DISCLAIMER

Users are warned that this historic issue of this publication series may contain language or views which, reflecting the authors' attitudes or that of the period in which the item was written, may be considered to be inappropriate or offensive today.

CHAPTER 23

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 749) 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 food stuffs. 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 1969* (detailed information, triennial), *Grain and Seed Harvesters on Rural Holdings, 31 March 1967* (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), *Chicken Hatchings and Poultry Slaughterings* (monthly), *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, 1965 TO 1969

('000 acres)

Year	*N.S.W.(a)*	*Vic.(b)*	*Qld(b)*	*S.A.(a)*	*W.A.(a)*	*Tas.(a)*	*N.T.(a)*	*Total(c)*
1965	15,943	8,861	25,451	22,802	78,088	4,861	60,903	216,909
1966	15,937	8,874	25,662	22,878	78,226	4,913	60,921	217,411
1967	15,875	8,921	27,240	22,878	80,491	4,938	60,974	221,317
1968	15,872	8,952	27,833	22,919	80,658	5,327	60,988	222,549
1969	15,849		28,209	22,919	80,772	6,546	61,124	

(*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, 4,926,738 acres; forest reserves, 1,518,842 acres; water and camping reserves, 761,074 acres; mining reserves, 1,007,102 acres; recreation and parks, 733,872 acres; other reserves, 6,901,640 acres; total, 15,849,268 acres.

Victoria. For roads, 1,707,565 acres; water reserves, 315,494 acres; forest and timber reserves, 5,818,285 acres; mallee reserves, 410,000 acres; other reserves, 701,121 acres; total 8,952,465 acres.

Queensland. For timber reserves, 1,750,537 acres; State forests and national parks, 9,824,854 acres; Aboriginal reserves, 6,978,466 acres; streets, surveyed roads and stock routes, 4,267,588 acres; general reserves, 5,387,826 acres; total, 28,209,271 acres.

South Australia. Total area of surveyed roads, railways and other reserves, 22,918,983 acres, including 18,842,822 acres set apart as Aboriginal reserves.

Western Australia. For State forests, 4,456,326 acres; timber reserves, 1,865,876 acres; other reserves 74,449,558 acres; total, 80,771,760 acres.

Tasmania. For forest reserves, 5,523,000 acres; national parks, 1,023,000 acres; total, 6,546,000 acres.

Northern Territory. For Aboriginal, defence and public requirements, 61,124,000 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 16 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-third is leased or licensed, while about one-quarter of 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, 1965 TO 1969

('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
1965	111,567	6,263	365,318	147,661	241,911	984	191,840	282	1,065,826
1966	111,262	6,269	362,866	150,422	241,662	933	190,688	279	1,064,381
1967	111,300	5,993	359,152	149,192	244,715	915	194,543	262	1,066,072
1968	110,499	(d)5,856	353,163	149,530	244,804	766	191,595	254	1,056,467
1969	112,133		346,946	149,327	245,240	767	192,966	251	

(a) Year ended 30 June. (b) Year ended 31 December. (c) Leases and licences for all purposes. (d) Includes 75,000 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 ex-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. At 30 June 1969, 13,936,731 acres had been acquired under the scheme and of this 13,531,646 acres has been allotted to 9,105 farms.

Particulars of expenditure on war service land settlement, to 30 June 1968, are given in Year Book No. 55, pages 716–17.

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 1969.

ALIENATION AND OCCUPATION OF CROWN LANDS: STATES AND TERRITORIES, 1969

State or Territory	Private lands				Crown lands				Total area
	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	'000 acres
N.S.W.(b)	61,821	31.2	4,740	2.4	112,843	57.0	18,632	9.4	198,037
Vic.(c)	32,156	57.2	2,140	3.8	5,781	10.3	16,168	28.7	56,246
Qld(d)	26,949	6.3	25,991	6.1	349,553	81.9	24,387	5.7	426,880
S.A.(b)	15,982	6.6	295	0.1	149,327	61.3	77,640	32.0	243,245
W.A.(d)	34,312	5.5	14,168	2.3	248,872	39.8	327,237	52.4	624,589
Tas.(b)	6,655	39.4	236	1.4	5,314	31.4	4,680	27.8	16,885
N.T.(b)	318	0.1	..	..	192,966	57.9	139,695	42.0	332,979
A.C.T.(b)(e)	87	14.5	11	1.8	251	41.8	252	41.9	601
Australia	**178,280**	**160.8**	**47,581**	**17.9**	**1,064,907**	**381.4**	**608,691**	**239.9**	**1,899,462**

(a) Occupied by Crown; reserved; unoccupied; unreserved. (b) At 30 June. (c) At 31 December 1968. (d) At 31 December 1969. (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, 1964-65 TO 1968-69

Year	N.S.W.	Vic.(a)	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
NUMBER OF RURAL HOLDINGS									
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
1967–68	76,225	72,802	43,694	29,058	23,116	10,631	305	196	256,027
1968–69	76,103	71,056	44,074	29,137	23,004	10,384	317	195	254,270
TOTAL AREA OF RURAL HOLDINGS ('000 acres)									
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
1967–68	171,767	39,564	380,993	160,765	275,334	6,579	174,385	350	1,209,737
1968–69	171,020	39,182	378,956	162,109	276,174	6,591	177,942	346	1,212,320

(a) Since 1967–68 the lists of land holdings used in the collection of agricultural and pastoral statistics in Victoria were reconciled with lists of rateable land of one acre or more in extent as recorded by municipalities for rating purposes.

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, 1964-65 TO 1968-69
('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
1968–69—					
New South Wales	15,259	2,686	10,268	142,807	171,020
Victoria(e)	6,156	2,727	18,003	12,295	39,182
Queensland	5,268	918	4,973	367,796	378,956
South Australia	7,382	1,302	5,961	147,463	162,109
Western Australia	9,490	1,828	15,363	249,494	276,174
Tasmania	268	61	1,934	4,329	6,591
Northern Territory	2	..	103	177,837	177,942
Australian Capital Territory	10	2	88	246	346
Australia	**43,836**	**9,525**	**56,693**	**1,102,266**	**1,212,320**
1967–68	38,735	9,340	54,374	1,107,287	1,209,737
1966–67	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

(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. (e) *See* footnote (a) to previous table.

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 1969

Males engaged	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Permanent—									
Owners, lessees or share-farmers	61,609	52,827	44,817	21,802	18,866	6,915	220	136	207,192
Relatives of owner, lessee or share-farmer, over 14 years of age, not receiving wages or salary	1,992	5,279	2,456	306	1,346	..	31	11	11,421
Employees, including managers and relatives working for wages or salary	27,347	13,587	16,977	7,328	8,640	3,842	1,455	118	79,294
Total permanent males	*90,948*	*71,693*	*64,250*	*29,436*	*28,852*	*10,757*	*1,706*	*265*	*297,907*
Temporary	24,540	17,551	14,548	10,181	(b)	4,831	385	15	(b)
Total males	115,488	89,244	78,798	39,617	(b)	15,588	2,091	280	(b)

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

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 1968–69. Data for New South Wales, and hence Australia, are not available.

EMPLOYEES ON RURAL HOLDINGS: SALARIES AND WAGES PAID(*a*)
STATES AND TERRITORIES, 1968-69
($'000)

Employees	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
Males and females—									
Permanent	(*b*)	29,658	39,639	15,865	19,848	8,777	3,180	486	
Temporary(*c*)	(*b*)	28,117	50,126	13,501	18,506	5,830	440	168	n.a.
Total	(*b*)	**57,775**	**89,765**	**29,366**	**38,354**	**14,607**	**3,620**	**653**	

(*a*) Includes value of keep. (*b*) Not available. (*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 1969, and thoughout Australia for a series of years, are as follows.

PERSONS (OF ALL AGES) RESIDING PERMANENTLY ON RURAL HOLDINGS
STATES AND TERRITORIES, 31 MARCH 1969

	N.S.W.	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.(a)*	*A.C.T.*	*Aust.*
Males	150,099	135,605	99,779	56,059	48,509	22,697	3,170	447	516,365
Females	131,054	120,465	82,980	49,737	40,403	20,614	2,158	398	447,809
Total	**281,153**	**256,070**	**182,759**	**105,796**	**88,912**	**43,311**	**5,328**	**845**	**964,174**

(*a*) Includes Aborigines.

PERSONS (OF ALL AGES) RESIDING PERMANENTLY ON RURAL HOLDINGS
AUSTRALIA, 31 MARCH 1965 TO 1969

	31 March				
	1965	*1966*	*1967*	*1968*	*1969*
Males	538,496	533,039	529,378	525,754	516,365
Females	464,416	461,683	457,507	455,050	447,809
Total	**1,002,912**	**994,722**	**986,885**	**980,804**	**964,174**

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 1969 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 1969*. Details of grain and seed harvesters on rural holdings at 31 March 1967, classified according to type of propulsion, width of cut, age and type of front have been published in the statistical bulletin: *Grain and Seed Harvesters on Rural Holdings, 31 March 1967*.

FARM MACHINERY ON RURAL HOLDINGS: STATES AND TERRITORIES, 31 MARCH 1969

Machinery	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
Cultivating—									
Rotary hoes and rotary tillers—									
Self-contained power unit	8,692	7,289	3,035	3,624	1,743	1,292	47	n.a.	(*a*)25,722
Tractor-mounted or trailing type	7,540	5,626	4,255	2,163	1,578	962	20		(*a*)22,144
Seeding and planting—									
Grain drills—									
Combine type	29,045	20,217	14,066	15,763	13,954	1,480	63	62	94,650
Other types	5,969	9,002	2,297	5,074	3,661	2,445	9	33	28,490
Maize and cotton planters(*b*)	8,449	909	9,003	..	109	..	18	7	18,495
Fertiliser distributors and broadcasters	25,062	30,383	15,906	9,772	9,861	5,976	53	106	97,119
Harvesting—									
Grain and seed headers and harvesters(*c*)—									
Self-propelled	4,842	1,611	2,938	2,152	1,524	114	23	9	13,213
Tractor drawn	16,421	12,568	4,648	9,890	9,709	597	21	29	53,883
Pick-up balers	11,755	14,106	3,039	5,305	3,905	1,957	26	49	40,142
Forage harvesters	2,714	2,080	1,352	896	614	329	21	10	8,016
Other—									
Shearing machines (number of stands)	73,647	43,393	18,857	29,868	25,355	4,862	13	291	196,286
Milking machines (number of units)	39,557	112,618	35,401	17,908	9,036	17,057	24	97	231,698
Tractors(*d*)—									
Wheel	80,756	79,101	62,355	33,534	31,388	11,642	313	208	299,297
Crawler	5,585	2,958	7,883	3,040	3,617	1,108	98	10	24,299

(*a*) Incomplete. (*b*) Number of units, i.e. number of rows that can be planted simultaneously. (*c*) Excludes reapers, binders, specialised clover harvesters and forage harvesters. (*d*) *See* text above.

FARM MACHINERY ON RURAL HOLDINGS: AUSTRALIA 31 MARCH 1965 TO 1969

	31 March—				
Machinery	*1965*	*1966*	*1967*	*1968*	*1969*
Rotary hoes and rotary tillers—					
Self-contained power unit	(*a*)40,195	45,267	27,788	27,174	25,722
Tractor-mounted or trailing type			17,881	20,333	22,144
Seeding and planting—					
Grain drills—					
Combine type	90,008	90,866	92,530	94,094	94,650
Other types	30,537	30,401	29,605	29,634	28,490
Maize and cotton planters	15,220	14,523	14,260	13,826	(*b*)18,495
Fertiliser distributors and broadcasters	86,653	86,409	93,064	95,853	97,119
Harvesting—					
Grain and seed headers and harvesters—					
Self-propelled	65,568	64,744	10,273	11,953	13,213
Tractor drawn			54,644	55,929	53,883
Pick-up bailers	32,278	34,229	36,688	38,211	40,142
Forage harvesters	5,676	6,385	7,214	7,545	8,016
Other—					
Shearing machines (number of stands)	186,393	188,496	193,226	195,542	196,286
Milking machines (number of units)	231,389	233,625	235,325	233,022	231,698
Tractors—					
Wheel	295,502	278,118	314,670	323,982	299,297
Crawler		22,741			24,299

(*a*) Incomplete; excludes tractor-drawn rotary hoes and rotary tillers in Queensland. (*b*) Definition changed in 1969 when informants were asked to report in terms of number of units, i.e. the number of rows that can be planted simultaneously. Figures not strictly comparable with earlier years.

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. But the production of superphosphate in Australia during 1968–69 amounted to 3,928,000 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 1968–69 season is given in the following table.

AREA FERTILISED AND QUANTITY OF ARTIFICIAL FERTILISERS USED
STATES AND TERRITORIES, 1968-69

	Crops			*Pastures*			*Total*		
State or Territory	*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.	8,963	341,298	93,609	7,867	440,683	22,303	16,830	781,981	115,912
Victoria . .	5,654	262,865	53,556	9,233	568,648	69,738	14,887	831,513	123,294
Queensland . .	1,384	34,371	196,101	299	26,919	7,582	1,683	61,290	203,683
South Australia .	6,007	312,949	21,716	4,270	242,488	3,603	10,277	555,437	25,319
Western Australia.	9,460	513,782	78,538	13,037	708,774	22,199	22,497	1,222,556	100,737
Tasmania . .	252	24,364	12,578	1,481	114,375	9,146	1,733	138,738	21,724
Northern Territory	20	550	2,701	36	1,854	12	56	2,404	2,713
Australian Capital Territory . .	8	442	48	34	1,692	13	41	2,134	61
Australia .	31,748	1,490,621	458,847	36,257	2,105,433	134,596	68,004	3,596,053	593,443

Particulars of the quantity of artificial fertilisers used in each State and Territory during each of the seasons 1964–65 to 1968–69 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
1964-65 TO 1968-69

(Tons)

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
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
1967–68	893,469	1,068,605	263,460	599,877	1,219,968	172,195	4,629	2,695	4,224,898
1968–69	897,893	954,807	264,973	580,756	1,323,293	160,462	5,117	2,195	4,189,496

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

ARTIFICIAL FERTILISERS: IMPORTS INTO AUSTRALIA, 1964-65 TO 1968-69

Fertiliser	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
	QUANTITY ('000 cwt)				
Ammonium fertilisers	1,565	1,311	1,973	2,893	2,193
Potassium fertilisers	2,180	2,163	2,398	2,602	2,699
Natural phosphate	50,346	55,901	65,436	65,916	63,531
Sodium nitrate	221	153	99	161	103
Other	746	335	885	887	1,603
Total	**55,058**	**59,862**	**70,791**	**72,458**	**70,129**
	VALUE ($'000 f.o.b.)				
Ammonium fertilisers	3,132	2,841	4,161	5,016	3,813
Potassium fertilisers	3,441	3,550	3,875	3,770	3,457
Natural phosphate	17,978	21,543	29,050	32,162	31,606
Sodium nitrate	443	393	249	390	255
Other	2,532	1,181	2,698	3,219	4,247
Total	**27,526**	**29,508**	**40,033**	**44,557**	**43,378**

Exports of fertilisers (manufactured locally) amounted to 34,000 cwt valued at $184,000 in 1968–69 compared with 31,000 cwt valued at $160,000 in 1967–68.

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 1968–69 the total was 14,416,000 acres. The following table shows details of area treated and materials used for each State for the five years ended 31 March 1969.

AERIAL AGRICULTURE, 1964-65 TO 1968-69

Year ended 31 March	*Area topdressed and seeded*	*Area sprayed*	*Total area treated(a)*	*Materials used*		*Total flying time*
				Super-phosphate	*Seed*	
1969—	'000 acres	'000 acres	'000 acres	tons	'000 lb	hours
New South Wales(b)	4,969	(c)	6,280	233,869	(c)	43,420
Victoria	(c)	(c)	1,956	87,225	157	15,536
Queensland(d)	994	(c)	(c)	15,123	(c)	(c)
South Australia	(c)	369	856	(c)	(c)	4,794
Western Australia	1,346	(c)	(c)	52,403	108	18,989
Tasmania	(c)	(c)	(c)	(c)	33	(c)
Australia	**9,474**	**4,580**	**14,416**	**436,589**	**4,125**	**99,639**
1968	10,495	(c)	14,348	524,374	3,249	102,112
1967	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

(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 254,000 farmers who utilise one acre or more of land for agricultural or pastoral purposes. The latest figures available are those for the year 1968–69. 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 1959-60 to 1968-69. Plate 38 in this chapter shows the area of crops in Australia from 1900–01 onward (page 758).

AREA OF CROPS: STATES AND TERRITORIES, 1860-61 TO 1968-69

('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
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
1967–68	12,985	6,250	4,928	6,430	9,138	423	6	7	40,168
1968–69	15,570	7,910	5,449	7,704	9,812	476	7	11	46,940

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, Trade and Industry, Interior, and External 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, Interior, External 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. *See also* pages 546 and 557–9, Chapter 19, Public Finance. 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 in Australia. Commencing with the 1969 cotton crop the bounty will be phased out. In 1969 the total available will be $4,000,000; in 1970, $3,000,000 and in 1971 $2,000,000. Payments will cease after that time.

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.

The Commonwealth Government also pays for cattle tick control, flood, drought and bush fire relief and fisheries 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, chicken meat, eggs and wine. Non-legislative schemes, on a similar financial basis, have been operative in relation to other research projects, e.g. plague locusts, pest management in pome fruit orchards, grape crop forecasting, honey research, barley research, banana research, fruit fly research and vegetable research.

Agricultural research

Each State Department of Agriculture has a number of research stations, investigating mainly problems of the regions in which they are located. In addition, a substantial amount of research and investigational work is carried out by these departments on farmers' properties. The work is supported by central laboratory and service facilities in capital cities, and increasingly also by research, analytical and diagnostic laboratories in the country areas. Research results are passed on to farmers through field days, meetings and publications, and through extension staff of the State Departments of Agriculture. In recent years, there has been increasing interest in economic interpretation of research results.

The Commonwealth Scientific and Industrial Research Organisation carries out research at field stations and laboratory facilities in many parts of Australia, and also undertakes developmental studies at national level. Its research programmes in the agricultural and livestock fields are generally designed to give information which is widely applicable in the Australian environment, and which may require further regional interpretation and adaptation in order that it may be of use to the farming industries. The Universities also carry out agricultural research at laboratory and field levels, in addition to their teaching functions.

For details of agricultural training *see* Chapter 20, Education, Cultural Activities and Research.

Extension services

Agricultural extension services are provided by the States through their Departments of Agriculture, and in certain special fields by other State departments and authorities. Extension services also operate in the Northern Territory, Australian Capital Territory and Territory of Papua and New Guinea.

All State Departments of Agriculture have university or agricultural college trained officers located in country areas. They carry out advisory and educational activities in the farming community, through contact with individual farmers, and through group and general publicity channels. In recent years several States have placed agricultural economists in country areas, strengthening the economic and farm management content of extension.

Support for the field extension staff is provided by information service groups, by applied research teams and industry and subject matter specialist groups, and by diagnostic and analytical services. Some States have advisory staff specialising in agricultural mechanisation, and one State has begun to place extension method specialists in country areas.

Information services operated by Departments of Agriculture include agricultural journals, periodicals in various industry fields, pamphlets, newsletters, films, radio talks and television presentations. Group activities include discussion groups, field days, demonstrations, evening meetings and displays.

Since 1948 the Commonwealth has provided unmatched grants to the States to assist them in expanding their extension activities. In 1966, a five-year programme of rapid expansion of this assistance beyond the existing provision of $1.4 million per annum was undertaken. The amount available for 1969–70 is $4.9 million, and the Commonwealth is prepared to make available up to $5.4 million per annum by the end of the five years. The Commonwealth Extension Services Grant is used mainly by State Departments of Agriculture, and its scope includes extension, regional research, information, economic services and training.

Limited services are available from non-government sources. Some commercial firms and co-operatives provide extension or advisory services primarily for their clients. Farmers themselves have grouped together to employ advisors in farm management clubs, and this movement has no doubt helped stimulate the development of independent management consultants who can provide services ranging from property assessment or supervision to detailed farm management and development plans.

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 1968–69 appears on plate 38, page 758.

AREA OF CROPS: STATES AND TERRITORIES, 1968-69

(Acres)

Crops	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Cereals for grain—									
Barley—									
2-row	290,917	387,165	384,901	1,333,466	198,260	25,299	..	..	2,620,008
6-row	195,434	21,856	42,053	78,856	354,550	915	..	..	693,664
Maize	54,484	1,161	(a)120,200	..	39	..	..	..	175,884
Oats	1,184,751	991,334	55,042	515,606	1,092,469	31,434	..	1,200	3,871,836
Panicum, millet and setaria	665	2,671	(a)60,913	..	..	..	..	..	64,249
Rice	82,773	..	494	..	(b)	..	(c)	..	(d)83,267
Rye	8,676	11,689	223	67,397	8,986	33	..	..	97,004
Sorghum	136,945	1,306	(a)436,479	..	8,679	..	(c)	..	(d)583,409
Wheat	9,961,678	3,984,084	1,788,583	3,748,418	7,295,094	17,394	..	4,158	26,799,409
Hay	822,871	1,847,047	111,927	614,881	341,176	210,563	2,113	4,385	3,954,963
Green fodder	2,428,028	352,147	1,405,622	1,130,126	297,168	98,784	704	1,307	5,713,886
Other stock fodder	18,548	21,045	2,338	26,428	7,763	28,985	(b)	..	(d)105,107
Grass seed—									
Lucerne	35,186	(e)	585	36,588	..	..	..	..	(d)72,359
Clover	14,234	7,029	15	11,231	104,341	436	..	..	137,286
Other	9,453	30,601	42,900	15,431	26,994	4,060	(f)3,662	..	133,101
Industrial crops—									
Broom millet	2,931	337	178	..	14	..	..	..	3,460
Canary seed	158	..	23,375	(b)	..	..	..	..	(d)23,533
Cotton	59,769	..	(a)12,140	..	8,327	..	..	..	80,236
Flax for linseed	15,164	14,304	21,459	1,025	18,645	..	..	..	70,597
Hops	..	(g)797	..	..	(b)	(h)1,595	..	..	(d)2,392
Peanuts	183	..	78,454	..	..	..	(b)	..	(d)78,637
Safflower	2,415	199	43,589	..	170	..	..	..	46,373
Sugar cane—									
For crushing	22,174	..	546,306	..	..	..	..	..	568,480
Stand-over and cut for plants	19,187	..	97,551	..	..	..	..	..	116,738
Sunflower	4,440	937	14,160	..	(b)	..	..	..	(d)19,537
Tobacco	2,190	9,727	13,837	..	..	..	..	..	25,754
Other	(b)	1,000	165	(b)	..	318	..	..	(d)1,483
Vegetables for human consumption—									
Onions	1,520	3,634	3,756	1,883	359	155	(i)	(i)	(d)11,307
Potatoes	29,236	39,979	18,515	7,643	6,588	11,461	(i)	15	(d)113,437
Other	44,686	52,042	57,557	9,997	7,906	21,521	255	94	194,058
Vineyards—									
Bearing	19,550	44,719	3,178	53,213	6,733	..	..	..	127,393
Not bearing	3,199	4,251	330	7,361	537	..	..	..	15,678
Fruit—									
Bearing	77,471	57,094	38,361	32,520	19,596	17,292	62	25	242,421
Not bearing	17,214	14,504	14,389	11,977	5,770	4,137	28	7	68,026
Nurseries and cut flowers	1,361	2,766	552	318	244	109	..	9	5,359
All other crops	2,131	4,203	8,909	119	1,699	1,852	355	15	19,283
Total area	15,569,622	7,909,628	5,449,036	7,704,484	9,812,107	476,343	7,179	11,215	46,939,614

(a) Sown 1967–68. (b) Not available for publication. Included in All other crops. (c) Not available for publication. Excluded from totals. (d) Incomplete; *see* individual States. (e) Not available separately. Included by All other crops. (f) Excludes area sown simultaneously to oats. (g) Includes 28 acres not bearing. (h) Includes 74 acres not bearing. (i) Not available for publication. Included in Other vegetables.

