	3,426
Unsweetened	5,637	4,327	5,077	319	258	304
Dried or powdered—						
Full cream	15,690	13,043	14,263	2,608	2,148	2,226
Skim	33,734	35,311	55,467	1,363	1,263	1,942
Malted	6,759	7,647	7,414	1,012	1,177	1,125
Infants' and invalids' foods—						
Essentially of milk	8,545	6,980	7,633	1,297	1,082	1,214
Other	8,147	9,573	9,059	1,539	1,774	1,763

3. Pigs and Pig Products.—(i) *Pig Numbers.* At 31st March, 1963, 1,440,000 pigs were recorded, representing a decrease of 212,000 (12.9 per cent.) on numbers a year earlier. The number of pigs in each State and Territory at 31st March for each of the years 1959 to 1963 compared with the averages for the three-year periods ended 31st March, 1939, 1949 and 1959, are given in the following table.

NUMBER OF PIGS

At 31st March	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
Average for three years ended—									
1939 ..	374,963	285,465	299,707	74,329	74,657	42,802	404	481	1,152,808
1949 ..	366,267	261,922	375,191	101,934	91,862	43,184	424	554	1,241,338
1959 ..	377,510	263,363	405,702	99,632	135,404	61,389	2,543	160	1,345,703
Year—									
1959 ..	348,730	253,125	399,875	98,374	115,446	69,215	3,802	175	1,288,742
1960 ..	398,959	284,505	429,034	108,696	130,933	67,118	4,400	151	1,423,796
1961 ..	455,345	318,523	448,279	143,645	175,675	70,882	2,845	109	1,615,303
1962 ..	471,579	325,120	432,609	170,133	174,182	75,754	2,762	184	1,652,323
1963 ..	391,999	297,791	402,498	144,976	130,791	70,002	1,842	92	1,439,991

A long-term comparison of pig numbers is given in the division Pastoral Production of this chapter (see page 1051). A map showing the distribution of pigs in Australia at 31st March, 1963, faces p. 1083. Maps showing the distribution at 31st March, 1955 and 1948, appear on page 912 of Year Book No. 43 and on page 908 of Year Book No. 39, respectively.

(ii) *Size of Pig Herds.* Details of the size of pig herds have been published in a series of bulletins entitled *Classification of Rural Holdings by Size and Type of Activity, 1959-60.*

(iii) *Pigs Slaughtered.* The number of pigs slaughtered during each of the years 1958-59 to 1962-63, compared with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59, is shown in the following table. A graph showing the number of pigs in Australia from 1870 onwards appears on page 1061 of Year Book No. 49.

PIGS SLAUGHTERED

('000)

Period	Slaughtering passed for human consumption									Total slaughtering (including boiled down)
	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.	
Average for three years ended—										
1938-39 ..	562	503	530	155	109	65	1		1,925	1,961
1948-59 ..	440	371	448	154	138	54	1		1,606	1,615
1958-59 ..	594	439	474	159	191	94	5		1,956	1,968
Year—										
1958-59 ..	604	462	521	179	197	107	7		2,077	2,087
1959-60 ..	584	458	530	171	168	115	7		2,033	2,043
1960-61 ..	655	513	554	183	194	111	9		2,219	2,229
1961-62 ..	755	587	597	232	264	120	2	7	2,564	2,573
1962-63 ..	688	528	604	234	237	116	2	7	2,416	2,424

(iv) *Production.* (a) *Pigmeat.* In the following table, details of the production of pigmeat in each State are shown for the years 1958-59 to 1962-63, together with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59.

PRODUCTION OF PIGMEAT (CARCASS WEIGHT)

(Tons)

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
Average for three years ended—									
1938-39 ..	25,558	24,569	23,522	7,538	4,322	2,893	5	43	(a)88,450
1948-49 ..	27,182	22,308	22,856	8,993	8,500	2,916	24	36	92,815
1958-59 ..	28,272	23,097	23,180	8,778	9,624	4,156	84	209	97,400
Year—									
1958-59 ..	27,253	23,770	26,210	9,451	9,991	4,911	113	187	101,886
1959-60 ..	26,252	23,383	27,106	9,161	9,029	5,352	103	208	100,594
1960-61 ..	29,048	25,350	27,289	9,574	10,550	5,057	150	240	107,458
1961-62 ..	32,677	27,406	29,802	11,558	13,180	5,428	86	326	120,463
1962-63 ..	30,283	25,086	29,619	11,810	11,731	5,461	69	328	114,387

(a) Excludes trimmings from baconer carcasses.

