

CHAPTER 21

RURAL INDUSTRY

This chapter is divided into four major parts:

Introduction, dealing with the disposal of Crown lands, closer settlement and war service settlement and 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 *Rural Industries*, *Value of Production*, and *Manufacturing Commodities* (regarding 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* (see page 853) 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 and Nutrients in Australia* contains details of the production and utilisation 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), *Value of Primary Production (Preliminary Estimates)* (annual), *Farm Machinery on Rural Holdings* (annual), *Tractors on Rural Holdings, 31 March 1966* (detailed information, triennial), *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 Utilisation* (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).

Detailed particulars of the early development of various aspects of Australian rural industry are given in previous issues of the Year Book up to No. 53 (see, for example No. 53, pages 885, 888, 891–2).

Throughout this chapter yearly periods for area and production of crops relate to years ended 31 March. Other periods in respect of e.g. factory and trade statistics relate to years ended 30 June.

INTRODUCTION

Disposal of Crown lands

Land legislation and tenures

The following sections contain figures showing the extent of the different land tenures in the several States and Territories, classified under broad headings indicating the nature of the tenure, together with some general descriptive matter. Information in greater detail, descriptions of the land tenure systems of the several States and the internal Territories, and conspectuses of land legislation in force and of the systems of land tenure were provided in Year Book No. 48 and previous issues (see also Year Book No. 50, page 85 and List of Special Articles, etc. preceding General Index to this Volume).

Free grants and reservations

Provision exists in all States except Tasmania for the disposal of Crown lands for public purposes by free grants, and in all States for the temporary and or permanent reservation of Crown lands for public purposes. In the Northern Territory any Crown lands not subject to any right of, or contract for, purchase may be resumed for public purposes, and the whole or any portion of the lands resumed may be reserved for that purpose. In the Australian Capital Territory, under the *Seat of Government (Administration) Act* 1910, Crown lands may not be sold or disposed of for any estate in freehold except in pursuance of some contract entered into before the commencement of the Act.

AREAS OF CROWN LANDS RESERVED: STATES AND TERRITORIES, 1963 TO 1967
(*000 acres)

Year	N.S.W. (a)	Vic. (b)	Qld (b)	S.A. (a)	W.A. (a)	Tas. (a)	N.T. (a)	Total (c)
1963 . .	15,958	8,801	25,053	22,754	74,353	3,994	59,663	210,576
1964 . .	15,931	8,847	25,234	22,764	76,450	4,098	60,903	214,227
1965 . .	15,943	8,861	25,451	22,802	78,088	4,116	60,903	216,164
1966 . .	15,937	8,874	25,662	22,878	78,226	4,191	60,922	216,690
1967 . .	15,875		27,240	22,878	80,491	4,274	60,974	

(a) At 30 June. (b) At 31 December. (c) Excludes the Australian Capital Territory.

The purposes for which areas were reserved are given hereunder for the latest years available as set out in the table above.

New South Wales. For travelling stock, 4,952,430 acres; forest reserves, 1,460,408 acres; water and camping reserves, 757,784 acres; mining reserves, 1,032,923 acres; recreation and parks, 767,127 acres; other reserves, 6,904,248 acres; total, 15,874,920 acres.

Victoria. For roads, 1,700,048 acres; water reserves, 314,145 acres; forest and timber reserves, 5,754,446 acres; mallee reserves, 410,000 acres; other reserves, 695,678 acres; total, 8,874,317 acres.

Queensland. For timber reserves, 1,912,799 acres; State forests and national parks, 9,171,211 acres; Aboriginal reserves, 6,642,371 acres; streets, surveyed roads and stock routes, 4,085,415 acres; general reserves, 5,427,928 acres; total, 27,239,724 acres.

South Australia. Total area of surveyed roads, railways and other reserves, 22,877,721 acres, including 18,833,822 acres set apart as Aboriginal reserves.

Western Australia. For State forests, 4,448,682 acres; timber reserves, 1,860,176 acres; other reserves 74,182,072 acres; total, 80,490,930 acres.

Tasmania. For forest reserves, 3,690,000 acres; national parks, 584,000 acres; total, 4,274,000 acres.

Northern Territory. For Aboriginal, defence and public requirements, 60,973,772 acres.

Conditional and unconditional purchases of freehold

Crown lands in the States may be disposed of by unconditional purchase at public auction or by certain other forms of purchase (for details see Year Book No. 48, pages 91-2). Conditional purchases of various types may also be made. In the Northern Territory only 0.1 per cent of the total area is alienated, the remainder being held under lease or licence, or reserved for various purposes or unoccupied. In the Australian Capital Territory about 14 per cent of the area is alienated or in process of alienation in consequence of contracts existing prior to the establishment of the Territory.

Leases and licences

Well over half the area of the States of New South Wales and South Australia and of the Northern Territory and more than four-fifths of that of Queensland are occupied under some form of lease or licence. In Victoria, only about one-tenth of the area is leased or licensed, more than half being alienated; in Western Australia, more than one-third is leased or licensed, most of the remainder being unoccupied; in Tasmania about one-thirteenth is leased or licensed, while about half the area of the State is occupied by the Crown or unoccupied, and the remainder alienated. Areas leased or licensed in the States are held under Crown lands Acts, closer settlement Acts, mining Acts, etc., and in the Territories under various Ordinances.

Land Acts and Ordinances. The types of lease and licence which obtain under land legislation cover a wide range, and vary with each State or Territory. The following are examples: grazing or pastoral, settlement and closer settlement, settlement purchase, conditional and unconditional purchase, perpetual and Crown; however, the variations of these forms and the special forms of lease and licence

which exist would extend this list considerably. Details of the various types in existence are given in Year Book No. 48, pages 93-4, and some detail is included in the tables on pages 878-81 of Year Book No. 53.

AREAS OCCUPIED UNDER LEASE OR LICENCE OTHER THAN MINING AND FORESTRY: STATES AND TERRITORIES, 1963 TO 1967

('000 acres)

Year	N.S.W. (a)	Vic. (b)	Qld (b)	S.A. (a)	W.A. (a)	Tas. (a)	N.T. (a) (c)	A.C.T. (a) (c)	Total
1963	110,066	5,936	364,140	146,807	243,976	1,032	178,017	289	1,050,263
1964	111,386	6,147	367,209	146,382	242,309	1,062	191,436	285	1,066,216
1965	111,567	6,263	365,318	147,661	241,911	984	191,840	282	1,065,826
1966	111,262	(d)6,269	362,866	150,422	241,662	933	190,688	279	1,064,381
1967	111,300		359,152	149,192	244,715	915	194,543	262	

(a) Year ended 30 June. (b) Year ended 31 December. (c) Leases and licences for all purposes. (d) Includes 79,000 acres of reserved Crown lands held under grazing licences.

Closer settlement and war service settlement

Closer settlement

Particulars of the methods of acquisition and disposal of land for the closer settlement of civilians and returned service personnel (1914-18 War) in the several States are given in issues of the Year Book up to No. 22 (see No. 22, pages 163-9), and the results of the operations of the several schemes have appeared in subsequent issues in considerable detail. However, the amalgamation in some States of closer settlement records with those of other authorities has since made it impossible to obtain up-to-date figures for those States and for Australia as a whole. Page 96 of Year Book No. 48 contains particulars as at 30 June 1960 of the areas and costs for those States for which separate information is available.

War Service Land Settlement Scheme

The War Service Land Settlement Scheme provides for the settlement on the land of eligible servicemen from the 1939-45 War and the Korea-Malaya operations. Finance for capital expenditure under the scheme in South Australia, Western Australia and Tasmania and for special loans to New South Wales and Victoria is provided through Loan (War Service Land Settlement) Acts. Finance for other aspects of the scheme in all States is provided by annual parliamentary appropriation. The *States Grants (War Service Land Settlement) Act 1952* provides that the responsible Commonwealth Minister may make grants of financial assistance to the States under such terms as he may from time to time determine.

New South Wales, Victoria and Queensland agreed, at the inception of the scheme, to find their own finance for the acquisition and development of properties. In 1954 Queensland abandoned the scheme and made available for general settlement all unallotted lands held under it. Detailed information about the agreements and the methods of operation and administration of the scheme are contained in earlier Year Books (see List of Special Articles, etc., preceding General Index to this volume).

WAR SERVICE LAND SETTLEMENT: SUMMARY, STATES, TO 30 JUNE 1967

State	Land acquired	Farms allotted		Farms in course of development		Other
		No.	acres	No.	acres	
New South Wales	9,094,021	3,047	9,094,021	..	..	..
Victoria	1,181,599	3,048	1,181,599	..	..	..
Queensland	398,524	470	218,640	..	..	(a)179,884
South Australia	755,873	1,021	690,225	..	..	(b)65,648
Western Australia	2,053,972	1,010	1,905,475	..	..	(b)148,497
Tasmania	449,629	552	439,745	..	..	(b)9,884
Total	13,933,618	9,148	13,529,705	..	..	403,913

(a) War Service Land Settlement was discontinued in 1954, and unallotted lands were made available for general settlement. (b) Includes land disposed of outside the scheme and discrepancies to be corrected upon survey.

Particulars of expenditure on war service land settlement are given in Chapter 19, Public Finance (see pages 746-7).

Alienation and occupation of Crown lands

Detailed particulars of the alienation and occupation of Crown lands in the several States and Territories are given in previous issues of the Year Book up to No. 53 (see No. 53, pages 878-81).

The following table provides a summary for each State and Territory, and for Australia as a whole, of the alienation and occupation of Crown lands in 1967.

ALIENATION AND OCCUPATION OF CROWN LANDS: STATES AND TERRITORIES, 1967

State or Territory	Private lands				Crown lands				Total area '000 acres
	Alienated		In process of alienation		Leased or licensed		Other (a)		
	'000 acres	Per cent	'000 acres	Per cent	'000 acres	Per cent	'000 acres	Per cent	
N.S.W.(b)	61,525	31.1	5,385	2.7	113,108	57.1	18,019	9.1	198,037
Vic.(c)	32,036	57.0	2,101	3.7	6,189	11.0	15,919	28.3	56,246
Qld(d)	26,645	6.2	11,027	2.6	361,456	84.7	27,752	6.5	426,880
S.A.(b)	15,896	6.6	338	0.1	149,192	61.3	77,819	32.0	243,245
W.A.(b)	31,583	5.1	15,200	2.4	248,812	39.8	328,994	52.7	624,589
Tas.(b)	6,652	39.4	246	1.5	1,279	7.6	8,708	51.6	16,885
N.T.(b)	319	0.1	..	..	194,543	58.4	138,117	41.5	332,979
A.C.T.(b)(e)	84	14.4	14	2.4	262	45.0	241	38.2	601
Australia	174,740	9.2	34,311	1.8	1,074,841	56.6	615,569	32.4	1,899,462

(a) Occupied by Crown; reserved; unoccupied; unreserved.
(d) At 31 December 1967.

(b) At 30 June.

(c) At 31 December 1966.

(e) Includes Jervis Bay area.

Number and area of rural holdings

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 or for the raising of livestock and the production of livestock products.

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.

RURAL HOLDINGS: NUMBER AND AREA, STATES AND TERRITORIES, 1962-63 TO 1966-67

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
NUMBER OF RURAL HOLDINGS									
1962-63	76,294	69,700	43,284	28,922	22,554	10,974	281	217	252,226
1963-64	77,339	69,775	43,183	28,711	22,770	10,949	299	214	253,240
1964-65	77,098	69,737	43,565	28,754	22,856	10,979	307	207	253,503
1965-66	76,152	69,199	43,914	28,759	22,853	10,777	305	203	252,162
1966-67	76,251	68,466	43,858	28,957	23,181	10,641	304	200	251,858
TOTAL AREA OF RURAL HOLDINGS (^{'000} acres)									
1962-63	172,038	37,709	376,788	156,697	262,660	6,422	164,955	376	1,177,645
1963-64	172,076	37,798	376,687	158,905	266,556	6,377	165,734	373	1,184,506
1964-65	172,148	37,844	377,010	156,955	268,553	6,420	171,482	358	1,190,770
1965-66	171,200	37,844	380,325	159,394	270,054	6,496	175,862	355	1,201,531
1966-67	171,652	38,653	379,977	161,510	274,765	6,507	170,018	350	1,203,431

Land utilisation of rural holdings

The following table shows the purposes for which the land on the rural holdings referred to in the preceding paragraph was used.

RURAL HOLDINGS: LAND UTILISATION, 1962-63 TO 1966-67
(*000 acres)

Year	Area used for crops (a)	Land lying fallow (b)	Area under sown grasses and clovers (c)	Balance of holdings (d)	Total area of holdings
1966-67—					
New South Wales	12,045	2,860	10,617	146,131	171,652
Victoria	5,492	2,751	15,768	14,642	38,653
Queensland	4,470	731	3,993	370,782	379,977
South Australia	6,267	1,331	6,207	147,705	161,510
Western Australia	8,558	2,023	13,018	251,166	274,765
Tasmania	243	86	1,755	4,423	6,507
Northern Territory	4	..	26	169,988	170,018
Australian Capital Territory	8	1	88	253	350
Australia	37,087	9,784	51,471	1,105,090	1,203,431
1965-66	32,798	10,471	48,519	1,109,742	1,201,531
1964-65	32,251	8,466	47,159	1,102,894	1,190,770
1963-64	29,948	8,510	44,211	1,101,837	1,184,506
1962-63	30,056	8,719	40,991	1,097,879	1,177,645

(a) Excludes (i) duplication on account of area double cropped, except for New South Wales and South Australia, and (ii) clovers and grasses cut for hay and seed which have been included in Area under sown grasses and clovers, and differs therefore from crop area figures shown later in this chapter. (b) Excludes short or summer fallow. (c) Includes paspalum. (d) Used for grazing, lying idle, etc.

Classification by size and type of activity

Some of the information obtained from the 1965-66 Agricultural and Pastoral Census has been 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 have been 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*, 1965-66. Similar information was published in a series of bulletins for the year 1959-60. A size classification for each State is available for the year 1955-56.

Employment on rural holdings**Persons engaged**

The following table shows, for each State and Territory, the recorded number of males working on rural holdings. Particulars for females are not available except for New South Wales and Victoria. 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: STATES AND TERRITORIES, 31 MARCH 1967

<i>Males engaged</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
Permanent—									
Owners, lessees or share-farmers	63,171	59,834	45,364	22,579	20,215	7,564	213	124	219,064
Relatives of owner, lessee or share-farmer, over 14 years of age, not receiving wages or salary	2,749	4,927	2,588	674	1,289	5	38	18	12,288
Employees, including managers and relatives working for wages or salary	28,220	14,840	16,880	8,045	8,051	4,101	700	121	80,958
<i>Total permanent males</i>	<i>94,140</i>	<i>79,601</i>	<i>64,832</i>	<i>31,298</i>	<i>29,555</i>	<i>11,670</i>	<i>951</i>	<i>263</i>	<i>312,310</i>
Temporary	22,200	18,316	13,051	10,551	4,620	4,773	1,065	40	74,616
<i>Total males</i>	<i>116,340</i>	<i>97,917</i>	<i>77,883</i>	<i>41,849</i>	<i>34,175</i>	<i>16,443</i>	<i>2,016</i>	<i>303</i>	<i>386,926</i>

(a) Details for females not available except for New South Wales and Victoria.

Information regarding the number of persons (males and females) working full-time on rural holdings in Australia at 31 March of years to 1958 appears in Year Book No. 50, page 987, and in earlier Year Books. Data for subsequent years are the subject of investigation and are not available at this stage.

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 1966-67. Data for New South Wales, and hence Australia, are not available.

**EMPLOYEES ON RURAL HOLDINGS: SALARIES AND WAGES PAID(a)
STATES AND TERRITORIES, 1966-67
(\$'000)**

<i>Employees</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
Males and females—									
Permanent	(b) {	29,835	35,782	15,225	17,933	8,179	1,535	326	} n.a.
Temporary(c)		27,811	44,156	12,399	16,232	5,095	635	170	
<i>Total</i>		<i>57,646</i>	<i>79,938</i>	<i>27,624</i>	<i>34,165</i>	<i>13,274</i>	<i>2,170</i>	<i>496</i>	

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

Similar information for Australia for years up to 1957-58 is given in Year Book No. 50, page 988, and in earlier Year Books. Particulars for subsequent years are the subject of investigation and are not available at this stage.

Persons residing permanently on holdings

Particulars of persons (of all ages) residing permanently on rural holdings in each State and Territory at 31 March 1967, and throughout Australia for a series of years, are as follows.

**PERSONS (OF ALL AGES) RESIDING PERMANENTLY ON RURAL HOLDINGS
STATES AND TERRITORIES, 31 MARCH 1967**

	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
Males	154,579	139,835	101,250	58,028	50,000	23,852	1,313	521	529,378
Females	134,146	124,087	83,958	51,270	41,596	21,348	672	430	457,507
<i>Total</i>	<i>288,725</i>	<i>263,922</i>	<i>185,208</i>	<i>109,298</i>	<i>91,596</i>	<i>45,200</i>	<i>1,985</i>	<i>951</i>	<i>986,885</i>

PERSONS (OF ALL AGES) RESIDING PERMANENTLY ON RURAL HOLDINGS
AUSTRALIA, 31 MARCH 1963 TO 1967

	31 March—				
	1963	1964	1965	1966	1967
Males	540,893	541,394	538,496	533,039	529,378
Females	464,048	465,990	464,416	461,683	457,507
Total	1,004,941	1,007,384	1,002,912	994,722	986,885

Farm machinery on rural holdings

The tables following show data for the principal types of farm machinery on rural holdings in the several States and Territories at 31 March 1967 and throughout Australia for a series of years. A more detailed analysis of tractors on rural holdings according to horse-power, type of fuel used, and age of tractor has been published in the Statistical Bulletin *Tractors on Rural Holdings—Australia, 31 March 1966*.

FARM MACHINERY ON RURAL HOLDINGS: STATES AND TERRITORIES, 31 MARCH 1967

Machinery	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Cultivating—									
Mouldboard ploughs—									
Trailing type	12,167	13,568	7,592	7,357	2,755	2,977	11	23	46,450
Tractor-mounted type	13,789	12,348	7,325	3,194	1,787	3,684	25	67	42,219
Disc implements (including disc ploughs, disc cultivators, disc tillers and disc harrows)—									
Trailing type	37,757	31,225	29,551	14,102	17,911	5,932	71	100	136,649
Tractor-mounted type	19,414	18,740	20,862	4,809	3,848	3,811	70	47	71,601
Tyne implements—									
Chisel ploughs, scarifiers, cultivators and rippers—									
Trailing type	26,882	22,175	19,347	13,737	11,789	3,151	27	38	97,146
Tractor-mounted type	26,237	18,399	31,242	7,599	4,184	6,081	53	67	93,862
Tyne harrows (number of leaves)—									
Trailing type	115,899	115,045	82,242	91,803	41,340	17,354	185	216	464,084
Tractor-mounted type	30,663	25,665	18,374	9,216	3,308	6,209	110	70	93,615
Rotary hoes and rotary tillers—									
Self-contained power unit	9,427	7,906	3,456	3,881	1,823	1,221	74	n.a.	(a) 27,788
Tractor-mounted or trailing type	6,209	4,399	3,456	1,561	1,513	723	20		(a) 17,881
Seeding and planting—									
Grain drills—									
Combine type	28,205	20,392	13,255	15,489	13,628	1,465	31	65	92,530
Other types	5,781	9,574	2,369	4,793	4,192	2,546	15	35	29,305
Maize and cotton planters	7,382	747	6,041	..	69	..	18	3	14,260
Fertiliser distributors and broadcasters	23,017	30,948	14,458	9,166	9,540	5,805	31	99	93,064
Harvesting—									
Grain and seed headers and harvesters(b)	19,848	14,319	7,395	11,597	11,072	655	..	31	64,917
Mowers—									
Power-driven	n.a.	n.a.	8,337	n.a.	7,581	5,193	64	n.a.	n.a.
Ground-driven			3,089		n.a.	823				12
Hay rakes—									
Side delivery	n.a.	n.a.	4,561	n.a.	n.a.	2,438	27	n.a.	n.a.
Buck			2,819			988			
Dump			5,542			861			
Pick-up balers	10,711	12,965	2,801	4,760	3,624	1,757	19	51	36,688
Potato diggers	n.a.	n.a.	1,154	n.a.	n.a.	932	n.a.	n.a.	n.a.
Forage harvesters	2,369	1,913	1,291	765	547	309	11	9	7,214
Peanut pickers	n.a.	..	380	..	..	..	16	..	(a) 396
Corn pickers	n.a.	n.a.	851	..	..	..	..	..	n.a.
Other—									
Shearing machines (number of stands)	72,872	43,510	19,197	29,343	23,431	4,559	16	298	193,226
Milking machines (number of units)	41,433	108,664	40,878	18,143	9,664	16,414	35	94	235,325
Tractors (wheel and crawler)	85,038	79,566	67,553	35,829	33,997	12,171	309	207	314,670
Hammer mills	n.a.	n.a.	7,656	n.a.	n.a.	570	..	n.a.	n.a.

(a) Incomplete. (b) Excludes reapers, binders, specialised clover harvesters and forage harvesters.

FARM MACHINERY ON RURAL HOLDINGS: AUSTRALIA
31 MARCH 1963 TO 1967

<i>31 March—</i>					
<i>Machinery</i>	<i>1963</i>	<i>1964</i>	<i>1965</i>	<i>1966</i>	<i>1967</i>
Cultivating(a)—					
Mouldboard ploughs—					
Trailing type			60,506		46,450
Tractor-mounted type			41,722		42,219
Disc implements (including disc ploughs, disc cultivators, disc tillers and disc harrows)—					
Trailing type		156,143			136,649
Tractor-mounted type		73,675			71,601
Tyne implements—	n.a.		n.a.	n.a.	
Chisel ploughs, scarifiers, cultivators and rippers—					
Trailing type		98,180			97,146
Tractor-mounted type		77,748			93,862
Tyne harrows (number of leaves)—					
Trailing type		448,626			464,084
Tractor-mounted type		62,720			93,615
Rotary hoes and rotary tillers—					
Self-contained power unit	(b)38,896	(c)37,561	(c)40,195	45,267	27,788
Tractor-mounted or trailing type					17,881
Seeding and planting—					
Grain drills—					
Combine type			90,008	90,866	92,530
Other types	116,116	117,271	30,537	30,401	29,305
Maize and cotton planters	(d)15,509	(d)14,635	15,220	14,523	14,260
Fertiliser distributors and broadcasters	83,499	84,320	86,653	86,409	93,064
Harvesting—					
Grain and seed headers and harvesters	65,628	64,697	65,568	64,744	64,917
Mowers(a)—					
Power-driven			81,410		
Ground-driven	n.a.	n.a.	17,153	n.a.	n.a.
Hay rakes(a)—					
Side delivery			42,832		
Buck	n.a.	n.a.	11,917	n.a.	n.a.
Dump			16,564		
Pick-up balers	28,725	30,411	32,275	34,229	36,688
Potato diggers(a)	n.a.	n.a.	6,613	n.a.	n.a.
Forage harvesters	5,083	5,509	5,674	6,385	7,214
Peanut pickers(a)	n.a.	n.a.	315	(e)371	(e)396
Corn pickers(a)	n.a.	n.a.	1,246	n.a.	n.a.
Other—					
Shearing machines (number of stands)	178,805	180,370	186,393	188,496	193,226
Milking machines (number of units)	229,270	229,042	231,389	233,625	235,325
Tractors—					
Wheel	249,783			278,118	
Crawler	21,277	283,748	295,502	22,741	314,670
Hammer mills(a)	n.a.	n.a.	22,128	n.a.	n.a.

(a) Details for all States are collected at triennial intervals only. (b) Rotary hoes, all types. (c) Incomplete; excludes tractor-drawn rotary hoes and rotary tillers in Queensland. (d) Incomplete; particulars for Victoria not available. (e) Incomplete; excludes New South Wales.

The soils of Australia

Year Book No. 52 contains an article (pages 873-9) on the soils of Australia which deals with the following matters: nature and development of Australian soils, including the agricultural development of soils, and types of Australian soils. A soil map of Australia and illustrations are included on plates 47 to 51 of Year Book No. 52.

Soil improvement and conservation

Fertilisers

The Australian output of prepared fertilisers is derived chiefly from imported rock phosphate. Complete information regarding local production of fertilisers is not available. The number of firms engaged in the manufacture of chemical fertilisers in Australia for the year 1966-67 was 48 made up as follows: New South Wales, 12; Victoria, 6; Queensland, 5; South Australia, 10; Western Australia, 8; and Tasmania, 7. The production of superphosphate in Australia during 1966-67 amounted to 4,430,000 tons.

Information regarding the area treated with artificial fertilisers and the quantity of artificial fertilisers (superphosphate, bonedust, nitrates, etc.) used in each State during the 1966-67 season is given in the following table.

AREA FERTILISED AND QUANTITY OF ARTIFICIAL FERTILISERS USED
STATES AND TERRITORIES, 1966-67

State or Territory	Crops			Pastures			Total		
	Area fertilised	Super-phosphate used	Other artificial fertilisers used	Area fertilised	Super-phosphate used	Other artificial fertilisers used	Area fertilised	Super-phosphate used	Other artificial fertilisers used
	'000 acres	tons	tons	'000 acres	tons	tons	'000 acres	tons	tons
New South Wales	6,661	266,232	57,488	9,927	525,356	15,493	16,588	791,588	72,981
Victoria	4,772	211,625	55,571	12,502	778,269	67,927	17,275	989,894	123,498
Queensland	1,029	30,885	192,156	180	15,824	3,750	1,210	46,709	195,906
South Australia	5,123	271,083	15,813	5,237	308,656	3,256	10,359	579,739	19,069
Western Australia	8,531	436,834	37,269	11,601	609,858	12,594	20,133	1,046,692	49,863
Tasmania	231	23,927	11,461	1,588	128,205	6,162	1,819	152,132	17,624
Northern Territory	2	134	92	12	435	20	14	569	112
Australian Capital Territory	6	385	56	60	2,756	196	66	3,141	252
Australia	26,356	1,241,105	369,906	41,107	2,369,359	109,398	67,463	3,610,464	479,305

Particulars of the quantity of artificial fertilisers used in each State and Territory during each of the seasons 1962-63 to 1966-67 are shown in the next table. These details include the quantity used for the top-dressing of pasture lands.

QUANTITY OF ARTIFICIAL FERTILISERS USED: STATES AND TERRITORIES
1962-63 TO 1966-67
(Tons)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1962-63	576,561	822,488	135,896	430,561	713,067	124,523	226	4,501	2,807,823
1963-64	683,968	880,941	183,326	465,583	720,943	141,507	305	5,213	3,081,786
1964-65	837,959	988,106	198,696	528,827	844,455	142,660	307	5,225	3,546,235
1965-66	839,955	1,054,393	214,487	561,962	972,432	163,925	672	3,777	3,811,603
1966-67	864,569	1,113,392	242,615	598,808	1,096,555	169,756	681	3,393	4,089,769

The chief sources of Australia's supplies of natural phosphate are Nauru, Christmas Island (Indian Ocean) and the United States of America. Sodium nitrate is obtained chiefly from Chile.

ARTIFICIAL FERTILISERS: IMPORTS INTO AUSTRALIA, 1962-63 TO 1966-67

Fertiliser	1962-63	1963-64	1964-65	1965-66	1966-67
QUANTITY (^{'000} cwt)					
Ammonium fertilisers	934	2,533	1,565	1,311	1,973
Potassium fertilisers	1,167	1,935	2,180	2,163	2,398
Natural phosphate	33,898	39,788	50,346	55,901	65,436
Sodium nitrate	144	193	221	153	149
Other	515	337	746	335	885
Total	36,658	44,786	55,058	59,862	70,841
VALUE (^{'000} f.o.b.)					
Ammonium fertilisers	1,615	3,934	3,132	2,841	4,161
Potassium fertilisers	1,848	2,856	3,441	3,550	3,875
Natural phosphate	9,874	12,486	17,978	21,543	29,050
Sodium nitrate	336	478	443	393	372
Other	1,471	1,092	2,532	1,181	2,698
Total	15,144	20,846	27,526	29,508	40,156

Exports of fertilisers (manufactured locally) amounted to 20,000 cwt valued at \$93,000 in 1966-67 compared with 37,000 cwt valued at \$124,000 in 1965-66.

Aerial agriculture

Extensive use is 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 1966-67 the total was 15,237,000 acres. The following table shows details of area treated and materials used for each State for the five years ended 31 March 1967.

AERIAL AGRICULTURE, 1962-63 TO 1966-67

Year ended 31 March	Area		Total area treated (a)	Materials used		Total flying time
	topdressed and seeded	Area sprayed		Super-phosphate	Seed	
	^{'000} acres	^{'000} acres	^{'000} acres	tons	^{'000} lb	hours
1967—						
New South Wales(b)	6,859	(c)	7,793	318,527	1,086	56,442
Victoria	1,945	(c)	2,424	(c)	139	19,109
Queensland(d)	(c)	385	(c)	(c)	854	(c)
South Australia	903	372	1,276	46,850	(c)	7,822
Western Australia	(c)	(c)	2,301	(c)	(c)	14,031
Tasmania	(c)	19	(c)	22,009	(c)	(c)
Australia	11,646	3,192	15,237	596,628	2,407	108,688
1966	11,314	3,469	15,010	588,045	1,581	108,850
1965	14,147	2,416	16,640	656,094	3,467	108,753
1964	10,666	2,041	12,788	505,811	1,997	84,827
1963	6,965	1,739	8,763	328,646	1,012	61,411

(a) Includes other types of treatment (rabbit baiting, etc.). (b) Includes details for the Australian Capital Territory.
(c) Not available for publication. (d) Includes details for the Northern Territory.

Pasture improvement

An article on pasture improvement, which includes notes on indigenous and introduced species of grasses and which traces the development of pasture research in Australia, appears on pages 1001-2 of Year Book No. 49.

Soil conservation

Year Book No. 49 contains an article (pages 1003-4) on soil conservation which deals 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

In general, statistics in this chapter relating to agricultural production are derived from 'census' returns supplied by approximately 250,000 farmers who utilise one acre or more of land for agricultural or pastoral purposes. The latest figures available are those for the year 1966-67. The returns are collected on a substantially uniform basis in all States at 31 March each year, and relate mainly to crops sown 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 section are therefore shown in 'agricultural' years. For most purposes there will be little error involved in considering them as applying to years ended 30 June.

For more detailed information on period covered and details of the weights and measures used in recording production of agricultural commodities see introductory notes to the bulletin *Rural Industries*. Details of weights and measures are also included after the Contents of this Year Book.

Progress, assistance and control

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 1957-58 to 1966-67. Plate 53 in this chapter shows the area of crops in Australia from 1900-01 onward (page 862).

AREA OF CROPS: STATES AND TERRITORIES, 1860-61 TO 1966-67
('000 acres)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	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
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
1963-64	8,997	6,102	3,665	5,975	6,915	380	3	8	32,045
1964-65	10,334	6,477	3,967	5,965	7,505	404	4	9	34,665
1965-66	9,052	6,219	4,119	6,030	8,680	386	4	8	34,498
1966-67	12,421	6,765	4,605	6,488	8,817	444	4	10	39,553

The Australian Agricultural Council

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. This is a permanent organisation which was formed following a conference of Commonwealth and State Ministers on agricultural and marketing matters held at Canberra in December 1934. 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 organised 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.

The Standing Committee on Agriculture comprises the permanent heads of the State Departments of Agriculture, the Secretary, Department of Primary Industry, and a representative each from the Commonwealth Departments of the Treasury, Health, Trade and Industry, and Territories, and from the Commonwealth Scientific and Industrial Research Organization.

Financial assistance to primary producers

Financial assistance to primary producers by the Commonwealth Government may be provided in a number of ways. Examples of these follow.

Bounties. A bounty to producers, not exceeding \$4,000,000 in any one year, is currently paid on raw cotton produced and sold for use in Australia. This arrangement is due for review in 1968.

A bounty of \$27,000,000 paid annually on the production of butter, cheese and related butterfat products and an export bounty on processed milk products of a maximum of \$800,000 annually are both continued in the fifth Five Year Dairy Industry Stabilization Plan which commenced 1 July 1967.

Commitments to industry-financed stabilisation schemes. In schemes of this nature the Commonwealth generally accepts a defined contingent liability to contribute to Government-approved stabilisation funds if falling prices, or rising costs, or both, lead to a situation where growers' contributions prove inadequate. The Dried Vine Fruits Stabilization Fund and the Wheat Prices Stabilization Fund are examples of this.

Other financial assistance

The Commonwealth Government also pays for cattle tick control, flood, drought and bush fire relief, fisheries research, and farm mechanisation research.

Over recent years, legislative research schemes financed by matching contributions from the Commonwealth, and industry or States, or both, have been initiated in regard to tobacco, wool, wheat, dairy produce, meat, eggs, wine and honey. Non-legislative schemes, on a similar financial basis, have been operative in relation to Australian plague locusts, pest management in pome fruit orchards, grape crop forecasting, honey research, barley research, banana research, fruit fly research and poultry research.

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 concerned primarily with agricultural research and experimentation, each farm concentrating on problems specific to the region 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* the chapter 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.

Extension services

Extension services operate in each State and in the Northern Territory, Australian Capital Territory and the Territory of Papua-New Guinea. Commonwealth funds have been provided in the States to enable them to expand their extension activities, through the Commonwealth Extension Services Grant since 1952-53 and the Commonwealth Dairy Industry Grant since 1948-49. The

funds made available increased over the period and by 1963 had reached \$1.4 million. In 1966 the Commonwealth decided to amalgamate the two grants and to increase the funds available progressively over a period of five years to a maximum of \$5.4 million per annum. In 1966-67 the Commonwealth Extension Services grant was \$2.9 million and in 1967-68 \$3.65 million was made available. The scope of the grant has been enlarged to include regional research and training for extension and regional research.

Distribution, production and value of crops

Distribution of crops

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. A graph showing the area sown to principal crops for the years 1900-01 to 1966-67 appears on plate 53, over the page.