AREA OF CROPS: AUSTRALIA

1900-01 TO 1968-69

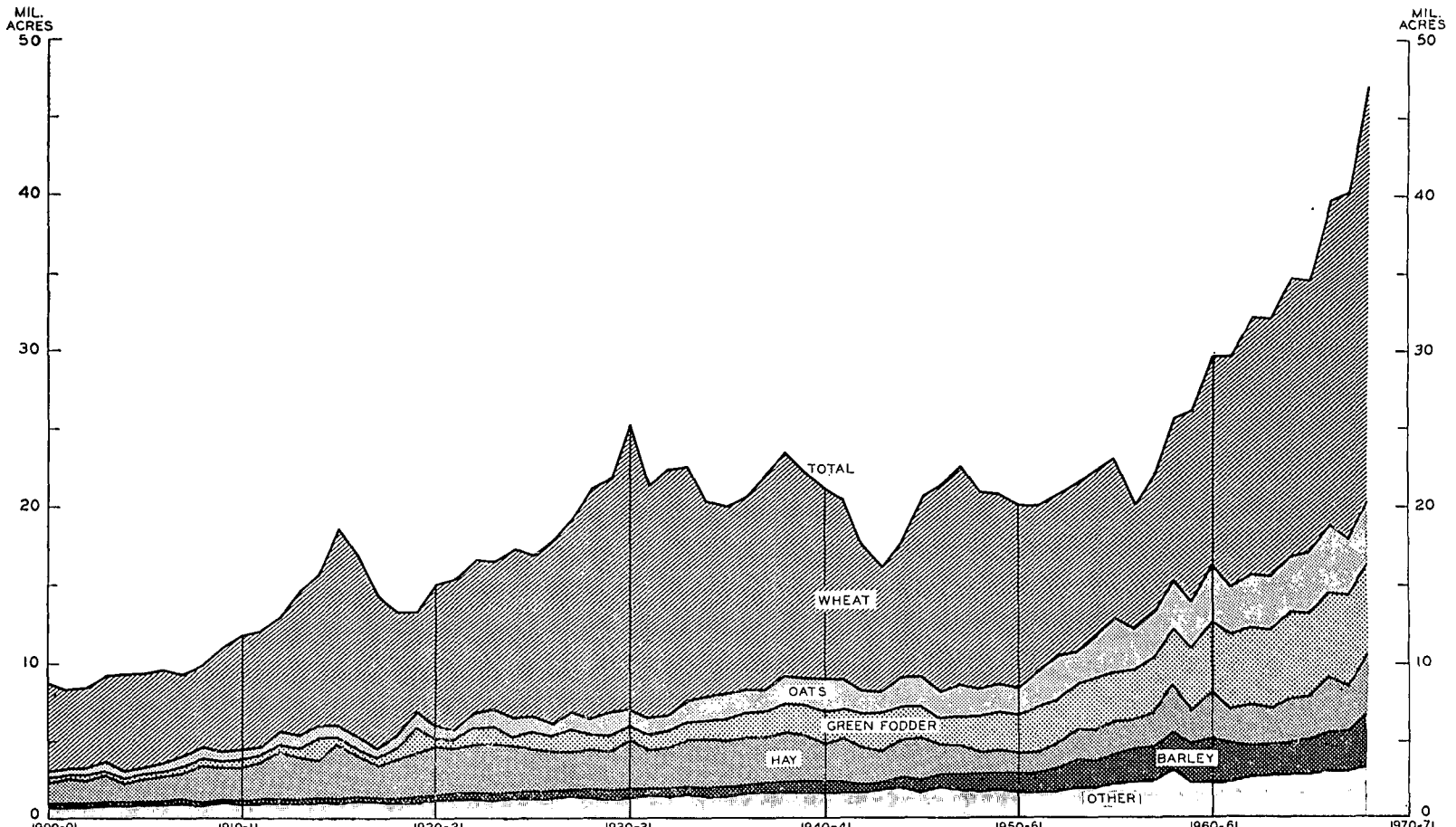


PLATE 38
758

AREA OF CROPS: AUSTRALIA, 1964-65 TO 1968-69

('000 acres)

Crop	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Cereals for grain—					
Barley—					
2-row	1,655	1,766	1,951	2,074	2,620
6-row	409	531	546	538	694
Maize	212	197	201	200	176
Oats	3,497	3,768	4,258	3,380	3,872
Rice	62	64	74	76	83
Sorghum	346	433	502	462	583
Wheat	17,919	17,515	20,823	22,441	26,799
Hay	2,793	2,780	3,496	2,800	3,955
Green fodder	5,614	5,324	5,399	5,916	5,714
Grass seed	258	227	304	248	343
Industrial crops—					
Cotton	38	55	53	77	80
Flax for linseed	134	25	35	54	71
Hops	2	2	2	2	2
Peanuts	46	58	70	62	79
Safflower	48	60	95	105	46
Sugar cane	628	647	669	675	685
Tobacco	26	23	22	23	26
Vegetables for human consumption—					
Onions	10	8	10	10	11
Potatoes	88	96	99	106	113
Other	168	185	184	178	194
Vineyards	139	140	139	140	143
Fruit	311	313	313	311	310
All other crops	262	282	308	292	339
Total	**34,665**	**34,498**	**39,553**	**40,168**	**46,940**

Production and yield per acre of crops

PRODUCTION OF CROPS: STATES AND TERRITORIES, 1968-69

Crop		*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
Cereals for grain—										
Barley—										
2-row	'000 bus	6,032	8,394	11,812	27,630	3,712	858	..	..	58,438
6-row	,,	5,179	491	1,058	1,921	5,475	26	..	..	14,149
Maize		3,083	72	(*a*)3,670	..	1	..	..	..	6,826
Oats	,,	27,454	30,230	1,119	11,895	22,942	583	..	27	94,250
Panicum, millet and setaria	,,	9	58	(*a*)876	..	..	..	..	..	943
Rice	,,	13,392	..	28	..	(*b*)	..	(*b*)	..	(*c*)13,420
Rye	,,	97	70	5	365	59	..	..	..	597
Sorghum	,,	3,927	46	(*a*)11,800	..	58	..	(*b*)	..	(*c*)15,831
Wheat	,,	215,119	90,728	42,000	83,160	112,450	410	..	84	543,950
Hay	'000 tons	1,439	3,635	263	985	501	494	5	7	7,330
Grass seed—										
Lucerne	cwt	24,199	n.a.	769	30,194	..	..	..	..	(*c*)55,162
Clover	,,	27,135	9,883	5	26,084	198,746	475	..	..	262,328
Other	,,	8,102	42,836	40,432	23,446	61,132	14,131	5,596	..	195,675
Industrial crops—										
Broom millet—										
Fibre	cwt	20,690	1,757	576	..	100	..	..	..	23,123
Grain	bushels	22,473	1,132	n.a.	..	..	..	..	..	23,605
Canary seed	bus	2,020	..	218,122	(*b*)	..	..	..	..	(*c*)220,142
Cotton, unginned	'000 lb	173,759	..	(*a*)23,363	..	21,560	..	..	..	218,682
Flax for linseed	tons	2,614	5,079	6,132	350	5,321	..	..	..	19,496
Hops (dry weight)	cwt	..	11,614	..	..	(*b*)	31,143	..	..	(*c*)42,757
Peanuts	,,	1,861	..	332,740	..	..	..	(*b*)	..	(*c*)334,601
Safflower	'000 bus	15	1	553	..	1	..	..	..	570
Sugar cane for crushing	'000 tons	998	..	17,415	..	..	..	..	..	18,413
Sunflower	cwt	23,252	7,042	59,393	..	(*b*)	..	..	..	(*c*)89,687
Tobacco, dried leaf	'000 lb	2,481	12,075	19,517	..	..	..	..	..	34,072
Vegetables for human consumption—										
Onions	tons	11,084	21,282	28,365	18,639	5,494	1,281	(*b*)	(*b*)	(*c*)86,145
Potatoes	,,	160,823	299,961	122,990	68,018	74,435	72,120	(*b*)	131	(*c*)798,478
Vinyards—										
Grapes—										
For drying	,,	38,756	168,682	..	14,012	7,479	..	..	..	228,929
For table	,,	7,470	6,939	5,913	587	1,729	..	..	..	22,638
For wine	,,	54,313	29,450	274	202,937	6,128	..	..	..	293,102

(*a*) Harvested from crop sown in 1967–68. (*b*) Not available for publication. (*c*) Incomplete; *see* Individual States.

PRODUCTION OF PRINCIPAL CROPS: AUSTRALIA, 1964–65 TO 1968–69

Crop		*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Cereals for grain—						
Barley—						
2-row	'000 bus	41,775	33,235	49,207	28,731	58,438
6-row	„	7,540	8,600	12,381	8,067	14,149
Maize	„	6,879	4,918	7,491	7,132	6,826
Oats	„	70,043	60,739	107,106	39,628	94,250
Rice	„	8,030	9,540	11,250	11,597	13,420
Sorghum	„	7,164	7,149	11,713	10,582	15,831
Wheat	„	368,789	259,666	466,610	277,289	543,950
Hay	'000 tons	4,963	4,179	6,371	3,812	7,330
Grass seed	cwt	411,919	356,815	488,477	317,303	513,165
Industrial crops—						
Cotton, unginned	'000 lb	63,009	133,850	120,360	214,736	218,682
Flax for linseed	tons	46,600	6,064	13,744	10,482	19,496
Hops (dry weight)	cwt	27,892	36,463	28,907	36,752	42,757
Peanuts	„	207,115	548,279	827,151	606,159	334,601
Safflower	'000 bus	697	550	1,369	878	570
Sugar cane for crushing	'000 tons	15,070	14,155	16,685	16,756	18,413
Tobacco (dried leaf)	'000 lb	25,111	27,361	27,905	24,721	34,072
Vegetables for human consumption—						
Onions	'000 tons	70	58	84	58	86
Potatoes	„	508	639	643	658	798
Vineyards—						
Grapes	„	680	582	684	629	545
Wine made (*a*)	'000 gal	38,718	34,125	41,514	44,231	51,936
Dried vine fruits	'000 tons	108	91	107	85	55

(*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, 1964–65 TO 1968–69

Crop		*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Cereals for grain—						
Barley—						
2-row	bushels	25.2	18.8	25.2	13.9	22.3
6-row	„	18.4	16.2	22.7	15.0	20.4
Maize	„	32.4	25.0	37.2	35.6	38.8
Oats	„	20.0	16.1	25.2	11.7	24.3
Rice	„	130.3	148.1	152.6	152.7	161.2
Sorghum	„	20.7	16.5	23.3	22.9	27.1
Wheat	„	20.6	14.8	22.4	12.4	20.3
Hay	tons	1.78	1.50	1.82	1.36	1.85
Industrial crops—						
Cotton, unginned	lb	1,662	2,436	2,264	2,793	2,725
Flax for linseed	tons	0.35	0.25	0.40	0.19	0.28
Hops (dry weight)(*a*)	cwt	13.48	17.16	13.51	16.50	18.67
Peanuts	„	4.51	9.50	11.86	9.82	4.26
Safflower	bushels	14.68	9.12	14.47	8.40	12.29
Sugar cane for crushing(*a*)	tons	32.04	28.13	29.93	30.30	32.39
Tobacco (dried leaf)	lb	954	1,165	1,247	1,076	1,323
Vegetables for human consumption—						
Onions	tons	7.18	7.04	8.27	5.94	7.62
Potatoes	„	5.78	6.63	6.47	6.23	7.04
Vineyards—						
Grapes(*a*)	„	5.42	4.58	5.37	4.92	4.28

(*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, 1964–65 TO 1968–69
($'000)

Crop	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Cereals for grain—					
Barley	55,620	47,932	73,743	42,222	70,531
Maize	9,999	9,517	10,395	9,463	9,733
Oats	51,449	53,323	83,384	34,205	58,763
Rice	8,529	10,224	12,445	12,831	14,358
Wheat	517,702	384,853	689,880	435,443	731,334
Hay	99,209	107,755	151,470	107,434	166,284
Green fodder	25,011	28,380	24,805	30,234	32,577
Industrial crops—					
Cotton, unginned	7,685	14,323	12,468	19,675	20,715
Hops	2,372	3,020	2,531	3,211	3,788
Sugar cane	133,372	119,350	138,431	138,409	158,716
Tobacco (dried leaf)	24,608	30,399	29,782	27,919	38,528
Vegetables for human consumption—					
Onions	5,340	6,667	6,044	7,167	6,366
Potatoes	60,713	43,751	41,233	51,985	43,399
Other vegetables for human consumption	68,335	74,804	82,387	85,417	88,509
Grapes	50,385	43,516	50,173	47,750	44,602
Fruit and nuts	146,242	151,877	162,918	155,250	165,860
All other crops	53,413	51,603	67,183	60,197	69,182
Total	**1,319,984**	**1,181,294**	**1,639,273**	**1,268,812**	**1,723,245**

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

Values of agricultural production in the various States and Territories are shown for 1968–69 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, 1968–69
($'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	542,184	118,144	424,040	(*b*)46,513	377,527
Victoria	331,715	55,292	276,423	29,229	247,194
Queensland	363,704	46,900	316,804	55,965	260,839
South Australia	221,097	29,655	191,442	29,836	161,605
Western Australia	218,643	37,371	181,272	44,917	136,355
Tasmania	44,599	10,174	34,424	6,504	27,920
Northern Territory	857	n.a.	857	n.a	857
Australian Capital Territory	446	40	406	19	387
Australia	**1,723,245**	**297,576**	**1,425,668**	**212,983**	**1,212,684**

(*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 agricultural production

Indexes of quantum and price of agricultural production previously shown in this section are now incorporated in the farm production price and quantum indexes shown in the chapter Miscellaneous.

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, 1963–66 and 1968 for the purpose of administering the second, third, fourth and fifth 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), No. 48, pages 903 and 904 (1958–59 to 1962–63) and No. 54, pages 868 and 869 (1963–64 to 1967–68).

Fifth Post-war Wheat Industry Stabilisation Plan. Following negotiations during 1968, the fifth post-war Wheat Industry Stabilisation Plan was enacted by the Commonwealth and States towards the end of 1968. 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 1968–69 wheat crop and will end with the marketing of the 1972–73 crop.

The *Wheat Export Charge Act* 1968 repealed the *Wheat Export Charge Act* 1963 and provided for an export charge on wheat and wheat products for the seasons 1968–69 to 1972–73 inclusive. *See also* page 557, Chapter 19, Public Finance. The charge which may be levied is the excess of the average export return over the sum of the guaranteed price (*see below*) and five cents per bushel with a maximum charge of fifteen cents per bushel. The ceiling on the Wheat Prices Stabilisation Fund, into which this charge is paid, has been raised from $60 million to $80 million. Any excess beyond this figure is returned to growers on a 'first in, first out' basis.

Payments from the Wheat Prices Stabilisation Fund will be paid 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 price the deficiency is made up first by drawing upon the Stabilisation Fund in respect of up to 200 million bushels of wheat from each crop. If the Fund is exhausted, the necessary deficiency payments will be made from the Commonwealth Government's 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' money in the Fund was

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 1967–68 Pool, this has involved an amount totalling $156 million.

The Commonwealth has guaranteed a price to growers applying to 200 million bushels of wheat exported from each crop during the period of the plan. The guaranteed price is subject to adjustment in each year of the plan in accordance with changes in price of cash costs, rail freights and handling and storage charges. There will no longer be any adjustment for imputed costs such as interest on farmers' equity. The guaranteed price per bushel in the 1969–70 season is $1.459 f.o.b. vessel, an increase of 0.9 cents on that of the previous season.

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.

Amending legislation, with effect from December 1969, gave the Australian Wheat Board discretionary power to sell wheat in Australia for purposes other than human consumption at prices below that set for human consumption but not less than the guaranteed price.

The home consumption price for 1969–70, the second year of the fifth plan, has been established at $1.725 per bushel, bulk basis, f.o.r. ports for wheat for human consumption. Wheat for the manufacture of flour for industrial use is priced at $1.435. The basic price for wheat for stock feed is $1.50; however, any purchaser who undertakes to buy the whole of his wheat requirements for stock feed purposes from the Board throughout the year ending 30 November 1970 will be charged $1.435 per bushel. These prices include a loading of 1.6 cents per bushel to cover the cost of transporting wheat from the mainland to Tasmania. There is provision in the plan for annual adjustments to be made to the home consumption price by the same amount as the guaranteed price is adjusted. The home consumption price for the 1968–69 season was $1.71 per bushel for wheat for human consumption and stock feed. This price included a loading of 1 cent per bushel to meet freight charges on wheat shipped to Tasmania.

Wheat delivery quotas plan

In March 1969 the Australian Wheat Growers' Federation put forward proposals for the allotment of quotas on deliveries of wheat to the Australian Wheat Board. The Federation's proposals were mainly designed to bring marketable supplies of wheat more into line with available outlets, following the record 1968–69 harvest. The proposals became effective for the 1969–70 harvest. State governments have the responsibility, for Constitutional reasons, of implementing the quota plan within the States. Each State (except in Queensland where the legislation will operate retrospectively from about March 1970) enacted the necessary enabling legislation in 1969. The period of operation of the legislation varies among the States.

Quotas are subject to annual review. Wheat in excess of a quota may be received from a grower if storage space is available but 'quota wheat' will receive preference as far as receival and subsequent sale by the Australian Wheat Board is concerned.

State quotas effective for the 1969–70 season and those proposed by the Federation and agreed to by all parties for 1970–71 are given below:

	1969–70 mil. bus	1970–71 mil. bus
Basic—		
New South Wales	123	92
Victoria	65	52
South Australia	45	36
Western Australia	86	83
Queensland	25	25
	344	288
Extra—		
New South Wales hard	..	7
New South Wales prime hard	7	12
Queensland prime hard	6	11
Total	*357*	*318*

Deliveries in 1969–70 made within the quotas established received the usual first advance payment of $1.10 per bushel for f.a.q. bulk wheat, f.o.r. ports basis. The same arrangement will apply to 1970–71 season's quota wheat. In addition, the quota plan provides that wheat received which is

declared by the Australian Wheat Board to have been sold and paid for within the season will be treated as quota wheat of the season and receive a first advance payment.

The States are responsible for determining the method of allocation of individual quotas within their respective boundaries. The bases of quota allocation vary from State to State, but in the main, quotas are based on a farm's average deliveries over a recent period.

Wheat standards

A description of the F.A.Q. (fair average quality) standard of wheat is given in issues of the Year Book up to No. 53 (*see*, for example No. 53 page 902). However, over recent years there has been an extension of the system and Australian wheat is now marketed under eleven main 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 classifications of wheat are:

Queensland prime hard
New South Wales prime hard
South Australian hard
Queensland F.A.Q.
New South Wales northern hard
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 1965 TO 1969

(*Source:* Bulk handling authorities in the various States. *See* above)

('000 bushels)

State	*1965*	*1966*	*1967*	*1968*	*1969*
New South Wales	(*b*)101,992	(*b*)141,182	(*b*)132,792	184,972	212,600
Victoria(*c*)	102,609	105,038	105,514	108,090	130,000
Queensland	15,956	19,213	24,987	30.600	32,700
South Australia	39,685	43,328	58,362	73,050	(*d*)95,486
Western Australia	128,175	134,898	144,487	159,677	183,787
Tasmania	1,060	1,060	1,060	1,060	1,060
Australia	**389,477**	**444,719**	**467,202**	**557,449**	**655,633**

(*a*) Includes terminals, sub-terminals, country installations, and temporary storage. (*b*) Storage at beginning of season. (*c*) Includes storage in southern New South Wales operated by the Victorian Grain Elevators Board. (*d*) Includes current contracts.

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, fourth and fifth International Wheat Agreements which covered the periods from 1 August 1956 to 31 July 1959, 1 August 1959 to 31 July 1962 and 1 August 1962 to 31 July 1968 were published in Year Books 43 (page 836), 48 (page 906) and 55 (page 836) respectively.

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. Details of the Arrangement were published in Year Book No. 55 (*see* page 836).

Research into the wheat industry

Details of research into the Wheat Industry were published in Year Book No. 55 and previous issues. To the end of June 1969, the Wheat Industry Research Council (set up by the Commonwealth Government) and the Wheat Industry Research Committees (set up in the wheat-growing States) had spent $13,128,000 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 1964–65 to 1968–69 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., 1964-65 TO 1968-69

State or Territory	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
New South Wales	18,537	16,150	19,575	20,619	21,340
Victoria	11,981	11,355	11,202	11,056	11,686
Queensland	5,236	4,941	5,674	5,867	6,063
South Australia	9,657	9,387	9,419	8,905	9,884
Western Australia	8,779	9,044	8,897	8,746	8,964
Tasmania	255	213	194	159	239
Australian Capital Territory	20	13	25	20	27
Australia	**54,465**	**51,103**	**54,986**	**55,372**	**58,203**

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 1968–69 were as follows: New South Wales, Heron (27.7), Gamut (10.5), Falcon (10.0), Olympic (10.0); Victoria, Insignia (48.2), Olympic (20.2), Pinnacle (12.6); Queensland, Mendos (38.7), Gamut (21.6), Spica (11.9), Timgalen (10.1); South Australia, Heron (34.3), Insignia (including Insignia 49) (27.5); and Western Australia, Gamenya (45.2), Falcon (15.3), Insignia (11.1). A detailed table of wheat varieties sown appears in the annual bulletin *The Wheat Industry* (*see* No. 116, published in March 1970).

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, 1964-65 TO 1968-69

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*Aust.*
			AREA ('000 ACRES)					
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
1967–68	8,215	3,224	1,477	2,864	6,647	12	2	22,441
1968–69	9,962	3,984	1,789	3,748	7,295	17	4	26,799
			PRODUCTION ('000 BUSHELS)(*a*)					
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
1967–68	87,323	28,317	27,417	26,899	106,975	316	42	277,289
1968–69	215,119	90,728	42,000	83,160	112,450	410	84	543,950
			YIELD PER ACRE (BUSHELS)(*a*)					
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
1967–68	10.6	8.8	18.6	9.4	16.1	26.3	17.8	12.4
1968–69	21.6	22.8	23.5	22.2	15.4	23.6	20.1	20.3

(*a*) 60 lb per bushel.

A graph showing the area sown to wheat for grain in Australia since 1900–01 appears on plate 38 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.

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, Western Australia and Victoria. Tasmania imports wheat from the mainland to satisfy its needs, though it exports flour made from local wheat which is particularly suitable for biscuits.

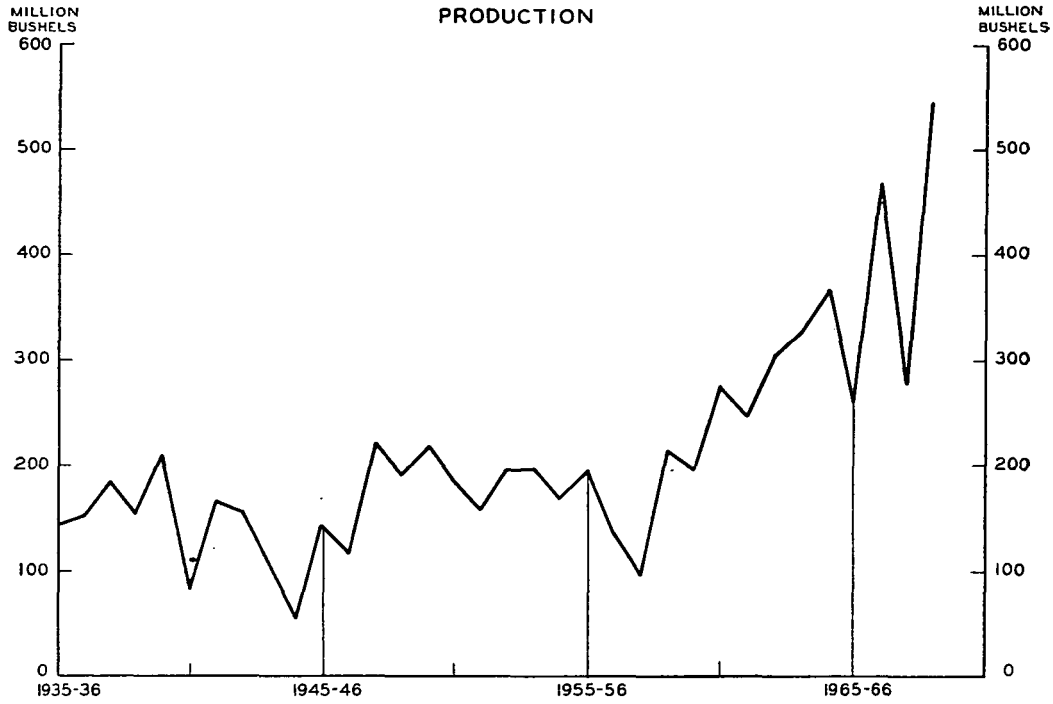
The area and production of wheat for grain in the 1968–69 season were at record levels. The area sown was 19 per cent above the previous record area sown in 1967–68. Production was 17 per cent greater than the previous record crop of 1966–67.

Price of wheat

The prices charged, per bushel, 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 1966, $1.53; 1967, $1.57; 1968, $1.66; 1969, $1.71; and 1970, $1.725 for wheat to millers and $1.50 for wheat sold for stock feed. These prices include a loading to meet freight charges incurred on wheat shipped to Tasmania (1.66 cents in 1966; 1.50 cents in 1967 and 1968; 1.0 cents in 1969; and 1.6 cents in 1970).

WHEAT FOR GRAIN: AUSTRALIA

1935-36 to 1968-69



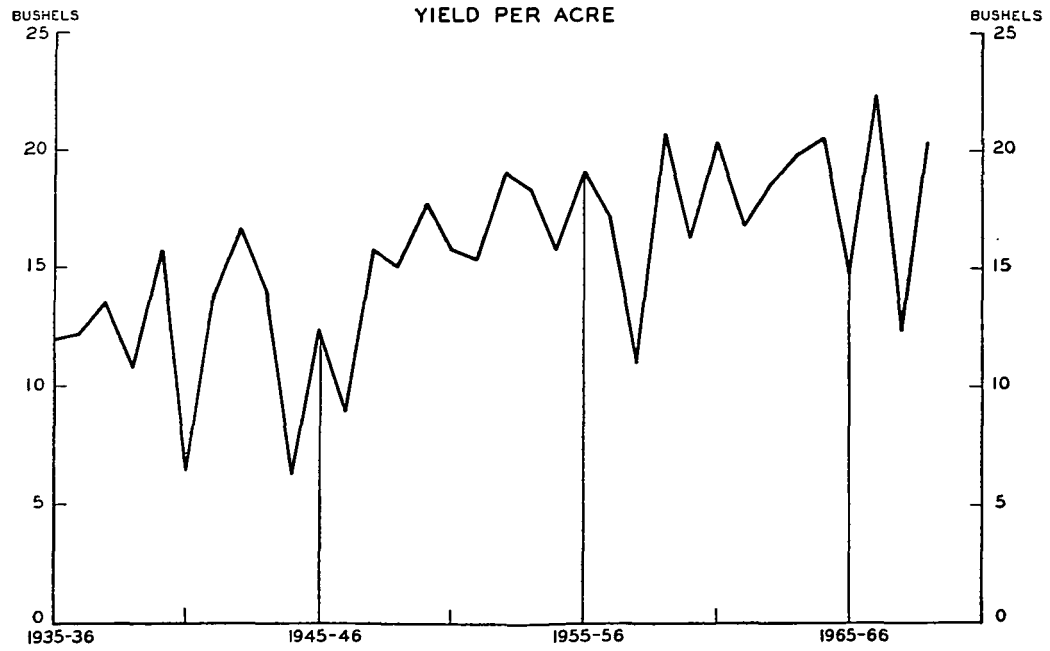


PLATE 39

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 30 June 1966, $1.38 to $1.48; 1967, $1.51 to $1.60; 1968, $1.41 to $1.49; 1969, $1.38 to $1.43.

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* Year Book No. 55, page 836 for a description of the International Grains Arrangement).

Details of export prices of wheat in earlier 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 1968–69 and the value per acre are shown below.

WHEAT FOR GRAIN: VALUE OF CROP(*a*), STATES, 1968-69

		N.S.W.	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Aust.(b)*
Aggregate value	$'000	289,061	122,008	55,827	112,551	151,306	467	731,334
Value per acre	$	29.02	30.62	31.21	30.03	20.74	26.85	27.29

(*a*) Gross value of total crop, including wheat used for seed and for stock feed on farms. Also includes payment of $24,172,000 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 1965 to 1969.

AUSTRALIAN WHEAT BOARD
WHEAT RECEIVED, STATES, 1964-65 TO 1968-69 HARVESTS
('000 bushels)

Pool	*Harvest*	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Aust.*
28	1964–65	137,494	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	184,643	74,619	32,884	50,007	96,823	247	439,224
67–68	1967–68	73,006	27,819	24,367	22,084	99,940	154	247,370
68–69	1968–69	196,828	94,672	38,781	79,447	105,679	210	515,617

Stocks of wheat (including flour in terms of wheat) held by the Australian Wheat Board in each State at 30 November for the years 1965 to 1969 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 1965 TO 1969
('000 bushels)(*b*)

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Aust.*
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	43,238	22,709	596	8,160	5,285	536	80,524
1968	10,148	13,298	688	6,791	20,580	353	51,858
1969	84,834	61,793	6,785	46,097	66,502	572	266,582

(*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 1965 to 1969 are shown in the following table.

WHEAT: PRODUCTION AND DISPOSAL, AUSTRALIA, 1965 TO 1969
(million bushels)(a)

	Year ended 30 November—				
	1965	1966	1967	1968	1969
Opening stocks (including flour) (b)(c)(d)	20.4	24.4	16.5	80.5	51.9
Production	368.8	259.7	466.6	277.3	544.0
Total available supplies	*389.2*	*284.1*	*483.1*	*357.8*	*595.9*
Exports—					
Wheat	244.5	163.5	293.1	187.7	219.0
Flour(b)	23.8	16.2	19.7	19.1	15.0
Breakfast foods and other products(b)(d)	0.7	0.7	0.9	1.0	1.9
Local consumption—					
Flour(b)(d)	44.2	44.2	43.8	45.0	44.5
Breakfast foods and other products(b)(d)	1.9	2.4	1.8	2.4	1.7
Stock feed wheat sales(d)	28.7	20.3	15.6	22.6	9.8
Seed	16.3	19.1	20.9	24.5	21.7
Retained on farm (excluding seed)	6.0	6.2	6.5	5.4	6.9
Closing stocks (including flour)(b)(c)(d)	24.4	16.5	80.5	51.9	266.6
Total disposals	*390.5*	*288.7*	*483.2*	*359.6*	*587.1*
Excess (+) or deficiency (−) of disposals in relation to available supplies(e)	+1.3	+4.6	+0.1	+1.8	−8.8

(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. and in differences related to the timing of official export statistics.

