

# **PRODUCTION.**

## **LAND SETTLEMENT, ETC.**

The total area of the State is 56,245,760 acres. This comprises—

	Acres.
Lands alienated in fee simple .. ..	25,803,657
Lands in process of alienation .. ..	8,941,051
Crown lands .. ..	21,501,052
<b>Total .. ..</b>	<b>56,245,760</b>

The Crown lands comprise—

Permanent forests (under Forests Act) ..	3,569,226
Timber reserves (under Forests Act) ..	736,355
State forests and Timber reserves (under Land Act) .. ..	329,385
Water reserves .. ..	314,114
Reserves for Agricultural Colleges, &c. ..	87,062
Reserves in the Mallee .. ..	409,800
Other reserves .. ..	333,378
Roads .. ..	1,794,218
Water frontages, beds of rivers, lakes, &c.; } unsold land in cities, towns, and boroughs }	2,570,400
Land in occupation under—	
Perpetual leases .. ..	99,673
Other leases and licences .. ..	62,170
Temporary grazing licences .. ..	8,308,575
Unoccupied .. ..	2,886,696
<b>Total .. ..</b>	<b>21,501,052</b>

Alienation  
of land.

In the following table are shown the area of Crown lands sold absolutely and conditionally, and the area of lands alienated in fee simple in each year since 1917.

A portion of the area conditionally sold reverts to the Crown each year in consequence of the non-fulfilment of conditions by the selectors. The lands alienated each year include areas selected in previous years.

### ALIENATION OF CROWN LANDS, 1918 to 1927.

Year.			Area of Crown Lands Sold.		Crown Lands alienated in Fee Simple.	
			Absolutely, at Auction, &c.	Conditionally to Selectors.*	Area.	Purchase Money.
			Acres.	Acres.	Acres.	£
1918	..	..	1,760	74,514	76,064	78,235
1919	.	..	1,166	70,729	102,294	114,654
1920	..	..	3,125	102,534	187,228	192,861
1921	..	..	1,800	99,519	110,056	100,890
1922	..	..	2,658	186,686	106,485	118,698
1923	..	..	3,015	200,517	142,940	167,669
1924	..	..	3,093	151,875	126,147	167,322
1925	..	..	2,920	92,996	185,038	129,187
1926	..	..	2,832	93,469	125,765	87,740
1927	..	..	3,824	85,409	214,173	203,414

\* Exclusive of Mallee selectors.

Amount  
realized by  
sale of Crown  
lands.

From the period of the first settlement of the State to the end of 1927 the amount realized by the sale of Crown lands was £34,926,876, which represents an average of £1 0s. 1d. per acre for all lands alienated or in process of alienation. Payment of a considerable portion of this amount extended over a series of years without interest, upon very easy terms.

The next table shows the whole of the unalienated lands of the Crown remaining for disposal:—

CROWN LANDS REMAINING FOR DISPOSAL ON 31ST  
DECEMBER, 1927.

Location.	Classification.						Total.
	Agricultural and Grazing.					Auri-ferous.	
	First.	Second.	Third.	Fourth.	Un-classed.		
County.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Bulu Bulu .. ..	5,099	29,818	77,889	..	..	..	112,806
Croajlongong .. ..	2,510	1,756	364,058	..	837,400	13,850	1,219,574
Dargo .. .. .	..	..	100,477	..	431,900	72,000	604,377
Tambo .. .. .	..	..	217,784	..	364,450	900	583,134
Tanjil .. .. .	..	..	109,095	..	361,650	67,000	537,745
Wonnangatta .. ..	..	39	151,847	..	608,200	..	760,086
Bogong .. .. .	1,130	12,541	202,100	..	158,724	98,150	472,645
Benambra .. .. .	..	403	275,713	..	316,474	88,779	681,369
Delatite .. .. .	390	18,521	194,630	4,960	277,750	61,333	557,584
Moirá .. .. .	546	149	10,833	..	..	..	11,528
Anglesey .. .. .	..	3,823	59,704	..	..	3,160	66,687
Bourke .. .. .	..	162	..	..	..	..	162
Dalhousie .. .. .	..	533	1,234	..	..	4,855	6,622
Evelyn .. .. .	19	6,763	391	..	..	993	8,166
Mornington .. ..	..	897	9,184	..	..	..	10,081
Bendigo .. .. .	173	797	3,399	..	..	4,078	8,387
Rodney .. .. .	..	88	..	..	..	2,234	2,322
Borong .. .. .	25	647	63,381	274	423	5,069	69,819
Gladstone .. ..	1,101	1,481	2,358	..	..	12,915	17,855
Lowan .. .. .	..	699	198,283	34,405	10,343	..	243,730
Kara Kara .. ..	86	126	3,436	..	..	3,710	7,358
Talbot .. .. .	318	801	561	..	..	41,169	42,849
Tatchera .. .. .	20	70	..	..	..	..	90
Heytesbury .. ..	..	863	164,448	..	..	..	165,311
Polwarth .. .. .	16,796	17,112	28,468	..	..	..	62,376
Grant .. .. .	..	155	24,445	..	..	12,044	26,844
Grenville .. .. .	..	311	..	..	..	8,793	9,104
Ripon .. .. .	..	380	23,606	..	..	2,489	26,475
Normanby .. .. .	615	..	124,172	..	8,810	..	133,597
Dundas .. .. .	..	..	89,857	6,571	15,754	..	112,182
Villiers .. .. .	..	..	1,268	..	..	..	1,268
Follett .. .. .	..	1,852	155,442	..	32,276	..	189,570
Karkarocoe .. ..	..	39	..	..	..	..	39
Total .. .. .	28,828	100,766	2,658,263	46,210	3,424,154	503,521	6,761,742
Throughout the State	Swamp or reclaimed lands .. .. .						1,073
" " "	Lands which may be sold by auction .. .. .						7,087
The north-western por- tion of the State	Mallee lands (such as are suitable to be eventually classed 1st, 2nd, 3rd, 4th and 4A class for selection) .. .. .						4,425,369
Total area remaining for disposal .. .. .							11,195,271

Much of the land included in the above statement is temporarily leased under grazing licences.

**Pastoral  
occupation of  
Crown lands.  
are as follows :—**

The particulars of Crown lands for which licences had been issued for pastoral occupation on 31st December, 1927,

Number of Licences .. .. .	5,545
Area (acres) .. .. .	8,308,575
Annual Rental .. .. .	£28,815

**Persons who  
may select  
land.**

Any person of the age of 18 years or upwards is eligible to apply to select under the Land Acts a prescribed area varying according to the classification of the land—less the area of previous selections.

**Concessions to  
land seekers.**

The Lands Inquiry Branch gives information to intending applicants and issues concession warrants for half fares on Victorian Railways to persons travelling to make inspection or take possession of land.

**Area that may  
be selected.**

An applicant may select in the Mallee, under Selection Purchase Lease, 640 acres of first class, 1,000 acres of second class, 1,280 acres of third class, 1,600 acres of fourth class land, or 4,000 acres of land classed 4A; and, in addition, may acquire privately an area equivalent to that which he selects from the Crown.

**Grazing  
licences.**

Grazing licences are renewable annually, and are only granted for waste lands of the Crown until required under the principal sections of the Act.

**Transfer of  
Land Act.**

The "Torrens System," whereby persons acquiring possession of land may receive a clear title, was introduced into Victoria in 1862. The system has been the means of simplifying procedure in connexion with the transferring of land. It gives a title to the transferee free of any latent defect and reduces the cost of dealing in real estate by reason of the simplicity of the procedure. All land parted with by the Crown since 1862 is under the operation of the Transfer of Land Act, and the Crown grant issues through the Titles Office; but, to bring under the Act land that was parted with prior to that year, application must be made accompanied by strict proofs of the applicant's interest in the property. During 1927 there were submitted 421 applications to have brought under the Act land amounting to 16,202 acres in extent, and to £1,122,323 in value; while the land actually brought under the Act during the year by application was 23,103 acres valued at £1,215,532. Up to the end of 1927 there had been brought under the Act 3,148,607 acres valued at £66,945,262.

**Assurance  
Fund.**

When application is made to have land brought under the Transfer of Land Act, a contribution to the assurance fund of  $\frac{1}{2}$ d. in the £1 on the value of the land is levied on the applicant to assure and indemnify the Government in granting a clear title against all the world, as some other person may have a latent interest in the property, and it may be necessary for the Government to recompense such person out of the fund for the loss of his interest. Receipts during 1927-28 comprised contributions £3,836, interest on stock £4,992, and interest on £75,073—advanced under *The Protection of Public Buildings Act 1885*—£3,003. During the year £83 was paid out of the fund in settlement of claims, and £5,098 as interest on securities under the *Special Funds Act 1920*, No. 3067. The balance at the credit of the assurance fund on 30th June, 1928, was £180,538. The amount paid up to 30th June, 1928, as compensation and for judgments recovered, including costs, was £8,411.

**CLOSER SETTLEMENT.****Closer  
Settlement.**

Under the provisions of the Closer Settlement Act the Closer Settlement Board is empowered to expend at the rate of £500,000 per annum in the purchase—either by voluntary or compulsory acquisition—of lands (whether privately owned or held under lease from the Crown) for subdivision into suitable allotments according to the class of the land, and for disposal by the Board to eligible applicants, as stated hereafter. Lands well adapted for settlement are thus made available in those portions of the State in which railways, water supply and markets are provided, and in which roads and other facilities are good. The areas purchased comprise ordinary farming lands in a more or less improved condition, and lands in irrigated districts with plentiful supplies of water for irrigation.

Every application for a Closer Settlement allotment must be accompanied by the registration fee of 5s., a lease fee of £1, and a deposit (equal to at least 3 per cent. of the capital value of the land) which is deducted from the purchase money. The applicant is required to give evidence of suitability and fitness, &c., to occupy the land. If successful, a permit giving immediate possession is issued (followed by a lease as soon as practicable), and no further payment is required for six months. If the application be refused, the amount forwarded as a deposit in respect of the purchase money and the lease fee are returned to the unsuccessful applicant, but the registration fee is retained. Only one allotment of the maximum value can be granted to any one person, and the principle of residence for eight months in each year is a condition of the lease.

In addition to the provisions for the purchase of large estates for subdivision, the Closer Settlement Act provides that any one or more persons, who are eligible to acquire a farm allotment under the Closer Settlement Act, may enter into a provisional agreement with the owner of a block of private land for the purchase thereof, and

acquire it through the Closer Settlement Board—vide section 20, Act 2629. The value of the land must not exceed the maximum allowed under the Act. An application on the proper form must be filled in, and the agreement with full details and the application must be lodged with the Board, together with a valuation fee of £4. Where the agreement is submitted on behalf of more than one applicant, an additional fee of £2 must be lodged in respect of each additional applicant. The fee may be returned if, after a preliminary inspection, the Board does not approve of the application. Should the Board decide to acquire the land, the purchaser is required to deposit an amount not exceeding four half-yearly instalments, and is otherwise subject to all the provisions of the Closer Settlement Act with regard to payments, residence, improvements, &c.

Repurchased lands are disposed of as farm allotments, agricultural labourers' allotments, and workmen's home allotments under conditional purchase lease. The principal terms of these leases, as regards farm allotments, are briefly stated herein. They are given in detail in each title as issued.

Conditional purchase leases are granted to successful applicants under the Closer Settlement Act, and are for such a term not exceeding  $36\frac{1}{2}$  years as may be agreed upon between the lessee and the Board. The purchase money is payable by 73 or a less number of half-yearly instalments. In some cases the Board has granted applications for extension of payments under a lease to  $46\frac{1}{2}$  years, the payments being by 93 half-yearly instalments. The deposit lodged with the application is credited as part of the principal, and the balance bears interest at 5 per cent. Each instalment includes interest upon the balance of purchase money remaining unpaid, and is 3 per cent. half-yearly (6 per cent. per annum) of the capital value of the allotment (less the amount of the deposit). Payments in advance may be made at any time, at the option of the lessee, and a proportionate reduction of interest secured thereby.

In special cases, when a lessee is unable to meet the instalments of purchase money as they fall due, the Board has power to suspend such payments up to an amount not exceeding 60 per cent. of the value of the improvements effected by him. Interest at the rate of 5 per cent. per annum is charged on the amount in arrear or on any instalments which may have been suspended.

The lessee must reside on the allotment for eight months during each year. Personal residence by the lessee's wife, or child over 18 years of age, or parent dependent for support, may, with the approval of the Board, be considered personal residence by the lessee. A farm lessee cannot transfer, assign, mortgage, or sublet the whole or any part of his allotment within the first three years of the lease. The Crown grant may be issued to the lessee at the end of any half-year after the first twelve years have expired, on payment of the balance of purchase money. The residence condition is not carried into the Crown grant.

**Farm allotments.**

Lands for farm allotments are subdivided into suitable areas, of which none must exceed in value £2,500 except in the case of blocks mainly consisting of grazing land, when the value may be increased to £3,500; and no lease of any of these areas can be granted to a person who at the date of application is directly or indirectly the owner of any other land in Victoria (township land excepted) the value of which, together with that of the allotment applied for, exceeds the amount stated. The *Closer Settlement Act* 1925, No. 3422, empowers the Closer Settlement Board to increase the maximum value of a farm allotment to any amount not exceeding £3,000 in the case of any conditional purchase lease issued before the commencement of the said Act, where, in the opinion of the Minister after consulting the Board, the lessee has a reasonable chance of success if the area of his allotment is increased. Improvements of a permanent and substantial character must be effected by the lessee of a farm allotment to the value of at least two instalments of the purchase money before the end of the first year from the date of the lease, 10 per cent. of the purchase money before the end of the third year, and a further 10 per cent. before the end of the sixth year. Improvements must thus be made to the value of at least 20 per cent. of the total purchase money payable for the allotment. If an approved deputy is fulfilling the residential condition, the value of the improvements must be at least 30 per cent. of the total purchase money. If they are made in excess of requirements during the first three years, the excess is set off against the expenditure necessary by the end of the sixth year. Where special circumstances warrant action, the Minister, upon the recommendation of the Board, may modify the improvement conditions.

**Advances to settlers.**

The Closer Settlement Act provides for advances by the Closer Settlement Board to settlers who are—

- (a) Lessees under the *Closer Settlement Act* 1915.
- (b) Licensees of an agricultural or grazing allotment under the *Land Act* 1915.
- (c) Licensees under section 86 of the *Land Act* 1915 or corresponding sections of any repealed Act.
- (d) Conditional purchase lessees under the *Land Act* 1915; or
- (e) Conditional purchase lessees under the Murray Settlements Act, now Section 245, *Land Act* 1915.
- (f) Selection purchase lessees under Sections 46 and 50, *Land Act* 1915, during the first six years of the term of the leases.
- (g) Perpetual lessees under Section 54, *Land Act* 1915.

Advances of money to assist in effecting improvements may be granted by the Board up to 80 per cent. of the value of the permanent improvements effected, such advances to be repaid by half-yearly instalments extending over twenty years, bearing interest at 5 per cent. Advances to acquire stock and for the purchase of seed, manure, and implements can also be made. The total advances for all purposes must not exceed

£625, or in the case of a mountainous area lease, or of a Mallee allotment, or of any allotment of land which in the opinion of the Minister is mainly grazing land, £1,000; but where the whole or part of an advance is repaid the Board may make a further advance up to a total of £625 or (as the case may be) £1,000.

Advances not exceeding £250 may be made to persons holding approved share-farming or leasing agreements, which must be for a period of not less than three years, for the purchase of stock and implements, and for such other purposes as the Board thinks fit, to enable them to carry out the share-farming or leasing agreement.

The period for repaying the advances on improvements is usually limited to twenty years, and for live stock, seed, manure, and implements, to five years, interest at 5 per cent. per annum being charged on the unpaid balance of the amount advanced. On share farming and leasing agreements the period for repayment is limited to the period for which the lease or share farming agreement is in force.

**Group Settlement in Mountainous Areas.** Land may be acquired by the Board in mountainous areas for disposal to any group of settlers (not being less than five), and provision is made for freedom from payment of instalments for any period not exceeding ten years, subject to certain improvement conditions. Special provision is also made to enable the Board to provide road access to such areas. Interest at the rate of 5 per cent. per annum for the free period fixed by the Minister of Lands will be added to the capital value of the allotment, and will be repaid as part of the instalments of purchase money.

The Board may authorize an advance to be made for the purpose of clearing and improving the land, and may make progress payments to the lessee as the work for which the advance is intended progresses.

The Board will also assist in the erection of the dwelling-house and out-buildings required for the allotment. Advances made by the Board for this purpose are repayable on the same terms as those made to assist in effecting improvements which are referred to above.

**Wire netting advances.** Advances of wire netting may be made by the Board to Crown lessees and owners of land generally under the *Vermin Destruction Act 1915*, and the *Wire Netting Act 1924*.

The wire netting supplied is :—

- (a) Rabbit proof—No. 17 gauge, 1½-in. mesh, 42 inches wide, "A" grade.
- (b) Dog proof—No. 16 gauge, 4-in. mesh, 42 inches wide, "A" grade.

Netting is supplied for cash or on terms, advances being repayable over a period of thirteen years with interest at 4 per cent. per annum; payment of instalments is postponed during the first three years of an advance, and each advance is limited to a quantity sufficient for 6 miles of vermin-proof fencing. Where the netting is erected on a boundary



immediately adjoining unoccupied Crown land, or separated only by a public road therefrom, a rebate of 50 per cent. of the cost thereof is allowed.

**Estates purchased.** A complete statement of all estates acquired by the Closer Settlement Board at 30th June, 1928, including those purchased by the State Rivers and Water Supply Commission (i.e., estates in irrigable areas), will be found in the report of the Closer Settlement Board for the year ended 30th June, 1928.

A summary of the lands acquired, exclusive of estates purchased for discharged soldiers' settlement (*vide* page 530), is given in the following statement:—

### CLOSER SETTLEMENT LANDS ACQUIRED AT 30TH JUNE, 1928.

	Area.	Purchase Money, including Discount on Stock Debentures	Total Cost to Date.*	Number of Lessees.			Area Unallotted.
				Farm Allotments.†	Workmen's Homes.	Agricultural Labourers' Allotments.	
<b>Dry Areas.</b>	acres.	£	£	Number.	Number.	Number.	acres.
Lands purchased (Farms)...	898,774	5,445,704	5,657,629	3,025	..	141	10,180
Crown lands taken over (Farms)...	21,977	20,186	24,026	29	..	17	610
Repurchased lands (Workmen's Homes)	628	63,133	94,544	..	974	..	..
Crown lands taken over (Workmen's Homes)...	355	6,372	8,505	..	83	..	9
<b>Total Dry Areas ..</b>	<b>831,734</b>	<b>5,535,395</b>	<b>5,784,704</b>	<b>3,054</b>	<b>1,057</b>	<b>158</b>	<b>10,799</b>
<b>Irrigable Areas.</b>							
Repurchased lands (Farms)...	171,079	2,211,418	2,361,222	2,120	..	147	15,741
Crown lands taken over (Farms) ..	922	4,398	4,475			..	..
<b>Total Irrigable areas</b>	<b>172,001</b>	<b>2,215,816</b>	<b>2,365,697</b>	<b>2,120</b>	<b>..</b>	<b>147</b>	<b>15,741</b>
<b>Total acquired at 30th June, 1928</b>	<b>1,003,735</b>	<b>7,751,211</b>	<b>8,150,401</b>	<b>5,174</b>	<b>1,057</b>	<b>305</b>	<b>26,540</b>
<b>Less area disposed of under Discharged Soldiers Settlement Acts</b>	<b>69,670</b>	<b>682,806</b>	<b>682,806</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>
<b>Total (net) ..</b>	<b>934,065</b>	<b>7,068,405</b>	<b>7,467,595</b>	<b>5,174</b>	<b>1,057</b>	<b>305</b>	<b>26,540</b>

\* Includes (a) Purchase money, £7,751,211; expenses prior to disposal, £82,045; public works, £277,833; and interest capitalized, £39,312.

† Not including 649 lessees of farm allotments disposed of under the Discharged Soldiers Settlement Acts.

Up to 30th June, 1928, the Board had acquired 305 properties, with a total area of 1,003,735 acres, of which 26,541 acres were then unallotted. Portions of estates amounting in the aggregate to 52,420 acres have been sold by public competition, and for public reserves without any restrictions, and are not under conditional purchase leases.

The Land Settlement Agreement of 1922 resulted in 238 approved migrants from overseas being settled. Under the agreement of 1925 between the Imperial and Commonwealth Governments (by which loan moneys are advanced at a very low rate of interest), Victoria, at 30th June, 1928, had received £857,201 for approved settlement schemes at Childers, Katandra, and Maffra-Sale.

Up to 30th June, 1928, 649 allotments containing 69,670 acres, had been sold to discharged soldiers and transferred to the Discharged Soldiers Settlement Acts.

The extent of the settlement effected by the Board up to 30th June, 1928, is given in the next statement:—

### SUMMARY OF CLOSER SETTLEMENT TO 30TH JUNE, 1928.

Classification of Holdings.	Number.	Average Capital Value.	Average Area.	Total Area.
<b>Dry Areas.</b>	<b>No.</b>	<b>£</b>	<b>Acres.</b>	<b>Acres.</b>
Areas settled—				
Farms .. .. .	3,050	1,583	241	734,145
Agricultural Labourers' Allotments ..	158	160	17	2,694
Workmen's Homes .. .. .	1,061	89	3	783
Allotments disposed of under Discharged Soldiers Settlement Acts ..	230	1,222	173	39,726
Public Competition, Auction, &c. ..	..	..	..	43,582
Total area of land settled .. .. .	..	..	..	820,930
Area of land available for—				
Farm Lands and Agricultural Labourers' Allotments ..	..	..	..	9,167
Workmen's Homes .. .. .	..	..	..	19
Public Competition, Auction, &c. ..	..	..	..	607
Area of land acquired but not yet available ..	..	..	..	..
Loss of area on subdivision (roads, channels, reserves, &c.) ..	..	..	..	1,011
Total dry areas acquired .. .. .	..	..	..	831,734
<b>Irrigation Areas.</b>	<b>No.</b>	<b>£</b>	<b>Acres.</b>	<b>Acres.</b>
Areas settled—				
Farms .. .. .	2,120	786	53	113,072
Agricultural Labourers' Allotments ..	147	116	6	892
Allotments disposed of under Discharged Soldiers Settlement Acts ..	419	959	71	29,943
Public Competition, Auction, &c. ..	..	..	..	8,838
Total area of land settled .. .. .	..	..	..	152,745
Area of land available for—				
Farm Lands and Agricultural Labourers' Allotments ..	..	..	..	11,766
Public Competition, Auction, &c. ..	..	..	..	370
Area of land acquired but not yet available ..	..	..	..	5,589
Loss of area on subdivision (roads, channels, reserves, &c.) ..	..	..	..	1,531
Total irrigation areas acquired .. .. .	..	..	..	172,001
TOTAL AREAS acquired to 30th June, 1928 ..	..	..	..	1,003,735

Financial  
statement of  
Closer  
Settlement.

The liabilities and assets of Closer Settlement at 30th June, 1928, are shown hereunder :—

FINANCIAL STATEMENT OF CLOSER SETTLEMENT AT  
30TH JUNE, 1928.