(b) *Bacon and Ham.* Production of bacon and ham amounted to 41,436 tons in 1962-63. This amount is 3.9 per cent. above the amount of 39,868 tons produced in 1961-62. The record output of 56,246 tons was attained in 1944-45.

Details of production are shown by States in the following table for each year from 1958-59 to 1962-63, compared with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59.

PRODUCTION OF BACON AND HAM (CURED CARCASS WEIGHT) (a)

(Tons)

Period	N.S.W.	Victoria	Q'land	S. Aust.	W. Aust.	Tas.	Australia
Average for three years ended—							
1938-39 ..	10,396	7,556	8,759	2,940	1,838	1,022	32,511
1948-49 ..	14,436	10,787	9,846	4,580	4,209	1,196	45,054
1958-59 ..	11,132	8,302	10,294	3,275	2,987	1,078	37,068
Year—							
1958-59 ..	11,606	8,852	11,299	3,069	2,955	1,126	38,907
1959-60 ..	11,012	8,634	9,948	3,115	3,061	1,144	36,914
1960-61 ..	11,328	9,211	9,442	3,141	3,169	1,120	37,411
1961-62 ..	11,145	9,102	12,221	2,757	3,512	1,131	39,868
1962-63 ..	b 12,739	9,004	11,449	3,218	3,844	1,182	b 41,436

(a) Pressed and canned bacon and ham have been converted to cured carcass weight for periods subsequent to 1948-49.

(b) Subject to revision.

(v) *Consumption.*(a) *Pork.* Apparent consumption of pork per head in 1962-63 was 11.8 lb., compared with 13.6 lb. per head in 1961-62. The 1961-62 level was the highest since the war. In recent years, annual consumption of pork per head has not fallen below 10 lb.

In the following table, details of the production and disposal of pigmeat are shown for the years 1958-59 to 1962-63 compared with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59.

PRODUCTION AND DISPOSAL OF PIGMEAT (CARCASS WEIGHT): AUSTRALIA

Period	Change in stocks	Production	Exports	Curing and canning	Apparent consumption (as pork or smallgoods) in Australia	
					Total	Per head per annum
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	lb.
Average for three years ended—						
1938-39 .. ..	..	88.5	13.7	48.6	26.2	8.5
1948-49	-1.2	92.8	6.3	63.4	24.3	7.1
1958-59 .. ..	..	97.4	0.8	53.0	43.6	10.1
Year—						
1958-59	-1.9	101.9	0.9	55.6	47.3	10.6
1959-60	+0.8	100.6	0.4	52.6	46.8	10.3
1960-61	+0.8	107.5	0.4	53.3	53.0	11.4
1961-62	-0.7	120.5	0.9	55.9	64.4	13.6
1962-63	+0.2	114.4	0.2	57.0	57.0	11.8

(b) *Bacon and Ham.* Annual consumption of bacon and ham has been about 7 lb. per head in recent years. The 1962-63 consumption was 7.3 lb. per head.

Details of production and disposal of bacon and ham for the years 1958-59 to 1962-63, compared with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59 are shown in the following table.

PRODUCTION AND DISPOSAL OF BACON AND HAM (CURED CARCASS WEIGHT) (a): AUSTRALIA

Period	Change in stocks	Production	Exports	Canning	Apparent consumption in Australia	
					Total	Per head per annum
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	lb.
Average for three years ended—						
1938-39 .. ..	..	32.5	1.0	..	31.5	10.2
1948-49 .. ..	..	45.1	3.1	2.1	39.9	11.7
1958-59	+0.1	37.1	0.5	6.0	30.5	7.1
Year—						
1958-59	+0.2	38.9	0.3	6.4	32.0	7.2
1959-60	-0.8	36.9	0.3	5.3	32.1	7.1
1960-61	+0.1	37.4	0.3	5.3	31.7	6.8
1961-62	(b)	39.9	0.1	6.8	33.0	6.9
1962-63	-0.1	41.4	0.1	5.8	35.6	7.3

(a) Pressed and canned bacon and ham have been converted to cured carcass weight.