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, 1964-65 TO 1968-69
($'000)

	No. 28 Pool (*1964–65 Harvest*)	*No. 29 Pool(a)* (*1965–66 Harvest*)	*No. 30 Pool(a)* (*1966–67 Harvest*)	*No. 67/68 Pool(a)* (*1967–68 Harvest*)	*No. 68/69 Pool(a)* (*1968–69 Harvest*)
Paid to growers	409,337	294,886	535,698	319,261	476,219
Rail freight	57,765	34,605	76,538	42,009	90,516
Expenses	21,298	20,471	31,121	32,130	58,126
Total payments	*488,400*	*349,962*	*643,357*	*393,400*	*624,861*
Value of sales delivered	(b)471,052	(c)334,645	(d)635,429	(e)354,898	(f)686,361

(a) Incomplete. (b) Subject to additional $18,069,000 provided by the Commonwealth Government and payment of $722,000 to Wheat Industry Research Fund. (c) Subject to additional $16,154,000 provided by the Commonwealth Government and payment of $586,000 to Wheat Industry Research Fund. (d) Subject to additional $15,508,000 provided by the Commonwealth Government and payment of $1,097,000 to Wheat Industry Research Fund. (e) Subject to an estimated additional $42,870,000 to be provided by the Commonwealth Government and payment of $618,000 to Wheat Industry Research Fund. (f) Subject to an estimated additional $24,172,000 to be provided by the Commonwealth Government and payment of $1,287,000 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, 1964-65 TO 1968-69

	Quantity				*Value*		
		Flour(a)					
Year	*Wheat*	*As flour*	*In terms of wheat(b)*	*Total (in terms of wheat)*	*Wheat*	*Flour(a)*	*Total*
	'000 bushels	short tons	'000 bushels	'000 bushels	$'000 f.o.b.	$'000 f.o.b.	$'000 f.o.b.
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	379,352	17,564	256,615	361,227	24,600	385,827
1967–68	238,778	406,847	18,837	257,613	342,767	25,303	368,070
1968–69	179,707	379,267	17,560	197,267	258,334	23,822	282,156

(*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, 1964-65 TO 1968-69

('000 bushels)

Country to which exported	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Chile	..	..	1,725	6,271	3,849
China (mainland)	83,623	74,131	79,523	88,781	43,431
Japan	16,276	13,357	15,851	22,484	42,149
Korea (North)	1,663	3,737	3,952	1,466	3,491
Lebanon	2,725	1,157	5,130	3,497	3,167
Malaysia	(*a*)3,669	(*a*)3,758	9,244	9,374	9,299
Netherlands	..	..	4,406	4,479	5,935
Norway	2,830	702	4,142	2,728	3,195
Peru	..	..	848	3,041	5,668
Rhodesia	1,497	2,300	1,971	2,948	2,864
Singapore	(*b*)	(*b*)4,479	7,403	9,297	3,924
United Kingdom	19,132	23,293	14,233	23,622	28,412
Other(*c*)	78,565	62,565	90,623	60,790	24,323
Total	**209,980**	**189,479**	**239,051**	**238,778**	**179,707**

(*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 of shipments made 'for orders' which could not be classified to countries.

The following table shows the exports of flour to various countries for each of the years 1964–65 to 1968–69. The figures relate to exports of white flour (plain and self-raising), sharps and wheatmeal for baking.

FLOUR(*a*): EXPORTS TO VARIOUS COUNTRIES, AUSTRALIA, 1964-65 TO 1968-69
(Short tons)

Country to which exported	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Ceylon	191,144	170,083	144,982	160,620	143,005
Fiji	34,915	34,219	24,642	33,735	35,323
Guyana	2,381	2,463	2,171	7,378	5,925
Indonesia	9,124	3,086	24,766	65,564	58,595
Libya	629	487	1,504	1,036	8,488
Malawi	8,360	6,192	7,413	10,483	6,464
Mauritius	19,847	11,817	12,147	17,372	17,004
Papua and New Guinea	13,871	14,889	16,139	17,804	18,158
Saudi Arabia	15,822	16,692	12,111	17,183	15,019
South Yemen	44,990	29,968	25,272	9,958	8.081
Trucial States	10,965	8,114	8,489	12,207	10,840
United Kingdom	45,579	33,075	19,411	11,090	9,156
Other(*b*)	200,410	85,116	80,305	42,417	43,209
Total	**598,037**	**416,201**	**379,352**	**406,847**	**379,267**

(*a*) One short ton (2,000 lb) of flour is taken as being equivalent to 46.3 bushels of wheat. (*b*) Includes particulars of shipments made 'for orders' which could not be classified to countries.

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 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 1968–69 the Canadian harvest occurred from August to September 1968 and the Australian harvest from October 1968 to February 1969.

WHEAT: AREA, PRODUCTION AND YIELD PER ACRE IN VARIOUS COUNTRIES
1966-67 TO 1968-69

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

Continent and country	*Area*			*Production*			*Yield per acre*		
	1966–67	*1967–68*	*1968–69*	*1966–67*	*1967–68*	*1968–69*	*1966–67*	*1967–68*	*1968–69*
	'000 acres	'000 acres	'000 acres	mill. bus	mill. bus	mill. bus	bus	bus	bus
Africa	18,978	19,768	21,535	193	225	294	10.2	11.3	13.6
Asia—									
China (mainland)(*b*)	60,500	60,500	61,776	764	845	772	12.6	14.0	12.5
India	31,273	31,723	37,061	383	419	608	12.2	13.2	16.4
Pakistan	12,874	13,385	14,977	145	161	238	11.3	12.0	15.9
Turkey	19,938	20,046	20,270	357	372	353	17.9	18.5	17.4
Total, Asia(a)	*151,100*	*156,278*	*164,003*	*2,033*	*2,244*	*2,429*	*13.5*	*14.4*	*14.8*
Europe—									
France	9,864	9,709	10,107	415	525	551	42.1	54.1	54 5
Germany, Federal Republic of	3,432	3,494	3,618	167	214	228	48.5	61.2	63.0
Italy	10,561	9,914	10,576	345	353	355	33.7	35.6	33.5
Spain	10,356	10,534	9,761	179	208	195	19.3	19.7	20.0
Total Europe(a)	*69,103*	*68,996*	*70,264*	*2,303*	*2,660*	*2,660*	*33.3*	*38.6*	*37.9*
North and Central America—									
Canada	29,692	30,121	29,422	827	593	650	27.9	19.7	22.1
United States	49,867	58,771	55,262	1,312	1,522	1,576	26.3	25.9	28.5
Total North and Central America(a)	*81,345*	*91,009*	*86,610*	*2,196*	*2,194*	*2,293*	*27.0*	*24.1*	*26.5*
Oceania—									
Australia	20,823	22,441	26,799	467	277	544	22.4	12.4	20.3
Total, Oceania(a)	*21,043*	*22,745*	*27,113*	*478*	*293*	*560*	*22.7*	*12.9*	*20.7*
South America—									
Argentine	12,884	14,362	14,423	230	269	211	17.8	18.7	14.6
Total, South America(a)	*17,717*	*18,903*	*20,386*	*311*	*348*	*311*	*17.5*	*18.4*	*15.3*
U.S.S.R. (Europe and Asia)	172,866	165,624	166,128	3,693	2,840	3,432	21.4	17.1	20.7
World total(a)	**532,152**	**543,323**	**556,039**	**11,207**	**10,804**	**11,978**	**21.1**	**19.9**	**21.5**

(*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 1968–69 Australia's share of the world wheat exports has averaged 12 per cent.

WORLD EXPORTS OF WHEAT AND WHEAT FLOUR IN TERMS OF WHEAT
1964-65 TO 1968-69

(*Source:* International Wheat Council—*World Wheat Statistics*)

(Million bushels)

Year and country of primary destination	*Exporting country*							
	Argentina	*Australia*	*Canada*	*E.E.C.*	*U.S.A.*	*U.S.S.R.*	*Other*	*Total*
1968–69p—								
Africa(*a*)—								
United Arab Republic	..	..	0.8	35.5	0.3	7 0	27.9	71.5
Other	0.9	7.2	7.5	33.6	30.8	0.9	9.8	90.7
Total, Africa	*0.9*	*7.2*	*8.3*	*69.1*	*31.1*	*7.9*	*37.7*	*162.2*
Asia(*a*)—								
China (mainland)	..	43.4	78.2	9.3	..	..	..	130.9
India	4.4	3.2	26.7	..	85.1	..	..	119.5
Japan	0.7	42.1	45.8	0.9	67.6	..	1.8	158.9
Korea, South	..	0.4	..	..	55.3	..	..	55.6
Other	0.9	45.6	10.4	26.0	116.1	22.0	10.7	231.7
Total, Asia	*6.0*	*134.7*	*161.1*	*36.2*	*324.0*	*22.0*	*12.5*	*696.6*
Europe(*a*)—								
Czechoslovakia	..	..	..	..	..	34.2	..	34.2
Germany, East	..	..	..	..	..	40.3	0.1	40.4
Germany, Federal Republic of	..	..	13.2	..	11.9	3.1	6.5	34.7
Italy	15.9	..	13.6	..	16.5	1.5	2.2	49.6
Netherlands	3.3	8.1	6.7	..	22.9	4.8	0.3	46.0
Poland	..	..	6.7	..	0.5	35.2	..	42.4
United Kingdom	4.8	29.1	58.3	31.8	4.5	11.7	26.2	166.4
Other	3.3	4.1	24.6	22.9	27.4	21.1	11.4	114.9
Total, Europe	*27.3*	*41.3*	*122.9*	*54.7*	*83.7*	*152.0*	*46.7*	*528.6*
North and Central America	..	0.1	18.7	4.8	19.7	10.4	0.7	54.4
Oceania	..	2.3	..	..	0.1	..	0.1	2.6
South America—								
Brazil	44.7	..	..	..	29.7	6.0	10.3	90.6
Other	23.4	10.6	3.2	0.6	51.5	..	3.3	92.6
Total, South America	*68.1*	*10.6*	*3.2*	*0.6*	*81.2*	*6.0*	*13.6*	*183.3*
U.S.S.R.	..	..	5.4	..	..	..	..	5.4
All other	..	..	..	3.6	..	..	..	3.6
World total, 1968-69	**102.3**	**196.2**	**319.6**	**169.0**	**539.8**	**198.3**	**111.4**	**1,636.7**
1967–68	50.3	257.6	327.1	206.1	742.1	186.8	143 6	1,913.7
1966–67	112.4	256.6	545.0	174.4	734.1	151.6	88.4	2,062.5
1965–66	292.0	208.7	545.0	230.2	859.7	80.9	79.4	2,296.0
1964–65	163.3	237.7	437.6	222.7	720.4	42.6	57.0	1,881.2

(*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 770–1 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 1968–69 accounted for 57 per cent of the area of all crops, oats grown for grain represented only 8 per cent.

OATS FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE
STATES AND AUSTRALIAN CAPITAL TERRITORY, 1964-65 TO 1968-69

	N.S.W.	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*Aust.*
				AREA ('000 ACRES)				
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
1967–68	907	723	31	525	1,158	35	1	3,380
1968–69	1,185	991	55	516	1,092	31	1	3,872
				PRODUCTION ('000 BUSHELS)(*a*)				
1964–65	22,885	22,446	1,171	8,977	14,011	520	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
1967–68	8,235	6,859	450	3,299	19,759	1,014	12	39,628
1968–69	27,454	30,230	1,119	11,895	22,942	583	27	94,250
				YIELD PER ACRE (BUSHELS)(*a*)				
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
1967–68	9.1	9.5	14.6	6.3	17.1	28.7	20.3	11.7
1968–69	23.2	30.5	20.3	23.1	21.0	18.5	22.4	24.3

(*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 38, page 758 and the production of oats from 1935–36 is shown in plate 40, page 777.

Production of oats in 1968–69, 94,250,000 bushels was 12 per cent below the record production in 1966–67. Yield per acre was 24.3 bushels, compared with the record yield per acre of 25.2 bushels in 1966–67.

Value of oat crop

The average wholesale price in the Melbourne market for oats of good milling quality was $0.72 per bushel in 1968–69, compared with $1.13 in 1967–68. The estimated gross value of the oat crop in each State for the 1968–69 season and the value per acre were as follows.

OATS FOR GRAIN: VALUE OF CROP, STATES, 1968-69

		N.S.W.	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Aust.*(*a*)
Aggregate value	$'000	25,532	13,029	1.007	5,686	12,978	505	58,763
Value per acre	$	21.55	13.14	18.30	11.03	11.88	16.07	15.18

(*a*) Includes the Australian Capital Territory.

Exports of oats

OATS: EXPORTS, AUSTRALIA, 1964-65 TO 1968-69

		1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Quantity	'000 bus	20,161	13,825	22,134	10,033	18,373
Value	$'000 f.o.b.	15,616	11,980	17,450	8,408	13,042

In 1968–69 the principal countries of destination were the Federal Republic of Germany (4,768,000 bushels), the Netherlands (4,597,000 bushels), Japan (3,401,000 bushels), the United Kingdom (2,164,000 bushels) and Italy (2,141,000 bushels).

World production of oats

The world production of oats for the year 1968, according to figures issued by the United States Department of Agriculture, amounted to 3,493 million bushels, harvested from 76.3 million acres, resulting in an average yield of 45.8 bushels an acre. This compared with an estimated production in the previous year of 3,255 million bushels from an area of 74.2 million acres and an average yield of 43.9 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 crops. Like oats, it may also be sown for fodder production or for grain. When sown for fodder, sowing may take place either early of 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. As the proportion of bagged barley to total receivals has been falling in recent years (14 per cent of Pool No. 30 as compared to 85 per cent of Pool No. 26) the following table shows details of advances made per bushel of bulk barley and not bagged as in previous issues.

AUSTRALIAN BARLEY BOARD: BARLEY RECEIVED, SOLD, ETC.
1964-65 TO 1968-69

Pool	*Quantity received*	*Quantity sold(a)*	*Total advances per bushels(b)*	*Net payments to growers*
	'000 bushels	'000 bushels	$	$'000
No. 26 (1964–65 Crop)	25,465	25,404	1.1292	25,184
„ 27 (1965–66 „)	14,922	14,894	1.1993	14,824
„ 28 (1966–67 „)	22,043	22,026	1.1940	22,759
„ 29 (1967–68 „)	7,985	7,975	1.1912	7,511
„ 30 (1968–69 „)	27,280	27,251	0.9200	(c)20,433

(*a*) Includes surplus or shortage in out-turn except for No. 30 Pool for which the sales are not yet complete. (*b*) 2-row No. 1 Grade (bulk) less freight. (*c*) As at 30 June 1970. At that date it was estimated that the amount still to be paid to growers was 4.881 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 then record level of 2,830,000 acres. However, the area sown in 1968–69, 3,314,000 acres, was 17 per cent more than the area in 1960–61. The production of barley for grain in 1968–69, 72,588,000 bushels, was a record and was 7 per cent more than the previous 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 1964–65 to 1968–69, are shown in the following table. Separate details for 2-row and 6-row varieties are shown for all States for 1968–69. The area sown to barley from 1900–01 is shown in plate 38, page 758 and the production of barley from 1935–36 is shown in plate 40, page 777.

BARLEY FOR GRAIN: AREA, PRODUCTION AND YIELD PER ACRE
STATES AND AUSTRALIAN CAPITAL TERRITORY, 1964-65 TO 1968-69

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*Aust.*
				AREA ('000 ACRES)				
1964–65	239	187	225	1,095	303	15	..	2,064
1965–66	236	192	338	1,098	413	20	..	2,298
1966–67	385	228	384	1,107	373	21	..	2,498
1967–68	367	305	342	1,157	416	24	..	2,611
1968–69—								
2-row	291	387	385	1,333	198	25	..	2,620
6-row	195	22	42	79	355	1	..	694
Total	*486*	*409*	*427*	*1,412*	*553*	*26*	..	*3,314*
				PRODUCTION ('000 BUSHELS)(*a*)				
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	11,796	5,421	13,194	23,698	6,707	772	..	61,588
1967–68	4,834	2,709	8,965	12,380	7,027	884	..	36,798
1968–69—								
2-row	6,032	8,394	11,812	27,630	3,712	858	..	58,438
6-row	5,179	491	1,058	1,921	5,475	26	..	14,149
Total	*11,212*	*8,885*	*12,869*	*29,551*	*9,187*	*884*	..	*72,588*
				YIELD PER ACRE (BUSHELS)(*a*)				
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	30.6	23.8	34.4	21.4	18.0	36.7	..	24.7
1967–68	13.2	8.9	26.2	10.7	16.9	36.8	..	14.1
1968–69—								
2-row	20.7	21.7	30.7	20.7	18.7	33.9	..	22.3
6-row	26.5	22.5	25.1	24.4	15.4	28.2	..	20.4
Total	*23.1*	*21.7*	*30.1*	*20.9*	*16.6*	*33.7*	..	*21.9*

(*a*) 50 lb per bushel.

For Australia, 79 per cent of the area of barley for grain in 1968–69 was sown with 2-row barley. The proportion, however, varied considerably in the several States. The utilisation of barley during the season ended November 1969 was as follows: exports, 24,189,000 bushels; malting and distilling, 14,000,000 bushels; pearl barley, 119,000 bushels; seed, 4,300,000 bushels.

A graph showing the production of barley in Australia since 1935–36 is shown in plate 40, page 777, and a map showing the distribution of barley growing areas throughout Australia in 1962–63 appears on page 1014 of Year Book No. 50. The area sown to barley from 1900–01 is shown in plate 38, page 758.

Value of barley crop

The average wholesale price for 2-row English malting barley in the Melbourne market was $1.52 per bushel in 1968–69 compared with $1.53 in 1967–68. The estimated gross value of the barley crop in each State for the 1968–69 season and the value per acre are shown in the following table.

BARLEY FOR GRAIN: VALUE OF CROP, STATES, 1968-69

		N.S.W.	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Aust.*
Aggregate value	$'000	13,479	8,868	12,766	25,657	8,619	1,142	70,531
Value per acre	$	27.71	21.68	29.90	18.17	15.59	43.56	21.28

Exports of barley

South Australia is the principal exporting State, and China (Taiwan), Italy, Japan and the United Kingdom were the principal countries to which barley was shipped in 1968–69. Particulars of exports of Australian-produced barley for the years 1964–65 to 1968–69 are shown in the following table.

BARLEY: EXPORTS, AUSTRALIA, 1964-65 TO 1968-69

		1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Quantity	'000 bus	16,281	9,994	18,718	5,701	19,871
Value	$'000 f.o.b.	18,002	11,508	21,569	6,569	18,246

In addition to exports of barley grain, there are also exports of Australian pearl and Scotch barley, the total for 1968–69 amounting to 77,000 lb, valued at $5,000, the main countries of consignment being Malaysia and Mauritius. Imports of barley into Australia amounted to 66,322,000 lb, valued at $1,757,000 during 1968–69.

Barley malt

Details of the recorded usage of barley and the production of barley malt in the years 1964–65 to 1968–69 are given in the following table.

BARLEY MALT: GRAIN USED AND MALT PRODUCED, AUSTRALIA 1964-65 TO 1968-69

		1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Barley used	'000 bus(*a*)	11,667	12,883	13,601	13,003	n.a.
Malt produced	'000 bus(*b*)	12,127	13,235	14,027	13,547	n.a.

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

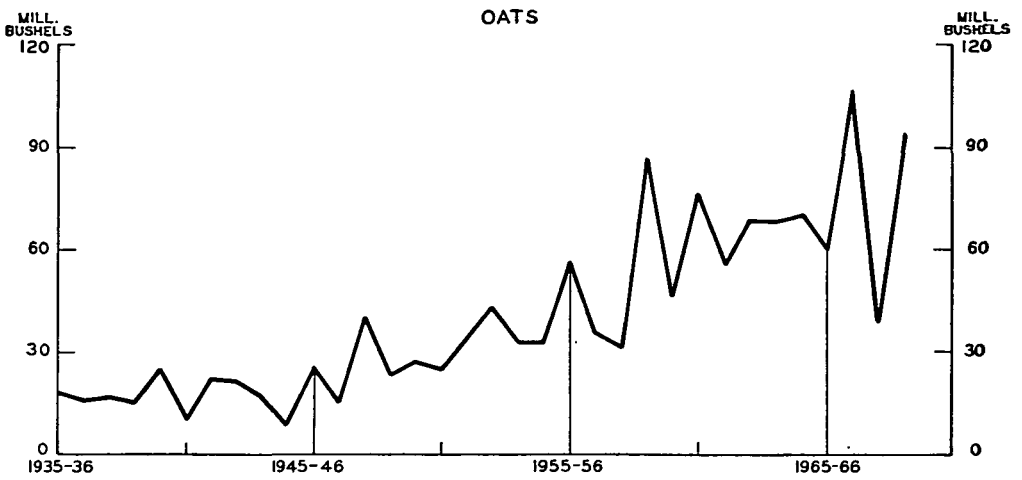
Since 1952–53 the production of malt in Australia has been sufficient to meet local requirements and to provide a margin for export. Exports of Australian produce amounting to 4,469,000 bushels (value $9,362,000) and 3,971,000 bushels (value $7,268,000) were recorded in 1967–68 and 1968–69 respectively.

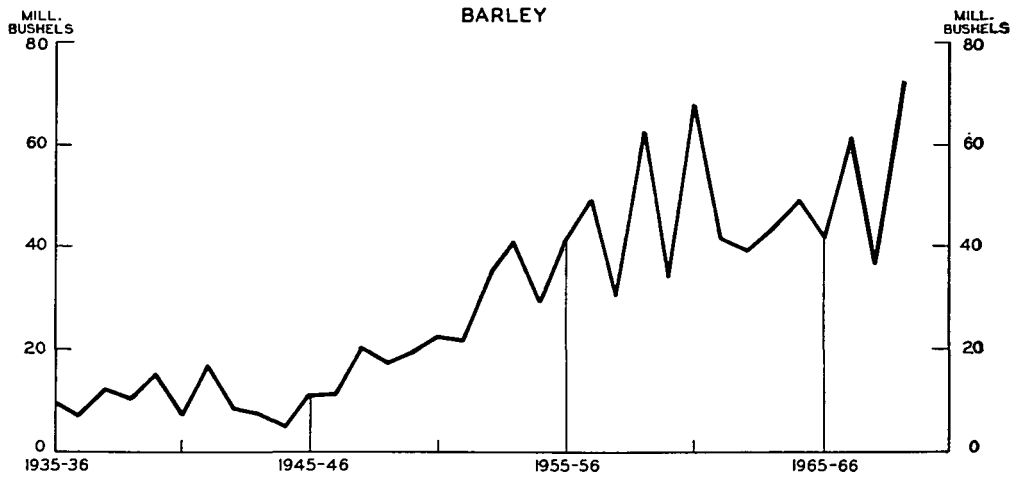
World production of barley

In comparison with the barley production of other countries that of Australia is extremely small. The main producers in 1968 were the Union of Soviet Socialist Republics, the United States of America, France and the United Kingdom. China (Mainland) is also normally a major producer, but details for 1968 are not available. Australian production in that year was approximately 1 per cent of the world total.

PRODUCTION OF OATS, BARLEY AND RAW SUGAR

AUSTRALIA, 1935-36 TO 1968-69





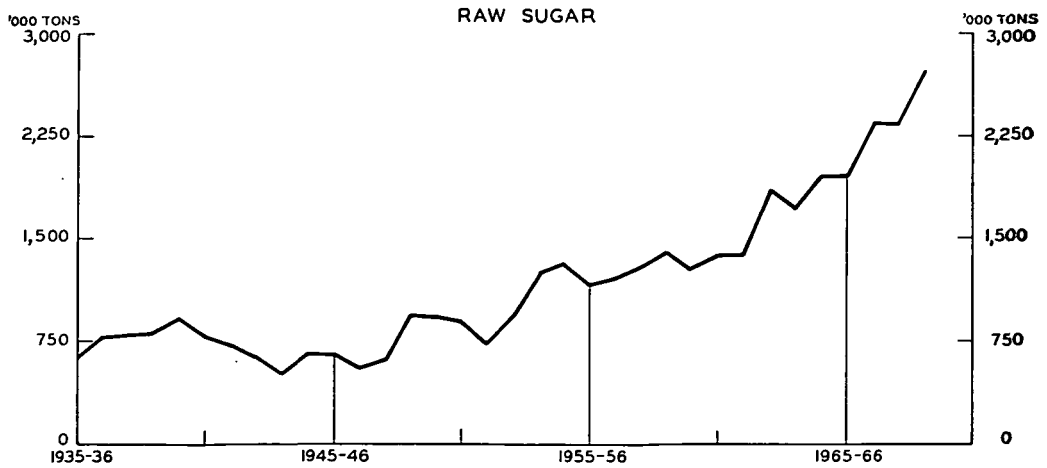


PLATE 40

According to estimates made by the United States Department of Agriculture, world production of barley in the year 1968 amounted to 5,094 million bushels harvested from 165 million acres, equivalent to a yield per acre of 30.9 bushels. This compared with the production of 4,734 million bushels in the previous year from 158.5 million acres, giving a yield per acre of 29.9 bushels.

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
1964-65 TO 1968-69

	Area			*Production(a)*			*Yield per acre(a)*		
Year	*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
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	11,713	15.6	25.2	23.3
1967–68	78,165	382,192	461,834	1,580	8,939	10,582	20.2	23.4	22.9
1968–69	136,945	436,479	583,409	3,927	11,800	15,831	28.7	27.0	27.1

(*a*) 60 lb per bushel. Production in New South Wales (for years prior to 1968–69) and Queensland harvested from crop sown in previous year. (*b*) Includes small areas sown and quantities produced in other States and Territories. Excludes Northern Territory for 1967–68 and 1968–69.

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., 1964-65 TO 1968-69

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*Aust.*
			AREA (ACRES)					
1964–65	41,660	2,353	168,300	..	10	..	..	212,323
1965–66	42,000	1,683	153,081	..	1	..	..	196,765
1966–67	49,019	1,407	151,010	..	5	..	..	201,441
1967–68	51,569	917	147,732	..	155	..	..	200,373
1968–69	54,484	1,161	120,200	..	39	..	..	175,884
			PRODUCTION ('000 BUSHELS)(*a*)					
1964–65	1,878	114	4,887	..	..	..	..	6,879
1965–66	1,607	101	3,209	..	..	..	..	4,918
1966–67	2,471	72	4,948	..	..	..	..	7,491
1967–68	2,320	32	4,778	..	2	..	..	7,132
1968–69	3,083	72	3,670	..	1	..	..	6,826
			YIELD PER ACRE (BUSHELS)(*a*)					
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	50.4	51.3	32.8	..	12.8	..	..	37.2
1967–68	45.0	34.9	32.3	..	11.4	..	..	35.6
1968–69	56.6	62.2	30.5	..	17.0	..	..	38.8

(*a*) 56 lb per bushel. Production in New South Wales (for years prior to 1968–69) and Queensland harvested from crop sown in previous year.

The average yield for Australia for the five-year period ended 1968–69 was 33.7 bushels per acre. Among principal producing countries, the United States of America averaged 78.5 bushels per acre and Brazil 20.1 bushels for 1968.

Value of maize crop

The average wholesale price of maize in the Melbourne market in 1968–69 was $2.83 per bushel compared with $2.14 in 1967–68. The estimated gross value of the crop in each State for the 1968–69 season and the value per acre were as follows.

MAIZE FOR GRAIN: VALUE OF CROP, STATES, 1968-69

		N.S.W.	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Aust.*
Aggregate value	$'000	4,778	108	4,846	..	1	..	9,733
Value per acre	$	87.70	93.02	40.32	..	25.64	..	55.34

Exports of maize

MAIZE: EXPORTS, AUSTRALIA, 1964-65 TO 1968-69

	1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Quantity '000 bus	20	1	80	101	7
Value $'000 f.o.b.	42	4	114	169	5

Imports of maize into Australia in 1968–69 amounted to 27,000 bushels, valued at $183,000.

World production of maize

According to figures issued by the United States Department of Agriculture, world production of maize in the year 1968 amounted to 9,046 million bushels, harvested from 252 million acres, giving an average yield per acre of 35.9 bushels. This compared with production in the previous year of 9,444 million bushels from 255 million acres, and an average yield of 37.1 bushels per acre.

The United States of America is the most important maize-producing country in the world, and during the three years ended 1968 the area sown to maize in that country averaged 58 million acres or 23 per cent of the world total. During the same period production averaged 4,417 million bushels or 48 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 Queensland, 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 1968–69 was shipped to Papua and New Guinea, and Okinawa. Details relating to area, production, and Australian-produced exports for the years 1964–65 and 1968–69 are shown in the following table.