Liabilities—						£
For Loans, Advances, and Interest (accrued) ..	..	..	..	..	..	8,409,166
Crown Lands taken over ..	..	..	..	..	..	12,590
Discharged Soldiers Settlement for land taken over ..	..	..	..	..	..	1,011,721
Sundry Creditors ..	..	..	..	..	..	40,517
Reserves, &c. ..	..	..	..	..	..	237,123
						<hr/>
						9,711,117
						<hr/>
Assets—						
Balance of purchase money not accrued due by lessees and others						5,228,141
Land on hand ..	..	..	..	..	..	321,598
Balance of advances on improvements not accrued due ..	..	..	..	..	..	1,830,055
Government Securities ..	..	..	..	..	..	130,000
Cash (including balance at credit of Closer Settlement Fund) ..	..	..	..	..	..	285,013
Sundry assets (including Interest accrued but not yet payable) ..	..	..	..	..	..	600,623
Arrears on land and advances (less £20,035 bad debts written off)—						
Principal—						£
Land ..	..	..	..	..	..	235,875
Advances ..	..	..	..	..	..	282,660
Interest—						
Land ..	..	..	..	..	..	648,218
Advances ..	..	..	..	..	..	148,934
						<hr/>
						1,315,687
						<hr/>
						9,711,117

At 30th June, 1928, payments by settlers on land and advances amounted to £5,985,867, of which amount £3,119,713 was paid on account of principal and £2,866,154 on account of interest.

Eighty per cent. of the value of the improvements can be accepted as security for arrears.

Arrears secured by improvements ..	..	£904,018
Arrears secured by principal repaid on land ..	..	74,441
Arrears secured by stock mortgage, lien on crop, or unsecured ..	..	337,228
		<hr/>
Total ..	..	£1,315,687

The sum of £7,046,904 had been paid to the Closer Settlement Fund up to 30th June, 1928. Of that amount £3,434,260 had been transferred to revenue to meet interest due to stockholders, £125,000 had been transferred to a redemption fund to replace amounts written off estates re-valued, £103,373 had been invested in securities with the

State Treasury, and £3,061,042 had been utilized for redemption and cancellation of stock and for capital and working expenditure, the balance to the credit of the fund on 30th June, 1928, being £323,229. The balance of unredeemed securities is now £8,068,251, on which the interest payable amounts to £288,889 per annum. Up to 30th June, 1928, 13,566 persons had received advances aggregating £3,325,555, to effect improvements, or upon improvements already effected, and 4,809 persons had received advances amounting to £178,747 for the purchase of wire netting.

By Acts 2916 of 1917, 2988 of 1918, 3039 of 1919, 3061 of 1920, 3130 of 1921, 3253 of 1922, 3370 of 1924, and 3422 of 1925, provision was made for the settlement of discharged soldiers on the land and for other matters. The operation of these acts is under the control of the Closer Settlement Board, with the limitation that the closer settlement areas under irrigation conditions, and situated within an Irrigation and Water Supply District within the meaning of the *Water Act 1915*, are managed by the State Rivers and Water Supply Commission.

Up to 30th June, 1928, the Closer Settlement Board and the State Rivers and Water Supply Commission had acquired for the settlement of discharged soldiers 2,411,533 acres at a cost of £14,541,192, including 69,670 acres of Closer Settlement land taken over and disposed of under the Discharged Soldiers Settlement Acts. Of these lands 166,296 acres were granted to civilians under Closer Settlement Acts.

The following is a summary of the lands acquired :—

#### LANDS ACQUIRED FOR DISCHARGED SOLDIERS SETTLEMENT TO 30TH JUNE, 1928.

	Area.	Cost.
	acres.	£
Land specially purchased (3,469 properties) .. ..	1,760,483	13,345,910
Crown Lands taken over .. ..	581,380	512,476
Closer Settlement Lands taken over .. ..	69,670	682,806
Total area and cost of purchase .. ..	2,411,533	14,541,192
Expenses prior to disposal .. ..	..	107,913
Public Works effected .. ..	..	824,242
Interest capitalized .. ..	..	154,795
Total cost to 30th June, 1928 .. ..	..	15,628,142
Less land granted to civilians under Closer Settlement Acts .. ..	166,296	1,671,456
Total net area and cost .. ..	2,245,237	13,956,686

Extent of  
Soldier  
Settlement.

The extent of settlement at 30th June, 1928, is given in the table which follows :—

SUMMARY OF DISCHARGED SOLDIERS SETTLEMENT TO  
30TH JUNE, 1928.

	Dry Areas.	Irrigation Areas.
	acres.	acres.
Area of land settled—Soldiers .. .. .	1,943,662	52,791
Area of land settled—Civilians (Closer Settlement Acts) .. .. .	147,123	19,173
Area of land available .. .. .	2,030	1,170
Area of land acquired but not yet available .. .. .	462	19,372
Sales by Auction, &c. .. .. .	201,019	24,731
Total land acquired to 30th June, 1928 .. .. .	2,294,296	117,237
Farms, Number of—		
Soldier Settlers .. .. .	6,327	1,033
Civilians .. .. .	601	519
Total .. .. .	6,928	1,552
Average area—acres .. .. .	302	46
Average capital value .. .. .	£1,686	£746

The number of soldiers settled up to that date was as follows :—

On land specially purchased by the Closer Settlement Board	6,649
On land specially purchased by the State Rivers and Water Supply Commission .. .. .	1,487
On Closer Settlement old estates—Dry areas .. .. .	36
On Closer Settlement old estates—Irrigable areas .. .. .	570
On Crown Lands—Ordinary and Mallee Areas .. .. .	1,455
On Crown Lands—Merbein and Nyah Irrigation Areas .. .. .	186
Soldiers receiving assistance from the Closer Settlement Board, on share farming, leasing agreements and freehold land .. .. .	852
Total .. .. .	11,235

In addition to the above there were available or in process of being made available 18 allotments, of which 3 were on land specially purchased by the Closer Settlement Board, and 15 were on Crown land. There were also 498 blocks available under ordinary Closer Settlement conditions, for which returned soldiers could apply.

**Financial  
statement  
of Discharged  
Soldiers  
Settlement.**

The liabilities and assets of Discharged Soldiers Settlement are shown hereunder :—

### FINANCIAL STATEMENT OF DISCHARGED SOLDIERS SETTLEMENT AT 30TH JUNE, 1928.

Liabilities—					£
For Loans, Advances, and Interest	..	..	..	..	23,568,786
Crown Lands taken over	..	..	..	..	513,529
Closer Settlement for land taken over	..	..	..	..	176,975
Sundry Creditors	..	..	..	..	26,059
Reserves, Trust Land, &c.	..	..	..	..	38,878
					<hr/> 24,324,227
Assets—					
Balance of purchase money not accrued due by lessees and others					13,709,591
Land on hand	..	..	..	..	102,527
Balance of advances on improvements not accrued due	..	..	..	..	4,497,112
Cash (including balance at credit of Discharged Soldiers Settlement Fund)	..	..	..	..	165,529
Concession of Interest and Administration expenses (State and Commonwealth)	..	..	..	..	2,631,997
Sundry assets (including Interest accrued but not yet payable)					289,961
Arrears on land and advances (less £267,250 bad debts written off)—					
Principal—					£
Land	..	..	..	..	146,212
Advances	..	..	..	..	764,845
Interest—					
Land	..	..	..	..	1,338,328
Advances	..	..	..	..	399,076
					<hr/> 2,648,461
Suspense Account	..	..	..	..	279,049
					<hr/> 24,324,227

At 30th June, 1928, payments by soldier settlers on land and advances amounted to £6,051,915, of which amount £4,205,644 was paid on account of principal and £1,846,271 on account of interest, and the amount of assistance rendered by the Board by way of advances was £8,760,710 to 11,235 soldier settlers.

Concessions granted by the State Government (£2,813,492) and the Commonwealth Government (£3,462,203)—representing interest, administration charges, and losses—have relieved the settlers to the extent of £6,275,695.

## WATERWORKS.

All Victorian waterworks are controlled by official bodies, either State or local. The following table, particulars of which were obtained chiefly from the Twenty-third Annual Report of the State Rivers and Water Supply Commission, summarizes those waterworks on which the Government has expended or advanced moneys, and includes practically all waterworks in the State other than minor works constructed by municipalities out of municipal funds:—

WATERWORKS—CAPITAL EXPENDITURE AND ADVANCES  
BY STATE TO 30TH JUNE, 1928.

Controlling Bodies.	Purposes of Supply.	Capital Expenditure and Advances by State.
		£
State Rivers and Water Supply Commission—		
Coliban System .. .. .	Domestic and Mining	1,492,801
Broken River Works .. .. .	Stock and Domestic	14,853
Goulburn-Waranga (including Goulburn main channels) .. .. .	Irrigation, &c. ..	2,764,000
Sugarloaf Reservoir .. .. .	" " ..	1,410,903
Kow Swamp Works .. .. .	" " ..	187,929
Loddon River Works .. .. .	" " ..	167,636
North-west (Kerang) Lakes .. .. .	" " ..	22,139
Long Lake Pumping Works .. .. .	Stock and Domestic	27,346
Lake Lonsdale Reservoir .. .. .	" " ..	49,054
Lower Wimmera Compensation Works ..	" " ..	8,558
Wimmera Storages .. .. .	" " ..	415,226
Maffra-Sale Scheme (including Glenmaggie Reservoir and channels) .. .. .	Irrigation, &c. ..	1,034,813
Bacchus Marsh and Werribee Scheme ..	" " ..	183,545
Red Cliffs Scheme .. .. .	" " ..	758,143
Irrigation and Water Supply Districts (distributary works) .. .. .	" " ..	3,425,075
Millewa Waterworks Scheme .. .. .	Stock and Domestic	453,118
Waterworks Districts (distributary works)	" " ..	2,963,853
Flood Protection Districts .. .. .	" " ..	412,006
Surveys, &c. .. .. .	" " ..	205,224
Other expenditure .. .. .	" " ..	230,050
Carried forward .. .. .	" " ..	16,226,272

**WATERWORKS—CAPITAL EXPENDITURE AND ADVANCES BY STATE TO  
30TH JUNE, 1928—continued.**

Controlling Bodies.	Purposes of Supply.	Capital Expenditure and Advances by State.
		£
Brought forward .. .. .	.. .. .	16,226,272
River Murray Agreement Works (Commis- sion the constructing authority) ..	Irrigation, &c. ..	1,702,750
Total State Rivers and Water Supply Commission .. .. .	.. .. .	17,929,022
First Mildura Irrigation and Water Supply Trust and Mildura Urban Trust ..	Irrigation, &c. ..	119,782
Abolished Irrigation and Water Supply Trusts (8) .. .. .	" .. .. .	32,754
Waterworks Trusts .. .. .	Stock and Domestic ..	1,851,104
Municipal Corporations .. .. .	" .. .. .	796,676
Free Grants to Local Authorities ..	.. .. .	147,046
Melbourne and Metropolitan Board of Works	Domestic .. .. .	8,735,217
Geelong Waterworks and Sewerage Trust ..	" .. .. .	802,098
Total .. .. .	.. .. .	30,413,699

NOTE.—For capacities of storages, vide page 542.

Of the expenditure given in the case of the Melbourne waterworks, £3,189,934 represents money borrowed by the State, all of which had been redeemed at 30th June, 1924—£800,000 out of consolidated revenue, and £2,389,934 by payments from the Melbourne and Metropolitan Board of Works, to which body the waterworks were transferred in 1891. Further particulars relating to this Board will be found on page 195, Part IV., of this volume.

The Geelong Waterworks were sold by the Government to the Geelong Waterworks and Sewerage Trust in 1908 for £265,000. The expenditure shown in the above table includes, in addition to this amount, the outstanding State loan liability on account of the works, viz., £159,358, and the capital expenditure by the Trust since acquiring the works, viz., £377,740.

The next table summarizes the amounts disbursed on State works and those granted and lent to local bodies by the State on account of waterworks. In addition to their receiving free grants large sums have been written off the liabilities of the local bodies.

State  
Expenditure  
on  
Waterworks.



## STATE EXPENDITURE ON WATERWORKS TO 30TH JUNE, 1928.

	Expenditure by State.	Capital Written Off.	Payments towards Redemption.	Free Head- works and Advances.	Amount standing at Debit, 30th June, 1928.
<b>State Rivers and Water Supply Commission—</b>	£	£	£	£	£
Free Headworks .. ..	1,217,067	..	420	1,216,647	..
Other Main Supply Works (including Coliban) .. ..	7,772,997	..	1,645	..	7,771,352
Irrigation and Water Supply Districts .. ..	3,425,075	575,152	31,067	..	2,818,856
Waterworks Districts .. ..	2,963,853	175,055	49,701	..	2,739,097
Flood Protection Districts .. ..	412,006	..	..	..	412,006
Surveys, &c. .. ..	205,224	..	..	..	205,224
Cost of Loan Flotation .. ..	230,050	..	..	36,137	193,913
	16,226,272	750,207	82,833	1,252,784	14,140,448
River Murray Agreement Works ..	1,702,750	..	..	..	1,702,750
Total State Rivers and Water Supply Commission .. ..	17,929,022	750,207	82,833	1,252,784	15,843,198
First Mildura Irrigation and Water Supply Trust and Mildura Urban Trust .. ..	119,782	..	8,595	..	111,187†
Abolished Irrigation and Water Supply Trusts (8) .. ..	32,754	32,724	30	..	..
Waterworks Trusts .. ..	1,851,104*	316,537	259,566	..	1,275,001
Municipal Corporations .. ..	796,676†	163,760	127,613	..	505,303
Free Grants to Local Authorities ..	147,046	..	..	147,046	..
Melbourne and Metropolitan Board of Works .. ..	3,189,934	..	3,189,934	..	..
Geelong Waterworks and Sewerage Trust	459,593	..	300,235	..	159,358
<b>Total .. ..</b>	<b>24,525,911</b>	<b>1,263,228</b>	<b>3,968,806</b>	<b>1,399,830</b>	<b>17,894,047</b>

\* Amount includes £6,871 representing Interest Capitalized.

† " " £43,979

‡ " " £700 liability transferred to S.R. and W.S. Commission.

In addition to the capital written off, as shown above, arrears of interest amounting to £579,786 have been written off certain liabilities to the State, viz., £342,773 from the liabilities of what were originally Irrigation and Water Supply Trusts, £85,556 from the liabilities of Waterworks Trusts, and £151,457 from the liabilities of Municipal Corporations. Thus the amount which has actually been written off the liabilities of the Trusts (Irrigation and Waterworks) and Corporations is £1,843,014. Interest outstanding at 30th June, 1928, amounted to £39,372, viz., £15,667 against the First Mildura Trust, £13,482 against Waterworks Trusts, and £10,223 against Municipal Corporations.

## IRRIGATION.

Prior to 1905 the management of irrigation in Victoria was in the hands of various Irrigation Trusts, which were financed by the State. These Trusts drifted into financial difficulties and the State was compelled to assume control. In the year mentioned, by the authority of Parliament, the State Rivers and Water Supply Commission was constituted and intrusted with the management of all irrigation works, except those controlled by the First Mildura Trust. This authority is embodied in the *Water Act* 1915—which consolidates the *Water Acts* of 1905 and 1909, of which epitomes have been given in previous issues of this work—and the *Water Acts* 1916 and 1918. The chief difficulties under which the Irrigation Trusts laboured were sparse settlement, and the absence of powers to make compulsory charges on the properties commanded by the irrigation channels. Since the assumption of control by the Commission a policy of closer settlement on the lands served by the irrigation channels has been inaugurated and vigorously pushed on, and a system of compulsory rating enforced, along with which there has been the allotment of water as a right to properties in channelled areas.

The particulars in the following statement, while not covering the whole of the activities of the State Rivers and Water Supply Commission, will furnish a general idea of the development of water conservation and distribution in Victoria under its administration; also of the value of an efficient water supply to country lands, whether for domestic and stock purposes only, or for the addition of irrigation to lands already so supplied :—

	At 30th June, 1907.	At 30th June, 1928.
<b>Irrigation Districts—</b>		
Number of Districts administered .. ..	9	30
Number of Districts having Water Rights .. ..	Nil	23
Total Area of such Water Rights .. ..	Nil	379,200 ac. ft.
Area under Irrigated Culture .. ..	108,000 acres	477,500 acres
Valuation for Rating purposes .. ..	£196,000	£705,000
<b>Rural Waterworks Districts—</b>		
Number of Districts administered (excluding Coliban) .. ..	3	25
Valuation for Rating purposes .. ..	£125,000	£1,670,000
<b>Urban Districts—</b>		
Number of Districts administered .. ..	1	62
Valuation for Rating purposes .. ..	£5,600	£472,000

An illustration of the influence of closer settlement and the allotment of water rights in extending irrigation is contained in the following table, which shows, for the districts having water rights, most of which

are directly affected by the Commission's Closer Settlement policy, the areas irrigated in 1909-10—the year in which these two factors were first put into operation—and the average areas for the last five years :—

# PROGRESS OF IRRIGATION IN CLOSER SETTLEMENT AREAS.

District (having allotted Water Rights).	Area Irrigated.	
	1909-10.	Average for last Five Years.
Supplied from the Goulburn—	Acres.	Acres.
Shepparton .. ..	..	14,711
South Shepparton (four years) ..	..	3,337
Rodney .. ..	32,356	52,666
Stanhope .. ..	2,000	11,421
Tongala .. ..	3,006	15,829
Rochester .. ..	500	34,210
Echuca North .. ..	..	3,298
Dingee .. ..	..	3,495
Tragowel Plains .. ..	20,000	42,259
Supplied from the Murray—		
Leitchville (three years) ..	..	3,905
Cobuna .. ..	12,000	18,655
Gannawarra .. ..	7,825	18,028
Koondrook .. ..	5,029	14,736
Swan Hill .. ..	5,410	16,545
Third Lake (two years) ..	..	2,888
Nyah .. ..	569	2,721
Merbein .. ..	202	7,578
Tresco .. ..	..	1,387
Mystic Park .. ..	..	2,075
Supplied from the Werribee—		
Bacchus Marsh .. ..	31	2,447
Werribee .. ..	..	6,480
Total .. ..	88,922	278,671

The area under irrigated culture in the whole State, in 1927-28, for all kinds of crop, was 477,500 acres, the largest yet recorded, being an increase of 70,968 acres compared with the area irrigated in the previous year, and 117,300 acres above the average of the previous five years.

The subjoined table shows the total extent of irrigated land in the State in 1909-10 and each of the last five years, and the purposes for which the land was utilized :—

Total area  
irrigated.

## IRRIGATED AREAS: HOW UTILIZED.

Crop.	1909-10.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
	acres.	acres.	acres.	acres.	acres.	acres.
Cereals .. ..	23,715	32,240	45,215	57,987	40,655	91,538
Lucerne .. ..	24,124	94,479	103,200	116,753	119,721	121,540
Sorghum and other annual fodders ..	8,094	33,356	30,683	37,340	29,476	60,104
Pastures .. ..	50,541	91,912	119,563	51,345	131,725	118,153
Vineyards and orchards	17,524	64,647	66,780	69,108	69,042	71,043
Fallow .. ..	4,988	4,523	4,863	5,102	9,992	6,727
Miscellaneous ..	785	3,401	5,199	6,050	5,921	8,395
<b>Total ..</b>	<b>129,771</b>	<b>324,558</b>	<b>375,503</b>	<b>343,685</b>	<b>406,532</b>	<b>477,500</b>

NOTE.—In 1909-10, 8,000 acres, details of which are not available, were irrigated by private diversions, making a total area for that year of 137,771 acres.

Of the total area irrigated in 1927-28—477,500 acres—the percentages devoted to different purposes were as follows:—Pastures, 25; cereals, 19; lucerne, 25; vineyards, orchards, and gardens, 15; sorghum and other annual fodder crops, 13; fallow, 1; and miscellaneous, 2.

It is undoubted that, during 1927, many thousands of acres of cereal crops, suffering from the lack of winter and spring rains, were saved by the water made available by the Commission in response to early demands for this purpose.

During 1927-28 the Commission has continued its policy of making available a sufficient number of holdings to meet the requirements of applicants desiring to obtain irrigable farms under the provisions of the Closer Settlement Acts, and in this respect it is interesting to note that, although the post war demand by discharged soldiers for farm lands was practically satisfied three or four years ago, a very satisfactory number of applications, from qualified persons, is being maintained. A total of 241 applications were approved by the Commission, for an aggregate area of 4,510 acres, as compared with 239 approved during the preceding year. Of these applications, 55 (most of which were from discharged soldier settlers) were received for additional areas, the settlers having developed their holdings to such an extent that larger areas were required, and to meet this demand a number of allotments, having become vacant through various causes, were subdivided and allotted to adjoining lessees. The demand for larger holdings was particularly noticeable in the dairying districts, and was due to the necessity of growing more fodder crops to provide for the increasing dairying herds.

Thirty-three approved British land-seekers, 15 discharged soldiers, and 138 local applicants were amongst the number granted irrigable holdings during the year.

In the more recently subdivided lands in the Katandra, Hallam Valley, and Maffra-Sale Districts the progress of the works in connexion with water supply and drainage has enabled the Commission to make

**Closer  
Settlement in  
Irrigation  
Districts.**

available further areas, and the rate of settlement in these districts has been particularly gratifying, practically all the allotments made available having been taken up.

With the exception of taking over the Pompapier Forest Reserve in the Calivil District, no further areas have been acquired during the year for subdivision and settlement under Closer Settlement conditions. The Commission, however, still has in reserve for future requirements 4,300 acres at Calivil, 2,040 acres at Katandra, 1,820 acres at Maffra, and 1,440 acres at Hallam Valley. All of these lands are temporarily leased, pending the completion of the necessary irrigation works, prior to their being made available for application. The Commission has received a large number of inquiries from intending applicants for the new irrigable Closer Settlement areas in the Calivil District, and indications are that the first portion of this estate, comprising an area of 1,044 acres, now ready for occupation, will be fully applied for.

The following statement shows the lands purchased and subdivided by the State, and the extent of settlement on each estate. The subdivided portions of these estates are already supporting nearly eighteen times as many families as resided thereon prior to their subdivision for Closer Settlement:—

Closer Settlement Estates.	Area of Lands purchased by the State in Acres.	Properties Subdivided.						
		Area in Acres.	Number.	Number of Families thereon when Purchased.	Subdivided into—		Number of Closer Settlement Blocks now occupied.	Increase in Number of Families.
					Number of Closer Settlement Blocks.	Average Area in Acres.		
Shepparton .. ..	14,170	14,170	33	29	385	34	370	341
East Goulburn .. ..	13,400	11,300	21	20	137	75	135	115
Rodney .. ..	3,230	3,230	8	5	55	57	48	48
Stanhope .. ..	21,500	21,500	7	13	285	64	271	258
Kyabram .. ..	4,600	4,420	9	12	69	62	61	49
Tongala .. ..	19,090	19,090	41	36	312	59	306	270
Koyuga .. ..	4,200	4,200	} Pt. 1	{	54	73	52	52
Cornelia Creek .. ..	2,500	2,500			19	161	19	19
Nanneella .. ..	9,040	9,040	18	8	125	70	122	114
Echuca .. ..	3,600	3,600	8	4	30	105	30	26
Bamawm .. ..	13,400	13,400	28	21	192	65	192	171
Dingee .. ..	500	500	3	1	20	23	15	14
Calivil .. ..	4,300	..	..	..	..	..	..	..
Cohuna .. ..	12,000	12,000	29	10	142	80	118	108
Koondrook .. ..	9,060	9,060	14	10	130	64	90	80
Swan Hill .. ..	12,500	12,500	34	16	329	36	313	297
Nyah .. ..	3,800	3,800	8	1	237	15	231	230
Merbein (Crown) .. ..	8,300	8,300	..	..	421	20	414	414
Red Cliffs .. ..	33,000	18,000	1	3	700	17	700	697
Bacchus Marsh .. ..	70	70	1	..	2	36	2	2
Werribee .. ..	10,000	10,000	1	11	231	36	225	214
Hallam .. ..	3,300	1,860	7	4	96	19	85	81
Maffra-Sale .. ..	10,570	8,970	23	22	165	51	160	138
Properties acquired under Section 20, Closer Settlement Act 1915, outside above Estates, vide page 524	216,130	191,510	295	226	4,136	42	3,959	3,733
	19,540	..	..	..	..	..	203	..
	235,670							

Closer Settlement in irrigation areas commenced in 1909, and, under the *Closer Settlement Act* 1912, administration in these areas was placed under the direct control of the State Rivers and Water Supply Commission. At 30th June, 1928, 235,670 acres had been purchased, and 4,162 families settled, or nearly 18 times as many as resided thereon prior to their subdivision for Closer Settlement.