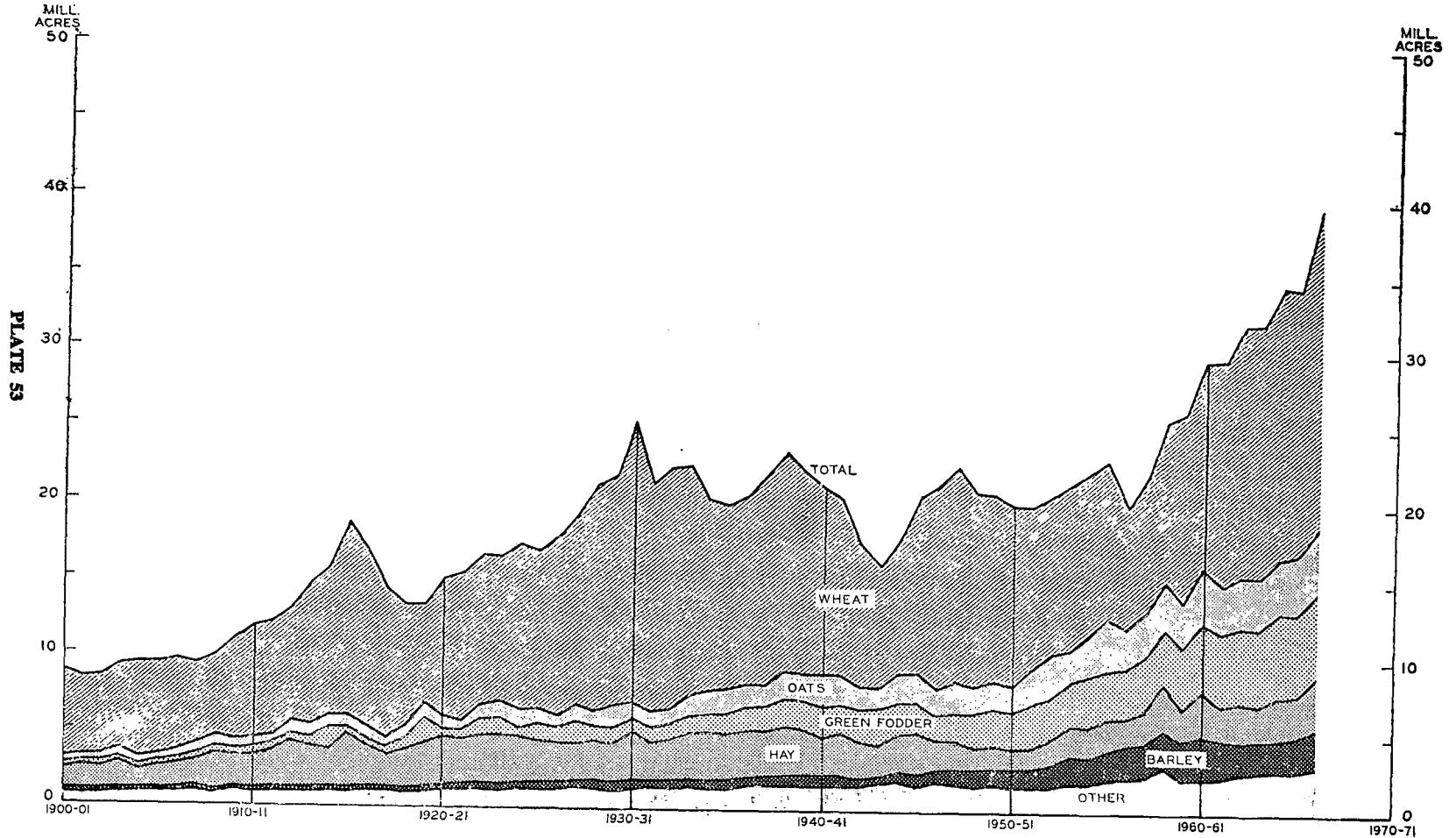
AREA OF CROPS: STATES AND TERRITORIES, 1966-67 (Acres)

Crops	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Cereals for grain—									
Barley—									
2-row	245,489	213,380	343,760	1,056,394	72,190	20,065	..	..	1,951,278
6-row	139,685	14,270	39,976	50,564	300,909	992	..	..	546,396
Maize—Hybrid	(a)44,688	1,261	(a)141,133	..	(b)	..	..	..	(c)187,082
Other	(a)4,331	146	(a)9,877	..	5	..	(d)	..	(c)14,359
Oats	1,362,607	1,078,877	66,482	508,845	1,203,815	35,909	..	1,797	4,258,332
Panicum, millet and setaria	423	3,576	(a)60,124	..	..	..	..	..	64,123
Rice	73,724	..	..	..	(d)	..	(e)	..	(c)73,724
Rye	8,586	11,608	178	56,617	10,682	25	..	..	87,696
Sorghum	(a)98,161	123	(a)403,500	..	38	..	527	..	502,349
Wheat	7,135,046	3,138,029	1,227,377	2,960,275	6,346,613	12,747	..	2,666	20,822,753
Hay	823,428	1,558,482	128,707	481,742	295,082	203,181	1,334	3,983	3,495,939
Green fodder	2,132,592	443,438	1,179,061	1,168,688	398,827	74,333	463	1,100	5,398,511
Other stock fodder	14,659	26,291	3,090	31,384	4,575	31,517	n.a.	..	(c)111,516
Grass seed—									
Lucerne	8,290	(f)	422	36,216	160	..	794	..	(c)45,882
Clover	26,480	7,174	8	6,402	95,421	880	..	..	136,365
Other	22,350	29,166	31,070	11,505	22,677	(g)4,256	111	503	121,638
Industrial crops—									
Broom millet	1,881	169	239	..	14	..	..	..	2,303
Canary seed	(d)	..	4,439	..	..	..	..	..	(c)4,439
Cotton	30,104	..	(a)11,167	..	11,892	..	..	..	53,163
Flax for linseed	9,580	5,012	17,854	389	1,751	..	..	..	34,586
Hops . . . . .	..	(h)714	..	..	(d)	(i)1,556	..	..	(c)2,270
Peanuts	397	..	69,330	..	..	..	(d)	..	(c)69,727
Safflower	5,092	729	88,803	(d)	(d)	..	..	..	(c)94,624
Sugar cane—									
For crushing	22,475	..	534,998	..	..	..	..	..	557,473
Stand-over and cut for plants	19,161	..	91,874	..	..	..	..	..	111,035
Sunflower	1,025	441	12,734	..	(d)	..	..	..	(c)14,200
Tobacco	1,794	8,455	12,134	..	..	..	..	..	22,383
Other . . . . .	..	918	183	(d)	..	245	..	..	(c)1,346
Vegetables for human consumption—									
Onions	1,256	3,295	3,495	1,631	413	129	(j)	(j)	(c)10,210
Potatoes	23,594	37,167	16,227	5,948	6,100	10,278	(j)	14	(c)99,328
Other	41,379	55,244	45,305	9,847	9,260	22,720	218	111	184,084
Vineyards—									
Bearing	18,899	45,381	2,913	52,732	7,304	..	..	..	127,229
Not bearing	2,358	3,783	391	4,348	641	..	..	..	11,521
Fruit—									
Bearing	76,590	56,677	34,855	30,372	19,590	18,624	74	29	236,811
Not bearing	19,892	16,842	15,203	13,785	6,867	3,719	59	9	76,376
Nurseries and cut flowers									
flowers	1,218	2,693	535	244	240	113	..	8	5,051
All other crops	3,790	1,477	7,326	104	1,906	2,214	45	27	16,889
Total area	12,421,024	6,764,818	4,604,770	6,488,032	8,816,972	443,504	3,625	10,247	39,552,992

(a) Sown 1965-66. (b) Included in Other maize. (c) Incomplete: see individual States. (d) Not available for publication. Included in All other crops. (e) Not available for publication. Excluded from totals. (f) Not available separately. Included in All other crops. (g) Excludes area sown simultaneously to oats. (h) Includes 43 acres not bearing. (i) Includes 88 acres not bearing. (j) Not available for publication. Included in Other vegetables.

AREA OF CROPS: AUSTRALIA

1900-01 TO 1966-67



RELATIVE AREAS OF CROPS: STATES AND TERRITORIES, 1966-67
(Per cent)

<i>Crop</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
Wheat (grain)	57.4	46.4	26.7	45.6	72.0	2.9	..	26.0	52.6
Green fodder	17.2	6.6	25.6	18.0	4.5	16.8	12.8	10.7	13.6
Oats (grain)	11.0	15.9	1.4	7.8	13.7	8.1	..	17.5	10.8
Hay	6.6	23.0	2.8	7.4	3.3	45.8	36.8	38.9	8.8
Barley (grain)	3.1	3.4	8.3	17.1	4.2	4.7	..	..	6.3
Sugar cane for crushing	0.2	..	11.6	..	..	..	..	..	1.4
Sorghum	0.8	..	8.8	..	..	..	14.5	..	1.3
Fruit	0.8	1.1	1.1	0.7	0.3	4.8	3.7	0.4	0.8
Maize (grain)	0.4	..	3.3	..	..	..	..	..	0.5
Vineyards	0.2	0.7	0.1	0.9	0.1	..	..	..	0.4
Potatoes	0.2	0.5	0.4	0.1	0.1	2.3	..	0.1	0.3
All other	2.1	2.4	9.9	2.4	1.8	14.6	32.2	6.4	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

AREA OF CROPS: AUSTRALIA, 1962-63 TO 1966-67
(*000 acres)

<i>Crop</i>	<i>1962-63</i>	<i>1963-64</i>	<i>1964-65</i>	<i>1965-66</i>	<i>1966-67</i>
Cereals for grain—					
Barley—					
2-row	1,553	1,621	1,655	1,766	1,951
6-row	474	392	409	531	546
Maize—					
Hybrid	161	172	176	164	187
Other	48	43	36	32	14
Oats	3,292	3,392	3,497	3,768	4,258
Rice	55	59	62	64	74
Sorghum	391	366	346	433	502
Wheat	16,469	16,474	17,919	17,515	20,823
Hay	2,720	2,602	2,793	2,780	3,496
Green fodder	4,952	4,877	5,614	5,324	5,399
Grass seed	162	219	258	227	304
Industrial crops—					
Cotton	38	41	38	55	53
Flax for linseed	97	118	134	25	35
Hops	2	2	2	2	2
Peanuts	36	45	46	58	70
Safflower	6	19	48	60	95
Sugar cane	506	539	628	647	669
Tobacco	29	29	26	23	22
Vegetables for human consumption—					
Onions	11	9	10	8	10
Potatoes	114	102	88	96	99
Other	163	166	168	185	184
Vineyards	134	136	139	140	139
Fruit	305	310	311	313	313
All other crops	374	312	262	282	308
Total	32,092	32,045	34,665	34,498	39,553

Production and yield per acre of crops

PRODUCTION OF CROPS: STATES AND TERRITORIES, 1966-67

<i>Crop</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
Cereals for grain—									
Barley—									
2-row . . . '000 bus	7,359	5,066	11,917	22,678	1,450	736	..	..	49,207
6-row . . . "	4,437	355	1,277	1,020	5,257	35	..	..	12,381
Maize—									
Hybrid . . . "	(a)2,301	67	(a)4,659	..	(b)	..	..	..	(c)7,026
Other . . . "	(a)170	5	(a)289	..	..	..	(d)	..	(c)465
Oats . . . "	41,003	31,248	1,467	10,276	22,117	948	..	47	107,106
Panicum, millet and setaria									
Rice . . . "	11,250	88	(a)1,064	..	(d)	..	(d)	..	1,159
Rye . . . "	155	78	3	244	99	..	..	..	580
Sorghum . . . "	(a)1,527	4	(a)10,172	..	..	..	8	..	11,711
Wheat . . . "	202,501	70,896	35,730	53,816	103,195	385	..	87	466,610
Hay . . . '000 tons	1,481	2,982	314	729	417	437	2	9	6,371
Grass seed—									
Lucerne . . . cwt	10,199	n.a.	403	45,263	82	..	2,079	..	(c)58,026
Clover . . . "	64,884	11,068	3	9,681	186,999	632	..	..	273,267
Other . . . "	19,670	47,811	29,682	13,255	33,565	11,070	15	183	155,251
Industrial crops—									
Broom millet—									
Fibre . . . cwt	12,659	893	694	..	80	..	..	..	14,326
Grain . . . bushels	18,795	595	n.a.	..	..	..	..	..	(c)19,390
Canary seed . . . bus	(d)	..	64,251	..	..	..	..	..	(c)64,251
Cotton, unginned '000 lb	79,159	..	(a)11,800	..	29,400	..	..	..	120,360
Flax for linseed, tons	3,265	2,319	7,338	188	634	..	..	..	13,744
Hops (dry weight) cwt	..	10,234	..	..	(d)	18,673	..	..	(c)28,907
Peanuts . . . "	5,194	..	821,957	..	..	..	(d)	..	(c)827,151
Safflower . . . '000 bus	72	7	1,290	(d)	(d)	..	..	..	(c)1,369
Sugar cane for crushing									
Sunflower . . . '000 tons	1,171	..	15,513	..	..	..	..	..	16,685
Sunflower . . . cwt	4,812	1,449	66,755	..	(d)	..	..	..	(c)73,016
Tobacco, dried leaf . . . '000 lb	2,133	10,953	14,819	..	..	..	..	..	27,905
Vegetables for human consumption—									
Onions . . . tons	10,809	22,375	27,033	17,933	5,417	898	(d)	(d)	(c)84,465
Potatoes . . . "	126,183	225,186	93,738	60,271	64,169	73,300	(d)	120	(c)642,967
Vineyards—									
Grapes—									
For drying . . . "	59,004	294,577	..	60,609	5,679	..	..	..	419,869
" table . . . "	8,201	11,381	4,193	1,027	2,088	..	..	..	26,890
" wine . . . "	47,145	20,531	245	165,030	5,313	..	..	..	238,264

(a) Harvested from crop sown in 1965-66.

(b) Included in Other maize.

(c) Incomplete; see individual States.

(d) Not available for publication.

PRODUCTION OF PRINCIPAL CROPS: AUSTRALIA, 1962-63 TO 1966-67

<i>Crop</i>		1962-63	1963-64	1964-65	1965-66	1966-67
Cereals for grain—						
Barley—						
2-row	'000 bus	31,370	36,464	41,775	33,235	49,207
6-row	"	8,209	6,931	7,540	8,600	12,381
Maize—						
Hybrid	"	6,064	5,592	5,896	4,253	7,026
Other	"	1,393	1,130	983	664	465
Oats	"	68,809	68,234	70,043	60,739	107,106
Rice	"	7,129	7,455	8,030	9,540	11,250
Sorghum	"	10,252	7,889	7,164	7,149	11,711
Wheat	"	306,912	327,912	368,789	259,666	466,610
Hay	'000 tons	4,717	4,269	4,963	4,179	6,371
Grass seed	cwt	232,669	333,286	411,919	356,815	486,544
Industrial crops—						
Cotton, unginced	'000 lb	15,762	18,223	63,009	133,850	120,360
Flax for linseed	tons	25,717	29,516	46,600	6,064	13,744
Hops (dry weight)	cwt	33,629	19,858	27,893	37,394	28,907
Peanuts	"	319,402	460,726	207,115	548,279	827,151
Safflower	'000 bus	90	303	697	550	1,369
Sugar cane for crushing	'000 tons	12,736	12,118	15,070	14,155	16,685
Tobacco (dried leaf)	'000 lb	27,148	34,342	25,111	27,361	27,905
Vegetables for human consumption—						
Onions	'000 tons	68	59	70	58	84
Potatoes	"	667	562	508	639	643
Vineyards—						
Grapes	"	471	646	680	582	685
Wine made(a)	'000 gals	29,893	37,536	38,520	33,956	41,642
Dried vine fruits	'000 tons	71	104	108	91	107

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

YIELD PER ACRE OF PRINCIPAL CROPS: AUSTRALIA, 1962-63 TO 1966-67

<i>Crop</i>		1962-63	1963-64	1964-65	1965-66	1966-67
Cereals for grain—						
Barley—						
2-row	bushels	20.2	22.5	25.2	18.8	25.2
6-row	"	17.3	17.7	18.4	16.2	22.7
Maize—						
Hybrid	"	37.7	32.6	33.4	25.9	37.6
Other	"	28.7	26.2	27.4	20.5	32.4
Oats	"	20.9	20.1	20.0	16.1	25.2
Rice	"	129.8	125.5	130.3	148.1	152.6
Sorghum	"	26.2	21.6	20.7	16.5	23.3
Wheat	"	18.6	19.9	20.6	14.8	22.4
Hay	tons	1.73	1.64	1.78	1.50	1.82
Industrial crops—						
Cotton, unginced	lb	418	445	1,662	2,436	2,264
Flax for linseed	tons	0.26	0.25	0.35	0.25	0.40
Hops (dry weight)(a)	cwt	16.82	9.68	13.23	17.24	13.51
Peanuts	"	8.89	10.25	4.51	9.50	11.86
Safflower	bushels	15.81	15.64	14.68	9.12	14.47
Sugar cane for crushing(a)	tons	31.71	29.02	32.04	28.13	29.93
Tobacco (dried leaf)	lb	924	1,183	954	1,165	1,247
Vegetables for human consumption—						
Onions	tons	6.34	6.43	7.18	7.04	8.27
Potatoes	"	5.86	5.51	5.78	6.63	6.47
Vineyards—						
Grapes(a)	"	3.86	5.21	5.42	4.56	5.38

(a) Per acre of productive crops.

Value of agricultural production

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 the chapter Miscellaneous.

GROSS VALUE^(a) OF AGRICULTURAL PRODUCTION: AUSTRALIA, 1962-63 TO 1966-67
(*\$'000*)

<i>Crop</i>	<i>1962-63</i>	<i>1963-64</i>	<i>1964-65</i>	<i>1965-66</i>	<i>1966-67</i>
Cereals for grain—					
Barley	42,656	47,484	55,620	47,932	73,743
Maize	9,524	10,364	9,999	9,517	10,395
Oats	51,258	49,666	51,449	53,323	83,384
Rice	7,676	7,912	8,529	10,224	12,445
Wheat	449,064	467,432	517,702	384,853	689,880
Hay	92,958	87,462	99,209	107,755	151,470
Green fodder	19,224	20,990	25,011	28,380	24,805
Industrial crops—					
Cotton, unginned	1,876	2,212	7,685	14,323	13,572
Hops	2,570	1,534	2,372	3,020	2,531
Sugar cane	131,038	162,880	133,372	121,865	142,810
Tobacco (dried leaf)	30,022	33,408	24,608	30,399	29,782
Vegetables for human consumption—					
Onions	3,628	4,096	5,340	6,667	6,044
Potatoes	27,960	33,226	60,713	43,751	41,233
Other vegetables for human consumption	57,552	66,514	68,335	74,804	82,387
Grapes	32,048	46,416	50,385	43,516	50,173
Fruit and nuts	128,860	135,133	146,242	151,877	162,918
All other crops	48,712	51,758	53,413	51,603	67,183
Total	1,136,626	1,228,487	1,319,984	1,183,809	1,644,756

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

Values of agricultural production in the various States and Territories are shown for 1966-67 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, LOCAL AND NET VALUES OF AGRICULTURAL PRODUCTION
STATES AND TERRITORIES, 1966-67
(*\$'000*)

<i>State or Territory</i>	<i>Gross production valued at principal markets</i>	<i>Marketing costs</i>	<i>Local value of production</i>	<i>Value of materials used in process of production</i>	<i>Net value of production (a)</i>
New South Wales	551,059	105,889	445,170	(b)37,261	407,909
Victoria	325,461	43,507	281,954	26,937	255,016
Queensland	318,954	42,399	276,555	47,129	229,426
South Australia	184,090	20,910	163,179	26,137	137,042
Western Australia	219,310	29,805	189,504	34,683	154,821
Tasmania	44,925	9,304	35,621	6,240	29,381
Northern Territory	354	n.a.	354	n.a.	354
Australian Capital Territory	603	40	563	26	537
Australia	1,644,756	251,854	1,392,900	178,413	1,214,486

(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.

NET VALUE OF AGRICULTURAL PRODUCTION(a): STATES AND TERRITORIES, 1962-63 TO 1966-67

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Net value (\$'000)—									
1962-63	226,072	193,972	185,728	93,358	108,506	22,312	168	298	830,414
1963-64	245,906	218,136	222,370	125,180	79,622	25,729	169	276	917,388
1964-65	293,883	232,775	193,673	134,239	92,800	27,223	222	349	975,164
1965-66	175,390	202,674	198,665	105,657	154,494	23,070	225	253	860,428
1966-67	407,909	255,016	229,426	137,042	154,821	29,381	354	537	1,214,486
Per head of population (\$)—									
1962-63	56.23	64.40	118.80	93.50	139.57	62.29	3.58	4.28	76.56
1963-64	60.29	70.98	139.42	122.31	99.67	70.93	3.38	3.59	82.95
1964-65	70.94	74.22	119.04	127.59	113.56	74.31	4.21	4.14	86.46
1965-66	41.66	63.45	119.67	97.66	184.52	62.42	4.06	2.73	74.82
1966-67	95.47	78.47	135.91	124.14	179.58	78.58	6.09	5.37	103.73

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

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 revalued at the unit gross value for the period 1936-37 to 1938-39. The price indexes relate to average 'prices' of farm products realised 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 the chapter Miscellaneous.

INDEXES OF QUANTUM(a) AND PRICE OF AGRICULTURAL PRODUCTION, 1962-63 TO 1966-67

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

	1962-63	1963-64	1964-65	1965-66	1966-67
Quantum produced—					
Wheat	186	199	224	158	283
Other crops	194	194	214	200	254
<i>Total, all crops</i>	<i>191</i>	<i>196</i>	<i>218</i>	<i>184</i>	<i>265</i>
Per head of population	121	122	133	110	156
Price—					
Wheat	366	356	351	372	366
Other crops	309	348	351	340	337
<i>Total, all crops</i>	<i>334</i>	<i>351</i>	<i>351</i>	<i>354</i>	<i>350</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).

Wheat

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.

Wheat marketing and research

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

As a large proportion of the Australian wheat crop is normally exported, the marketing of wheat plays an important part in the industry. 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 Australian Wheat Board and 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, and a detailed survey of legislation relating to stabilisation 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.

The Wheat Stabilization Board ceased to function on 31 December 1948, and under the *Wheat Industry Stabilization Act* 1948 the Australian Wheat Board was reconstituted to administer the first stabilisation plan and was given powers similar to those held under the National Security Regulations. The new Board commenced to function on 18 December 1948. The Board has been continued in existence by the *Wheat Industry Stabilization Acts* 1954, 1958 and 1963-66 for the purpose of administering the second, third and fourth five-year stabilisation plans. Details of the 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).

Fourth Post-war Wheat Industry Stabilisation Plan. Following negotiations during 1962 and 1963, the fourth post-war Wheat Industry Stabilisation Plan was enacted by the Commonwealth and States towards the end of 1963. The new plan operates on very much the same lines as the previous ones. However, there are some important changes in detail in the main features of the plan which are set out below.

The plan operates for five years. It commenced with the 1963-64 wheat crop and will end with the marketing of the 1967-68 crop.

The *Wheat Export Charge Act* 1963 repealed the *Wheat Export Charge Act* 1958 and provided for an export charge on wheat and wheat products for the seasons 1963-64 to 1967-68 inclusive. The charge which may be levied is the excess of the export price over the cost of production or 15 cents a bushel, whichever is the less. The Commonwealth has guaranteed a return to growers applying to a maximum of 150 million bushels of wheat exported from each crop during the period of the plan. The guaranteed return is based on the findings of a survey of the economic structure of the wheat industry conducted by the Bureau of Agricultural Economics. It is subject to adjustment in each year of the plan in accordance with movements in costs based on a cost index established from the survey. The guaranteed returns per bushel since the inception of the latest plan were: 1963-64, \$1.442; 1964-65, \$1.458; 1965-66, \$1.517; 1966-67, \$1.550. For the 1967-68 season the guaranteed return has been fixed at \$1.640 per bushel. The ceiling of the stabilisation fund is established at \$60 million; any excess beyond this figure is returned to growers on the 'first-in, first-out' principle. Collections from the wheat export charge are paid into the Wheat Prices Stabilization Fund, out of which payments will be made to the Australian Wheat Board, when required, for the purpose of building up the average export price, for any season, to the guaranteed price. When the average export realisations fall below the guaranteed return the deficiency is made up first by drawing upon the stabilisation fund in respect of up to 150 million bushels of wheat from each crop. If the fund is exhausted, additional payments will be made from the Consolidated Revenue Fund. As the return from exports has been below the guaranteed price, there have been no collections of the wheat export charge since the 1956-57 (No. 20) Pool when \$3,178,000 was collected. In fact, growers' moneys in the Fund were exhausted with the closure of the 1959-60 Pool, and since then the Commonwealth has been obliged to meet its commitment in respect of the export guarantee. Up to the closure of the 1965-66 Pool this has involved an amount totalling \$97 million.

The Australian Wheat Board is retained 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.

The home consumption base price for 1963-64, the first year of the new plan, was established at \$1.442 a bushel, bulk basis, f.o.r. ports, plus 1.66 cents a bushel loading to cover the cost of transporting 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.) There is provision in the plan for annual adjustments in the following years in accordance with the guaranteed price as outlined above. The home consumption price was \$1.533 a bushel for the 1965-66 season, \$1.565 a bushel for the 1966-67 season and is \$1.655 for the 1967-68 season. These prices include a loading of 1.5 cents per bushel to meet freight charges on wheat shipped to Tasmania.

A premium is paid from export realisations 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. The premium is the amount of the actual freight advantage enjoyed by Western Australia up to a maximum of 2.5 cents a bushel.

Wheat standards

A description of the F.A.Q. (fair average quality) standard of wheat which was formerly in use is given in issues of the Year Book up to No. 53 (*see*, for example No. 53 page 902). Australian wheat is now marketed under eleven different and distinct classifications. Each reflects the climatic and growing characteristics of its region of origin and also the particular characteristics of the varieties of wheat cultivated.

For each classification, samples of wheat are obtained each year and are mixed to give a representative sample of that grade. From these samples, which are representative of all the wheat of a particular classification grown in that region, standards for each grade are established; the bushel weight is determined by the use of the Schopper 1-litre scale chondrometer. This standard is used as the basis for sales of each grade and varies from year to year and from State to State. The eleven different grades of wheat are:

- Queensland prime hard
- New South Wales prime hard
- South Australian hard
- Queensland F.A.Q.
- New South Wales northern F.A.Q.
- New South Wales southern-western F.A.Q.
- Victorian F.A.Q.
- South Australian F.A.Q.
- Western Australian F.A.Q.
- Western Australian soft
- Victorian soft

The six F.A.Q. grades, while possessing some characteristics in common, vary in protein content, milling characteristics, and dough qualities, and all are distinct grades. Similarly, the prime hard, hard, and soft grades are individual grades segregated for specific end uses.

Australia currently produces a full range of wheats for all purposes from high protein hard wheats to low protein soft wheats.

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 Grain Elevators Board.

WHEAT: TOTAL CAPACITY OF BULK HANDLING FACILITIES^(a)
STATES, 30 NOVEMBER 1963 TO 1967
(^{'000} bushels)

State	1963	1964	1965	1966	1967
New South Wales	87,046	93,727	104,852	117,472	135,057
Victoria ^(b)	86,253	90,247	97,132	101,302	103,812
Queensland	11,081	13,178	15,956	19,213	24,987
South Australia	28,370	35,483	39,685	43,328	40,798
Western Australia	99,535	115,438	128,175	134,898	144,487
Tasmania	960	960	1,060	1,060	1,060
Australia	313,245	349,033	386,860	417,273	450,201

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

^(b) Includes storage in southern New South Wales operated by the Victorian Grain Elevators Board.

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.

International Wheat Agreement

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

A fifth International Wheat Agreement, ratified by the required number of wheat exporting and importing countries, came into force on 1 August 1962. This was intended to cover the three-year period from 1 August 1962 to 31 July 1965, but at a special meeting held in February 1965 the International Wheat Council adopted the text of a protocol providing for the prolongation of the Agreement, without amendment, to 31 July 1966. The Council stated that it recognised the need for the maintenance of institutional arrangements to provide for continuing international co-operation in wheat matters, and that, following its decision to recommend a one-year extension of the existing agreement, it had given immediate consideration to preparatory work designed to ensure effective arrangements to follow the expiry of the term of the protocol. The Agreement was subsequently extended by protocol to 31 July 1967 and, with respect to its administrative provisions only, for a further year to 31 July 1968.

International Grains Arrangement

In August 1967 agreement was reached on a new International Grains Arrangement to operate for a period of three years from 1 July 1968. The new arrangement consists of two legal instruments, the Wheat Trade Convention and the Food Aid Convention.

The Wheat Trade Convention seeks to continue the orderly marketing arrangements which have been developed over a series of International Wheat Agreements, whilst introducing a number of important new elements and improvements. It preserves the institutional and administrative structures of previous wheat agreements and will be administered by the International Wheat Council and its Secretariat.

The convention goes further than earlier wheat agreements in regard to pricing provisions. In contrast with previous agreements, which specified minimum and maximum prices for only one type of wheat, the convention specifies minimum and maximum prices for fourteen types. The basic wheat is now United States Hard Red Winter No. 2 Ordinary Protein, the minimum price for which has been fixed at \$US1.73 per bushel f.o.b. from loading ports in the Gulf of Mexico. The minimum price per bushel for No. 1 Manitoba Northern Wheat is now \$US1.955 f.o.b. Gulf ports, and for Australian f.a.q. wheat \$US1.68 f.o.b. Gulf ports. It is estimated that, after allowing for quality differentials and for the change in geographical basing points, the general level of minimum prices is approximately 19 US cents per bushel above the minimum prices in the 1962 International Wheat Agreement. The maximum price for each type of wheat is 40 US cents above the minimum.

The convention provides for the establishment of a Prices Review Committee, on which Australia is represented. The committee will conduct a continuous review of world wheat prices and is empowered to initiate action to restore market stability when prices approach the agreed limits.

The convention continues the arrangement in the 1962 agreement whereby the member importing countries undertake to buy each year from the member exporting countries a specified percentage of their total commercial purchases of wheat. Exporting countries undertake that wheat will be made available at prices consistent with the price range and will not be sold below minimum prices to any purchaser whether a member of the arrangement or not. Member countries importing wheat from non-member countries undertake to do so at prices consistent with the price range. When prices are at the maximum of the range, exporters agree to supply to member importing countries, at prices not above the maximum, certain minimum quantities of wheat based on the importing country's historical purchases. A provision is also included under which member countries undertake to conduct any concessional transactions in grains in such a way as to avoid harmful interference with normal patterns of commercial trade.

The Food Aid Convention provides for a programme of food aid to developing countries amounting in total to 4.5 million metric tons of grains for human consumption in each of the three years of the arrangement. Australia's contribution has been fixed at 225,000 metric tons annually (8,267,000 bushels) which is approximately 5 per cent of the total contribution. Donor countries are free to specify the country or countries to which the grain may be supplied.

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 fertiliser treatments by governmental, university and private research organisations. 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.

The *Wheat Tax Act 1957* imposed a tax of 0.21 cents for each bushel of wheat:

- (a) which was delivered to the Wheat Board on or after the first day of October 1956 and before the date of commencement of the Act, or
- (b) which was delivered to the Wheat Board on or after that date.

The Act was amended in October 1965 to become the *Wheat Tax Act 1957-1965* to provide for an increase in the rate of taxation from 0.21 cents to 0.25 cents for each bushel of wheat delivered to the Board on or after 1 October 1965. The *Wheat Research Act 1957* provided for the establishment of a Wheat Research Trust Account to receive moneys payable under the *Wheat Tax Act 1957* and for the setting up of a Wheat Industry Research Council to direct the expenditure of moneys from that account for research, etc. to benefit the wheat industry. 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 \$568,000 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, mechanisation, the industry's cost structure, and marketing problems. To the end of June 1967 the Council and the State Committees had spent \$9,541,000, including grants to the Commonwealth Scientific and Industrial Research Organization, State Departments of Agriculture, universities, and agricultural colleges.

Wheat farms: number and classification by activity

Particulars of the number of farms growing twenty acres and upwards of wheat for grain during each of the years 1962-63 to 1966-67 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 TWENTY ACRES AND UPWARDS
OF WHEAT FOR GRAIN: STATES AND A.C.T., 1962-63 TO 1966-67

State or Territory	1962-63	1963-64	1964-65	1965-66	1966-67
New South Wales	18,286	17,753	18,537	16,150	19,575
Victoria	12,166	11,370	11,981	11,355	11,202
Queensland	5,095	4,927	5,236	4,941	5,674
South Australia	9,881	9,902	9,657	9,387	9,419
Western Australia	8,966	8,983	8,779	9,044	8,897
Tasmania	243	251	255	213	194
Australian Capital Territory	27	29	20	13	25
Australia	54,664	53,215	54,465	51,103	54,986

There is in Australia a widespread combination of wheat growing with other rural activities. This is illustrated, for all States and for Australia, in respect of the 1965-66 season, in a series of statistical bulletins: *Classification of Rural Holdings by Size and Type of Activity, 1965-66*, Nos 1 to 7. These publications also contain details of numbers of rural holdings classified according to area of wheat for grain.

Varieties of wheat sown

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 forty-five.

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 1966-67 were as follows: New South Wales, Heron (23.1), Falcon (12.9), Olympic (11.3); Victoria, Insignia (48.3), Olympic (23.5), Pinnacle (16.5); Queensland, Mendos (34.0), Spica (25.0), Gamut (9.0); South Australia, Insignia (including Insignia 49) (34.4), Heron (23.4), Gabo (9.9); and Western Australia, Gamenya (38.5), Insignia (15.2), Insignia 49 (9.6). A detailed table of wheat varieties sown appears in the annual bulletin *The Wheat Industry* (see No. 112, published in February 1968).

Wheat area, production and yield per acre

Prominent factors in the early development of the wheat industry 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.

**WHEAT FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE
STATES AND AUSTRALIAN CAPITAL TERRITORY, 1936-37 TO 1966-67**

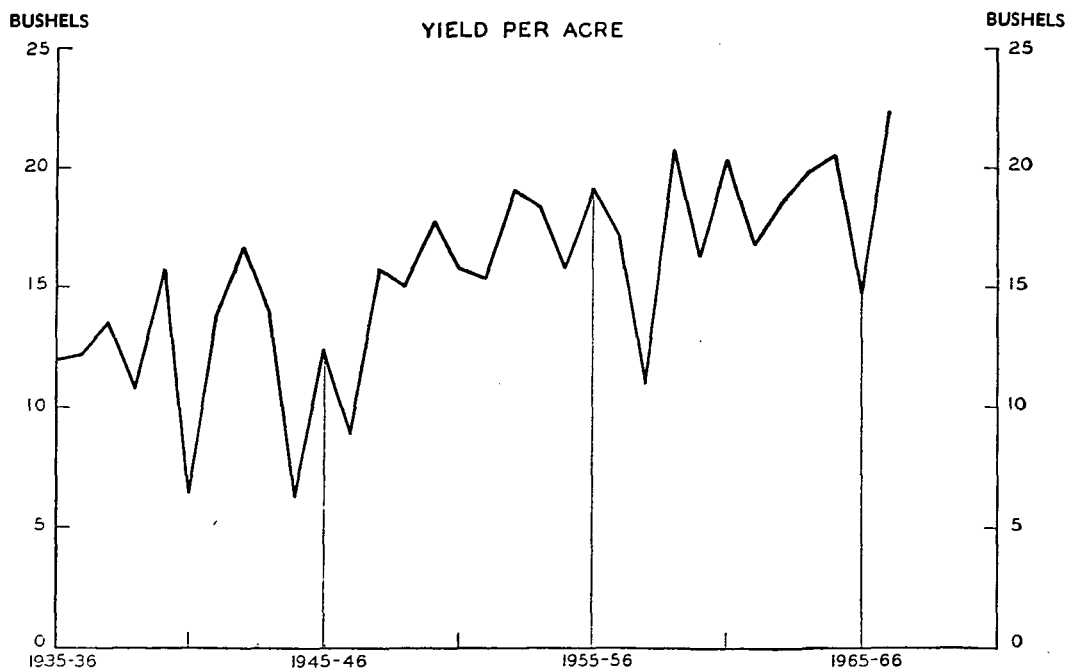
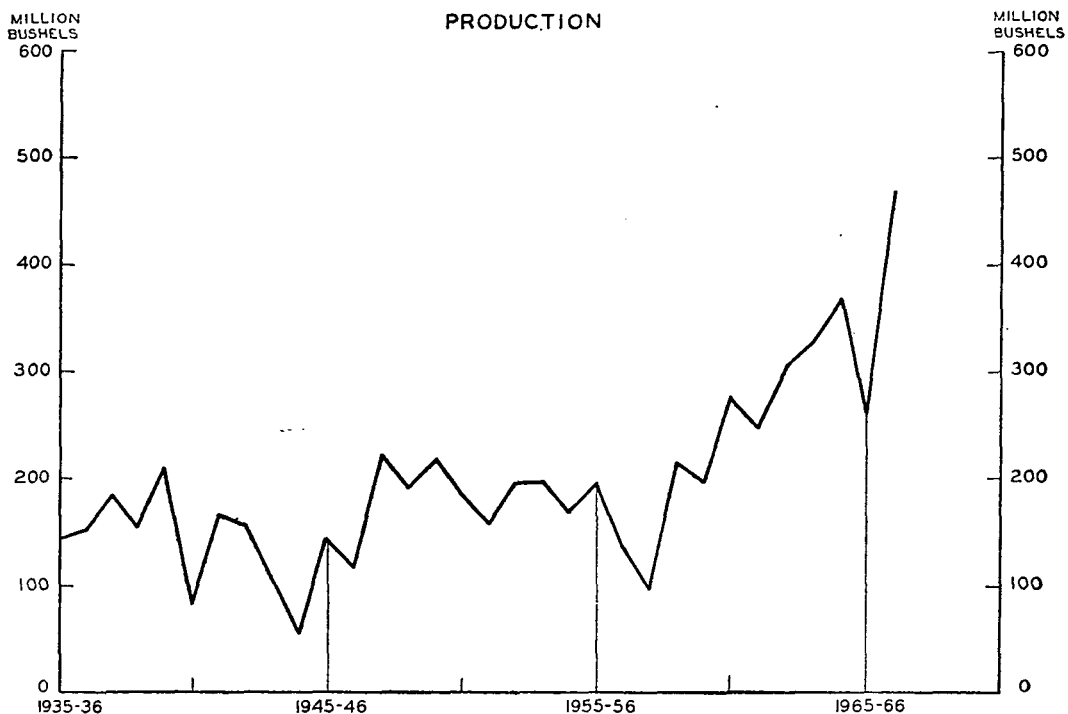
<i>Period</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>A.C.T.</i>	<i>Aust.</i>
AREA ('000 ACRES)								
Average for three years ended—								
1938-39 . . .	4,366	2,609	366	3,100	3,005	18	2	13,466
1948-49 . . .	4,519	3,241	439	2,319	2,685	7	4	13,214
1958-59 . . .	2,392	1,737	508	1,392	3,005	5	1	9,040
Year—								
1962-63 . . .	5,008	3,125	919	2,595	4,804	15	3	16,469
1963-64 . . .	4,964	3,109	938	2,802	4,640	18	3	16,474
1964-65 . . .	5,760	3,236	1,026	2,727	5,151	17	2	17,919
1965-66 . . .	4,577	3,074	954	2,745	6,150	14	1	17,515
1966-67 . . .	7,135	3,138	1,227	2,960	6,347	13	3	20,823
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—								
1962-63 . . .	109,002	67,899	18,683	38,339	72,500	419	70	306,912
1963-64 . . .	122,472	76,302	22,275	53,971	52,340	483	69	327,912
1964-65 . . .	151,483	78,166	22,830	52,817	63,071	364	58	368,789
1965-66 . . .	39,117	60,591	17,429	39,976	102,156	368	28	259,666
1966-67 . . .	202,501	70,896	35,730	53,816	103,195	385	87	466,610
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—								
1962-63 . . .	21.8	21.7	20.3	14.8	15.1	27.3	29.3	18.6
1963-64 . . .	24.7	24.5	23.8	19.3	11.3	27.5	24.6	19.9
1964-65 . . .	26.3	24.2	22.3	19.4	12.2	21.7	27.6	20.6
1965-66 . . .	8.5	19.7	18.3	14.6	16.6	26.1	20.8	14.8
1966-67 . . .	28.4	22.6	29.1	18.2	16.3	30.2	32.5	22.4

(a) 60 lb per bushel.

A graph showing the area sown to wheat for grain in Australia since 1900-1 appears on plate 53 of this Year Book, and a map showing the distribution of areas growing wheat for grain throughout Australia in 1962-63 appears on page 1013 of Year Book No. 50. 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 833.