RICE: AREA, PRODUCTION AND EXPORTS, AUSTRALIA(*a*)
1964-65 TO 1968-69

Year	No. of holdings growing rice(*b*)	Area	Production (Paddy rice)		Average yield (paddy) per acre	Imports	Exports
			Quantity	Gross value(*c*)			
		acres	'000 bushels (*d*)	$'000	bushels (*d*)	'000 lb	'000 lb
1964–65	1,074	61,617	8,030	8,529	130.3	2,987	142,724
1965–66	1,115	64,398	9,540	10,224	148.1	3,951	142,256
1966–67	1,164	73,724	11,250	12,445	152.6	3,718	198,370
1967–68	1,210	75,957	11,597	12,831	152.7	3,749	224,956
1968–69	1,464	83,267	13,420	14,358	161.2	3,225	245,202

(*a*) For some years 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 1968–69 hay represented 8 per cent of the total area of crops. Up to 1946–47 hay, in terms of area, was second only to wheat for grain, but in more recent years it has been supplanted by green fodder (for feeding-off). 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
1964-65 TO 1968-69

Season	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
				AREA ('000 ACRES)					
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
1967–68	586	1,165	119	429	318	179	2	2	2,800
1968–69	823	1,847	112	615	341	211	2	4	3,955
				PRODUCTION ('000 TONS)					
1964–65	1,040	2,506	167	487	390	364	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
1967–68	806	1,556	296	418	421	309	3	3	3,812
1968–69	1,439	3,635	263	985	501	494	5	7	7,330
				YIELD PER ACRE (TONS)					
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
1967–68	1.38	1.34	2.49	0.97	1.32	1.73	1.30	1.19	1.36
1968–69	1.75	1.97	2.35	1.60	1.47	2.35	2.38	1.60	1.85

Plate 38 shows the area under hay since 1900–01 (page 758).

Information regarding areas cut for hay and varieties grown in 1968–69 is given in the following table

HAY: AREA OF VARIOUS KINDS GROWN, STATES AND TERRITORIES
1968-69
(Acres)

State or Territory	Oaten	Lucerne	Wheaten	Other	Total
New South Wales	155,254	250,268	125,779	291,570	822,871
Victoria	270,785	99,683	41,492	1,435,087	1,847,047
Queensland	12,986	68,278	10,950	19,713	111,927
South Australia	150,296	78,314	52,938	333,333	614,881
Western Australia	106,133	2,400	34,290	198,353	341,176
Tasmania	15,249	2,901	263	192,150	210,563
Northern Territory	..	(a)	..	2,113	2,113
Australian Capital Territory	1,357	1,814	293	921	4,385
Australia	**712,000**	**(b)503,658**	**266,005**	**2,473,240**	**3,954,963**

(a) Not available for publication; included in 'Other hay'. (b) Incomplete; excludes the Northern Territory.

For all States and the Territories combined, the proportions of the areas sown to the principal kinds of hay in 1968–69 were 18.0 per cent for oaten, 12.7 per cent for lucerne, 6.7 per cent for wheaten, and 62.5 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 1968–69 season.

HAY: VALUE OF CROP, STATES 1968-69

		N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.(a)
Aggregate value	$'000	44,985	79,274	9,547	14,114	10,132	7,850	166,284
Value per acre	$	54.67	42.92	85.30	22.95	29.70	37.28	42.04

(a) Includes $166,000 and $216,000 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 1965 to 1969 are given in the table below.

STOCKS OF HAY HELD ON FARMS, STATES AND A.C.T., 1965 TO 1969
(Tons)

31 March—	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	A.C.T.	Aust.(a)
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
1968	1,273,385	1,104,034	241,922	267,677	223,115	297,118	3,594	3,410,845
1969	1,819,874	2,987,848	152,945	723,057	243,836	450,547	4,975	6,383,082

(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 1968–69 exports amounting to 3,412 tons, valued at $178,000, were made, principally to Kuwait, Malaysia and Singapore. 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 livestock 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 1968–69 the area under green fodder (5,713,886 acres) consisted of oats (2,148,069 acres), lucerne (2,478,293 acres) barley (225,095 acres), sorghum (304,909 acres), wheat (177,190 acres), rye (27,317 acres), maize (21,517 acres), sugar cane (1,086 acres), and other crops (330,410 acres). Particulars concerning the area of green fodder in the several States during each of the years 1964–65 to 1968–69 are given in the following table.

GREEN FODDER: AREA, STATES AND TERRITORIES, 1964-65 TO 1968-69
('000 acres)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
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
1967–68	2,326	545	1,337	1,217	414	75	..	1	5,916
1968–69	2,428	352	1,406	1,130	297	99	1	1	5,714

In the 1968–69 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 38, page 758. The value of these crops is variously estimated in the several States, but the Australian total, excluding Western Australia, may be taken as approximately $30,000,000 for the 1967–68 season and $33,000,000 for the 1968–69 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 1964–65 to 1968–69 is given in the following table.

ENSILAGE: PRODUCTION AND FARM STOCKS, STATES AND A.C.T.
1964-65 TO 1968-69

(Tons)

Period	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*Aust.*
Production during—								
1964–65 season	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
1967–68 ,,	134,408	160,771	36,238	22,388	30,322	66,602	40	450,769
1968–69 ,,	208,650	337,360	18,221	91,925	45,469	71,209	98	772,932
Farm stocks at—								
31 March 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
,, ,, 1968	365,488	82,139	79,461	24,749	21,460	54,118	4	627,419
,, ,, 1969	393,838	263,190	68,222	80,892	30,078	66,596	27	902,843

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, which replaced the 1961 agreement (extended by supplementary agreements) is for the period from 1 July 1969 to 30 June 1974 and prescribes 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. Exports are limited by the export quota provisions of the International Sugar Agreement (*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. Production for 1969–70 is estimated to be 2,178,000 tons 94 net titre, to which New South Wales is expected to contribute approximately 98,000 tons.

International Sugar Agreement

The International Sugar Agreement of 1937 was superseded by the International Sugar Agreements of 1953, 1958 and 1968. Details of the 1937, 1953 and 1958 Agreements were given in Year Books No. 40, pages 881–2, No. 48, page 936 and No. 54, page 892 respectively.

The 1968 International Sugar Agreement came into force on 1 January 1969. The Agreement is for a five year period, but the operation of the Agreement is to be reviewed before the end of the third year. It is possible that such a review will result in modifications to the Agreement to apply in its final two years.

Like its predecessors, the 1968 Agreement is built around a schedule of export quotas governing the net exports of exportation members to the world 'free' market. The Agreement is designed to maintain a balance between total world free market supply and demand by adjustments to the level of quotas in effect of exporting members. Quotas in effect cannot be adjusted downwards below 90 per cent of basic export tonnages except in exceptional circumstances where adjustments down to 85 per cent may be possible.

Quota adjustments under the Agreement must take account of the prices ruling in the world free market. The quota adjustment provisions pivot around a world free market price of U.S. four cents per pound f.o.b. and stowed Caribbean port, in bulk. When the price is below U.S. four cents, the system is designed to provide an upward pressure on prices by quota reductions. When the price is above U.S. four cents, the system is designed to apply a downward pressure on prices by increases in the level of quotas in effect above basic export tonnages.

Under the Agreement, exporters are required to establish and maintain certain levels of minimum stocks which are only to be released to the market when the price rises above U.S. 4.75 cents. If the price rises above U.S. 5.25 cents all quota restraints become inoperative and, if the price rises above U.S. 6.50 cents, exporters are required to supply importer members with certain quantities of sugar at prices not exceeding the commercial equivalent of U.S. 6.50 cents.

If the price is below U.S. 3.50 cents, minimum export quotas in effect are to apply, while at prices below U.S. 3.25 cents, members are obliged to prohibit imports from non-member countries.

Australia has a quota under this Agreement of 1,100,000 metric tons raw value (about 1,040,000 long tons of actual raw sugar) and is obliged to establish a minimum level of uncommitted stocks amounting to 15 per cent of this quantity.

Australian exports of negotiated price sugar to the United Kingdom under the British Commonwealth Sugar Agreement, and to the U.S.A. market, are not controlled by the International Sugar Agreement.

British Commonwealth Sugar Agreement

On 1 January 1953 the British Commonwealth Sugar Agreement became effective. The Agreement is now of indefinite duration but is subject to triennial review, with the next such review to be held in 1971. Under the Agreement Australia has a negotiated price quota of 335,000 tons per annum to the United Kingdom. The negotiated price for the years 1966, 1967 and 1968 of £stg43.10s. per ton of bulk raw sugar, f.o.b. and stowed, has been extended for the three years to 1971.

The Agreement also allows an adjusted overall Agreement quota (which includes the negotiated price quota) of 630,000 tons per annum to Australia. The balance of this quota over the negotiated price quota may be sold to preferential markets on the basis of the world market price plus preference, as part of Australia's export quota under the International Sugar Agreement.

Exports to the United States of America

Australian exports to the U.S.A. are governed by legislation enacted by the U.S.A. in 1965 and covering the period to the end of 1971. These exports are sold on the U.S. domestic raw sugar market, the supplies to which are regulated with a view to ensuring stable and equitable prices, independently of prices ruling elsewhere in the world.

Australian export entitlements to this market vary from year to year but have recently been of the order of 170,000 tons of raw sugar per year.

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 brought 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 and to $15 from 1 July 1969.

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.

Under the Sugar Agreement 1969 the Queensland Government contributes to the fund $924,000 annually, reimburses the Committee for the actual expenditure on export sugar rebates, and, 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 loan of $19 million, plus interest on a temporary advance of this amount from the Reserve Bank, to assist the returns from No. 1 Pool in the 1966 season, and $3,559,193 for a similar purpose in respect of the 1967 season. The total amount of $23,327,590 so advanced will be repayable over ten years commencing in mid-1970, and will not be subject to interest before then. Thereafter it will incur interest at the rate of five per cent per annum.

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 to give a total bulk storage capacity of 1,300,000 long tons. 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 1964–65 to 1968–69 are shown in the following table. The areas shown in the table do not include the small acreage cut for green fodder, which in 1968–69 amounted to 1,086 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, 1964–65 TO 1968–69

(Acres)

	New South Wales			*Queensland*			*Australia*			
Year	*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*	*Total*
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
1967–68	22,181	18,761	488	530,828	89,494	13,194	553,009	108,255	13,682	674,946
1968–69	22,174	18,588	599	546,306	84,237	13,314	568,480	102,825	13,913	685,218

(*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 1968–69 was at the record level of 18,413,000 tons, which was 1,656,000 tons above the previous record production in 1967–68.

SUGAR CANE: PRODUCTION OF CANE AND RAW SUGAR, STATES, 1964–65 TO 1968–69
(Tons)

Year	*New South Wales*		*Queensland*		*Australia*	
	Cane	*Sugar(a)*	*Cane*	*Sugar(a)*	*Cane*	*Sugar(a)*
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
1967–68	1,038,507	120,583	15,717,789	2,213,810	16,756,296	2,334,393
1968–69	997,813	120,381	17,414,966	2,604,319	18,412,779	2,724,700

(a) Raw sugar at 94 net titre.

Climatic conditions in New South Wales are such that the crop 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 1964–65 to 1968–69 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, 1964–65 TO 1968–69
(Tons)

Year	*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*
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
1967–68	46.82	5.44	8.61	29.61	4.17	7.10	30.30	4.22	7.18
1968–69	45.00	5.43	8.29	31.88	4.77	6.69	32.39	4.79	6.67

Production and utilisation of sugar

Details of the production and utilisation of sugar for the years 1964–65 to 1968–69 are shown below. Consumption is shown in terms of refined sugar, including that consumed in manufactured products. The production of raw sugar from 1935–36 is shown in plate 40, page 777.

SUGAR: PRODUCTION AND UTILISATION, AUSTRALIA, 1964–65 TO 1968–69

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
1964–65	— 4.1	1,880.0	1,308.2	20.5	555.4	110.3
1965–66	+ 82.6	1,961.8	1,289.0	22.1	568.2	110.7
1966–67	— 36.5	2,222.1	1,674.6	20.8	563.2	107.7
1967–68	+170.0	2,393.9	1,634.8	20.8	568.3	106.7
1968–69	n.a.	2,563.2	2,058.4	n.a.	584.7	107.6

(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 statistics of sugar usage in factories for 1968–69 are not yet available. However, the quantity recorded as used in factories in 1967–68 amounted to 377,132 tons compared with 372,394 tons in 1966–67 and 371,713 tons in 1965–66. Particulars of sugar used in establishments not classified as

factories are not available, and consequently these quantities are deficient to that extent. In 1967–68 the reported consumption by factories engaged in the production of jams, jellies and preserved and dried fruit and vegetables amounted to 77,288 tons, by those producing confectionery, ice cream, etc., to 74,196 tons, by breweries to 47,438 tons, and by factories producing aerated waters, cordials, etc., to 70,775 tons.

Sugar prices and returns

The current prices of sugar in Australia (as determined under the Sugar Agreement in Australia, *see* page 783) and details of net returns for raw sugar from 1964–65 to 1967–68 are shown in the following tables.

SUGAR: PRICES IN AUSTRALIA

	Raw sugar, 94 net titre			*Refined sugar*		
	Average return per ton received by millers and growers for—					
Year	*Home consumption*	*Exports(a)*	*Whole crop(a)*	*Date of determination*	*Wholesale price to retailer per ton*	*Retail price capital cities per lb*
	$	$	$		$	cents
1964	120.75	83.89	95.78	16.5.60 to 18.6.67	180.52	9.2
1965	121.95	67.27	85.14	19.6.67	206.72	10.5
1966	121.25	57.47	75.01			
1967(*b*)	142.80	59.45	82.05			
1968(*b*)	143.20	63.04	82.10			

(*a*) Includes 'excess' sugar. (*b*) Excludes repayable Commonwealth grant (*see* page 785).

RAW SUGAR(*a*): NET RETURNS, AUSTRALIA, 1964-65 TO 1968-69
(*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
1964–65	67.76	83.89	95.78	186,728
1965–66	67.31	67.27	85.14	166,270
1966–67	72.50	57.47	75.01	175,694
1967–68	72.89	59.45	82.05	191,471
1968–69	76.23	63.04	82.10	223,638

(*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 1968–69 amounted to $4,451,000, 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, 1964-65 TO 1968-69

		1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Quantity	tons	1,269,139	1,252,546	1,652,263	1,597,235	2,029,177
Value	$'000 f.o.b.	112,683	93,925	100,026	97,582	122,214

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, production is limited to areas with suitable soils and climate. The main centres of production are the Mareeba-Dimbulah districts of north Queensland and Myrtleford in north-eastern Victoria. Other areas where tobacco is grown include Bundaberg, Beerwah and Texas (Queensland), Ashford (New South Wales) and Gunbower (Victoria). All tobacco grown in Australia is of the flue-cured type except for small quantities of burley tobacco produced mainly in Victoria.

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.

In 1965 the Commonwealth and State Governments agreed to a stabilisation plan for the tobacco growing industry with 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 according to a formula approved by the Australian Agricultural Council. The determination of grower disputes in regard to quotas from State allocations is the responsibility of State Quota Committees.

In 1968, the final year of the plan, the Governments concerned agreed that it should continue for a further period of five years with an increased marketing quota for the 1969 selling season of 28.5 million pounds, which was subsequently increased to 31.5 million pounds to correct industry stockholdings which were depleted by higher than expected manufacturer usage. Provision was made for an annual review of the quota and in 1970 a basic quota of 34 million pounds was set for the 1971 season, to be divided among the producing States in the same proportions as the original quota.

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 1970 season, 109.4 cents per lb, is 0.4 cents per lb above the amount set for the 1969 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 Charge 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 $6,564,924 has been paid to State and Commonwealth departments for expenditure on tobacco research and extension. The allocation for 1969–70 was $773,865. 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 to make annual recommendations to Council, regarding research and extension programmes financed from the Trust Account. In order to facilitate the early disbursement of funds the Central Tobacco Advisory Committee now submits its financial recommendations directly to the Minister under new terms of reference approved by the Australian Agricultural Council in July 1969. These are:

'To report 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.'

Tobacco research and extension

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, nutrition, disease and pest control, fertilisers, crop rotation, and cultural practices. The State Departments also provide extension services for tobacco growers.

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 1967–68 the quantity of cured leaf recorded as used in tobacco factories in Australia amounted to 50 million lb, of which 23 million lb was of local origin. The balance was imported, chiefly from the United States of America and South Africa. Figures for 1968–69 are not yet available.

Tobacco area and production

The area of tobacco in 1968–69 was 12.3 per cent below the record area established in 1962–63. Production at 34,072,000 lb was 0.8 per cent below the record established in 1963–64.

TOBACCO: AREA AND PRODUCTION, STATES, 1964-65 TO 1968-69

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Aust.*
			AREA (ACRES)				
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
1967–68	1,831	8,664	12,472	..	..	..	22,967
1968–69	2,190	9,727	13,837	..	..	..	25,754
			PRODUCTION OF DRIED LEAF ('000 lb)				
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
1967–68	2,075	7,625	15,021	..	..	..	24,721
1968–69	2,481	12,075	19,517	..	..	..	34,072

Imports and exports of tobacco

Imports of tobacco and tobacco manufactures into Australia during 1968–69 were valued at $28.4 million. This included 29.2 million lb of unmanufactured tobacco valued at $21.8 million. Exports of tobacco and tobacco manufactures during 1968–69 were valued at $2,374,000, including Australian produce, $1,667,000.

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. Linters are used in the manufacture of felts and other materials where fibre length is of little importance. The kernels when crushed produce an oil which is used for both edible and industrial purposes. The residual meal is a useful high protein stockfeed; the hulls may be used as fuel.

Until 1964 cotton growing was mainly confined to Queensland, most of it being grown under conditions of natural rainfall. Since then there has been an increasing trend in the use of irrigation. A sound industry has been established in the Namoi and Macquarie Valleys in New South Wales with water provided by the Keepit Dam. More than three quarters of Australia's raw cotton requirements are now produced in that area. Cotton is also grown under irrigation in Queensland and on the Ord River of Western Australia and to a lesser extent in the Murrumbidgee Irrigation Areas of New South Wales. Nearly all Australian cotton is now grown with the assistance of irrigation and acreage yields compare more than favourably with those obtained by traditional overseas cotton producing countries.

Cotton bounty

For particulars of the *Cotton Bounty Act* 1951–1958, *see* page 1044 of Year Book No. 49. This Act was replaced by the *Raw Cotton Bounty Act* 1963–1966 under which the Commonwealth agreed to pay 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, for a period of five years from 1 January 1964. In 1968 this Act was amended to extend bounty payments to all cotton produced in Australia of a grade higher than Strict Good Ordinary, whether used in Australia or not, provided it has a staple length of $\frac{7}{8}$″ or greater. The Commonwealth Government proposes to phase out the bounty assistance over the next three years, commencing with the 1969 crop. The maximum bounty will remain at the previous level of $4 million for 1969, falling to $3 million in 1970, and to $2 million in 1971 after which it will cease.

Cotton area and production

COTTON: AREA, PRODUCTION AND YIELD PER ACRE, STATES AND TERRITORIES
1964-65 TO 1968-69

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
				AREA (ACRES)					
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
1967–68	53,474	..	11,629	..	11,782	..	..	..	76,885
1968–69	59,769	..	12,140	..	8,327	..	..	..	80,236
				PRODUCTION (UNGINNED) ('000 lb)					
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
1967–68	170,064	..	18,718	..	25,954	..	..	..	214,736
1968–69	173,759	..	23,363	..	21,560	..	..	..	218,682
				YIELD PER ACRE (lb)					
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
1967–68	3,180	..	1,610	..	2,203	..	..	..	2,793
1968–69	2,907	..	1,924	..	2,589	..	..	..	2,725

(*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, and in other States to the year following: e.g., for 1968–69, the Queensland crop was harvested during 1968, while the crop in other States was harvested during 1969.

Production of ginned cotton for 1964–65 was 17,286,000 lb; 1965–66, 40,885,000 lb; 1966–67, 35,510,000 lb; and 1967–68, 70,405,000 lb. Figures for 1968–69 are not yet available.

The gross value of unginned cotton for the five years ended 1968–69 was $7,685,000; $14,323,000; $12,468,000; $19,675,000; and $20,715,000 respectively.

Imports of raw cotton (excluding linters) during the past five years were: 1964–65, 55,474,000 lb; 1965–66, 32,096,000 lb; 1966–67, 19,963,000 lb; 1967–68, 27,066,000 lb; and 1968–69, 12,497,000 lb.

Exports of raw cotton (excluding linters) in 1968–69 were 8,231,000 lb, valued at $1,890,000. Japan and the Philippines were the principal importing countries.

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-rowed, field-cured for two to four weeks, and then threshed to recover the pods. The main products of the industry are nuts, peanut oil, oil cake, and synthetic protein fibre.

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

PEANUTS: AREA AND PRODUCTION, STATES, 1964-65 TO 1968-69

	Area (Acres)			*Production (cwt)*		
Year	*N.S.W.*	*Qld*	*Aust.*	*N.S.W.*	*Qld*	*Aust.*
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
1967–68	353	61,373	61,738	3,920	602,207	606,159
1968–69	183	78,454	(a)78,637	1,861	332,740	(a)334,601

(a) Incomplete: excludes Northern Territory.

The gross value of the 1968–69 crop was $3,152,000 which was approximately $2,984,000 less than in 1967–68. Total supplies available for consumption in Australia in 1968–69 were 27,196 tons (in shell equivalent), after allowing for a decrease of 14,916 tons in stock held by the Peanut Marketing Board, exports of 1,723 tons of peanut and peanut products, and industrial usage of 26,473 tons. Supplies were made up of 9,922 tons from Australian production received into store by the Board and 2,358 tons imported.

Flax

Prior to 1948–49 flax for the production of linseed oil had not been grown 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. In recent years there has been increased production, principally for export, in the Esperance district of Western Australia.

Particulars of area and production of flax for linseed, by States, are given in the following table for the years 1964–65 to 1968–69.

FLAX FOR LINSEED: AREA AND PRODUCTION, STATES, 1964-65 TO 1968-69

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Aust.
Area (acres)—						
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
1967–68	9,947	9,365	27,764	516	6,886	54,478
1968–69	15,164	14,304	21,459	1,025	18,645	70,597
Production (tons of linseed)—						
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
1967–68	952	804	6,571	72	2,083	10,482
1968–69	2,614	5,079	6,132	350	5,321	19,496

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 1964–65 to 1968–69. Exports of hops are negligible and are not recorded separately.

HOPS: PRODUCTION AND DISPOSAL, AUSTRALIA
1964-65 TO 1968-69

Year	Production(a)		Imports	Net available supplies(b)	Quantity used in breweries
	Quantity	Gross value			
	cwt	$'000	cwt	cwt	cwt
1964–65	27,892	2,372	9,521	37,413	39,517
1965–66	36,463	3,020	12,696	49,159	35,223
1966–67	28,907	2,531	2,683	31,590	31,347
1967–68	36,752	3,211	1,370	38,122	30,501
1968–69	42,757	3,788	1,501	44,258	34,077

(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 1964-65 TO 1968-69

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
				AREA (ACRES)					
1964–65	2,253	1,902	43,350	(a)	4	..	..	..	(b)47,509
1965–66	2,539	935	56,727	(a)	75	..	..	..	(b)60,276
1966–67	5,092	729	88,803	(a)	(b)	..	..	..	(b)94,624
1967–68	8,550	489	95,351	(a)	225	..	..	..	(b)104,615
1968–69	2,415	199	43,589	..	170	..	..	..	46,373
				PRODUCTION (BUSHELS)(c)					
1964–65	33,373	20,218	643,524	(a)	280	..	..	..	(b)697,395
1965–66	13,941	11,738	522,810	(a)	1,070	..	..	..	(b)549,559
1966–67	71,823	7,336	1,290,087	(a)	(b)	..	..	..	(b)1,369,246
1967–68	59,310	1,375	815,354	(a)	2,207	..	..	..	(b)878,246
1968–69	14,963	1,268	552,555	..	1,153	..	..	..	569,939

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

Imports of crude safflower seed oil in 1967–68 and 1968–69 totalled 833,000 gallons and 468,000 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 1966–67 to 1968–69. 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 1968–69 are given in the chapter Miscellaneous.

FRESH VEGETABLES FOR HUMAN CONSUMPTION: AUSTRALIA 1966-67 TO 1968-69

Vegetable	1966–67		1967–68		1968–69	
	Area sown	Production	Area sown	Production	Area sown	Production
	acres	tons	acres	tons	acres	tons
Asparagus	4,227	5,776	4,315	7,427	4,148	6,270
Beans, French and runner	18,073	36,912	18,632	31,395	19,745	37,607
Beans, navy	5,153	933	6,045	1,445	13,528	4,159
Beetroot	2,558	22,426	2,428	22,138	2,188	19,441
Cabbages and brussel sprouts	6,193	76,151	5,948	69,001	6,421	72,899
Carrots	6,326	77,599	6,767	74,588	6,969	78,198
Cauliflowers	6,364	77,168	6,229	72,996	6,334	68,971
Celery	757	13,485	839	12,639	911	15,576
Cucumbers	1,987	8,870	2,197	10,280	2,106	9,758
Lettuce	5,046	24,324	5,399	24,639	5,405	24,881
Onions	10,210	84,465	9,852	58,486	11,307	86,145
Parsnips	1,278	15,163	1,302	13,806	1,308	14,417
Peas, blue	4,373	2,992	4,267	2,505	3,357	2,129
Peas, green	65,964	120,182	57,428	91,503	61,134	118,233
Potatoes	99,328	642,967	105,668	658,112	113,437	798,478
Tomatoes	17,791	172,965	17,266	153,309	17,479	154,317
Turnips, swede and white	1,655	8,834	1,727	8,493	1,983	9,170
All other	36,339	..	36,809	..	41,043	..
Total	**293,621**	..	**293,118**	..	**318,802**	..

Processed vegetables

Total production of canned vegetables in 1968–69 amounted to 190,015,000 lb. The principal types produced were green peas (excluding mint-pro peas), 30,364,000 lb; green beans, 9,615,000 lb; baked beans (including pork and beans), 40,933,000 lb; asparagus, 8,907,000 lb; beetroot, 40,422,000 lb; and mushrooms, 9,529,000 lb.

The production of dehydrated vegetables, including split peas, during 1967–68 amounted to 10,494,000 lb. Production of potato crisps, chips and flakes during 1968–69 was 25,577,000 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 1968–69 production had risen to 141,842,000 lb, of which 80,425,000 lb were peas and 35,041,000 lb were beans.

Exports and imports of vegetables

Overseas exports of fresh and frozen vegetables during 1968–69 amounted to 44,418,000 lb valued at $2,678,000; dried vegetables, 6,674,000 lb valued at $366,000; preserved vegetables, 4,006,000 lb valued at $790,000; and other prepared or preserved vegetables, 116,000 lb valued at $71,000.

Imports of fresh and frozen vegetables during 1968–69 amounted to 16,836,000 lb valued at $2,094,000.

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. New South Wales and Queensland come next in order of acreage sown. In New South Wales production is chiefly in the tablelands district.