With the extension of the areas, there has been created an increased and more uniform demand for water. An increasing proportion of the total areas being devoted to lucerne, vines, and fruits, which require watering to a great extent, irrespective of wet or dry seasons, has further helped to stabilize these settlements. The increase in the lucerne area, particularly, has enabled settlers to increase their flocks, herds, and swine at a time when dairy cows and pigs showed a decrease in the State as a whole.

During 1927-28, considerable progress was shown in various irrigation districts, in most cases the quantity of produce being far in excess of previous years.

In the fresh fruit areas, following the light crops of the previous season, yields, especially of canning peaches, were so heavy that the co-operative canneries were unable to take the whole crop as in former years. However, the quantities packed easily constituted a record, and it was necessary to export a much higher percentage of the pack than in previous years. The total quantity of fruit processed at the three co-operative canneries amounted to 20,000 tons. A cool store at the Ardmona cannery was completed, and has enabled that cannery to prolong the season for pears and peaches, and reduce the cost of production. All three canneries, however, had to make use of the Government Cool Store at Melbourne, the fruit being returned to the canneries for processing as required.

Cattle from irrigation areas again gained a large proportion of awards in herd testing and other competitions, despite the fact that only 10 per cent. of the dairy cows in Victoria are in irrigation areas. Development in poultry has continued, and the establishment of an export market for surplus eggs should give further encouragement to producers. An outbreak of swine fever, now fortunately under control, caused a severe setback to the pig industry. This somewhat reduced the number of pigs and interfered considerably with marketing. There was a keen demand for lucerne for the agistment of sheep, and a large number were brought in from dry areas to be fattened or carried through the dry period on irrigation blocks.

Development of market gardening at Werribee, Bacchus Marsh, Narre Warren and Hallam, has continued. Glass houses, erected at Werribee and elsewhere, enabled settlers to successfully market early tomatoes, while, at Narre Warren and Hallam, a growers' association for direct marketing has been formed.

Owing to severe frosts, the quantity of dried fruit produced was somewhat less, but, on the whole, the crops in the soldier settlement areas were not below the average of the last few years. Marketing of the large crop of the previous season has proceeded satisfactorily, and very little remains to be disposed of.

The Irrigation Research Committee, which comprises representatives of the Department of Agriculture and the State Rivers and Water Supply Commission, continued its experiments, and the publication of their results has led, among other improvements, to an increased use of manures on lucerne and pastures. Special work on salted land at Tresco has been continued, and improvement shown. During the year, Sir John Russell, Director of the Rothamstead Research Station, England, visited Victoria, and made an inspection of the irrigation areas, paying special attention to the nature of the soils in various districts. The results of his investigations are awaited.

In addition to waterworks for purposes of irrigation, **Supply of water for domestic and stock purposes.** extensive schemes for the supply of water for domestic and stock purposes are under the control of the State Rivers and Water Supply Commission. Altogether, the area within the State so supplied is approximately 23,523 square miles—about 27 per cent. of the total area of the State. The major portion so supplied is in the Mallee and Wimmera districts.

The number of towns supplied with water, exclusive of the City of Melbourne and its suburbs, is as follows :—85 towns of a total population of 117,330 supplied by the Commission, 111 towns with a total population of 185,630 supplied by Waterworks Trusts, and 18 towns with a total population of 74,700 supplied by Local Governing Bodies.

## STORAGE AND SUPPLY SCHEMES.

**Total Storages in State.** In 1902 the total capacity of storages in the State was 172,000 acre feet. The present capacity under the control of the State Rivers and Water Supply Commission is 1,215,880 acre feet, and, when the Wimmera Storages and Glenmaggie and Pykes Creek Reservoirs are complete, the total capacity will be





**Goulburn  
Irrigation  
System.**

The storage and regulation headworks of the Goulburn System, the largest of the State's irrigation schemes, comprise the Sugarloaf Reservoir on the Upper Goulburn River (capacity 306,000 acre feet), the Goulburn Weir at Nagambie—mainly for diversion purposes (capacity 20,700 acre feet), the Waranga Reservoir (capacity 333,400 acre feet), and the Goulburn-Waranga Main Channel (capacity 3,434 acre feet per day, length  $23\frac{1}{2}$  miles) from the Goulburn Weir to the Waranga Reservoir.

The Sugarloaf Reservoir is situated on the Goulburn River below its junction with the Delatite River, about 18 miles from Alexandra. The dam consists of a diaphragm of concrete, built from bed-rock (which, in places, is 75 feet below ground surface) to crest level (140 feet above the river bed), a wall of clayey material on the upstream side of the diaphragm, and supporting masses of rock on both sides. The reservoir was first filled to full capacity on 21st August, 1927.

The State Electricity Commission has proceeded with its scheme of hydro-electric works at the Sugarloaf Reservoir (*vide* page 645), in connexion with which the Water Commission provided a separate outlet for emergency or power purposes. Generally, the regulated flow from the reservoir, required for water supply purposes, can be discharged through this pipe, thus enabling it, in whole or part, to be passed through the turbines on its way to the river.

The Goulburn Weir, commenced in 1887 and completed in 1891, was, for some 30 years, the headwork of the system. It is built of concrete masonry, backed with coursed granite blocks, and, including channel regulators, is 925 feet long. It raises the summer level of the river 45 feet. Two main channels take off from the river above this weir.

The East Goulburn main channel, with a capacity of 666 acre feet per day and a length of 32 miles to the Broken River, has supplied the Shepparton Irrigation District of about 25,000 acres—mainly Closer Settlement areas—since its inception in 1912, and is now being enlarged to 1,100 acre feet per day, and extended to a total length of 51 miles to supply also the recently constituted Irrigation Districts of South Shepparton (34,000 acres), North Shepparton (38,000 acres), and Katandra (10,000 acres). These districts will be gradually extended as required to include additional areas served by further distributary channels completed from time to time, until the whole of the suitable area, bounded by the East Goulburn main channel on the east, the Goulburn River on the West, and the Nine-Mile Creek on the north, has been supplied.

The Goulburn-Waranga main channel serves the eastern portion of the old-established Rodney District of 268,000 acres, by four main distributary channels, and fills Waranga Reservoir, the storage for the irrigation districts west of the river. This reservoir was formed by the construction of an earthen embankment  $4\frac{1}{2}$  miles in length, across a natural depression 6,000 acres in extent, and 6 feet deep. The work

was commenced in 1902, and completed in 1905 to a capacity of 201,300 acre feet. The reservoir was subsequently enlarged by increasing the length of the embankment to  $4\frac{1}{2}$  miles, with a mean depth of 23 feet, thus giving a submerged area of 23 square miles, and a capacity of 333,400 acre feet. The bank has been strengthened by the construction of a reinforced concrete core wall for its whole length.

Two main channels issue from the Waranga Reservoir, the Waranga-Rodney (capacity 500 acre feet per day, length  $4\frac{1}{2}$  miles) for the service of the western portion of the Rodney District, and the Waranga-Western main channel with a capacity of 2,000 acre feet per day—reducing to 400 acre feet per day at the Loddon River (100 miles westward)—which carries supplies for Deakin, Stanhope, Tongala, Echuca North, and Rochester Irrigation Districts, containing an aggregate area of 414,700 acres. The Tandarra-Calivil channel, which branches off from the Waranga-Western just beyond the Rochester District, serves the Tragowel Plains Irrigation District (189,000 acres), formerly dependent on the uncertain and insufficient supplies available from the Loddon River, the Dingee Irrigation District (6,000 acres), and the recently constituted district of Calivil (46,000 acres).

In view of the existing heavy demands on this system and requests for extensions, the Waranga-Western main channel is being enlarged as required, and being extended westward of the Loddon River, towards the Avoca River, to ensure a more reliable supply for Boort Irrigation District than is available from the Loddon River. The construction of this extension is being advanced as rapidly as possible, with a view to improving the water supply conditions of the Wimmera-Mallee Districts, as mentioned in subsequent paragraphs.

**Wimmera  
Storage.** Progress was made with the works for supplementing the domestic and stock supplies to the districts served by the Wimmera-Mallee system. The earthwork of the embankment for the second stage of Pine Lake Reservoir, the construction of the valve tower and outlet structures, and the beaching of the present embankment have been completed, and the reservoir is ready to fill to 52,000 acre-feet capacity. The ultimate holding capacity of this storage will be 62,000 acre-feet.

The storage provision of the Wimmera-Mallee Supply Scheme now reaches 183,050 acre-feet as against 69,000 acre-feet a few years ago. Storage works now in course of construction will carry the capacity to 213,050 acre-feet. The water is distributed throughout a total area of about 11,000 square miles by main and distributary channels aggregating 5,450 miles in length (exclusive of an approximately equal length of farmers' connecting branches). Full supplies are furnished to five urban Waterworks Trusts within the Wimmera-Mallee areas, in addition to the reticulated systems of 32 towns directly controlled by the Commission.

The rainfall on the Wimmera catchment during the last three years has been so light that the 1927-28 watering had to be commenced with partially depleted storages. There has been a considerable increase in the quantity of water used in both urban and rural districts, as the average capacity of farmers' storages has doubled during the last 15 years, and the consumption in urban districts has risen to 80 gallons per head per day, as compared with a consumption of 56 gallons per head for Melbourne.

The Commission, after serious consideration of these important facts, commenced construction of a further section of the Waranga Extension Channel north-westerly beyond the Avoca River, in order to supplement the Wimmera-Mallee supplies, from the more permanent streams to the eastward, during winter periods when water could be made available without affecting irrigation supplies. This extension, the first portion of which is expected to be ready for the 1928-29 season, will eventually command practically the whole of the area served by the Wimmera-Mallee System north of the 36th Parallel, thus leaving the Wimmera catchment available for the southern portion of the area dependent on the system.

In the Walpeup portion of the Northern Mallee, comprising an area of about 1,250,000 acres, which adjoins the Wimmera-Mallee districts, but is generally too high for inclusion in the gravitation channel system, the Commission has met the water supply needs of settlers by sinking bores, and excavating large public tanks. There are now 99 successful public bores in this area with an average depth of 460 feet, and 260 tanks with a total storage capacity of 1,210,000 cubic yards.

The Commission has further assisted settlers in this area by clearing and grubbing 5,704 miles of roads.

A scheme to supply an area of 173 square miles between Tyntynder Waterworks District and the River Murray, but too high to be commanded by the Wimmera-Mallee Irrigation System, has been prepared at the request of the landholders, mostly returned soldiers. The works comprise a pumping plant on the River Murray, 20 miles below Euston, to deliver 15 cusecs through a 27-in. diameter steel rising main, 60 chains in length, to a high ridge from which 130 miles of main and tributary channels will distribute supplies for domestic and stock purposes. The maximum lift will be 91 feet. The area to be served has been constituted the Coreena Waterworks District, and good progress has been made with the works. It is proposed to extend the district at the request of other landholders, to include about 34 square miles in the parish of Gayfield.

**Millewa Water Supply.** The extensive domestic and stock supply scheme for the supply of water by pumping to an area of about 1,000,000 acres in the extreme north-western portion of the State (opened up by the 55 miles of railway from Red Cliffs), comprises a lift of 19 feet from the River Murray to Lake Cullulleraine (a depression on the river flats), a second lift of 113 feet, and a third lift of 19 feet, to command the whole of the lower level channel system which supplies the area which has been constituted the Lower Millewa Waterworks District, and a fourth lift, of 145 feet, to command the higher level channel system which supplies the area of 205,000 acres, which will be constituted the Upper Millewa Waterworks District. The length of channels actually constructed is 664 miles. The total area served (at present wholly within the Lower Millewa Waterworks District) is 600,000 acres, all of which has been allotted to settlers. The balance of the lands in the whole system can be served expeditiously, as soon as such lands are being made available for settlement.

The works required for the pipe reticulation of the township of Werrimul, having been completed by 1st January, 1928, an Urban District, comprising this township, has been proclaimed.

**Carwarp Waterworks Districts.** The Carwarp Waterworks District, of 200,000 acres, lying to the south-east of Lower Millewa District, and served by a system of channels 141 miles in length, is supplied from the Red Cliffs pumping station. The high lands surrounding the Carwarp Railway Station are supplied by a pump, a rising main, and 13 miles of distributary channels; and these lands comprising 14,800 acres, have been formed into a separate district—called "Carwarp Central."

**Mornington Peninsula Scheme.** The important scheme of reticulated supply to the Naval Base, the inland towns of Berwick, Beaconsfield, Pakenham, Noble Park, Spring Vale, Dandenong, Somerville, Cranbourne, and Bittern, and the bayside towns of Mornington, Frankston, South Frankston, Seaford, Carrum, Chelsea, Edithvale, Aspendale, Hastings, and Mount Martha is in full working order. Extensions of services in all directions are being applied for. The reservoirs at Beaconsfield, Dandenong (Heywood's Hill), Frankston, South Frankston, Mornington, and Bittern are kept fully supplied.

The main race has now been extended 33 miles from Toomuc Creek, to tap the Cannibal Creek and River Bunyip, as outlined in the original scheme. This will ensure adequate supplies to meet the increasing demands of reticulations already connected, and to provide when required, for the townships of Garfield, Bunyip, Kooweerup, and the bayside towns of Dromana, Rosebud, Rye,

Sorrento, and Portsea. A full supply of water is now available for the irrigation, by pressure pipes, of small blocks suitable for market gardening and intensive culture. In this connexion the estates in the Hallam Valley, comprising 3,300 acres, purchased by the Commission for Closer Settlement purposes, are being subdivided and allotted to settlers for intensive culture under irrigation. Extensive works for the systematic drainage and reclamation of the portions of the above estates not yet subdivided have been carried out, and about 1,300 acres, between Berwick and Dandenong, have been settled.

**Bellarine  
Peninsula  
Scheme.**

The dry conditions prevailing during the last few years have focussed attention on the question of an adequate water supply for the Bellarine Peninsula, including the town of Drysdale and the seaside towns of Portarlington, Queenscliff, Point Lonsdale, Ocean Grove, Barwon Heads, Torquay, and Anglesea.

At the unanimous request of representatives of all interests concerned, full investigation was made of a scheme tentatively prepared by the Commission, which provided for the utilization of the headwaters of the Upper Barwon River and tributaries, the catchments of which lie in the well-watered Otway Ranges. A complete scheme was prepared, to provide for reticulated supplies to all the towns mentioned above, domestic and stock supplies for rural districts traversed, irrigation supplies by pipes under pressure to selected areas, especially in the southern environs of Geelong, and an ample supplementary supply for Geelong itself, at present dependent on the limited catchment of the Eastern Moorabool River. The scheme, which was submitted for consideration by the various bodies concerned, and accepted by them, comprises a main storage basin at the natural depressions known as Wurdee Boluc and Lake Gherang, with an ultimate capacity of 60,000 acre feet, inlet channels tapping the various tributaries of the Upper Barwon River, a main outlet channel, 17 miles in length, to a pipe-head basin of 250 acre feet capacity, at Wauru Ponds, a pipe main thence to Geelong, and to the main distribution basin on the Bellarine Peninsula near Drysdale, and channels and pipe mains thence to local service basins for the Peninsula towns. The towns of Anglesea and Torquay will have separate channels from the main outlet channel, near Moriac, to service basins in the vicinity of each place.

The construction of the first stage of Wurdee Boluc Reservoir (capacity 10,000 acre feet) is practically completed, and ready to store water when supply conditions are favorable. The main inlet channel has been completed for a length of 10 miles, including 1 mile 14 chains of 54-in. diameter steel pipe syphons. This inlet channel will be extended upstream so that supplies from the large and more permanent tributaries of the Upper Barwon may be made available as the demands on the main reservoir increase. The construction of the Wauru Ponds

Pipe-head Basin is now completed, and the laying of the 24-in. pipe main is in hand, so that supplies will be available for Geelong at an early date.

**Goulburn  
Irrigation  
Areas.**

Following the completion of the Sugarloaf Reservoir and the Waranga Reservoir enlargement and improvement works, considerable expansion of the whole Goulburn system is taking place. The main Eastern channel is being enlarged and extended for 17 miles, and, with distributary channels in course of construction, is supplying a continually increasing area, including 34,000 acres south of the Broken River, now included in South Shepparton Irrigation District; 38,000 acres, now constituted the North Shepparton Irrigation District; and 10,000 acres of Closer Settlement lands constituted the Katandra Irrigation District. In addition, these new channels will serve large areas further north, which will eventually be added to the districts.

On the west of the Goulburn River, the Tandarra-Calivil main channel and distributaries are supplying a new area of 46,000 acres, lying north-west of Dingee Irrigation District; and which has now been constituted the Calivil Irrigation District. Many requests for further extensions are under consideration.

On the west of the Loddon River, the Waranga-Western main channel is being extended to supplement the supply to Boort Irrigation District, hitherto dependent entirely on the uncertain quantities of water obtainable from that river. This extension will be known as the Loddon-Avoca Channel, which is being extended beyond the Avoca River, to supplement the Wimmera-Mallee system (*vide* page 544).

**Loddon-Murray  
Irrigation  
Areas.**

In the districts administered from the Cohuna and Kerang centres, the abnormally dry conditions during the irrigation season of 1927-28 created an exceptionally heavy demand for water, which, however, was met entirely by gravitation from the Torrumbarry Weir.

In many places the old timber structures and iron flumes have been replaced by modern reinforced concrete head checks, syphons, and culverts, and channels cleaned and treated to prevent leakage. The work of replacement is being steadily pursued, and (in the Kerang District) the re-conditioning and extension of the distribution system is being carried out in conjunction therewith.

Drainage works, comprising about 25 miles of main and branch drains, to serve the Murrabit Closer Settlement Estates and other lands of an area of about 5,000 acres, are in operation, and the Barr Creek

was converted from an irrigation channel to act in its natural capacity as a drain, and, in combination with the Cohuna and Leitchville drainage systems generally, is proving of distinct benefit to these districts.

**Maffra-Sale  
District  
Irrigation  
Scheme.**

The construction of the Glenmaggie Weir on the Macalister River has been so far advanced that 104,500 acre feet of water can now be stored, and arrangements can be made to increase this to the full capacity of 150,000 acre feet during the coming season, if required. The Maffra Irrigation District has been extended to include a total area of 20,000 acres, and a new district of 15,000 acres—known as "Sale"—has been constituted. The channel system is being further extended, and many requests for inclusion in those irrigation districts have been received.

**Red Cliffs  
Irrigation  
District.**

At Red Cliffs, the scheme, which ranks first in importance among the pumping systems of the State, supplies water to an area totalling 18,000 acres, including the township and 700 occupied soldier settlement blocks. The plant is capable of delivering 500 acre feet of water per day, lifted 105 feet. The total length of channels constructed to date is 124 miles. Channels having a total length of 114 miles have been lined with concrete, with the result that 99 per cent. of the total number of blocks in the settlement are protected from seepage from channels. The area now planted to vines and citrus is 10,000 acres, of which 8,750 acres are in bearing. The yield of dried fruit for 1928 was 8,500 tons. Following considerable progress in the township, which has been proclaimed an Urban Waterworks District, a concrete standpipe, 70 feet high and 26 feet in diameter, has been erected, and reticulation extended to meet requirements.

**Flood  
Protection  
Schemes**

The Commission has under construction a comprehensive scheme of works for the reclamation of the extensive swamps in West Gippsland, known as Kooweerup and Cardinia, and for the protection from periodical flooding of the surrounding low-lying lands, aggregating in all 100,000 acres. These areas have been constituted Flood Protection Districts under the provisions of the Water Acts. The construction of the huge main drains, feeders and subsidiary works has reached the stage that provides the landholders affected with protection from all but abnormal floods, and flood protection charges have been levied accordingly.

Flood protection works at Loch Garry (below Shepparton) for the regulation of Goulburn flood waters have effectively served their purpose. The area benefited—about 40,000 acres—is known as the "Loch

Garry" Flood Protection District. Further down the Goulburn (at Kanyapella) works constructed for the relief from flooding of an area of about 13,500 acres have similarly been effective. This area is called the "Kanyapella" Flood Protection District.

The levee works for the protection of the Echuca district continues to prove effective. The scheme for the protection of lands in the Carrum areas is now well advanced.

The scheme of works provided in the River Murray Waters Acts passed by the Governments of the Commonwealth and of the States of New South Wales, Victoria, and South Australia comprises storages on the Upper River Murray and at Lake Victoria, locks and weirs in the course of the River Murray from its mouth to Echuca, and also locks and weirs on the lower part of the River Darling or the River Murrumbidgee, as may be decided by the Government of New South Wales. The Acts provide that for purposes of construction the Minister for Public Works of New South Wales shall be the Constructing Authority for that State; that, for the State of South Australia, the Commissioner of Public Works shall be the Constructing Authority; and that the State Rivers and Water Supply Commission shall be the Constructing Authority for Victoria.

Under the River Murray Agreement of 1914 the estimated total cost of the whole of the works is set down at £4,663,000. It is now clear, from the experience gained in connexion with the works which have been put in hand to date, that the total cost of the works will be more than double that amount. The four contracting Governments have agreed to share equally in the total cost of the works. The total expenditure incurred up to 30th June, 1928, on the portion of the scheme completed and in course of construction was £6,134,150.

The site of the Hume Reservoir is a little below the junction of the Rivers Murray and Mitta Mitta. Originally it was designed to provide for a capacity of 1,100,000 acre feet, but it was subsequently decided to provide for a total capacity of 2,000,000 acre feet. (*Vide Victorian Year-Book*, 1926-27, pages 500 and 501.)

The work is being carried out by the Constructing Authorities for the States of New South Wales and Victoria. On the New South Wales section considerable progress has been made, comprising mainly the setting of the outlet valves, and further preparations of the foundations for the spillway and south wing wall within the coffer dam enclosing the bed of the river channel. On the Victorian side the construction of the main embankment is being steadily advanced. The gap, about 1,000 feet in length, which had been left on the Victorian bank of the river for the passage of flood waters, was closed, and this section of the embankment is now 20 feet above the flats. The concrete bridge over the River Murray for Bethanga District is now being constructed.



The Torrumbarry Weir and Lock (near Echuca) has been in successful operation since December, 1923, and water has been diverted for the various irrigation districts benefited.

Weir and Lock No. 11—situated about  $\frac{1}{2}$  mile downstream from Mildura—now completed, forms a lock pool for about 40 miles upstream, providing a local reserve storage of great value and reducing the suction lift at the Mildura and Red Cliffs Pumping Stations. The Constructing Authority for New South Wales is proceeding with the construction of No. 10 Weir and Lock at Wentworth, and has commenced work on Weir and Lock No. 15 at Euston; while, in the South Australian section, Weir and Locks Nos. 1, 2, 3, 4, 5, and 9 have been completed, and No. 6 has been commenced. Lake Victoria Storage Works have been completed with the exception of the improvement of the inlet and outlet channels.