WHEAT FOR GRAIN: AUSTRALIA

1935-36 to 1966-67



Apart from the variations in the area sown, the size of the wheat harvest in Australia is determined largely 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. Tasmania imports wheat from the mainland to satisfy its needs, though it exports flour made from local wheat which is particularly suitable for biscuits.

Area, production, and yield per acre of wheat for Australia in respect of the 1966-67 crop were at record levels. Production exceeded by 27 per cent the previous highest figure, for the year 1964-65. It was 80 per cent greater than production in 1965-66, when the crop was seriously affected by drought conditions in New South Wales and Queensland.

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, 1966-67. 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 fertilisers 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. The production and yield per acre of wheat for each year from 1935-36 to 1966-67 are shown on plate 54, page 873.

WHEAT FOR GRAIN: AVERAGE AREA AND PRODUCTION
AUSTRALIA, 1861 TO 1966-67

Period	Area	Production	Yield
	'000 acres	'000 bushels	per acre 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—			
1966-67	20,823	466,610	22.4

Price of wheat

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 30 November 1964, \$1.46; 1965, \$1.47; 1966, \$1.53; 1967, \$1.57; and 1968, \$1.66. These prices include a loading to meet freight charges incurred on wheat shipped to Tasmania (1.66 cents in 1964; 0.83 cents in 1965; 1.66 cents in 1966; and 1.50 cents in 1967 and 1968).

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 31 July 1964, \$1.43 to \$1.58; 1965, \$1.35 to \$1.52; 1966, \$1.38 to \$1.51; 1967, \$1.49 to \$1.60.

The 1962 International Wheat Agreement, operative from 1 August 1962 to 31 July 1967, set the maximum price at \$US2.025 a bushel and the minimum at \$US1.625 for f.a.q. wheat sold under the Agreement. Under the new International Grains Arrangement, which is operative from 1 July 1968, provision has been made for minimum and maximum prices for fourteen types of wheat, the basic wheat being United States Hard Red Winter No. 2 Ordinary Protein, the minimum price for which has been fixed at \$US1.73 per bushel. The minimum price per bushel for No. 1 Manitoba Northern Wheat is now \$US1.955 and for Australian f.a.q. wheat \$US1.68 (see page 870 for a description of the International Grains Arrangement).

Details of export prices of wheat 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 in the statistical bulletin *The Wheat Industry, Australia*, No. 99, March 1961, and in previous issues of these publications.

Value of the wheat crop

The estimated gross value of the wheat crop in each State and in Australia during the season 1966-67 and the value per acre are shown below.

WHEAT FOR GRAIN: VALUE OF CROP(a), STATES, 1966-67

		<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.</i> (b)
Aggregate value	\$'000	299,201	104,471	52,759	79,612	153,157	552	689,880
Value per acre	\$	41.93	33.29	43.00	26.90	24.13	42.46	33.13

(a) Gross value of total crop, including wheat used for seed and for stock feed on farms. Also includes payment of \$15,508,000 by the Commonwealth Government. (b) Includes the Australian Capital Territory.

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 30 November 1963 to 1967.

AUSTRALIAN WHEAT BOARD WHEAT RECEIVED, STATES, 1962-63 TO 1966-67 HARVESTS (^{'000} bushels)

<i>Pool</i>	<i>Harvest</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.</i>
26	1962-63	98,677	67,215	17,537	35,120	66,898	275	285,722
27	1963-64	110,722	77,728	20,330	51,660	47,071	325	307,836
28	1964-65	137,495	80,685	20,712	49,991	57,440	188	346,511
29	1965-66	27,558	60,923	13,701	36,160	95,837	217	234,396
30	1966-67	184,644	74,614	32,884	50,007	96,823	247	439,219

Stocks of wheat (including flour in terms of wheat) held by the Australian Wheat Board in each State at 30 November for the years 1963 to 1967 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), STATES, 30 NOVEMBER 1963 TO 1967 (^{'000} bushels)(b)

<i>Year</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.</i>
1963	10,879	7,000	775	1,775	2,221	625	23,275
1964	7,340	7,490	806	3,048	1,257	472	20,413
1965	15,265	3,716	862	2,602	1,556	382	24,383
1966	3,406	6,020	343	2,623	3,626	529	16,547
1967	43,128	22,710	554	8,066	5,180	542	80,180

(a) Held at mills, sidings, ports and depots. Excludes new season's wheat received from growers prior to 30 November of years shown. (b) One short ton (2,000 lb) of flour is taken as being equivalent to 46.3 bushels of wheat.

Particulars of the disposal of wheat during the years ended 30 November 1963 to 1967, as recorded by the Australian Wheat Board, are shown in the following table.

AUSTRALIAN WHEAT BOARD: DISPOSAL OF WHEAT, 1963 TO 1967
(^{'000} bushels)

	<i>Year ended 30 November—</i>				
	1963	1964	1965	1966	1967
Exported as wheat	203,703	221,530	243,725	158,104	293,958
Exported as flour(a)	24,903	31,797	23,318	16,615	19,329
Sold for local consumption as flour	40,389	42,954	44,160	44,164	43,845
Sold for other purposes	10,791	13,658	30,556	22,705	17,384

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

A summary of *all* transactions in wheat for Australia, as distinct from those recorded for the Wheat Board above, appears in the following table.

WHEAT: PRODUCTION AND DISPOSAL, AUSTRALIA, 1963 TO 1967
(million bushels)(a)

	<i>Year ended 30 November—</i>				
	1963	1964	1965	1966	1967
Opening stocks (including flour) (b)(c)(d)	17.7	23.3	20.4	24.4	16.5
Production	306.9	327.9	368.8	259.7	466.6
<i>Total available supplies</i>	324.6	351.2	389.2	284.1	483.1
Exports—					
Wheat	200.4	221.6	244.5	163.2	294.0
Flour(b)	25.1	34.4	23.8	16.2	21.1
Breakfast foods and other products(b)(d)	0.7	0.7	0.7	0.7	0.9
Local consumption—					
Flour(b)(d)	40.4	43.0	44.2	44.2	43.8
Breakfast foods and other products(b)(d)	1.7	1.7	1.9	2.4	1.8
Stock feed wheat sales(d)	9.1	12.0	28.7	20.3	15.6
Seed	15.4	16.6	16.3	19.1	23.1
Retained on farm (excluding seed)	5.8	3.4	6.0	6.2	4.3
Closing stocks (including flour)(b)(c)(d)	23.3	20.4	24.4	16.5	80.2
<i>Total disposals</i>	321.9	353.8	390.5	288.8	484.8
Excess (+) or deficiency (–) of disposals in relation to available supplies(e)	–2.7	+2.6	+1.3	+4.7	+1.7

(a) One short ton (2,000 lb) of flour is taken as being equivalent to 46.3 bushels of wheat. (b) In terms of wheat. (c) Held at ports, depots, mills, and sidings. (d) Source: Australian Wheat Board. (e) Includes allowance for unrecorded movements in stocks, gain or loss in out-turn, etc.

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 26 TO 30
(**\$'000**)

	No. 26 Pool	No. 27 Pool	No. 28 Pool	No. 29 Pool (a)	No. 30 Pool (a)
	(1962-63 Harvest)	(1963-64 Harvest)	(1964-65 Harvest)	(1965-66 Harvest)	(1966-67 Harvest)
Paid to growers	351,972	373,254	409,337	288,983	451,471
Rail freight	45,358	49,270	57,765	34,605	76,536
Expenses	20,552	17,990	21,298	20,219	33,541
<i>Total payments</i>	<i>417,882</i>	<i>440,514</i>	<i>488,400</i>	<i>343,807</i>	<i>561,548</i>
Value of sales delivered	(b)395,842	(c)439,262	(d)471,052	(e)335,647	(f)635,977

(a) Incomplete. (b) Subject to additional \$22,634,000 provided by the Commonwealth Government and payment of \$594,000 to Wheat Industry Research Fund. (c) Subject to additional \$1,892,000 provided by the Commonwealth Government and payment of \$640,000 to Wheat Industry Research Fund. (d) Subject to additional \$18,069,000 provided by the Commonwealth Government and payment of \$722,000 to Wheat Industry Research Fund. (e) Subject to additional \$16,154,000 provided by the Commonwealth Government and payment of \$586,000 to Wheat Industry Research Fund. (f) Subject to additional \$15,508,000 provided by the Commonwealth Government and payment of \$1,097,000 to Wheat Industry Research Fund.

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

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 supplies of high protein wheat 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.

Exports of wheat and flour

Statistics in the following three tables are for years ended 30 June and relate to the exports of Australian produce only.

WHEAT AND FLOUR: EXPORTS, AUSTRALIA, 1962-63 TO 1966-67

Year	Quantity				Value		
	Wheat	Flour		Total (in terms of wheat)	Wheat	Flour (a)	Total
		As flour (a)	In terms of wheat (b)				
	'000 bushels	short tons	'000 bushels	'000 bushels	\$'000 f.o.b.	\$'000 f.o.b.	\$'000 f.o.b.
1962-63	151,970	544,441	25,208	177,178	216,904	32,660	249,565
1963-64	253,724	714,939	33,102	286,826	362,018	43,758	405,776
1964-65	209,980	598,037	27,689	237,669	297,199	39,122	336,321
1965-66	189,479	416,201	19,270	208,749	264,062	26,526	290,588
1966-67	239,051	379,348	17,564	256,615	361,227	24,600	385,827

(a) White flour (plain and self-raising), sharps and wheatmeal for baking. (b) One short ton (2,000 lb) of flour is taken as being equivalent to 46.3 bushels of wheat.

WHEAT: EXPORTS TO VARIOUS COUNTRIES, AUSTRALIA, 1962-63 TO 1966-67
(^{'000} bushels)

<i>Country to which exported</i>	1962-63	1963-64	1964-65	1965-66	1966-67
China (mainland)	76,230	93,440	83,623	74,131	79,523
Pakistan	5,596	2,044	2,173	1,569	25,863
Japan	12,673	18,800	16,276	13,357	15,851
India	7,144	7,572	17,543	6,650	14,721
United Kingdom	16,317	28,146	19,132	23,293	14,233
South Africa	2,019	..	3	2,209	10,473
Malaysia	560	149	(a) 3,669	(a) 3,758	9,244
Singapore	32	1,588	(b)	(b) 4,479	7,403
Lebanon	3,131	5,274	2,725	1,157	5,130
Iraq . . . . .	..	4,876	2,450	45	4,902
Netherlands . . . . .	..	..	..	..	4,406
Norway	2,739	4,169	2,830	702	4,142
Other(c)	25,529	87,666	59,556	58,129	43,160
Total	151,970	253,724	209,980	189,479	239,051

(a) Includes Singapore from 1 July 1964 to 30 September 1965. (b) Included in Malaysia from 1 July 1964 to 30 September 1965. (c) Includes particulars which could not be classified to countries and shipments made 'for orders'.

The following table shows the exports of flour to various countries for each of the years 1962-63 to 1966-67. The figures relate to exports of white flour (plain and self-raising), sharps and wheatmeal for baking.

FLOUR: EXPORTS TO VARIOUS COUNTRIES, AUSTRALIA, 1962-63 TO 1966-67
(Short tons)

<i>Country to which exported</i>	1962-63	1963-64	1964-65	1965-66	1966-67
Ceylon	103,503	115,273	191,144	170,083	144,982
South Arabia, Federation of	38,914	40,675	44,990	29,968	25,272
Indonesia	5,525	5,080	9,124	3,086	24,766
Fiji	29,554	37,993	34,915	34,219	24,642
India	14	18	86	162	21,084
United Kingdom	66,641	48,744	45,579	33,075	19,411
Papua and New Guinea	10,369	11,516	13,871	14,889	16,139
Mauritius	14,011	21,279	19,847	11,817	12,147
Saudi Arabia	16,211	12,564	15,822	16,692	12,111
Malaysia	95,865	95,545	(a) 97,560	(a) 32,344	9,189
Other(b)	163,834	326,252	125,099	69,866	69,605
Total	544,441	714,939	598,037	416,201	379,348

(a) Includes Singapore from 1 July 1964 to 30 September 1965. (b) Includes particulars which could not be classified to countries and shipments made 'for orders'.

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 International Wheat Council. Harvests in the northern hemisphere occur in the first of the two years mentioned in each column heading, and in the southern hemisphere at the end of that year and the beginning of the next. Harvests of the northern hemisphere countries are thus combined with those of the southern hemisphere which immediately follow; e.g. in 1966-67 the Canadian harvest occurred from August to September 1966 and the Australian harvest from September 1966 to February 1967.

**WHEAT: AREA, PRODUCTION AND YIELD PER ACRE IN VARIOUS COUNTRIES
1964-65 TO 1966-67**

(Source for countries other than Australia: International Wheat Council—World Wheat Statistics)

Continent and country	Area			Production			Yield per acre		
	1964-65	1965-66	1966-67	1964-65	1965-66	1966-67	1964-65	1965-66	1966-67
	'000 acres	'000 acres	'000 acres	mill. bus	mill. bus	mill. bus	bus	bus	bus
U.S.S.R. (Europe and Asia)	167,749	173,477	172,866	2,734	2,190	3,693	16.3	12.6	21.4
Europe—									
France	10,843	11,169	9,864	509	542	415	46.9	48.6	42.1
Italy	10,892	10,596	10,561	316	359	345	29.0	33.9	32.7
Romania	7,312	7,371	7,497	141	218	186	19.2	29.6	24.8
Spain	10,237	10,519	10,371	146	173	177	14.2	16.5	17.1
Total, Europe(a)	71,961	71,267	69,040	2,248	2,479	2,300	31.2	34.8	33.3
North and Central America—									
United States	49,761	49,558	49,867	1,283	1,316	1,312	25.8	26.5	26.3
Canada	29,684	28,281	29,692	600	649	827	20.2	22.9	27.9
Total, North and Central America(a)	81,617	79,591	81,345	1,964	2,025	2,200	24.1	25.4	27.0
Asia—									
China (mainland)(b)	63,011	61,034	60,500	849	790	739	13.5	12.9	12.2
India	33,349	33,260	31,273	362	452	383	10.9	13.6	12.2
Turkey	19,790	19,840	19,938	310	317	357	15.7	16.0	17.9
Pakistan	12,543	13,272	12,874	154	170	145	12.3	12.8	11.3
Total, Asia(a)	152,535	150,163	148,418	2,019	2,099	1,954	13.2	14.0	13.2
Oceania—									
Australia	17,919	17,515	20,823	369	260	467	20.6	14.8	22.4
Total, Oceania(a)	18,103	17,714	21,058	378	270	479	20.9	15.3	23.3
South America—									
Argentina	15,160	11,349	12,884	414	228	230	27.3	19.7	17.8
Total, South America(a)	20,485	16,136	17,396	510	315	308	24.9	19.2	17.7
Africa	19,274	19,817	16,976	216	211	172	11.2	10.7	10.1
World total(a)	531,722	528,159	527,098	10,067	9,589	11,104	18.9	18.1	21.1

(a) Includes allowances for any missing data for countries shown and for other producing countries not shown.
b) International Wheat Council estimate.

Principal wheat exporting and importing countries

The following table shows world exports of wheat and wheat flour (in terms of wheat) by the major wheat exporting countries, according to continents and countries of primary destination, based on statistics recently published by the International Wheat Council. While Australia's production of wheat has averaged about three per cent of the world's total during recent years, its exports account for a much higher proportion of the total quantities shipped. For the three years ended 1966-67 Australia's share of the world wheat exports has averaged 11 per cent.

**WORLD EXPORTS OF WHEAT AND WHEAT FLOUR IN TERMS OF WHEAT
1962-63 TO 1966-67**

(Source: International Wheat Council—World Wheat Statistics)

(Million bushels)

<i>Year and country of primary destination</i>	<i>Exporting country</i>							<i>Total</i>
	<i>United States of America</i>	<i>Canada</i>	<i>Australia</i>	<i>U.S.S.R.</i>	<i>France</i>	<i>Argen- tina</i>	<i>Other</i>	
1966-67p—								
Asia(a)—								
India	156.0	58.4	15.7	..	..	0.2	0.3	230.6
China (mainland) . . . . .	..	90.6	79.5	..	2.7	11.2	..	184.0
Japan	78.5	59.5	15.8	..	..	..	..	153.8
Pakistan	41.9	7.6	25.6	..	..	..	..	75.1
Korea, South	30.0	..	..	..	..	..	..	30.0
Other	77.5	7.0	59.5	12.4	12.3	0.4	23.3	192.4
<i>Total, Asia</i>	<i>383.9</i>	<i>223.1</i>	<i>196.1</i>	<i>12.4</i>	<i>15.0</i>	<i>11.8</i>	<i>23.6</i>	<i>865.9</i>
Europe(a)—								
United Kingdom	25.8	73.5	15.1	..	3.4	7.9	22.5	148.2
Poland	5.6	16.8	..	23.8	13.7	..	4.6	64.5
Germany, East . . . . .	..	6.7	..	48.2	2.4	..	0.1	57.4
Germany, Federal Re- public of	16.5	25.6	..	..	7.5	1.5	4.5	55.6
Czechoslovakia . . . . .	..	3.3	..	32.3	11.6	..	0.3	47.5
Italy	8.2	9.8	..	..	6.6	11.8	0.4	36.8
Netherlands	20.2	3.0	4.4	1.1	1.5	5.8	0.4	36.4
Belgium-Luxembourg	5.9	14.8	..	0.1	2.6	0.7	0.2	24.3
France	10.3	1.8	..	..	..	2.2	5.9	20.2
Other	27.9	19.9	7.5	1.1	5.9	2.3	36.0	100.6
<i>Total, Europe</i>	<i>120.4</i>	<i>175.2</i>	<i>27.0</i>	<i>106.6</i>	<i>55.2</i>	<i>32.2</i>	<i>74.9</i>	<i>591.5</i>
Africa—								
United Arab Republic	34.0	..	1.9	19.7	1.5	..	25.7	82.8
Other	88.1	12.6	19.1	7.9	30.1	2.1	13.9	173.8
<i>Total, Africa</i>	<i>122.1</i>	<i>12.6</i>	<i>21.0</i>	<i>27.6</i>	<i>31.6</i>	<i>2.1</i>	<i>39.6</i>	<i>256.6</i>
South America—								
Brazil	42.8	..	3.8	0.7	..	46.0	6.9	100.2
Other	57.4	5.6	2.7	..	0.6	19.6	0.3	86.2
<i>Total, South America</i>	<i>100.2</i>	<i>5.6</i>	<i>6.5</i>	<i>0.7</i>	<i>0.6</i>	<i>65.6</i>	<i>7.2</i>	<i>186.4</i>
U.S.S.R.—								
North and central America	15.4	28.8	0.1	4.2	3.3	..	2.6	54.4
Oceania	0.1	0.1	5.7	..	1.2	..	..	7.1
All other	0.3	..	1.0	0.1	1.0	..	0.9	3.2
World total, 1966-67	742.4	545.0	257.4	151.6	112.8	112.4	148.8	2,070.4
1965-66	859.7	545.0	208.7	80.9	175.7	292.0	134.0	2,296.0
1964-65	720.4	437.6	237.7	42.6	169.6	163.3	110.0	1,881.2
1963-64	848.7	554.4	287.1	47.1	98.5	102.0	134.3	2,072.1
1962-63	636.8	331.2	175.9	195.8	109.4	66.4	83.7	1,599.2

(a) Excludes U.S.S.R., details for which are shown separately.

The above particulars are based on customs clearances of the exporting countries, and relate to years ended 30 June. There are small differences between Australian exports as shown and those on pages 877-8 due in part to the use by the International Wheat Council of a slightly different factor to convert flour to wheat equivalent.

Oats

This cereal is widely grown in all agricultural areas which have autumn, winter and spring rainfall; it 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 fertiliser. 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.

Oats 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 1966-67 accounted for 53 per cent of the area of all crops, oats grown for grain represented only 11 per cent.

**OATS FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE
STATES AND AUSTRALIAN CAPITAL TERRITORY, 1936-37 TO 1966-67**

<i>Period</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>A.C.T.</i>	<i>Aust.</i>
AREA ('000 ACRES)								
Average for three years ended—								
1938-39 . .	297	478	8	338	425	26	..	1,572
1948-49 . .	515	548	21	282	484	17	1	1,868
1958-59 . .	756	735	29	445	1,178	20	..	3,163
Year—								
1962-63 . .	708	932	27	416	1,177	31	1	3,292
1963-64 . .	794	910	31	501	1,125	30	1	3,392
1964-65 . .	850	966	55	444	1,152	28	1	3,497
1965-66 . .	1,033	966	45	455	1,240	28	1	3,768
1966-67 . .	1,363	1,079	66	509	1,204	36	2	4,258
PRODUCTION ('000 BUSHELS)(a)								
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—								
1962-63 . .	16,035	27,042	545	5,770	18,572	828	17	68,809
1963-64 . .	19,811	19,885	673	9,149	17,850	844	22	68,234
1964-65 . .	22,885	22,446	1,171	8,977	14,011	521	32	70,043
1965-66 . .	12,607	17,784	735	5,622	23,279	677	37	60,739
1966-67 . .	41,003	31,248	1,467	10,276	22,117	948	47	107,106
YIELD PER ACRE (BUSHELS)(a)								
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—								
1962-63 . .	22.7	29.0	20.0	13.9	15.8	26.6	25.6	20.9
1963-64 . .	24.9	21.8	21.7	18.3	15.9	27.8	19.8	20.1
1964-65 . .	26.9	23.2	21.1	20.2	12.2	18.5	21.6	20.0
1965-66 . .	12.2	18.4	16.3	12.4	18.8	23.9	25.6	16.1
1966-67 . .	30.1	29.0	22.1	20.2	18.4	26.4	26.2	25.2

(a) 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 of Year Book No. 50. The area sown to oats from 1900-01 is shown in plate 53, page 862.

Area, production, and yield per acre of oats for Australia in respect of the 1966-67 crop were at record levels. Production of 107,106,000 bushels exceeded by 23 per cent the previous highest figure for the year 1958-59 (86,905,000 bushels). It was 76 per cent greater than production in 1965-66, when the crop was seriously affected by drought conditions in eastern States.

Value of oat crop

The average wholesale price in the Melbourne market for oats of good milling quality was \$0.80 a bushel in 1966-67, compared with \$0.94 in 1965-66. The estimated gross value of the oat crop in each State for the 1966-67 season and the value per acre were as follows.

OATS FOR GRAIN: VALUE OF CROP, STATES, 1966-67

		<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.(a)</i>
Aggregate value	\$'000	40,593	19,033	1,173	5,914	15,800	835	83,384
Value per acre	\$	29.78	17.64	17.77	11.62	13.12	23.19	19.58

(a) Includes the Australian Capital Territory.

Exports of oats

OATS: EXPORTS, AUSTRALIA, 1962-63 TO 1966-67

		1962-63	1963-64	1964-65	1965-66	1966-67
Quantity	'000 bus	17,744	16,673	20,161	13,825	22,134
Value	.\$'000 f.o.b.	14,152	12,623	15,616	11,980	17,450

In 1966-67 the principal countries of destination were the Federal Republic of Germany (8,161,000 bushels), Italy (5,519,000 bushels), the Netherlands (4,260,000 bushels), Japan (1,021,000 bushels), and the United Kingdom (913,000 bushels). Imports of oats into Australia are negligible.

Oatmeal and other oat products

In 1966-67 the production of granulated or rolled oats or oatmeal (kilned and unkilned) for breakfast foods, porridge and other purposes was 28,000 tons.

World production of oats

The world production of oats for the year 1966, according to figures issued by the United States Department of Agriculture, amounted to 3,109 million bushels, harvested from 73.6 million acres, resulting in an average yield of 42.2 bushels an acre. This compared with an estimated production in the previous year of 3,028 million bushels from an area of 73.8 million acres and an average yield of 41.0 bushels an acre.

Barley

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 South Australia (Murray-Mallee, Eyre and Yorke Peninsulas), but considerable quantities are grown also in New South Wales, Victoria, Queensland and Western Australia.

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. 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.
1962-63 TO 1966-67**

<i>Pool</i>	<i>Quantity received</i>	<i>Quantity sold(a)</i>	<i>Total advances made per bushel on 2-row No. 1 grade less freight</i>	<i>Total net payments to growers</i>
	'000 bushels	'000 bushels	\$	\$'000
No. 24 (1962-63 Crop)	17,195	17,285	1.1563	16,666
„ 25 (1963-64 „)	23,145	23,204	1.1862	22,446
„ 26 (1964-65 „)	25,465	25,404	1.2000	25,184
„ 27 (1965-66 „)	14,922	14,894	1.2873	14,824
„ 28 (1966-67 „)	22,043	(b)22,027	(b)1.1800	(b)21,290

(a) Includes surplus or shortage in out-turn, except for No. 28 Pool for which the surplus has not yet been ascertained. (b) As at 30 June 1968. At that date it was estimated that the amount still to be paid to growers was 6.667 cents per bushel.

Barley 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 1966-67, 2,498,000 acres, was 12 per cent less than the area in 1960-61. The production of barley for grain in 1966-67, 61,588,000 bushels, was 9 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 1962-63 to 1966-67, compared with the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59 are shown in the following table. Separate details for 2-row and 6-row varieties are shown for all States for 1966-67. The area sown to barley from 1900-01 is shown in plate 53, page 862.

**BARLEY FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE
STATES AND AUSTRALIAN CAPITAL TERRITORY, 1936-37 TO 1966-67**

<i>Period</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>A.C.T.</i>	<i>Aust.</i>
AREA ('000 ACRES)								
Average for three years ended—								
1938-39	13	138	10	391	53	8	..	613
1948-49	23	166	18	587	65	7	..	866
1958-59	73	354	184	1,255	324	8	..	2,198
Year—								
1962-63	221	194	150	1,053	390	19	..	2,027
1963-64	211	190	176	1,123	299	14	..	2,013
1964-65	239	187	225	1,095	303	15	..	2,064
1965-66	236	192	338	1,098	413	20	..	2,298
1966-67—								
2-row	245	213	344	1,056	72	20	..	1,951
6-row	140	14	40	51	301	1	..	546
<i>Total</i>	<i>385</i>	<i>228</i>	<i>384</i>	<i>1,107</i>	<i>373</i>	<i>21</i>	<i>..</i>	<i>2,498</i>

**BARLEY FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE
STATES AND A.C.T., 1936-37 TO 1966-67—continued**

<i>Period</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>A.C.T.</i>	<i>Aust.</i>
PRODUCTION ('000 BUSHELLS)(a)								
Average for three years ended—								
1938-39	197	2,174	135	6,816	660	252	..	10,234
1948-49	316	3,149	375	11,964	748	194	..	16,746
1958-59	1,463	7,192	4,673	29,740	4,239	267	..	47,574
Year—								
1962-63	5,331	5,469	4,088	18,004	6,056	631	..	39,579
1963-64	5,351	4,025	5,191	24,337	4,077	414	..	43,395
1964-65	6,707	4,335	7,111	26,932	3,701	529	..	49,315
1965-66	3,801	3,218	9,137	18,514	6,481	684	..	41,835
1966-67—								
2-row	7,359	5,066	11,917	22,678	1,450	736	..	49,207
6-row	4,437	355	1,277	1,020	5,257	35	..	12,381
<i>Total</i>	<i>11,796</i>	<i>5,421</i>	<i>13,194</i>	<i>23,698</i>	<i>6,707</i>	<i>772</i>	..	<i>61,588</i>
YIELD PER ACRE (BUSHELLS)(a)								
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—								
1962-63	24.2	28.1	27.3	17.1	15.5	31.9	..	19.5
1963-64	25.3	21.2	29.5	21.7	13.6	30.0	..	21.6
1964-65	28.1	23.2	31.6	24.6	12.2	34.2	..	23.9
1965-66	16.1	16.7	27.0	16.9	15.7	34.4	..	18.2
1966-67—								
2-row	30.0	23.7	34.7	21.5	20.1	36.7	..	25.2
6-row	31.8	24.9	31.9	20.2	17.5	35.6	..	22.7
<i>Total</i>	<i>30.6</i>	<i>23.8</i>	<i>34.4</i>	<i>21.4</i>	<i>18.0</i>	<i>36.7</i>	..	<i>24.7</i>

(a) 50 lb per bushel.

For Australia, 78 per cent of the area of barley for grain in 1966-67 was sown with 2-row barley, while the remainder consisted of 6-row varieties. The proportion, however, varied considerably in the several States. The utilisation of barley during the season ended November 1967 was as follows: exports, 20,271,000 bushels; malting and distilling, 14,867,000 bushels; pearl barley, 141,000 bushels; seed, 3,400,000 bushels.

**BARLEY FOR GRAIN, 2- AND 6-ROW: AREA AND PRODUCTION
AUSTRALIA, 1936-37 TO 1966-67**

<i>Period</i>	<i>Area ('000 acres)</i>			<i>Production ('000 bushels)(a)</i>			<i>Yield per acre (bushels)(a)</i>		
	<i>2-row</i>	<i>6-row</i>	<i>Total</i>	<i>2-row</i>	<i>6-row</i>	<i>Total</i>	<i>2-row</i>	<i>6-row</i>	<i>Total</i>
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—									
1962-63	1,553	474	2,027	31,370	8,209	39,579	20.2	17.3	19.5
1963-64	1,621	392	2,013	36,464	6,931	43,395	22.5	17.7	21.6
1964-65	1,655	409	2,064	41,775	7,540	49,315	25.2	18.4	23.9
1965-66	1,766	531	2,298	33,235	8,600	41,835	18.8	16.2	18.2
1966-67	1,951	546	2,498	49,207	12,381	61,588	25.2	22.7	24.7

(a) 50 lb per bushel.

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 of Year Book No. 50.

Value of barley crop

The average wholesale price for 2-row English malting barley in the Melbourne market was \$1.48 a bushel in 1966-67 compared with \$1.47 in 1965-66. The estimated gross value of the barley crop in each State for the 1966-67 season and the value per acre are shown in the following table.

BARLEY FOR GRAIN: VALUE OF CROP, STATES, 1966-67

		<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.</i>
Aggregate value	\$'000	15,197	7,260	15,789	26,912	7,476	1,109	73,743
Value per acre	\$	39.45	31.89	41.15	24.31	20.04	52.67	29.52

Exports of barley

South Australia is the principal exporting State, and Japan, Italy, the Netherlands and the United Kingdom were the principal countries to which barley was shipped in 1966-67. Particulars of exports of Australian-produced barley for the years 1962-63 to 1966-67 are shown in the following table.

BARLEY: EXPORTS, AUSTRALIA, 1962-63 TO 1966-67

		1962-63	1963-64	1964-65	1965-66	1966-67
Quantity	'000 bus	10,322	17,756	16,281	9,994	18,718
Value	\$'000 f.o.b.	10,458	18,298	18,002	11,508	21,569

In addition to exports of barley grain, there are also exports of Australian pearl and Scotch barley, the total for 1966-67 amounting to 325,000 lb, valued at \$16,000, the main countries of consignment being the Federation of South Arabia, and Ceylon. Imports of barley into Australia are negligible.

Barley malt

Details of the recorded usage of barley and the production of barley malt in the years 1962-63 to 1966-67 are given in the following table.

BARLEY MALT: GRAIN USED AND MALT PRODUCED, AUSTRALIA
1962-63 TO 1966-67

		1962-63	1963-64	1964-65	1965-66	1966-67
Barley used	'000 bus(a)	10,119	11,886	11,667	12,883	13,601
Malt produced	'000 bus(b)	10,429	11,988	12,127	13,235	13,969

(a) 50 lb per bushel. (b) 40 lb per bushel.

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 4,678,000 bushels (value \$9,295,000) and 5,235,000 bushels (value \$10,543,000) were recorded in 1965-66 and 1966-67 respectively.

World production of barley

In comparison with the barley production of other countries that of Australia is extremely small. The main producers in 1966 were the Union of Soviet Socialist Republics, the United Kingdom and the United States of America. China is also normally a major producer, but details for 1966 are not available. Australian production in that year was approximately 1 per cent of the world total.

According to estimates made by the United States Department of Agriculture, world production of barley in the year 1966 amounted to 4,593 million bushels harvested from 153.8 million acres, equivalent to a yield per acre of 29.9 bushels. This compared with the production of 4,218 million bushels in the previous year from 154.1 million acres, a yield of 27.4 bushels per acre.

Sorghum

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 mechanised.

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 Areas are the main areas. This crop is also suitable for the semi-tropical areas of the Northern Territory, where development is proceeding, and the Kimberleys.

GRAIN SORGHUM: AREA, PRODUCTION AND YIELD PER ACRE, STATES
1962-63 TO 1966-67

Year	Area			Production(a)			Yield per acre(a)		
	N.S.W.	Qld	Aust. (b)	N.S.W.	Qld	Aust. (b)	N.S.W.	Qld	Aust. (b)
	acres	acres	acres	'000 bushels	'000 bushels	'000 bushels	bushels	bushels	bushels
1962-63	80,255	311,068	391,334	1,891	8,361	10,252	23.6	26.9	26.2
1963-64	61,203	303,857	365,708	1,269	6,612	7,889	20.7	21.8	21.6
1964-65	51,699	292,769	345,737	1,270	5,883	7,164	24.6	20.1	20.7
1965-66	99,576	332,768	433,437	605	6,533	7,149	6.1	19.6	16.5
1966-67	98,161	403,500	502,349	1,527	10,172	11,711	15.6	25.2	23.3

(a) 60 lb per bushel. Production in New South Wales and Queensland harvested from crop sown in previous year.
(b) Includes small areas sown and quantities produced in other States and Territories.

Maize

Like sorghum, maize is a summer cereal demanding specific soil and climatic conditions. For grain, it is grown almost entirely in the south-east and Atherton Tablelands of Queensland and the north coast and northern tablelands of New South Wales. 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 used also 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 connection with the dairying industry. There is practically no difference between grain and fodder varieties.

There has been a continuing 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 specialised industry of growing hybrid strains for seed.

Maize area, production and yield per acre

MAIZE FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE
STATES AND A.C.T., 1936-37 TO 1966-67

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	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—								
1962-63 . . .	46,537	3,634	159,285	(a)	34	..	..	(b)209,490
1963-64 . . .	44,679	3,399	166,598	(a)	85	..	..	(b)214,761
1964-65 . . .	41,660	2,353	168,300	..	10	..	..	212,323
1965-66 . . .	42,000	1,683	153,081	..	1	..	..	196,765
1966-67—								
Hybrid . . .	44,688	1,261	141,133	..	(c)	..	..	(b)187,082
Other . . .	4,331	146	9,877	..	5	..	..	14,359
Total . . .	49,019	1,407	151,010	..	5	..	..	201,441
PRODUCTION ('000 BUSHELS)(d)								
Average for three years ended—								
1938-39 . . .	3,204	665	3,170	1	..	..	..	7,040
1948-49 . . .	2,446	314	2,960	..	1	..	..	5,721
1958-59 . . .	2,347	175	3,428	(a)	..	..	..	(b)5,950
Year—								
1962-63 . . .	2,145	216	5,096	(a)	..	..	..	(b)7,457
1963-64 . . .	2,089	204	4,427	(a)	2	..	..	(b)6,722
1964-65 . . .	1,878	114	4,887	..	..	..	..	6,879
1965-66 . . .	1,607	101	3,209	..	..	..	..	4,918
1966-67—								
Hybrid . . .	2,301	67	4,659	..	(c)	..	..	(b)7,026
Other . . .	170	5	289	..	..	..	..	465
Total . . .	2,471	72	4,948	..	..	..	..	7,491
YIELD PER ACRE (BUSHELS)(d)								
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—								
1962-63 . . .	46.1	59.5	32.0	(a)	12.2	..	..	(b)35.6
1963-64 . . .	46.8	59.8	26.6	(a)	18.5	..	..	(b)31.3
1964-65 . . .	45.1	48.5	29.0	..	15.6	..	..	32.4
1965-66 . . .	38.3	60.3	21.0	..	60.0	..	..	25.0
1966-67—								
Hybrid . . .	51.5	53.2	33.0	..	(c)	..	..	(b)37.6
Other . . .	39.4	34.8	29.3	..	12.8	..	..	32.4
Total . . .	50.4	51.3	32.8	..	12.8	..	..	37.2

(a) Not available for publication. (b) Incomplete. (c) Included in Other maize. (d) 56 lb per bushel. Production in New South Wales and Queensland harvested from crop sown in previous year.

The average yield for Australia for the five-year period ended 1966-67 was 32.3 bushels per acre. Among principal producing countries, the United States of America averaged 72.1 bushels per acre and Brazil 22.7 bushels for 1966.

Value of maize crop

The average wholesale price of maize in the Melbourne market in 1966-67 was \$2.28 a bushel compared with \$2.83 in 1965-66. The estimated gross value of the crop in each State for the 1966-67 season and the value per acre were as follows.

MAIZE FOR GRAIN: VALUE OF CROP, STATES, 1966-67

		<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.</i>
Aggregate value	.\$'000	3,855	115	6,425	..	..	..	10,395
Value per acre	.\$	78.64	81.73	42.55	..	..	..	51.60

Exports of maize**MAIZE: EXPORTS, AUSTRALIA, 1962-63 TO 1966-67**

		1962-63	1963-64	1964-65	1965-66	1966-67
Quantity	.'000 bus	552	14	20	1	80
Value	.\$'000 f.o.b.	480	27	42	4	114

The exports of maize in 1962-63 were due principally to the shipment of 474,000 bushels to Japan, a country to which there were no previous or subsequent significant exports. Imports of maize into Australia amounted to 19,000 bushels in 1966-67.