POTATOES: AREA, PRODUCTION AND YIELD PER ACRE STATES AND TERRITORIES, 1964-65 TO 1968-69

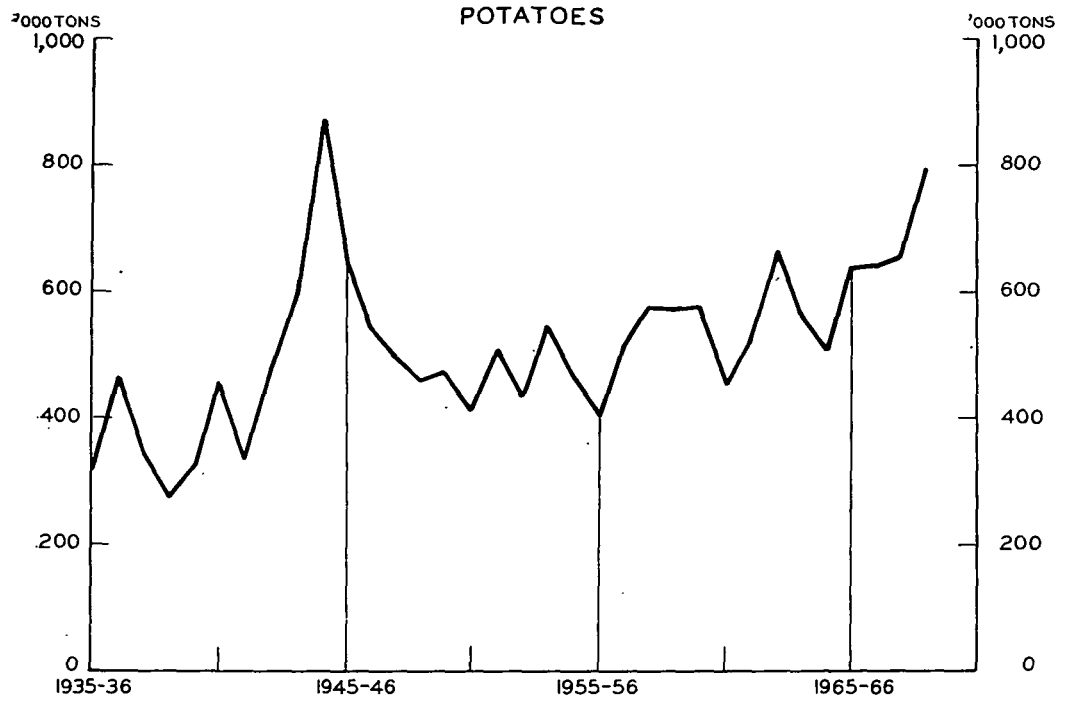
Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
				AREA (ACRES)					
1964–65	20,530	32,931	14,005	5,247	5,797	9,393	(*a*)	16	(*b*)87,919
1965–66	21,913	34,333	16,080	5,748	6,229	11,993	1	14	96,311
1966–67	23,594	37,167	16,227	5,948	6,100	10,278	(*a*)	14	(*b*)99,328
1967–68	24,334	40,329	17,347	6,527	6,149	10,960	(*a*)	22	(*b*)105,668
1968–69	29,236	39,979	18,515	7,643	6,588	11,461	(*a*)	15	(*b*)113,437
				PRODUCTION (TONS)					
1964–65	75,769	183,665	82,389	48,400	60,739	57,062	(*a*)	105	(*b*)508,129
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
1967–68	122,795	215,941	106,429	63,331	70,469	79,058	(*a*)	89	(*b*)658,112
1968–69	160,823	299,961	122,990	68,018	74,435	72,120	(*a*)	131	(*b*)798,478
				YIELD PER ACRE (TONS)					
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
1967–68	5.05	5.35	6.14	9.70	11.46	7.21	(*a*)	4.05	(*b*)6.23
1968–69	5.50	7.50	6.64	8.90	11.30	6.29	(*a*)	8.73	(*b*)7.04

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

The production of potatoes from 1935-36 is shown in plate 41, page 795.

PRODUCTION OF POTATOES AND ONIONS

AUSTRALIA, 1935-36 TO 1968-69



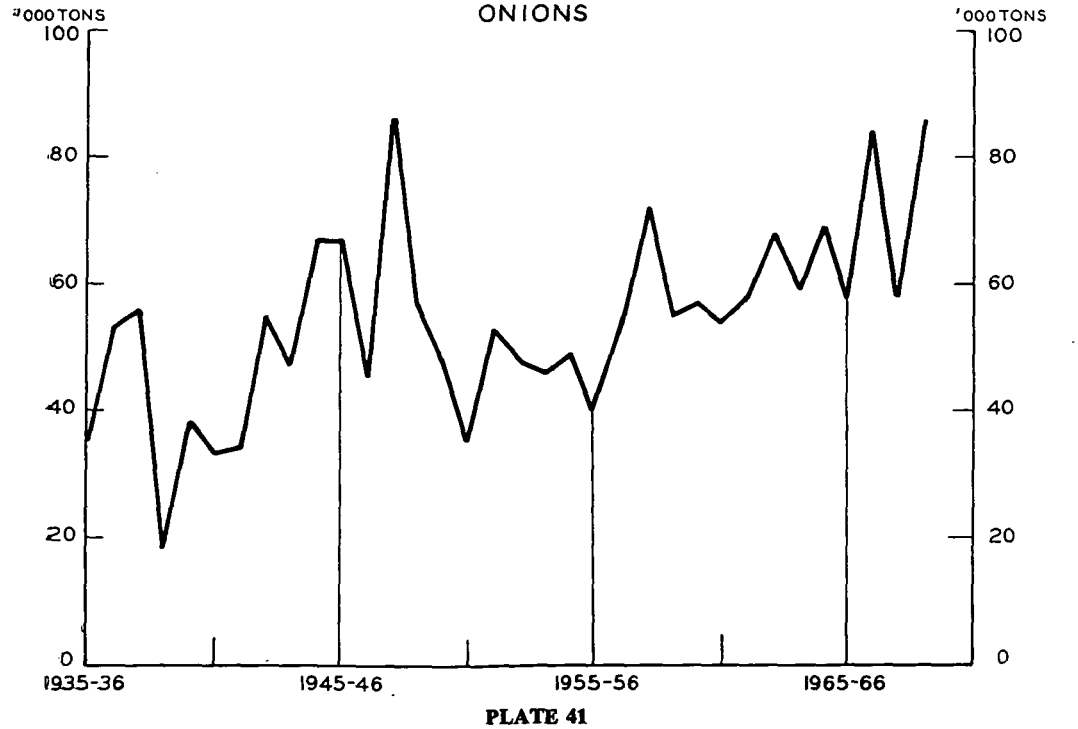


PLATE 41

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 1968–69 season and the value per acre are shown in the following table.

POTATOES: VALUE OF CROP, STATES, 1968-69

		N.S.W.	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Aust.(a)*
Aggregate value	$'000	9,595	10,343	11,679	4,045	5,613	2,119	43,399
Value per acre	$	328	259	631	529	852	185	383

(a) Includes Australian Capital Territory.

Consumption and exports of potatoes. The annual consumption of potatoes in Australia during each of the three years 1966–67 to 1968–69 amounted to 574,700 tons, 587,700 tons and 721,200 tons. respectively or 109.9 lb, 110.4 lb and 132.7 lb respectively per head of population. These figures exclude the quantities used for seed, which averaged about 55,000 tons annually over this period. Details showing exports and imports for the years 1964–65 to 1968–69 are given in the following table.

POTATOES: EXPORTS AND IMPORTS, AUSTRALIA
1964-65 TO 1968-69

	Exports		*Imports*	
Year	*Quantity*	*Value*	*Quantity*	*Value*
		$'000		$'000
	tons	f.o.b.	tons	f.o.b.
1964–65	4,715	427	5,404	343
1965–66	10,064	626	7,208	455
1966–67	13,593	839	..	..
1967–68	8,150	693	..	..
1968–69	12,591	966	237	12

Western Australia has emerged in recent years as the principal exporting State, accounting for over two-thirds of the Australian total in 1968–69. Australia's principal markets are Ceylon, Papua and New Guinea, and Singapore.

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

Overseas marketing of fruits

Details of the overseas marketing of fruits were published in Year Book No. 55 and earlier issues.

Area and production of fruit

In general the area under fruit in Australia has remained static during recent years.

FRUIT: AREA(a), STATES AND TERRITORIES, 1964-65 TO 1968-69

(Acres)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
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	26,458	22,343	133	38	313,188
1967–68	95,798	71,158	51,391	45,113	25,598	21,762	98	37	310,955
1968–69	94,685	71,598	52,750	44,497	25,366	21,429	90	32	310,447

(a) Bearing and not bearing.

FRUIT: AREA AND PRODUCTION, STATES AND TERRITORIES, 1968-69

Fruit	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
AREA (ACRES)(a)									
Apples	18,826	21,110	13,801	5,869	15,165	18,159	..	27	92,957
Apricots	1,819	3,022	529	4,583	276	349	..	..	10,578
Bananas	19,434	..	5,782	..	540	..	(b)	..	(c)25,756
Cherries	2,852	2,106	10	605	47	41	..	..	5,661
Citrus—									
Oranges	27,801	6,704	3,533	17,115	4,506	..	43	..	59,702
Mandarins	2,484	687	2,920	1,020	642	..	1	..	7,754
Lemons and limes	2,832	1,074	404	909	528	..	4	..	5,751
Other	765	340	163	515	109	..	4	..	1,896
Nuts	204	211	1,061	4,859	63	..	29	..	6,427
Peaches	7,512	13,839	1,721	4,631	855	39	..	..	28,597
Pears	3,105	17,126	1,124	1,885	978	1,337	..	..	25,555
Pineapples	194	..	15,534	..	..	..	(b)	..	(c)15,728
Plums	1,798	1,412	1,498	790	1,067	38	..	..	10,001
Prunes	3,228	170	..						
Small fruit	87	919	292	184	18	1,440	..	..	2,940
Other fruit	1,744	2,878	4,378	1,532	574	26	9	5	11,146
Total	**94,685**	**71,598**	**52,750**	**44,497**	**25,366**	**21,429**	**90**	**32**	**310,447**
PRODUCTION ('000 BUSHELS)									
Apples	3,701	4,858	2,043	1,561	2,870	7,138	..	3	22,174
Apricots	307	440	44	1,149	36	29	..	..	2,004
Bananas	3,695	..	993	..	253	..	(b)	..	(c)4,940
Cherries	123	149	1	39	3	2	..	..	316
Citrus—									
Oranges	5,657	1,360	865	3,703	551	..	2	..	12,137
Mandarins	205	81	409	92	49	..	..	..	837
Lemons and limes	503	215	120	75	154	..	1	..	1,069
Peaches	1,124	2,722	165	1,154	112	3	..	..	5,280
Pears	650	3,420	128	405	191	451	..	..	5,245
Pineapples	40	..	6,324	..	..	..	(b)	..	(c)6,363
Plums	161	125	137	58	100	6	..	..	904
Prunes	305	13	..						

(a) Bearing and not bearing. (b) Not available for publication. (c) Incomplete: *see* individual States.

Principal fruit crops

PRINCIPLE FRUIT CROPS: AREA, PRODUCTION, AND GROSS VALUE OF PRODUCTION, AUSTRALIA, 1964-65 TO 1968-69

Year	*Apples*	*Apricots*	*Bananas*	*Oranges*	*Peaches*	*Pears*	*Pineapples*	*Plums and prunes*
				AREA (ACRES)(*a*)				
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
1967–68	92,591	10,925	26,398	59,830	29,735	25,627	15,550	10,026
1968–69	92,957	10,578	25,756	59,702	28,597	25,555	15,728	10,001
				PRODUCTION ('000 BUSHELS)				
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
1967–68	19,615	1,519	5,145	9,846	6,294	7,351	6,804	778
1968–69	22,174	2,004	4,940	12,137	5,280	5,245	6,363	904
				GROSS VALUE OF PRODUCTION ($'000)				
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
1967–68	49,741	4,637	19,636	24,496	14,123	16,469	6,470	3,362
1968–69	56,146	6,992	19,128	26,095	12,685	13,512	7,482	4,697

(*a*) Bearing and not bearing.

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. The statistics of fruit usage in factories for 1968–69 are not yet available. However, during 1968–69 output of jams, conserves, fruit spreads, etc., amounted to 91,985,000 lb, while output of preserved fruit amounted to 512,578,000 lb. Of the latter figure, peaches accounted for 193,613,000 lb, pears 90,957,000 lb, and pineapples 66,839,000 lb.

In 1967–68, 9,102,000 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 1968–69 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 1968–69 amounted to $29,456,000 and $21,601,000 respectively. Apples constitute the bulk of the fresh fruit exported, although exports of pears and citrus fruits are considerable.

FRESH AND FROZEN FRUIT: EXPORTS, AUSTRALIA, 1964-65 TO 1968-69

Year	*Apples*		*Pears*		*Citrus*		*Total value*(*a*)
	Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	
	'000lb	$'000 f.o.b.	'000lb	$'000 f.o.b.	'000lb	$'000 f.o.b.	$'000 f.o.b.
1964–65	296,142	20,989	65,745	5,297	51,936	3,382	30,543
1965–66	351,246	25,863	94,005	7,464	58,080	3,685	37,819
1966–67	288,834	18,280	64,620	4,800	58,656	3,779	27,869
1967–68	277,814	17,368	68,922	5,442	54,875	3,656	27,535
1968–69	287,135	19,964	46,652	4,107	68,312	4,423	29,456

(*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 1964–65 to 1968–69 are shown below.

DRIED TREE FRUIT(*a*): IMPORTS AND EXPORTS, AUSTRALIA
1964-65 TO 1968-69

Year	*Imports(b)*		*Exports*	
	Quantity	*Value*	*Quantity*	*Value*
	'000 lb	$'000 f.o.b.	'000 lb	$'000 f.o.b.
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
1967–68	8,996	750	8,027	2,016
1968–69	9,942	843	5,401	2,087

(*a*) Excludes sultanas, raisins and currants dealt with separately under Vineyards (*see* pages 801–2). (*b*) Dates and figs only.

Exports of jams and jellies in 1968–69 were 7,335,000 lb valued at $1,104,000, compared with 10,361,000 lb, valued at $1,463,000 in 1967–68. Imports of jams and jellies in 1968–69 were 3,116,000 lb, valued at $555,000, compared with 1,637,000 lb, valued at $324,000 in 1967–68.

Large quantities of canned or bottled fruit are normally exported from Australia, the quantity recorded in 1968–69 being 311,061,000 lb, valued at $37,841,000. Exports in 1968–69 were made up principally of peaches (126,176,000 lb), pears (91,739,000 lb), fruit salad (37,300,000 lb), pineapples (16,781,000 lb), and apricots (13,970,000 lb). In addition, the exports of pulped fruits during 1968–69 amounted to 1,920,000 lb valued at $367,000.

The total value of preserved fruit and fruit preparations (including fruit juices) imported into Australia during 1968–69 was $2,801,000. The value of exports of fruit juices in 1968–69 was $784,000.

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 other States.

Area of vineyards

The area under vineyards in the 1968–69 season in Victoria and South Australia constituted 77 per cent of the total area of vineyards.

VINEYARDS: AREA(*a*), STATES, 1964-65 TO 1968-69
(Acres)

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Aust.*
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	21,257	49,164	3,304	57,080	7,945	138,750
1967–68	22,155	48,725	3,400	58,129	7,665	140.074
1968–69(*b*)—						
Drying	7,724	36,793	..	4,035	(*c*)2,568	51,120
Table	2,610	3,003	3,202	141	(*c*)976	9,932
Wine	12,415	9,174	306	56,398	(*c*)3,726	82,019
Total	**22,749**	**48,970**	**3,508**	**60,574**	(*c*)**7,270**	**143,071**

(*a*) Bearing and not bearing. (*b*) Area of individual categories is shown according to ultimate use to which grapes are put. (*c*) Estimated.

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 1968–69 production of table wines had exceeded the volume 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 1968–69 the total production of wine (beverage and distillation) in Australia was 51.9 million gallons, while total consumption of beverage wine was 22.0 million gallons (1.81 gallons per head of population). Similar particulars for 1967–68 are 44.2 million gallons and 19.8 million gallons (1.66 gallons per head of population) respectively.

WINE: PRODUCTION(*a*), STATES, 1964-65 TO 1968-69

('000 gallons)

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Aust.*
1964–65	6,404	3,656	24	28,022	613	38,718
1965–66	6,439	3,151	24	23,884	627	34,125
1966–67	7,893	3,555	37	29,324	705	41,514
1967–68	8,350	5,180	31	30,055	616	44,231
1968–69	8,597	6,241	32	36,230	837	51,936

(*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, 1964-65 TO 1967-68

(Proof gallons)

Year	*S.A.*	*Aust.(a)*
1964–65	1,183,351	1,400,100
1965–66	1,167,309	1,371,217
1966–67	650,618	791,163
1967–68	715,147	872,428

(*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 1968–69 these countries received 1,003,000 gallons, 435,000 gallons and 91,000 gallons respectively. Exports of Australian-produced wine for the five years ended 1968–69 are shown in the following table.

WINE: EXPORTS, AUSTRALIA, 1964–65 TO 1968–69

Year	Quantity ('000 gals)			Value ($'000 f.o.b.)		
	Sparkling	Other	Total	Sparkling	Other	Total
1964–65	16	1,976	1,992	96	3,425	3,521
1965–66	35	1,922	1,957	171	3,364	3,535
1966–67	65	1,709	1,774	251	2,917	3,169
1967–68	88	1,751	1,839	359	2,794	3,153
1968–69	73	1,729	1,802	314	3,081	3,395

Imports of wine for 1968–69 amounted to 456,000 gallons valued at $1,883,000, compared with 305,000 gallons valued at $1,364,000 in the previous year. During 1968–69 Italy supplied 126,000 gallons valued at $455,000, France 78,000 gallons valued at $523,000 and Portugal 75,000 gallons valued at $233,000.

Exports of Australian-produced brandy in 1968–69 amounted to 97,000 proof gallons, valued at $463,000. Imports of brandy, mainly from France, amounted to 152,000 proof gallons, valued at $702,000.

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. For details of the *Dried Fruits Export Control Act* 1924–1966 *see* Year Book No. 55, page 877, and earlier issues.

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 subcommittee of the permanent committee was established in Hamburg in 1964.

The *Dried Vine Fruits Stabilization Act* 1964–1966. For details of the Dried Vine Fruits Stabilization Scheme *see* Year Book No. 55, page 877, and earlier issues.

DRIED VINE FRUIT: PRODUCTION, STATES, 1964–65 TO 1968–69

(Tons)

Year	N.S.W.		Vic.		S.A.		W.A.		Aust.	
	Raisins (a)	Currants	Raisins (a)	Currants	Raisins (a)	Currants	Raisins (a)	Currants	Raisins (a)	Currants
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
1967–68	12,119	505	59,222	3,166	5,200	3,112	40	1,668	76,581	8,451
1968–69	7,829	428	37,896	2,687	1,743	2,261	8	1,862	47,476	7,238

(a) Includes sultanas and lexias.

DRIED VINE FRUIT(a): EXPORTS, AUSTRALIA, 1963–64 TO 1967–68

Year	*Raisins, sultanas and lexias*		*Currants*		*Total*	
	Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
	tons	$'000 f.o.b.	tons	$'000 f.o.b.	tons	$'000 f.o.b.
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
1967–68	63,562	19,459	3,907	1,316	67,469	20,775
1968–69	58,070	18,310	3,437	1,203	61,507	19,513

(a) Excludes quantities exported as mincemeat.

The chief countries importing Australian dried vine fruit are Canada, the United Kingdom, the Federal Republic of Germany, and Ireland. The quantities exported to these countries in 1968–69 were 19,792 tons, 17,631 tons, 7,517 tons and 1,952 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 1968–69. The quantities of table grapes produced during the season 1968–69 in each State are shown on page 759.

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 1965 onwards in single years, are given in the following table, and are shown continuously since 1870 on the graph on plate 42 following.

LIVESTOCK: AUSTRALIA, 1860 TO 1969
('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	1965	520	18,816	170,622	1,660
1900	1,610	8,640	70,603	950	1966	n.a.	17,936	157,563	1,747
1910	2,166	11,745	98,066	1,026	1967	479	18,270	164,237	1,804
1920	2,416	13,500	81,796	764	1968	n.a.	19,218	166,912	2,056
1930	1,793	11,721	110,568	1,072	1969	n.a.	20,606	174,602	2,253

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, 1969 (20,606,000); sheep, 1969 (174,602,000); and pigs, 1969 (2,253,000).

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 and indexes of quantum and price

Values of pastoral production are shown for 1968–69 in the table following. Further details of values of pastoral production and indexes of quantum and price, together with details of the source of the information and an explanation of the terms used in this compilation will be found in the chapter Miscellaneous.

GROSS, LOCAL AND NET VALUES OF PASTORAL PRODUCTION: STATES AND TERRITORIES, 1968-69

($'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	445,340	41,532	403,807	(*b*)54,427	349,380
Victoria	345,275	24,643	320,631	57,924	262,707
Queensland	340,022	27,578	312,444	43,733	268,711
South Australia	136,070	8,347	127,724	21,394	106,329
Western Australia	210,780	15,480	195,300	26,572	168,728
Tasmania	39,117	2,855	36,263	17,578	18,684
Northern Territory	18,338	3,181	15,157	n.a.	15,157
Australian Capital Territory	1,875	151	1,724	141	1,583
Australia	**1,536,817**	**123,767**	**1,413,050**	**221,769**	**1,191,279**

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

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 somewhat 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 second 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 42 and 43 of this Year Book (pages 804 and 812).

SHEEP: NUMBERS IN STATES AND TERRITORIES, 1965 TO 1969

('000)

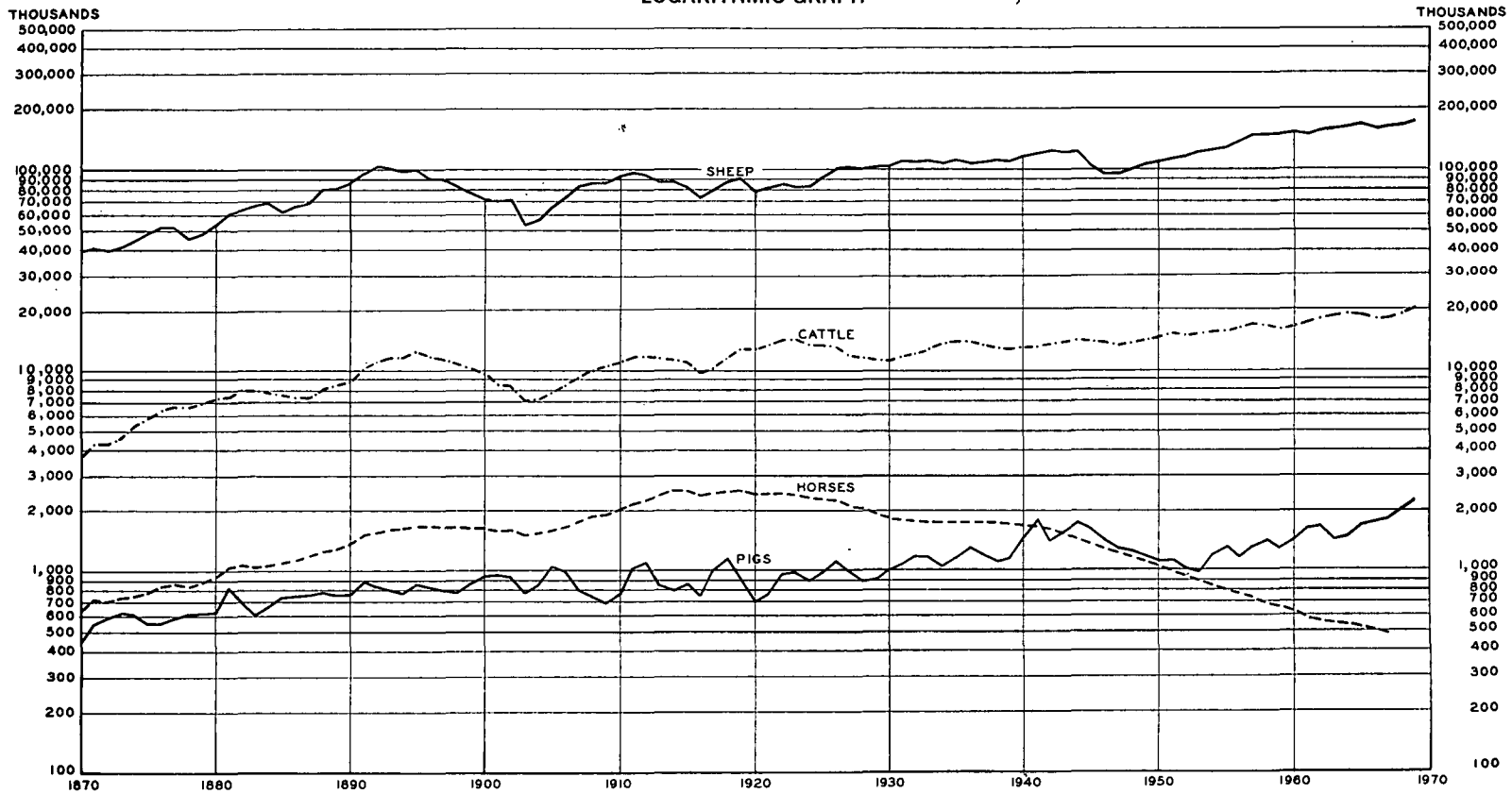
Year Ended 31 March	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
1965	72,396	30,437	24,016	17,289	22,392	3,793	9	290	170,622
1966	61,396	30,968	18,384	17,993	24,427	4,127	9	258	157,563
1967	63,848	31,239	19,305	17,864	27,370	4,321	8	281	164,237
1968	67,786	27,909	19,948	16,405	30,161	4,428	9	267	166,912
1969	68,153	30,185	20,324	18,392	32,901	4,395	7	246	174,602

The percentage distribution of sheep and lambs in the several States in 1969 was: New South Wales, 39; Victoria, 17; Queensland, 12; South Australia, 11; Western Australia, 19; and Tasmania, 2.

PLATE 42

LIVESTOCK: AUSTRALIA, 1870 TO 1969

LOGARITHMIC 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.

Movement in Sheep numbers

SHEEP AND LAMBS: ANALYSIS OF MOVEMENT IN NUMBERS, AUSTRALIA 1964-65 TO 1968-69
('000)

Year ended 31 March	*Numbers at beginning of season*	*Lambs marked*	*Net exports*	*Sheep and lambs Slaughtered (a)*	*Estimated deaths on farms (b)*	*Numbers at close of season*
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	337	33,350	7,469	164,237
1968	164,237	50,648	362	38,145	9,466	166,912
1969	166,912	51,171	361	35,676	7,444	174,602

(*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 818.

Classification of sheep according to age, sex, and breed

SHEEP, BY AGE AND SEX: AUSTRALIA, 31 MARCH 1965 TO 1969
('000)

Description	*1965*	*1966*	*1967*	*1968*	*1969*
Rams, 1 year and over	2,047	2,002	2,013	2,079	2,184
Breeding ewes (including ewes intended for mating)	75,580	73,626	76,618	77,872	83,607
Other ewes, 1 year and over	8,952	7,397	7,117	6,700	6,424
Wethers, 1 year and over	49,284	45,649	44,186	42,512	45,178
Lambs and hoggets, under 1 year	34,759	28,890	34,302	37,750	37,209
Total, sheep and lambs	**170,622**	**157,563**	**164,237**	**166,912**	**174,602**

Particulars of the principal breeds of sheep at 31 March 1968 (details are collected on a triennial basis) are shown in the following table.

SHEEP, BY PRINCIPAL BREED: STATES AND TERRITORIES, 31 MARCH 1968
('000)

Breed	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
Merino	48,977	12,810	19,414	13,418	27,286	315	9	209	122,438
Other recognised breeds	6,333	6,909	203	1,383	1,304	2,809	..	14	18,954
Merino comeback(*a*)	1,846	1,584	52	214	339	476	..	5	4,516
Crossbreds(*b*)	10,630	6,605	279	1,391	1,232	829	..	39	21,005
Total	**67,786**	**27,909**	**19,948**	**16,405**	**30,161**	**4,428**	**9**	**267**	**166,912**

(*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 1968–69 the number of sheep exported was 368,676, valued at $2,932,000 (1967–68, 358,143, valued at $3,301,000). 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 slaughterings, they began to rise again in 1960 and in 1964 reached 19,055,000. Again because of drought in the eastern States, this figure declined to 17,936,000 in 1966, but recovered to reach a record level of 20,606,000 in 1968–69.

A graph showing the number of cattle in Australia from 1870 onwards appears on plate 42, page 804.

CATTLE: NUMBERS IN STATES AND TERRITORIES, 1965 TO 1969
('000)

Year ended 31 March	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
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
1968	4,555	3,474	7,361	695	1,427	564	1,130	13	19,218
1969	4,864	3,878	7,668	865	1,546	586	1,185	14	20,606

The percentage of cattle in each State and Territory during 1969 was: New South Wales, 24; Victoria, 19; Queensland, 37; 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.