A conference of representatives of the Commonwealth, New South Wales, Victorian, and South Australian Governments was held at Canberra on 27th and 28th February, 1928, when the question of the future development of the Murray Valley and the works of Water Conservation and Distribution necessary therefor was discussed. The conference decided that the programme of works to be constructed under the River Murray Agreement during the period ending June, 1932, be limited to the following and be carried out by the present constructing authorities.

- (1) The completion of the Hume Reservoir to 2,000,000 acre feet capacity.
- (2) The completion of the Lake Victoria Storage.
- (3) The completion of all weirs and locks from the mouth of the river Murray up to No. 11 (Mildura); and
- (4) The construction of weir and lock No. 15 (Euston).

It was also decided that, on the completion of this 1932 programme, the question of the advisability of carrying out the remaining works provided for in the River Murray Agreement by one constructing authority be considered by the four Governments concerned.

At this conference, sub-committees were also formed to (a) consider the question of the protection of the forests on the River Murray watershed, and (b) to deal with the co-ordination of the development of irrigation and production of the valleys of the River Murray and its tributaries.

During the year, proposals for regulating the output from Hume Reservoir during the sixteen years ending 1943 as set out in a report by the Gauging Officers of the State Rivers and Water Supply Commission, Victoria, and the Water Conservation and Irrigation Commission, New South Wales, were generally approved, conditionally on the definite understanding that the use of the water for irrigation must always be paramount to its use for the generation of electricity.

Artesian  
Bores.

The following particulars relating to artesian boring have been supplied by the State Rivers and Water Supply Commission :—

### ARTESIAN AND SUB-ARTESIAN BORING (MALLEE).

Number of Bores Sunk.*		Total Depth of Bores.*	
State.	Private.	State.	Private.
99	275	Feet. 46,100	Feet. 53,600

\* At 31st December, 1927.

Mildura  
Irrigation  
Settlement.

The Mildura Irrigation Settlement, on the River Murray, was established in 1887 under the management of the Chaffey Brothers Limited, and in 1895 the control of the water supply was vested in the First Mildura Irrigation Trust. Water is obtained by pumping from the river. The following particulars are an indication of the prosperity of the settlement :—

### POPULATION OF MILDURA SHIRE, 1891 to 1928.\*

1891 April (Census)	..	2,321	1924 December	..	..	14,250
1901 March (Census)	..	3,325	1925 "	..	..	14,450
1911 April (Census)	..	6,119	1926 "	..	..	15,000
1921 April (Census)	..	13,183	1927 "	..	..	15,100
1922 December	..	13,760	1928 "	..	..	15,200
1923 December	..	13,950				

\* Including the population of the town of Mildura, which up to 1920 was part of the shire.

The capital value of property in the Shire of Mildura in 1913 was £1,294,160. In 1928 in the same area it had risen to £5,733,300. The receipts and payments of the Mildura Irrigation Trust during the year ended 30th June, 1928, were as follows :—

### RECEIPTS AND PAYMENTS OF FIRST MILDURA IRRIGATION TRUST, 1927-28.

Receipts.	£	Payments.	£
Horticultural Rates	.. 38,538	Wages and Salaries	.. 19,314
Special Waterings, &c.	.. 3,159	Firewood	.. 16,252
Miscellaneous	.. 2,334	Interest, Sinking Fund and Depreciation	.. 3,493
		Miscellaneous	.. 5,122
Total	.. 44,031	Total	.. 44,181

The extent of watering done represented 22,876 water acres in 1917-18, 39,895 acres in 1918-19, 41,808 acres in 1919-20, 35,632 acres in 1920-21, 44,150 acres in 1921-22, 42,807 acres in 1922-23, 42,854 acres in 1923-24, 39,212 acres in 1924-25, 42,230 acres in 1925-26, 42,134 acres in 1926-27, and 48,536 acres in 1927-28.

## METEOROLOGY.

Particulars in regard to climate and weather conditions have been furnished by the Commonwealth Meteorologist, and are given in the following tables. In the first are shown the rainfall for each of the years 1925, 1926, and 1927, and the average yearly amount of rainfall deduced from all available records to December, 1927, in each of the 26 river basins or districts constituting the State of Victoria :—

## RAINFALL.—YEARLY RECORDS AND AVERAGES.

Basin or District.	Rainfall.			
	During the Year—			Yearly Average to December, 1927.
	1925.	1926.	1927.	
	Inches.	Inches.	Inches.	Inches.
Glenelg and Wannon Rivers ..	23.04	27.13	22.33	26.24
Fitzroy, Eumeralla, and Merri Rivers ..	22.64	27.76	24.11	27.97
Hopkins River and Mt. Emu Creek ..	20.14	24.04	19.45	24.75
Mt. Elephant and Lake Corangamite ..	19.16	20.42	19.91	25.66
Cape Otway Forest ..	32.71	38.52	34.36	39.09
Moorabool and Barwon Rivers ..	17.34	19.00	17.05	23.81
Werribee and Maribyrnong Rivers ..	17.36	18.47	16.53	23.27
Yarra River and Dandenong Creek ..	26.34	30.68	25.22	33.80
Koo-wee-rup Swamp ..	29.29	29.09	25.82	35.81
South Gippsland ..	35.08	33.24	31.69	38.73
Latrobe and Thomson Rivers ..	34.35	34.72	30.84	38.09
Macallister and Avon Rivers ..	22.03	21.64	20.37	24.32
Mitchell River ..	26.59	22.48	24.21	25.98
Tambo and Nicholson Rivers ..	26.86	22.93	25.22	27.47
Snowy River ..	36.62	31.08	35.18	34.40
Murray River ..	14.14	17.46	10.43	16.69
Mitta Mitta and Kiewa Rivers ..	32.29	36.47	30.29	33.29
Ovens River ..	28.18	37.29	25.97	33.47
Goulburn River ..	21.11	24.66	18.14	26.22
Campaspe River ..	15.25	18.83	14.77	22.57
Loddon River ..	14.33	17.40	12.94	20.00
Avoca River ..	13.11	14.48	11.28	16.97
Avon and Richardson Rivers ..	11.91	13.84	11.41	15.28
Eastern Wimmera ..	16.58	20.70	15.82	21.25
Western Wimmera ..	15.44	17.73	16.09	19.79
Mallee ..	8.97	11.79	6.85	12.52
Weighted Averages ..	20.22	22.52	18.58	23.96

The wettest portion of the State is the Cape Otway Forest, which is closely followed by the South Gippsland district and the Latrobe and Thomson Basin. The lowest rainfall occurs in the Mallee district, where it averages 12.52 inches per annum, as compared with 23.96 inches for the whole State.

An estimate of the areas of the State, in square miles, subject to different degrees of rainfall was first made in 1910. More comprehensive data has since become available, and in 1925 the Commonwealth Meteorologist issued the following revised figures:—

### DISTRIBUTION OF AVERAGE RAINFALL.

Rainfall.						Area.
Inches.						Square Miles.
Under 15 ..	..	..	..	..	..	19,270
15 to 20 ..	..	..	..	..	..	13,492
20 to 25 ..	..	..	..	..	..	14,170
25 to 30 ..	..	..	..	..	..	15,579
30 to 40 ..	..	..	..	..	..	14,450
40 to 50 ..	..	..	..	..	..	7,338
50 to 60 ..	..	..	..	..	..	2,980
Over 60 ..	..	..	..	..	..	605

The rainfall recorded for each quarter of 1927 and the quarterly averages up to 1927 deduced from all available records are as follows:—

### RAINFALL—QUARTERLY RECORDS AND AVERAGES.

Basin or District.	First Quarter.		Second Quarter.		Third Quarter.		Fourth Quarter.	
	Amount.	Average.	Amount.	Average.	Amount.	Average.	Amount.	Average.
	points	points	points	points	points	points	points	points
Glenelg and Wannon Rivers ..	330	353	578	787	864	902	461	582
Fitzroy, Eumeralla, and Merri Rivers ..	341	420	679	825	931	944	460	608
Hopkins River and Mt. Emu Creek ..	248	411	535	706	751	782	411	576
Mt. Elephant and Lake Corangamite ..	254	445	453	702	840	810	444	609
Cape Otway Forest ..	401	589	876	1,160	1,547	1,325	612	835
Moorabool and Barwon Rivers ..	212	462	354	644	641	687	498	588
Werribee and Maribyrnong Rivers ..	203	499	323	594	563	635	564	599
Yarra River and Dandenong Creek ..	324	684	652	865	949	943	597	888
Koo-wee-rup Swamp ..	312	681	693	978	970	1,012	607	910
South Gippsland ..	382	778	725	1,071	1,334	1,136	728	888
Latrobe and Thomson Rivers ..	408	722	703	972	1,242	1,112	731	1,003
Macallister and Avon Rivers ..	275	622	291	545	611	605	860	660
Mitchell River ..	404	655	394	582	837	692	786	669
Tambo and Nicholson Rivers ..	476	696	458	647	896	682	692	722
Snowy River ..	526	802	898	886	1,379	918	715	834
Murray River ..	95	309	191	490	475	488	282	382
Mitta Mitta and Kiewa Rivers ..	413	602	577	896	1,182	1,039	857	792
Ovens River ..	253	534	526	983	1,109	1,103	709	727
Goulburn River ..	151	458	358	750	784	805	521	609
Campaspe River ..	129	399	349	670	704	718	295	470
Loddon River ..	118	346	274	594	606	624	296	436
Avon and Richardson Rivers ..	143	276	286	520	482	542	217	359
Avoca River ..	131	242	259	460	449	499	302	327
Eastern Wimmera ..	161	291	402	649	678	721	341	464
Western Wimmera ..	200	245	407	615	694	701	308	418
Mallee District ..	73	218	123	363	299	390	190	281
The whole State ..	228	429	418	673	758	737	454	557

The averages of the climatic elements for the seasons in Melbourne deduced from all available official records are given below :—

### AVERAGES OF CLIMATIC ELEMENTS IN MELBOURNE.

Meteorological Elements.	Spring.	Summer.	Autumn.	Winter.
Mean pressure of air in inches .. ..	29·971	29·923	30·080	30·077
Monthly range of pressure of air—Inches	0·893	0·768	0·817	0·979
Mean temperature of air in shade—°Fahr.	57·7	66·6	59·4	50·0
Mean daily range of temperature of air in shade—°Fahr. .. ..	18·6	21·1	17·3	13·9
Mean relative humidity. Saturation=100	66	60	70	76
Mean rainfall in inches .. ..	7·30	5·87	6·51	5·79
Mean number of days of rain .. ..	38	24	34	42
Mean amount of spontaneous evaporation in inches .. ..	10·25	17·31	7·86	3·62
Mean daily amount of cloudiness—Scale 0 to 10 .. ..	6·0	5·2	5·9	6·5
Mean number of days of fog .. ..	1	1	6	11

In the subjoined statement are shown the yearly averages of the climatic elements in Melbourne for 1927 and for the last 72 years, as well as the extremes between which the yearly average values of such elements have oscillated in the latter period :—

### YEARLY AVERAGES AND EXTREMES OF CLIMATIC ELEMENTS.

Meteorological Elements.	Yearly Averages and Extremes.			
	Year 1927.	Average for 72 Years.	Extremes between which the Yearly Average Values have oscillated in 72 years.	
			Highest.	Low est.
Mean atmospheric pressure (inches) ..	30·022	30·012	30·106	29·945
Highest " " " ..	30·553	30·606	30·770	30·488
Lowest " " " ..	29·155	29·254	29·495	28·868
Range (inches) .. ..	1·398	1·353	1·719	1·104
Mean temperature of air in shade (°Fahr.) .. ..	59·0	58·4	59·9	57·3
Mean daily maximum .. (°Fahr.)	67·9	67·3	69·0	65·4
Mean daily minimum .. ..	50·1	49·5	51·2	47·2
Absolute maximum .. ..	105·7	105·1	111·2	96·6
Absolute minimum .. ..	29·9	30·8	34·2	27·0
Mean daily range .. ..	17·8	17·8	20·4	15·0
Absolute annual range .. ..	75·8	74·3	82·6	66·0
Solar Radiation (mean maxima) ..	*	117·8	127·6	106·0
Terrestrial Radiation (mean minima) .. (°Fahr.)	42·7	43·9	46·8	39·5
Rainfall (in inches) .. ..	17·98	25·47	38·04	15·61
Number of wet days .. ..	125	138	171	102
Year's amount of free evaporation (in inches) .. ..	45·50	39·04	45·66	31·59
Percentage of humidity (saturation =100) .. ..	61	68	76	61
Cloudiness (scale 10 = overcast, 0 = clear) .. ..	5·6	5·9	6·4	4·8
Number of days of fog .. ..	27	19	48	5

\* No observations.

## AGRICULTURAL RESEARCH AND EDUCATION.

**Department of Agriculture.** This Department is controlled by a Minister of the Crown, under whom there is a large staff of experts with the Director of Agriculture as permanent head. These officers are actively engaged in supervising all matters relating to the Agricultural, Pastoral, Fruit and Dairying Industries of the State, and in giving instructions to those engaged therein. The Department publishes a monthly journal.

**Melbourne University School of Agriculture.** Melbourne University has a well-equipped School of Agriculture, for the maintenance of which a special grant is provided by the State. This School affords opportunity for the training of students in science as applied to practical agriculture and kindred industries. The course occupies four years; the first is devoted to pure science; during the second the students are in residence at the State Research Farm, Werribee, engaged in practical farming with lectures on preparatory subjects. The remaining two years are devoted to a more specialized study of agriculture and allied subjects on a scientific basis.

The staff consists of a Professor of Agriculture and about fifteen lecturers, some of whom are whole-time University officers, while the others are senior officers of the State Agricultural Department.

By Act of Parliament the Minister for Agriculture is empowered to employ graduates of the School as Science Field Officers in the State Department.

A number of free places for this course for the degree in Agricultural Science (B.Ag.Sc.) are awarded annually by the State Government.

**Government Experimental Farms.** The great expansion in our rural industries during recent years has been largely brought about by the general adoption of better methods of farming and by the introduction of more prolific wheats, and it is claimed that these improvements have been adopted as the result of the experimental and demonstration work of the Department of Agriculture. In 1912 a Central Research Farm was established at Werribee, and it is there that the initiative with regard to practically all experimental and research work is now undertaken. The State farms at Rutherglen and Longerenong are used as district experimental stations for the North-

East and the Wimmera respectively. In addition, there are a number of subsidized experimental and demonstration areas located on private farms throughout the State.

**Agricultural Colleges.**

An Act for the establishment of Agricultural Colleges was passed in 1884, and 14,458 acres, comprising 5,955 acres at Dookie, 2,386 acres at Longerenong, 2,500 acres at Gunyah Gunyah, 2,800 acres at Olangolah, and 817 acres at Bullarto, were reserved as sites for colleges and experimental farms. The areas at Dookie and Longerenong are being used for the purpose for which they were reserved, but the other three are devoted to other uses.

In addition to the college and farm lands, provision was made by the Act of 1884 to permanently reserve from sale an area of not more than 150,000 acres of Crown lands, and to vest it in trustees to be appointed, who should hold it in trust for the benefit of and by way of an endowment for State agricultural colleges and experimental farms. The land so reserved now amounts to 71,412 acres, and is let for grazing and agricultural purposes.

The fee for students in residence at the agricultural colleges is £50 per annum for maintenance, including stationery and medical and other charges. No charge is made for instruction. Accommodation is provided at Dookie for 100 and at Longerenong for 50 students.

**School of Primary Agriculture and Horticulture.**

This institution is situated in the Burnley Gardens, close to the Hawthorn, Burnley, and Heyington railway stations, but is most easily reached by the Hawthorn electric tram. The classes are open to male and female students above fourteen years of age. The Course for the Certificate in Horticulture occupies two years, and is intended for those who propose to follow orchard or garden work as a profession. Part time classes are also held for those who are unable to devote full time to the subject. Another feature of the work at the school is the holding of regular classes of instruction in Agricultural Science for those desirous of taking the subject either in the Intermediate or the Leaving grade at the Annual Public Examinations conducted by the University. A practical training is obtained in the orchards, gardens, and nursery connected with the school; the course also includes lectures and demonstrations by various expert teachers. Excursions to up-to-date farms, orchards, and nurseries form part of the work of the school. In 1927 the students enrolled numbered 131.

Experimental  
Farms and  
Agricultural  
Colleges

Various particulars relating to the State Experimental Farms and Agricultural Colleges are embodied in the next statement.

# GOVERNMENT EXPERIMENTAL FARMS AND AGRICULTURAL COLLEGES, 1927.

Particulars.	Central Research Farm, Werribee.	Ruther- glen Farm, &c.	Dookie Agri- cultural College.	Longer- enong Agri- cultural College.	Burnley School of Primary Agriculture, &c.
	No.	No.	No.	No.	No.
Professional Staff .. ..	1	2	14	8	4
Hands employed .. ..	42	37	36	18	6
Students .. ..	..	..	96	45	131
	£	£	£	£	£
Value of plant and machinery ..	3,407	2,595	7,850	6,399	160
Value of produce for year ..	10,532	2,800	8,295	8,250	1,250
Receipts—					
Government Grant .. ..	11,464	7,306*	10,720*	5,937*	2,185
Fees .. ..	..	..	4,491	2,615	108
Sale of produce, &c. .. ..	10,532	1,831	7,818	3,597	1,097
Other .. ..	112	52	..	..	6
Total receipts .. ..	22,108	9,189	23,029	12,149	3,396
Expenditure—					
Salaries—					
Professional Staff .. ..	372	779	5,863	2,692	1,348
General Staff .. ..	6,698	5,136	5,763	2,469	1,168
Buildings and maintenance ..	2,490	1,398	11,326	6,832	813
Other .. ..	2,839	1,876	77	156	..
Total expenditure .. ..	12,399	9,189	23,029	12,149	3,329
Area under—	acres.	acres.	acres.	acres.	acres.
Cereals for Grain .. ..	495	200	585	530	..
Hay .. ..	280	149	193	180	1
Fruit trees, &c. .. ..	..	1½	14	20	9
Vines .. ..	..	121	4	5	½
Green fodder .. ..	50	5	22	197	2
Other crops .. ..	189	10	..	..	½
Total area under crop .. ..	1,014	486½	823	932	13
Area of land in fallow .. ..	650	256½	516	550	5
Area under artificially sown grasses ..	400	90	..	32	½
Area resting .. ..	60	209	953	357	..
New ground broken up .. ..	..	..	8	93	..
Total area of arable land .. ..	2,124	1,042	2,300	1,969	18½
Balance of area .. ..	87	311	3,655	417	14½
Total area of farm .. ..	2,211	1,353	5,955	2,386	33
Live Stock—	No.	No.	No.	No.	No.
Horses .. ..	10	46	93	48	2
Dairy cows .. ..	189	14	48	22	6
All other cattle .. ..	..	25	81	49	8
Sheep .. ..	1,500	646	3,100	1,188	..
Pigs .. ..	..	22	220	51	..

\* Including grant received from the Council of Agricultural Education.



**Inspection of  
Orchards,  
Nurseries, &c.**

The orchards, nurseries, and gardens of the State are systematically inspected by the officers of the Horticultural Division of the Department of Agriculture. Nurseries are inspected periodically, and action is taken in accordance with the condition of the plants in relation to disease or freedom therefrom. Old, worn-out, and infected orchards are destroyed.

The Department has purchased fumigating outfits for the purpose of fumigating citrus trees for the control of scale insects, and is performing the work for citrus growers at cost price. Much satisfaction has been expressed by growers at this being done.

Special attention is being paid to the grading and packing of fruit; packing classes have been established and are successfully conducted by departmental officers in a number of fruit districts throughout the State. In addition to this, individual growers receive personal instruction.

Lectures and demonstrations are given on the various other phases of horticulture; experiments are carried out in the treatment of diseases; and sites are selected on the farms of intending fruit-growers, to whom advice is given as to the most suitable varieties to be planted and their subsequent treatment.

The fear of introducing the fruit-flies *Tephritis tryoni* and *Halterophora capitata* and diseases arising from other causes has necessitated a thorough examination of fruit from Queensland, New South Wales, and elsewhere. The fruit-fly question is a very grave one, and, should either of the above-named insects obtain a footing in Victoria, a great portion of the large and important fruit industry of our State will be practically ruined.

Plants and cuttings coming from foreign parts are fumigated if a certificate that they have been treated at the port of shipment does not accompany the consignment. Even when they have been thus certified the Senior Fruit Inspector has the right of examination, and, if necessary, of ordering a second fumigation.

**Forestry.**

The State forests are controlled by a Commission of three, which was appointed in 1919. The State has a wooded area of about 13,987,000 acres, of which about 4,330,450 acres are set aside as permanent State forests and timber reserves. The wooded area consists of—

1. 6,481,500 acres of merchantable forest, mainly situated along the Dividing Range with its spurs and foothills and also including the red gum forests of the northern river basins and of the River Glenelg in the south-western district.

2. 7,206,500 acres of forest in the more rugged portions of the mountain region. These forests are not at present accessible for practical working, owing to difficulties of transport; their protection, however, is essential for the maintenance of streams and springs.

3. 299,000 acres in the north-west of the State, known as Mallee, bearing at intervals a thick growth of stunted eucalypts and interspersed with belts of cypress pine and belar.

The forests of Victoria may be divided into four main classes which are referred to hereunder:—

- (a) The coastal region, extending from the shore line some fifty miles northward, carries chiefly messmate and three species of stringybark. In Cape Otway district, however, bluegum, mountain ash, and spotted gum predominate; whilst, in the extreme south-east of the State, silvertop, small-fruited bluegum, bastard mahogany, bloodwood, and Gippsland grey box are found.
- (b) The mountain region. In the western half of the State the predominant species in the hill forests are messmate, bluegum, manna gum, brown and red stringybarks, and yellow box. In the eastern half of the State the prevailing species are mountain ash, spotted gum, messmate, peppermint, red ash or woollybutt, and bluegum, with stunted snow gums on the steep granitic slopes near the mountain summits.
- (c) The foothills, stretching from the Dividing Range northward down to the plains, bear three valuable species, red ironbark, white ironbark or yellow gum, and grey box.
- (d) The river basins of the Murray and the streams flowing over the northern plain, and of the River Glenelg in the south-western district, bear broad belts of river redgum.

The timbers of commercial value in Victoria number about twenty, all species of the eucalyptus family. In addition, there are a number of woods of fine grain, many of them, however, being small trees confined to limited areas.

With careful conservation and management Victoria's forests are capable of yielding considerable amounts of timber for all time, despite the ravages made upon them in the past by bush fires, settlement, and mining.

The State is notably deficient in softwoods or conifers, though over extensive areas the conditions are suitable for their growth once they are introduced. To encourage their growth, both in State and in private plantations, three large nurseries have been established, at Creswick, Macedon, and Broadford, and a number of plantations have been formed, the principal ones being situated at Creswick, Mount Macedon, Frankston, Anglesea, Port Campbell, Bright, Castlemaine, Harcourt, Scarsdale, Mount Disappointment, and Mt. Difficult. In addition to providing trees for the plantations, the nurseries supply considerable numbers of plants at low rates to State schools, public bodies and private applicants. This has proved of great benefit to the community by fostering an interest in tree planting generally, and especially by encouraging farmers to plant in order to afford protection to their homesteads and to provide shade and shelter for their flocks and herds.