(b) Less than 50 tons.

(vi) *Exports of Pigs and Pig Products.* Total quantities and values of exports of pigs and pig products of Australian origin for the years 1960-61 to 1962-63 are given in the following table.

EXPORTS OF PIGS AND PIG PRODUCTS: AUSTRALIA

Particulars	Quantity			Value (£A.'000 f.o.b.)		
	1960-61	1961-62	1962-63	1960-61	1961-62	1962-63
Bacon and ham (including canned) '000 lb.	1,575	596	216	404	154	59
Lard '000 lb.	539	645	246	47	48	24
Frozen pork '000 lb.	985	2,092	482	187	306	84
Pigs, live number	125	139	113	6	5	5

§ 2. The Poultry Industry

1. **General.**—Originally the poultry industry was conducted in conjunction with other branches of rural activity, mainly dairying, but it is now a specialized and distinct industry. It is from this source that the bulk of the commercial production is obtained. Practically all farm households keep poultry for the purpose of supplying their own domestic requirements and some supplies from this source are also marketed. In addition, many private homes in both rural and suburban areas keep small numbers of fowls in back-yard runs to help satisfy domestic needs. Because of the incompleteness of data available on poultry throughout Australia, details of poultry numbers are not published.

2. **Marketing of Eggs.**—(i) *Markets.* Details of the annual contracts entered into between the United Kingdom and Australian Governments up to 1952-53 and of the results of trading under free market conditions in the four years following appear in previous issues of the Year Book.

Over the period 1952-53 to 1962-63, Australian exports of shell eggs fell by 81 per cent. The main outlets for Australian eggs in 1962-63 were Kuwait (1,258,000 dozen), Saudi Arabia (655,000 dozen) and the United States of America (467,000 dozen).

The United Kingdom remains virtually the only export market for egg pulp. Australian exports of pulp to that country were approximately 12,200 tons in 1961-62 and 7,755 tons in 1962-63.

(ii) *Egg Export Control Act 1947.* Details of this Act were given in previous issues of the Year Book (see No. 47, p. 997).

3. **Recorded Production of Eggs and Egg Products.**—(i) *Shell Eggs.* Available statistics of the production and disposal of eggs in Australia are restricted to those recorded by the Australian Egg Board and the Egg Marketing Board of New South Wales. Details of production as recorded by these authorities are shown in the following table.

SHELL EGGS: PRODUCTION^(a) RECORDED BY EGG BOARDS
('000 Dozen)

State	1958-59	1959-60	1960-61	1961-62	1962-63
New South Wales	45,221	53,495	62,156	61,657	54,609
Victoria	23,447	26,521	28,215	29,939	26,794
Queensland	8,692	10,507	10,810	10,176	11,314
South Australia	9,692	10,041	10,491	11,387	9,816
Western Australia	7,577	7,476	7,333	7,558	7,796
Tasmania	(b)	(b)	(b)	(b)	(b)
Total(c)	94,629	107,540	119,005	120,717	110,329

(a) Receipts from consignors and sales by producer agents.
Tasmania.

(b) Not available.

(c) Excludes

(ii) *Egg Pulp, etc. Production.* Particulars of the production of whole egg pulp as recorded by the Egg Marketing Board for the State of New South Wales and by the Australian Egg Board for the other States are shown in the following table.

LIQUID WHOLE EGG PULP: PRODUCTION RECORDED BY EGG BOARDS
(‘000 lb.)

State	1958-59	1959-60	1960-61	1961-62	1962-63
New South Wales	9,808	17,791	21,446	20,916	11,499
Victoria	3,473	6,460	7,948	12,000	7,684
Queensland	2,011	2,767	3,716	3,321	3,864
South Australia	2,495	3,210	3,394	3,374	2,837
Western Australia	1,600	1,122	916	620	834
Tasmania	(a)	(a)	(a)	(a)	(a)
Total(b)	19,387	31,350	37,420	40,231	26,718

(a) Not available. (b) Excludes Tasmania.

In addition to liquid whole egg, production was also recorded of liquid egg whites and liquid egg yolks. Output in 1962-63 amounted to 2,029,000 lb. and 1,412,000 lb., respectively, compared with 2,416,000 lb. and 1,784,000 lb., respectively, in the previous year. These figures exclude small quantities produced in Tasmania for which details are not available.