Classification of cattle

CATTLE, BY PURPOSE, AGE AND SEX: STATES AND TERRITORIES, 31 MARCH 1969
('000)

Classification	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
Bulls (1 year and over) used or intended for service—									
Dairy breeds	15	37	13	6	3	3	..	..	77
Beef breeds	76	44	129	13	26	7	28	..	323
Total bulls	*91*	*81*	*141*	*19*	*29*	*10*	*28*	..	*400*
Cattle used or intended for production of—									
Milk or cream for sale—									
Cows (in milk and dry)	604	1,209	497	138	97	153	1	1	2,701
Heifers—Springing (within 3 months of calving)	151	359	122	22	19	43	..	..	769
Other (1 year and over)				25	27				
Calves (under 1 year)	118	317	88	34	28	39	..	..	624
Milk or cream for use on rural holdings—									
House cows and heifers	85	25	35	7	8	5	..	..	165
Total cattle production of milk, etc.	*958*	*1,910*	*742*	*226*	*179*	*240*	*1*	*2*	*4,258*
Cattle for other purposes(*a*)—									
Cows and heifers (1 year and over)	2,062	949	3,440	350	712	150	661	7	8,330
Calves (under 1 year)(*b*)	1,194	601	1,553	189	331	128	218	4	4,217
Other (1 year and over), i.e. steers, bullocks, speyed cows, etc.	561	336	1,792	81	296	57	276	1	3,401
Total cattle, other purposes	*3,816*	*1,887*	*6,784*	*620*	*1,338*	*335*	*1,155*	*11*	*15,948*
Total cattle and calves for all purposes	**4,864**	**3,878**	**7,668**	**865**	**1,546**	**586**	**1,185**	**14**	**20,606**

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

CATTLE, BY PURPOSE, AGE AND SEX: AUSTRALIA, 31 MARCH 1965 TO 1969
('000)

Classification	*1965*	*1966*	*1967*	*1968*	*1969*
Bulls (1 year and over) used or intended for service—					
Dairy breeds	95	90	87	82	77
Beef breeds	274	261	279	299	323
Total bulls	*369*	*351*	*367*	*381*	*400*
Cattle used or intended for production of—					
Milk or cream for sale—					
Cows (in milk and dry)	3,012	2,908	2,881	2,794	2,701
Heifers—Springing (within 3 months of calving) and other (1 year and over)	843	823	796	755	769
Calves (under 1 year)	690	681	672	689	624
Milk or cream for use on rural holdings—					
House cows and heifers	202	186	180	169	165
Total cattle, production of milk, etc.	*4,747*	*4,598*	*4,528*	*4,407*	*4,258*
Cattle for other purposes(*a*)—					
Cows and heifers (1 year and over)	7,073	6,692	6,886	7,450	8,330
Calves (under 1 year) (*b*)	3,378	3,063	3,392	3,868	4,217
Other (1 year and over), i.e. steers, bullocks, speyed cows, etc.	3,248	3,232	3,097	3,113	3,401
Total cattle, other purposes	*13,699*	*12,987*	*13,375*	*14,431*	*15,948*
Total cattle and calves for all purposes	**18,816**	**17,936**	**18,270**	**19,218**	**20,606**

(*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 1968–69 the number of cattle exported was 3,301, valued at $738,000 (1967–68, 3,989 valued at $563,000). 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)

Country	*Year and month*	*Number* p
India(*a*)	1962 (May)	236,000
United States of America	1969 (January)	109,661
U.S.S.R.	1969 (January)	95,700
Brazil	1968 (December)	89,992
China (mainland)(*a*)	1960 (December)	65,400
Argentina	1968 (June)	51,465
Pakistan(*a*)	1961 (Estimate)	30,300
Mexico	1969 (December)	24,000
Ethiopia	1963 (Estimate)	22,000
France	1969 (October)	21,918
Australia	**1969 (March)**	**20,606**
Colombia	1969 (October)	19,583
Turkey(*a*)	1969 (December)	15,750
Germany, Federal Republic of	1969 (December)	14,045
South Africa	1968 (June)	12,145
United Kingdom	1969 (December)	12,123

(*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 only at triennial intervals.

A graph showing the number of horses in Australia since 1870 appears on plate 42, page 804.

HORSES: NUMBERS IN STATES AND TERRITORIES, 1965 TO 1969
('000)

31 March—	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
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
1968 . .	n.a.	n.a.	181	n.a.	n.a.	n.a.	38	1	n.a.
1969 . .	132	n.a.	176	n.a.	n.a.	n.a.	39	1	n.a.

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

Overseas trade in horses

Exports of Australian-bred horses in 1968–69 numbered 622, valued at $1,370,000, made up of horses for breeding (201 valued at $234,000), horses for racing (335 valued at $1,078,000, shipped principally to the Philippines, Singapore and the United States of America), and horses for other purposes (86 valued at $58,000). Horses imported into Australia in 1968–69 (947 valued at $2,620,000) 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 818.

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 the 1951 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, Fremantle, 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 by the Joint Wool Selling Organisation representing wool growers, 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 Enquiry

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* 1962–1970 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 will be appointed by the Minister for Primary Industry after consultation with 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 by the Minister after consultation with the Conference.

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* 1970, 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, South Africa and Uruguay.

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.

Wool Research. The Board is required to advise the Minister for Primary Industry on the general scope of those research programmes of the C.S.I.R.O. and the Bureau of Agricultural Economics in relation to the needs of the wool industry. The Board is also responsible for recommending grants from the Fund to recipients other than the C.S.I.R.O. and the Bureau of Agricultural Economics.

Investigation into all aspects of wool marketing on a continuing basis. The Board is required to inquire into, and from time to time report to the Australian Wool Industry Conference upon, methods of marketing wool and related matters. However, the Board has no executive powers over marketing.

In July 1964 the Board 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.

On 31 October 1967 the Board presented another report on wool marketing to the Australian Wool Industry Conference. The report included proposals for the establishment of an 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 the establishment of an organisation of woolgrowers, brokers, and buyers to conduct and control the sale of wool at auction.

A recommendation that these proposals, with some amendments, be implemented by a non-statutory Australian Wool Marketing Corporation was accepted by the Australian Wool Industry Conference in November 1968. The proposals were then submitted to the Government with a request for assistance in financing some of their elements. In September 1969 the Minister for Primary Industry announced details of assistance offered by the Government in response to this request. The Government undertook to meet, for a period of three years, half of the costs involved in handling one, two and three bale lots admitted to the price averaging plan and half of wool selling brokers' administrative charges relating to the price averaging plan, on the understanding that the Government would share equally in any reductions in these charges.

The Government also undertook to meet any losses, incurred by the Wool Marketing Corporation, on wool it may have purchased at the end of a price averaging period and sold in a subsequent period. The Government's offer was conditional upon the Corporation undertaking to limit its activities to one, two and three bale lots and on the understanding that the total borrowings of the Corporation for the purchase and carry over of price averaging plan wool will not exceed $14,000,000 at any one time.

The Government's offer was accepted by the Wool Industry Conference at its meeting in November 1969. Arrangements were immediately commenced by the Wool Board to bring the Wool Marketing Corporation to operational status. The Price Averaging Plan Wool Marketing Scheme, administered by the Corporation, came into operation on 1 July 1970. Included in the Corporation's responsibilities are the operation of the Wool Statistical Service and the Wool Classer Registration Scheme, both formerly administered by the Wool Board. 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.

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.

The establishment of integrated wool selling complexes. The aim is to make the cost savings inherent in this wool handling technique available to the woolgrowing industry as soon as possible.

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, *see* below.

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. The fifty 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. 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 and the wool research programme.

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 about $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 till 1969–70. From 1 August 1970, the rate of levy was reduced to 1 per cent.

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

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 in financing its commitment to the greatly expanded wool promotion programme of the International Wool Secretariat. The expanded 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

about $2.70 a bale, which resulted in a Commonwealth commitment of about $1.70 a bale. In aggregate this commitment entailed a Commonwealth contribution for promotion of about $8,500,000 a year. This arrangement operated until 30 June 1967.

During 1967 the Wool Industry Act was amended following negotiations between the Executive of the Australian Wool Industry Conference and the Government. The amendment provided for a Government contribution for wool research and promotion during the three years 1967–68 to 1969–70 on a $1 for $1 basis matching woolgrowers' contribution by levy, to a maximum of $14,000,000 in any one year. It provided for the grower levy and the Government grant to be apportioned annually between wool research and promotion by the Minister for Primary Industry after considering the recommendations of the Australian Wool Industry Conference. No change occurred in the legislation providing for the payment by woolgrowers of a levy at a rate not exceeding two per cent per annum.

In August 1969, the Government announced that when the then current arrangements for Government financial support for wool research and promotion expired on 30 June 1970, it would increase its contribution for these activities to an average of $27,000,000 a year for each of the three years 1970–71 to 1972–73. An amendment to the Wool Industry Act was enacted in 1970 to give effect to this undertaking. At the same time, as mentioned above, the levy on woolgrowers was reduced from 2 per cent to 1 per cent of the gross proceeds from the sale of shorn wool.

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 57.1 per cent in 1968–69.

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 1968–69 was about 8 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 813). 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 1964–65 to 1968–69. A graph showing the production of wool in relation to sheep numbers from 1870 onwards appears on plate 43 following.

PRODUCTION OF WOOL (GREASY BASIS): STATES AND TERRITORIES, 1964-65 TO 1968-69
('000 lb)

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
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
1967–68	650,420	332,427	226,822	218,951	300,229	38,308	112	2,238	1,769,507
1968–69	673,531	364,347	247,005	238,120	375,650	46,955	111	2,059	1,947,778

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 (less than 1.5 per cent) or is exported on skins (about 8 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.

SHEEP NUMBERS AND WOOL PRODUCTION

AUSTRALIA, 1870 TO 1969

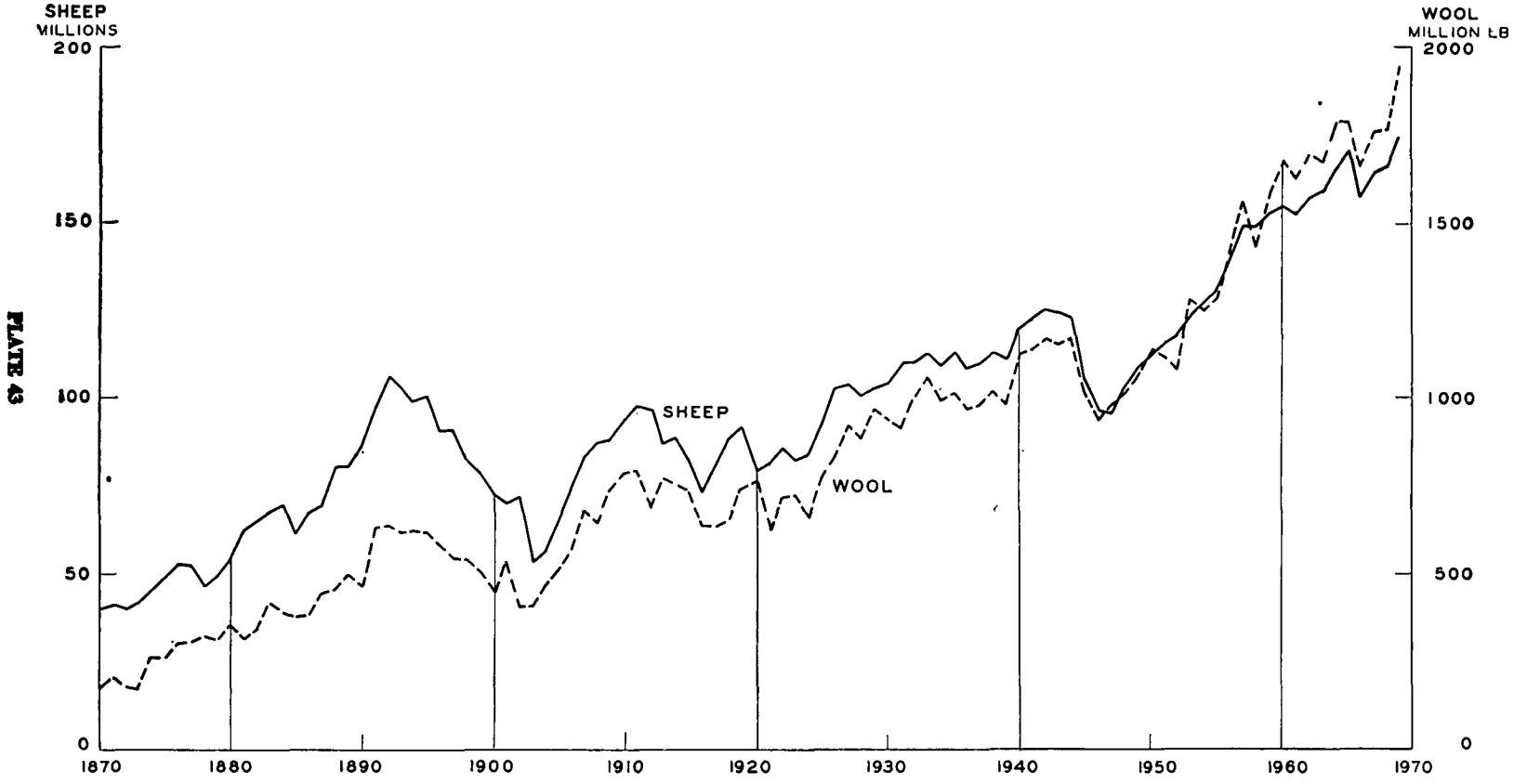


PLATE 43
812

QUANTITY (GREASY BASIS) AND VALUE OF WOOL PRODUCED
AUSTRALIA, 1964-65 TO 1968-69

Year	Shorn (including crutchings)	Dead and fell-mongered	Exported on skins	Total production	
				Quantity	Value
	'000 lb	'000 lb	'000 lb	'000 lb	$'000
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
1967–68	1,605,056	23,944	140,507	1,769,507	709,524
1968–69	1,773,222	25,223	149,332	1,947,778	838,651

Average fleece weight

AVERAGE WEIGHT OF FLEECES SHORN (SHEEP AND LAMBS)
STATES AND TERRITORIES, 1964-65 TO 1968-69
(lb)

State or Territory	Sheep					Lambs				
	1964–65	1965–66	1966–67	1967–68	1968–69	1964–65	1965–66	1966–67	1967–68	1968–69
N.S.W.	9.81	8.65	10.01	9.87	10.06	3.34	2.99	3.21	3.16	3.56
Vic.	10.08	9.63	9.90	9.08	9.79	2.97	2.72	2.90	2.56	2.97
Qld	9.65	8.79	9.94	10.62	11.26	3.78	3.56	3.55	4.10	4.34
S.A.	12.49	12.72	12.75	12.25	13.41	3.79	3.73	3.90	3.38	3.93
W.A.	10.06	10.74	10.67	10.57	11.72	2.69	2.90	2.98	2.97	3.47
Tas.	10.64	10.34	10.22	8.62	10.62	2.31	2.48	2.54	2.28	2.66
N.T.	9.26	8.13	8.13	10.89	10.78	3.88	3.00	3.00	..	..
A.C.T.	9.07	7.33	9.81	8.67	8.54	1.93	1.82	1.64	1.65	1 67
Aust.	**10.15**	**9.63**	**10.39**	**10.14**	**10.81**	**3.24**	**3.03**	**3.19**	**3.09**	**3.52**

Classification of wool according to quality

The following table provides a detailed analysis of wool sold at auction, according to quality, for the years 1964–65 to 1968–69. 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 1lb of tops (combed wool) of that particular wool.

CLASSIFICATION OF GREASY WOOL SOLD AT AUCTION(*a*): AUSTRALIA
1964-65 TO 1968-69
(Bales of approximately 300 lb)

Predominating quality	1964–65		1965–66		1966–67		1967–68		1968–69	
	Quantity	Per cent	Quantity	Per cent	Quantity	Per cent	Quantity	Per cent	Quantity	Per cent
70's and finer	145,267	2.9	149,305	3.3	114,406	2.4	131,939	2.7	113,057	2.2
64/70's	409,279	8.2	402,134	8.8	292,158	6.2	270,039	5.6	203,969	3.9
64's	620,453	12.5	576,499	12.7	470,153	9.9	468,436	9.7	381,785	7.5
64/60's	486,575	9.7	373,796	8.2	403,917	8.5	427,884	8.8	401,844	7.9
60/64's	1,108,668	22.2	896,070	19.7	1,002,088	21.1	1,089,866	22.4	1,081,779	21.1
60's and 60/58's	930,821	18.7	900,760	19.8	1,016,979	21.5	1,073,517	22.1	1,228,214	24.0
Total, 60's and finer	*3,701,063*	*74.2*	*3,298,564*	*72.5*	*3,299,701*	*69.6*	*3,461,681*	*71.3*	*3,410,648*	*66.6*
58's	586,708	11.8	591,790	13.0	660,570	13.9	623,043	12.8	789,540	15.4
56's	406,878	8.2	386,169	8.5	461,182	9.7	433,505	8.9	514,587	10.1
50's	153,079	3.1	133,574	2.9	178,587	3.8	173,313	3.6	204,014	4.0
Below 50's	51,534	1.0	44,887	1.0	61,289	1.3	59,401	1.2	72,710	1.4
Oddments	82,742	1.7	94,268	2.1	81,725	1.7	104,738	2.2	126,142	2.5
Grand total	**4,982,004**	**100.0**	**4,549,252**	**100.0**	**4,743,054**	**100.0**	**4,855,681**	**100.0**	**5,117,641**	**100.0**

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

Price and value

During 1968–69 the price of greasy and scoured wool sold in the selling centres of Australia averaged 44.7c per lb compared with the average price of 41.75c per lb in 1967–68 and 47.39c per lb in 1966–67. These prices are as compiled by the National Council of Wool Selling Brokers and represent the average price realised for all greasy and scoured 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 1968–69 it was $838,651,000, 21.2 per cent of the gross value of production of rural industries.

ESTIMATED GROSS VALUE OF TOTAL WOOL PRODUCTION(*a*) STATES AND TERRITORIES, 1964-65 TO 1968-69

($'000)

Season	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
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
1967–68	265,527	133,213	94,874	79,925	119,146	15,609	41	1,189	709,524
1968–69	296,005	155,547	108,060	95,054	161,589	21,180	38	1,178	838,651

(*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 1969 amounted to 330.2 million lb (greasy basis) of which 59.0 million lb (37.0 million lb as greasy and 22.0 million lb as scoured and carbonised) was held by woollen mills, wool scourers and fellmongers, and 271.2 million lb, assumed to be all greasy, was held by brokers. Of the wool held by brokers, 82.4 million lb was unsold wool and 188.8 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 1964–65 to 1968–69.

ESTIMATED CONSUMPTION OF RAW WOOL: AUSTRALIA, 1964-65 TO 1968-69

('000 lb)

	Greasy basis			*Clean equivalent*		
Year	*Used on woollen and worsted systems*	*Used for felt manufacture (including hats)*	*Total*	*Used on woollen and worsted systems*	*Used for felt manufacture (including hats)*	*Total*
1964–65	121,621	2,826	124,447	71,764	1,342	73,106
1965–66	126,119	1,990	128,109	74,418	945	75,363
1966–67	121,777	2,210	123,987	71,412	1,050	72,462
1967–68	128,401	2,530	130,931	73,043	1,202	74,245
1968–69p	130,903	2,530	133,433	74,466	1,202	75,668

As considerable quantities of tops, noils and yarn are exported from Australia, the series on raw wool consumption shown on page 814 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 1964–65 to 1968–69. 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.

ESTIMATED CONSUMPTION OF PROCESSED WOOL: AUSTRALIA
1964-65 TO 1968-69
('000 lb)

	Greasy basis				*Clean equivalent*			
Year	*Worsted yarn used (a)(b)*	*Woollen yarn used (b)*	*Scoured wool used for felt manufacture (including hats)*	*Total*	*Worsted yarn used (a)(b)*	*Woollen yarn used (b)*	*Scoured wool used for felt manufacture (including hats)*	*Total*
1964–65	47,172	40,575	2,826	90,573	27,233	24,408	1,342	52,983
1965–66	47,426	34,107	1,990	83,523	27,496	20,829	945	49,270
1966–67	43,969	38,628	2,210	84,807	25,376	23,499	1,050	49,925
1967–68	44,496	37,197	2,530	84,223	24,801	22,667	1,202	48,670
1968–69p	38,927	45,510	2,530	86,967	21,694	27,733	1,202	50,629

(*a*) Includes hand knitting yarns used. (*b*) Includes wool content of yarns containing a mixture of wool and other fibres.

Quantities of wool exported

Of the total shipments of greasy and slipe wool in 1968–69, 36 per cent went to Japan, 9 per cent to France, 9 per cent to Italy, 8 per cent to the United Kingdom, 7 per cent to the Federal Republic of Germany and 6 per cent to Belgium-Luxembourg.

EXPORTS OF GREASY AND SLIPE WOOL: AUSTRALIA, 1964-65 TO 1968-69
('000 lb actual weight)

Country of consignment	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Belgium-Luxembourg	106,391	88,802	98,546	95,934	84,557
France	122,283	130,903	106,208	120,641	130,776
Germany, Federal Republic of	85,944	91,006	71,170	100,823	96,880
India	18,858	9,241	29,583	21,562	34,027
Italy	95,175	137,405	151,749	123,116	130,678
Japan	424,175	467,587	492,456	498,087	530,453
Netherlands	6,932	13,165	13,998	15,294	28,960
Poland	22,983	28,441	30,651	35,536	34,460
United Kingdom	192,961	133,696	145,828	143,593	115,856
United States of America	67,093	72,720	55,721	60,165	60,611
U.S.S.R.	50,681	29,542	29,205	46,147	62,018
Other	142,923	121,831	142,786	133,490	161,723
Total	**1,336,399**	**1,324,339**	**1,367,901**	**1,394,388**	**1,470,999**

EXPORTS OF SCOURED AND WASHED, AND CARBONISED WOOL: AUSTRALIA 1964-65 TO 1968-69

('000 lb actual weight)

Country of consignment	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Canada	4,966	2,925	3,767	5,087	2,203
China (Taiwan)	1,852	1,863	1,487	990	1,511
France	3,268	2,877	2,920	2,443	2,326
Germany, Federal Republic of	8,997	7,531	7,100	8,648	6,773
Hong Kong	792	2,439	2,816	2,689	4,551
Iran	3,513	4,668	4,650	4,729	4,111
Italy	6,292	7,928	8,048	8,708	7,434
Japan	4,122	5,594	4,215	3,952	3,644
Korea, Republic of	253	155	1,025	1,823	2,693
United Kingdom	12,812	14,521	16,850	18,931	13,509
United States of America	27,834	27,671	16,180	18,377	19,061
U.S.S.R.	..	..	2,472	3,675	7,742
Other	12,752	10,591	8,340	9,985	9,834
Total	**87,453**	**88,763**	**79,870**	**90,037**	**85,392**

EXPORTS OF CARDED OR COMBED WOOL, NOILS AND WOOLWASTE: AUSTRALIA 1964-65 TO 1968-69

('000 lb actual weight)

	1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Carded or combed—Tops	19,232	22,909	23,975	22,617	24,124
Other	17	175	..	..	6
Noils	4,066	3,734	4,114	3,886	3,386
Waste—Soft wool	2,393	2,734	2,585	2,875	2,261
Hard wool	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 1964–65 to 1968–69. As the figures in the following table are in terms of 'greasy' or 'clean' basis, they differ from those in the preceding tables which represent actual weight shipped.

EXPORTS OF WOOL—GREASY AND CLEAN BASES: AUSTRALIA 1964-65 TO 1968-69

('000 lb)

	1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69p*
	GREASY BASIS				
Raw wool—					
Greasy and slipe	1,336,920	1,324,763	1,368,237	1,395,405	1,473,295
Scoured and washed and carbonised	140,617	141,780	128,614	147,119	139,531
Exported on skins	127,746	134,968	135,269	140,507	154,022
Total raw wool	*1,605,283*	*1,601,511*	*1,632,120*	*1,683,031*	*1,766,848*
Semi-processed wool—					
Tops	34,041	43,069	44,687	24,426	25,571
Yarn	354	530	263	240	200
Total raw and semi-processed wool	**1,639,678**	**1,645,110**	**1,677,070**	**1,707,697**	**1,792,619**

EXPORTS OF WOOL—GREASY AND CLEAN BASES: AUSTRALIA
1964–65 TO 1968–69—*continued*

('000 lb)

	1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*p
	CLEAN EQUIVALENT				
Raw wool	935,755	926,812	951,373	967,577	1,030,884
Semi-processed wool	19,819	25,274	25,754	24,563	25,685
Total	**955,574**	**952,086**	**977,127**	**992,140**	**1,056,569**

Value of wool exported

The value of wool (other than wool on sheepskins) exported from Australia during 1968–69 was 25 per cent of the total value of exports of merchandise of Australian origin, while the proportion for the five years ended 1968–69 averaged 27 per cent. The value for the five years ended 1968–69, together with the principal countries to which wool was exported, is shown in the following table.

VALUE OF WOOL EXPORTS: AUSTRALIA(*a*), 1964-65 TO 1968-69

($'000)

Country of consignment	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Belgium-Luxembourg	42,664	34,059	39,822	32,712	32,709
France	61,799	64,990	53,554	49,430	59,991
Germany, Federal Republic of	50,179	51,174	40,552	46,517	48,994
Italy	54,515	76,630	82,229	60,182	70,127
Japan	242,549	259,731	274,321	245,882	263,320
United Kingdom	110,015	79,857	85,214	71,846	63,947
United States of America	62,233	68,749	50,611	47,058	49,753
U.S.S.R.	31,681	18,588	20,305	27,368	40,104
Other	150,215	131,066	159,843	134,736	166,562
Total	**805,850**	**784,844**	**806,451**	**715,731**	**795,507**

(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 1968–69 Australia produced 32 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, 7 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 21 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 WOOLLED SHEEP NUMBERS AND PRODUCTION OF WOOL
1966-67 TO 1968-69

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

Country	*Sheep numbers (million)*			*Wool production (million lb—greasy basis)*		
	1966–67	*1967–68*	*1968–69(a)*	*1966–67*	*1967–68*	*1968–69*
Australia	**164**	**167**	**175**	**1,762**	**1,774**	**1,948**
New Zealand	60	61	60	709	728	732
Argentina	48	44	45	441	428	397
South Africa	37	37	39	292	304	317
United States of America	24	22	21	236	227	214
Uruguay	23	23	23	178	186	181
United Kingdom	29	28	27	132	127	119
U.S.S.R., China, Eastern Europe(b)	243	246	248	1,178	1,239	1,287
Other	316	319	321	924	920	914
World total	**942**	**946**	**958**	**5,852**	**5,933**	**6,109**
Type of wool—						
Apparel type—						
Merino				2,310	2,356	2,487
Crossbred				2,270	2,308	2,340
Carpet type				1,272	1,269	1,282

(*a*) Provisional. (*b*) This group comprises Albania, Bulgaria, China and Dependencies, Czechoslovakia, East Germany, Hungary, Outer Mongolia, Poland Romania, 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 1968 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 wool is quoted.

PRINCIPAL WOOL IMPORTING COUNTRIES AND SOURCES OF SUPPLY, 1968

(*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*	
Japan	518.3	49.8	23.4	42.4	13.1	647.1
United Kingdom	147.0	141.6	46.8	40.0	169.6	545.0
France	133.8	101.2	19.4	39.6	16.0	310.1
Italy	126.0	22.6	14.8	23.5	49.0	235.9
Belgium	92.8	49.0	17.7	11.4	34.1	205.0
Germany, Federal Republic of	83.6	35.3	20.4	34.8	51.7	225.8
United States of America(b)	59.2	77.8	42.5	17.5	51.6	248.6

(*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 330.5 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 1964–1969, is the body responsible for controlling the external marketing of Australian beef, mutton and lamb. Powers and membership of the Board prior to 1964 are set out on page 801, Year Book No. 40. Following its reconstitution it consisted of five members representing meat producers, two representing meat exporters, one representing the Commonwealth Government, and an independent Chairman. The Meat Industry Act was amended in 1969 to provide for the appointment of an additional member to represent meat producers. 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.