A Forest School for training cadets is maintained at Creswick. The Commission also controls a State sawmill in the Warburton district, and Timber Seasoning Works at Newport, from which seasoned weatherboards, cabinet stock, floorings and linings are supplied, largely for use in the building of State schools and for other public works.

The Forestry Fund was established in 1918 by Act No. 2976, and made applicable only to expenditure on the improvements and reforestation of State forests and the development of forestry. In each year the Treasurer makes a grant of £40,000 out of the Consolidated Revenue to the Fund, and also half of the amount in excess of £80,000 received from royalties, leases, licences, and permits.

During the financial year 1924-25, authority was given by Act No. 3386 to raise the sum of £500,000 over a period of six years from 1st January, 1925, for the development of State forests.

The revenue derived from forest sources during the financial year 1927-28 was £140,715, and the expenditure was £285,271—£122,232 of which was paid out of the Consolidated Revenue, £86,601 under the Forests Loan Act No. 3386, and the balance—£76,438—from the Forestry Fund. The balance at the credit of the Fund at 30th June, 1928, was £28,454.

It is estimated that the quantity of timber produced in the rough in 1927-28 was 8,214,708 cubic feet. In addition, 523,200 tons measurement (19,358,400 cubic feet) of fuel timber was produced.

**Agriculture—  
expenditure  
and revenue  
connected  
with.** The State has rendered substantial assistance to the various branches of the agricultural and pastoral industries during past years. The appended table summarizes for the last five years the items of State expenditure from consolidated revenue in this direction, and shows the amount of revenue

received by the Department of Agriculture, which consists chiefly of payments by exporters for packing produce for export, and from State Forests and Nurseries, consisting chiefly of Royalties :—

### EXPENDITURE AND REVENUE CONNECTED WITH AGRICULTURE, ETC., 1923-24 to 1927-28.

	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
<i>Expenditure.</i>	£	£	£	£	£
Agricultural Branch ..	41,549	30,652	35,271	45,636	52,914
Horticultural Branch ..	..	27,938*	30,168*	32,984*	31,763*
Grants to Agricultural and Horticultural Societies, &c... ..	775	875	675	675	675
Development of Export Trade	53,372	50,679	48,362	60,875	60,946
Viticultural Education and Inspection of Vineyards ..	4,454	2,092	881	315	..
Mafira Beet Sugar Factory ..	74,497	105,680	85,825	55,891	89,941
Advances to Settlers for losses by bush fires, floods, &c. ..	659	1,190	18,587	32,987	21,150
Technical Agricultural Education, &c. ..	31,824	28,478	30,580	29,103	25,954
Publishing Agricultural Reports	250	213	234	254	214
Rabbit and Vermin Extermination ..	85,489	84,368	88,874	91,929	85,200
Stock and Dairy Branch	48,627	53,527	69,210	85,853	89,077
State Forests and Nurseries ..	168,880	179,278	95,555†	101,380†	122,232†
Miscellaneous ..	6,006	6,239	5,369	12,355	488
<b>Total ..</b>	<b>516,382</b>	<b>571,209</b>	<b>509,591</b>	<b>550,237</b>	<b>580,554</b>
<i>Revenue.</i>					
Department of Agriculture ..	73,282	81,687	77,547	85,440	78,637
Mafira Beet Sugar Factory ..	92,231	129,732	137,997	79,435	58,900
State Forests and Nurseries ..	166,446	162,786	161,608	156,700	140,715
<b>Total ..</b>	<b>331,959</b>	<b>374,205</b>	<b>377,152</b>	<b>321,575</b>	<b>278,252</b>

\* Previously included under Agricultural Branch.

† Vide expenditure out of Forestry Fund and State Forests Loan Act.

Included in the expenditure on State Forests and Nurseries are net payments into the Forestry Fund; these amounts are as follows :—£17,020 in 1921-22, £16,205 in 1922-23, £5,919 in 1923-24, and £6,333 in 1926-27. In 1924-25, 1925-26, and 1927-28, owing to increased expenditure, £21,968, £91,619, and £11,602 respectively—not included in the above statement—were paid out of the Fund, and, in 1925-26, 1926-27, and 1927-28 amounts of £87,527, £151,633, and £86,601 were expended out of the State Forests Loan Act 1924, No. 3386.

In addition to the expenditure shown, various sums have been advanced from loans and votes for the purpose of aiding closer settlement, for the resumption of mallee lands, for relief to farmers on account of bush fires and flood losses, and for purchase of seed wheat and fodder. These advances are gradually being repaid.

The expenditure from Loan Funds in 1927-28 was £1,853,660—£798,690 having been expended on discharged soldiers' land settlement, £916,604 on closer settlement, £32,635 on wire netting, £97,247 on cultivation advances, £5,000 on advances to fruit companies, £1,000 on bush fire relief, £43 on thrip losses, £2,432 on the Maffra Beet Sugar Factory, and £9 on Agricultural Colleges.

## AGRICULTURE.

**Progress of cultivation.** All divisions of the State are suitable for cultivation, but the Wimmera, Mallee, and Northern are the principal wheat-growing districts and furnish about 94 per cent. of the total area under this crop. In recent years the chief extensions of the wheat-growing areas have been in the Mallee. In this district, which has a rainfall at one time thought wholly inadequate, wheat growing was rendered practicable by the introduction of machinery specially suited to the conditions, the extension of railway lines, and storage of water for domestic and stock supplies; and, with more of these facilities being made available each year, further areas are gradually being brought under cultivation. An indication of the growing importance of the Mallee is afforded by recent figures, which show that, of the wheat produced in the State in the last five seasons, the proportion obtained from the Mallee was over 30 per cent., as against slightly less than 5 per cent. in 1891-92. The area under cultivation in the Mallee in 1927-28 for all purposes was 2,945,003 acres.

The area cultivated in the State in 1927-28 was 7,634,302 acres, as against an annual average of 7,039,471 acres for the previous five seasons, 5,032,359 acres for the seasons 1905-15, and 3,547,111 acres for the seasons 1895-1905. Notwithstanding the great increase in the area cultivated, the dairying and pastoral industries show a considerable expansion. This is evidenced by a comparison of the exports of the principal products to oversea countries in the year 1900 with the annual average in the last five seasons. The values have risen as follows:—Butter and cheese from £1,252,277 to £2,905,839; milk and cream from £5,455 to £1,267,053; and meats from £502,285 to £1,266,105.

The increase in cultivation has been associated with new and improved farming methods. The chief of these are the practice of fallowing, the use of fertilizers, the selection of suitable seeds, and the increasing attention given to crop rotation. The more general adoption of improved methods in recent years has contributed greatly to

the production of the State. The following table shows the progress of cultivation from period to period during the last 73 years :—

### ACREAGE CULTIVATED ANNUALLY, 1855 TO 1928.

Period or Year (ending in March).	Annual Average.		
	Crop.	Fallow.	Total Cultivation.
	acres.	acres.	acres.
1855-65 .. .. .	325,676	12,146	337,822
1865-75 .. .. .	624,377	57,274	681,651
1875-85 .. .. .	1,306,920	137,536	1,444,456
1885-95 .. .. .	2,109,326	364,282	2,473,608
1895-1905 .. .. .	3,022,914	524,197	3,547,111
1905-15 .. .. .	3,756,211	1,276,148	5,032,359
1915-20 .. .. .	4,523,308	1,567,258	6,090,566
1920-21 .. .. .	4,489,503	1,935,747	6,425,250
1921-22 .. .. .	4,530,312	2,052,964	6,583,276
1922-23 .. .. .	4,862,548	2,186,881	7,049,429
1923-24 .. .. .	4,682,144	2,294,297	6,976,441
1924-25 .. .. .	4,761,394	2,215,270	6,976,664
1925-26 .. .. .	4,433,492	2,457,136	6,890,628
1926-27 .. .. .	4,735,173	2,569,021	7,304,194
1927-28 .. .. .	4,942,258	2,692,044	7,634,302

Areas under  
Principal  
Crops.

The principal crops grown in the State are wheat, oats, barley, potatoes and hay. The average annual acreage of these for periods from 1855 to 1920 and the acreage for each of the last eight seasons are given in the next table :—

### ANNUAL ACREAGE OF FIVE PRINCIPAL CROPS, 1855 TO 1928.

Period or Year (ending in March).	Average Annual Area of—				
	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	acres.	acres.	acres.	acres.	acres.
1855-65 .. .. .	119,001	83,296	4,843	24,123	80,117
1865-75 .. .. .	278,077	129,384	19,262	36,744	117,393
1875-85 .. .. .	776,031	147,343	41,188	39,089	226,775
1885-95 .. .. .	1,236,501	210,901	64,310	48,009	437,087
1895-1905 .. .. .	1,898,280	340,957	52,829	45,243	540,472
1905-15 .. .. .	2,190,336	390,642	60,378	56,272	848,587
1915-20 .. .. .	2,725,728	398,232	84,973	60,606	1,015,585
1920-21 .. .. .	2,295,865	443,636	93,954	62,687	1,333,397
1921-22 .. .. .	2,611,198	318,681	100,127	63,895	1,159,135
1922-23 .. .. .	2,644,314	402,356	102,773	61,741	1,261,408
1923-24 .. .. .	2,454,117	520,654	56,564	59,306	1,277,606
1924-25 .. .. .	2,705,323	517,229	63,764	61,295	1,120,312
1925-26 .. .. .	2,513,494	437,696	103,395	63,369	1,013,613
1926-27 .. .. .	2,915,315	303,424	88,896	66,185	1,080,993
1927-28 .. .. .	3,064,172	529,392	76,768	77,640	908,804

**Production of principal Crops.**

The average annual production of the five principal crops for periods, from 1855 to 1920, and the production for each of the last eight seasons were as follows :—

**ANNUAL PRODUCTION OF PRINCIPAL CROPS, 1855 to 1928.**

Period or Year (ending in March).	Average Annual Production of—				
	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	bushels.	bushels.	bushels.	tons.	tons.
1855-65 ..	2,198,874	2,068,648	103,575	62,723	111,806
1865-75 ..	4,385,814	2,636,747	390,337	111,800	153,852
1875-85 ..	8,593,308	3,297,468	799,938	135,614	276,771
1885-95 ..	12,268,905	4,649,393	1,187,007	170,905	547,092
1895-1905 ..	14,032,145	6,649,453	947,580	134,357	672,982
1905-15 ..	22,906,743	7,342,468	1,243,442	158,445	1,084,726
1915-20 ..	37,503,989	7,127,504	1,812,447	165,486	1,376,142
1920-21 ..	39,468,625	10,907,191	2,495,762	171,628	1,984,854
1921-22 ..	43,867,596	6,082,258	2,336,246	173,660	1,548,453
1922-23 ..	35,697,220	8,093,459	2,442,041	148,354	1,665,089
1923-24 ..	37,795,704	9,366,205	1,455,435	238,520	1,541,287
1924-25 ..	47,364,495	9,572,003	1,444,823	139,043	1,492,588
1925-26 ..	29,255,534	4,998,165	1,774,963	160,729	929,068
1926-27 ..	46,886,020	4,884,006	1,920,722	162,909	1,387,971
1927-28 ..	26,160,814	4,682,724	1,552,109	230,348	1,001,251

**Principal crops in Districts.**

The percentage in each district of the total area under each principal crop during last season was as given below :—

**PERCENTAGE IN EACH DISTRICT OF TOTAL AREA UNDER EACH PRINCIPAL CROP, 1927-28.**

Districts.	Percentage in each District of Area under—					
	Wheat.	Oats.	Barley.	Potatoes.	Hay.	Other Crops.
Central .. ..	1·36	4·15	35·33	53·95	18·68	31·90
North-Central .. ..	0·68	2·40	3·88	15·46	6·56	2·75
Western .. ..	2·18	7·92	16·45	13·31	14·71	7·18
Wimmera .. ..	25·18	19·96	8·74	0·14	15·68	1·87
Mallee .. ..	47·67	44·54	8·29	0·01	14·60	14·29
Northern .. ..	20·81	18·41	12·89	0·07	17·19	15·77
North-Eastern .. ..	1·45	1·56	1·15	1·08	5·12	6·87
Gippsland .. ..	0·67	1·06	13·27	15·98	7·46	19·37

NOTE.—For counties contained in each District, see table on page 569.

The area under the principal crops in proportion to the total area under crop in each district during last season was as follows :—

**RELATIVE AREAS DEVOTED TO DIFFERENT CROPS IN EACH DISTRICT, 1927-28.**

Districts.	Percentage of Area under all Crops devoted to—					
	Wheat.	Oats.	Barley.	Potatoes.	Hay.	Other Crops.
Central .. ..	10·57	5·59	6·89	10·65	43·15	23·15
North-Central .. ..	17·94	10·96	2·57	10·35	51·41	6·77
Western .. ..	23·41	14·66	4·41	3·61	46·74	7·17
Wimmera .. ..	74·77	10·24	0·65	0·01	13·81	0·52
Mallee .. ..	77·85	12·57	0·34	0·00	7·07	2·17
Northern .. ..	67·39	10·29	1·05	0·00	16·51	4·76
North-Eastern .. ..	36·81	6·88	0·73	0·70	38·61	16·27
Gippsland .. ..	11·97	3·25	5·92	7·22	39·46	32·18
Total for Victoria ..	62·00	10·71	1·55	1·57	18·39	5·78

NOTE.—For counties contained in each District, see table on page 569.

The area and produce of the principal crops per head of population are given in the next table for each of the last five years :—

**AREA AND PRODUCTION OF FIVE PRINCIPAL CROPS PER HEAD OF POPULATION, 1923-24 TO 1927-28.**

Year ended March—			Wheat.	Oats.	Barley.	Potatoes.	Hay.
			Area per Head of Population.				
			acres.	acres.	acres.	acres.	acres.
1924 .. ..			1·51	·32	·03	·04	·79
1925 .. ..			1·63	·31	·04	·04	·68
1926 .. ..			1·49	·26	·06	·04	·60
1927 .. ..			1·70	·18	·05	·04	·63
1928 .. ..			1·76	·30	·04	·04	·52
			Produce per Head of Population.				
			bushels.	bushels.	bushels.	tons.	tons.
1924 .. ..			23·25	5·76	·89	·15	·95
1925 .. ..			28·58	5·77	·87	·08	·90
1926 .. ..			17·37	2·97	1·05	·10	·55
1927 .. ..			27·39	2·85	1·12	·10	·81
1928 .. ..			15·02	2·69	·89	·13	·57

Except in the three seasons 1895-96, 1902-03, and 1914-15, the wheat produced during each year since 1870 has been more than sufficient to supply home consumption.



Values of  
five principal  
crops.

The following table gives the annual value of each of the five principal crops, based upon prices realized upon farms, also the value of each crop per acre for each of the last five years :—

VALUES OF FIVE PRINCIPAL CROPS.

Year ended March.	Annual Value of—				
	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	£	£	£	£	£
1923-24 .. ..	8,189,069	1,455,331	262,210	701,229	5,229,162
1924-25 .. ..	11,993,546	934,538	354,006	682,878	3,639,496
1925-26 .. ..	6,665,150	684,320	290,166	1,309,470	3,497,253
1926-27 .. ..	9,546,812	653,291	295,739	671,673	4,719,925
1927-28 .. ..	4,724,369	688,804	297,327	388,537	3,683,272
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Value per acre 1923-24	3 6 9	2 15 11	4 12 9	11 16 6	4 1 10
„ „ 1924-25	4 8 8	1 16 2	5 11 0	11 2 10	3 5 0
„ „ 1925-26	2 13 0	1 11 3	2 16 1	20 13 3	3 9 0
„ „ 1926-27	3 5 6	2 3 1	3 6 6	10 3 0	4 7 4
„ „ 1927-28	1 10 10	1 6 0	3 17 6	5 0 1	4 1 1

The value of the five principal crops was £9,782,309 in 1927-28, as against £15,887,440 in 1926-27, £12,446,359 in 1925-26, £17,604,464 in 1924-25, and £15,837,001 in 1923-24.

Wheat  
production.

On the experience of the last five seasons the area under wheat for grain represented 58 per cent. of the total under all crops. The acreage, the total production, and the yield

per acre are given in the next table for decennial periods from 1860 to 1920, and for each of the last eight seasons :—

## WHEAT PRODUCTION, 1860 TO 1928.

Period or Season (ending in March).	Annual Average.		
	Area under Crop.	Production.	Yield per Acre.
	acres.	bushels.	bushels.
1860-70 .. .. .	194,714	3,480,765	17·87
1870-80 .. .. .	431,444	5,510,125	12·77
1880-90 .. .. .	1,077,575	10,793,936	10·02
1890-1900 .. .. .	1,563,403	12,610,595	8·07
1900-10 .. .. .	1,983,874	19,242,402	9·70
1910-20 .. .. .	2,570,540	30,632,514	11·92
1921 .. .. .	2,295,865	39,468,625	17·19
1922 .. .. .	2,611,198	43,867,596	16·80
1923 .. .. .	2,644,314	35,697,220	13·50
1924 .. .. .	2,454,117	37,795,704	15·40
1925 .. .. .	2,705,323	47,364,495	17·51
1926 .. .. .	2,513,494	29,255,534	11·64
1927 .. .. .	2,915,315	46,886,020	16·08
1928 .. .. .	3,064,172	26,160,814	8·54

Although a large area in districts of limited rainfall has been brought under cultivation for wheat growing during late years, the yield per acre for the State on the average of the last ten seasons was 13·68 bushels, which is better than the corresponding averages for decennial periods of earlier date back to 1870. This satisfactory result is largely due to the use of more prolific varieties of seed and to the more general practice of fallowing and fertilizing. In addition to the area shown for grain, 224,454 acres of wheat were cut for hay last season, so that the total area under wheat in 1927-28 was 3,288,626 acres.

The production of wheat in the other Australian States in 1927-28 was as follows :—New South Wales, 26,927,100 bushels; South Australia, 24,066,012 bushels; Western Australia, 36,370,219 bushels; Queensland, 3,783,584 bushels; and Tasmania, 672,000 bushels. The total production for the Commonwealth was 117,979,729 bushels.

Wheat  
growing in  
counties.

The principal wheat growing areas are the Wimmera, Mallee, and Northern districts. Although other districts provide only small proportions of the total area they are not to be regarded as unsuitable for wheat growing, as their average yield per acre is usually greater than in the areas mentioned. The production of wheat for grain in different counties for each of the last three seasons is shown in the following table:—

### WHEAT YIELDS IN COUNTIES FOR THE LAST THREE SEASONS.

Districts and Counties.	Year ended March.								
	Area.			Produce.			Average per Acre.		
	1926.	1927.	1928.	1926.	1927.	1928.	1926.	1927.	1928.
	acres.	acres.	acres.	bushels.	bushels.	bushels.	bush.	bush.	bush.
<b>Central—</b>									
Bourke ..	8,424	15,266	15,440	89,704	261,510	270,998	10·65	17·13	17·55
Grant ..	12,248	19,787	21,931	171,072	348,533	372,044	13·97	17·61	16·96
Mornington..	1,032	1,989	3,939	22,041	47,312	97,177	20·37	23·79	24·67
Evelyn ..	305	233	268	3,293	5,432	5,998	10·80	23·31	22·38
Total ..	22,059	37,275	41,578	286,110	662,787	746,217	12·97	17·78	17·95
<b>North-Central—</b>									
Anglesey ..	1,097	1,142	1,006	13,259	19,076	23,420	12·09	16·70	23·28
Dalhousie ..	2,168	2,239	2,376	32,026	39,292	49,020	14·77	17·55	20·63
Talbot ..	13,120	16,613	17,414	159,047	316,494	320,930	12·12	19·05	18·43
Total ..	16,385	19,994	20,796	204,332	374,862	393,370	12·47	18·75	19·91
<b>Western—</b>									
Grenville ..	5,943	8,632	11,741	83,315	165,902	265,754	14·86	19·22	22·63
Polwarth ..	85	172	182	1,166	4,080	3,919	13·72	23·72	21·53
Heytesbury ..	1	19	37	37	350	769	37·00	18·42	20·78
Hampden ..	11,027	11,305	13,945	205,562	178,105	317,640	18·64	15·75	22·78
Ripon ..	27,227	29,973	34,601	467,825	621,057	798,140	17·18	20·72	23·07
Villiers ..	926	1,514	2,279	18,923	23,834	53,072	20·44	19·04	23·29
Normanby ..	961	1,315	1,432	17,714	23,928	32,178	18·43	18·20	22·47
Dundas ..	1,849	1,766	2,348	29,722	28,567	51,060	16·07	16·18	21·75
Follett ..	185	312	379	1,787	6,512	6,706	9·66	20·37	17·69
Total ..	48,204	55,009	66,944	831,051	1,057,335	1,529,238	17·24	19·22	22·84
<b>Wimmera—</b>									
Lowan ..	163,996	185,638	191,984	2,901,283	3,805,448	3,058,292	17·71	20·56	15·68
Borong ..	403,638	440,049	430,174	8,347,435	10,834,649	4,936,717	20·68	23·60	11·48
Kara Kara ..	132,670	146,521	146,267	2,046,978	2,962,471	2,097,317	15·43	20·22	14·34
Total ..	700,304	772,216	771,425	13,298,696	17,152,538	10,092,320	18·99	22·21	13·03
<b>Mallee—</b>									
Millewa ..	18,399	45,636	116,028	63,672	544,263	16,991	3·73	11·93	0·15
Weeah ..	168,166	181,342	196,772	1,311,433	2,277,975	829,774	7·80	12·56	4·22
Karkaroc ..	568,041	678,484	708,307	3,930,625	8,711,983	3,826,285	6·92	12·84	3·99
Tatchera ..	342,067	401,968	439,549	2,364,893	5,415,076	1,224,703	6·91	13·47	2·79
Total ..	1,096,673	1,307,430	1,460,656	7,675,623	16,949,309	4,897,753	7·00	12·96	3·35
<b>Northern—</b>									
Gunbower ..	35,798	42,923	56,904	379,415	579,318	204,945	10·60	13·50	3·60
Gladstone ..	108,644	129,554	121,205	1,063,114	2,200,078	1,327,972	9·79	16·98	10·96
Bendigo ..	116,543	143,968	133,796	1,137,194	2,093,201	1,133,701	9·76	14·54	8·47
Roadsay ..	76,810	95,944	81,599	867,143	1,377,819	858,107	11·29	14·36	10·52
Moir ..	238,040	248,409	244,329	2,838,578	3,608,718	3,524,600	11·92	14·53	14·43
Total ..	575,835	660,798	637,833	6,285,144	9,859,164	7,049,225	10·92	14·92	11·05

### WHEAT YIELDS IN COUNTIES FOR THE LAST THREE SEASONS—continued.

Districts and Counties.	Year ended March.								
	Area.			Produce.			Average per Acre.		
	1926.	1927.	1928.	1926.	1927.	1928.	1926.	1927.	1928.
	acres.	acres.	acres.	bu.-hels.	bushels.	bushels.	bush.	bush.	bush.
North-Eastern—									
Delatite ..	8,138	8,686	8,623	105,772	113,805	170,842	13·00	13·10	19·81
Bogong ..	31,706	34,874	35,488	294,455	348,040	729,722	9·29	9·98	20·56
Benambra ..	233	380	261	3,703	4,828	5,864	15·89	12·71	22·47
Wonnangatta ..	..	..	..	..	..	..	..	..	..
Total ..	40,077	43,940	44,372	403,930	466,673	906,428	10·08	10·62	20·43
Gippsland—									
Croajingolong ..	21	3	9	257	58	134	12·24	19·33	14·80
Tambo ..	60	80	146	370	1,328	3,435	6·17	16·60	23·53
Dargo ..	380	538	1,141	8,565	11,251	27,281	22·54	20·91	23·91
Tanjil ..	12,463	16,379	16,845	244,617	314,749	456,906	19·63	19·22	27·12
Buln Buln ..	1,038	1,654	2,427	16,539	35,936	58,401	16·01	21·73	24·06
Total ..	13,957	18,654	20,568	270,348	363,322	546,157	19·37	19·48	26·55
Total (State)	2,513,494	2,915,315	3,064,172	29,255,534	46,886,020	26,160,814	11·64	16·08	8·54

The table which follows gives the average yield of wheat per acre in the principal wheat growing counties for each of the last ten years :—

### AVERAGE YIELD OF WHEAT PER ACRE IN WHEAT GROWING COUNTIES, 1918-19 TO 1927-28.

Districts and Counties.	Average Yield of Wheat per Acre (in Bushels) during Year ended March—									
	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.
Western District—										
Ripon ..	10·06	16·26	21·74	19·63	19·62	15·33	19·37	17·18	20·72	23·07
Wimmera District—										
Lowan ..	15·78	13·47	20·94	21·53	21·17	17·48	22·87	17·71	20·50	15·68
Borong ..	20·01	15·76	23·79	28·05	22·72	23·65	26·23	20·68	23·60	11·48
Kara Kara ..	14·39	14·10	21·25	22·05	19·12	18·10	22·60	15·43	20·22	14·34
Mallee District—										
Weeah ..	6·38	3·43	14·28	8·89	8·75	10·49	11·23	7·80	12·56	4·22
Karkaroc ..	7·15	3·29	13·42	10·88	8·14	12·36	11·12	6·92	12·84	3·99
Tatchera ..	9·44	4·60	13·65	13·13	7·41	13·01	12·33	6·91	13·47	2·79
Northern District—										
Gunbower ..	8·74	8·96	15·27	15·76	10·71	12·58	16·72	10·60	13·50	3·60
Gladstone ..	11·52	12·08	18·72	18·65	14·66	13·07	21·68	9·79	16·98	10·96
Bendigo ..	11·33	9·30	14·56	17·25	12·59	13·82	18·76	9·76	14·54	8·47
Rodney ..	10·80	6·85	15·79	15·77	13·65	14·68	20·29	11·29	14·36	10·52
Molra ..	10·70	4·79	17·46	16·83	12·34	16·13	21·15	11·92	14·53	14·43
Total State ..	11·40	7·75	17·19	16·80	13·50	15·40	17·51	11·64	16·08	8·54

#### Analysis of Grain Production.

For the season 1926-27 an analysis of the number of acres producing a given yield per acre was made for counties typical of the three important wheat growing districts of Victoria, and the resultant classification is shown hereunder :—

## CLASSIFICATION OF VICTORIAN WHEAT AREAS, 1926-27.

## WIMMERA DISTRICT.

## COUNTY OF BORUNG.

(Average yield 23·60 bushels.)