4. *Consumption of Eggs and Egg Products.*—Because of the operations of producers in areas outside the control of the Egg Boards and the extent of “back-yard” poultry-keeping, for which no statistics are collected, figures relating to total egg production must be accepted with some reserve. The production shown in the following table, together with details of exports and consumption, is based upon the records of Egg Boards of production from areas under their control, plus estimates of production from uncontrolled areas and from “back-yard” poultry-keepers.

**ESTIMATED PRODUCTION AND DISPOSAL OF EGGS IN SHELL:
AUSTRALIA**

Period	Change in stocks	Estimated total production	Exports	For drying and pulping(a)	Apparent consumption in Australia	
					Total	Per head per annum
	Mill. doz.	Mill. doz.	Mill. doz.	Mill. doz.	Mill. doz.	Dozen
Average for three years ended—						
1938-39	-0.1	152.7	13.0	5.5	134.3	19.5
1948-49	+0.1	204.7	17.7	39.1	147.8	19.3
1958-59 .. ..	..	189.9	9.6	23.0	157.3	16.1
Year—						
1958-59	-0.3	181.1	5.7	16.5	159.2	16.0
1959-60	+0.6	198.6	3.4	27.2	167.4	16.5
1960-61	-0.3	212.1	6.2	36.9	169.3	16.3
1961-62	-0.1	215.8	5.8	36.5	173.6	16.4
1962-63	-0.4	207.2	4.6	24.7	178.3	16.5

(a) Includes wastage.

Details of the annual consumption of shell eggs, liquid whole egg and total shell egg equivalent per head of population are shown in the following table.

SUPPLIES OF EGGS AND EGG PRODUCTS AVAILABLE FOR CONSUMPTION:
AUSTRALIA

(Per head per annum)

Period	Shell eggs	Liquid whole egg and egg powder (a)	Total	
			Number	Weight(b)
	No.	No.	No.	lb.
Average for three years ended—				
1938-39	235	8	243	26.6
1948-49	232	23	255	27.9
1958-59	194	12	206	22.5
Year—				
1958-59	192	12	204	22.3
1959-60	198	14	212	23.2
1960-61	195	15	210	(c) 26.3
1961-62	196	14	210	(c) 26.3
1962-63	198	12	210	(c) 26.3

(a) In terms of the number of shell eggs. (b) The average weight of an egg in Australia has been taken as 1.75 oz. for the years prior to 1960-61. From 1960-61, the average weight has been taken as 2 oz. (c) Not comparable with earlier years; see footnote (b).

5. Oversea Trade in Poultry Products.—Details of the exports of poultry products in each of the years 1960-61 to 1962-63 are shown below.

EXPORTS OF POULTRY PRODUCTS: AUSTRALIA

Particulars	Quantity			Value (£A.'000 f.o.b.)		
	1960-61	1961-62	1962-63	1960-61	1961-62	1962-63
Eggs in shell '000 doz.	5,443	5,007	3,943	847	831	603
Eggs not in shell—						
In liquid form '000 lb.	26,807	29,231	18,920	3,111	3,273	1,901
Drv '000 lb.	8	190	3	5	87	2
Frozen poultry '000 lb.	423	427	318	93	93	71
Poultry, live(a) number	283,365	555,908	550,362	41	75	73

(a) Includes day-old chicks.

There have been considerable imports of canned chicken from the United States of America in recent years. The quantities and values during 1960-61, 1961-62 and 1962-63, respectively, were: 2,016,000 lb., £227,000; 474,000 lb., £46,000; 293,000 lb., £28,000.

§ 3. The Bee-Farming Industry

1. Production of Honey and Bees-wax.—Although practised as a separate industry, bee-farming is also carried on in conjunction with other branches of farming. In recent years, there has been considerable growth in the number of itinerant apiarists operating on a large scale with mobile equipment. Some of these apiarists move as far afield as from Victoria to Queensland in an endeavour to provide a continuous supply of nectar from flora suitable for their bees. The returns of honey from productive hives during 1962-63 shows an average of 108 lb. per hive and the average quantity of wax was 1.4 lb. per productive hive.

The number of hives and the production of honey and bees-wax during the year 1962-63 are shown in the following table.