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, 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 (Chairman), 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 $1,835,000, and a mutton and lamb research programme of $919,600 for 1969–70.

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 operated from 1 August 1964 and have replaced the charge imposed on meat exports and also subsumed the cattle levy for beef research purposes imposed in 1960 (*see* page 909, Year Book No. 51). In November 1968 legislation was passed amending the Act to provide for an additional levy to finance service and investigation activities relating to meat processing. The amended legislation (the *Livestock Slaughter Levy Act* 1964–68) now provides three elements in the levy for each class of livestock—an amount to finance meat research; an amount to finance the operations of the Australian Meat Board; and, from 1 January 1969 until 31 December 1971, an amount to finance service and investigation activities relating to meat processing. The first two elements are paid by producers while the third element is paid by meat processors.

Under the Act the total levy may not exceed 75.0c a head for cattle or 7.5c a head for sheep and lambs. The amount levied for research may not exceed 25.0c a head for cattle or 3.3c a head for sheep and lambs while the amount for service and investigation activities relating to meat processing is set for the period of its operation at 1.0c a head for cattle and 0.1c a head for sheep and lambs. The present operative rate for cattle is 33.0c (20.0c for research; 12.0c to the Australian Meat Board; 1.0c for service and investigation) and for sheep and lambs, 3.10c (1.75c for research; 1.25c to the Australian Meat Board; 0.10c for service and investigation).

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, 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 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 15.5c per lb. Prices set for the 1969–70 season are 18.0c per lb and 16.5c 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 37.7 per cent in the basic quantity was set for 1970, providing for allowable imports of approximately 445,900 tons (441,100 tons in 1969) and an import ceiling, at which quotas would be established, of about 490,500 tons (485,200 tons in 1969). (Figures for earlier years are given in previous issues of the Year Book.) On the basis of the first official estimate of United States meat imports during 1970 the United States Secretary for Agriculture announced on 12 January 1970 that, as in 1969, it would not be necessary to invoke meat import quotas for 1970 as supplying countries had agreed to restrain shipments to 473,900 tons—16,600 tons below the point at which quotas would become operative. However, if a later quarterly estimate in 1970 indicated that the import ceiling would be equalled or exceeded, then quotas would be imposed. Australia's restraint level for 1970 is 235,400 tons compared with 225,000 tons in 1969.

Cattle slaughtered

CATTLE (INCLUDING CALVES) SLAUGHTERED: STATES AND TERRITORIES
1964-65 TO 1968-69
('000)

Year	*Slaughterings passed for human consumption*									*Total slaughterings including boiled down*
	N.S.W.	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*	
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
1967–68	1,447	1,713	1,664	245	333	172	74	10	5,656	5,731
1968–69	1,417	1,514	1,823	220	366	178	80	10	5,608	5,672

Production of beef and veal

PRODUCTION OF BEEF AND VEAL (CARCASS WEIGHT): STATES AND TERRITORIES
1964-65 TO 1968-69
(Tons)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
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
1967–68	220,879	223,307	310,478	33,074	59,249	25,084	15,879	1,692	889,642
1968–69	217,011	212,859	340,744	35,617	67,751	27,936	16,239	1,891	920,048

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 1968–69 consumption per head was 94.0 lb, of which 90.2 lb was carcass meat and 3.8 lb was canned meat (in terms of carcass equivalent).

PRODUCTION AND DISPOSAL OF BEEF AND VEAL (CARCASS WEIGHT)
AUSTRALIA, 1964-65 TO 1968-69

Year	Net change in stocks	Production	Exports (a)	For canning	Apparent consumption in Australia: Total	Apparent consumption in Australia: Per head per year
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	lb
1964–65	+ 6	1,010	457	48	499	99.2
1965–66	..	931	412	44	476	92.6
1966–67	− 5	865	384	40	445	85.2
1967–68	− 6	890	381	38	478	89.7
1968–69	+12	920	384	34	490	90.2

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

Exports of beef and veal

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 1968–69 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. In 1968–69, the principal markets for Australian beef and veal exports were the United States (451,084,000 lb, valued at $173,332,000); Japan (33,022,000 lb, valued at $9,960,000); and the United Kingdom (30,889,000 lb, valued at $8,040,000).

EXPORTS OF FROZEN AND CHILLED BEEF AND VEAL(a): AUSTRALIA
1964-65 TO 1968-69

Year	Exports of frozen and chilled beef: Quantity	Exports of frozen and chilled beef: Value	Exports of frozen veal: Quantity	Exports of frozen veal: Value	Exports of frozen and chilled beef and frozen veal: Quantity	Exports of frozen and chilled beef and frozen veal: Value
	'000 lb	$'000 f.o.b.	'000 lb	$'000 f.o.b.	'000 lb	$'000 f.o.b.
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
1967–68	554,423	194,524	9,645	4,064	564,068	198,588
1968–69	555,986	207,292	8,389	3,681	564,375	210,973

(a) Actual weight shipped, not carcass equivalent.

PRODUCTION OF MEAT: AUSTRALIA

1921-22 TO 1968-69

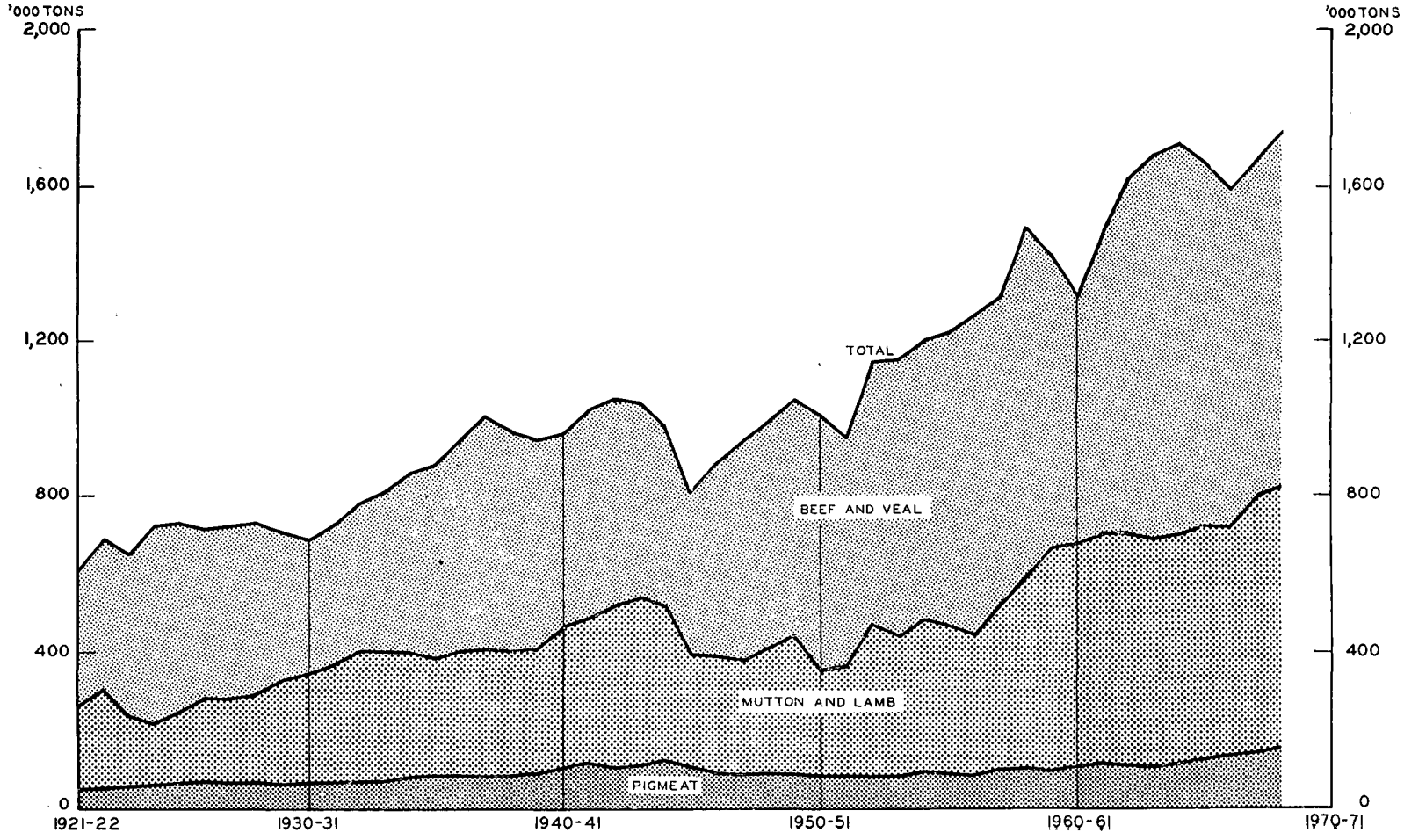


PLATE 44

Sheep slaughtered

SHEEP (INCLUDING LAMBS) SLAUGHTERED: STATES AND TERRITORIES
1964-65 TO 1968-69
('000)

Year	Slaughterings passed for human consumption									Total slaughterings including boiled down
	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.	
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
1967–68	12,099	14,999	2,491	4,019	3,173	1,125	..	103	38,008	38,164
1968–69	12,950	12,882	2,724	2,977	3,808	1,241	..	130	36,712	36,803

Production of mutton and lamb

PRODUCTION OF MUTTON AND LAMB (CARCASS WEIGHT)
STATES AND TERRITORIES, 1964-65 TO 1968-69
(Tons)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
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
1967–68	203,169	261,615	43,801	68,730	55,059	19,845	9	1,795	654,023
1968–69	223,945	247,972	48,208	56,824	67,713	22,452	1	2,240	669,355

Consumption of mutton and lamb

In 1959–60 consumption of mutton and lamb, at 103 lb per head of population, exceeded that of beef and veal for the first time on record. Subsequently, it showed a continuous decline until 1965–66, when it fell to 82.8 lb per head. Since then this downward trend has been reversed and in 1968–69 consumption per head reached 90.3 lb, exceeding that of beef and veal by 0.1 lb per head.

PRODUCTION AND DISPOSAL OF MUTTON AND LAMB
(CARCASS WEIGHT): AUSTRALIA, 1964-65 TO 1968-69

Year	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						
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	41.3
1967–68	+3	412	180	8	222	41.7
1968–69	+2	366	136	7	222	40.9
LAMB						
1964–65	+1	224	26	..	197	39.2
1965–66	+3	209	18	..	189	36.8
1966–67	−3	237	18	..	222	42.5
1967–68	..	242	11	..	230	43.2
1968–69	+1	303	34	..	268	49.4

(a) Includes carcass equivalent of boneless mutton exported.

Exports of frozen mutton and lamb

EXPORTS OF FROZEN MUTTON AND LAMB(*a*): AUSTRALIA, 1964-65 TO 1968-69

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.
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
1967–68	232,317	44,141	20,336	5,546	252,653	49,687
1968–69	167,564	32,213	65,004	13,216	232,568	45,429

(*a*) Actual weight shipped, not carcass equivalent.

In 1968–69 the principal buyers of Australian frozen mutton and lamb were the United States of America (64,378,000 lb, valued at $15,818,000); Japan (51,260,000 lb, valued at $8,669,000); Canada (50,185,000 lb, valued at $9,907,000); and the United Kingdom (39,250,000 lb, valued at $6,509,000).

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 1964–65 to 1968–69.

MEAT (INCLUDING CURED AND CANNED) AND EDIBLE OFFAL AVAILABLE FOR CONSUMPTION: AUSTRALIA, 1964-65 TO 1968-69

(lb per head per year)

Year	*Beef and veal(a)*	*Mutton (a)*	*Lamb(a)*	*Pork(a)*	*Offal*	*Canned meat(b)*	*Bacon and ham(c)*	*Carcass equivalent of meat and meat products (d)*
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	85.2	41.3	42.5	13.4	11.0	5.2	8.1	210.3
1967–68	89.7	41.7	43.2	14.6	11.4	4.8	7.7	217.4
1968–69	90.2	40.9	49.4	16.2	11.2	4.9	7.8	224.8

(*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 1963–64 to 1967–68 was as follows: 1963–64, 1,077,000 cwt; 1964–65, 1,157,000 cwt; 1965–66, 1,061,000 cwt; 1966–67, 1,007,000 cwt; 1967–68, 880,000 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 1964–65 to 1968–69.

TALLOW: EXPORTS, AUSTRALIA, 1964-65 TO 1968-69
(cwt)

	1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Edible	96,611	51,869	244,582	88,465	201,847
Inedible	1,846,543	1,243,684	1,767,130	1,654,071	2,035,529
Total	**1,943,154**	**1,295,553**	**2,011,712**	**1,742,536**	**2,237,376**

Overseas trade in hides and skins

The value of cattle and horse hides, sheep and other skins, and skin pieces sent overseas during 1968–69 amounted to $76,855,000, compared with a total of $63,731,000 in 1967–68 and $87,710,000 in 1966–67.

Of the total exports of sheepskins with wool during 1968–69, amounting to 216,182,000 lb valued at $55,784,000, 133,083,000 lb valued at $33,350,000 (60 per cent of total value) were shipped to France, 41,970,000 lb valued at $12,478,000 (22 per cent) to Italy, and 10,505,000 lb valued at $2,509,000 (4 per cent) to Yugoslavia. In the previous year France received 56 per cent (by value) of all sheepskin with wool exported, Italy 29 per cent and Yugoslavia 5 per cent. The exports of sheepskins with wool during each of the years 1964–65 to 1968–69 were as follows.

EXPORTS OF SHEEPSKINS WITH WOOL: AUSTRALIA
1964-65 TO 1968-69

		1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Number	'000	27,248	28,952	27,578	29,757	30,473
Value	$'000	59,621	63,042	62,074	45,620	55,784

In 1968–69 a total of 1,634,000 sheepskins without wool were exported, valued at $744,000. Of these, sheepskins without wool to the value of $161,000 (22 per cent) were shipped to the United States of America, $150,000 (20 per cent) to France and $116,000 (16 per cent) to Spain.

The export trade in cattle hides and calfskins during 1968–69 was distributed among the main importing countries as follows: Japan, $7,841,000, the Federal Republic of Germany, $1,844,000, and Italy, $1,776,000. The total quantity exported was 118,969,000 lb, valued at $17,460,000.

The exports of furred skins in 1968–69 were valued at $1,937,000, of which kangaroo and wallaby skins constituted $1,209,000 and rabbit and hare skins $547,000. In 1967–68 they accounted for $1,180,000 and $534,000 respectively, out of a total of $1,845,000. The skins were shipped principally to the United States of America, Italy, the Federal Republic of Germany and the United Kingdom; the values shipped to each in 1968–69 being $1,187,000, $208,000, $172,000, and $159,000 respectively.

The quantity of cattle hides, including calfskins, imported into Australia during the year 1968–69 amounted to 2,347,000 lb, valued at $503,000. The chief sources of supply were New Zealand and the United States of America.

OTHER RURAL INDUSTRIES: DAIRYING, PIG, 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, better feeding, resulting from the use of improved pastures and better farming methods, arising from the development of modern farm machinery and the application of the results of research.

The Australian dairying industry is conducted under conditions ranging from tropical to temperate and Mediterranean type climates, and in general, is confined to the coastal and near coastal regions where rainfall and topography are favourable. These conditions are found in parts of the eastern, southern and south-western coasts. Inland districts include the lower north-east of Victoria, the south-western slopes of New South Wales, the fertile Darling Downs in Queensland, and the irrigated districts of the Riverina in New South Wales and northern Victoria.

The manufacturing and processing sections of the industry are well advanced technologically and certain techniques and equipment developed in Australia are now being adopted overseas. State Agricultural Departments give advice on approved methods of production and inspect animals, buildings and marketable produce, to ensure that the latest advances in technology are passed on to the farmer and that hygiene standards are maintained at a high level.

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 827).

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 1965 to 1970 are given on page 834 of this issue. Details are also given on page 833 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 $17.381 in 1964–65, $24.918 in 1965–66, $23.556 in 1966–67, 24.573 in 1967–68, and $22.235 in 1968–69. For 1969–70, the initial rate had been set at $17.000 but was subsequently raised to $20.000 per cwt.

Commonwealth bounties 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 bounties on milk supplied for the manufacture of butter and cheese. Bounties were paid on a seasonal basis prior to 1 April 1946, but from that date have been on a flat rate basis. Bounties 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 were underwritten at 33c per lb on commercial butter each year since the inception of the underwriting arrangement in 1958 were raised to 34c per lb for the 1967–68 season and maintained at that level for 1968–69 and 1969–70.

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* 1967 to the present time. The amount standing to the credit of the Dairying Industry Stabilisation Fund at 30 June 1969 totalled approximately $4,983,000. The major portion of the fund represents capital and other investments in milk recombining plants now established or under construction by the Board in Bangkok, Cambodia, Djakarta and Manila.

Processed milk products. Bounty 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* 1968, for the payment of a maximum amount of $800,000 as a bounty on exports of processed milk products in 1967–68. The bounty is to continue under present legislation until 30 June 1972, the maximum amount available being $800,000 per annum.

Whole milk. In addition to the bounties 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 September 1970 is 57 cents per cwt (24 cents for promotion, 23 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 1964–65 to 1968–69.

BUTTERFAT LEVY: AMOUNTS COLLECTED FOR RESEARCH AND SALES PROMOTION, 1964-65 TO 1968-69

($)

	1964–65(a)	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Research(*b*)	262,800	310,200	406,100	363,700	367,720
Sales promotion	543,000	823,600	891,400	804,300	811,860
Total collected(*b*)	**805,800**	**1,133,800**	**1,297,500**	**1,168,000**	**1,179,580**

(*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 1965 TO 1969

At 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 (in milk and dry)	Heifers		
			One year and over(b)	Under one year	
1969—					
New South Wales	15,229	604,256	150,920	117,705	84,771
Victoria	37,103	1,209,218	358,706	317,325	25,172
Queensland	12,721	497,294	121,918	88,098	34,763
South Australia	5,536	137,756	47,274	34,188	6,802
Western Australia	2,739	97,122	46,369	27,709	7,533
Tasmania	3,221	152,894	43,257	38,987	5,042
Northern Territory	70	624	141	77	125
Australian Capital Territory	32	1,471	196	201	340
Australia	**76,651**	**2,700,635**	**768,781**	**624,290**	**164,548**
1968	81,512	2,793,650	754,587	689,038	169,384
1967	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

(a) Used or intended for service; excludes bull calves (under 1 year). (b) Springing (within 3 months of calving) and other. (c) Kept primarily for rural holdings' own milk supply.

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

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

Milking machines

MILKING MACHINES ON RURAL HOLDINGS: NUMBER OF UNITS(a) STATES AND TERRITORIES, 1965 TO 1969

At 31 March	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1965	42,209	101,994	44,074	19,135	10,055	13,806	23	93	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
1968	40,862	109,137	38,208	18,399	9,317	16,968	40	91	233,022
1969	39,557	112,618	35,401	17,908	9,036	17,057	24	97	231,698

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

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 498 gallons per cow per annum has been obtained. In 1968–69 the average yield was 525 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
1964-65 TO 1968-69

(Gallons)

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
1964–65	347	613	306	614	490	589	248	547	467
1965–66	378	616	316	602	508	578	234	524	483
1966–67	423	647	366	624	480	591	268	548	521
1967–68	416	596	354	590	502	581	232	465	497
1968–69	393	663	306	708	546	647	203	486	525

In the following table particulars of the production of whole milk in the various States and Territories are shown for the years 1964–65 to 1968–69. In 1968–69, the production of whole milk in Australia reached a level of 1,531 million gallons, which was 5 per cent below the record of 1,605 million gallons attained in 1966–67. Victoria is the principal milk-producing State, and in 1968–69 the output from that State, 816 million gallons, represented 53 per cent of total production. Output from New South Wales in 1968–69 was 279 million gallons (18 per cent of the total) and that of Queensland 172 million gallons (11 per cent). Production in the remaining States and Territories accounted for 18 per cent.

TOTAL PRODUCTION OF WHOLE MILK: STATES AND TERRITORIES
1964-65 TO 1968-69

('000 gallons)

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
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	796,673	238,134	98,727	55,611	91,418	97	1,070	1,604,725
1967–68	310,056	734,203	217,202	88,822	55,411	90,793	97	900	1,497,484
1968–69	278,930	815,791	171,686	102,808	58,222	102,164	97	898	1,530,597

UTILISATION OF WHOLE MILK: STATES AND TERRITORIES, 1968-69

('000 gallons)

	N.S.W.	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust*
Milk used for—									
Butter	111,230	580,749	87,245	28,331	28,464	72,546	..	..	908,565
Cheese	10,386	70,780	17,535	42,444	4,304	12,837	..	..	158,286
Processed milk products	26,922	61,365	66,906	...	655	16,781	...	...	98,945
Other purposes	130,393	102,897		32,033	24,799		97	898	364,801
Total	**278,930**	**815,791**	**171,686**	**102,808**	**58,222**	**102,164**	**97**	**898**	**1,530,597**

In 1968–69, 59.4 per cent of the total milk supply was used for butter, 10.3 per cent for cheese, 6.5 per cent for processed milk products, and 23.8 per cent for other purposes.

MILK PRODUCTION AND UTILIZATION: AUSTRALIA

1916 TO 1968-69

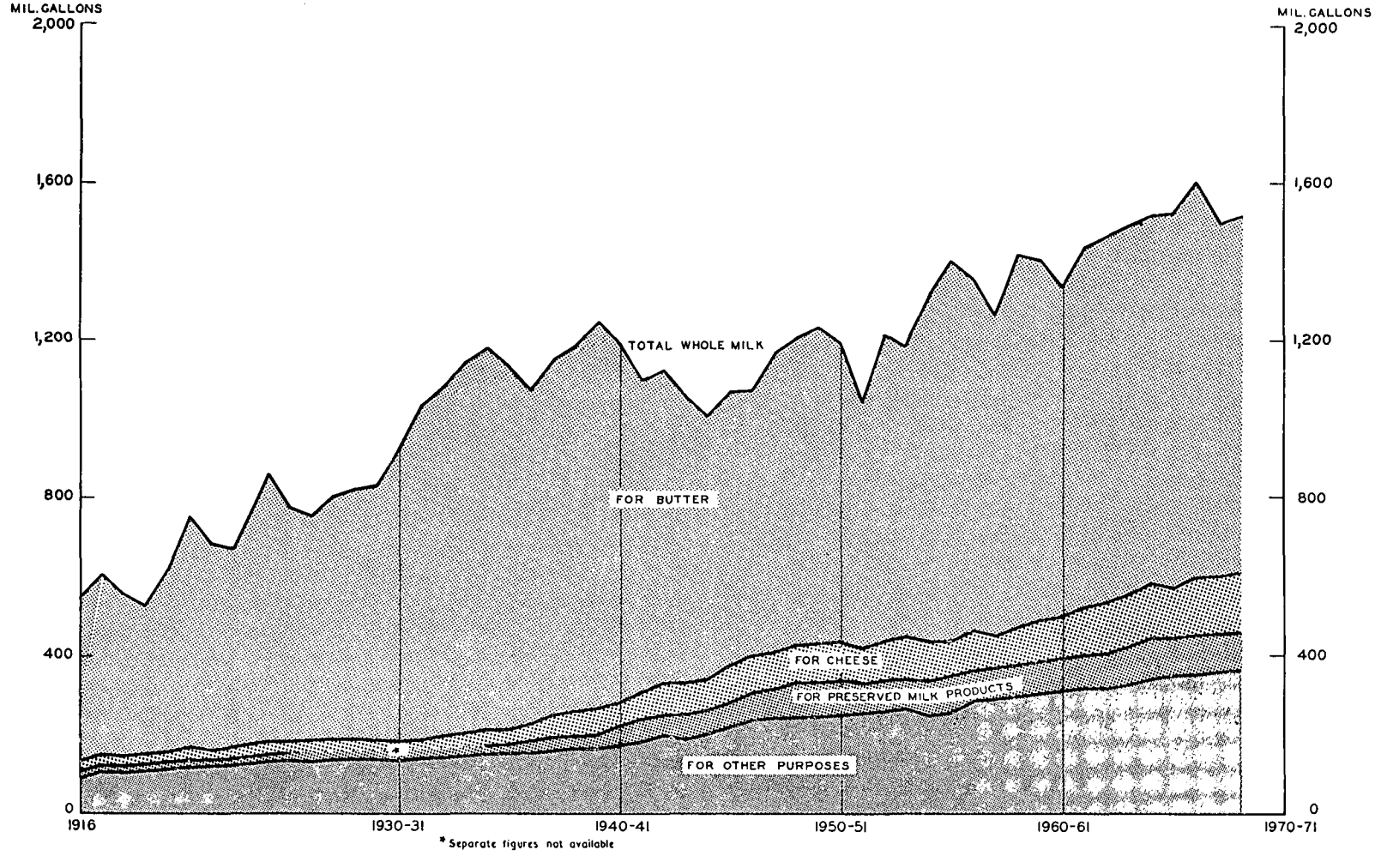


PLATE 45
830

PRODUCTION AND UTILISATION OF WHOLE MILK: AUSTRALIA
1964-65 TO 1968-69
('000 gallons)

Year	Total production	Quantity used for— Factory butter	Factory cheese	Processed milk products(a)	Other purposes(b)
1964–65	1,520,864	938,796	135,733	103,315	343,020
1965–66	1,522,013	949,270	126,575	99,221	346,947
1966–67	1,604,725	1,011,000	146,547	99,502	347,676
1967–68	1,497,484	892,898	149,444	98,555	356,587
1968–69	1,530,597	908,565	158,286	98,945	364,801

(a) Quantities of milk used to produce two or more products (for example, initially as full cream milk and subsequently as skim milk) are counted once only. (b) Principally fluid milk for domestic purposes. Includes milk used for farm production of butter and cheese.

Production of butter, cheese and processed 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 1967–68 factories classified to industry sub-classes Butter factories, Cheese factories, and Condensed and processed milk factories numbered 315 and were distributed among the States as follows: New South Wales, 69; Victoria, 109; Queensland, 60; South Australia, 38; Western Australia, 16; and Tasmania, 23. More details regarding numbers of factories, output, etc., are given in the chapter Manufacturing Industry. Statistics of the number of factories in 1968–69 are not yet available.

Factory production of butter in 1968–69 was 439,220,000 lb. This was 49,997,000 lb (10.2 per cent) below the record of 489,217,000 lb attained in 1966–67.

BUTTER PRODUCTION IN FACTORIES: STATES, 1964-65 TO 1968-69
('000 lb)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.
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
1967–68	71,281	241,240	63,546	12,133	13,248	30,865	432,313
1968–69	52,172	280,206	43,083	14,507	13,937	35,315	439,220

Factory production of cheese in 1968–69 reached a record level of 164,838,000 lb, which was 9,453,000 lb (6.0 per cent) more than the previous record of 1967–68.

CHEESE PRODUCTION IN FACTORIES: STATES, 1964-65 TO 1968-69
('000 lb)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.
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
1967–68	12,074	73,570	22,181	32,773	4,373	10,414	155,385
1968–69	12,201	75,256	17,871	42,218	4,458	12,834	164,838

FACTORY PRODUCTION OF CHEESE BY VARIETIES: AUSTRALIA 1964-65 TO 1968-69

('000 lb)

	1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Fetta	870	969	1,042	1,124	n.a.
Cheddar	127,507	119,176	137,657	138,655	
Cottage	1,070	1,561	1,876	2,215	
Edam	417	436	531	691	
Blue Vein	115	106	187	102	
Grating	4,599	6,148	8,975	9,790	
Soft	693				
Other	2,737	2,904	3,566	2,808	
Total cheese	**138,008**	**131,300**	**153,834**	**155,385**	**164,838**

Processed milk products are manufactured mainly in Victoria, which produced 62 per cent of the total (in terms of whole milk equivalent) in 1968–69. New South Wales accounted for 27 per cent and the remaining States for 11 per cent.