Production per acre.	Farms in Group.	Area of Crop.			Production.	
		Total.	Proportion of whole.	Average Size.	Total.	Proportion of whole.
	No.	acres.	per cent.	acres.	bushels.	per cent.
Under 3 bushels	3	275	·1	92	420	..
3 and under 6	11	533	·1	48	2,490	..
6     "     9	31	2,591	·6	84	19,231	·2
9     "     12	41	5,168	1·2	126	54,510	·5
12    "     15	85	17,308	3·9	204	239,063	2·3
15    "     21	480	111,823	25·4	233	2,078,369	20·0
21    "     27	725	186,751	42·4	258	4,465,176	43·0
27    "     33	426	98,875	22·5	232	2,945,413	28·4
33    "     39	84	16,648	3·8	198	576,478	5·6
39 and over	2	77	..	39	3,499	..
Total     ..	1,888	440,049	100·0	233	10,384,649	100·0

## MALLEE DISTRICT.

## COUNTY OF KARKAROOC.

(Average yield 12·84 bushels.)

Production per acre.	Farms in Group.	Area of Crop.			Production.	
		Total.	Proportion of whole.	Average Size.	Total.	Proportion of whole.
	No.	acres.	per cent.	acres.	bushels.	per cent.
Under 3 bushels	80	17,218	2·5	215	27,105	·3
3 and under 6	304	71,726	10·6	236	321,538	3·7
6     "     9	419	108,742	16·0	260	810,297	9·3
9     "     12	441	118,905	17·5	270	1,234,550	14·2
12    "     15	373	100,143	14·8	268	1,334,694	15·3
15    "     21	613	202,174	29·8	330	3,574,225	41·0
21    "     27	166	55,736	8·2	336	1,296,052	14·9
27    "     33	14	3,440	·5	246	98,936	1·1
33    "     39	1	400	·1	400	14,592	·2
Total     ..	2,411	678,484	100·0	281	8,711,989	100·0

## CLASSIFICATION OF VICTORIAN WHEAT AREAS, 1926-27 —continued.

## NORTHERN DISTRICT.

## COUNTY OF MOIRA.

(Average yield 14·53 bushels.)

Production per acre.	Farms in Group.	Area of Crop.			Production.	
		Total.	Proportion of whole.	Average Size.	Total.	Proportion of whole.
	No.	acres.	per cent.	acres.	bushels.	per cent.
Under 3 bushels	62	5,143	2·1	83	8,251	·2
3 and under 6	151	12,176	4·9	81	57,380	1·6
6     ,,     9	274	26,018	10·5	95	200,163	5·6
9     ,,     12	323	36,298	14·6	112	382,091	10·6
12   ,,     15	333	46,819	18·8	141	624,680	17·3
15   ,,     21	574	94,198	37·9	164	1,680,424	46·6
21   ,,     27	147	25,080	10·1	171	574,545	15·9
27   ,,     33	22	2,467	1·0	112	73,614	2·0
33   ,,     39	3	210	·1	70	7,600	·2
Total     ..	1,889	248,409	100·0	132	3,608,748	100·0

In Borung, 42·4 per cent. of the area under wheat yielded from 21 to 27 bushels per acre, and, in Karkarooc and Moira, 29·8 per cent. and 37·9 per cent. respectively, yielded from 15 to 21 bushels.

**Varieties of Wheat, etc., and Manure used.** Australian wheat is noted for its hard, white, and dry qualities, and, on account of the whiteness of the flour made therefrom, it is much sought after by oversea millers for the purpose of mixing with other wheats.

Enquiries in regard to the area sown under each variety of wheat, the quantity of seed sown, and the manure used, per acre, during the last three seasons, were made with the view of enabling the Agricultural Department to advise growers as to the most suitable varieties and the quantities to use in a particular district.

Analyses of the replies of the growers who supplied the information are given in the appended tables :—

## VARIETIES OF WHEAT SOWN IN VICTORIA.

Variety.	1926-27.		1927-28.		1928-29.	
	Relative Order of Importance.	Percentage (according to acreage) of total area in the State.	Relative Order of Importance.	Percentage (according to acreage) of total area in the State.	Relative Order of Importance.	Percentage (according to acreage) of total area in the State.
Federation ..	1	44.76	1	38.42	1	33.41
Free Gallipoli ..	14	1.33	5	5.47	2	10.56
Ranee ..	13	1.39	3	5.95	3	10.10
Currawa ..	2	9.89	2	9.51	4	7.76
Penny ..	4	5.42	6	4.44	5	4.58
Major ..	3	6.49	4	5.62	6	4.52
Nizam ..	22	0.33	16	1.41	7	3.28
Rajah ..	7	3.06	7	3.46	8	2.95
Bald Early ..	5	3.51	8	3.14	9	2.80
Joffre ..	11	2.37	10	2.66	10	2.69
Wannon ..	15	1.18	14	2.01	11	2.19
Gluyas ..	6	3.16	11	2.47	12	2.05
Yandilla King ..	8	2.76	9	2.77	13	2.00
Huf's Imperial ..	10	2.45	15	1.96	14	1.85
Mac's White ..	9	2.57	12	2.15	15	1.42
Turvey ..	12	1.70	13	2.09	16	1.30
Sepoy ..	48	0.03	21	0.31	17	0.88
Waratah ..	45	0.04	22	0.25	18	0.47
Nabawa ..	38	0.07	29	0.17	19	0.47
Dollar ..	17	0.87	17	0.56	20	0.47
Yanward ..	19	0.51	19	0.44	21	0.35
Graham ..	21	0.45	18	0.45	22	0.32
Austen ..	27	0.23	24	0.24	23	0.21
Warden ..	20	0.48	20	0.35	24	0.20
Bena ..	91	0.01	43	0.05	25	0.18
Other varieties..	..	4.94	..	3.65	..	2.99
Total ..	..	100.00	..	100.00	..	100.00

In all, over 140 varieties of wheat were sown. The number of these which were tried in the Mallee greatly exceeded the number experimented with in any other district. A more extended list showing the area and percentage of each variety, and the ten principal varieties grown in each district, can be obtained on application to the Government Statist.

## PERCENTAGE OF TOTAL AREA, NUMBER OF GROWERS, AND SEED AND MANURE USED, 1928-29.

District.	Percentage (according to acreage) of total area in the State.	Number of Growers Who Supplied Information.	Weight per acre of—	
			Seed Sown.	Manure Used.
	per cent.		lbs.	lbs.
Central ..	1.58	1,864	93	106
North Central ..	0.95	1,232	98	94
Western ..	2.01	2,469	88	119
Wimmera ..	25.23	3,638	75	95
Mallee ..	47.14	3,348	60	71
Northern ..	21.05	5,196	70	88
North Eastern ..	1.32	1,587	75	87
Gippsland ..	0.72	989	90	88
Total State ..	100.00	20,323	68	83

The rate of sowing ranged from 47 lbs. of seed per acre in the County of Millewa to 98 lbs. in Talbot. Manure used varied from 49 lbs. per acre in Millewa to 124 lbs. in Ripon.

The weight of an imperial bushel of wheat is 60 lbs., but the actual weight of a bushel of Victorian wheat of the fair average quality standard annually fixed by the Chamber of Commerce was 61·475 lbs. on the average of the last ten years. The following statement shows the variation in the f.a.q. standard weight of a bushel of Victorian wheat for each season since 1917-18 :—

F.A.Q. WHEAT STANDARD, 1919 TO 1928.

Season ended March—			Weight of Bushel (f.a.q.).	Season ended March—			Weight of Bushel (f.a.q.).
			lbs.				lbs.
1919	..	..	62½	1924	..	..	61
1920	..	..	62	1925	..	..	62½
1921	..	..	60½	1926	..	..	61½
1922	..	..	60	1927	..	..	61½
1923	..	..	61½	1928	..	..	61½

Stocks of  
wheat and  
flour.

It is estimated that about 13,500,000 bushels of wheat are required locally for food and seed. The stocks of wheat and flour in the State were as follows :—

WHEAT AND FLOUR ON HAND, 1925 TO 1928.

Year.		Quantity in Bushels.		
		Wheat.	Flour (equivalent in Wheat).	Total.
1925 (31st October)	.. ..	1,446,240	2,955,640	4,401,880
1926	.. ..	1,629,124	472,750	2,101,874
1927	.. ..	3,595,800	1,406,600	5,002,400
1928	.. ..	2,995,000	995,400	3,990,400



**Oats.** In 1927-28 the area harvested for oats in Victoria was 529,392 acres, from which a yield of 4,682,724 bushels was obtained, giving an average of 8.85 bushels to the acre. The appended statement shows the harvest results for this crop for each of the last eight seasons, and for periods prior thereto back to 1865:—

## OATS PRODUCTION, 1865 TO 1928.

Period or Year (ending in March).	Annual Average.		
	Area under Crop.	Produce.	Average per Acre.
	acres.	bushels.	bushels.
1865-75 .. .. .	129,384	2,636,747	20.38
1875-85 .. .. .	147,343	3,297,468	22.38
1885-95 .. .. .	210,901	4,649,393	22.05
1895-1905 .. .. .	340,957	6,649,453	19.50
1905-15 .. .. .	390,643	7,342,468	18.79
1915-20 .. .. .	398,232	7,127,504	17.90
1921 .. .. .	443,636	10,907,191	24.59
1922 .. .. .	318,681	6,082,258	19.09
1923 .. .. .	492,356	8,093,459	16.44
1924 .. .. .	520,654	9,366,205	17.99
1925 .. .. .	517,229	9,572,003	18.51
1926 .. .. .	437,696	4,998,165	11.42
1927 .. .. .	303,424	4,884,006	16.10
1928 .. .. .	529,392	4,682,724	8.85

In addition to the area for grain shown for last season there were 659,983 acres of oats cut for hay, so that the total area sown with oats was 1,189,375 acres. During 1927-28 there were exported from Victoria to oversea countries 21,200 bushels of oats and 26,865 lbs. of oatmeal, etc.

**Varieties of Oats.** Enquiries in regard to the different kinds of oats sown for the 1928-29 season showed that, of those growers who supplied the information, 92 per cent. planted principally Algerian, and 5 per cent. Mortgage Lifter oats.

**Barley.** The area under barley in 1927-28 was 76,768 acres, of which 50,005 were under malting, and 26,763 under other barley. The figures in the subjoined table show the acreage, production, and yield per acre, for each of the last five years:—

## BARLEY PRODUCTION, 1923-24 to 1927-28.

Year ended March—	Area under Crop.		Produce.		Average per Acre.		
	Malting.	Other.	Malting.	Other.	Malting.	Other.	Total.
	acres.	acres.	bushels.	bushels.	bushels.	bushels.	bushels.
1924 ..	39,588	16,976	1,037,144	418,291	26·20	24·64	25·73
1925 ..	42,217	21,547	971,532	473,291	23·01	21·97	22·66
1926 ..	72,244	31,151	1,189,081	585,882	16·46	18·81	17·17
1927 ..	59,935	28,961	1,186,733	733,989	19·80	25·34	21·61
1928 ..	50,005	26,763	866,213	685,896	17·32	25·63	20·22

During 1927-28, 1,875,963 bushels of barley were used locally in the production of 1,860,568 bushels of malt.

The area planted with potatoes in 1927-28 was 77,649 acres, and the production was 230,348 tons, which represented a yield of 2·97 tons per acre, as compared with 2·46 tons in the previous season, 2·54 tons in 1925-26, 2·27 tons in 1924-25, and 4·02 tons in 1923-24. The following table shows the potato returns for the last thirty-eight years:—

## POTATO PRODUCTION, 1890 to 1928.

Period or Year (ending in June).	Annual Average.		
	Area under Crop.	Produce.	Average per Acre.
	acres.	tons.	tons.
1890-1900 .. .. .	47,738	155,432	3·26
1900-10 .. .. .	48,857	142,307	2·91
1910-20 .. .. .	60,127	166,677	2·77
1921 .. .. .	62,687	171,628	2·74
1922 .. .. .	63,895	173,660	2·72
1923 .. .. .	61,741	148,354	2·40
1924 .. .. .	59,306	238,520	4·02
1925 .. .. .	61,295	139,043	2·27
1926 .. .. .	63,369	160,729	2·54
1927 .. .. .	66,185	162,909	2·46
1928 .. .. .	77,649	230,348	2·97

The estimated value of the potatoes produced last season was £388,537 as against £671,673 in 1926-27, £1,309,470 in 1925-26, £682,878 in 1924-25, and £701,229 in 1923-24.

In 1928 the production of hay amounted to 1,001,251 tons, as against 1,387,971 tons in 1927, 929,068 tons in 1926, 1,492,588 tons in 1925, and 1,541,287 tons in 1924. The quantity of straw returned for the season 1927-28 was 31,118 tons as against 23,985 tons for the previous year. The hay returns for decennial periods from 1890 to 1920, and each of the last eight seasons, are shown in the table which follows:—

## HAY PRODUCTION, 1890 to 1928.

Period or Year (ending in March).				Annual Average.		
				Area cut for Hay.	Produce.	Average per Acre.
				acres.	tons.	tons.
1890-1900	..	..	..	467,668	576,618	1·23
1900-10	..	..	..	664,387	894,108	1·35
1910-20	..	..	..	984,797	1,269,767	1·29
1921	..	..	..	1,333,397	1,984,854	1·49
1922	..	..	..	1,159,135	1,548,453	1·34
1923	..	..	..	1,261,408	1,665,089	1·32
1924	..	..	..	1,277,606	1,541,287	1·21
1925	..	..	..	1,120,312	1,492,588	1·33
1926	..	..	..	1,013,613	929,068	0·92
1927	..	..	..	1,080,993	1,387,971	1·29
1928	..	..	..	908,804	1,001,251	1·10

The estimated value of the hay crop was £3,683,272 for 1928, as compared with £4,719,925 for 1927, £3,497,253 for 1926, £3,639,496 for 1925, and £5,229,162 for 1924. Of the total hay produced in 1928, 754,305 tons were oatsen, 211,415 tons were wheaten, and 35,531 tons were made from lucerne and other crops; the yields per acre of these varieties of hay were 1·14, 0·94, and 1·46 tons respectively.

**Prices of  
agricultural  
produce.**

Information is obtained direct from growers, in February or March of each year, in regard to the prices of the leading agricultural products other than the main crop of potatoes, the price of which is ascertained in June or July. The following table gives the average price of each product for each of the last ten years:—

## PRICES OF PRODUCE, 1919 to 1928.

Year.		Average Price in February and March.						
		Wheat.	Oats.	Barley.		Hay.	Potatoes.	
				Malting.	Other.		Early Crop.	Main Crop (after March).
		per bushel.	per bushel.	per bushel.	per bushel.	per ton.	per ton.	per ton.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1919	..	4 9	4 5½	5 0½	3 11½	83 0	210 0	149 0
1920	..	7 8½	5 7¼	6 7½	5 8	134 0	219 0	178 0
1921	..	7 3	2 4½	4 0½	3 1	53 0	101 0	64 0
1922	..	4 9½	3 0½	4 0½	2 11	57 0	94 0	60 0
1923	..	4 6	3 6	3 11	3 0	76 0	170 0	136 0
1924	..	4 3	3 1½	3 9½	3 2½	72 0	111 0	53 0
1925	..	5 0½	1 11½	5 3½	4 0½	48 9	121 0	94 0
1926	..	4 6½	2 9	3 4½	3 0	75 3	194 0	158 0
1927	..	3 9½	2 5½	3 0	2 6½	64 9	170 0	69 0
1928	..	3 1½	2 5½	4 0½	3 1½	70 0	84 0	28 0

NOTE.—Prior to 1925, only freight and handling charges were deducted; but, for 1925 to 1928, the cost for bags and seed, and, for 1927 and 1928, manure also, was deducted from the F.O.B. charges.

**Other Crops.** The area under other than principal crops and the production since March, 1925, are shown in the subjoined table:—

## OTHER THAN PRINCIPAL CROPS, 1925-26 to 1927-28.

Crop.	Area.	Production.	Area.	Production.	Area.	Production.
	1925-26.		1926-27.		1927-28.	
	acres.	bushels.	acres.	bushels.	acres.	bushels.
Maize, for grain	21,913	768,761	20,046	685,407	17,645	757,780
Rye .. ..	978	10,788	864	10,443	791	11,122
Peas .. ..	14,094	166,543	10,431	198,947	10,615	139,621
		tons.		tons.		tons.
Mangel-wurzel ..	1,046	10,333	690	6,715	568	9,451
Beet, Carrots, Parsnips and Turnips	624	2,758	286	1,994	207	1,629
Onions .. ..	5,379	21,728	8,471	43,928	7,659	32,936
Green Forage ..	107,873	..	87,241	..	94,895	..
Grass and Clover		bushels.		bushels.		bushels.
Seeds .. ..	1,290	7,330	854	5,876	758	4,852
		cwt.		cwt.		cwt.
Hops .. ..	312	3,934	196	1,169	294	3,843
Tobacco .. ..	1,179	7,871	1,154	3,454	1,176	†
Vines—Grapes	40,712	2,253,884	40,612	3,587,224	40,988	2,275,770
Flax .. ..	154	1,200 seed 660 fibre 80 tow ..	388	‡	46	‡
Gardens and Orchards ..	82,665	..	83,215	..	81,397	..
Minor Crops ..	7,097*	..	8,161*	..	9,450*	..
Land in Fallow	2,457,136	..	2,569,021	..	2,692,044	..
Lucerne § ..	112,934	..	117,190	..	118,461	..
Artificial Grasses §	820,337	..	835,049	..	887,052	..

\* For details see page 587. † Not available. ‡ Not yet treated. § Not cut for seed or hay.

**Maize.** The area under maize for grain in 1927-28 was 17,645 acres, and the production was 757,780 bushels, which represented a yield of 42·95 bushels per acre, as compared with 34·19 bushels in 1926-27, 35·08 bushels in 1925-26, 38·57 bushels in 1924-25, and 50·33 bushels in 1923-24. Of the total production for last season 87 per cent. was obtained from the Gippsland district. The area, total production, and produce per acre are given in the next

table for each of the last eight seasons and for periods prior thereto back to 1890 :—

### MAIZE PRODUCTION, 1890 TO 1928.

Period or Year (ending in June).	Annual Average.		
	Area under Maize for Grain.	Production.	Produce per Acre.
	acres.	bushels.	bushels.
1890-1900 .. .. .	8,688	452,907	52·13
1900-10 .. .. .	12,082	716,158	59·27
1910-20 .. .. .	20,811	922,461	44·33
1921 .. .. .	24,149	1,065,880	44·14
1922 .. .. .	23,227	951,960	40·99
1923 .. .. .	25,846	879,915	34·04
1924 .. .. .	29,104	1,464,731	50·33
1925 .. .. .	23,126	891,987	38·57
1926 .. .. .	21,913	768,761	35·08
1927 .. .. .	20,046	685,407	34·19
1928 .. .. .	17,645	757,780	42·95

On the average of the last five seasons the yield per acre was 40·85 bushels, as against 45·0 in 1910-15, and 65·4 in 1900-05. The relatively light yield per acre for the latest five-year period was probably due to the cultivation of new areas, which are less fertile than the rich river flats upon which this cereal was grown exclusively in earlier periods.

**Rye.** The area under rye in 1927-28 was 791 acres, from which 11,122 bushels of grain were obtained. The production was 10,443 bushels in 1926-27, 10,788 bushels in 1925-26, 13,000 bushels in 1924-25, and 11,151 bushels in 1923-24. Rye was grown principally in the counties of Dalhousie, Delatite, and Talbot last season. The area under this crop in the three counties mentioned was about 58 per cent. of the total for the whole State.

**Peas.** The area under peas in 1927-28 was 10,615 acres, and the return, 139,621 bushels, as compared with 10,431 acres and 198,947 bushels for the previous year. Last season peas were grown to some extent in all districts with the exception of the Mallee. The counties from which the largest returns were obtained and the yields of these counties were as follows :—Grant, 33,697 bushels; Buln Buln, 27,340 bushels; Mornington, 16,462 bushels; and Bourke, 15,840 bushels. The production of peas in the four counties mentioned was equal to 67 per cent. of the total for the whole State.

**Mangel-wurzel.** In 1927-28 there were 568 acres under mangel-wurzel, as against 690 in 1926-27, 1,046 in 1925-26, 736 in 1924-25, and 854 in 1923-24. The production last year was 9,451 tons, as compared with an annual average of 9,752 tons for the preceding five-year period. Mangolds are grown principally in the Gippsland, Western, and Central districts.