BEEHIVES, HONEY AND BEES-WAX, 1962-63

State or Territory	Beehives (a)			Honey produced		Bees-wax produced	
	Pro-ductive	Unpro-ductive	Total	Quantity	Gross value	Quantity	Gross value
	'000	'000	'000	'000 lb.	£'000	'000 lb.	£'000
New South Wales ..	121	71	192	14,087	712	177	42
Victoria ..	62	39	101	4,818	291	64	16
Queensland ..	26	11	37	2,941	123	44	9
South Australia ..	51	19	70	4,147	206	56	10
Western Australia ..	37	9	46	6,099	268	79	14
Tasmania ..	5	2	7	547	47	6	1
Aust. Cap. Territory ..	1	..	1	40	1	..	..
Australia ..	303	151	454	32,679	1,648	426	92

(a) At 30th June.

The production of honey and bees-wax fluctuates considerably and is determined mainly by the flow of nectar from flora, particularly the eucalypts, which varies greatly from year to year.

The table below shows the production of honey and bees-wax for each of the years 1958-59 to 1962-63, compared with the averages for the three-year periods ended 1938-39, 1948-49, and 1958-59.

HONEY AND BEES-WAX PRODUCTION

('000 lb.)

Period	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Austra
HONEY								
Average for three years ended—								
1938-39 ..	3,005	3,107	700	2,874	1,299	200	3	11,188
1948-49 ..	14,934	8,232	2,185	8,292	2,831	206	34	36,714
1958-59 ..	12,853	7,239	2,071	5,924	6,548	398	44	35,077
Year—								
1958-59 ..	10,593	7,624	1,766	5,453	6,680	342	39	32,487
1959-60 ..	18,682	9,661	4,119	7,221	5,549	296	34	45,562
1960-61 ..	15,286	8,390	1,848	4,442	5,311	441	83	35,801
1961-62 ..	15,326	10,314	1,281	8,405	7,982	279	64	43,651
1962-63 ..	14,087	4,818	2,941	4,147	6,099	547	40	32,679
BEES-WAX								
Average for three years ended—								
1938-39 ..	49	39	11	38	23	2	(a)	162
1948-49 ..	174	86	36	110	34	3	(a)	443
1958-59 ..	163	81	31	94	81	5	(a)	455
Year—								
1958-59 ..	137	86	25	80	84	4	1	417
1959-60 ..	257	113	59	106	67	4	1	607
1960-61 ..	197	105	32	59	71	5	1	470
1961-62 ..	208	135	22	123	94	4	1	587
1962-63 ..	177	64	44	56	79	6	(a)	426

(a) Less than 500 lb.

2. **Oversea Trade in Bee Products.**—The quantity of honey exported in 1962–63, 26.8 million lb., was 5 per cent. more than in 1961–62. The principal importers were the United Kingdom (51 per cent. of total exports) and the Federal Republic of Germany (40 per cent.).

The quantity of bees-wax exported in 1962–63 was 322.9 million lb.

Total quantities and values of exports of honey and bees-wax for the years 1960–61 to 1962–63 are shown below.

EXPORTS OF HONEY AND BEES-WAX: AUSTRALIA

Particulars	Quantity			Value (£A.'000 f.o.b.)		
	1960–61	1961–62	1962–63	1960–61	1961–62	1962–63
Honey '000 lb.	16,770	25,390	26,759	708	1,113	1,401
Bees-wax lb.	195,707	211,420	322,922	42	43	71

§ 4. Value of Dairy, Poultry and Bee Production and Indexes of Price and Quantum of Production

1. **Gross Value of Dairy, Poultry and Bee Production, 1958–59 to 1962–63.**—The following table shows the gross value of recorded dairy, poultry and bee production at the principal markets in Australia.