World production of maize

According to figures issued by the United States Department of Agriculture, world production of maize in the year 1966 amounted to 8,944 million bushels, harvested from 246 million acres, giving an average yield per acre of 36.3 bushels. This compared with production in the previous year of 8,182 million bushels from 240 million acres, and an average yield of 34.1 bushels per acre.

The United States of America is the most important maize-producing country in the world, and during the three years ended 1966 the area sown to maize in that country averaged 57 million acres or 23 per cent of the world total. During the same period production averaged 3,941 million bushels or 47 per cent of the world total.

Rice

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 Areas 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.

Apart from small experimental areas in Western Australia and the Northern Territory, rice-growing in Australia is practically confined to the Murrumbidgee Irrigation Areas in New South Wales. The bulk of Australia's exports of rice in 1966-67 was shipped to Papua and New Guinea and the Pacific Islands. Details relating to area, production, and Australian-produced exports for the years 1962-63 to 1966-67 are shown in the following table.

**RICE: AREA, PRODUCTION AND EXPORTS, AUSTRALIA(a)
1962-63 TO 1966-67**

Year	No. of holdings growing rice(b)	Area	Production (paddy rice)		Average yield (paddy) per acre	Exports		Imports
			Quantity	Gross value(c)		Uncleaned	Cleaned	
		acres	'000 bushels (d)	'000	bushels (d)	'000 lb	'000 lb	'000 lb
1962-63	956	54,929	7,129	7,676	129.8	26,860	101,425	1,971
1963-64	1,033	59,398	7,455	7,912	125.5	22,268	102,847	2,452
1964-65	1,074	61,617	8,030	8,529	130.3	24,219	118,505	2,987
1965-66	1,115	64,398	9,540	10,224	148.1	25,552	116,704	3,951
1966-67	1,164	73,724	11,250	12,445	152.6	23,050	175,320	3,718

(a) Particulars of area and production for Western Australia and the Northern Territory are not available for publication, and are excluded. (b) Twenty acres or more in area. (c) Excludes the value of straw. (d) 42 lb per bushel.

Fodder crops

Hay

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 1966-67 hay represented 9 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.

HAY: AREA, PRODUCTION AND YIELD PER ACRE, STATES AND TERRITORIES
1936-37 TO 1966-67

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	..	4	2,372
Year—									
1962-63	587	1,251	87	287	340	165	1	2	2,720
1963-64	584	1,138	80	358	289	150	1	2	2,602
1964-65	600	1,306	82	314	305	180	1	3	2,793
1965-66	733	1,150	155	299	291	148	1	4	2,780
1966-67	823	1,558	129	482	295	203	1	4	3,496
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	..	7	3,701
Year—									
1962-63	965	2,376	197	406	453	313	1	6	4,717
1963-64	1,006	1,947	184	488	389	249	1	5	4,269
1964-65	1,040	2,506	167	487	390	365	1	7	4,963
1965-66	978	1,873	282	368	414	257	2	5	4,179
1966-67	1,481	2,982	314	729	417	437	2	9	6,371
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—									
1962-63	1.64	1.90	2.27	1.41	1.33	1.89	1.21	2.38	1.73
1963-64	1.72	1.71	2.30	1.37	1.35	1.67	1.02	1.71	1.64
1964-65	1.73	1.92	2.19	1.55	1.28	2.02	1.11	1.99	1.78
1965-66	1.33	1.63	1.83	1.23	1.43	1.74	1.39	1.29	1.50
1966-67	1.80	1.91	2.44	1.51	1.41	2.15	1.63	2.14	1.82

Plate 53 shows the area under hay since 1900-01 (page 862).

Information regarding areas cut for hay and varieties grown in 1966-67 is given in the following table.

HAY: AREA OF VARIOUS KINDS GROWN, STATES AND TERRITORIES
1966-67
(Acres)

<i>State or Territory</i>	<i>Oaten</i>	<i>Lucerne</i>	<i>Wheaten</i>	<i>Other</i>	<i>Total</i>
New South Wales	129,059	269,158	102,740	322,471	823,428
Victoria	213,109	99,361	29,453	1,216,559	1,558,482
Queensland	11,323	92,463	10,138	14,783	128,707
South Australia	135,051	67,055	47,988	231,648	481,742
Western Australia	111,045	2,909	35,247	145,881	295,082
Tasmania	14,033	1,803	146	187,199	203,181
Northern Territory . . . . .	..	..	..	1,334	1,334
Australian Capital Territory	466	1,874	22	1,621	3,983
Australia	614,086	534,623	225,734	2,121,496	3,495,939

For all States and the Territories combined, the proportions of the areas sown to the principal kinds of hay in 1966-67 were 17.6 per cent for oaten, 15.3 per cent for lucerne, 6.5 per cent for wheaten, and 60.7 per cent for other hay.

The following table shows the estimated gross value, and the value per acre, of the hay crop of the several States for the 1966-67 season.

HAY: VALUE OF CROP, STATES 1966-67

		<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust..</i> (a)
Aggregate value	\$'000	39,019	74,151	9,738	12,089	8,985	7,145	151,470
Value per acre	\$	47.39	47.58	75.66	25.09	30.45	35.17	43.33

(a) Includes \$76,000 and \$266,000 for the Northern Territory and Australian Capital Territory respectively.

Farm stocks of hay

Particulars of stocks of hay held on farms at 31 March for the years 1963 to 1967 are given in the table below.

STOCKS OF HAY HELD ON FARMS, STATES AND A.C.T., 1963 TO 1967
(Tons)

<i>31 March—</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>A.C.T.</i>	<i>Aust..</i> (a)
1963	1,609,639	2,197,725	194,948	470,202	273,500	333,650	6,896	5,086,560
1964	1,610,063	1,911,475	179,422	547,354	274,812	276,650	5,085	4,804,861
1965	1,586,969	2,402,299	145,737	614,451	275,948	414,415	7,606	5,447,425
1966	1,158,481	1,915,693	190,659	444,089	291,528	296,196	5,171	4,301,817
1967	1,888,668	2,175,731	270,470	544,676	249,531	399,891	8,151	5,537,118

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

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 1966-67 exports amounting to 5,599 tons, valued at \$265,000, were made, principally to Kuwait, Singapore and Malaysia. Imports of hay are not recorded separately, but are considered to be negligible.

Green fodder

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 livestock. The principal crops cut for green fodder are lucerne and oats, while small quantities of barley, sorghum, wheat, maize, rye, and sugar cane are also used in this way. In 1966-67 the area under green fodder (5,398,511 acres) consisted of lucerne (2,226,058 acres), oats (2,159,850 acres), sorghum (224,140 acres), barley (184,340 acres), wheat (163,101 acres), rye (28,421 acres), maize (27,387 acres), sugar cane (1,216 acres), and other crops (383,998 acres). Particulars concerning the area of green fodder in the several States during each of the years 1962-63 to 1966-67 are given in the following table.

GREEN FODDER: AREA, STATES AND TERRITORIES, 1962-63 TO 1966-67

('000 acres)

<i>Year</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
1962-63 . . .	1,900	478	912	928	668	65	..	1	4,952
1963-64 . . .	1,974	431	1,011	972	417	71	..	1	4,877
1964-65 . . .	2,397	454	1,111	1,135	446	67	1	1	5,614
1965-66 . . .	1,952	526	1,143	1,210	414	78	1	1	5,324
1966-67 . . .	2,133	443	1,179	1,169	399	74	..	1	5,399

In the 1966-67 season green fodder ranked second to wheat in area of crops throughout Australia. A graph showing the area sown to green fodder appears on plate 53. The value of these crops is variously estimated in the several States, but the Australian total, excluding Western Australia, may be taken as approximately \$28,000,000 for the 1965-66 season and \$25,000,000 for the 1966-67 season.

Ensilage

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.

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 connection with the design of the silos and the cutting and packing of the ensilage. Information regarding production and farm stocks of ensilage for the years 1962-63 to 1966-67 is given in the following table.

ENSILAGE: PRODUCTION AND FARM STOCKS, STATES AND A.C.T.

1962-63 TO 1966-67

(Tons)

<i>Period</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>A.C.T.</i>	<i>Aust.</i>
Production during—								
1962-63 season . . .	210,653	295,914	63,489	64,206	48,806	68,117	290	751,475
1963-64 " . . .	222,126	252,837	53,160	88,183	37,238	43,760	270	697,574
1964-65 " . . .	182,063	250,997	34,440	78,709	26,798	54,438	400	627,845
1965-66 " . . .	139,438	228,439	42,886	48,388	30,225	52,802	120	542,298
1966-67 " . . .	312,968	335,244	31,895	65,548	29,135	87,041	406	862,237
Farm stocks at—								
31 March 1963 . . .	602,585	263,440	146,286	63,315	37,415	61,110	1,768	1,175,919
" " 1964 . . .	565,457	185,115	139,691	78,997	29,709	43,554	1,108	1,043,631
" " 1965 . . .	534,730	206,304	112,596	86,093	24,160	49,668	892	1,014,443
" " 1966 . . .	365,995	157,134	73,122	58,038	28,293	43,461	291	726,334
" " 1967 . . .	519,371	233,979	77,180	62,262	20,476	68,464	740	982,472

Sugar cane

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.

The Bureau of Sugar Experiment Stations in Queensland and the Colonial Sugar Refining Company Limited render useful service to the sugar industry by advocating and demonstrating better methods of cultivation and the more scientific use of fertilisers, lime, etc. and by producing and distributing improved varieties of cane. In common with these two organisations, Sugar Research Ltd, of Mackay, undertakes technological research in raw sugar milling practices.

Sugar agreements and marketing arrangements in Australia

In Year Book No. 37, pages 940-1, a summary is given of 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 was for the period from 1 September 1961 to 31 August 1967. It was extended for a further year to 31 August 1968 by a supplementary agreement which prescribed prices for sugar equivalent to a retail price of 10.5 cents per lb.

Production of sugar is regulated under the terms of the agreement. At the mill level control is exerted by means of seasonal 'mill peaks' in respect of Queensland mills and a proportionate allowance for New South Wales mills. The combined total equals the estimated requirements of the domestic and export markets. Farm production is regulated according to the limit on the mill which the farm supplies. Up to the end of 1961 exports were limited by the export quota provisions of the International Sugar Agreement, but these provisions have not been operative since then (*see below*).

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 uniform prices paid to mills. In 1963 a Queensland Government Committee of Enquiry recommended that the industry should expand production to 2.26 million tons (of 94 net titre sugar) by 1965-66, of which New South Wales might produce 132,000 tons. This recommendation has been implemented, although seasonal conditions prevented the attainment of the target until 1966-67, when 2,343,000 tons were produced, the New South Wales contribution being 140,000 tons. Production for 1967-68 is estimated to be 2,334,000 tons 94 net titre, to which New South Wales is expected to contribute 121,000 tons.

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 1 January 1959, established basic export quotas for exporting countries. The British Commonwealth was allocated a total quota, the distribution of which remained a matter for internal arrangement by the countries and territories concerned (*see below*). The Australian quota for 1960 and 1961 was approximately 651,000 tons per annum.

The quota and price provisions of the International Sugar Agreement were subject to review before 31 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 was that former export limitations on participating exporting countries, including Australia, did not apply until such time as agreement on this question was 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. The 1958 Agreement, in its restricted form, was extended by protocol until 31 December 1965.

A United Nations conference was convened at Geneva in September 1965. This conference did not negotiate a new agreement, but extended the 1958 Agreement, in a restricted form, until 31 December 1966. The restricted Agreement was further extended until 31 December 1968. A conference for the purpose of negotiating a new International Sugar Agreement met at Geneva in April 1968.

British Commonwealth Sugar Agreement

On 1 January 1953 the British Commonwealth Sugar Agreement became effective. This agreement, which has been extended to 1974, provides for Australia to export to preferential markets a maximum of 600,000 tons per annum. Of the 600,000 tons, 335,000 tons are purchased by the United Kingdom Government at a regularly negotiated price and the balance may be sold at world market prices plus tariff preferences where applicable. The negotiated price of £Stg42 a ton bulk f.o.b. and stowed payable for Australian raws in 1965 was increased to £Stg43 10s. a ton for 1966, 1967 and 1968.

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 15 May 1960 a rebate of \$4.40 a ton of refined sugar used in processing approved fruit products was paid to Australian manufacturers, provided they bought fresh fruit at prices not lower than those declared by the Committee as reasonable. This was increased to \$10 a ton from 16 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 the Australian sugar content than the price for which the cheapest imported sugar could be landed duty free in Australia. The Queensland Government is responsible for payment of a similar rebate to exporters of other approved products. Payment of the export sugar rebate in respect of approved fruit products has been made conditional upon satisfactory arrangements having been made for payment for such fruit at not less than the prices (if any) which the Committee has declared to be reasonable at the time of purchase.

Under the Sugar Agreement 1962 the Queensland Government contributes to the fund \$528,000 annually, reimburses the Committee for the actual expenditure on export sugar rebates, and, by a supplementary agreement operating from 1 September 1962, pays the Committee an additional sum equal to the amount payable by way of domestic sugar rebate in respect of the products exported. 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 research for the purpose of increasing the yield per acre of Australian fruit, or of obtaining information regarding Australian fresh marketable fruits.

Financial assistance to the sugar industry

Under the provisions of the *Sugar Marketing Assistance Agreement Act 1967* the Commonwealth Government arranged a repayable grant of \$19 million through the Queensland Government to the sugar industry to raise returns from sales of the No. 1 Pool in the 1966 season to a level comparable with that received in the 1965 season. A further grant of up to a maximum of \$15 million was authorised for a similar purpose in respect of No. 1 Pool in the 1967 season. The grants will be repayable over ten years commencing in mid-1970, and will not be subject to interest before then. Thereafter they will incur interest at the medium term bond rate prevailing when each grant was made.

Bulk handling of sugar

Bulk handling and mechanised loading and unloading of raw sugar is now in operation throughout the Australian sugar industry, except for the operation of a bagging station specially provided at Townsville to meet the needs of a few overseas customers. Terminals for the bulk loading of sugar were opened at Mackay in 1957, at Lucinda and Bundaberg in 1958, at Townsville in 1959, at Mourilyan in 1960, and at Cairns in 1964. A second storage shed at Bundaberg, a third shed at Mackay and second sheds at Lucinda and Townsville have been opened subsequently. The comparatively small New South Wales sugar industry was converted to bulk handling in 1954. Bulk receiving facilities are in operation at all Australian refineries.

Area of sugar cane

A brief outline of the development of the industry was included in earlier issues of the Year Book (*see* No. 38, page 985). The area of sugar cane in Australia for the seasons 1962-63 to 1966-67 and the averages for the three-year periods ended 1938-39, 1948-49 and 1958-59 are shown in the following table. The areas shown in the table do not include the small acreage cut for green fodder, which in 1966-67 amounted to 1,216 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.

SUGAR CANE: AREA(a), STATES, 1936-37 TO 1966-67
(Acres)

Period	New South Wales			Queensland			Australia			Total
	Area crushed	Area of standover and newly-planted cane	Area cut for plants	Area crushed	Area of standover and newly-planted cane	Area cut for plants	Area crushed	Area of standover 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—										
1962-63 . . .	14,109	12,656	495	387,477	80,438	11,313	401,586	93,094	11,808	506,488
1963-64 . . .	15,508	14,204	594	402,060	93,149	13,205	417,568	107,353	13,799	538,720
1964-65 . . .	19,429	17,043	728	450,956	126,906	12,896	470,385	143,949	13,624	627,958
1965-66 . . .	15,824	23,350	668	487,375	105,361	14,243	503,199	128,711	14,911	646,821
1966-67 . . .	22,475	18,548	613	534,998	78,609	13,265	557,473	97,157	13,878	668,508

(a) Excludes areas cut for green fodder and small area sown in Western Australia.

Production of cane and sugar

The production of sugar cane in 1966-67 was at the record level of 16.7 million tons, which was 10.7 per cent above the previous record production of 15.1 million tons in 1964-65. A graph showing the production of sugar appears on page 995 of Year Book No. 49.

SUGAR CANE: PRODUCTION OF CANE AND RAW SUGAR, STATES, 1936-37 TO 1966-67
(Tons)

Period	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—						
1962-63 . . .	637,310	79,733	12,098,582	1,770,084	12,735,892	1,849,817
1963-64 . . .	617,402	75,980	11,500,672	1,648,273	12,118,074	1,724,253
1964-65 . . .	784,126	95,195	14,286,350	1,854,883	15,070,476	1,950,078
1965-66 . . .	609,320	69,989	13,545,719	1,883,364	14,155,039	1,953,353
1966-67 . . .	1,171,441	139,967	15,513,449	2,202,809	16,684,890	2,342,776

(a) Raw sugar at 94 net titre.

Owing to climatic variations the crop in New South Wales matures in from twenty to twenty-four months, whereas in Queensland a period of from twelve to sixteen months is sufficient. The average yields of cane and sugar per acre for the years 1962-63 to 1966-67 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, STATES, 1936-37 TO 1966-67
(Tons)

Period	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—									
1962-63 . . .	45.17	5.65	7.99	31.22	4.57	6.84	31.71	4.61	6.88
1963-64 . . .	33.81	4.90	8.13	28.60	4.10	6.98	29.02	4.13	7.03
1964-65 . . .	40.36	4.90	8.24	31.68	4.11	7.70	32.04	4.15	7.73
1965-66 . . .	38.51	4.42	8.71	27.79	3.86	7.19	28.13	3.88	7.25
1966-67 . . .	52.12	6.23	8.37	29.00	4.12	7.04	29.93	4.20	7.12

Production and utilisation of sugar

Details of the production and utilisation of sugar for the years 1962-63 to 1966-67 are shown below. Consumption is shown in terms of refined sugar, including that consumed in manufactured products.

SUGAR: PRODUCTION AND UTILISATION, AUSTRALIA, 1962-63 TO 1966-67

Year	Changes in stocks(a)	Production (raw)	Exports(b)	Miscellaneous uses(c)	Consumption in Australia(d)	
					Total	Per head
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	lb
1962-63	+ 114.7	1,831.6	1,175.3	17.5	524.1	108.2
1963-64	- 64.8	1,648.7	1,156.0	20.9	536.7	108.7
1964-65	- 4.1	1,880.0	1,308.2	20.5	555.4	110.3
1965-66	+ 76.7	1,961.8	1,289.0	27.9	568.2	110.7
1966-67	- 58.4	2,222.1	1,674.6	27.1	578.7	110.7

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

The quantity of sugar recorded as used in factories in 1966-67 amounted to 374,207 tons compared with 377,708 tons in 1965-66 and 359,596 tons in 1964-65. Particulars of sugar used in establishments not classified as factories are not available, and consequently these quantities are deficient to that extent. In 1966-67 consumption by factories engaged in the production of jams, jellies and preserved and dried fruit and vegetables amounted to 81,219 tons, by those producing confectionery, ice cream, etc. to 65,182 tons, by breweries to 48,487 tons, and by factories producing aerated waters, cordials, etc. to 63,664 tons.

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.

Sugar prices and returns

The current prices of sugar in Australia (as determined under the Sugar Agreement in Australia see page 892) and details of net returns for raw sugar from 1962-63 to 1966-67 are shown in the following tables.

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 cistres per lb
	Home consumption	Exports (a)	Whole crop (a)			
	\$	\$	\$		\$	\$
1962	125.10	82.18	95.98	16.5.60 to 18.6.67	180.52	0.092
1963	122.00	131.22	127.97	19.6.67	206.72	0.105
1964	120.75	83.89	95.78			
1965	121.95	67.27	85.14			
1966(b)	121.25	51.45	75.01			

(a) Includes 'excess' sugar. (b) Excludes repayable Commonwealth grant (see page 893).

RAW SUGAR(a): NET RETURNS, AUSTRALIA, 1962-63 TO 1966-67

(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	\$	\$	\$'000
1962-63	67.85	82.18	95.98	177,496
1963-64	64.70	131.22	127.97	220,520
1964-65	67.76	83.89	95.78	186,728
1965-66	67.31	67.27	85.14	166,270
1966-67	72.50	51.45	75.01	175,694

(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. They include concessions to the fruit industry and other rebates which in 1966-67 amounted to \$3,893,000, but exclude the repayable Commonwealth grants referred to earlier. 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.

Exports of sugar

RAW AND REFINED SUGAR: EXPORTS, AUSTRALIA, 1962-63 TO 1966-67

	1962-63	1963-64	1964-65	1965-66	1966-67
Quantity tons	1,145,966	1,116,190	1,269,139	1,252,546	1,638,263
Value \$'000 f.o.b.	91,042	156,513	112,683	93,925	99,535

Tobacco

Tobacco is a summer-growing annual which requires a temperate to tropical climate, adequate soil moisture and a frost-free period of approximately five months. In Australia almost all tobacco is grown under irrigation. Because of specialised requirements, commercial production is restricted mainly to river valleys where suitable light friable soil types are found. Grown in the three eastern States of Australia, the centres of production include Mareeba (northern Queensland), Bundaberg (central coastal Queensland), Beerwah (Glasshouse Mountains, Queensland), Texas (south-western Queensland), Ashford (north-western New South Wales), Myrtleford (north-eastern Victoria), and Gunbower (northern Victoria). All tobacco produced in Australia is of the flue-cured type. The main variety grown is Hicks.

Marketing

Between 9 May 1941 and 24 September 1948 all leaf was under the direct control of the Australian Tobacco Board, and prices were paid on leaf appraisal. Subsequently the Board was disbanded, and 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). In 1964 the Victorian Tobacco Leaf Marketing Board was set up to market the portion of the crop that was formerly sold by the Victorian Tobacco Growers Association Ltd, and in 1965 a Board was established in New South Wales. However, the actual physical handling of New South Wales leaf at auction is carried out by the Queensland and Victorian authorities.

A stabilisation plan for the tobacco growing industry was agreed on between Commonwealth and State Governments in 1965. In 1968, the final year of the plan, the Governments concerned agreed that it should continue for a further period of five years. The plan provides broadly for the establishment of an annual marketing quota of 26 million pounds (green weight) of leaf to be sold under an

agreed grade and price schedule providing for an average minimum price, based on normal crop fall out. The overall marketing quota is divided among tobacco-producing States and the State quotas are in turn divided among individual growers.

The plan is administered by the Australian Tobacco Board, constituted under the *Tobacco Marketing Act 1965-66* and representative of the Commonwealth, tobacco-producing States, growers, and manufacturers.

The guaranteed average minimum price for the 1968 season, i.e. 109.0 cents per lb, is 0.4 cents per lb below the minimum for the previous season.

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.

In 1955 the Committee formulated a programme for increased research and advisory activities. The capital costs of establishing this programme were estimated at \$336,000, of which the Commonwealth Government and tobacco manufacturers each agreed to contribute half. Annual contributions are made to a fund by the Commonwealth and State Governments and tobacco growers and manufacturers. A Tobacco Industry Trust Account has been established under the *Tobacco Industry Act 1955-1965* to receive these contributions. The contributions from growers and manufacturers are obtained under the Tobacco Charges Assessment Act and the Tobacco Charges Acts, whose purpose is to provide funds to be used in research and otherwise with a view to fostering and expanding the Australian tobacco industry. This programme commenced in 1956, and since then \$4,593,310 has been paid to State and Commonwealth departments for expenditure on tobacco research and extension. The allocation for 1967-68 was \$724,736. As from 1 July 1964 the annual Commonwealth contribution has been increased to one-half of approved expenditure from the Tobacco Industry Trust Account. 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. However, following the establishment of the Australian Tobacco Board, the Australian Agricultural Council in 1966 abolished this sub-committee and reconstituted the Central Tobacco Advisory Committee with the following terms of reference:

'To make recommendations annually to the Australian Agricultural Council, through the Standing Committee on Agriculture, regarding research and extension programmes to be financed from the Tobacco Industry Trust Account.'

Other assistance and research

Details of the recommendations by the Tobacco Inquiry Committee and grants periodically approved by the Commonwealth Government up to 30 June 1953 are given in Year Book No. 40, pages 895-6, and in previous issues.

The Commonwealth Scientific and Industrial Research Organization and the State Departments of Agriculture in the tobacco growing States are carrying out investigations into a wide range of problems involving fundamental research, plant breeding, variety trials, irrigation, disease and pest control, fertilisers, crop rotation, and cultural practices.

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, which in November 1946 stood at 3 per cent for cigarettes and 5 per cent for tobacco, have been increased progressively in intervening years and since 1 January 1966 have been set at 50 per cent for both cigarettes and tobacco.

In 1966-67 the quantity of cured leaf recorded as used in tobacco factories in Australia amounted to 51 million lb, of which 25 million lb was of local origin. The balance was imported, chiefly from the United States of America and South Africa.

Tobacco area and production

The area of tobacco in 1966-67 was 23.8 per cent below the record area established in 1962-63. Production at 27,905,000 lb was 17.7 per cent below the record established in 1963-64.

TOBACCO: AREA AND PRODUCTION, STATES, 1936-37 TO 1966-67

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.
AREA (ACRES)							
Average for three years ended—							
1938-39 . . .	697	4,262	3,842	77	1,055	134	10,067
1948-49 . . .	415	1,046	1,948	..	609	..	4,018
1958-59 . . .	1,257	3,478	7,479	..	1,295	..	13,509
Year—							
1962-63 . . .	3,163	9,844	16,346	..	28	..	29,381
1963-64 . . .	2,927	10,519	15,579	..	..	..	29,025
1964-65 . . .	2,546	9,720	14,042	..	..	..	26,308
1965-66 . . .	1,742	9,230	12,509	..	..	..	23,481
1966-67 . . .	1,794	8,455	12,134	..	..	..	22,383
PRODUCTION OF DRIED LEAF ('000 lb)							
Average for three years ended—							
1938-39 . . .	471	1,603	2,173	17	741	104	5,109
1948-49 . . .	380	670	1,725	..	523	..	3,298
1958-59 . . .	1,066	3,770	5,563	..	1,016	..	11,415
Year—							
1962-63 . . .	2,885	9,447	14,787	..	29	..	27,148
1963-64 . . .	2,652	14,459	17,231	..	..	..	34,342
1964-65 . . .	2,356	12,080	10,675	..	..	..	25,111
1965-66 . . .	1,698	11,083	14,580	..	..	..	27,361
1966-67 . . .	2,133	10,953	14,819	..	..	..	27,905

Imports and exports of tobacco

Imports of tobacco and tobacco manufactures into Australia during 1966-67 were valued at \$27.5 million. This included 27.0 million lb of unmanufactured tobacco valued at \$20.6 million. Exports of tobacco and tobacco manufactures during 1966-67 were valued at \$2,363,000, including Australian produce, \$1,534,000.

Cotton

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 was formerly restricted mainly to the coastal river valleys of Queensland. In recent years, however, the Namoi River area of New South Wales and the Ord River district of Western Australia have emerged as the predominant growing areas, while smaller quantities are grown in the Murrumbidgee Irrigation Area of New South Wales. The bulk of the Australian cotton crop is now grown under irrigation and this has resulted in greatly increased yields.

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* 1963-1966 the Commonwealth pays a bounty on raw cotton produced and sold for use in Australia at the rate of 13.4375 cents per lb for Middling 1' White, with premiums and discounts on grades and staples above and below, up to a maximum of \$4 million in any one year. The bounty is for a period of five years from 1 January 1964.

Cotton area and production

COTTON: AREA, PRODUCTION AND YIELD PER ACRE, STATES AND TERRITORIES
1962-63 TO 1966-67

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
AREA (ACRES)									
1962-63	2,359	(a)	35,330	..	(a)	..	(a)	..	(b)37,689
1963-64	10,947	..	28,465	..	1,526	..	..	..	40,938
1964-65	18,897	(a)	13,550	..	5,475	..	..	..	(b)37,922
1965-66	33,176	(a)	13,455	..	8,307	..	..	..	(b)54,938
1966-67	30,104	..	11,167	..	11,892	..	..	..	53,163
PRODUCTION (UNGINNED) ('000 lb)									
1962-63	2,993	(a)	12,769	..	(a)	..	(a)	..	(b)15,762
1963-64	8,167	..	7,943	..	2,114	..	..	..	18,223
1964-65	45,951	(a)	6,268	..	10,790	..	..	..	(b)63,009
1965-66	103,280	(a)	10,138	..	20,431	..	..	..	(b)133,850
1966-67	79,159	..	11,800	..	29,400	..	..	..	120,360
YIELD PER ACRE (lb)									
1962-63	1,269	(a)	361	..	(a)	..	(a)	..	(b)418
1963-64	746	..	279	..	1,385	..	..	..	445
1964-65	2,432	(a)	463	..	1,971	..	..	..	(b)1,662
1965-66	3,113	(a)	754	..	2,460	..	..	..	(b)2,436
1966-67	2,630	..	1,057	..	2,472	..	..	..	2,264

(a) Not available for publication. (b) Incomplete; see individual States.

NOTE. Production in Queensland relates to the crop harvested in the first of the years mentioned in column 1, and in other States to the year following: e.g., for 1966-67, the Queensland crop was harvested during 1966, while the crop in other States was harvested during 1967.

Production of ginned cotton for 1962-63 was 5,403,000 lb; 1963-64, 6,570,000 lb; 1964-65, 17,286,000 lb; 1965-66, 40,885,000; and 1966-67, 35,510,000 lb.

The gross value of unginning cotton for the five years ended 1966-67 was \$1,876,000; \$2,212,000; \$7,685,000; \$14,323,000; and \$13,572,000 respectively.

Imports of raw cotton (excluding linters) during the past five years were: 1962-63, 42,543,000 lb; 1963-64, 56,663,000 lb; 1964-65, 55,474,000 lb; 1965-66, 32,096,000 lb; and in 1966-67, 19,963,000 lb.

Peanuts

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-rows, 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, the Northern Territory and, in some years, Western Australia.

PEANUTS: AREA AND PRODUCTION, STATES, 1962-63 TO 1966-67

Year	Area (acres)			Production (cwt)		
	N.S.W.	Qld	Aust.	N.S.W.	Qld	Aust.
1962-63	395	35,552	(a)35,947	4,258	315,144	(a)319,402
1963-64	478	44,482	(a)44,960	4,744	455,982	(a)460,726
1964-65	400	45,554	(a)45,954	4,746	202,369	(a)207,115
1965-66	394	57,298	57,708	4,468	543,735	548,279
1966-67	397	69,330	(a)69,727	5,194	821,957	(a)827,151

(a) Incomplete: excludes Northern Territory.

The gross value of the 1966-67 crop was \$7,966,000 which was approximately \$2,677,000 more than in 1965-66. Total supplies available for consumption in Australia in 1966-67 were 20,631 tons (in shell equivalent), after allowing for an increase of 8,371 tons in stock held by the Peanut Marketing Board, exports of 104 tons of peanuts and peanuts products, and industrial usage of 4,777 tons. Supplies were made up of 31,203 tons from Australian production received into store by the Board and 2,680 tons imported.

Flax

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 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.

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 23 October 1953.

Particulars of area and production of flax for linseed, by States, are given in the following table for the years 1962-63 to 1966-67. The significant reduction in area in 1965-66 was attributable to over-production in 1964-65.

FLAX FOR LINSEED: AREA AND PRODUCTION, STATES, 1962-63 TO 1966-67

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Aust.
Area (acres)—						
1962-63	11,493	25,232	58,493	1,220	626	97,064
1963-64	15,335	16,240	83,336	1,002	1,588	117,501
1964-65	23,769	9,953	97,092	898	2,135	133,847
1965-66	3,658	7,370	12,266	1,196	97	24,587
1966-67	9,580	5,012	17,854	389	1,751	34,586
Production (tons of linseed)—						
1962-63	2,634	8,180	14,477	290	136	25,717
1963-64	3,722	4,758	20,342	283	411	29,516
1964-65	8,761	2,671	34,175	426	567	46,600
1965-66	213	2,538	2,895	403	15	6,064
1966-67	3,265	2,319	7,338	188	634	13,744

Hops

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.

Production and imports of hops

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 1962-63 to 1966-67. Exports of hops are negligible and are not recorded separately.

**HOPS: PRODUCTION AND DISPOSAL, AUSTRALIA
1962-63 TO 1966-67**

Year	Production(a)		Imports	Net available supplies (b)	Quantity used in breweries
	Quantity	Gross value			
	cwt	\$'000	cwt	cwt	cwt
1962-63	33,629	2,570	1,337	34,966	38,202
1963-64	19,858	1,534	536	20,394	37,033
1964-65	27,893	2,372	9,521	37,414	39,517
1965-66	37,394	3,020	12,696	50,090	35,223
1966-67	28,907	2,531	2,683	31,590	31,347

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

Safflower

The cultivation of safflower in Australia has developed rapidly in recent years to make it one of the major oilseed crops. It is best cultivated, either in the warm temperate zones or as a winter crop in the tropical or sub-tropical regions, on moderately fertile, weed-free, clay or sandy loams. Adequate moisture is required up to the flowering stage, after which it is relatively drought resistant. The soil preparation and sowing techniques are similar to those employed for small grains; it is usually harvested by combine when the seed is hard and dry. The oil, produced by crushing, is used in the manufacture of margarine, soaps, paints, varnishes, enamels, and textiles.

Queensland is the main producer of safflower where suitable growing conditions exist particularly in the marginal wheat regions of Dawson-Callide Valleys, Fitzroy Basin, Central Highlands, and the Darling Downs. Suitable growing conditions also exist in New South Wales, Victoria and Western Australia, but, at present, production in the latter two States is relatively small.

**SAFFLOWER: AREA AND PRODUCTION, STATES AND TERRITORIES
1962-63 TO 1966-67**

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust. (a)
AREA (ACRES)									
1962-63	(b)	..	5,694	..	(b)	..	..	..	5,694
1963-64	113	(b)	18,141	..	1,125	..	..	..	19,379
1964-65	2,253	1,902	43,350	(b)	4	..	..	..	47,509
1965-66	2,539	935	56,727	(b)	75	..	..	..	60,276
1966-67	5,092	729	88,803	(b)	(b)	..	..	..	94,624
PRODUCTION (BUSHEL)(c)									
1962-63	(b)	..	90,021	..	(b)	..	..	..	90,021
1963-64	1,546	(b)	275,106	..	26,387	..	..	..	303,039
1964-65	33,373	20,218	643,524	(b)	280	..	..	..	697,395
1965-66	13,941	11,738	522,810	(b)	1,070	..	..	..	549,559
1966-67	71,823	7,336	1,290,087	(b)	(b)	..	..	..	1,369,246

(a) Incomplete; see individual States. (b) Not available for publication. (c) 40 lb per bushel.

Imports of crude safflower seed oil in 1965-66 and 1966-67 totalled 873,000 gallons and 1,267,000 gallons respectively. These imports came mainly from the United States of America.

Vegetables for human consumption

Area, production and trade

Vegetables were initially grown on a large scale near the main cities, where there was ready access to reliable water supplies and to markets. Later, the expansion of irrigation areas and improvement in transport services 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.

Details of the areas planted and production of individual kinds of vegetables are shown below for the seasons 1964-65 to 1966-67. 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 *Rural Industries*. Details of the estimated consumption of vegetables for a series of years ending 1966-67 are given in the chapter Miscellaneous.

FRESH VEGETABLES FOR HUMAN CONSUMPTION: AUSTRALIA 1964-65 TO 1966-67

Vegetable	1964-65		1965-66		1966-67	
	Area sown	Production	Area sown	Production	Area sown	Production
	acres	tons	acres	tons	acres	tons
Asparagus	4,067	5,390	3,976	5,957	4,227	5,776
Beans, French and runner	16,692	30,302	17,319	30,434	18,073	36,912
Beans, navy	3,430	710	3,400	242	5,153	933
Beetroot	1,893	16,519	2,081	17,248	2,558	22,426
Cabbages and brussel sprouts	5,959	65,914	5,915	69,134	6,193	76,151
Carrots	5,591	62,629	5,922	67,833	6,326	77,599
Cauliflowers	6,941	74,262	6,511	73,967	6,364	77,168
Celery	756	13,025	769	12,803	757	13,485
Cucumbers	1,588	8,115	1,913	8,710	1,987	8,870
Lettuce	4,710	22,386	4,976	23,303	5,046	24,324
Onions	9,707	69,701	8,250	58,124	10,210	84,465
Parsnips	1,314	13,311	1,336	13,966	1,278	15,163
Peas, blue	3,973	2,718	5,502	2,741	4,373	2,992
Peas, green	57,948	100,603	66,938	102,661	65,964	119,118
Potatoes	87,919	508,019	96,311	639,000	99,328	642,967
Tomatoes	16,315	147,194	16,705	159,707	17,791	172,965
Turnips, swede and white	1,255	8,179	1,893	8,373	1,655	8,834
All other	35,520	..	39,662	..	36,341	..
Total	265,578	..	289,378	..	293,623	..

Processed vegetables

Total production of canned vegetables in 1966-67 amounted to 194,834,000 lb. The principal types produced were green peas (excluding mint-pro peas), 30,511,000 lb; green beans, 12,074,000 lb; baked beans (including pork and beans), 38,724,000 lb; asparagus, 9,475,000 lb; beetroot, 42,794,000 lb; and mushrooms, 8,213,000 lb.

The production of dehydrated vegetables, including split peas, during 1966-67 amounted to 14,627,000 lb, while the production of potato crisps, chips and flakes was 20,910,000 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 principally of 10,131,000 lb of peas and 2,540,000 lb of beans. In 1966-67 production had risen to 118,186,000 lb, of which 81,643,000 lb were peas and 18,600,000 lb were beans.