**Beet, carrots, parsnips, and turnips.** The cultivation of beet, carrots, parsnips, and turnips, exclusive of those grown in market gardens, again showed a considerable decrease in area as compared with previous seasons. In 1927-28 the extent of land sown was 207 acres, as against 286 acres in 1926-27, 624 in 1925-26, 238 in 1924-25, and 538 in 1923-24. The produce for last year was 1,629 tons, as compared with 1,994 tons in 1926-27, 2,758 in 1925-26, 1,847 in 1924-25, and 4,222 in 1923-24.

**Onions.** Onions are grown in nearly every county south of the Dividing Range. The returns for last season show that in Grenville the yield was 8,874 tons from 1,800 acres; in Villiers, 6,781 tons from 1,487 acres; in Polwarth, 4,895 tons from 997 acres; in Bourke, 4,304 tons from 800 acres; in Grant, 3,292 tons from 1,045 acres; in Buln Buln, 2,546 tons from 906 acres; and in Mornington, 1,742 tons from 505 acres. The following statement shows the area and yield for each of the last five years:—

#### ONION PRODUCTION, 1923-24 to 1927-28.

Year ended March—					Area.	Produce.
					acres.	tons.
1923-24	..	..	..	..	4,714	31,683
1924-25	..	..	..	..	4,504	26,555
1925-26	..	..	..	..	5,379	21,728
1926-27	..	..	..	..	8,471	43,928
1927-28	..	..	..	..	7,659	32,936

The value of onions grown was £188,186 in 1927-28, as compared with £110,839 in 1926-27, £267,793 in 1925-26, £209,803 in 1924-25, and £215,444 in 1923-24.

**Green forage.** The area devoted to green forage in 1927-28 was 94,895 acres, 87,241 in 1926-27, 107,873 in 1925-26, 99,531 in 1924-25, and 107,371 in 1923-24.

**Ensilage.** The practice of preserving forage in a green state has existed in Victoria for many years, but only a small number of farmers have adopted it. The returns for the last five seasons are given in the next table:—

#### ENSILAGE RETURNS, 1923-24 to 1927-28.

Year ended March—					Number of Farms on which made.	Number of Silos (Pits and Stacks).	Materials used.
							tons.
1924	..	..	..	..	61	88	3,649
1925	..	..	..	..	106	149	6,667
1926	..	..	..	..	113	150	6,092
1927	..	..	..	..	94	110	6,132
1928	..	..	..	..	75	97	6,037

**Grass and clover seed.** The area harvested for grass and clover seed last season was 758 acres, as compared with 854 in 1926-27, 1,290 in 1925-26, 1,424 in 1924-25, and 1,306 in 1923-24. The production in 1927-28 was 4,852 bushels, as against 5,876 in 1926-27, 7,330 in 1925-26, 8,597 in 1924-25, and 6,466 in 1923-24.

**Hops.**

The hop-growing industry attained its maximum development in 1883-84, when 1,758 acres yielded 15,717 cwt. In 1927-28 the return from 294 acres was 3,843 cwt. Delatite, Bogong, Polwarth, and Buln Buln were the only counties in which hops were grown last season.

**Flax.**

No flax was sown during the year 1923-24, but the Commonwealth Flax Committee, before winding up, supplied to Drysdale farmers seed for sowing in the 1924-25 season. An area of 130 acres was then sown, followed by 154 acres in 1925-26, 388 acres in 1926-27, and 46 acres in 1927-28. Owing to discontinuance of operations by the local co-operative company, the last two harvests have not yet been treated. Particulars of the crop for each of the last four years are given in the following statement:—

FLAX PRODUCTION, 1923 to 1927.

Year ended December—			Area under Crop.	Seed Produced.	Fibre Produced.	Tow Produced.	Straw awaiting Treatment.
			acres.	cwt.	cwt.	cwt.	tons.
1924	..	..	130	800	17	3	130
1925	..	..	154	1,200	660	80	..
1926	..	..	388	*	*	*	*
1927	..	..	46	*	*	*	*

\* Harvest not yet treated.

NOTE.—For particulars of New Zealand flax, not included in above statement, *vide* page 587.

In 1927-28 imports into Victoria from countries outside Australia included linseed to the value of £56,807, linseed oil worth £38,684, and fibre worth £215,359.

**Tobacco.**

Tobacco production reached its maximum in 1880-81, when 17,333 cwt. of dry leaf was produced. Subsequent years were marked by great variations in area and produce, but since 1920-21 increasing areas have been devoted to the industry. The area devoted to this product last year was 1,176 acres, of which 682 were in Delatite, and 398 in Bogong. Particulars relating to the cultivation of tobacco for each of the last five years are as follows:—

TOBACCO PRODUCTION, 1923-24 to 1927-28.

Year ended June—				Area.	Produce.
				acres.	cwt. (dry).
1923-24	..	..	..	1,047	1,165
1924-25	..	..	..	1,228	3,199
1925-26	..	..	..	1,179	7,871
1926-27	..	..	..	1,154	3,454
1927-28	..	..	..	1,176	*

\* Not available.

**Vine Production.** During the period 1904-15 the area under vines decreased by 6,712 acres, or by nearly 24 per cent., and the number of growers decreased by 521, or by 23 per cent. Since 1915 there has been a fairly large increase in the area and the number of growers. Vineyards are distributed fairly well over the State, and there are certain districts where the principal industries are connected with vine-growing. The Shire of Mildura produced last season 1,735,010 cwt. of grapes; Swan Hill, 324,330 cwt.; Rutherglen, 103,436 cwt.; and Rodney, 15,259 cwt. At Mildura the crop is principally dried for raisins and currants. The results of five years' operations are given below :—

## VINE PRODUCTION, 1924 to 1928.

Year ended June—	Number of Growers.	Area.	Produce.				
			Grapes gathered.	Wine made.	Raisins made.		Currants made.
					Lexias.	Sultanas.	
		acres.	cwt.	gallons.	cwt.	cwt.	cwt.
1924 ..	3,047	42,599	2,707,729	2,177,127	71,993	366,834	150,867
1925 ..	2,999	42,467	2,142,349	1,368,765	70,695	296,304	104,948
1926 ..	2,876	40,712	2,253,884	1,637,274	54,021	297,485	123,733
1927 ..	2,832	40,612	3,587,224	2,346,314	75,296	582,418	135,464
1928 ..	2,774	37,974	2,275,770	1,739,560	75,672	326,649	73,101

Of the total quantity of grapes gathered in 1928, it is estimated that 311,367 cwt. were used for making wine and spirits, 1,897,639 cwt. for raisins and currants, and 66,764 cwt. for table consumption and export. Of the 326,649 cwt. of sultanas made, 265,740 cwt. were from Mildura, and 58,245 cwt. from Swan Hill.

Raisins are produced in Victoria upon a scale far in excess of the State's requirements. It is estimated that a year's consumption of raisins is about 88,000 cwt.; consequently, about 314,000 cwt. of the production in 1928 were available for interstate or oversea export. A year's consumption of currants is about 30,000 cwt., which would enable approximately 43,000 cwt. of last season's production to be exported to other States or oversea.

**Orchards.** The total number of persons in the State growing fruit for sale was 7,209 in 1927-28, as against 7,425 in 1926-27, 7,673 in 1925-26, 7,414 in 1924-25, and 7,387 in 1923-24. The area under orchards in each of those years was 79,293, 81,301, 80,251, 83,369, and 83,469 acres respectively. The orchards are distributed over the whole State. The counties having the largest areas last season were as follows:—Mornington, 14,877 acres; Bourke, 11,652 acres; Evelyn, 11,090 acres; Rodney, 10,137 acres; Moira, 7,803 acres; Talbot, 4,200 acres; and Bendigo, 3,321 acres.

The following is a statement of the number of bearing and not-bearing fruit trees and plants for the seasons 1922-23 and 1925-26 :—



RETURN SHOWING THE NUMBER OF FRUIT TREES, PLANTS,  
ETC., IN ORCHARDS AND GARDENS WHERE FRUIT WAS  
GROWN FOR SALE, 1922-23 AND 1925-26.

Fruit.	Number of Trees, Plants, &c.					
	1922-23.			1925-26.		
	Bearing.	Not Bearing.	Total.	Bearing.	Not Bearing.	Total.
Apples ..	2,302,089	854,643	3,156,732	2,281,817	751,046	3,032,863
Pears ..	729,775	360,403	1,090,178	803,344	247,341	1,050,685
Quinces ..	72,316	33,041	105,357	77,950	15,733	93,683
Plums ..	368,355	153,020	521,375	305,348	64,826	370,174
Prunes ..	*	*	*	74,118	46,019	120,137
Cherries ..	182,093	33,802	215,895	112,324	29,228	141,552
Peaches ..	778,650	341,485	1,120,135	876,635	222,333	1,098,968
Apricots ..	349,242	130,114	479,356	397,402	67,532	464,934
Nectarines ..	15,295	1,645	16,940	13,539	3,570	17,109
Oranges ..	279,146	224,117	503,263	338,290	259,710	598,000
Lemons ..	100,544	96,207	196,751	130,634	64,881	195,515
Limes ..	..	..	†	360	58	418
Grapefruit ..	..	..	†	1,597	5,959	7,556
Pomelo - Shad- dock ..	..	..	†	350	114	464
Loquats ..	3,337	1,138	4,475	3,346	1,092	4,438
Medlars ..	55	27	82	71	15	86
Figs ..	29,149	7,069	36,218	31,967	6,050	38,017
Guavas ..	182	92	274	68	67	135
Pomegranates ..	107	243	350	69	59	128
Persimmons ..	384	427	811	535	205	740
Total Large Fruits ..	5,210,719	2,237,473	7,448,192	5,449,764	1,785,838	7,235,602
Raspberries ..	308,647	..	308,647	..	351,201	351,201
Loganberries ..	139,084	..	139,084	..	147,901	147,901
Strawberries ..	2,432,038	..	2,432,038	..	3,662,153	3,662,153
Gooseberries ..	185,922	29,418	215,340	196,494	20,114	216,608
Mulberries ..	901	355	1,256	858	259	1,117
Olives ..	1,577	208	1,785	1,576	300	1,876
Currants (Red, White, and Black) ..	29,779	6,939	36,718	36,369	7,444	43,813
Passion-fruit ..	41,148	27,133	68,281	54,245	35,019	89,264
Almonds ..	21,987	9,792	31,779	23,272	16,287	39,559
Walnuts ..	5,223	7,019	12,242	7,382	4,481	11,863
Filberts ..	628	246	874	259	502	761
Chestnuts ..	692	262	954	462	254	716
Total Nuts ..	28,530	17,319	45,849	31,375	21,524	52,899

\* Included in Plums.

† Not collected.

In 1926, a special census was taken to ascertain the number of trees of each variety of each kind of fruit planted in Victoria, in order to facilitate consideration of the problems of marketing. The Department of Agriculture, Victoria, 1740.—34

published a detailed statement of each variety in each county in the State, and copies may be had on application thereto.

The results are briefly summarized in the following table:—

### CENSUS OF FRUIT TREES, 1926.

Kind and Variety.	Trees of Bearing Age.	Young Trees not Bearing.	Kind and Variety.	Trees of Bearing Age.	Young Trees not Bearing.
	No.	No.		No.	No.
<b>Apples—</b>			<b>Apricots—</b>		
Jonathan .. ..	910,146	247,572	Moorpark .. ..	195,679	29,486
Rome Beauty ..	253,012	98,555	Oullin's Early ..	46,412	4,979
London Pippin (Five Crown) .. ..	183,438	36,636	Mansfield .. ..	41,338	6,136
Yates .. ..	135,140	57,251	Others .. ..	113,973	26,931
Delicious .. ..	46,112	75,146	All Varieties ..	397,402	67,532
Dunn's (Munro's Favorite) .. ..	91,761	18,893	<b>Cherries—</b>		
Stewart's .. ..	56,303	35,452	Bedford Prolific ..	21,695	6,804
Gravenstein ..	58,011	18,569	Early Purple Guigne ..	15,355	2,647
Cleopatra (N.Y. Pippin) .. ..	46,290	12,412	Burgsdorf's Seedling ..	11,216	3,568
Granny Smith ..	21,936	29,672	Biggareau Twyford ..	13,623	1,089
Reinette de Canada ..	42,801	6,935	Others .. ..	50,435	15,120
Statesman .. ..	35,240	12,748	All Varieties ..	112,324	29,228
Rokewood .. ..	38,668	6,348	<b>Nectarines—</b>		
King David .. ..	35,648	6,304	Goldmine .. ..	9,436	1,580
Others .. ..	327,311	88,553	Others .. ..	4,103	1,990
All Varieties ..	2,281,817	751,046	All Varieties ..	13,539	3,570
<b>Pears—</b>			<b>Peaches—</b>		
Williams (Bartlett) ..	376,609	85,222	Pullar's Cling .. ..	237,914	31,081
Beurre Bosc .. ..	80,168	32,500	Elberta .. ..	65,595	2,771
Packham's Triumph ..	55,112	46,608	Brigg's Red May ..	55,778	11,587
Kieffer .. ..	51,324	9,104	Hales' Early .. ..	56,856	10,188
Josephine de Malines ..	38,891	17,740	Nicholls' Orange ..	61,246	2,402
Others .. ..	201,240	56,167	Cling .. ..	44,955	12,590
All Varieties ..	803,344	247,341	Goodman's Choice ..	354,291	151,714
<b>Oranges—</b>			Others .. ..	354,291	151,714
Washington Navel ..	198,363	180,728	All Varieties ..	876,635	222,833
Valencia Late .. ..	67,902	70,995	<b>Plums and Prunes—</b>		
Others .. ..	54,243	36,120	Grand Duke .. ..	45,431	13,824
All Varieties ..	320,508	237,843	Diamond .. ..	40,985	6,820
<b>Mandarins—</b>			Prune d'Agen .. ..	23,019	23,071
Emperor .. ..	12,029	13,534	Angelina Burdett ..	28,823	7,261
Others .. ..	5,753	8,333	Others .. ..	175,441	42,996
All Varieties ..	17,782	21,867	All Varieties ..	313,699	93,972
<b>Lemons—</b>			<b>Plums (Japanese)—</b>		
Lisbon .. ..	89,629	37,775	Burbank .. ..	22,386	4,153
Eureka .. ..	34,153	24,781	Santa Rosa .. ..	11,503	2,918
Others .. ..	6,852	2,325	Satsuma (Blood) ..	10,865	3,177
All Varieties ..	130,634	64,881	Others .. ..	20,513	6,625
<b>Grape Fruit—</b>			All Varieties ..	65,767	16,873
Marsh's Seedless ..	1,017	5,306	<b>Figs—</b>		
Triumph .. ..	239	415	White Genoa .. ..	15,750	1,458
Others .. ..	341	238	White Adriatic ..	5,610	585
All Varieties ..	1,597	5,959	Brown Turkey ..	3,641	1,657
			Others .. ..	6,966	2,350
			All Varieties ..	31,967	6,050

The area of orchards growing fruit for sale in 1927-28—79,293 acres—showed an increase of 2,008 acres as compared with the area for the previous year. Details of the produce from such orchards in the last five years are given in the subjoined statement:—

ORCHARDS GROWING FRUIT FOR SALE, 1923-24  
to 1927-28.

Year ended March—	Number of Fruit-growers.	Area of Gardens and Orchards.	LARGE FRUITS GATHERED.					
			Apples.	Pears.	Quinces.	Plums.	Prunes.	Cherries.
		acres.	bushels.	bushels.	bushels.	bushels.	bushels.	bushels.
1924	7,387	83,469	1,663,308	858,611	76,167	241,818	*	63,662
1925	7,414	83,369	2,233,230	910,915	81,160	308,638	*	51,299
1926	7,673	80,251	2,063,214	840,113	81,365	203,334	50,408	69,639
1927	7,425	81,301	543,106	500,995	42,695	172,724	37,060	29,317
1928	7,209	79,293	3,712,350	1,053,481	115,606	231,728	79,481	47,795

Large Fruits Gathered—continued.

	Peaches.	Apricots.	Oranges.	Lemons.	Figs.	Nectarines.	Passion.	Other.
	bushels.	bushels.	bushels.	bushels.	bushels.	bushels.	bushels.	bushels.
1924	938,908	352,604	210,595	95,443	27,772	14,649	15,986	3,942
1925	990,683	350,778	310,890	128,889	25,658	16,545	30,866	1,211
1926	1,221,582	247,600	286,216	131,154	22,568	15,289	10,495	860
1927	925,353	440,423	276,407	112,570	16,474	9,274	22,289	6,311
1928	1,350,701	416,277	†	†	18,125	23,142	22,072	3,608

SMALL FRUITS GATHERED.

NUTS GATHERED.

	Rasp-berries.	Straw-berries.	Goose-berries.	Currants, Black, Red, & White.	Other.	Almonds.	Walnuts.	Filberts.	Chest-nuts.
	cwt.	cwt.	cwt.	cwt.	cwt.	lbs.	lbs.	lbs.	lbs.
1924	2,160	3,831	3,657	283	3,046	76,905	29,665	964	6,190
1925	3,665	5,856	4,281	355	6,980	70,217	23,199	615	14,469
1926	3,548	4,022	4,675	329	5,881	71,480	61,845	201	16,793
1927	1,283	1,877	1,322	161	1,549	68,315	31,254	59	15,495
1928	3,295	4,958	4,449	417	6,202†	66,783	30,236	148	26,066

\* Included in Plums. † As the season for citrus fruits ends later than that for other fruits details are not yet available. ‡ Including 4,859 cwt. of loganberries, and 1,240 cwt. of blackberries.

The effects of the dry season and the ravages of the "thrip" pest, during 1926-27, are shown in the above table, except in the yields of apricots and passion fruit. In 1927-28, the yield for all fruits was exceptionally heavy; that for pome and citrus fruits constituting a record.

In addition to the fruits shown, large quantities of melons, rhubarb, and tomatoes were produced in the orchards, the following being the quantities returned for 1927-28:—Melons, 13,457 cwt.; rhubarb, 10,653 dozen bundles; and tomatoes, 189,392 bushels. There were also 2,104 acres laid down in gardens growing fruit for private use; the value of the produce from these was estimated at about £10,500.

According to prices received by growers the value of fruit which reaches market was estimated to be £1,193,689 in 1923-24, £1,091,508 in 1924-25, £1,247,700 in 1925-26, £970,831 in 1926-27, and £1,189,356 in 1927-28. This, of course, does not represent the actual value of all the fruit grown, as large quantities are privately consumed in various ways. No very reliable estimate of the value of such fruit can be prepared, but it may be set down at about £40,000.

The area under market gardens in the year 1927-28 was 18,984 acres. As these gardens are generally situated near large centres of population, the producers are able to dispose of the bulk of their goods with a minimum loss from waste, &c. An average return of £50 per acre is regarded as a fair estimate of their value, and on this basis the total value of the produce may be given as £949,200. This does not include crops of one acre and over of potatoes, onions, mangel-wurzel, beet, carrots, parsnips, and turnips grown in market gardens, such crops being tabulated under their respective heads in the returns relating to agriculture.

The quantity of dried fruit (weight after drying) was first collected in 1895-96, when 179,460 lbs. were returned. During 1927-28 the quantity produced was 1,207,558 lbs., which was 59 per cent. more than the quantity for the previous year. The production of the various kinds of dried fruit, with the exception of raisins and currants, the particulars of which appear on page 582, is shown in the following statement for each of the last five seasons:—

#### DRIED FRUIT, 1923-24 to 1927-28.

Year ended June—	Apples.	Prunes.	Peaches.	Apricots.	Figs.	Pears.	Nectarines.	Total.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1924 ..	3,104	395,090	168,948	217,624	6,226	132,217	2,953	926,162
1925 ..	8,087	638,302	153,235	328,643	16,945	102,792	10,354	1,258,358
1926 ..	4,569	307,377	232,170	213,764	29,301	89,025	8,163	884,369
1927 ..	2,840	313,390	107,933	278,796	9,966	43,333	66	756,324
1928 ..	3,351	610,073	305,984	188,085	10,245	85,396	4,424	1,207,558

A feature of the returns for the season 1927-28, as compared with those for the previous year, is the large increase in all fruits except apricots.

The following is a return of the minor crops for the last two seasons. The items do not in all cases represent the whole of the respective crops grown, but refer only to such as were taken cognisance of by the collectors. The return, therefore, indicates the nature of the crops rather than the full extent of their cultivation:—

## MINOR CROPS, 1926-27 AND 1927-28.

Crop.	1926-27.		1927-28.	
	Area.	Produce.	Area.	Produce.
	acres.		acres.	
Beans .. ..	1,045	18,204 bushels	1,561	20,894 bushels
Chicory .. ..	540	257 tons (dry)	576	646 tons (dry)
Flowers .. ..	388	..	226	..
Garlic .. ..	35	55 tons	42	43 tons
Flax—New Zealand ..	90	*	90	*
Millet—Broom ..	1,493	{ 4,487 cwt. fibre 2,847 cwt. seed }	2,059	{ 9,341 cwt. fibre 11,532 cwt. seed }
„ Japanese ..	25	40 „ „	30	500 „ „
Nurseries .. ..	815	..	906	..
Pumpkins .. ..	1,590	5,816 tons	1,401	9,303 tons
Seeds—Agricultural and Garden ..	79	..	64	..
Sugar Beet .. ..	2,024	{ 9,851 .. tons clean beet, pro- ducing 1,177 tons market- able sugar }	2,353	{ 25,438 .. tons clean beet, pro- ducing 2,352 tons market- able sugar }
Sunflowers .. ..	37	390 cwt.	142	1,057 cwt.
Total .. ..	8,161	..	9,450	..

\* Only cut every third year.

Land in fallow.

The practice of fallowing has become very popular in recent years. This is no doubt due to the more enlightened methods adopted, especially in wheat farming, where results have justified the introduction of extensive fallowing in conjunction with heavy manuring. The acreage in fallow in the years 1901, 1906, 1911, 1916, 1921, and each of the last five years was as follows:—

## LAND IN FALLOW.

Year ended March—	Acres.	Year ended March—	Acres.
1901 .. ..	602,870	1924 .. ..	2,294,297
1906 .. ..	1,049,915	1925 .. ..	2,215,270
1911 .. ..	1,434,177	1926 .. ..	2,457,136
1916 .. ..	1,358,343	1927 .. ..	2,569,021
1921 .. ..	1,935,747	1928 .. ..	2,692,044

Nearly all of the fallowed area is devoted to wheat production. Of the 2,692,044 acres in fallow last season, 854,989 were in the Wimmera, 1,068,641 in the Mallee, and 553,452 in the Northern District. The total for these three districts represented 92 per cent. of the land fallowed in the State.

The increase in the proportion of farmers using manure indicates the popularity and the value of this method of treating the soil. Last year the number of farmers who used manure was 43,682, as compared with 37,835 in 1921, 26,159 in 1911, 11,439 in 1901, and 7,318 in 1898. The following table shows the number of farmers using manure, and the quantity used, in 1901, 1906, 1911, 1916, 1921, and each of the last two years:—

#### MANURE USED FOR FERTILIZATION. 1901 to 1927.

Year.			Farmers using.	Area used on.	Manure used—	
					Natural.	Artificial.
				acres.	tons.	tons.
1901	..	..	11,439	556,777	153,611	23,535
1906	..	..	23,072	1,985,148	205,906	60,871
1911	..	..	26,159	2,676,408	205,739	82,581
1916	..	..	33,165	3,870,742	181,268	117,812
1921	..	..	37,835	3,848,184	161,683	150,012
1926	..	..	41,795	4,601,239	142,334	214,234
1927	..	..	43,682	5,148,144	140,410	240,715

NOTE.—The average weight of manure used per acre in each district will be found on page 573.