GROSS VALUE OF DAIRY, POULTRY AND BEE PRODUCTION: AUSTRALIA

(£'000)

Particulars	1958–59	1959–60	1960–61	1961–62	1962–63
Whole milk used for—					
Butter(a)	66,328	72,615	64,601	67,912	73,538
Cheese(a)	10,120	10,124	10,658	11,341	12,558
Preserved milk products	9,230	10,340	9,376	9,641	9,544
Other purposes	59,887	61,768	64,098	65,973	66,005
Subsidy paid on whole milk for—					
Butter	12,314	12,295	12,275	12,247	12,250
Cheese	1,186	1,205	1,225	1,253	1,250
<i>Total, Whole Milk (including Subsidy)</i>	<i>159,065</i>	<i>168,347</i>	<i>162,233</i>	<i>168,367</i>	<i>175,145</i>
Pigs slaughtered	25,553	30,121	30,659	26,953	31,303
Dairy cattle slaughtered	15,721	14,228	11,864	10,916	13,241
Eggs	40,397	45,249	48,854	44,130	43,739
Poultry	14,380	14,588	16,240	16,731	18,076
Honey	1,803	2,390	1,772	1,877	1,648
Bees-wax	105	155	111	130	92
Grand Total	257,024	275,078	271,733	269,104	283,244

(a) Excludes Commonwealth subsidy which is shown separately.

2. Gross, Local and Net Values, 1962-63.—The values of dairy, poultry and bee farming production on gross, local and net bases are shown in the following table. Further information on values, including definitions of the terms used, is given in Chapter XXX. Miscellaneous.

GROSS, LOCAL AND NET VALUE OF DAIRY, POULTRY AND BEE PRODUCTION, 1962-63

(£'000)

State or Territory	Gross production valued at principal markets	Marketing costs	Gross production valued at farm	Value of materials used in process of production	Net value of production(a)
New South Wales	94,518	14,467	80,051	(b) 17,595	62,456
Victoria	101,912	5,933	95,979	28,266	67,713
Queensland	40,416	2,876	37,540	11,074	26,466
South Australia	19,619	879	18,740	7,991	10,749
Western Australia	13,693	920	12,773	7,107	5,666
Tasmania	12,602	651	11,951	3,784	8,167
Northern Territory	131	n.a.	131	n.a.	131
Australian Capital Territory ..	353	29	324	80	244
Australia	283,244	25,755	257,489	75,897	181,592

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

(b) No allowance has been made for costs of power, power kerosene, petrol and other oils.

3. Net Value of Production, 1958-59 to 1962-63.—In the following table, the net values of dairy, poultry and bee production (total and per head of population) are shown by State.

NET VALUE OF DAIRY, POULTRY AND BEE PRODUCTION(a)

Year	N.S.W. (b)	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	Australia (c)
NET VALUE (£'000)							
1958-59	65,077	57,362	26,113	11,351	3,549	7,108	170,909
1959-60	69,285	62,533	29,579	10,912	4,565	7,492	184,677
1960-61	63,933	65,612	22,443	9,986	5,075	7,214	174,587
1961-62	58,902	56,376	23,563	11,160	5,222	7,354	162,982
1962-63	62,456	67,713	26,466	10,749	5,666	8,167	181,592

NET VALUE PER HEAD OF POPULATION (£)

1958-59	17.5	20.9	18.0	12.5	5.0	21.0	17.2
1959-60	18.2	22.2	20.0	11.7	6.4	21.8	18.2
1960-61	16.5	22.8	14.9	10.4	7.0	20.6	16.8
1961-62	14.9	19.1	15.4	11.4	7.0	20.6	15.4
1962-63	15.6	22.4	17.1	10.8	7.4	22.6	16.8

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

(b) No deduction has been made for costs of power, power kerosene, petrol and other oils.

(c) Includes Northern Territory and Australian Capital Territory.

4. **Indexes of Quantum and Price of Dairy, Poultry and Bee Production.**—For details of the methods of calculating these indexes and of the weights used *see* Chapter XXX. Miscellaneous.

INDEXES OF QUANTUM^(a) AND PRICE OF DAIRY, POULTRY AND BEE PRODUCTION: AUSTRALIA

(Base: Average 3 years ended June, 1939 = 100)

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63
Quantum^(a) of production—					
Milk	120	123	116	125	129
Other products	118	122	127	135	130
<i>Total, Dairy, Poultry and Bee</i>	<i>119</i>	<i>123</i>	<i>120</i>	<i>128</i>	<i>129</i>
Per head of population ..	82	83	79	83	82
Price—					
Milk	372	383	384	373	378
Other products	421	450	446	371	410
<i>Total, Dairy, Poultry and Bee . .</i>	<i>386</i>	<i>402</i>	<i>402</i>	<i>373</i>	<i>387</i>

(a) Indexes of value at constant prices, i.e. quantities revalued at average unit values of base years 1936-37 to 1938-39.