Exports and imports of vegetables

Overseas exports of fresh and frozen vegetables during 1966-67 amounted to 73,413,000 lb valued at \$3,960,000; dried vegetables, 9,612,000 lb valued at \$6,089,000; preserved vegetables, 4,346,000 lb valued at \$879,000; and other prepared or preserved vegetables, 133,000 lb valued at \$73,000.

Imports of fresh and frozen vegetables during 1966-67 amounted to 7,491,000 lb valued at \$1,100,000.

Potatoes

This crop requires deep friable soils, which in Australia are usually basaltic, alluvial or swampy in origin. Fertiliser 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.

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 then, however, acreage in New South Wales and Queensland has increased considerably, and there is now a greater area of potatoes in each of these States than in Tasmania. In New South Wales production is chiefly in the tablelands districts. A graph showing production since 1935-36 appears on page 996 of Year Book No. 49.

POTATOES: AREA, PRODUCTION AND YIELD PER ACRE, STATES AND TERRITORIES, 1936-37 TO 1966-67

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	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—									
1962-63 . . .	27,420	43,024	16,994	5,918	6,499	13,839	6	42	113,742
1963-64 . . .	24,352	39,626	15,886	5,459	5,835	10,806	(a)	23	(b)101,987
1964-65 . . .	20,530	32,931	14,005	5,247	5,797	9,393	(a)	16	(b)87,919
1965-66 . . .	21,913	34,333	16,080	5,748	6,229	11,993	1	14	96,311
1966-67 . . .	23,594	37,167	16,227	5,948	6,100	10,278	(a)	14	(b)99,328
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—									
1962-63 . . .	132,969	254,473	86,239	53,253	56,900	82,545	5	212	666,596
1963-64 . . .	98,308	200,384	90,201	51,195	55,402	66,420	(a)	122	(b)562,032
1964-65 . . .	75,659	183,665	82,389	48,400	60,739	57,062	(a)	105	(b)508,019
1965-66 . . .	104,647	240,786	97,744	56,471	62,865	76,400	4	83	639,000
1966-67 . . .	126,183	225,186	93,738	60,271	64,169	73,300	(a)	120	(b)642,967
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—									
1962-63 . . .	4.85	5.91	5.07	9.00	8.76	5.96	0.83	5.05	5.86
1963-64 . . .	4.04	5.06	5.68	9.38	9.49	6.15	(a)	5.30	(b)5.51
1964-65 . . .	3.69	5.58	5.88	9.22	10.48	6.07	(a)	6.56	(b)5.78
1965-66 . . .	4.78	7.01	6.08	9.82	10.09	6.37	4.00	5.93	6.63
1966-67 . . .	5.35	6.06	5.78	10.13	10.52	7.13	(a)	8.57	(b)6.47

(a) Not available for publication. (b) Incomplete; excludes Northern Territory.

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.

Value of potato crop. The estimated gross value of the potato crop of each State for the 1966-67 season and the value per acre are shown in the following table.

POTATOES: VALUE OF CROP, STATES, 1966-67

		<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.(a)</i>
Aggregate value	\$'000	8,414	15,291	5,423	3,138	4,959	3,999	41,233
Value per acre	\$	357	411	334	528	813	389	415

(a) Includes Northern Territory and Australian Capital Territory.

Consumption and exports of potatoes. The annual consumption of potatoes in Australia during each of the three years 1964-65 to 1966-67 amounted to 465,300 tons, 573,700 tons and 577,800 tons respectively or 92.4 lb, 111.7 lb and 110.5 lb respectively per head of population. These figures exclude the quantities used for seed, which averaged about 49,000 tons annually over this period. Details showing exports and imports for the years 1962-63 to 1966-67 are given in the following table.

**POTATOES: EXPORTS AND IMPORTS, AUSTRALIA
1962-63 TO 1966-67**

<i>Year</i>	<i>Exports</i>		<i>Imports</i>	
	<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>
	tons	\$'000 f.o.b.	tons	\$'000 f.o.b.
1962-63	15,819	850	..	..
1963-64	12,722	643	..	..
1964-65	4,715	427	5,404	343
1965-66	10,064	626	7,208	455
1966-67	13,593	839	..	..

Western Australia has emerged in recent years as the principal exporting State, accounting for about two-thirds of the Australian total in 1966-67. Its principal markets are Papua and New Guinea, Singapore, and New Caledonia. New Zealand is the principal source of imports.

Onions

Area, production and yield per acre. Australia's onion supply comes chiefly from Victoria and 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 also consists mainly of brown varieties. A graph showing production since 1935-36 appears on page 996 of Year Book No. 49.

**ONIONS: AREA, PRODUCTION AND YIELD PER ACRE, STATES
1936-37 TO 1966-67**

<i>Period</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.(a)</i>
AREA (ACRES)							
Average for three years ended—							
1938-39	126	5,634	1,187	521	122	8	7,604
1948-49	433	6,245	2,234	534	468	26	9,944
1958-59	491	4,614	3,655	635	413	29	9,846
Year—							
1962-63	800	4,634	3,796	944	509	79	10,765
1963-64	682	3,756	3,317	930	446	91	9,222
1964-65	803	3,825	3,422	1,146	428	83	9,707
1965-66	999	2,955	2,748	1,148	331	69	8,250
1966-67	1,256	3,295	3,495	1,631	413	120	10,210
PRODUCTION (TONS)							
Average for three years ended—							
1938-39	324	34,039	3,040	3,904	915	42	42,285
1948-49	1,703	41,156	10,489	5,032	3,831	153	62,388
1958-59	2,496	31,982	15,505	5,625	4,599	132	60,410
Year—							
1962-63	5,185	26,175	21,184	8,531	6,622	515	68,219
1963-64	4,998	17,946	20,412	8,736	6,814	372	59,278
1964-65	6,378	22,963	22,853	11,061	5,981	465	69,701
1965-66	8,764	17,115	17,728	10,069	3,948	500	58,124
1966-67	10,809	22,375	27,033	17,933	5,417	898	84,465
YIELD PER ACRE (TONS)							
Average for three years ended—							
1938-39	2.57	6.04	2.56	7.49	7.50	5.25	5.56
1948-49	3.93	6.59	4.70	9.42	8.19	5.88	6.27
1958-59	5.08	6.93	4.24	8.86	11.14	4.55	6.14
Year—							
1962-63	6.48	5.65	5.58	9.04	13.01	6.52	6.34
1963-64	7.33	4.78	6.15	9.39	15.28	4.09	6.43
1964-65	7.94	6.00	6.68	9.65	13.97	5.60	7.18
1965-66	8.77	5.79	6.45	8.77	11.93	7.25	7.04
1966-67	8.61	6.79	7.73	11.00	13.12	7.48	8.27

(a) Includes, for some of the years shown, the Northern Territory and the Australian Capital Territory.

Value of onion crop. The estimated gross value of the onion crop and the value per acre are shown in the following table for the 1966-67 season.

ONIONS: VALUE OF CROP, STATES, 1966-67

	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.</i>
Aggregate value \$'000	622	1,464	1,771	1,675	419	93	6,044
Value per acre \$	495	444	507	1,027	1,015	775	592

Consumption and exports of onions. The consumption of onions in Australia during 1966-67 was 79,000 tons or 15.1 lb per head of population. Onions are the only root crop, other than potatoes, in which any considerable overseas trade is carried on by Australia. In 1966-67 exports amounted to

8,816 tons, valued at \$525,000, and were shipped mainly to Japan and Singapore. The quantity of exports in 1965-66 was 1,609 tons, valued at \$172,000. Imports of onions amounted to 849 tons, valued at \$95,000, in 1966-67, and 1,538 tons, valued at \$136,000, in 1965-66. The principal country from which onions were imported was New Zealand.

Fruit

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, is grown extensively, the balance of the area being mainly taken up with pears and apricots.

Overseas marketing of fruits

The *Apple and Pear Organization Act 1938-1966* 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 1938-1966*. The function of the Board is the organisation 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.

In January 1964 the *Canned Fruits Marketing Act 1963-1966* replaced the *Canned Fruits Export Control Act 1926-1959* under which the overseas marketing of canned fruit was initially organised (see Year Book No. 49, page 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 new 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 1926-1966* 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 canned deciduous fruit.

In 1959 the Australian Canned Fruit Sales Promotion Committee was established to promote the sale of canned deciduous fruit 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.

Area and production of fruit

In general the area under fruit in Australia has been increasing steadily during recent years.

FRUIT: AREA, STATES AND TERRITORIES, 1962-63 TO 1966-67

(Acres)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1962-63	98,032	75,855	43,242	40,444	25,204	21,943	136	55	304,911
1963-64	98,670	76,796	44,681	41,686	25,670	22,134	149	54	309,840
1964-65	97,221	75,509	45,918	43,012	26,425	22,375	130	56	310,646
1965-66	97,212	75,001	47,715	43,986	26,715	22,426	110	42	313,207
1966-67	96,482	73,519	50,058	44,157	26,457	22,343	133	38	313,187

FRUIT: AREA AND PRODUCTION, STATES AND TERRITORIES, 1966-67

<i>Fruit</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
AREA, BEARING AND NOT BEARING (ACRES)									
Apples	18,945	22,154	13,710	5,937	15,654	18,540	..	33	94,973
Apricots	2,026	3,264	470	4,845	287	421	..	..	11,313
Bananas	20,154	..	5,524	..	506	..	29	..	26,213
Cherries	3,156	2,012	10	591	46	69	..	..	5,884
Citrus—									
Oranges	28,102	7,133	3,515	17,382	4,811	..	39	..	60,982
Mandarins	2,500	601	2,648	974	613	..	2	..	7,338
Lemons and limes	2,607	1,127	388	694	584	..	5	..	5,405
Other	725	304	91	546	122	..	3	..	1,791
Nuts	196	289	790	3,897	82	..	26	..	5,280
Peaches	8,162	14,503	1,677	4,754	924	48	..	..	30,068
Pears	3,169	16,818	987	1,920	1,080	1,584	..	..	25,558
Pineapples	266	..	14,790	..	..	..	17	..	15,073
Plums	1,814	1,569	1,319	353	1,122	51	..	..	10,157
Prunes	3,076	263	..	589	1	..	..	..	..
Small fruit	51	963	190	155	13	1,608	..	..	2,980
Other fruit	1,533	2,519	3,949	1,520	613	21	12	5	10,172
Total	96,482	73,519	50,058	44,157	26,457	22,343	133	38	313,187

PRODUCTION ('000 BUSHEL)

Apples	3,329	4,357	1,496	1,544	2,387	6,301	..	3	19,418
Apricots	473	530	42	1,307	34	21	..	..	2,405
Bananas	3,921	..	809	..	169	..	2	..	4,901
Cherries	118	121	..	41	2	5	..	..	287
Citrus—									
Oranges	5,258	1,144	773	3,034	466	..	1	..	10,677
Mandarins	180	64	357	70	33	..	..	..	705
Lemons and limes	488	148	114	55	142	..	1	..	948
Peaches	1,464	2,732	178	1,427	108	5	..	..	5,913
Pears	667	4,701	101	530	154	404	..	..	6,557
Pineapples	38	..	6,020	..	..	..	1	..	6,059
Plums	182	148	127	105	123	8	..	..	1,204
Prunes	491	21	..	..	..	..	..	..	..

Principal fruit crops

PRINCIPAL FRUIT CROPS: AREA, PRODUCTION, AND GROSS VALUE OF PRODUCTION, AUSTRALIA, 1962-63 TO 1966-67

<i>Year</i>	<i>Apples</i>	<i>Apricots</i>	<i>Bananas</i>	<i>Oranges</i>	<i>Peaches</i>	<i>Pears</i>	<i>Pineapples</i>	<i>Plums and prunes</i>
1962-63	91,380	11,847	30,392	57,301	30,226	25,945	10,495	10,828
1963-64	92,859	11,890	29,709	59,211	30,237	25,870	11,086	10,963
1964-65	94,870	11,274	26,762	60,497	30,387	26,079	11,582	10,515
1965-66	94,865	11,427	26,555	61,517	30,036	25,941	12,938	10,474
1966-67	94,973	11,313	26,213	60,982	30,068	25,558	15,073	10,157

PRINCIPAL FRUIT CROPS: AREA, PRODUCTION AND GROSS VALUE OF PRODUCTION, AUSTRALIA, 1962-63 TO 1966-67—*continued*

Year	Apples	Apricots	Bananas	Oranges	Peaches	Pears	Pineapples	Plums and prunes
PRODUCTION ('000 BUSHELS)								
1962-63	18,349	1,913	4,832	9,307	4,003	5,667	4,126	1,043
1963-64	19,285	1,610	5,324	8,735	4,366	6,916	4,445	1,039
1964-65	18,897	1,968	5,028	10,836	5,078	5,920	4,363	1,068
1965-66	19,783	1,778	4,694	9,137	5,508	7,485	4,924	952
1966-67	19,418	2,405	4,901	10,677	5,913	6,557	6,059	1,204
GROSS VALUE OF PRODUCTION (\$'000)								
1962-63	42,006	5,296	18,354	19,752	9,548	12,760	5,230	3,226
1963-64	44,862	4,802	16,442	20,834	10,084	14,900	5,150	4,036
1964-65	46,577	5,508	18,585	23,547	12,676	14,753	5,491	4,544
1965-66	47,631	5,119	20,409	22,037	13,795	17,674	6,165	3,419
1966-67	52,108	6,912	20,319	25,327	13,912	15,913	7,137	5,149

Production and consumption 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 1966-67 output of jams, conserves, fruit spreads, etc. amounted to 90,761,000 lb, while output of preserved fruit amounted to 611,552,000 lb. Of the latter figure, peaches accounted for 238,547,000 lb, pears 135,927,000 lb, and pineapples 65,813,000 lb.

In 1966-67, 8,725,000 cwt of fruit was recorded as used in factories classified to the sub-classes Oils, vegetable; Jam, fruit and vegetable canning; Condiments, coffee, spices; Aerated waters and cordials; and Dehydrated fruit and vegetables. Details of the estimated consumption of fruit and fruit products per head of population for a series of years ending 1966-67 are shown in the chapter Miscellaneous.

Imports and exports of fruit and fruit products

The imports of fresh fruit into Australia are negligible, while those of dried fruit consist mainly of dates obtained almost entirely from Iraq and Iran. A considerable export trade in both fresh and dried fruit is carried on by Australia with overseas countries. The values of the shipments in 1966-67 amounted to \$27,211,000 and \$23,185,000 respectively. Apples constitute the bulk of the fresh fruit exported, although exports of pears and citrus fruit are considerable.

FRESH AND FROZEN FRUIT: EXPORTS, AUSTRALIA, 1962-63 TO 1966-67

Year	Apples		Pears		Citrus		Total value (a)
	Quantity	Value	Quantity	Value	Quantity	Value	
	'000 bus	\$'000 f.o.b.	'000 bus	\$'000 f.o.b.	'000 bus	\$'000 f.o.b.	\$'000 f.o.b.
1962-63	7,206	23,290	1,071	3,500	862	2,566	29,968
1963-64	8,212	24,036	1,666	5,294	961	2,986	33,156
1964-65	7,051	20,989	1,461	5,297	1,082	3,382	30,543
1965-66	8,363	25,863	2,089	7,464	1,210	3,685	37,819
1966-67	6,877	18,280	1,441	4,819	1,222	3,779	27,211

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

The quantity and value of overseas imports and exports of dried fruit, other than raisins and currants, for the years 1962-63 to 1966-67 are shown on the following page.

**DRIED TREE FRUIT(a): IMPORTS AND EXPORTS, AUSTRALIA
1962-63 TO 1966-67**

Year	Imports(b)		Exports	
	Quantity	Value	Quantity	Value
	'000 lb	\$'000	'000 lb	\$'000
		f.o.b.		f.o.b.
1962-63	8,939	592	6,603	1,903
1963-64	10,262	604	8,479	1,988
1964-65	8,454	601	9,415	1,808
1965-66	8,145	557	11,907	2,450
1966-67	8,936	671	8,038	2,037

(a) Excludes sultanas, raisins and currants dealt with separately under Vineyards (see page 912). (b) Dates and figs only.

Exports of jams and jellies in 1966-67 were 8,731,000 lb, valued at \$1,227,000, compared with 10,346,000 lb, valued at \$1,504,000 in 1965-66. Imports of jams and jellies in 1966-67 were 1,045,000 lb, valued at \$247,000, compared with 1,304,000 lb, valued at \$268,000 in 1965-66.

Large quantities of canned or bottled fruit are normally exported from Australia, the quantity recorded in 1966-67 being 324,970,000 lb, valued at \$39,995,000. Exports in 1966-67 were made up principally of peaches (138,426,000 lb), pears (97,731,000 lb), fruit salad (29,553,000 lb), pineapples (19,181,000 lb), and apricots (17,846,000 lb). In addition, the exports of pulped fruits during 1966-67 amounted to 2,733,000 lb valued at \$491,000.

The total value of canned or bottled fruit (including fruit juices) imported into Australia during 1966-67 was \$953,000. The value of exports of fruit juices in 1966-67 was \$787,000.

Vineyards

Grapes require a warm to hot climate and a predominantly winter rainfall. Freedom from late spring frosts is essential. They are grown for wine-making, drying and, to a minor extent, for table use. In Australia wine is produced very largely from irrigated crops, as are dried fruits. Some of the better known wine producing areas are the Murray Valley (South Australia and Victoria), Barossa Valley and Southern Vales Areas (South Australia), the Murrumbidgee Irrigation Areas and the Hunter Valley (New South Wales), the Mildura, Rutherglen and Stawell districts of Victoria, and the Swan Valley (Western Australia). Nearly all the dried fruit is produced along the River Murray and its tributaries, with small localised areas in the other States.

Area of vineyards

The area under vineyards in the 1966-67 season in Victoria and South Australia constituted 77 per cent of the total area of vineyards.

**VINEYARDS: AREA(a), STATES, 1936-37 TO 1966-67
(Acres)**

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	Aust.
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—						
1962-63	17,704	45,662	3,237	58,266	8,685	133,554
1963-64	18,715	46,501	3,276	58,679	8,629	135,800
1964-65	20,464	47,996	3,299	58,857	8,310	138,926
1965-66	21,292	48,617	3,268	58,730	8,215	140,122
1966-67—						
Drying	8,145	40,433	..	11,476	3,126	63,180
Table	2,925	3,109	3,064	223	1,304	10,625
Wine	10,187	5,622	240	45,381	3,515	64,945
Total	21,257	49,164	3,304	57,080	7,945	138,750

(a) Bearing and not bearing.

Wine industry

Australia produces wine of every type and also brandy. In recent years there has been a distinct trend towards greater consumption and production of unfortified or table wines. Until 1957-58 production of these wines (which include burgundy, claret, riesling, sauterne, and sparkling wines) was less than half that of the fortified varieties (sherries, ports, etc.). By 1966-67 production of table wines had reached a volume almost equal to that of fortified varieties.

The *Wine Overseas Marketing Act* 1929-1966 was introduced to place the overseas marketing of 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 Australian Wine Centre, which is a medium for promoting interest in Australian wines and brandy. It is also a retail shop for the sale of these products. The *Wine Grapes Charges Act* 1929-1966 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 meet the Board's projects in Australia and overseas and to defray the administrative expenses of the Board, which has no other source of income.

Production and consumption of wine and brandy

In 1966-67 the total production of wine (beverage and distillation) in Australia was 41.6 million gallons, while total consumption of beverage wine was 17.5 million gallons (1.49 gallons per head of population). Similar particulars for 1965-66 are 34.0 million gallons and 15.3 million gallons (1.33 gallons per head of population) respectively.

WINE: PRODUCTION(a), STATES, 1936-37 TO 1966-67
(*000 gallons)

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	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—						
1962-63 . . .	5,858	2,433	28	20,785	789	29,893
1963-64 . . .	6,030	3,705	33	27,102	666	37,536
1964-65 . . .	6,404	3,458	24	28,022	613	38,520
1965-66 . . .	6,439	2,982	24	23,884	627	33,956
1966-67 . . .	7,893	3,368	37	29,638	705	41,642

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

**BRANDY: PRODUCTION, SOUTH AUSTRALIA
AND AUSTRALIA, 1936-37 TO 1966-67**
(Proof gallons)

Period	S.A.	Aust.(a)
Average for three years ended—		
1938-39 . . .	446,251	505,474
1948-49 . . .	648,641	714,688
1958-59 . . .	1,009,040	1,149,032
Year—		
1962-63 . . .	994,420	1,128,997
1963-64 . . .	1,052,850	1,219,968
1964-65 . . .	1,183,351	1,400,100
1965-66 . . .	1,167,309	1,371,217
1966-67 . . .	650,618	791,163

(a) Includes New South Wales and Victoria, for which separate details are not available for publication.

Exports and imports of wine and brandy

Principal markets for exports of Australian wine are the United Kingdom, Canada and New Zealand. During 1966-67 these countries received 1,055,406 gallons, 371,157 gallons and 81,003 gallons respectively. Exports of Australian-produced wine for the five years ended 1966-67 are shown in the following table.

WINE: EXPORTS, AUSTRALIA, 1962-63 TO 1966-67

Year	Quantity (gallons)			Value (\$ f.o.b.)		
	Sparkling	Other	Total	Sparkling	Other	Total
1962-63	17,245	1,594,004	1,611,249	92,444	2,649,314	2,741,758
1963-64	10,373	1,526,468	1,536,841	62,118	2,679,054	2,741,172
1964-65	16,035	1,976,443	1,992,478	96,056	3,425,420	3,521,476
1965-66	34,888	1,922,186	1,957,074	170,859	3,364,368	3,535,227
1966-67	64,897	1,709,205	1,774,102	251,276	2,917,361	3,168,637

Imports of wine for 1966-67 amounted to 189,409 gallons valued at \$828,000, compared with 145,861 gallons valued at \$647,000 in the previous year. During 1966-67 Italy supplied 91,295 gallons valued at \$298,000, France 34,786 gallons valued at \$267,000 and the Federal Republic of Germany 17,500 gallons valued at \$103,000.

Exports of Australian-produced brandy in 1966-67 amounted to 121,458 proof gallons, valued at \$534,000. Imports of brandy, mainly from France, amounted to 88,914 proof gallons, valued at \$535,000.

Dried vine fruit industries

The dry period from November to March in 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.

The *Dried Fruits Export Control Act 1924-1966* was passed to organise overseas marketing of Australian dried vine fruit. The Australian 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 appraisal, regulation of shipments and advertising. The *Dried Fruits Export Charges Act 1924-1965* provides for a levy on exports of dried fruit to defray costs and expenses incurred by the Board.

For details of the bulk purchase agreements between the Governments of the United Kingdom and Australia which operated during the period 1946-53 see Year Book No. 40, page 888. From 1 December 1953 exports to the United Kingdom have been on a trader to trader basis.

In June 1963 Australian, Greek and Turkish dried vine fruit interests concluded an agreement to maintain minimum prices for sultanas on world markets. The agreement, which aims at international price stability, is periodically reviewed. A permanent committee of the contracting parties was established in London for the purpose of supervising the working of the agreement, and a sub-committee of the permanent committee was established in Hamburg in 1964.

The Dried Vine Fruits Stabilization Scheme was introduced under the *Dried Vine Fruits Stabilization Act 1964-1966* to stabilise seasonal returns to growers of currants, sultanas and raisins. Its main features are as follows.

Growers are guaranteed an average return from seasonal sales of currants, sultanas and raisins equal to the average cost of production of each variety less \$10.00 a ton.

The maximum quantities for which returns are guaranteed each season are 13,500 tons of currants, 75,000 tons of sultanas and 11,000 tons of raisins.

Growers are required to contribute to separate varietal stabilisation funds when the average return to the industry from seasonal sales of a variety exceeds cost of production by more than \$10.00 a ton, with a limit on such contributions of \$20.00 a ton.

When the quantity received for packing in any season does not reach 8,000 tons of currants, 50,000 tons of sultanas or 6,000 tons of raisins, growers are not required to contribute to the stabilisation fund for the variety concerned.

Contributions are to be made by the Commonwealth to raise average returns to the guaranteed price when there is insufficient industry money in a stabilisation fund for this purpose.

Limits are set to the accumulation of money in the stabilisation funds. These are \$1,000,000 in the case of both the currant and raisin stabilisation funds, and \$4,000,000 in the case of the sultana stabilisation fund.

Where these limits are exceeded during the operation of the scheme, the excess will be used first to reimburse the Government for any contribution it may have made to a fund; any balance will be repaid to growers on a first-in first-out basis.

The scheme is to operate for five years. At the end of the fifth year any credit balance in the stabilisation funds will be used, in the first instance, to reimburse the Government for unrepaid contributions (if any). If the scheme is not renewed any remaining money will be returned to growers.

Growers' contributions for the scheme are collected under the *Dried Vine Fruits Contributory Charges Act 1964-1966* and the *Dried Vine Fruits Contributory Charges (Collection) Act 1964-1966*.

DRIED VINE FRUIT: PRODUCTION, STATES, 1936-37 TO 1966-67
(Tons)

Period	N.S.W.		Vic.		S.A.		W.A.		Aust.	
	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—										
1962-63	8,560	463	44,059	2,536	11,007	2,607	51	1,225	63,677	6,831
1963-64	13,563	709	66,138	3,934	13,159	4,533	121	2,166	92,981	11,342
1964-65	12,841	632	66,153	4,477	16,325	5,044	75	2,364	95,394	12,517
1965-66	11,480	449	59,418	3,127	11,915	3,153	116	1,306	82,929	8,035
1966-67	14,108	643	69,628	3,588	13,544	3,773	67	1,353	97,347	9,357

(a) Includes sultanas and lexias.

DRIED VINE FRUIT(a): EXPORTS, AUSTRALIA, 1962-63 TO 1966-67

Year	Raisins, sultanas and lexias		Currants		Total	
	Quantity	Value	Quantity	Value	Quantity	Value
		\$'000		\$'000		\$'000
	tons	f.o.b.	tons	f.o.b.	tons	f.o.b.
1962-63	56,696	16,058	4,208	1,141	60,904	17,199
1963-64	57,451	17,442	5,512	1,601	62,963	19,043
1964-65	63,197	20,324	6,532	1,968	69,729	22,292
1965-66	74,704	24,070	6,102	1,918	80,805	25,988
1966-67	63,561	19,720	4,301	1,428	67,862	21,148

(a) Excludes quantities exported as mincemeat.

The chief countries importing Australian dried vine fruit are the United Kingdom, Canada, the Federal Republic of Germany, New Zealand, and Ireland. The quantities exported to these countries in 1966-67 were 27,184 tons, 16,578 tons, 7,926 tons, 6,313 tons, and 2,797 tons respectively.

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 1966-67. The quantities of table grapes produced during the season 1966-67 in each State are shown on page 864.

PASTORAL PRODUCTION

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 1960, and from 1963 onwards in single years, are given in the following table, and are shown continuously since 1870 on the graph on plate 55 following.

LIVESTOCK: AUSTRALIA, 1860 TO 1967
(‘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	1960	640	16,503	155,174	1,424
1890	1,522	10,300	97,881	891	1963	547	18,549	158,626	1,440
1900	1,610	8,640	70,603	950	1964	536	19,055	164,981	1,468
1910	2,166	11,745	98,066	1,026	1965	520	18,816	170,622	1,660
1920	2,416	13,500	81,796	764	1966	n.a.	17,936	157,563	1,747
1930	1,793	11,721	110,568	1,072	1967	479	18,270	164,237	1,804

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, 1944-45 to 1946-47, and 1965-67. The years in which the numbers of livestock attained their peaks are as follows: horses, 1919 (2,527,000); cattle, 1964 (19,055,000); sheep, 1965 (170,622,000); and pigs, 1967 (1,804,000).

The distribution throughout Australia of sheep, beef cattle, dairy cattle, and pigs at 31 March 1963 is shown in the maps on pages 1049 and 1050 and facing pages 1082 and 1083 of Year Book No. 50.

The numbers of horses, cattle, sheep, and pigs in each State and Territory are shown later in this chapter.

Value of pastoral production

Values of pastoral production are shown for 1966-67 and earlier years in the following tables. Further details of the source of the information and an explanation of the terms used in this compilation will be found in the chapter Miscellaneous. Maintenance costs and depreciation have not been deducted; consequently the net values are inflated to the extent of these amounts.

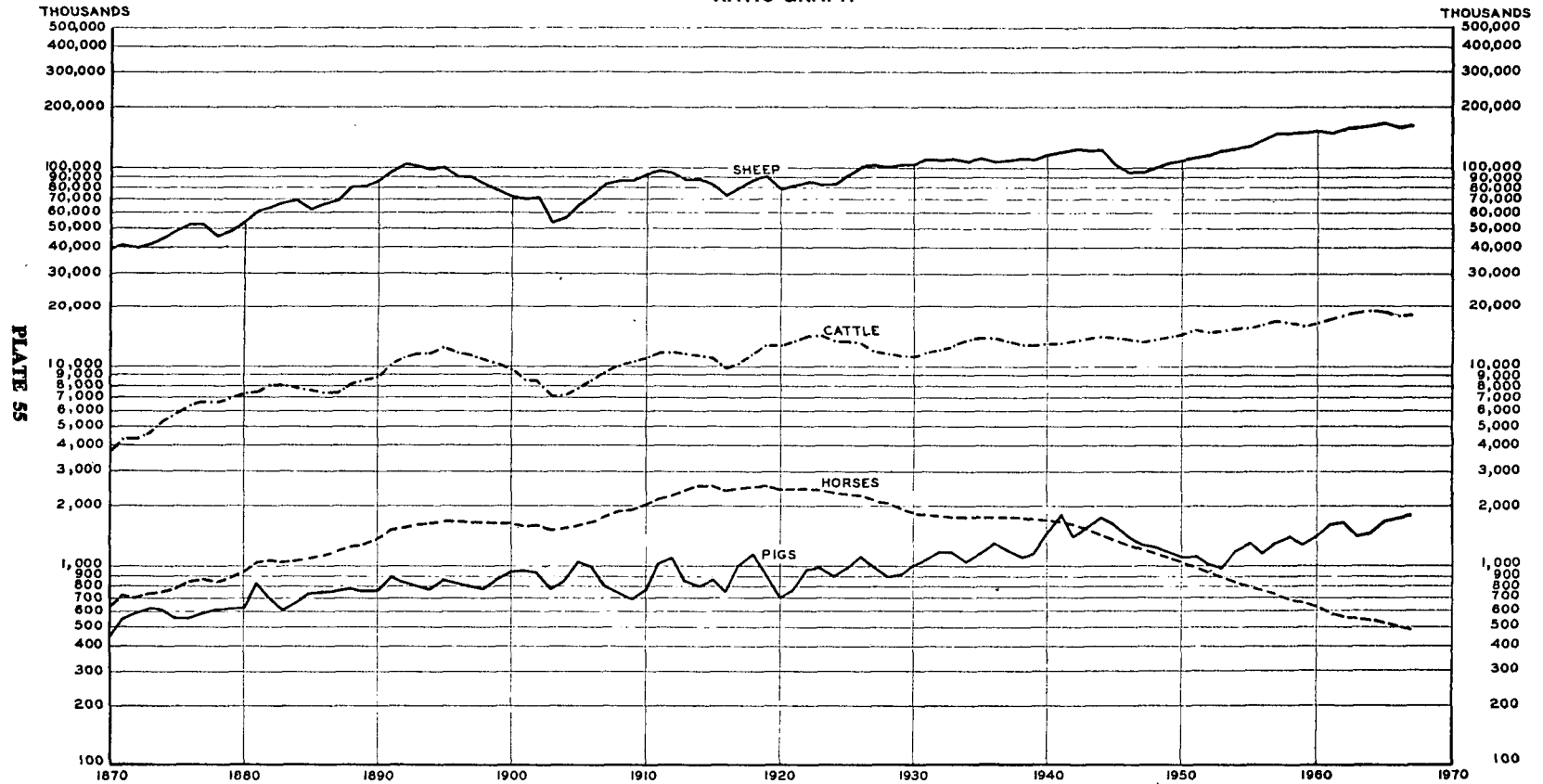
GROSS, LOCAL AND NET VALUES OF PASTORAL PRODUCTION: STATES AND TERRITORIES, 1966-67
(\$'000)

State or Territory	Gross production valued at principal markets	Marketing costs	Local value of production	Value of materials used in process of production	Net value of production(a)
New South Wales	454,016	38,772	415,244	(b)63,756	351,488
Victoria	376,196	32,805	343,391	28,249	315,142
Queensland	276,402	20,798	255,604	33,426	222,178
South Australia	169,226	9,690	159,536	24,928	134,608
Western Australia	159,857	11,973	147,884	21,835	126,049
Tasmania	37,540	2,606	34,933	13,367	21,566
Northern Territory	10,983	1,727	9,256	n.a.	9,256
Australian Capital Territory	1,846	147	1,699	138	1,561
Australia	1,486,066	118,518	1,367,547	185,699	1,181,848

(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.

LIVESTOCK: AUSTRALIA, 1870 TO 1967

RATIO GRAPH



NOTE. VERTICAL SCALE IS LOGARITHMIC, AND THE CURVES RISE AND FALL ACCORDING TO RATE OF INCREASE OR DECREASE; ACTUAL NUMBERS ARE INDICATED BY SCALE.

**NET VALUE OF PASTORAL PRODUCTION^(a): STATES AND TERRITORIES
1962-63 TO 1966-67**

<i>Year</i>	<i>N.S.W.(b)</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
NET VALUE									
(\$'000)									
1962-63	403,660	265,126	200,522	103,990	82,580	15,084	5,992	1,744	1,078,698
1963-64	503,090	323,696	235,774	125,978	123,544	19,566	6,890	2,040	1,340,578
1964-65	451,368	309,668	220,988	110,054	101,069	21,040	5,372	1,741	1,221,300
1965-66	356,470	346,230	198,898	123,757	129,773	22,319	9,742	1,347	1,188,536
1966-67	351,488	315,142	222,178	134,608	126,049	21,566	9,256	1,561	1,181,848

NET VALUE PER HEAD OF POPULATION

(\$)

1962-63	100.39	88.03	128.26	104.15	106.22	42.11	127.60	25.07	99.45
1963-64	123.34	105.32	147.82	123.09	154.66	53.94	137.77	26.51	121.22
1964-65	108.96	98.74	135.83	104.60	123.68	57.43	101.76	20.63	108.28
1965-66	84.68	108.40	119.81	114.39	154.99	60.39	175.79	14.54	103.35
1966-67	82.26	96.97	131.62	121.93	146.21	57.68	159.36	15.62	100.94

(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.

Indexes of quantum and price of pastoral production, 1962-63 to 1966-67

The quantum indexes shown in the following table relate to gross output of farm products valued at constant prices. The quantities of each farm product produced each year have been revalued at the unit gross value for the period 1936-37 to 1938-39. The price indexes relate to average 'prices' of farm products realised 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 the chapter Miscellaneous.

**INDEXES OF QUANTUM^(a) AND PRICE OF PASTORAL PRODUCTION
AUSTRALIA, 1962-63 TO 1966-67**

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

	1962-63	1963-64	1964-65	1965-66	1966-67
Quantum^(a) produced—					
Wool	170	183	183	169	180
Other products	154	158	158	157	151
<i>Total, pastoral</i>	<i>163</i>	<i>172</i>	<i>172</i>	<i>163</i>	<i>167</i>
Per head of population	103	107	105	97	98
Price—					
Wool	449	531	437	458	433
Other products	451	480	496	567	593
<i>Total, pastoral</i>	<i>450</i>	<i>511</i>	<i>460</i>	<i>501</i>	<i>496</i>

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

Sheep

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, although its relative importance has declined in recent years, due, among other factors, to heavy losses caused by drought conditions in 1965-66. Concurrently, there has been a marked increase in the sheep population of Western Australia, where figures have doubled in little more than a decade to give that State third position of importance in terms of sheep numbers.

A map showing the distribution of sheep in Australia at 31 March 1963 appears on page 1049 of Year Book No. 50. Graphs showing the number of sheep in Australia from 1870 onwards appear on plates 55 and 56 of this Year Book (pages 914 and 924).

SHEEP: NUMBERS IN STATES AND TERRITORIES, 1937 TO 1967
(*000)

<i>Period</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
Average for three years ended—									
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
At 31 March—									
1963	70,021	27,472	22,811	15,737	18,727	3,570	9	279	158,626
1964	71,764	28,413	24,337	16,403	20,165	3,600	10	289	164,981
1965	72,396	30,437	24,016	17,289	22,392	3,793	9	290	170,622
1966	61,396	30,968	18,384	17,993	24,427	4,127	9	258	157,563
1967	63,848	31,239	19,305	17,864	27,370	4,321	8	281	164,237

The percentage distribution of sheep and lambs in the several States in 1967 was: New South Wales, 39; Victoria, 19; Queensland, 12; South Australia, 11; Western Australia, 17; and Tasmania, 3.

Movement in sheep numbers

SHEEP AND LAMBS: ANALYSIS OF MOVEMENT IN NUMBERS, AUSTRALIA
1962-63 TO 1966-67
(*000)

<i>Year ended 31 March</i>	<i>Numbers at beginning of season</i>	<i>Lambs marked</i>	<i>Net exports</i>	<i>Sheep and lambs slaughtered (a)</i>	<i>Estimated deaths on farms (b)</i>	<i>Numbers at close of season</i>
1963	157,712	45,146	247	33,944	10,041	158,626
1964	158,626	47,818	312	33,240	7,911	164,981
1965	164,981	47,608	307	33,549	8,111	170,622
1966	170,622	40,330	273	33,671	19,445	157,563
1967	157,563	47,830	341	33,350	7,465	164,237

(a) Includes an estimate for numbers boiled down. (b) Balance figure; excludes lambs which died before marking.