PRODUCTION OF PROCESSED MILK PRODUCTS: AUSTRALIA, 1964-65 TO 1968-69

('000 lb)

	1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
Condensed, concentrated and evaporated milk—					
Full cream—					
Sweetened(*a*)	102,479	73,985	61,510	47,316	40,437
Unsweetened	89,390	88,482	91,700	87,946	98,658
Skim	21,936	21,196	24,974	18,932	18,040
Ice cream mix (liquid)	10,810	15,198	15,422	9,065	7,245
Infants', invalid and health beverages—					
Infants' milk powder	12,629	13,723	14,535	16,233	17,601
Other(*b*)	32,550	31,557	34,813	32,001	36,981
Casein	39,768	50,712	45,812	44,815	64,963
Powdered milk—					
Full cream—					
Spray	41,561	42,888	46,276	46,125	53,083
Roller	2,108	2,172	1,742	1,147	1,341
Skim—					
Without added ingredients—					
Spray	82,624	84,018	162,351	161,071	123,395
Roller	14,704	14,466	13,153	18,606	14,679
With added ingredients—					
Baker's powder	5,264	5,577	5,401	5,937	5,765
Other	5,231	8,281	7,679	10,415	13,076
Buttermilk or mixed skim and buttermilk—					
Spray	4,702	8,345	12,829	15,836	14,821
Roller	16,183	17,555	19,689	17,756	19,735
Total powdered milk	*172,378*	*183,301*	*269,120*	*276,893*	*245,893*

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

Wholesale prices of butter and cheddar 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 cheddar cheese.

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

Date from which prices became effective	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*
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
31 March 1969	54.60	54.60	54.60	54.60	54.60	54.60
Cheddar 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 1968–69, at 21.1 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. There was a slight decline thereafter, however in 1968–69 it again attained the record level of 7.9 lb per head.

PRODUCTION AND DISPOSAL OF BUTTER AND CHEESE
AUSTRALIA, 1964-65 TO 1968-69

Year	*Change in stocks(a)* ('000 lb)	*Factory production* ('000 lb)	*Exports(b)* ('000 lb)	*Apparent consumption in Australia*	
				Total ('000 lb)	*Per head per year* (lb)
BUTTER					
1964–65	−16,265	454,878	216,875	254,268	22.5
1965–66	+19,398	460,433	190,607	250,428	21.8
1966–67	− 872	489,217	234,611	255,478	21.8
1967–68	− 3,068	432,313	177,331	258,050	21.6
1968–69	+11,471	439,220	170,709	257,040	21.1
CHEESE					
1964–65	− 7,777	138,008	61,087	84,699	7.5
1965–66	−16,916	131,300	56,964	91,251	7.9
1966–67	+ 5,248	153,834	57,423	91,162	7.8
1967–68	−10,527	155,385	76,249	89,663	7.5
1968–69	+12,375	164,838	56,494	95,968	7.9

(*a*) Balance figure (includes imports). (*b*) Includes ships' stores; figures for butter include ghee and butter concentrate expressed as butter.

Average returns from butter and cheddar 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 1965 to 1970.

BUTTER AND CHEDDAR CHEESE: RATES REALISED ON SALES, AVERAGE EQUALISATION RATES AND RATES OF COMMONWEALTH SUBSIDY UNDER DAIRYING INDUSTRY ACTS, 1964-65 TO 1969-70

(*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—							
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	49.88	47.46	31.97	29.87	39.38	5.66	45.04
1967–68	(*a*)	(*a*)	(*a*)	(*a*)	(*b*)39.50	6.31	(*b*)45.81
1968–69	(*a*)	(*a*)	(*a*)	(*a*)	(*b*)38.75	(*b*)6.02	(*b*)44.77
1969–70	(*a*)	(*a*)	(*a*)	(*a*)	(*b*)38.00	(*b*)5.55	(*b*)43.55
Cheddar cheese—							
1964–65		29.32		22.11	26.00	2.23	28.23
1965–66		29.43		21.38	25.99	2.36	28.34
1966–67		31.24		21.52	27.01	2.04	29.05
1967–68		(*a*)		(*a*)	(*b*)25.04	2.38	(*b*)27.42
1968–69		(*a*)		(*a*)	(*b*)24.70	(*b*)2.87	(*b*)27.57
1969–70		(*a*)		(*a*)	(*b*)24.00	(*b*)2.65	(*b*)26.65

(*a*) Not yet available. (*b*) Interim rates.

The distribution between factory and farm of the overall return to manufacturers for butter is shown in the following table.

COMMERCIAL BUTTER: AVERAGE OVERALL RETURNS AUSTRALIA, 1964-65 TO 1969-70

(*Source:* Commonwealth Dairy Produce Equalization Committee Ltd)

(Cents per lb)

Year	Rate of overall return to manufacturer	Estimated manufacturing cost	Return to dairy farmer
1964–65	43.154	4.449	38.705
1965–66	41.324	4.449	36.875
1966–67	40.216	4.583	35.633
1967–68	40.904	4.583	36.321
1968–69	(*a*)39.969	4.750	35.219
1969–70	(*a*)38.911	4.911	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 1968–69 amounted to 140.9 million lb, compared with 148.6 million lb in 1967–68. Exports of cheese in these years were 56.1 million lb and 76.0 million lb respectively. The principal importing country for Australian butter in 1968–69 was the United Kingdom, accounting for 82.5 per cent of total exports. In 1968–69 Japan replaced the United Kingdom as the principal importing country for Australian cheese with 30.8 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, will be found in *Rural Industries*, 1967–68, Bulletin No. 6.

BULK BUTTER AND CHEESE GRADED FOR EXPORT: AUSTRALIA, 1966-67 TO 1968-69

Grade	*Quantity ('000 lb)*			*Percent*		
	1966–67	*1967–68*	*1968–69*	*1966–67*	*1967–68*	*1968–69*
BUTTER(a)						
Choicest quality	164,364	136,312	145,577	77.3	80.2	86.1
First quality	37,126	25,581	16,923	17.5	15.1	10.0
Second and pastry quality(b)	11,111	8,021	6,658	5.2	4.7	3.9
Total	**212,601**	**169,914**	**169,158**	**100.0**	**100.0**	**100.0**
CHEESE						
Bulk cheddar—						
Choicest quality	10,500	19,967	29,036	16.7	26.2	35.0
First quality	34,886	40,214	31,339	55.5	52.7	37.8
Second quality(b)	1,295	1,972	2,721	2.1	2.6	3.3
Other cheese	16,194	14,154	19,839	25.8	18.5	23.9
Total	**62,875**	**76,307**	**82,935**	**100.0**	**100.0**	**100.0**

(a) Includes unsalted. (b) Includes rejected.

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

EXPORTS OF DAIRY PRODUCTS: AUSTRALIA, 1966-67 TO 1968-69

	Quantity ('000 lb)			*Value ($'000 f.o.b.)*		
	1966–67	*1967–68*	*1968–69*	*1966–67*	*1967–68*	*1968–69*
Butter(a)	205,550	148,634	140,865	55,094	39,114	34,745
Cheese(b)—						
Processed(c)	12,633	11,049	16,922	4,995	4,352	6,070
Other—						
Cheddar and epicure cheddar	30,893	55,479	28,821	6,707	11,085	5,417
Parmesan (incl. parmigiano and reggiono)	62	129	64	30	43	30
Other	13,606	9,379	10,289	3,529	2,453	2,355
Total cheese	*57,195*	*76,036*	*56,096*	*15,262*	*17,933*	*13,872*
Other milk products—						
Preserved, condensed, concentrated, etc.—						
Sweetened	35,781	13,228	12,653	4,601	1,741	1,570
Unsweetened	14,543	11,638	10,512	1,656	1,350	1,189
Infants' and invalids' food (essentially of milk)(d)	10,698	26,783	29,079	3,244	8,827	9,171
Casein	42,470	37,020	58,217	9,545	8,227	10,809
Dried or powdered—						
Full cream	28,282	24,865	30,006	7,515	6,958	7,435
Skim	118,279	87,025	88,259	15,095	9,493	6,127

(a) Excludes butter concentrate, ghee, and ships' stores. (b) Excludes ships' stores. (c) Includes pastes and spreads. (d) Includes malted milk. New series from 1967–68; not comparable with figures for earlier years.

The pig industry

In line with the general trend of increased specialisation common to most of the rural industries, pig farming has developed into a separate industry being no longer mainly associated with the dairy industry.

At 31 March 1969 the number of pigs in Australia reached a record level of 2,253,000 which represented an increase of 197,000 (9.6 per cent) on the previous record at 31 March 1968 (2,056,000).

PIGS: NUMBERS IN STATES AND TERRITORIES, 1965 TO 1969

At 31 March	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*Aust.(a)*
1965	448,661	378,055	406,028	195,873	137,192	92,021	2,182	1,660,012
1967	513,575	350,591	467,572	222,334	160,983	85,654	2,791	1,746,551
1967	513,575	350,591	467,572	222,334	160,983	85,654	2,791	1,803,500
1968	645,196	376,990	520,141	242,319	182,507	86,517	1,999	2,055,669
1969	690,226	421,655	535,496	288,019	219,787	95,363	2,488	2,253,034

(a) Incomplete; excludes Australian Capital Territory.

A long-term comparison of pig numbers is given in the division Pastoral Production of this chapter (*see* page 802). A map showing the distribution of pigs in Australia at 31 March 1963 faces page 1083, Year Book No. 50 and a graph showing the number of pigs in Australia from 1870 onwards appears on plate 42 of this Year Book (*see* page 804).

PIGS SLAUGHTERED: STATES AND TERRITORIES, 1964-65 TO 1968-69
('000)

	Slaughterings passed for human consumption									*Total slaughterings (including boiled down)*
Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*	
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
1967–68	908	700	735	310	242	143	3	9	3,049	3,058
1968–69	1,008	771	800	317	263	139	3	10	3,310	3,319

Production of pigmeat, bacon and ham

PRODUCTION OF PIGMEAT (CARCASS WEIGHT): STATES AND TERRITORIES
1964-65 TO 1968-69
(Tons)

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*N.T.*	*A.C.T.*	*Aust.*
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
1967–68	41,129	33,204	36,739	15,787	13,159	6,890	93	385	147,386
1968–69	46,313	36,582	39,168	15,939	14,006	7,024	107	460	159,599

PRODUCTION OF BACON AND HAM (CURED CARCASS WEIGHT): STATES
1964-65 TO 1968-69
(Tons)

Year	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Aust.*
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	9,995	14,670	4,403	4,624	1,242	50,300
1967–68	15,134	9,340	14,103	4,110	5,128	1,281	49,096
1968–69	14,748	9,872	15,189	3,998	5,417	1,394	50,618

Consumption of pigmeat, bacon and ham

The apparent consumption of pigmeat increased from 14.6 lb per head in 1967–68 to a record post-war figure of 16.2 lb in 1968–69.

PRODUCTION AND DISPOSAL OF PIGMEAT (CARCASS WEIGHT): AUSTRALIA 1964-65 TO 1968-69

Year	Change in stocks(a)	Production	Exports	Curing and canning	Apparent consumption (as pork or smallgoods) in Australia	
					Total	Per head per year
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	lb
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	69.8	70.2	13.4
1967–68	+0.9	147.4	0.6	68.1	77.9	14.6
1968–69	+0.4	159.6	1.2	70.3	87.7	16.2

(a) Includes allowance for imports.

PRODUCTION AND DISPOSAL OF BACON AND HAM (CURED CARCASS WEIGHT): AUSTRALIA, 1964-65 TO 1968-69

Year	Change in stocks	Production	Exports	Canning	Apparent consumption in Australia	
					Total	Per head per year
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	lb
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
1966–67	−0.2	50.3	0.2	8.1	42.1	8.1
1967–68	+0.1	49.1	0.2	7.7	41.1	7.7
1968–69	..	50.6	0.2	8.1	42.4	7.8

Exports of pigs and pig products

EXPORTS OF PIGS AND PIG PRODUCTS: AUSTRALIA, 1966-67 TO 1968-69

		Quantity			Value ($'000 f.o.b.)		
		1966–67	1967–68	1968–69	1966–67	1967–68	1968–69
Bacon and ham (including canned)	'000 lb	564	574	498	406	448	377
Lard	'000 lb	98	72	42	16	14	8
Frozen pork	'000 lb	2,060	1,239	2,658	826	540	935
Pigs, live	number	680	806	1,600	47	47	93

The poultry industry

Once part of the mixed farming sector the poultry industry is now a highly specialised and distinct industry. The bulk of the commercial production is obtained from this source, though many farm households and some private homes in suburban areas keep poultry to supply their domestic needs and some supplies from this source are also marketed. Because the data from this latter sector is incomplete, details of poultry numbers throughout Australia are not published. There is an increasing tendency for producers in the large scale commercial sector to specialise in either egg production or the production of poultry meats. These two sectors of the industry each have separate statistics and separate research schemes. Both sectors are good examples of the general movement towards specialised, large scale capital intensive production which is common to all rural industries.

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 maximum rate of levy permitted under the legislation is $1 per hen per annum. The levy is payable fortnightly by the owner of the hen. The levy operated at its maximum in 1967–68 and 1968–69. It was apportioned at a rate of 4 cents per hen per fortnight for the first 24 fortnights and 2 cents per hen per fortnight for the remaining two fortnights, in accordance with the recommendations of the Council of Egg Marketing Authorities of Australia.

Exemptions from payment are granted on the first twenty 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 $10,786,000 in 1968–69 ($10,949,000 in 1967–68). 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 $10,920,228 in 1968–69 ($10,420,000 in 1967–68).

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 per annum. 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.

Chicken Meat Research

In June 1969 a research scheme for the chicken meat industry was established along the lines of the schemes existing for the meat, wheat, dairy, tobacco, wine, wool and poultry industries. The legislation provides for a levy of 10 cents per 100 meat type chickens hatched to be paid into a trust fund. Research expenditure from this fund will be matched by an equal Commonwealth contribution. It is expected that some $160,000 will be available for research purposes in the initial years of the scheme.

Marketing of eggs

Details of the *Egg Export Control Act* 1947–1966 were given in earlier issues of the Year Book (*see* No. 47, page 997).

Chicken hatching and poultry slaughterings

Statistics shown in the following section have been compiled on a Commonwealth basis since 1965–66 from returns supplied by commercial chicken hatcheries (i.e. those making sales of day-old chicks) and by commercial poultry slaughtering establishments. Poultry farmers hatching chicks solely for replenishing their own flocks, and the many very small producers, including producers in the Australian Capital Territory and the Northern Territory are excluded from the collection. However, the statistics represent a high level of coverage in respect of commercial hatcheries and slaughtering establishments.

Poultry slaughtered for human consumption

No allowance has been made in the following figures for interstate movement of dressed poultry or changes in stocks held, and figures therefore do not necessarily represent the level of consumption in the States concerned.

Statistics for poultry slaughtered in Queensland are based on numbers slaughtered as collected by the Queensland Department of Primary Industries. From 1968–69, New South Wales slaughtering statistics include poultry slaughterings by producers in the Australian Capital Territory.

NUMBERS OF POULTRY SLAUGHTERED FOR HUMAN CONSUMPTION
1965-66 TO 1968-69
('000)

Year	*Chickens(a)*	*Other fowls(b)*	*Ducks and drakes*	*Turkeys*
1968–69				
New South Wales	34,838	2,763	535	683
Victoria	13,832	1,327	272	114
Queensland	12,952	1,102	114	52
South Australia	4,415	282	35	21
Western Australia	8,137	419	(c)	(c)
Tasmania	1,001	131	(c)	(c)
Australia	**75,174**	**6,025**	**1,010**	**916**
1967–68	76,361	5,403	790	660
1966–67	67,085	4,760	775	694
1965–66	52,551	4,601	841	481

(a) Comprises broilers, fryers and roasters. (b) Comprises hens, roosters, etc. (c) Not available for publication.

DRESSED WEIGHT OF POULTRY SLAUGHTERED FOR HUMAN CONSUMPTION(a)
1965-66 TO 1968-69
('000 lb)

Year	*Chickens(b)*	*Other fowls(c)*	*Ducks and drakes*	*Turkeys*	*Total*
1968–69—					
New South Wales	97,153	9,951	1,953	6,243	115,299
Victoria	39,445	4,667	1,005	1,048	46,166
Queensland(d)	35,578	4,317	513	411	40,818
South Australia	10,937	987	130	215	12,269
Western Australia	20,672	1,508	(e)	(e)	22,653
Tasmania	2,866	447	(e)	(e)	3,507
Australia	**206,651**	**21,877**	**3,849**	**8,335**	**240,711**
1967–68	197,350	19,671	3,099	6,363	226,482
1966–67	168,130	16,940	2,997	7,093	195,159
1965–66	127,551	15,910	3,419	5,122	152,002

(a) Dressed weight of all birds, including pieces and giblets, as reported in all States except Queensland. (b) Comprises dressed weight of broilers, fryers and roasters. (c) Comprises dressed weight of hens, roosters, etc. (d) Estimated. (e) Not available for publication.

Chicken hatchings in commercial hatcheries

Details contained in the following tables relate to all eggs set and to chicks hatched in commercial hatcheries whether for sale as day-old chicks or for replenishment of own flocks.

NUMBER OF EGGS SET(a) IN COMMERCIAL HATCHERIES: STATES, 1965-66 TO 1968-69
('000)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.
MEAT STRAINS							
1965–66 . .	40,226	18,758	n.a.	5,089	(b)	953	(c)65,026
1966–67 . .	50,141	19,626	n.a.	6,215	(b)	1,227	(c)77,209
1967–68 . .	54,270	20,655	17,969	7,407	(b)	(b)	112,484
1968–69 . .	51,667	20,120	18,381	6,546	(b)	(b)	109,832
EGG STRAINS							
1965–66 . .	19,096	10,956	n.a.	4,464	3,362	1,067	(c)38,945
1966–67 . .	19,847	12,206	n.a.	5,352	3,784	761	(c)41,950
1967–68 . .	19,510	12,578	8,823	5,060	3,256	1,024	50,251
1968–69 . .	19,971	13,104	8,909	5,049	3,660	904	51,597

(a) Includes eggs which failed to hatch. (b) Not available for publication. (c) Incomplete; *see* individual States.

CHICKENS HATCHED(a) IN COMMERCIAL HATCHERIES: STATES, 1965-66 TO 1968-69
('000)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.
INTENDED FOR CHICKEN MEAT—MEAT STRAINS (Unsexed)							
1965–66 . .	26,136	13,705	n.a.	3,501	(b)	582	(c)43,924
1966–67 . .	34,163	14,486	n.a.	4,383	(b)	833	(c)53,865
1967–68 . .	37,629	15,806	13,456	5,218	(b)	(b)	80,874
1968–69 . .	35,563	15,546	13,765	5,053	(b)	(b)	79,538
INTENDED FOR CHICKEN MEAT—EGG STRAINS (Crossbred and other cockerels)(d)							
1965–66 . .	3,109	2,135	n.a.	274	324	107	(c)5,949
1966–67 . .	1,743	1,509	n.a.	230	313	72	(c)3,867
1967–68 . .	1,545	1,567	759	134	105	43	4,153
1968–69 . .	1,191	880	457	180	66	19	2,794
INTENDED FOR EGG PRODUCTION—EGG STRAINS (Pullets)(d)							
1965–66 . .	5,934	3,710	n.a.	1,525	1,077	372	(c)12,618
1966–67 . .	6,293	4,114	n.a.	1,925	1,253	273	(c)13,858
1967–68 . .	6,093	4,251	2,862	1,904	1,143	371	16,624
1968–69 . .	6,310	4,455	2,922	1,854	1,246	299	17,085

(a) Excludes chicks destroyed. (b) Not available for publication. (c) Incomplete; *see* individual States. (d) Includes (for States other than Queensland) a proportion of unsexed egg strain chicks.

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, 1964-65 TO 1968-69
('000 dozen)

State	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
New South Wales(*b*)	62,918	65,240	68,043	74,682	76,062
Victoria	28,016	29,925	34,100	38,231	41,147
Queensland	14,182	17,062	20,474	21,393	20,854
South Australia	9,354	11,218	13,176	15,813	15,692
Western Australia	9,620	9,295	9,810	11,583	11,491
Tasmania	n.a.	n.a.	n.a.	n.a.	n.a.
Total(*c*)	**124,089**	**132,740**	**145,603**	**161,702**	**165,247**

(*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, 1964-65 TO 1968-69
('000 lb)

State	*1964–65*	*1965–66*	*1966–67*	*1967–68*	*1968–69*
New South Wales	18,463	12,540	15,734	14,532	15,691
Victoria	5,512	3,286	6,029	8,841	10,093
Queensland	5,731	5,450	6,809	7,877	5,288
South Australia	2,639	4,148	4,953	7,024	5,370
Western Australia	1,450	977	1,143	1,802	1,510
Tasmania	n.a.	n.a.	n.a.	n.a.	n.a.
Total(*a*)	**33,795**	**26,401**	**34,667**	**40,076**	**37,952**

(*a*) Excludes Tasmania.

In addition to liquid whole egg, production was also recorded of liquid egg whites and liquid egg yolks. Output in 1968–69 amounted to 7,112,000 lb and 4,928,000 lb respectively, compared with 5,968,000 lb and 4,541,000 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, 1964-65 TO 1968-69

Year	*Change in stocks*	*Estimated total production*	*Exports(a)*	*For drying and pulping(b)*	*Apparent consumption in Australia*	
					Total	*Per head per year*
	mil. doz	mil. doz	mil. doz	mil. doz	mil. doz	doz
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
1966–67	+0.2	237.8	5.3	31.3	201.0	17.2
1967–68	−0.3	253.3	6.5	42.3	204.7	17.2
1968–69	+0.3	257.0	6.7	41.0	208.9	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, 1964-65 TO 1968-69

(Per head per year)

Year	Eggs in shell	Liquid whole egg and egg powder(a)	Total	
			Number	Weight(b)
	number	number		lb
1964–65	202	15	217	27.1
1965–66	205	15	220	27.5
1966–67	206	13	220	27.5
1967–68	206	17	223	27.9
1968–69	206	18	224	28.0

(a) In terms of number of eggs in shell. (b) The average weight of an egg in Australia is taken as 2 oz.

Overseas trade in poultry products

Australian exports of shell eggs in 1968–69 amounted to 6,043,000 dozen compared with 5,813,000 dozen in 1967–68. The main outlets for Australian eggs in 1968–69 were the United Kingdom (1,964,000 dozen), Trucial States (874,000 dozen), Hong Kong (765,000 dozen), and Bahrain (462,000 dozen).

EXPORTS OF POULTRY PRODUCTS: AUSTRALIA
1966-67 TO 1968-69

		Quantity			Value ($'000 f.o.b.)		
		1966–67	1967–68	1968–69	1966–67	1967–68	1968–69
Eggs in shell	'000 doz	4,451	5,813	6,043	1,161	1,417	1,356
Eggs not in shell—							
In liquid form	'000 lb	18,226	25,707	28,505	3,224	4,115	4,214
Dry	'000 lb	100	144	99	77	81	31
Frozen poultry	'000 lb	1,410	2,102	2,699	503	694	858
Poultry, live(a)	number	276,259	167,060	86,574	69	42	24

(a) Includes day-old chicks.

Imports of canned poultry in 1968–69 amounted to 210,000 lb, valued at $70,000, compared with 247,000 lb, valued at $81,000, in 1967–68.

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. Production of honey in 1968–69 amounted to 29,081,000 lb (96.6 lb per productive hive) compared with 43,958,000 lb (122.0 lb per productive hive) in 1967–68. Bees-wax produced in 1968–69 was 425,000 lb compared with 609,000 lb in the previous year.

In the following tables, statistics for 1968–69 for each State are confined to apiarists with five or more hives, except in New South Wales where, since 1966–67, 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., 1968-69

State or Territory	Beehives(a)			Honey produced		Bees-wax produced	
	Productive	Unproductive	Total	Quantity	Gross value	Quantity	Gross value
	'000	'000	'000	'000 lb	$'000	'000 lb	$'000
New South Wales	113	60	173	10,654	932	145	90
Victoria	57	43	100	3,638	520	50	37
Queensland	32	27	58	1,718	173	32	20
South Australia	55	15	70	5,770	539	92	55
Western Australia	35	10	46	6,553	491	94	51
Tasmania	7	2	9	671	97	11	5
Australian Capital Territory	1	1	2	78	8	1	1
Australia	**301**	**157**	**458**	**29,081**	**2,760**	**425**	**259**

(a) At 30 June 1969.

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., 1964-65 TO 1968-69
('000 lb)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	A.C.T.	Aust.
				HONEY				
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
1967–68	21,014	7,580	4,116	6,844	3,410	841	153	43,958
1968–69	10,654	3,638	1,718	5,770	6,553	671	78	29,081
				BEES-WAX				
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
1967–68	281	92	66	105	49	13	2	609
1968–69	145	50	32	92	94	11	1	425

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* 1962–65, 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 1966–67, 1967–68 and 1968–69 collections amounted to $92,000, $96,000 and $106,000 respectively.

Overseas trade in bee products

The principal importer of Australian honey in 1968–69 was the United Kingdom, accounting for 50.4 per cent, by value, of total exports.

Bees-wax was exported mainly to the United Kingdom and the Federal Republic of Germany in 1968–69.

EXPORTS OF HONEY AND BEES-WAX: AUSTRALIA, 1966-67 TO 1968-69

	Quantity ('000 lb)			*Value ($'000 f.o.b.)*		
	1966–67	*1967–68*	*1968–69*	*1966–67*	*1967–68*	*1968–69*
Honey	13,050	n.a.	12,246	1,518	1,197	1,480
Bees-wax	598	471	301	299	321	200

Value of dairy, poultry and bee production

Value of dairy, poultry and bee production

Values of dairy, poultry and bee-farming production for 1968–69 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 1964-65 TO 1968-69

($'000)

	1964–65	*1965–66*	*1966–67*	*1967–68*	*1968–69*
DAIRYING					
Whole milk used for—					
Butter(*a*)	157,989	154,862	165,635	134,089	148,148
Cheese(*a*)	30,119	25,603	33,345	31,148	29,994
Processed milk products	23,806	24,197	25,355	23,084	23,245
Other purposes	145,310	149,589	148,955	154,280	154,547
Subsidy paid on whole milk for—					
Butter	24,500	24,500	24,500	24,100	23,313
Cheese	2,500	2,500	2,500	2,900	3,687
Total, whole milk (including subsidy)	*384,224*	*381,250*	*400,289*	*369,602*	*382,935*
Pigs slaughtered	75,408	77,284	83,961	89,598	86,842
Dairy cattle slaughtered	45,624	49,438	39,563	44,849	43,967
Total, dairying	**505,256**	**507,973**	**523,814**	**504,050**	**513,742**
POULTRY					
Total, poultry	**137,425**	**154,603**	**174,451**	**172,488**	**179,160**
BEE-FARMING					
Honey	4,866	4,103	3,765	4,259	2,760
Bees-wax	253	224	224	367	259
Total, bee-farming	**5,119**	**4,323**	**3,992**	**4,627**	**3,021**

(*a*) Excludes Commonwealth subsidy which is shown separately.

GROSS, LOCAL AND NET VALUE OF DAIRY PRODUCTION
STATES AND TERRITORIES, 1968-69

($'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	154,840	13,316	141,524	(b)26,437	115,087
Victoria	202,245	8,097	194,148	28,030	166,117
Queensland	64,267	4,747	59,521	19,346	40,175
South Australia	39,016	828	38,188	14,935	23,253
Western Australia	25,101	1,340	23,762	10,853	12,909
Tasmania	27,713	1,393	26,321	7,450	18,871
Northern Territory	112	3	109	n.a.	109
Australian Capital Territory	448	23	425	103	322
Australia	**513,742**	**29,747**	**483,998**	**107,154**	**376,843**

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

Indexes of quantum and price of dairy, poultry and bee production

For details of these indexes *see* the chapter Miscellaneous.