Comparisons of Australian flock numbers with those of certain other principal sheep-producing countries are given on page 930.

Classification of sheep according to age, sex, and breed

SHEEP, BY AGE AND SEX: AUSTRALIA, 31 MARCH 1963 TO 1967
(^{'000})

Description	1963	1964	1965	1966	1967
Rams, 1 year and over	1,979	1,986	2,047	2,002	2,013
Breeding ewes (including ewes intended for mating)	70,936	72,862	75,580	73,626	76,618
Other ewes, 1 year and over	8,878	8,631	8,952	7,397	7,117
Wethers, 1 year and over	44,267	46,203	49,284	45,649	44,186
Lambs and hoggets, under 1 year	32,566	35,299	34,759	28,890	34,302
Total, sheep and lambs	158,626	164,981	170,622	157,563	164,237

Particulars of the principal breeds of sheep at 31 March 1965 (details are collected on a triennial basis) are shown in the following table.

SHEEP, BY PRINCIPAL BREED: STATES AND TERRITORIES, 31 MARCH 1965
(^{'000})

Breed	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Merino	56,232	14,148	23,655	14,581	20,533	351	9	245	129,754
Other recognised breeds	7,601	7,486	129	1,218	788	2,352	..	13	19,587
Merino comeback(a)	1,163	2,160	47	284	287	419	..	4	4,364
Crossbreds(b)	7,400	6,643	185	1,206	784	671	..	27	16,917
Total	72,396	30,437	24,016	17,289	22,392	3,793	9	290	170,622

(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.

Exports and imports of sheep

The overseas exports of live sheep from Australia are of comparatively minor importance. On 27 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 Kuwait and Singapore. In 1966-67 the number of sheep exported was 340,382, valued at \$3,254,000 (1965-66, 290,960, valued at \$2,513,000). Since June 1958 an embargo has been imposed on the import of sheep in order to prevent the introduction of the disease 'blue-tongue'.

Cattle

Objects of cattle-raising in Australia

Cattle-raising is carried out in all 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.

Distribution throughout Australia

Although cattle numbers declined after 1957 because of drought conditions and heavy slaughtering, they began to rise again in 1960 and in 1964 reached a record level of 19,055,000. Again because of drought in the eastern States, this figure declined to 17,936,000 in 1966, but recovered to 18,270,000 in 1966-67.

A graph showing the number of cattle in Australia from 1870 onwards appears on plate 55, page 914.

CATTLE: NUMBERS IN STATES AND TERRITORIES, 1937 TO 1967

('000)

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	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
At 31 March—									
1963	4,569	3,225	7,233	679	1,298	444	1,087	14	18,549
1964	4,789	3,301	7,402	694	1,299	450	1,105	15	19,055
1965	4,619	3,316	7,393	697	1,258	451	1,068	14	18,816
1966	4,153	3,397	6,888	690	1,271	492	1,032	13	17,936
1967	4,146	3,528	6,919	687	1,357	522	1,097	14	18,270

The percentage of cattle in each State and Territory during 1967 was: New South Wales, 23; Victoria, 19; Queensland, 38; South Australia, 4; Western Australia, 7; Tasmania, 3; and Northern Territory, 6.

Maps showing the distribution of beef and dairy cattle in Australia appear on page 1050 and facing page 1082 of Year Book No. 50, and maps showing the distribution in earlier years were published in previous issues of the Year Book.

CATTLE: NUMBERS, AUSTRALIA, 1963 TO 1967

('000)

31 March—	Bulls one year and over	Cows and heifers one year and over	Calves under one year	Other	Total
1963	379	10,936	4,079	3,155	18,549
1964	377	11,138	4,253	3,286	19,055
1965	369	11,130	4,068	3,248	18,816
1966	351	10,609	3,744	3,232	17,936
1967	367	10,742	4,064	3,097	18,270

Classification of cattle

CATTLE, BY PURPOSE, AGE AND SEX: STATES AND TERRITORIES 31 MARCH 1967

('000)

Classification	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.(a)	A.C.T.	Aust.
Bulls (1 year and over) used or intended for service—									
Dairy breeds	18	40	15	6	3	4	..	..	87
Beef breeds	64	35	110	10	22	5	32	..	279
Total bulls	83	75	126	16	26	9	32	..	367
Cattle used or intended for production of—									
Milk or cream for sale—									
Cows—In milk	525	889	450	90	39	149	..	{	1
Dry	144	322	148	59	64				
Heifers—Springing (within 3 months of calving)	165	347	139	22	22	48	..	..	796
Other (1 year and over)				25	28				
Calves (under 1 year)				127	326					105	37	32	44	..	672
Milk or cream for use on rural holdings—									
House cows and heifers	92	28	37	7	9	6	..	..	180
Total cattle, production of milk, etc.	1,052	1,913	880	239	194	247	1	2	4,528
Cattle for other purposes(b)—									
Cows and heifers (1 year and over)	1,634	750	2,935	239	583	113	626	6	6,886
Calves (under 1 year)(c)	894	495	1,277	131	280	101	209	4	3,392
Other (1 year and over), i.e. steers, bullocks, spayed cows, etc.	483	295	1,701	62	274	51	229	1	3,097
Total cattle, other purposes	3,011	1,540	5,913	431	1,137	266	1,064	11	13,375
Total cattle and calves for all purposes	4,146	3,528	6,919	687	1,357	522	1,097	14	18,270

(a) As at 30 June 1966. (b) Mainly for meat production. (c) Includes vealers, and bull calves intended for service.

CATTLE, BY PURPOSE, AGE AND SEX: AUSTRALIA, 31 MARCH 1964 TO 1967
(*000)

<i>Classification</i>	<i>1964</i>	<i>1965</i>	<i>1966</i>	<i>1967</i>
Bulls (1 year and over) used or intended for service—				
Dairy breeds	99	95	90	87
Beef breeds	278	274	261	279
<i>Total bulls</i>	377	369	351	367
Cattle used or intended for production of—				
Milk or cream for sale—				
Cows—In milk	3,078	3,012	2,908	2,881
Dry				
Heifers—Springing (within 3 months of calving)	821	843	823	796
Other (1 year and over)				
Calves (under 1 year)	718	690	681	672
Milk or cream for use on rural holdings—				
House cows and heifers	218	202	186	180
<i>Total cattle, production of milk, etc.</i>	4,835	4,747	4,598	4,528
Cattle for other purposes(a)—				
Cows and heifers (1 year and over)	7,021	7,073	6,692	6,886
Calves (under 1 year)(b)	3,536	3,378	3,063	3,392
Other (1 year and over), i.e. steers, bullocks, speyed cows, etc.	3,286	3,248	3,232	3,097
<i>Total cattle, other purposes</i>	13,842	13,699	12,987	13,375
<i>Total cattle and calves for all purposes</i>	19,055	18,816	17,936	18,270

(a) Mainly for meat production. (b) Includes vealers, and bull calves intended for service.

For beef cattle and dairy cattle numbers prior to 1964 see pages 1056 and 1078 respectively of Year Book No. 50.

Exports and imports of cattle

In 1966-67 the number of cattle exported was 5,480, valued at \$1,108,000 (1965-66, 7,315 valued at \$932,000). Prior to June 1958 small numbers of cattle were imported, consisting mainly of valuable animals for stud purposes. Since that date an embargo has been imposed on the import of cattle in order to prevent the introduction of the disease 'blue-tongue'.

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: NUMBERS IN VARIOUS COUNTRIES

Source (for countries other than Australia): World Agricultural Production and Trade, United States Department of Agriculture
(*000)

<i>Country</i>	<i>Year and month</i>	<i>Number p</i>
India(a)	1962 (May)	236,000
United States of America	1967 (January)	108,645
U.S.S.R.	1967 (January)	97,100
Brazil	1967 (December)	90,244
China (mainland)(a)	1960 (December)	65,400
Argentina	1965 (June)	45,000
Pakistan(a)	1961 (Estimate)	30,300
Mexico	1966 (Spring)	23,294
Ethiopia	1963 (Estimate)	22,000
France	1967 (October)	21,184
Australia	1967 (March)	18,270
Colombia	1967 (October)	17,932
Turkey(a)	1967 (December)	15,022
Germany, Federal Republic of	1967 (December)	13,973
United Kingdom	1967 (December)	12,171
South Africa	1967 (June)	11,920

(a) Includes buffaloes.

Horses

The number of horses in Australia reached a peak of 2,527,000 in 1919. Since then it has declined, because of mechanisation of transport and farming, and the number recorded at 31 March 1967 was 479,000. In future, particulars of horses will be collected in all States at triennial intervals only.

A graph showing the number of horses in Australia since 1870 appears on plate 55, page 914.

HORSES: NUMBERS IN STATES AND TERRITORIES, 1963 TO 1967
(⁰000)

31 March—	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1963 . . .	166	58	212	25	39	8	38	1	547
1964 . . .	163	56	206	(a)25	39	8	38	1	(b)536
1965 . . .	158	56	201	(a)24	37	7	36	1	(b)520
1966 . . .	151	n.a.	190	n.a.	35	n.a.	37	1	n.a.
1967 . . .	146	55	182	16	35	7	38	1	479

(a) Estimated. (b) See South Australia.

Overseas trade in horses

Exports of Australian-bred horses in 1966-67 numbered 840, valued at \$1,416,000, made up of horses for breeding (163 valued at \$434,000), horses for racing (550 valued at \$915,000, shipped principally to Singapore, Hong Kong and New Zealand), and horses for other purposes (127 valued at \$67,000). Horses imported into Australia in 1966-67 (831 valued at \$2,560,000) were mainly from New Zealand and the United Kingdom.

Pastoral products: wool

With about one-sixth of the world's woolled sheep, Australia produces almost one-third of the world's wool and more than half the world's fine-quality Merino wool. The bulk of the production is exported, mainly as greasy wool, although substantial amounts of scoured and carbonised wool, wool on sheep skins and small quantities of semi-manufactured wool are also shipped. The important position held by Australia among the principal sheep and wool producing countries of the world is shown in the table on page 930.

Wool marketing

Details of past wool 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.

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 recognised 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 wool-growers, 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 more than fifty countries.

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 1962-1967* which set up the Australian Wool Board.

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 below*), 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 1 May 1963 it took over the functions of the Australian Wool Bureau. On 1 July 1963 the Australian Wool Testing Authority became part of the Board, and on 1 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 organisational changes carried out under the Wool Industry Act, the functions of the Board embrace the following activities.

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.

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.

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.

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.

In July 1964 the Board, after an investigation by the Wool Marketing Committee, made recommendations to the Australian Wool Industry Conference for the introduction of a Reserve Price Plan for wool, which were put to woolgrowers in a referendum in December 1965. However, the plan was rejected by 53.4 per cent of the enfranchised woolgrowers who voted. For details *see* Year Book No. 52, page 945.

Following the rejection of the Reserve Price Plan at this referendum, the Board continued with its investigations and on 31 October 1967 presented its second report on wool marketing to the Australian Wool Industry Conference. The report included proposals for the establishment of an Australian Wool Marketing Authority to enforce standards of clip preparation, administer the elimination of one, two, and three bale lots, conduct a price averaging plan for these wools and others voluntarily submitted, and conduct, in conjunction with wool selling brokers, a system of supply management involving chiefly wools in the price averaging plan. The report also recommended a system of financial advances for woolgrowers and the establishment of an organisation of woolgrowers, brokers, and buyers to conduct and control the sale of wool at auction.

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.

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, pages 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 sources of finance for the various activities of the Board are a levy paid by woolgrowers and contributions by the Commonwealth Government.

The Australian Wool Industry Conference

This body was formed by woolgrowers in October 1962 to meet the need for an organisation with sufficient authority to speak on behalf of the woolgrowing industry as a whole. It is not a statutory body and consists of twenty-five members each from the Australian Woolgrowers' and Graziers' Council and the Australian Wool and Meat Producers' Federation, and, from October 1965, five members from the Australian Primary Producers' Union. The fifty-five member conference is presided over by an independent chairman.

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 below*) 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.

Wool levy

Since 1936 a statutory levy has been collected from woolgrowers to finance wool promotion activities. The initial rate of 5c a bale was increased at the request of woolgrowers to 20c a bale in 1945 and 40c 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 20c a bale. In 1960 the wool promotion levy was raised to 50c a bale, and the following year it was increased further to \$1 a bale. The operation of this rate was subsequently extended for 1962-63 and 1963-64.

On 1 July 1964 the basis for collecting the woolgrowers' combined levy for wool promotion and research was changed from a flat rate per bale to a percentage deduction from the gross value of shorn wool sold. A maximum rate of 2 per cent was fixed, but provision was made for a lower rate to be prescribed, if appropriate. For 1964-65 the rate was set at 1.875 per cent, which involved a substantial increase in payments by woolgrowers for promotion (from \$1 per bale to the equivalent of \$2.70 per bale), while the research component of the levy was left unaltered at 20c per bale. In 1965-66 the levy was set at 2 per cent and it remained at the maximum rate for 1966-67.

The imposition and collection of the combined levy from woolgrowers is governed by six complementary Acts, the Wool Tax Acts (Nos 1 to 5) 1964 and the *Wool Tax Administration Act* 1964-1966.

Commonwealth Government's contributions to wool research and promotion, 1945 to 1967

In 1945 the Commonwealth Government commenced contributing on a statutory basis to wool research. Initially the contribution was at the rate of 20c a bale, but this was doubled in 1957 to 40c a bale. At this rate the Commonwealth Government contributed about \$2,000,000 to wool research in 1965-66, and a similar sum was provided in 1966-67.

Prior to 1964-65 the Commonwealth Government had not contributed to wool promotion. However, following representations made by the Australian Wool Industry Conference, the Commonwealth Government undertook to provide assistance to the Australian Wool Board to finance its commitment to the vastly expanded wool promotion activities of the International Wool Secretariat. The five-year wool promotion programme, announced by the Secretariat, envisaged an increase in the Wool Board's annual contribution to overseas wool promotion campaigns from the then level of \$5,000,000 to about \$20,000,000.

From 1 July 1964 the Commonwealth Government agreed to match on a \$1 for \$1 basis any increase in contributions by woolgrowers for wool promotion in excess of the levy of \$1 a bale then in force, and the Wool Industry Conference agreed to increase the growers' levy to the equivalent of \$2.70 a bale, which resulted in a Commonwealth commitment of \$1.70 a bale. In aggregate this commitment required a Commonwealth contribution for promotion of about \$8,500,000 a year. This arrangement operated until 30 June 1967.

Revised financial arrangements for wool research and promotion

For the year 1967-68 the rate of levy paid by woolgrowers under the Wool Tax Acts remained unaltered at 2 per cent of the gross value of shorn wool sold. The Commonwealth Government has agreed that, for the three-year period commencing 1 July 1967, it will match, on a \$1 for \$1 basis, the total funds contributed by woolgrowers for research and promotion, up to a maximum of \$14,000,000 per annum. Effect has been given to this decision by an amendment to the Wool Industry Act, which has also been amended to change the allocation, as between research and promotion, both of funds collected from woolgrowers and the Government's contribution. Provision has been made for these funds to be apportioned annually between research and promotion by the Minister for Primary Industry on the recommendation of the Australian Wool Industry Conference according to actual requirements.

Wool production

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 Realisation 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 showed a continuous rise up to 1951-52, when it reached 57.5 per cent. It has since fluctuated between 55.7 per cent and 57.7 per cent. It was 56.9 per cent in 1966-67.

Wool scoured, washed and carbonised 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 carbonised contains quantities of dirty and low-grade wool. The quantity of scoured wool exports during 1966-67 was about 9 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 exported a standard factor of 93 per cent is taken.

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* page 925). In general, however, South Australia obtains from its large-framed Merinos a much heavier fleece per sheep than the Australian average. 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 1962-63 to 1966-67 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 plate 56 following.

PRODUCTION OF WOOL (GREASY BASIS): STATES AND TERRITORIES, 1936-37 TO 1966-67
(^{'000} lb)

<i>Period</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
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—									
1962-63 . . .	693,734	316,705	233,638	207,344	184,123	34,561	100	2,343	1,672,548
1963-64 . . .	731,316	334,288	255,386	210,500	216,574	34,007	91	2,552	1,784,714
1964-65 . . .	706,061	361,530	251,426	215,736	207,035	39,671	89	2,475	1,784,023
1965-66 . . .	579,475	366,943	192,773	232,296	247,530	41,858	88	1,873	1,662,836
1966-67 . . .	622,745	378,457	203,664	239,202	272,575	43,153	88	2,454	1,762,338

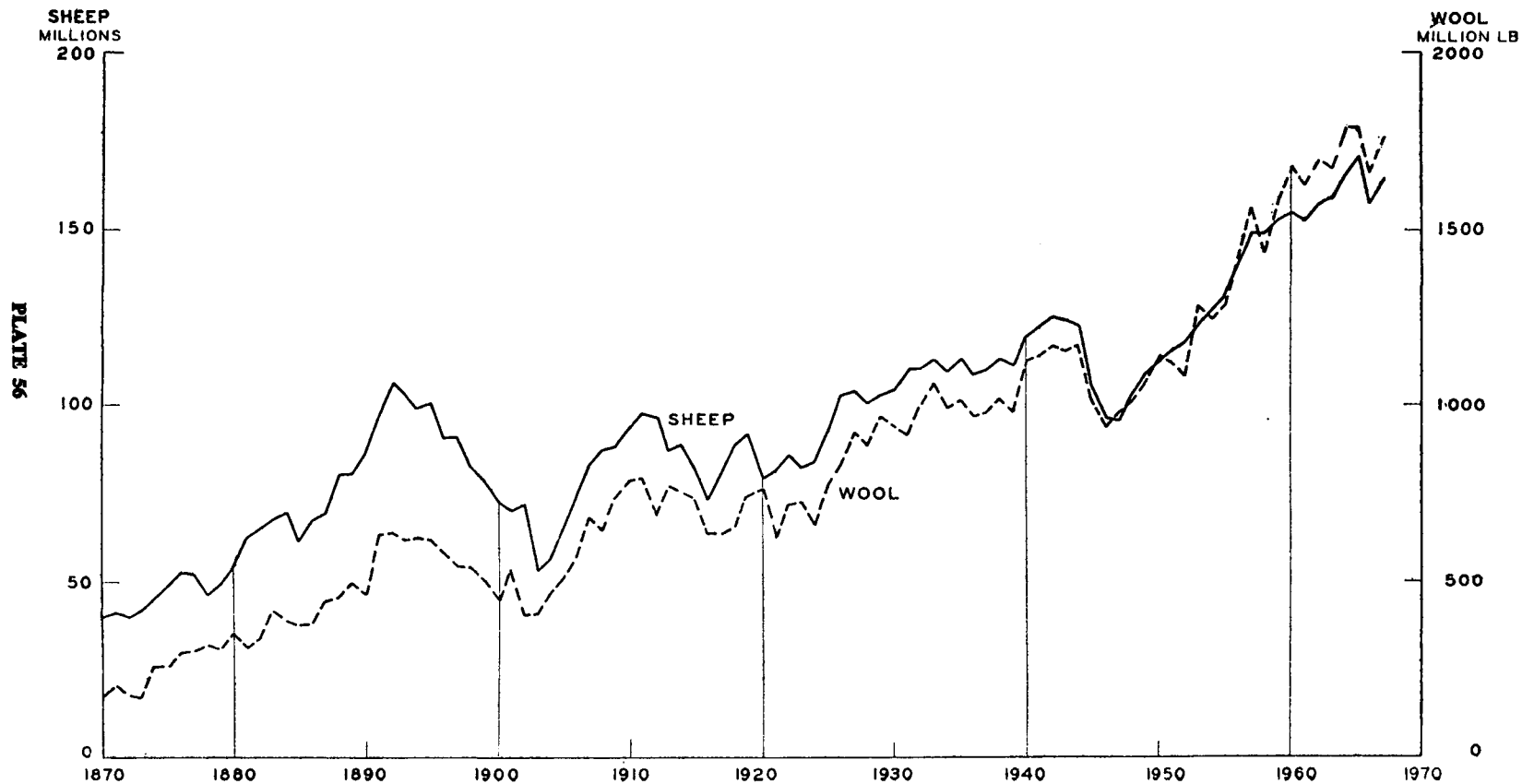
The bulk of the Australian wool production (about 91 per cent in recent years) is shorn from live sheep. The remainder is obtained by fellmongering (about 2 per cent) or is exported on skins (about 7 per cent). The following table shows details of total wool production according to method of obtaining wool, and also the gross value of wool produced. Gross value is based, for shorn wool, upon the average price realised 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, 1936-37 TO 1966-67

<i>Period</i>	<i>Shorn (including crutchings)</i>	<i>Dead and fellmongered</i>	<i>Exported on skins</i>	<i>Total production</i>	
				<i>Quantity</i>	<i>Value</i>
	^{'000} lb	^{'000} lb	^{'000} lb	^{'000} lb	^{'000}
Average for three years ended—					
1938-39 . . .	889,338	49,280	57,983	996,601	106,850
1948-49 . . .	902,007	50,660	60,265	1,012,932	305,072
1958-59 . . .	1,411,424	36,804	81,490	1,529,718	788,290
Year—					
1962-63 . . .	1,515,932	32,854	123,762	1,672,548	800,524
1963-64 . . .	1,631,962	28,688	124,064	1,784,714	1,023,442
1964-65 . . .	1,629,412	26,865	127,746	1,784,023	840,552
1965-66 . . .	1,503,457	24,411	134,968	1,662,836	808,437
1966-67 . . .	1,602,229	24,841	135,269	1,762,338	812,230

SHEEP NUMBERS AND WOOL PRODUCTION

AUSTRALIA, 1870 TO 1967



Average fleece weight

AVERAGE WEIGHT OF FLEECES SHORN (SHEEP AND LAMBS)
STATES AND TERRITORIES, 1962-63 TO 1966-67

(lb)

State or Territory	1962-63	1963-64	1964-65	1965-66	1966-67
SHEEP					
New South Wales	9.94	10.19	9.81	8.65	10.01
Victoria	9.59	10.09	10.08	9.63	9.90
Queensland	9.83	10.41	9.65	8.79	9.94
South Australia	12.29	12.89	12.49	12.72	12.75
Western Australia	10.09	11.46	10.06	10.74	10.67
Tasmania	9.44	9.14	10.64	10.34	10.22
Northern Territory	10.94	10.36	9.26	8.13	8.13
Australian Capital Territory	8.88	9.59	9.07	7.33	9.81
Australia	10.11	10.60	10.15	9.63	10.39
LAMBS					
New South Wales	3.34	3.39	3.34	2.99	3.21
Victoria	2.82	2.76	2.97	2.72	2.90
Queensland	3.85	3.99	3.78	3.56	3.55
South Australia	3.63	3.71	3.79	3.73	3.90
Western Australia	2.55	2.91	2.69	2.90	2.98
Tasmania	2.35	2.12	2.31	2.48	2.54
Northern Territory	5.00	4.34	3.88	3.00	3.00
Australian Capital Territory	1.80	1.61	1.93	1.82	1.64
Australia	3.20	3.26	3.24	3.03	3.19

Classification of wool according to quality

The following table provides a detailed analysis of wool sold at auction, according to quality, for the years 1962-63 to 1966-67. 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
1962-63 TO 1966-67

(Bales of approximately 300 lb)

Predominating quality	1962-63		1963-64		1964-65		1965-66		1966-67	
	Quantity	Per cent	Quantity	Per cent	Quantity	Per cent	Quantity	Per cent	Quantity	Per cent
70's and finer	138,238	3.0	132,620	2.7	145,267	2.9	149,305	3.3	114,406	2.4
64/70's	413,195	8.9	373,658	7.6	409,279	8.2	402,134	8.8	292,158	6.2
64's	582,315	12.5	567,559	11.6	620,453	12.5	576,499	12.7	470,153	9.9
64/60's	469,010	10.1	482,770	9.9	486,575	9.7	373,796	8.2	403,917	8.5
60/64's	1,043,674	22.4	1,149,957	23.4	1,108,668	22.2	896,070	19.7	1,002,088	21.1
60's and 60/58's	854,771	18.4	964,274	19.7	930,821	18.7	900,760	19.8	1,016,979	21.5
<i>Total, 60's and finer</i>	<i>3,501,203</i>	<i>75.3</i>	<i>3,670,838</i>	<i>74.9</i>	<i>3,701,063</i>	<i>74.2</i>	<i>3,298,564</i>	<i>72.5</i>	<i>3,299,701</i>	<i>69.6</i>
58's	527,493	11.3	566,904	11.6	586,708	11.8	591,790	13.0	660,570	13.9
56's	353,344	7.6	382,384	7.8	406,878	8.2	386,169	8.5	461,182	9.7
50's	135,256	2.9	141,638	2.9	153,079	3.1	133,574	2.9	178,587	3.8
Below 50's	45,631	1.0	45,675	0.9	51,534	1.0	44,887	1.0	61,289	1.3
Oddments	86,058	1.9	92,622	1.9	82,742	1.7	94,268	2.1	81,725	1.7
Grand total	4,648,985	100.0	4,900,061	100.0	4,982,004	100.0	4,549,252	100.0	4,743,054	100.0

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

Price and value

During 1966-67 the price of greasy wool sold in the selling centres of Australia averaged 47.4c per lb compared with the average price of 50.1c per lb in 1965-66 and 47.8c per lb in 1964-65. These prices are as compiled by the National Council of Wool Selling Brokers and represent the average price realised for all greasy wool, of whatever type or quality, marketed during the years indicated.

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 \$117,194,000, 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 \$1,303,804,000 or 55.6 per cent of the total value of production for all rural industries. The value of wool production fluctuated considerably in subsequent years. In 1966-67 it was \$812,230,000, 21.2 per cent of the gross value of production of rural industries.

ESTIMATED GROSS VALUE OF TOTAL WOOL PRODUCTION(a)
STATES AND TERRITORIES, 1962-63 TO 1966-67
(\$'000)

<i>Season</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>N.T.</i>	<i>A.C.T.</i>	<i>Aust.</i>
1962-63	332,340	158,012	115,462	92,514	82,988	17,772	40	1,396	800,524
1963-64	416,834	208,700	141,458	113,410	119,862	21,352	50	1,776	1,023,442
1964-65	336,675	176,041	117,218	94,328	95,804	19,051	39	1,396	840,552
1965-66	278,295	193,797	90,961	103,638	118,198	22,405	41	1,105	808,437
1966-67	286,293	180,946	93,190	104,588	124,821	20,983	39	1,370	812,230

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

Stocks of wool

Stocks of raw wool held in Australia at 30 June 1967 amounted to 301.1 million lb (greasy basis), of which 67.0 million lb (42.4 million lb as greasy and 24.6 million lb as scoured and carbonised) was held by woollen mills, wool scourers and fellmongers, and 234.1 million lb, assumed to be all greasy, was held by brokers. Of the wool held by brokers, 74.1 million lb was unsold wool and 160.0 million lb was 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.

Consumption of 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 carbonised 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 1962-63 to 1966-67.

Some additional information on wool scouring activities has become available from 1964-65. Greasy, scoured, and clean equivalent factors derived from this source have therefore been calculated on a slightly different basis from that previously used. For this reason details from 1964-65 appearing below may not be strictly comparable with figures for earlier years.

ESTIMATED CONSUMPTION OF RAW WOOL: AUSTRALIA, 1962-63 TO 1966-67
(*000 lb)

<i>Year</i>	<i>Greasy basis</i>		<i>Total</i>	<i>Clean equivalent</i>		<i>Total</i>
	<i>Used on woollen and worsted systems</i>	<i>Used for felt manufacture (including hats)</i>		<i>Used on woollen and worsted systems</i>	<i>Used for felt manufacture (including hats)</i>	
1962-63	120,238	3,868	124,106	72,295	1,837	74,132
1963-64	124,591	3,568	128,159	74,441	1,695	76,136
1964-65(a)	121,621	2,826	124,447	71,764	1,342	73,106
1965-66(a)	126,119	1,990	128,109	74,418	945	75,363
1966-67(a)p	125,268	644	125,912	73,916	306	74,222

(a) Particulars for 1964-65 and later years may not be strictly comparable with figures for earlier periods; see text above.

As considerable quantities of tops, noils and yarn are exported from Australia, the series on raw wool consumption shown on page 926 is over-stated to this extent. The series 'Estimated consumption of 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 1962-63 to 1966-67. 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 overseas trade in woollen piece goods, clothing, etc., because of the obvious difficulties of estimating accurately the wool content of these products. For the reasons stated in the preceding paragraph, details from 1964-65 appearing below may not be strictly comparable with figures for earlier years.

ESTIMATED CONSUMPTION OF PROCESSED WOOL: AUSTRALIA
1962-63 TO 1966-67
(*000 lb)

Year	<i>Greasy basis</i>			Total	<i>Clean equivalent</i>			Total
	<i>Worsted yarn used (a)(b)</i>	<i>Woollen yarn used (b)</i>	<i>Scoured wool used for felt manufacture (including hats)</i>		<i>Worsted yarn used (a)(b)</i>	<i>Woollen yarn used (b)</i>	<i>Scoured wool used for felt manufacture (including hats)</i>	
1962-63	45,967	31,835	3,868	81,670	27,135	19,753	1,837	48,725
1963-64	45,733	31,061	3,568	80,362	26,686	19,150	1,695	47,531
1964-65(c)	47,172	40,575	2,826	90,573	27,233	24,408	1,342	52,983
1965-66(c)	46,792	34,107	1,990	82,889	27,089	20,568	945	48,602
1966-67(c) p	38,329	42,182	644	81,155	22,191	25,438	306	47,935

(a) Includes hand knitting yarns used. (b) Includes wool content of yarns containing a mixture of wool and other fibres. (c) Particulars for 1964-65 and later years may not be strictly comparable with figures for earlier periods; see text on page 926.

Quantities of wool exported

Of the total shipments of greasy and slipe wool in 1966-67, 36 per cent went to Japan, 11 per cent to Italy, 11 per cent to the United Kingdom, 8 per cent to France and 7 per cent to Belgium-Luxembourg.

EXPORTS OF GREASY AND SLIPE WOOL: AUSTRALIA, 1962-63 TO 1966-67
(*000 lb actual weight)

<i>Country of consignment</i>	1962-63	1963-64	1964-65	1965-66	1966-67
Japan	386,956	433,944	424,175	467,587	492,456
Italy	119,409	127,556	95,175	137,405	151,749
United Kingdom	204,412	229,308	192,961	133,696	145,828
France	131,769	138,798	122,283	130,903	106,208
Belgium-Luxembourg	98,572	101,699	106,391	88,802	98,546
Germany, Federal Republic of	74,474	86,350	85,944	91,006	71,170
United States of America	46,314	27,590	67,093	72,720	55,721
Poland	21,662	22,600	22,983	28,441	30,651
India	6,617	12,908	18,858	9,241	29,583
U.S.S.R.	49,445	45,595	50,681	29,542	29,205
Yugoslavia	15,236	16,754	14,182	17,143	23,577
Other	124,102	139,699	135,673	117,853	133,207
Total	1,278,968	1,382,801	1,336,399	1,324,339	1,367,901

**EXPORTS OF SCOURED AND WASHED, AND CARBONISED WOOL
AUSTRALIA, 1962-63 TO 1966-67**

('000 lb actual weight)

<i>Country of consignment</i>	<i>1962-63</i>	<i>1963-64</i>	<i>1964-65</i>	<i>1965-66</i>	<i>1966-67</i>
United Kingdom	17,497	17,566	12,812	14,521	16,835
United States of America	25,469	23,063	27,834	27,671	16,180
Italy	8,582	8,340	6,292	7,928	8,041
Germany, Federal Republic of	7,314	7,517	8,997	7,531	7,100
Iran	3,173	2,428	3,513	4,668	4,650
Japan	5,796	4,891	4,122	5,594	4,205
Canada	2,981	3,398	4,966	2,925	3,767
France	4,251	3,205	3,268	2,877	2,915
Hong Kong	459	1,435	792	2,439	2,816
U.S.S.R. . . . .	..	..	..	..	2,500
China, Republic of (Formosa)	1,010	2,011	1,853	1,858	1,487
Belgium-Luxembourg	1,541	1,413	2,466	1,703	1,320
Other	23,840	12,950	10,538	9,048	8,053
Total	101,913	88,217	87,453	88,763	79,869

**EXPORTS OF CARDED OR COMBED WOOL, NOILS AND WOOLWASTE
AUSTRALIA, 1962-63 TO 1966-67**

('000 lb actual weight)

	<i>1962-63</i>	<i>1963-64</i>	<i>1964-65</i>	<i>1965-66</i>	<i>1966-67</i>
Carded or combed—Tops	21,631	25,932	19,232	22,909	23,975
Other	10	177	17	175	..
Noils	4,794	5,006	4,066	3,734	4,114
Waste—Soft wool	3,121	2,661	2,393	2,734	2,585
Hard wool	3,181	3,448	2,595	2,891	

The following table shows the estimated greasy and clean weights of exports of raw and semi-processed wool for the years 1962-63 to 1966-67. 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.

By reason of the availability, from 1964-65, of additional information on wool scouring activities, to which reference has already been made (*see* page 926), greasy equivalents of scoured and carbonised exports calculated from these data for 1964-65 and later years may not be strictly comparable with figures for earlier periods.

**EXPORTS OF WOOL—GREASY AND CLEAN BASES: AUSTRALIA
1962-63 TO 1966-67**

('000 lb)

	<i>1962-63</i>	<i>1963-64</i>	<i>1964-65</i>	<i>1965-66</i>	<i>1966-67p</i>
GREASY BASIS					
Raw wool—					
Greasy and slipe	1,279,334	1,383,271	1,336,920	1,324,763	1,368,237
Scoured and washed and carbonised	191,208	162,272	(a)145,531	(a)141,780	(a)127,586
Exported on skins	123,762	124,064	127,746	134,968	135,269
<i>Total raw wool</i>	<i>1,594,304</i>	<i>1,669,607</i>	<i>1,610,197</i>	<i>1,601,511</i>	<i>1,631,092</i>
Semi-processed wool—					
Tops	39,368	46,445	34,041	42,382	44,687
Yarn	436	707	354	530	263
<i>Total raw and semi-processed wool</i>	<i>1,634,108</i>	<i>1,716,759</i>	<i>1,644,592</i>	<i>1,644,423</i>	<i>1,676,042</i>

(a) May not be strictly comparable with figures for years earlier than 1964-65; *see* text on page 926.

EXPORTS OF WOOL—GREASY AND CLEAN BASES: AUSTRALIA
1962-63 TO 1966-67—*continued*
(^{'000} lb)

	1962-63	1963-64	1964-65	1965-66	1966-67p
CLEAN EQUIVALENT					
Raw wool	912,148	969,007	935,755	926,812	951,373
Semi-processed wool	23,394	27,389	19,819	24,816	25,996
Total	935,542	996,396	955,574	951,628	977,369

Value of wool exported

The value of wool (other than wool on sheepskins) exported from Australia during 1966-67 was 28 per cent of the total value of exports of merchandise of Australian origin, while the proportion for the five years ended 1966-67 averaged 32 per cent. The value for the five years ended 1966-67, together with the principal countries to which wool was exported, is shown in the following table.

VALUE OF WOOL EXPORTS: AUSTRALIA(a), 1962-63 TO 1966-67
(\$'000)

Country of consignment	1962-63	1963-64	1964-65	1965-66	1966-67
Japan	222,234	282,172	242,549	259,731	274,321
United Kingdom	114,004	153,528	110,015	79,857	85,214
Italy	65,260	84,014	54,515	76,630	82,229
France	66,538	83,134	61,799	64,990	53,554
United States of America	45,904	41,240	62,233	68,749	50,611
Germany, Federal Republic of	40,940	55,830	50,179	51,174	40,552
Belgium-Luxembourg	37,906	48,268	42,664	34,059	39,822
U.S.S.R.	29,142	33,990	31,681	18,588	18,341
Other	136,784	178,704	150,215	131,066	161,807
Total	758,712	960,880	805,850	784,844	806,451

(a) Excludes wool exported on sheepskins.

World sheep numbers and wool 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 1966-67 Australia produced 30 per cent of the world total of all types of wool. Other principal wool producers were New Zealand with 12 per cent of the world total, Argentina, 8 per cent, South Africa, 5 per cent, and United States of America, 4 per cent. Production in the U.S.S.R., China, and eastern European countries together amounted to 20 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.

ESTIMATED WORLD WOOLED SHEEP NUMBERS AND PRODUCTION OF WOOL, 1964-65 TO 1966-67

(Source for countries other than Australia: Reports published by the Commonwealth Secretariat, London)

Country	Sheep numbers (million)			Wool production (million lb—greasy basis)		
	1964-65	1965-66	1966-67 (a)	1964-65	1965-66	1966-67
Australia	171	158	164	1,784	1,663	1,762
New Zealand	54	57	60	623	695	709
Argentina	48	49	49	419	430	441
South Africa	37	37	37	296	329	300
United States of America	25	25	24	255	241	236
Uruguay	22	22	22	187	183	176
United Kingdom	30	30	29	127	129	131
U.S.S.R., China, eastern Europe(b)	231	236	242	1,101	1,138	1,178
Other	315	317	318	893	917	925
World total	933	931	945	5,685	5,725	5,858
Type of wool—						
Apparel type—						
Merino				2,318	2,265	2,320
Crossbred				2,160	2,230	2,272
Carpet type				1,207	1,230	1,266

(a) Provisional. (b) This group comprises Albania, Bulgaria, China and Dependencies, Czechoslovakia, East Germany, Hungary, Outer Mongolia, Poland, Rumania, Tibet, and U.S.S.R.

Principal importing countries and sources of supply

The following table, prepared from information published by the Commonwealth Secretariat, furnishes, in respect of the principal importing countries, details of their imports of wool for 1966 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.

PRINCIPAL WOOL IMPORTING COUNTRIES AND SOURCES OF SUPPLY, 1966

(Source: Information published by the Commonwealth Secretariat, London)

(Million lb)

Importing country	Quantity imported from(a)—					Total imports
	Australia	New Zealand	Argentina	South Africa	Other countries	
United Kingdom	139.6	135.9	62.4	40.6	143.1	521.6
Japan	476.6	75.6	28.5	42.8	9.6	633.1
France	137.5	107.3	28.4	53.2	20.0	346.4
Italy	127.9	26.0	17.7	40.4	89.2	301.2
Belgium	84.7	42.8	26.9	0.3	49.7	204.4
Germany, Federal Republic of	81.3	27.9	16.2	42.5	47.7	215.6
United States of America(b)	65.9	76.9	54.8	22.4	56.7	276.7

(a) Actual weight of greasy and scoured wool. (b) Imports are in terms of estimated clean content of greasy and scoured wool. Actual weight of total United States of America imports was 376.0 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.

Pastoral products: meat

Australian Meat Board

The Australian Meat Board, which was re-constituted under the *Meat Industry Act 1964-1966*, is the body responsible for controlling the external marketing of Australian beef, mutton and lamb. Powers and membership of the Board prior to its re-constitution in 1964 are set out on page 801 of Year Book No. 40. The Board's primary function is to ensure that Australian meat exports are marketed in a manner which will safeguard the long-term interests of the Australian meat industry. It consists of representatives of producers, exporters and the Commonwealth Government, and an independent Chairman.

The Board regulates overseas marketing of Australian meat by means of an export licensing system. It has power of control over the kinds of meat that may be exported by licensed exporters to particular places, or to particular agents and representatives. The Board also has power to undertake measures to promote the sale and consumption of meat both in Australia and overseas, and it may purchase and sell meat in its own right for the purpose of market development. However, the exercise of this power is limited to activities aimed at meeting special marketing problems or circumstances which preclude the effective participation of private traders. The Board may also purchase and sell meat, with the approval of the Minister for Primary Industry, for the purpose of administering any international arrangements to which Australia may be a party.

Meat research schemes

In November 1965 the Commonwealth Parliament passed legislation providing for the extension of the cattle and beef research scheme to cover beef, mutton and lamb research. Details of the beef research scheme were set out on page 1050 of Year Book No. 51. Under the new legislation the Cattle and Beef Research Committee was re-constituted as the Meat Research Committee, its powers and functions being similar to those of the former Committee extended to include mutton and lamb research. The Meat Research Committee consists of twelve members—seven meat producer representatives, the Chairman of the Australian Meat Board, one representative from the Universities engaged in meat research, the Commonwealth Scientific and Industrial Research Organization, the Australian Agricultural Council, and the Department of Primary Industry. The new Committee came into being in March 1966 and the Cattle and Beef Research Committee ceased to exist from that date.

The scheme is financed from the Livestock Slaughter Levy (*see below*). The Commonwealth makes a matching contribution on a \$1 for \$1 basis to meet expenditure on research. The research is conducted by such bodies as the universities, C.S.I.R.O., State Departments of Agriculture and the Bureau of Agricultural Economics.

The Minister for Primary Industry has approved a beef research programme of \$2,100,000 and a mutton and lamb research programme of \$295,000 for 1967-68.

The Livestock Slaughter Levy

The *Livestock Slaughter Levy Act 1964-1966* imposed a levy on all cattle (over 200 lb dressed weight), sheep and lambs slaughtered within Australia for human consumption. These levies, operative from 1 August 1964, replace the charge formerly imposed on meat exports. The proceeds of the levies under the Livestock Slaughter Levy Act are for the purposes of meat market development (including the financing of the operations of the Australian Meat Board) and for research into the technical, scientific and economic problems of the beef, mutton and lamb industries. The maximum rate of levy for cattle is 75 cents per head, of which no more than 20 cents is for beef research, and, for sheep and lambs, 7.50 cents, of which a maximum of 3.33 cents is for mutton and lamb research. The present operative rate for cattle is 32 cents (20 cents for beef research) and for sheep and lambs, 3.00 cents (1.75 cents for mutton and lamb research).

United Kingdom long-term purchase arrangements

Details of the long-term meat contracts with the United Kingdom from 1939 to 1952 and of the Fifteen Year Meat Agreement (1952-67) are given on page 710 of Year Book No. 41 and in earlier issues. In September 1953 the trade in meat between the United Kingdom and Australia reverted to private traders. The main features of the arrangements were given in Year Book No. 47, page 960. Details of minimum prices operating and deficiency payments received in recent years under private trading appear in Year Book No. 48 (page 973) and No. 50 (page 1068).

On 30 September 1967 the Fifteen Year Meat Agreement expired, and no new agreement has been negotiated. However, Australia still retains guaranteed duty-free entry for meat and a number of tariff preferences in the United Kingdom market under the provisions of the United Kingdom-Australia Trade Agreement.

Lamb Guarantee Scheme

Since the 1962-63 lamb export season the Australian Meat Board has guaranteed exporters a minimum price on all lambs 36 lb and under shipped to the United Kingdom. For the 1962-63 and 1963-64 seasons these prices were set at 15.0c per lb f.o.b. for the period September to November and 13.8c per lb for the following three months. For the 1964-65 and 1965-66 lamb export seasons the corresponding prices were 15.8c per lb and 14.6c per lb. For the 1966-67 season the prices were set at 16.0c per lb and 14.5c per lb, and for 1967-68 and 1968-69, 17.0c per lb and 15.8c per lb. The higher guaranteed price for the initial period is aimed at stimulating early shipments of lamb, because normally the most opportune time for selling Australian lamb in 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.

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 sought to preserve approximately the current pattern of trade in beef and mutton and to permit Australia to obtain a reasonable share of the expected market growth. Under the agreement Australia undertook to limit its exports of beef, veal and mutton to the United States to 242,000 tons in 1964. In the succeeding two years (1965 and 1966) exports were permitted to increase at a compound rate of 3.7 per cent. The agreement provides for a triennial review of the growth factor, the first of which was to take place before 1 October 1966, but no review has been held.

In August 1964 the United States Congress passed a Bill providing for the imposition of quotas on imports of beef and veal, mutton and goatmeat from all sources, for 1965 and subsequent years, if imports of these items are estimated by the United States Department of Agriculture to equal or exceed 110 per cent of a basic quantity. The basic quantity, 323,840 tons, is approximately the average of imports from 1959 to 1963. This quantity may be increased or decreased in any future calendar year by a percentage equal to that by which the United States average annual commercial production of beef and veal, mutton and goatmeat has changed since the base period 1959-1963. For this purpose the level of domestic production is the average of estimated commercial production for the year in which quotas may be applied and the two preceding years. An increase of 31.0 per cent in the basic quantity was set for 1968, providing for allowable imports of approximately 434,200 tons (403,800 tons in 1967) and an import ceiling, at which quotas would be established, of about 466,600 tons (444,200 tons in 1967). On the basis of the first official estimate of United States meat imports during 1968 the United States Secretary for Agriculture announced on 29 December 1967 that it would not be necessary to invoke meat import quotas for 1968. However, if a later quarterly estimate in 1968 indicated that the import ceiling would be equalled or exceeded, then quotas could be imposed.

Cattle slaughtered

CATTLE (INCLUDING CALVES) SLAUGHTERED STATES AND TERRITORIES, 1936-37 TO 1966-67 (*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 . . .	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—										
1962-63 . . .	1,809	1,562	1,804	254	308	158	24	12	5,931	5,995
1963-64 . . .	1,930	1,760	1,857	279	373	176	50	12	6,437	6,484
1964-65 . . .	2,157	1,879	1,960	275	327	174	59	13	6,844	6,902
1965-66 . . .	1,780	1,829	1,888	277	315	154	69	11	6,323	6,371
1966-67 . . .	1,455	1,706	1,677	265	301	170	67	10	5,650	5,701

Production of beef and veal

PRODUCTION OF BEEF AND VEAL (CARCASS WEIGHT)
STATES AND TERRITORIES, 1936-37 TO 1966-67

(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 . . .	181,057	122,758	199,340	26,074	27,743	10,222	1,336	560	569,089
1948-49 . . .	160,702	106,219	206,403	27,043	29,521	8,687	3,024	763	542,361
1958-59 . . .	247,508	176,161	304,984	41,166	41,058	19,454	5,130	2,013	837,475
Year—									
1962-63 . . .	263,054	213,908	313,786	36,420	55,934	23,694	5,061	2,080	913,937
1963-64 . . .	286,417	227,877	327,481	39,759	66,025	25,909	9,872	2,158	985,498
1964-65 . . .	303,419	246,129	326,128	37,268	56,983	26,270	11,699	2,179	1,010,075
1965-66 . . .	244,527	238,904	313,747	36,513	58,089	23,011	14,798	1,795	931,384
1966-67 . . .	209,403	224,983	295,810	38,754	54,811	24,695	14,572	1,711	864,739

Consumption of beef and veal

The highest post-war consumption of beef and veal (including canned beef and veal) was 132.7 lb per head in 1956-57. With the buoyant overseas 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 1966-67 consumption per head was 89.0 lb, of which 84.0 lb was carcass meat and 5.0 lb was canned meat (in terms of carcass equivalent).

PRODUCTION AND DISPOSAL OF BEEF AND VEAL (CARCASS WEIGHT)
AUSTRALIA, 1936-37 TO 1966-67

Period	Net change in stocks	Pro- duction	Exports (a)	For canning	Apparent consumption in Australia	
					Total	Per head per year
	'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 . . .	+ 2	542	102	67	373	109.1
1958-59 . . .	+ 5	837	209	85	538	123.8
Year—						
1962-63 . . .	+ 1	914	385	45	483	99.8
1963-64 . . .	+ 2	985	423	43	517	104.8
1964-65 . . .	+ 6	1,010	457	48	499	99.2
1965-66 . . .	..	931	412	44	476	92.6
1966-67 . . .	- 5	865	384	46	439	84.0

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

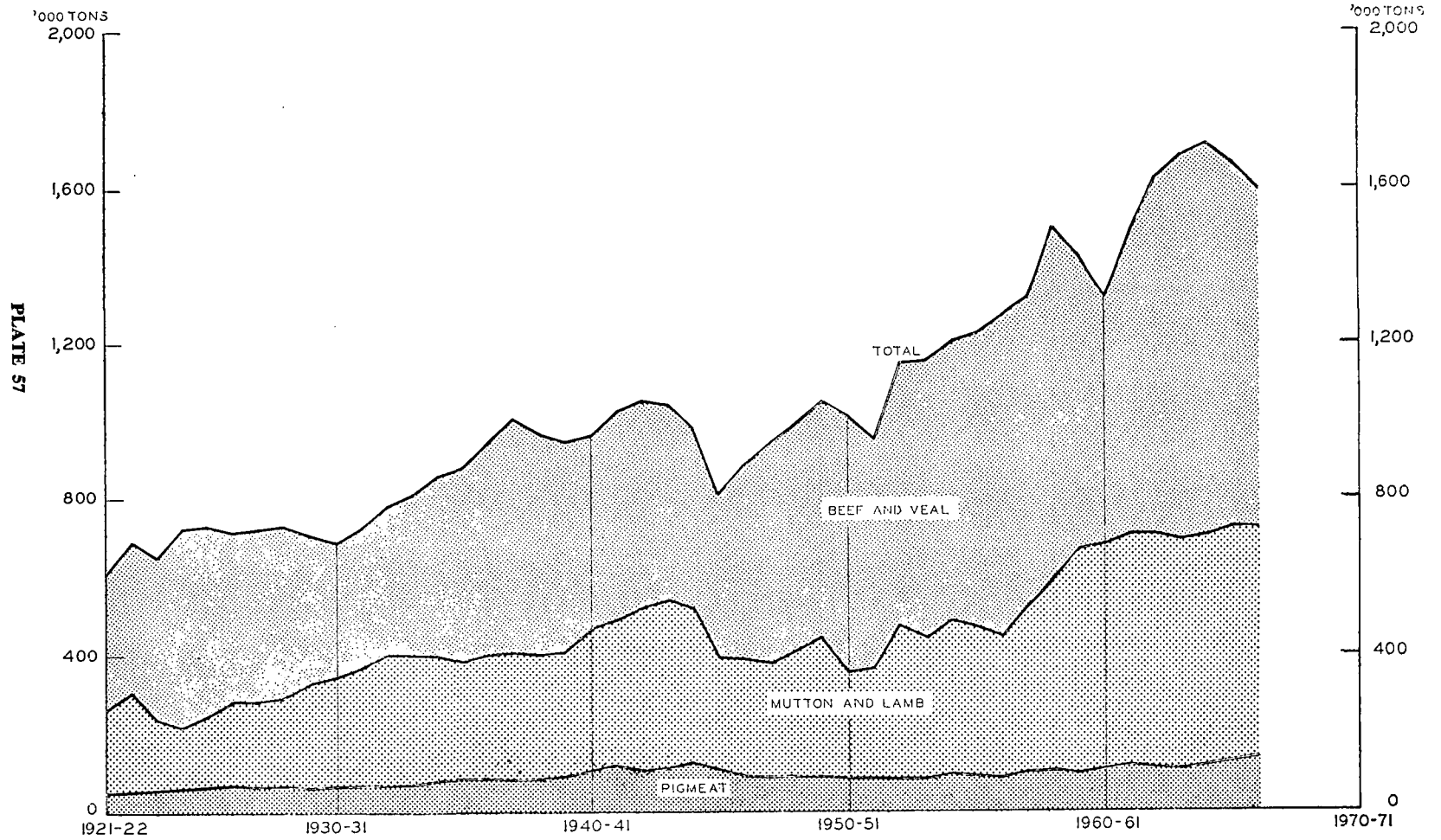
Exports of beef and veal

In 1966-67 chilled beef exports were 173,000 lb valued at \$72,000, while frozen beef exports amounted to 562,157,000 lb valued at \$192,249,000.

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 1966-67 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 1966-67 was \$145,211,000 and \$29,444,000 respectively.

PRODUCTION OF MEAT: AUSTRALIA

1921-22 TO 1966-67



**EXPORTS OF FROZEN AND CHILLED BEEF AND VEAL(a): AUSTRALIA
1962-63 TO 1966-67**

Year	Exports of frozen and chilled beef		Exports of frozen veal		Exports of frozen and chilled beef and frozen veal	
	Quantity	Value	Quantity	Value	Quantity	Value
	'000 lb	\$'000 f.o.b.	'000 lb	\$'000 f.o.b.	'000 lb	\$'000 f.o.b.
1962-63	576,504	155,962	7,624	2,074	584,128	158,036
1963-64	620,613	173,731	9,489	2,791	630,102	176,522
1964-65	679,989	192,404	27,919	7,958	707,908	200,363
1965-66	593,350	189,762	19,260	5,714	612,610	195,477
1966-67	562,330	192,321	15,889	5,922	578,219	198,243

(a) Actual weight shipped, not carcass equivalent.

Sheep slaughtered

**SHEEP (INCLUDING LAMBS) SLAUGHTERED: STATES AND TERRITORIES
1936-37 TO 1966-67**

('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	6,520	7,891	1,088	1,762	1,216	364	..	25	18,866	18,925
1948-49	6,367	8,413	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—										
1962-63	11,719	12,830	2,125	3,467	2,467	1,095	3	108	33,813	33,911
1963-64	11,934	12,628	2,407	2,996	2,137	1,127	3	117	33,349	33,440
1964-65	11,739	12,543	2,933	3,100	2,056	987	4	111	33,472	33,587
1965-66	11,192	13,332	2,769	3,474	2,535	1,164	2	92	34,560	34,696
1966-67	9,989	13,160	2,154	3,358	2,580	1,159	2	93	32,496	32,578

Production of mutton and lamb

**PRODUCTION OF MUTTON AND LAMB (CARCASS WEIGHT)
STATES AND TERRITORIES, 1936-37 TO 1966-67**

(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	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—									
1962-63	198,873	237,645	35,483	58,919	41,236	19,386	68	1,849	593,459
1963-64	202,057	231,769	40,209	52,864	36,690	20,079	72	1,986	585,726
1964-65	195,236	230,318	47,984	55,392	35,839	18,123	88	1,856	584,836
1965-66	184,523	240,697	45,515	60,738	44,695	21,097	46	1,517	598,828
1966-67	173,857	243,597	37,744	62,476	46,381	20,902	45	1,621	586,623

Consumption of mutton and lamb

In 1959-60 consumption of mutton and lamb, at 103 lb per head of population, showed a rise of approximately 16 lb per head over the previous year and exceeded that of beef and veal for the first time on record. Subsequently, it showed a continuous decline until 1966-67 when it rose slightly to 83.9 lb per head, an increase of 1.1 lb per head over the previous year. Since 1962-63 consumption of mutton and lamb has been below that of beef and veal, the difference in 1966-67 being 0.1 lb per head.

**PRODUCTION AND DISPOSAL OF MUTTON AND LAMB
(CARCASS WEIGHT): AUSTRALIA, 1936-37 TO 1966-67**

Period	Net change in stocks (^{'000} tons)	Production (^{'000} tons)	Exports (a) (^{'000} tons)	For canning (^{'000} tons)	Apparent consumption in Australia		
					Total (^{'000} tons)	Per head per year (lb)	
MUTTON							
Average for three years ended—							
1938-39 . . .	n.a.	201	17	..	184	60.0	
1948-49 . . .	-1	177	15	8	154	45.1	
1958-59 . . .	..	268	27	19	222	51.0
Year—							
1962-63 . . .	-2	363	107	8	249	51.4	
1963-64 . . .	+2	361	112	9	238	48.1	
1964-65 . . .	+5	361	116	10	231	45.9	
1965-66 . . .	+4	390	141	9	236	46.0	
1966-67 . . .	-5	350	132	7	216	41.4	
LAMB							
Average for three years ended—							
1938-39 . . .	n.a.	118	72	..	46	15.0	
1948-49 . . .	-2	130	45	..	86	25.2	
1958-59 . . .	..	159	31	..	128	29.3
Year—							
1962-63 . . .	+1	231	27	..	203	42.0	
1963-64 . . .	..	225	21	..	205	41.5
1964-65 . . .	+1	224	26	..	197	39.2	
1965-66 . . .	+3	209	18	..	189	36.8	
1966-67 . . .	-3	237	18	..	221	42.5	

(a) Includes carcass equivalent of boneless mutton exported.

Exports of frozen mutton and lamb

EXPORTS OF FROZEN MUTTON AND LAMB(a): AUSTRALIA, 1962-63 TO 1966-67

Year	Exports of frozen mutton		Exports of frozen lamb		Exports of frozen mutton and lamb	
	Quantity	Value	Quantity	Value	Quantity	Value
	^{'000} lb	^{\$'000} f.o.b.	^{'000} lb	^{\$'000} f.o.b.	^{'000} lb	^{\$'000} f.o.b.
1962-63 . . .	136,741	23,304	56,615	10,362	193,356	33,666
1963-64 . . .	149,918	24,752	41,606	7,718	191,524	32,470
1964-65 . . .	162,964	29,517	54,132	10,832	217,096	40,349
1965-66 . . .	176,424	37,242	35,574	8,176	211,998	45,417
1966-67 . . .	177,359	35,339	33,161	7,979	210,520	43,318

(a) Actual weight shipped, not carcass equivalent.

In 1966-67 the principal buyers of Australian frozen mutton and lamb were Japan (62,263,000 lb, valued at \$10,795,000); the United States of America (50,927,000 lb, valued at \$11,566,000); Canada (41,939,000 lb, valued at \$9,581,000); and the United Kingdom (20,273,000 lb, valued at \$4,436,000).

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 1962-63 to 1966-67 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, 1936-37 TO 1966-67**
(lb per head per year)

<i>Period</i>	<i>Beef and veal (a)</i>	<i>Mutton (a)</i>	<i>Lamb (a)</i>	<i>Pork (a)</i>	<i>Offal</i>	<i>Canned meat (b)</i>	<i>Bacon and ham (c)</i>	<i>Carcass equivalent of meat and meat products (d)</i>
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—								
1962-63 . . .	99.8	51.4	42.0	11.9	12.4	4.2	7.4	233.9
1963-64 . . .	104.8	48.1	41.5	11.5	12.8	4.1	7.3	234.8
1964-65 . . .	99.2	45.9	39.2	11.8	12.3	4.6	7.5	225.0
1965-66 . . .	92.6	46.0	36.8	13.3	11.5	4.5	7.6	216.4
1966-67 . . .	84.0	41.4	42.5	13.5	10.9	5.0	8.0	210.3

(a) Carcass weight. (b) Canned weight. (c) Cured carcass weight. (d) Includes offal.

Other pastoral products**Tallow**

Details of tallow consumption are collected from the principal factories using tallow. Recorded usage of inedible tallow in factories classified to industry sub-classes Industrial and heavy chemicals and acids, and Soap and candles, for the five years 1962-63 to 1966-67 was as follows: 1962-63, 1,086,000 cwt; 1963-64, 1,077,000 cwt; 1964-65, 1,157,000 cwt; 1965-66, 1,061,000 cwt; 1966-67, 1,007,000 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.

Particulars of exports of edible and inedible tallow of Australian origin are shown in the following table for the five years 1962-63 to 1966-67.

TALLOW: EXPORTS, AUSTRALIA, 1962-63 TO 1966-67
(cwt)

	1962-63	1963-64	1964-65	1965-66	1966-67
Edible . . .	120,944	135,425	96,611	51,869	244,377
Inedible . . .	2,229,230	1,976,000	1,846,543	1,243,684	1,612,166
Total . . .	2,350,174	2,111,425	1,943,154	1,295,553	1,856,543

Overseas trade in hides and skins

The value of cattle and horse hides, sheep and other skins, and skin pieces sent overseas during 1966-67 amounted to \$87,710,000, compared with a total of \$88,501,000 in 1965-66 and \$79,534,000 in 1964-65.

Of the total exports of sheepskins with wool during 1966-67, amounting to 195,349,000 lb valued at \$62,074,000, 118,493,000 lb valued at \$35,507,000 (57 per cent of total value) were shipped to France, 45,071,000 lb valued at \$16,808,000 (27 per cent) to Italy, and 9,509,000 lb valued at \$2,564,000 (4 per cent) to the United Kingdom. In the previous year France received 62 per cent (by value) of all sheepskins with wool exported, Italy 21 per cent and the United Kingdom 4 per cent. The exports of sheepskins with wool during each of the years 1962-63 to 1966-67 were as follows.

**EXPORTS OF SHEEPSKINS WITH WOOL: AUSTRALIA
1962-63 TO 1966-67**

	1962-63	1963-64	1964-65	1965-66	1966-67
Number . . . '000	26,795	27,913	27,248	28,952	27,578
Value . . . \$'000	55,484	73,696	59,621	63,042	62,074

In 1966-67 a total of 1,188,000 sheepskins without wool were exported, valued at \$783,000. Of these, sheepskins without wool to the value of \$108,000 (14 per cent) were shipped to France; \$91,000 (12 per cent) to the United States of America and \$43,000 (5 per cent) to the Netherlands.

The export trade in cattle hides and calfskins during 1966-67 was distributed among the main importing countries as follows: Japan \$7,756,000; Italy, \$2,743,000; and the Federal Republic of Germany \$2,721,000. The total quantity exported was 119,338,000 lb, valued at \$20,960,000.

The exports of furred skins in 1966-67 were valued at \$2,335,000, of which kangaroo and wallaby skins constituted \$1,426,000 and rabbit and hare skins \$666,000. In 1965-66 they accounted for \$1,266,000 and \$818,000 respectively, out of a total of \$2,196,000. The skins were shipped principally to the United States of America, the United Kingdom, the Federal Republic of Germany, and Italy; the values shipped to each in 1966-67 being: United States of America, \$1,514,000; United Kingdom, \$256,000; Federal Republic of Germany, \$161,000; and Italy, \$122,000.

The quantity of cattle hides, including calfskins, imported into Australia during the year 1966-67 amounted to 2,041,000 lb, valued at \$387,000. The chief sources of supply were New Zealand and the Pacific Islands.

OTHER RURAL INDUSTRIES: DAIRYING, POULTRY AND BEE-FARMING

The dairying industry

The introduction of cattle into Australia and the early history of the dairying industry are treated in some detail in earlier issues of the 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 southwestern 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 organised and are well advanced technologically. Certain techniques and equipment developed in Australia are being adopted overseas. 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.

Marketing of dairy products

The export trade is regulated by the terms of the *Commonwealth Customs Act 1901-1967* and the *Commonwealth Commerce (Trade Descriptions) Act 1905-1966* and regulations thereunder. This legislation requires that the true trade descriptions, 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.

Details of the *Dairy Produce Export Control Act 1924-1966* and of the Australian Dairy Produce Board constituted under it were given in earlier issues of the Year Book (see No. 48, pages 999-1000). The administrative expenses of the Australian Dairy Produce Board and other sundry expenditure were met from the proceeds of a levy imposed by the *Dairy Produce Export Charges Act 1964* (see Year Book No. 51, page 1070). In 1965 this Act, together with the *Dairy Produce Levy Act 1958*, was replaced by the *Butterfat Levy Act 1965-1966* (see page 940).

Equalisation schemes

Reference is made to the butter and cheese equalisation schemes in Year Book No. 48, pages 998-9. Particulars of the returns realised on local and overseas sales and of the average equalisation rate for the years ended June 1963 to 1968 are given on page 947 of this issue. Details are also given on page 946 of the wholesale prices of butter and cheese for home consumption as determined by the Commonwealth Dairy Produce Equalisation Committee Ltd.

An equalisation scheme for casein similar to that for butter and cheese has been operated since 1952 by the Commonwealth Dairy Produce Equalisation Committee Ltd. Average realisations per cwt under the scheme were \$15.908 in 1962-63, \$16.101 in 1963-64, \$17.381 in 1964-65, \$24.918 in 1965-66, and \$23.556 in 1966-67. The interim equalisation value for 1967-68 has been fixed at \$22.00 per cwt.

Commonwealth subsidies and stabilisation plans

Butter and cheese. 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 1 April 1946, but from that date have been on a flat rate basis. Subsidies are distributed by the Commonwealth Dairy Produce Equalisation Committee Ltd, through factories, to milk producers by payments on butter and cheese manufactured. Details of the three five-year stabilisation plans which operated up to 30 June 1962 will be found in Year Book No. 49, page 1084. Information regarding the plan which operated during the five years ended 30 June 1967 appears in Year Book No. 52, page 961.

A new five-year stabilisation plan came into operation on 1 July 1967. All the features of the previous plan have been retained. The fixed bounty of \$27,000,000 payable in each year of the plan on butter, cheese and butterfat products containing 40 per cent or more butterfat is continued.

The underwriting of final minimum equalised returns on butter and cheese, each year, is also continued. Returns to producers which have been underwritten at 33c per lb on commercial butter each year since the inception of the underwriting arrangement in 1958 have been raised to 34c per lb for the 1967-68 season.

Amounts realised on exports of butter and cheese were, in 1948-49 and 1949-50, in excess of the f.o.b. equivalent of the then guaranteed return and were credited to the Dairying Industry Stabilisation Fund, which was established in July 1948 for the purpose of stabilising returns from exports. During 1951-52 the Stabilisation Fund met the deficiency in respect of all exports which did not earn sufficient to meet the basic return to the factory. From 1 July 1952 to 30 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 Stabilisation 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, and this amendment was later extended by the *Dairying Industry Act 1962* to the present time. The amount standing to the credit of the Dairying Industry Stabilisation Fund at 30 June 1967 totalled approximately \$4,452,000. The major portion of the fund represents capital and other investments in milk recombining plants now established by the Board in Bangkok, Singapore and Manila.

Processed milk products. Subsidy on milk supplied for the manufacture of processed milk products was also payable from 1942 until 30 June 1948, and again from 1 July 1949 to 30 June 1952. The Commonwealth Government provided, under the *Processed Milk Products Bounty Act 1962*, for the payment of a maximum amount of \$700,000 as a bounty on exports of processed milk products in 1962-63. The bounty is to continue under present legislation until 30 June 1972, the maximum amounts made available being \$1,000,000 for 1963-64 and \$800,000 for each subsequent year.

Whole milk. In addition to the subsidies referred to above, the Commonwealth Government subsidised 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.

Extension, research and promotion of the dairying industry

Dairy Industry Extension Grant. An annual grant of \$500,000, 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 1 July 1948. The grant was renewed at the same level until 30 June 1963 when it was increased to \$700,000 per annum. On 1 July 1966 the Dairy Industry Extension Grant was incorporated in the Commonwealth Extension Services Grant, and assistance to the State agricultural departments for extension services to the dairying industry will be maintained from funds from this source until 1970-71 at least.

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 provided for a statutory levy on the manufacture of butter and cheese (the Dairy Produce Levy) which was initially set at rates of 0.104c per lb for butter and 0.052c per lb for cheese, the proceeds being divided equally between research and sales promotion. The rates of levy operative from November 1959 were 0.156c per lb for butter and 0.078c per lb for cheese, of which two-thirds was allocated to sales promotion and one-third to research.

In August 1964 the legislation was amended to include butter powder, at the same rates as for butter, and butteroil and ghee at 0.065c per lb for research and 0.130c per lb for sales promotion. In 1965 the Dairy Produce Levy Act was repealed and replaced by the *Butterfat Levy Act 1965-1966* which provides for the amalgamation of the three levies into one levy on butterfat used in the manufacture of butter, cheese and related products. The maximum rate of levy in the Act is 60 cents per cwt of butterfat, and the prescribed rate operative from 1 July 1967 is 53 cents per cwt (22 cents for promotion, 21 cents for administration and overseas market development, and 10 cents for research).

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 for research and sales promotion during the five years 1962-63 to 1966-67.

BUTTERFAT LEVY: AMOUNTS COLLECTED FOR RESEARCH AND SALES PROMOTION, 1962-63 TO 1966-67

(\$)

	1962-63(a)	1963-64(a)	1964-65(a)	1965-66	1966-67
Research(b)	263,500	264,200	262,800	310,200	406,100
Sales promotion	527,000	528,400	543,000	823,600	893,700
Total collected(b)	790,500	792,600	805,800	1,133,800	1,299,800

(a) Collected under Dairy Produce Levy Act. (b) 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.

Cattle for milk production

DAIRY BREED BULLS, AND COWS AND HEIFERS USED OR INTENDED FOR PRODUCTION OF MILK OR CREAM, 31 MARCH 1964 TO 1967

31 March—	Bulls, dairy breed (a)	Cows and heifers used or intended for production of milk or cream for sale					House cows and heifers (c)
		Cows		Heifers			
		In milk	Dry	1 year and over		Under one year	
				Spring- ing(b)	Other		
1967—							
New South Wales	18,261	524,668	143,529	164,829		126,914	91,982
Victoria	40,410	889,347	321,896	347,146		326,244	28,035
Queensland	15,354	450,477	148,318	138,847		104,956	37,351
South Australia	5,950	89,694	58,811	21,867	25,261	37,137	6,655
Western Australia	3,324	38,691	64,229	21,509	28,395	31,941	9,426
Tasmania	3,890	149,148		47,521		44,494	5,762
Northern Territory	15	322		226		97	27
Australian Capital Territory	31	1,154	397	170		174	437
Australia	87,235	2,880,681		795,771		671,957	179,675
1966	90,009	2,908,372		822,887		681,033	185,589
1965	95,012	3,011,832		843,212		690,267	202,138
1964	99,270	3,078,075		821,286		717,895	218,098

(a) Used or intended for service; excludes bull calves (under 1 year). (b) Within three months of calving. (c) Kept primarily for rural holdings' own milk supply.

For particulars relating to dairy cattle numbers up to 1963 see page 1078 of Year Book No. 50.

A map showing the distribution of dairy cattle in Australia at 31 March 1963 appears facing page 1082 of Year Book No. 50.

Milking machines

MILKING MACHINES ON RURAL HOLDINGS: NUMBER OF UNITS(a)
STATES AND TERRITORIES, 1963 TO 1967

31 March—	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.	
1963	43,089	97,372	46,674	18,836	10,514	12,701	n.a. {	84	(b)229,270	
1964	42,970	98,321	45,072	19,057	10,157	13,382		83	(b)229,042	
1965	42,209	101,994	44,074	19,135	10,055	13,806		23	231,389	
1966	41,796	105,003	42,199	18,833	9,780	15,894		26	94	233,625
1967	41,433	108,664	40,878	18,143	9,664	16,414		35	94	235,325

(a) The number of units indicates the number of cows that can be milked simultaneously, i.e. the cow capacity of installed milking machines. (b) Excludes the Northern Territory.

Production of milk

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 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 has been exceeded in each year since 1924. In the last five years an average of 476 gallons per cow per annum has been obtained. In 1966-67 the average yield was a record 520 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 cows in milk and dry and house cows at 31 March of that year and of the preceding year. They are, in effect, based on

the approximate number of 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 COW: STATES AND TERRITORIES
1936-37 TO 1966-67
(Gallons)

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.(a)
Average for three years ended—									
1938-39	315	439	298	442	353	349	} n.a. {	349	354
1948-49	310	506	267	565	370	419		328	371
1958-59	322	522	267	513	406	537		420	393
Year—									
1962-63	364	586	312	586	442	570	n.a.	479	452
1963-64(b)	368	587	307	587	448	577	230	557	456
1964-65(b)	347	613	306	614	490	589	248	547	467
1965-66(b)	378	616	316	602	508	578	234	524	483
1966-67(b)	423	p643	366	624	480	591	268	561	p520

(a) Excludes the Northern Territory before 1963-64. (b) Due to the introduction of a new cattle classification, may not be comparable with earlier years.

In the following table particulars of the production of whole milk in the various States and Territories are shown for the years 1962-63 to 1966-67 compared with the averages for the three years ended 1938-39, 1948-49 and 1958-59. In 1966-67, the production of whole milk in Australia reached a record level of 1,599 million gallons, which was 5 per cent above the previous record of 1965-66. Victoria is the principal milk-producing State, and in 1966-67 the output from that State, 791 million gallons, represented 49 per cent of total production. Output from New South Wales in 1966-67 was 323 million gallons (20 per cent of the total) and that of Queensland 238 million gallons (15 per cent). Production in the remaining States and Territories accounted for 16 per cent.

TOTAL PRODUCTION OF WHOLE MILK: STATES AND TERRITORIES
1936-37 TO 1966-67
(‘000 gallons)

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.(a)
Average for three years ended—									
1938-39	319,003	403,152	275,898	68,429	42,358	32,803	} n.a. {	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—									
1962-63	324,113	667,562	245,067	95,378	56,029	78,518	n.a.	1,090	1,467,757
1963-64	322,547	694,990	239,827	97,523	57,162	83,124	76	1,146	1,496,395
1964-65	291,931	745,896	230,289	102,330	61,883	87,343	98	1,094	1,520,864
1965-66	300,740	750,915	221,086	98,398	61,865	87,890	92	1,026	1,522,013
1966-67	322,995	p790,941	238,134	98,727	55,611	91,418	97	1,095	p1,599,018

(a) Excludes the Northern Territory before 1963-64.

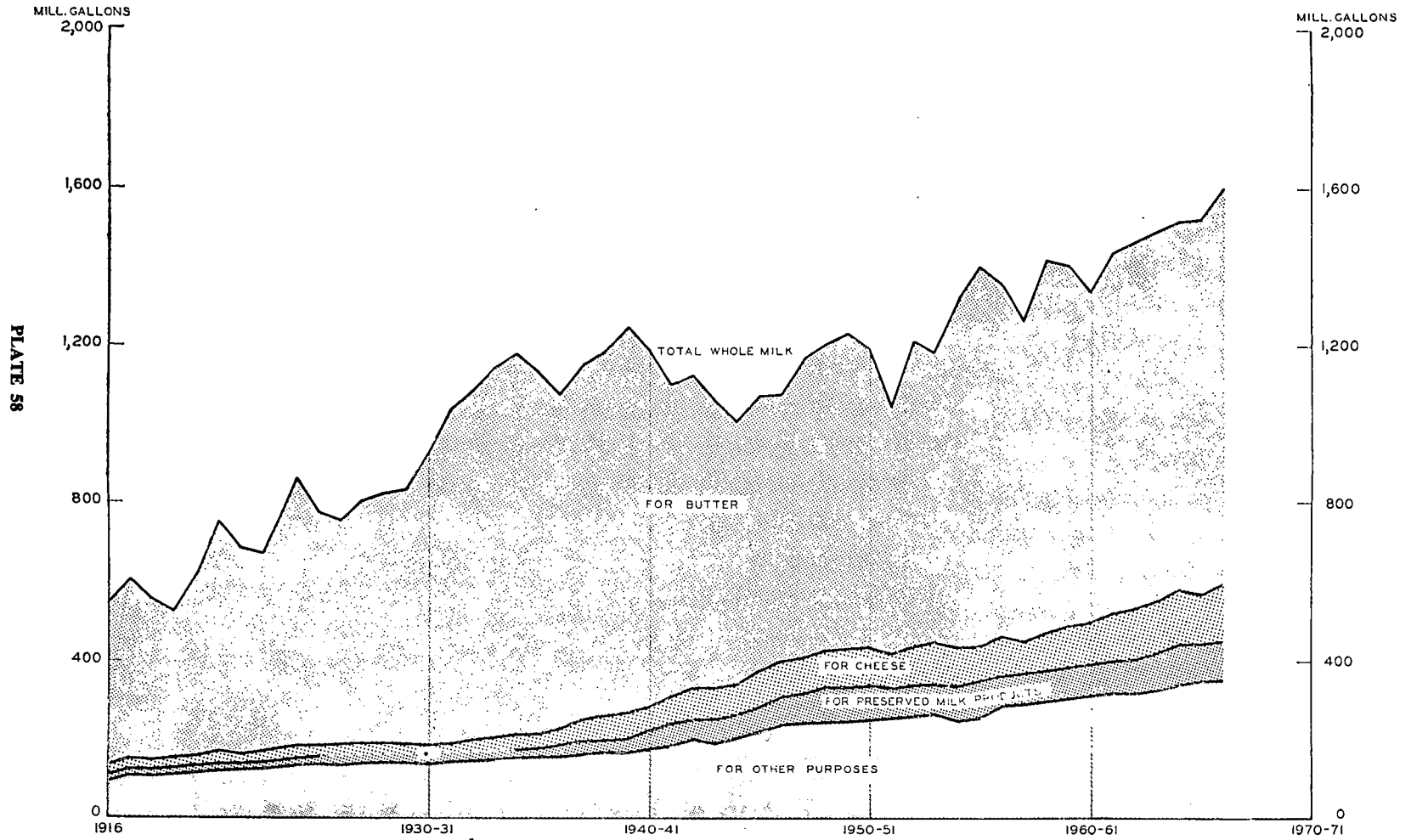
UTILISATION OF WHOLE MILK: STATES AND TERRITORIES, 1966-67
(‘000 gallons)

	N.S.W.	Vic.p	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.p
Milk used for—									
Butter	163,683	559,627	150,834	29,458	29,429	66,520	..	..	999,551
Cheese	9,956	63,959	22,669	37,710	3,755	8,411	..	..	146,460
Preserved milk products	17,337	67,018	} 64,631 {	} 31,559 {	} 273 {	} 16,487 {	} 97 {	} 1,095 {	} 101,354 {
Other purposes	132,019	100,337							
Total	322,995	790,941	238,134	98,727	55,611	91,418	97	1,095	1,599,018

In 1966-67, 62.5 per cent of the total milk supply was used for butter, 9.2 per cent for cheese, 6.3 per cent for preserved milk products, and 22.0 per cent for other purposes.

MILK PRODUCTION AND UTILIZATION: AUSTRALIA

1916 TO 1966-67



* Separate figures not available

PRODUCTION AND UTILISATION OF WHOLE MILK: AUSTRALIA
1936-37 TO 1966-67
('000 gallons)

Period	Total production	Quantity used for—			
		Factory butter (a)	Factory cheese (a)	Preserved milk products	Other purposes (b)
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—					
1962-63	1,467,757	932,041	130,503	83,167	322,046
1963-64	1,496,395	940,787	130,431	92,235	332,942
1964-65	1,520,864	938,796	135,733	96,973	349,362
1965-66	1,522,013	949,270	126,575	93,189	352,979
1966-67p	1,599,018	999,551	146,460	101,354	351,653

(a) Prior to 1964-65, includes milk equivalent of farm production. (b) Principally fluid milk for domestic purposes. Includes, from 1964-65, milk used for farm production of butter and cheese.

Production of butter, cheese and preserved milk products

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 to negligible proportions. A similar position exists in the cheese-making industry.

In 1966-67 factories classified to industry sub-classes Butter factories, Cheese factories, and Condensed and processed milk factories numbered 328 and were distributed among the States as follows: New South Wales, 69; Victoria, 117; Queensland, 61; South Australia, 41; Western Australia, 17; and Tasmania, 23. More details regarding numbers of factories, output, etc., are given in the chapter Manufacturing Industry.

Factory production of butter in 1966-67 at 489,217,000 lb was a record. It was 29,000,000 lb (6.3 per cent) more than the amount produced in 1965-66, and 28,000,000 lb (6.1 per cent) more than the previous post-war record production of 1955-56.

BUTTER PRODUCTION IN FACTORIES: STATES, 1936-37 TO 1966-67
('000 lb)

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.
Average for three years ended—							
1938-39	111,250	137,908	117,907	17,868	12,999	8,812	406,744
1948-49	70,323	131,522	94,624	20,223	14,856	10,044	341,591
1958-59	75,784	196,356	85,413	16,820	15,259	23,784	413,417
Year—							
1962-63	80,568	227,207	81,661	16,395	15,596	29,338	450,765
1963-64	80,880	231,499	79,220	16,587	15,491	30,616	454,292
1964-65	67,081	248,506	73,546	17,215	17,387	31,143	454,878
1965-66	73,901	250,680	70,189	16,160	18,133	31,370	460,433
1966-67	86,392	266,907	74,375	15,092	14,394	32,056	489,217

Factory production of cheese in 1966-67 reached a record level of 153,834,000 lb, which was 16,000,000 lb (11.5 per cent) more than the previous record of 1964-65.

CHEESE PRODUCTION IN FACTORIES: STATES, 1936-37 TO 1966-67
(^{'000} lb)

<i>Period</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.</i>
Average for three years ended—							
1938-39	7,347	16,141	11,357	15,380	957	3,190	54,371
1948-49	5,342	38,927	19,972	26,844	2,171	1,436	94,692
1958-59	9,784	39,440	15,331	25,128	2,524	750	92,958
Year—							
1962-63	12,366	57,274	22,851	33,967	3,223	1,440	131,120
1963-64	12,142	56,397	21,263	34,236	3,373	2,994	130,405
1964-65	9,785	60,975	19,095	38,836	4,051	5,265	138,008
1965-66	9,786	58,158	17,773	36,281	2,712	6,590	131,300
1966-67	12,023	67,907	23,071	38,598	3,807	8,427	153,834

Preserved milk products are manufactured mainly in Victoria, which produced 63 per cent of the total (in terms of whole milk equivalent) in 1966-67. New South Wales accounted for 18 per cent and the remaining States for 19 per cent.

PRODUCTION OF PRESERVED MILK PRODUCTS: AUSTRALIA
1962-63 TO 1966-67
(^{'000} lb)

<i>Product</i>	<i>1962-63</i>	<i>1963-64</i>	<i>1964-65</i>	<i>1965-66</i>	<i>1966-67</i>
Condensed, concentrated and evaporated milk—					
Full cream—					
Sweetened(a)	75,533	95,744	102,479	73,985	61,510
Unsweetened	64,409	71,964	89,390	88,482	91,700
Skim	19,203	25,712	21,936	22,047	24,974
Ice cream mixes (liquid)	8,612	11,896	10,810	15,198	15,422
Infants' and invalids' food(b)	38,465	44,105	45,179	45,280	49,348
Casein	36,236	37,360	39,768	50,712	45,812
Powdered milk—					
Full cream—					
Spray	37,829	40,069	41,561	42,888	46,276
Roller	1,874	2,109	2,108	2,172	1,742
Skim—					
Without added ingredients—					
Spray	76,689	70,189	82,624	84,018	162,351
Roller	10,845	12,783	14,704	14,466	13,153
With added ingredients—					
Baker's powder	4,808	4,854	5,264	5,577	5,401
Other	1,834	4,303	5,231	8,281	7,679
Buttermilk or mixed skim and buttermilk—					
Spray	2,543	4,650	4,702	8,345	12,829
Roller	18,258	17,060	16,183	17,555	19,689
<i>Total powdered milk</i>	<i>154,680</i>	<i>156,019</i>	<i>172,378</i>	<i>183,301</i>	<i>269,120</i>

(a) Includes 'coffee and milk'. (b) Includes malted milk and milk sugar (lactose).

Wholesale prices of butter and cheese in Australia

Details of prices operating in each of the States since 1 July 1956 are shown in the following table. The prices included are those determined by the Commonwealth Dairy Produce Equalisation Committee Ltd for choicest grade bulk butter and cheese.

WHOLESALE PRICES OF BUTTER AND CHEESE: AUSTRALIA
(*\$ per cwt*)

<i>Date from which prices became effective</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>
Butter—						
1 July 1956	46.67	46.67	46.55	46.43	46.67	46.67
1 July 1958	48.53	48.53	48.42	48.42	48.53	48.53
1 July 1960	50.17	50.17	50.05	50.17	50.17	50.17
19 June 1964	51.80	51.80	51.80	51.80	51.80	51.80
14 February 1966	52.08	52.08	52.08	52.08	52.08	52.08
Cheese—						
1 July 1956	28.23	28.23	28.23	28.12	28.23	28.23
1 July 1958	29.17	29.17	29.17	29.17	29.17	29.17
1 July 1960	29.63	29.63	29.63	29.63	29.63	29.63
19 June 1964	30.57	30.57	30.57	30.57	30.57	30.57
14 February 1966	30.80	30.80	30.80	30.80	30.80	30.80
7 November 1966	33.04	33.04	33.04	33.04	33.04	33.04

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 1965–66, at 21.7 lb per head, it reached its lowest level since the war. Consumption of cheese per head rose steadily in recent years and in 1965–66 reached a record level of 7.9 lb. This figure declined slightly in 1966–67.

PRODUCTION AND DISPOSAL OF BUTTER AND CHEESE
AUSTRALIA, 1936–37 TO 1966–67

<i>Period</i>	<i>Change in stocks</i> (a) (‘000 tons)	<i>Production</i> (b) (‘000 tons)	<i>Exports</i> (c) (‘000 tons)	<i>Apparent consumption in Australia</i>	
				<i>Total</i> (‘000 tons)	<i>Per head per year</i> (lb)
BUTTER					
Average for three years ended—					
1938–39	n.a.	190.8	89.4	101.4	32.9
1948–49	–3.6	157.1	76.0	84.7	24.8
1958–59	–0.6	187.4	69.6	118.4	27.2
Year—					
1962–63	+7.1	202.4	80.6	114.7	23.7
1963–64	–2.3	203.8	91.0	115.1	23.3
1964–65	–6.9	203.1	96.8	113.2	22.5
1965–66	+8.9	205.6	85.1	111.6	21.7
1966–67p	–0.3	218.4	104.7	114.1	21.8
CHEESE					
Average for three years ended—					
1938–39	n.a.	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—					
1962–63	+0.2	58.7	26.0	32.4	6.7
1963–64	–5.3	58.2	27.9	35.6	7.2
1964–65	–3.5	61.6	27.3	37.8	7.5
1965–66	–7.6	58.6	25.4	40.7	7.9
1966–67p	+2.4	68.7	25.6	40.7	7.8

(a) Balance figure for 1946–47 and subsequent years; includes allowance for imports.
(b) Factory production only from 1964–65. (c) Includes ships' stores; figures for butter include ghee and butter concentrate expressed as butter.

Average returns from butter and cheese sold

The table below shows rates realised on local, interstate and overseas sales and the average equalisation and subsidy rates in operation for the years ended June 1963 to 1968.

BUTTER AND CHEESE: RATES REALISED ON SALES, AVERAGE EQUALISATION RATES AND RATES OF COMMONWEALTH SUBSIDY UNDER DAIRYING INDUSTRY ACTS, 1962-63 TO 1967-68

(Source: Commonwealth Dairy Produce Equalisation Committee Ltd)

(\$ per cwt)

Year	Rates realised on sales				Average equalisation rate	Rate of subsidy	Rate of overall return to manufacturer
	Intrastate	Interstate	Manufacturing	Overseas			
Butter—							
1962-63	48.49	46.49	31.62	32.67	41.15	6.15	47.30
1963-64	48.65	47.03	31.40	33.82	41.73	6.10	47.83
1964-65	50.08	48.18	31.63	34.08	42.25	6.09	48.33
1965-66	50.06	47.47	32.26	30.63	40.27	6.01	46.28
1966-67	(a)	(a)	(a)	(a)	(b)39.30	5.66	(b)44.96
1967-68	(a)	(a)	(a)	(a)	(b)37.35	(b)5.86	(b)43.21
Cheese—							
1962-63		(c)28.39		20.28	24.22	2.33	26.56
1963-64		(c)28.54		21.13	25.51	2.36	27.87
1964-65		(c)29.32		22.11	26.00	2.23	28.23
1965-66		(c)29.43		23.18	25.98	2.36	28.34
1966-67		(a)		(a)	(b)26.48	2.04	(b)28.52
1967-68		(a)		(a)	(b)23.50	(b)1.90	(b)25.40

(a) Not yet available. (b) Interim rates. (c) As cheddar.

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 AUSTRALIA, 1962-63 TO 1967-68

(Source: Commonwealth Dairy Produce Equalisation Committee Ltd)

(Cents per lb)

Year	Average overall returns on commercial butter		
	Rate of overall return to manufacturer	Estimated manufacturing cost	Return to dairy farmer
1962-63	42.234	4.449	37.785
1963-64	42.705	4.449	38.256
1964-65	43.154	4.449	38.705
1965-66	41.324	4.449	36.875
1966-67	(a)40.141	4.583	35.558
1967-68	(a)38.583	4.583	34.000

(a) Interim rates.

Overseas trade in dairy products

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 1966-67 amounted to 205.5 million lb, compared with 167.6 million lb in 1965-66. Exports of cheese in these years were 57.2 million lb and 55.8 million lb respectively. As in previous years, the principal importing country for Australian butter was the United Kingdom, which received 78 per cent of total exports. In 1966-67 Japan replaced the United Kingdom as the principal importing country for Australian cheese with 37 per cent of total shipments.

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 *Rural Industries*, 1965-66, Bulletin No. 4.

BULK BUTTER AND CHEESE GRADED FOR EXPORT: AUSTRALIA, 1964-65 TO 1966-67
(Per cent)

Grade	Butter			Cheese		
	1964-65	1965-66	1966-67	1964-65	1965-66	1966-67
Choicest	73.4	73.7	77.3	6.1	6.9	22.5
First quality	21.0	20.7	17.5	87.0	86.7	74.7
Second and third quality(a)	5.7	5.7	5.2	6.9	6.4	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

(a) Includes rejected.

Exports of butter, cheese and other milk products of Australian origin are shown in the following table.

EXPORTS OF DAIRY PRODUCTS: AUSTRALIA, 1964-65 TO 1966-67

Product	Quantity ('000 lb)			Value (\$'000 f.o.b.)		
	1964-65	1965-66	1966-67	1964-65	1965-66	1966-67
Butter(a)	202,240	167,625	205,550	62,165	49,989	55,094
Cheese(b)	60,929	55,777	57,195	14,197	13,470	15,262
Other milk products—						
Preserved, condensed, concentrated, etc.—						
Sweetened	78,070	44,661	35,781	10,362	5,650	4,601
Unsweetened	11,678	14,228	14,543	1,328	1,619	1,656
Infants' and invalids' food (essentially of milk)(c)	16,523	13,301	10,698	4,752	3,811	3,244
Casein	36,624	43,342	42,470	6,145	10,183	9,545
Dried or powdered—						
Full cream	18,737	20,181	28,282	5,248	5,161	7,515
Skim	56,098	42,018	118,279	5,885	5,333	15,095

(a) Excludes butter concentrate, ghee, and ships' stores. (b) Excludes ships' stores. (c) Includes malted milk.

Pigs

At 31 March 1967 the number of pigs in Australia reached a record level of 1,804,000 which represented an increase of 57,000 (3.3 per cent) on numbers recorded at 31 March 1966 and 6,000 (0.3 per cent) more than the previous record at 31 March 1941.

PIGS: NUMBERS IN STATES AND TERRITORIES, 1937 TO 1967

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	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
At 31 March—									
1963	391,999	297,791	402,498	144,976	130,791	70,002	1,842	92	1,439,991
1964	391,300	322,051	388,144	153,415	128,140	82,534	1,806	121	1,467,511
1965	448,661	378,055	406,028	195,873	137,192	92,021	2,182	(a)	(b)1,660,012
1966	479,768	383,509	417,235	223,586	144,022	96,156	2,275	(a)	(b)1,746,551
1967	513,575	350,691	467,572	222,334	160,983	85,654	2,791	(a)	(b)1,803,600

(a) Not available for publication. (b) Incomplete; excludes Australian Capital Territory.

A long-term comparison of pig numbers is given in the division Pastoral Production of this chapter (see page 913). A map showing the distribution of pigs in Australia at 31 March 1963 faces page 1083 of Year Book No. 50 and a graph showing the number of pigs in Australia from 1870 onwards appears on plate 55 of this Year Book (see page 914).

PIGS SLAUGHTERED: STATES AND TERRITORIES, 1936-37 TO 1966-67

('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.		
Average for three years ended—										
1938-39	562	503	530	155	109	65	1		1,925	1,961
1948-49	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—										
1962-63	688	528	604	235	237	115	2	7	2,416	2,424
1963-64	636	531	606	214	185	124	2	7	2,305	2,313
1964-65	674	599	623	241	182	135	3	5	2,461	2,468
1965-66	774	703	640	298	195	146	2	9	2,769	2,777
1966-67	849	698	666	316	214	149	2	9	2,903	2,912

Production of pigmeat, bacon and ham

PRODUCTION OF PIGMEAT (CARCASS WEIGHT): STATES AND TERRITORIES
1936-37 TO 1966-67

(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	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—									
1962-63	30,283	25,086	29,619	11,810	11,731	5,461	69	328	114,387
1963-64	28,717	25,306	29,919	11,163	9,852	5,927	73	326	111,283
1964-65	31,509	28,048	31,259	12,656	9,861	6,585	90	218	120,226
1965-66	35,343	33,195	31,394	15,223	10,444	7,023	93	428	133,143
1966-67	38,283	33,094	33,255	15,947	11,584	7,164	87	386	139,800

(a) Excludes trimmings from baconer carcasses.

Production of bacon and ham amounted to 50,092 tons in 1966-67. This amount was 8.4 per cent above the amount of 46,220 tons produced in 1965-66 but 10.9 per cent below the record output of 56,246 tons attained in 1944-45.

PRODUCTION OF BACON AND HAM (CURED CARCASS WEIGHT)(a): STATES
1936-37 TO 1966-67
(Tons)

<i>Period</i>	<i>N.S.W.</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.</i>
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—							
1962-63 . . .	12,827	9,004	11,449	3,355	3,844	1,182	41,661
1963-64 . . .	13,503	8,629	10,843	3,605	3,792	1,166	41,538
1964-65 . . .	13,923	9,366	11,086	3,822	3,998	1,171	43,366
1965-66 . . .	15,055	9,357	12,342	4,106	4,298	1,062	46,220
1966-67 . . .	15,366	p9,787	14,670	4,403	4,624	1,242	p50,092

(a) Pressed and canned bacon and ham have been converted to cured carcass weight for periods subsequent to 1948-49.

Consumption of pigmeat, bacon and ham

The apparent consumption of pigmeat increased from 13.3 lb per head in 1965-66 to 13.5 lb per head in 1966-67 and equalled the highest post-war consumption, which occurred in 1961-62.

PRODUCTION AND DISPOSAL OF PIGMEAT (CARCASS WEIGHT): AUSTRALIA
1936-37 TO 1966-67

<i>Period</i>	<i>Change in stocks (a)</i>	<i>Production</i>	<i>Exports</i>	<i>Curing and canning</i>	<i>Apparent consumption (as pork or smallgoods) in Australia</i>	
					<i>Total</i>	<i>Per head per year</i>
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	lb
Average for three years ended—						
1938-39 . . .	n.a.	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—						
1962-63 . . .	-1.6	114.4	0.2	58.0	57.8	11.9
1963-64 . . .	-3.4	111.3	0.2	57.5	57.0	11.5
1964-65 . . .	-0.2	120.2	0.4	60.7	59.3	11.8
1965-66 . . .	..	133.1	0.5	64.3	68.4	13.3
1966-67 . . .	-1.1	139.8	0.9	69.5	70.5	13.5

(a) Includes allowance for imports.

PRODUCTION AND DISPOSAL OF BACON AND HAM (CURED CARCASS WEIGHT): AUSTRALIA, 1936-37 TO 1966-67

Period	Change in stocks	Pro- duction	Exports	Canning	Apparent consumption in Australia	
					Total	Per head per year
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	lb
Average for three years ended—						
1938-39 . . .	n.a.	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—						
1962-63 . . .	-0.1	41.7	0.1	5.8	35.8	7.4
1963-64 . . .	..	41.5	0.1	5.5	36.0	7.3
1964-65 . . .	..	43.4	0.1	5.2	38.0	7.5
1965-66 . . .	+0.2	46.2	0.2	7.0	38.8	7.6
1966-67p . . .	-0.1	50.1	0.2	8.1	41.9	8.0

Exports of pigs and pig products

EXPORTS OF PIGS AND PIG PRODUCTS: AUSTRALIA, 1964-65 TO 1966-67

		Quantity			Value (\$'000 f.o.b.)		
		1964-65	1965-66	1966-67	1964-65	1965-66	1966-67
Bacon and ham (including canned)	'000 lb	379	487	564	259	334	406
Lard	'000 lb	231	157	98	32	27	16
Frozen pork	'000 lb	818	1,064	2,060	324	436	826
Pigs, live	number	n.a.	n.a.	680	n.a.	n.a.	47

The poultry industry

Originally the poultry industry was conducted in conjunction with other branches of rural activity, mainly dairying, but it is now a specialised 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, some 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.

Stabilisation scheme for the egg industry

A Commonwealth industry stabilisation scheme for the egg industry has been in operation since 1 July 1965. The principal features of the scheme are embodied in three Commonwealth Acts—*Poultry Industry Levy Act 1965-1966*, *Poultry Industry Levy Collection Act 1965-1966*, and *Poultry Industry Assistance Act 1965-1966*.

The scheme provides for the imposition of a levy on hens over six months of age kept for commercial purposes. The money obtained from the levy is used to meet trading losses on surplus eggs. Previously, returns to producers were equalised by State Egg Boards, who imposed an equalisation deduction to cover deficits which resulted from sales to overseas markets.

In determining the rate of the hen levy, the Minister for Primary Industry is required to take into consideration any recommendations by the Council of Egg Marketing Authorities of Australia (which consists of all members of the State Egg Marketing Boards) and is precluded from prescribing a rate

in excess of such recommendations. The initial rate of levy was set at about 2.71c per hen per fortnight (the equivalent of \$0.70 per bird per year). This rate was increased to 2.80c on 23 February 1966. Following upon recommendations by the Council of Egg Marketing Authorities of Australia, the Minister for Primary Industry approved an increase in the levy to 3.50c per fortnight operative from 13 July 1966. As from 19 April 1967 the levy was increased to 5.00c per fortnight for the remainder of the financial year 1966-67. This had the effect of raising the total levy for the year to the maximum permitted under the legislation of \$1.00 per hen per year. For 1967-68 the maximum levy was again imposed, to be apportioned at 4.00c per hen per fortnight for 24 periods and 2.00c per hen per fortnight for the remaining 2 periods.

Exemptions from payment are granted on the first 20 hens in each flock and also on a substantial proportion of broiler breeder hens. The eggs produced by broiler breeder hens which are not used for hatching determine the proportion of those hens on which the levy becomes payable in accordance with a formula incorporated in the legislation.

By arrangement between the Commonwealth and State Governments, the State Egg Boards collect the levy due in each State from individual producers and remit the total amount to the Commonwealth (the Department of Primary Industry collects the levy in the Australian Capital Territory). The Commonwealth Government pays into the Poultry Industry Trust Fund amounts equal to the receipts obtained from the hen levy. These amounts totalled \$8,900,000 in 1966-67 (\$6,427,000 in 1965-66). Payments from the Fund are made to the State Governments for financial assistance to the poultry industry, and are authorised by the Minister for Primary Industry, after consideration has been given to the recommendations by the Council of Egg Marketing Authorities of Australia. Payments from the Trust Fund totalled \$9,062,000 in 1966-67 (\$5,540,000 in 1965-66).

Research

The *Poultry Industry Assistance Act* 1965-1966 permits expenditure from the Poultry Industry Trust Fund to be made for research. The Commonwealth Government has agreed to match expenditure from this Fund on a \$1 for \$1 basis with a limit to its contribution of \$100,000. There is no restriction on the amount which may be expended from the Fund for research purposes.

Research projects are recommended by the Council of Egg Marketing Authorities of Australia for approval by the Minister for Primary Industry. Expenditure may be approved for scientific, technical or economic research, the publication of reports thereon, the training of persons for research, and the dissemination of information and advice on scientific, technical or economic matters.

Marketing of eggs

Details of the *Egg Export Control Act* 1947 were given in earlier issues of the Year Book (see No. 47, page 997).

Australian exports of shell eggs in 1966-67 amounted to 4,451,000 dozen compared with 3,935,000 dozen in 1965-66. The main outlets for Australian eggs in 1966-67 were Kuwait (1,755,000 dozen), Federation of South Arabia (673,000 dozen), Trucial States (406,000 dozen), and Bahrain (404,000 dozen).

Recorded production of eggs and egg products

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
STATES, 1962-63 TO 1966-67
(*000 dozen)

State	1962-63	1963-64	1964-65	1965-66	1966-67
New South Wales ^(b)	54,609	56,713	62,918	65,240	68,043
Victoria	26,794	24,992	28,016	29,925	34,100
Queensland	11,290	12,459	14,182	17,062	20,474
South Australia	9,816	8,731	9,354	11,218	13,176
Western Australia	7,796	8,331	9,620	9,295	9,810
Tasmania	n.a.	n.a.	n.a.	n.a.	n.a.
Total ^(c)	110,305	111,226	124,089	132,740	145,603

^(a) Receipts from consignors and sales by producer agents. ^(b) Includes Australian Capital Territory.
^(c) Excludes Tasmania.

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
STATES, 1962-63 TO 1966-67**
(^{'000} lb)

<i>State</i>	<i>1962-63</i>	<i>1963-64</i>	<i>1964-65</i>	<i>1965-66</i>	<i>1966-67</i>
New South Wales	11,500	9,272	18,463	12,540	15,581
Victoria	7,684	3,216	5,456	3,286	5,825
Queensland	3,864	3,922	5,731	5,450	6,718
South Australia	2,836	3,001	2,639	4,148	4,953
Western Australia	533	835	1,450	977	1,143
Tasmania	n.a.	n.a.	n.a.	n.a.	n.a.
Total(a)	26,417	20,246	33,739	26,401	34,220

(a) Excludes Tasmania.

In addition to liquid whole egg, production was also recorded of liquid egg whites and liquid egg yolks. Output in 1966-67 amounted to 2,101,000 lb and 1,526,000 lb respectively, compared with 3,875,000 lb and 2,664,000 lb respectively, in the previous year. These figures exclude small quantities produced in Tasmania for which details are not available.

Consumption of eggs and egg products

Because of the operation of producers 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, 1936-37 TO 1966-67**

<i>Period</i>	<i>Change in stocks</i>	<i>Estimated total production</i>	<i>Exports (a)</i>	<i>For drying and pulsing (b)</i>	<i>Apparent consumption in Australia</i>	
					<i>Total</i>	<i>Per head per year</i>
Average 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	+0.1	189.9	9.6	23.0	157.2	16.1
Year—						
1962-63	-0.3	207.7	4.6	23.9	179.4	16.6
1963-64	+1.1	210.6	4.3	21.0	184.2	16.7
1964-65	-0.2	225.5	4.2	31.9	189.6	16.8
1965-66	-0.3	228.1	4.7	27.2	196.5	17.1
1966-67p	+0.2	238.4	5.3	31.9	201.0	17.2

(a) Includes ships' stores. (b) 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, 1936-37 TO 1966-67**
(Per head per year)

Period	Eggs in shell	Liquid whole egg and egg powder (a)	Total	
			Number	Weight (b)
	number	number		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—				
1962-63 . . .	199	11	210	26.2
1963-64 . . .	200	13	213	26.6
1964-65 . . .	202	15	217	27.1
1965-66 . . .	205	15	220	27.5
1966-67p . . .	206	13	220	27.5

(a) In terms of number of eggs in shell. (b) The average weight of an egg in Australia was taken as 1.75 oz for years prior to 1960-61. Since then the average weight has been taken as 2 oz, and figures from 1960-61 are therefore not strictly comparable with those for earlier periods.

Overseas trade in poultry products

**EXPORTS OF POULTRY PRODUCTS: AUSTRALIA
1964-65 TO 1966-67**

		Quantity			Value (\$'000 f.o.b.)		
		1964-65	1965-66	1966-67	1964-65	1965-66	1966-67
Eggs in shell . . .	'000 doz	3,327	3,935	4,451	921	1,124	1,161
Eggs not in shell—							
In liquid form(a)	'000 lb	17,119	14,484	18,226	3,840	3,280	3,224
Dry	'000 lb	158	257	100	123	189	77
Frozen poultry . . .	'000 lb	792	857	1,410	331	350	503
Poultry, live(b)	number	735,911	323,601	276,259	184	79	69

(a) Includes frozen pulp. (b) Includes day-old chicks.

Imports of canned poultry in 1966-67 amounted to 539,000 lb, valued at \$146,000, compared with 526,000 lb, valued at \$138,000; in 1965-66.

The bee-farming industry

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. A feature of the industry is that it consists mainly 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 1966-67 showed an average of 110.2 lb per hive, and the average quantity of wax was 1.5 lb per productive hive.

In the following table, statistics are confined to apiarists with five or more hives, except in New South Wales, where details relate to beekeepers with six or more hives. Prior to 1966-67, statistics for States other than Queensland related to beekeepers with five or more hives. In Queensland, details were confined to beekeepers on rural holdings with five or more hives and to beekeepers not on rural holdings with ten or more hives.

BEEHIVES, HONEY AND BEES-WAX: STATES AND A.C.T., 1966-67

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 . . .	103	57	160	10,580	1,230	137	66
Victoria	72	24	96	7,160	1,045	88	44
Queensland	38	19	57	3,461	346	52	23
South Australia	57	16	73	6,588	642	93	43
Western Australia . . .	41	10	51	6,882	440	99	44
Tasmania	7	3	10	385	50	7	3
Australian Capital Terri- tory	1	1	1	100	12	1	1
Australia	319	129	448	35,158	3,765	477	224

(a) At 30 June 1967.

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.

HONEY AND BEES-WAX PRODUCTION: STATES AND A.C.T., 1936-37 TO 1966-67
(*000 lb)

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	A.C.T.	Aust.
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—								
1962-63	14,087	4,818	2,941	4,147	6,099	547	40	32,679
1963-64	15,135	9,460	2,053	9,722	8,510	632	135	45,647
1964-65	13,701	9,180	3,794	6,527	8,066	715	97	42,080
1965-66	7,343	9,608	1,472	9,929	10,923	630	80	39,985
1966-67	10,580	7,160	3,461	6,588	6,882	385	100	35,158
BEES-WAX								
Average for three years ended—								
1938-39	49	39	11	38	23	2	..	162
1948-49	174	86	36	110	34	3	..	443
1958-59	163	81	31	94	81	5	..	455
Year—								
1962-63	177	64	44	56	79	6	..	426
1963-64	194	110	32	134	103	6	2	581
1964-65	185	105	52	90	106	10	1	549
1965-66	95	115	25	136	138	8	1	519
1966-67	137	88	52	93	99	7	1	477

Honey levy

A levy is imposed on domestic sales of honey for the purpose of financing the operations of the Australian Honey Board. The current rate of levy, which became effective on 14 February 1966, is four-tenths of a cent per lb, but under the provisions of the *Honey Levy Act 1962-66*, it can be increased by regulation to a maximum of one cent per lb. The proceeds of this levy may be expended on the regulation of Australian exports of honey and on associated promotional and research activities. In 1964-65, 1965-66 and 1966-67 collections amounted to \$104,000, \$101,000 and \$92,000 respectively.

Overseas trade in bee products

The principal importer of Australian honey in 1966-67 was the United Kingdom, importing 10,358,000 lb, valued at \$1,060,000.

Bees-wax was exported mainly to the United Kingdom and the Federal Republic of Germany in 1966-67.

EXPORTS OF HONEY AND BEES-WAX: AUSTRALIA, 1964-65 TO 1966-67

	Quantity ('000 lb)			Value (\$'000 f.o.b.)		
	1964-65	1965-66	1966-67	1964-65	1965-66	1966-67
Honey	13,710	16,234	13,050	1,431	1,646	1,518
Bees-wax	258	238	598	111	104	299

Value of dairy, poultry and bee production, and indexes of price and quantum of production**Value of dairy, poultry and bee production**

Values of dairy, poultry and bee-farming production for 1966-67 and earlier years are shown in the following tables. Further information on values, including definitions of the terms used, is given in the chapter Miscellaneous.

**GROSS VALUE OF DAIRY, POULTRY AND BEE PRODUCTION: AUSTRALIA
1962-63 TO 1966-67
(\$'000)**

	1962-63	1963-64	1964-65	1965-66	1966-67
DAIRYING					
Whole milk used for—					
Butter(a)	147,076	152,750	157,989	154,862	165,635
Cheese(a)	25,116	27,456	30,119	25,603	33,345
Preserved milk products	19,088	21,132	23,806	24,197	25,355
Other purposes	132,010	138,522	145,310	149,589	148,955
Subsidy paid on whole milk for—					
Butter	24,500	24,500	24,500	24,500	24,500
Cheese	2,500	2,500	2,500	2,500	2,500
<i>Total, whole milk (including subsidy)</i>	<i>350,290</i>	<i>366,860</i>	<i>384,224</i>	<i>381,250</i>	<i>400,289</i>
Pigs slaughtered	62,606	65,998	75,408	77,284	83,961
Dairy cattle slaughtered	26,482	30,664	45,624	49,438	39,563
Total, dairying	439,378	463,522	505,256	507,973	523,814
POULTRY					
Total, poultry	123,630	138,182	137,425	154,603	174,451
BEE-FARMING					
Honey	3,296	5,778	4,866	4,103	3,765
Bees-wax	184	250	253	224	224
Total, bee-farming	3,480	6,028	5,119	(b)4,323	(b)3,992

(a) Excludes Commonwealth subsidy which is shown separately.

(b) Discrepancy in addition due to rounding.

GROSS, LOCAL AND NET VALUE OF DAIRY, POULTRY AND BEE PRODUCTION
STATES AND TERRITORIES, 1966-67
(\$'000)

<i>State or Territory</i>	<i>Gross production valued at principal markets</i>	<i>Marketing costs</i>	<i>Local value of production</i>	<i>Value of materials used in process of production</i>	<i>Net value of production (a)</i>
New South Wales	226,249	21,554	204,695	(b)61,643	143,052
Victoria	264,296	14,704	249,593	70,677	178,916
Queensland	94,028	7,233	86,795	30,153	56,642
South Australia	51,549	2,684	48,864	20,374	28,489
Western Australia	33,022	1,648	31,374	16,072	15,303
Tasmania	31,902	1,439	30,464	8,500	21,964
Northern Territory	315	2	313	n.a.	313
Australian Capital Territory	896	71	825	254	571
Australia	702,257	49,335	652,923	207,673	445,250

(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.

NET VALUE OF DAIRY, POULTRY AND BEE PRODUCTION(a)
STATES AND TERRITORIES, 1962-63 TO 1966-67

<i>Year</i>	<i>N.S.W.(b)</i>	<i>Vic.</i>	<i>Qld</i>	<i>S.A.</i>	<i>W.A.</i>	<i>Tas.</i>	<i>Aust.(c)</i>
NET VALUE (\$'000)							
1962-63	124,912	135,426	52,932	21,498	11,332	16,334	363,184
1963-64	131,838	152,640	57,018	23,604	12,714	18,116	396,870
1964-65	135,235	161,371	55,550	27,080	14,709	20,760	415,771
1965-66	132,732	164,782	53,413	27,556	16,926	19,741	416,003
1966-67	143,052	178,916	56,642	28,489	15,303	21,964	445,250

NET VALUE PER HEAD OF POPULATION (\$)

1962-63	31.07	44.96	33.86	21.53	14.58	45.60	33.48
1963-64	32.32	49.67	35.75	23.06	15.92	49.94	35.89
1964-65	32.65	51.45	34.14	25.74	18.00	56.66	36.86
1965-66	31.53	51.59	32.18	25.47	20.22	53.41	36.17
1966-67	33.48	55.05	33.55	25.81	17.75	58.74	38.03

(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.

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* the chapter Miscellaneous.

**INDEXES OF QUANTUM^(a) AND PRICE OF DAIRY, POULTRY AND BEE
PRODUCTION: AUSTRALIA, 1962-63 TO 1966-67**

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

	1962-63	1963-64	1964-65	1965-66	1966-67
Quantum^(a) of production—					
Milk	129	131	132	133	140
Other products	130	133	143	147	156
<i>Total, dairy, poultry and bee</i>	<i>129</i>	<i>131</i>	<i>136</i>	<i>138</i>	<i>145</i>
Per head of population	82	81	83	82	85
Price—					
Milk	380	382	403	395	388
Other products	410	452	472	491	493
<i>Total, dairy, poultry and bee</i>	<i>388</i>	<i>402</i>	<i>423</i>	<i>422</i>	<i>418</i>

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