Portion of the increase in the area on which manure is used is accounted for by the increasing practice of treating pastures with artificial fertilizers. During 1927-28 the quantity of fertilizers imported into Victoria from oversea countries was 187,825 tons valued at £489,010. This included 182,010 tons of rock phosphates valued at £426,740, most of which came from the Pacific Islands.

Persons employed on Farming, Dairying, and Pastoral Holdings. Information is obtained by the collectors of agricultural statistics each year as to the number of persons ordinarily employed upon the land occupied. For the last five years the numbers were as follows :—

NUMBER OF PERSONS EMPLOYED UPON FARMING, DAIRYING, AND PASTORAL HOLDINGS, 1923 to 1927.

Year.	Males.	Females.	Total.
1923 .. ..	105,933	46,218	152,151
1924 .. ..	103,013	33,954	136,967
1925 .. ..	98,059	19,124	117,183
1926 .. ..	96,791	17,619	114,410
1927 .. ..	95,639	13,841	109,480

Persons absent from their farms for the greater portion of the year following other occupations, as well as temporary hands engaged in harvesting, &c., are not included in the above tabulation, neither are domestic servants nor cooks. Prior to 1925, females who were only partly engaged in work on the holdings were included in the figures given, whereas, in that year, only those wholly employed in outdoor duties are included. It is estimated that the temporary labour employed on farms and pastoral holdings is equivalent to about 30,000 men employed continuously throughout the year.

Wages—agricultural and pastoral. In the next return will be found particulars of the rates of wages paid (with rations) upon farms and pastoral holdings during 1927-28. The information has been furnished by the occupiers of holdings.

WAGES, AGRICULTURAL AND PASTORAL, 1927-28.

Occupations.	Range.	Prevailing Rate.
Ploughmen .. ..	30s. to 60s. per week ..	45s. per week
Farm labourers .. ..	25s. to 60s. per week ..	40s. per week
Threshing machine hands ..	12d. to 18d. per hour ..	16d. per hour
Harvest hands .. ..	10s. to 16s. per day ..	14s. per day
Milkers .. ..	25s. to 60s. per week ..	35s. per week
Maize pickers (without rations)	7d. to 12d. per bag ..	8d. per bag
Married couples .. ..	50s. to 80s. per week ..	60s. per week
Female servants .. ..	20s. to 40s. per week ..	25s. per week
Shearers, hand (without rations)	35s. to 50s. per 100 sheep	40s. per 100 sheep
„ machine (without rations) .. ..	35s. to 60s. per 100 sheep	40s. per 100 sheep
Gardeners, market .. ..	30s. to 70s. per week ..	40s. per week
„ orchard .. ..	40s. to 80s. per week ..	50s. per week
Vineyard hands .. ..	40s. to 80s. per week ..	50s. per week

## PASTORAL AND DAIRYING INDUSTRIES.

**Live Stock.** The pastoral and dairying industries have always been important sources of wealth to the State, and their increasing value in recent years, despite the larger areas devoted to cultivation, indicates that both pastures and stock are, on the whole, steadily improving. The progress of stock breeding is shown in the next table, which gives the numbers of horses, dairy cows, other cattle, sheep and pigs, and their numbers per head of population and per square mile, in each of the last seven census years, also in the year 1928 :—

## LIVE STOCK IN VICTORIA, 1861 to 1928.

Year ended March—	Horses (including Foals).	Cattle—		Sheep.	Pigs.
		Dairy Cows.	Other.		
	number.	number.	number.	number.	number.
1861 .. ..	76,536	197,332	525,000	5,780,896	61,259
1871 .. ..	209,025	212,193	564,534	10,477,976	180,109
1881 .. ..	275,516	329,198	957,069	10,360,285	241,936
1891 .. ..	436,469	395,192	1,387,689	12,692,843	282,457
1901 .. ..	392,237	521,612	1,080,772	10,841,790	350,370
1911 .. ..	472,080	668,777	878,792	12,882,665	333,281
1921 .. ..	487,503	620,005	955,154	12,171,084	175,275
1928 .. ..	428,666	626,139	700,938	15,557,067	212,785
<i>Per Head of Population.</i>					
1861 .. ..	·14	·37	·97	10·70	·11
1871 .. ..	·29	·29	·77	14·32	·25
1881 .. ..	·32	·38	1·11	12·01	·28
1891 .. ..	·38	·35	1·22	11·13	·25
1901 .. ..	·33	·43	·90	9·03	·23
1911 .. ..	·36	·51	·67	9·79	·25
1921 .. ..	·32	·41	·63	7·99	·12
1928 .. ..	·25	·36	·40	8·93	·12
<i>Per Square Mile.</i>					
1861 .. ..	·87	2·25	5·97	65·78	·70
1871 .. ..	2·38	2·41	6·42	119·22	2·05
1881 .. ..	3·14	3·75	10·89	117·88	2·75
1891 .. ..	4·97	4·50	15·79	144·43	3·21
1901 .. ..	4·46	5·94	12·30	123·36	4·00
1911 .. ..	5·37	7·61	10·00	146·59	3·79
1921 .. ..	5·55	7·05	10·87	138·49	1·99
1928 .. ..	4·88	7·12	7·98	177·02	2·42

By reducing horses and cattle to an equivalent in sheep on the assumption that one of the former will eat as much as ten, and one of the latter as much as six sheep, interesting comparisons of the stock carried on the land at different periods may be instituted. Calculations made on this basis show that each square mile carried an equivalent of 316 sheep in 1928, as compared with 302 in 1921, 306 in 1911, and 237 in 1881.



Size of  
holdings in  
1913, 1919,  
and 1925.

Particulars of the size of holdings and cultivation thereon, together with the particulars of the total holdings in which only Crown land was held, are given in the following table for the years 1913, 1919, and 1925:—

SIZE OF HOLDINGS AND CULTIVATION THEREON,  
1913, 1919, AND 1925.

Privately-owned Land.				Crown Land held in conjunction with that privately owned.	Total Area Occupied.	Area under—	
Size of Holdings. (In acres.)	Year.	Number of Holdings.	Area Occupied.			Cultivation.	Pasture, &c.
			acres.	acres.	acres.	acres.	acres.
1 and under 100	1913	26,113	915,493	374,511	1,290,004	245,498	1,044,506
	1919	28,902	942,775	347,377	1,290,152	241,794	1,048,358
	1925	31,289	1,063,933	370,024	1,433,957	291,220	1,142,737
100 " 321	1913	18,483	3,819,680	1,216,829	5,036,509	875,525	4,160,984
	1919	19,930	3,967,377	840,116	4,807,493	807,434	4,000,059
	1925	21,718	4,268,016	698,212	4,966,228	932,530	4,033,698
321 " 641	1913	11,212	5,475,942	1,191,890	6,667,832	1,424,020	5,243,812
	1919	11,831	5,790,225	1,480,407	7,270,632	1,490,476	5,780,156
	1925	12,397	6,013,942	872,005	6,885,947	1,842,798	5,043,149
641 " 1,000	1913	5,221	4,187,010	1,241,667	5,428,677	1,075,000	4,353,677
	1919	5,709	4,523,331	1,071,162	5,594,493	1,105,867	4,488,626
	1925	6,901	5,470,464	616,611	6,087,075	1,644,026	4,443,049
1,000 " 2,500	1913	4,544	6,748,985	1,852,529	8,601,514	1,546,611	7,054,903
	1919	5,010	7,291,675	2,300,465	9,592,140	1,379,247	8,212,893
	1925	5,521	7,958,566	1,345,581	9,304,147	1,836,923	7,467,219
2,500 " 5,000	1913	820	2,803,419	1,085,769	3,889,188	352,258	3,536,930
	1919	855	2,825,855	716,245	3,542,100	270,428	3,271,674
	1925	899	2,974,753	741,294	3,716,047	284,495	3,431,552
5,000 " 10,000	1913	267	1,825,862	342,848	2,168,710	111,910	2,056,800
	1919	290	1,996,606	378,877	2,375,483	83,014	2,292,469
	1925	273	1,868,708	198,969	2,067,677	90,274	1,977,403
10,000 and upwards	1913	151	2,652,966	404,710	3,057,676	39,606	3,018,070
	1919	152	2,638,307	124,045	2,762,352	35,979	2,726,373
	1925	104	1,576,942	34,869	1,611,811	17,643	1,594,168
Total of privately-owned land	1913	66,811	28,429,357	7,710,753	36,140,110	5,670,428	30,469,682
	1919	72,679	29,976,151	7,258,694	37,234,845	5,414,237	31,820,608
	1925	79,102	31,195,324	4,877,565	36,072,889	6,939,914	29,132,975
Crown Land not held in conjunction with that privately owned	1913	1,892	..	1,078,688	1,078,688	36,151	1,042,537
	1919	1,651	..	899,289	899,289	76,783	822,506
	1925	935	..	733,335	733,335	38,800	696,535
Grand Total	1913	68,703	28,429,357	8,789,441	37,218,798	5,706,579	31,512,219
	1919	74,330	29,976,151	8,157,983	38,134,134	5,491,020	32,643,114
	1925	80,037	31,195,324	5,610,900	36,806,224	6,976,714	29,829,510

The number of holdings of privately-owned land of over 10,000 acres 104 was in 1925, as compared with 152 in 1919, 151 in 1913, 175 in 1910, and 195 in 1906, and the aggregate areas comprised therein in the corresponding years were 1,576,942 acres, 2,638,307 acres, 2,652,966 acres, 3,298,227 acres and 4,134,067 acres. The reduction in the period of nineteen years between March, 1906, and March, 1925, was equivalent to 47 per cent. in the number and 62 per cent. in the acreage of such estates. Subdivision of estates of over 10,000 acres was practically at a stand-still during the period between March, 1913, and March, 1919, but, since the latter date, such estates have declined by 32 per cent. in the number and 40 per cent. in the acreage. In all

other holdings of the sizes mentioned in the above table, excepting those between 5,000 and 10,000 acres, which declined in both numbers and acreage, between March, 1919, and March, 1925, there were increases in both numbers and acreage in the nineteen years referred to.

To illustrate the uses to which the land was applied in 1913, 1919, and 1925, various percentages relating to holdings of different sizes, of privately-owned land and Crown land held in conjunction therewith, are given for those years in the succeeding table, which also shows the live stock carried by the holdings, reduced to their equivalent in sheep :—

### SIZE OF HOLDINGS AND HOW UTILIZED, 1913, 1919, AND 1925.

Size of Holdings of Privately-owned Land. (In Acres.)		Year.	Percentage in each Division to Total of—					Live Stock Grazed reduced to equivalent in Sheep.	
			Holdings.	Area Occupied.	Area under Cultivation.	Area used for Pasture, &c.	Equivalent in Sheep Grazed.	Total.	Per 100 Acres used for Grazing, &c.
1 and under	100 ..	{ 1913	39·08	3·57	4·33	3·43	7·08	1,766,873	169
		{ 1919	39·77	3·46	4·47	3·29	6·50	1,909,552	182
		{ 1925	39·56	3·97	4·20	3·92	7·97	2,072,251	181
100	321 ..	{ 1913	27·66	13·94	15·44	13·66	17·67	4,410,283	106
		{ 1919	27·42	12·91	14·91	12·57	17·40	5,107,256	123
		{ 1925	27·46	13·77	13·44	13·85	19·20	4,994,010	124
321	641 ..	{ 1913	16·78	18·45	25·12	17·21	17·14	4,278,079	82
		{ 1919	16·28	19·53	27·53	18·17	17·48	5,132,920	89
		{ 1925	15·67	19·09	26·55	17·31	17·68	4,599,327	91
641	1,000 ..	{ 1913	7·82	15·02	18·95	14·29	12·15	3,031,015	70
		{ 1919	7·85	15·03	20·43	14·11	12·37	3,630,165	81
		{ 1925	8·72	16·88	23·69	15·25	12·63	3,285,208	74
1,000	2,500 ..	{ 1913	6·80	23·80	27·27	23·15	20·34	5,076,868	72
		{ 1919	6·89	25·76	25·47	25·81	22·23	6,539,378	80
		{ 1925	6·98	25·79	26·47	25·63	21·55	5,607,738	75
2,500	5,000 ..	{ 1913	1·23	10·76	6·22	11·61	9·22	2,300,276	65
		{ 1919	1·18	9·51	5·00	10·28	8·84	2,594,808	79
		{ 1925	1·14	10·30	4·10	11·78	9·32	2,425,033	71
5,000	10,000 ..	{ 1913	·40	6·00	1·98	6·75	6·95	1,735,240	84
		{ 1919	·40	6·38	1·53	7·20	6·85	2,011,066	88
		{ 1925	·34	5·73	1·30	6·79	6·26	1,628,559	82
10,000 and upwards	..	{ 1913	·23	8·46	·69	9·90	9·45	2,358,478	78
		{ 1919	·21	7·42	·66	8·57	8·28	2,431,720	89
		{ 1925	·13	4·47	·25	5·47	5·39	1,401,304	88
Total	..	{ 1913	100·00	100·00	100·00	100·00	100·00	24,937,112	82
		{ 1919	100·00	100·00	100·00	100·00	100·00	29,356,865	92
		{ 1925	100·00	100·00	100·00	100·00	100·00	26,013,430	89

In the above table horses and cattle have been reduced to an equivalent in sheep on the assumption that one head of the former will eat as much as ten, and one of the latter as much as six sheep. On this basis every 100 acres under pasture was carrying the equivalent of 89 sheep in 1925, as compared with 92 in 1919, 82 in 1913, and 78 in 1910. Dairying is carried on principally on the small holdings,

and pigs are most numerous where dairying prevails. In 1925, 62 per cent. of the dairy cows and 67 per cent. of the pigs were on holdings of not more than 320 acres.

Particulars of the number of holdings of different sizes and of the cultivation and live stock thereon in March, 1925, are given in greater detail than in the above tables in the *Year-Book* for 1924-25, pages 537 and 538.

The following tables show the area of, and the land in occupation, in March, 1928, in districts, and the uses to which the land was applied:—

### AREA OF AND LAND IN OCCUPATION IN EACH DISTRICT OF VICTORIA, MARCH, 1928.

(Areas of 1 acre and upwards.)

Districts.	Area of Districts.	Number of Occupiers.	Acres Occupied.				
			For Agricultural Purposes.	For Pasture.		Other Purposes and Unproductive.	Total.
				Sown Grasses, Clover, or Lucerne.	Natural Grasses.		
	acres.						
Central ..	4,065,280	17,093	467,065	219,105	1,868,641	203,348	2,758,159
North-Central ..	2,929,920	5,549	138,627	22,883	2,026,729	28,847	2,217,086
Western ..	8,775,040	12,163	365,528	222,684	5,610,716	474,004	6,672,932
Wimmera ..	7,394,560	6,290	1,886,742	10,074	3,660,965	523,987	6,081,768
Mallee ..	10,784,000	8,381	2,945,003	9,740	2,394,547	527,865	5,877,155
Northern ..	6,337,280	12,174	1,499,966	130,137	3,593,003	50,947	5,274,053
North-Eastern ..	7,220,480	5,277	150,085	12,766	3,859,399	233,019	4,255,269
Gippsland ..	8,739,200	8,847	181,286	378,124	2,557,091	1,576,695	4,693,196
Total ..	56,245,760	75,774	7,634,302	1,005,513	25,571,091	3,618,712	37,829,618

#### PERCENTAGE OF TOTAL OCCUPIED IN EACH DISTRICT.

Central ..	..	..	16.93	7.94	67.76	7.37	100.00
North-Central ..	..	..	6.25	1.03	91.42	1.30	100.00
Western ..	..	..	5.48	3.34	84.08	7.10	100.00
Wimmera ..	..	..	31.02	0.16	60.20	8.62	100.00
Mallee ..	..	..	50.11	0.17	40.74	8.98	100.00
Northern ..	..	..	28.44	2.47	68.12	0.97	100.00
North-Eastern ..	..	..	3.53	0.30	90.70	5.47	100.00
Gippsland ..	..	..	3.86	8.06	54.49	33.59	100.00
Total ..	..	..	20.18	2.66	67.60	9.56	100.00

#### PERCENTAGE IN EACH DISTRICT OF TOTAL IN STATE.

Central ..	..	22.56	6.12	21.79	7.31	5.62	7.29
North-Central ..	..	7.32	1.81	2.28	7.93	0.80	5.86
Western ..	..	16.05	4.79	22.15	21.94	13.10	17.64
Wimmera ..	..	8.30	24.71	1.00	14.32	14.48	16.08
Mallee ..	..	11.06	38.58	0.97	9.36	14.59	15.54
Northern ..	..	16.07	19.65	12.94	14.05	1.40	13.94
North-Eastern ..	..	6.96	1.97	1.27	15.09	6.44	11.25
Gippsland ..	..	11.68	2.37	37.60	10.00	43.57	12.40
Total ..	..	100.00	100.00	100.00	100.00	100.00	100.00

It will be seen from these tables that the largest areas under cultivation and the largest proportions of cultivation to land occupied are found in the Mallee, Wimmera, and Northern districts. Of the occupied land, 50 per cent. in the Mallee, 31 per cent. in the Wimmera, and 28 per cent. in the Northern districts are devoted to agriculture, and these divisions supply nearly 83 per cent. of the cultivation in Victoria. In the North-Central, Western, and North-Eastern districts the land occupied is largely devoted to grazing; in Gippsland considerable attention is given to the cultivation of grasses, 38 per cent. of all the sown grasses in the State being found in that district.

The next table contains particulars of the distribution of horses, cattle, and sheep on agricultural and pastoral lands in March, 1928:—

#### AREA OCCUPIED AND STOCK THEREON, 1928.

Districts.	Area Occupied for—		Number of—		
	Agriculture.	Pasture.	Horses.	Cattle.	Sheep.
	acres.	acres.			
Central ..	467,065	2,087,746	81,760	206,322	1,256,334
North-Central ..	138,627	2,049,612	20,644	76,680	1,384,354
Western ..	365,528	5,833,400	55,951	317,445	4,750,210
Wimmera ..	1,886,742	3,671,039	59,275	36,270	2,293,270
Mallee ..	2,945,003	2,404,287	63,757	30,761	809,377
Northern ..	1,499,966	3,723,140	80,952	160,301	2,536,094
North-Eastern ..	150,085	3,872,165	29,584	213,587	1,331,184
Gippsland ..	181,286	2,935,215	36,743	285,711	1,196,244
Total ..	7,634,302	26,576,604	428,666	1,327,077	15,557,067

The area occupied does not include 3,618,712 acres which are mostly in an unproductive state. Compared with 1927, sheep increased by 4·3 per cent., while horses decreased by 4·3 per cent., and cattle by 7·6 per cent.

The following return shows the live stock in Victoria in each of the last five years. Tables showing the stock classified in conjunction with holdings and sheep classified in different-sized flocks in March, 1925, are given on page 538 of the *Year-Book* for 1924-25, and page 602 of this volume:—

#### LIVE STOCK IN VICTORIA, 1924 TO 1928.

Live Stock.	1924.	1925.	1926.	1927.	1928.
Horses (including foals) ..	486,075	473,236	463,051	447,988	428,666
Cattle—					
Dairy Cows ..	738,149	760,207	727,940	673,089	626,139
Other (including calves) ..	853,218	845,347	785,847	762,672	700,938
Sheep ..	11,059,761	12,649,898	13,740,500	14,919,653	15,557,067
Pigs ..	259,795	288,509	339,601	284,271	212,785

Prices of Live Stock. In the subjoined table will be found a statement of the average and the range of prices ruling in Melbourne during the years 1926-27 and 1927-28 for live stock. The information has been extracted from the Melbourne Stock and Station Journal :—

# PRICES IN MELBOURNE OF LIVE STOCK, 1926-27 AND 1927-28.

Stock.	Prices in 1926-27.			Prices in 1927-28.		
	Average.	Range.		Average.	Range.	
		£ s. d.	£ s. d.		£ s. d.	£ s. d.
<i>Horses.</i>						
Extra heavy draught	38 15 0	36 0 0 to 40 0 0	38 15 0	37 0 0 to 40 10 0		
Medium draught ..	28 0 0	26 0 0 to 29 0 0	28 15 0	27 10 0 to 30 0 0		
Delivery cart ..	13 7 0	12 0 0 to 14 10 0	14 5 0	13 0 0 to 15 0 0		
Indian Remounts ..	21 15 0	21 0 0 to 22 0 0	19 12 6	19 0 0 to 20 10 0		
Saddle and harness	3 15 0	3 10 0 to 4 0 0	5 2 6	4 10 0 to 6 0 0		
Ponies ..	7 2 6	7 0 0 to 7 10 0	8 0 0	7 10 0 to 8 10 0		
Order cart ..	8 0 0	7 10 0 to 8 10 0	9 5 0	8 0 0 to 10 0 0		
<i>Fat Cattle.</i>						
<i>Bullocks—</i>						
Extra prime ..	16 16 0	13 15 0 to 21 19 0	24 7 1	19 6 8 to 29 6 0		
Prime ..	14 18 0	12 14 0 to 18 2 6	21 1 8	17 6 0 to 25 5 0		
Good ..	13 2 0	10 16 0 to 15 9 0	18 1 7	16 3 6 to 21 6 0		
Good light and handy weights	11 5 6	9 7 6 to 12 17 0	16 1 7	14 5 0 to 19 0 0		
<i>Cows—</i>						
Best ..	11 4 0	9 11 0 to 13 4 9	14 16 6	13 6 0 to 17 7 0		
Others ..	6 5 0	5 9 6 to 7 5 0	8 6 4	7 7 6 to 8 19 0		
<i>Dairy Cattle.</i>						
Best milkers ..	*	*	*	*		
Best springers ..	*	*	*	*		
<i>Fat Sheep.</i>						
<i>Wethers (cross)—</i>						
Extra prime ..	1 9 2	1 4 8 to 1 15 9	1 13 4	1 4 9 to 2 2 7		
Prime ..	1 6 3	1 2 0 to 1 13 0	1 9 9	1 2 0 to 1 18 7		
Good ..	1 2 11	0 19 2 to 1 9 8	1 5 10	0 18 11 to 1 13 7		
<i>Ewes (cross)—</i>						
Extra prime ..	1 2 3	0 17 2 to 1 9 0	1 7 0	1 0 2 to 1 14 1		
Prime ..	0 19 1	0 14 7 to 1 6 3	1 4 2	0 17 7 to 1 10 11		
Good ..	0 15 3	0 13 3 to 1 3 0	1 0 5	0 13 3 to 1 6 11		
<i>Wethers (merino)—</i>						
Extra prime ..	1 7 7	1 1 9 to 1 14 8	1 12 5	1 2 5 to 2 3 5		
Prime ..	1 4 11	0 19 5 to 1 12 3	1 9 0	0 19 5 to 1 19 1		
Good ..	1 1 2	0 16 5 to 1 8 4	1 4 11	0 16 7 to 1 14 7		
Ewes (merino) best	0 17 2	0 14 5 to 1 6 4	1 1 4	0 15 8 to 1 9 10		
<i>Fat Lambs.</i>						
Extra prime ..	1 6 0	1 3 3 to 1 12 2	1 8 9	1 4 1 to 1 17 6		
Prime ..	1 3 3	1 0 1 to 1 8 1	1 6 0	0 19 9 to 1 14 3		
Good ..	1 0 5	0 17 9 to 1 3 3	1 2 3	0 17 2 to 1 9 5		
<i>Pigs.</i>						
<i>Back Fattens—</i>						
Extra heavy prime	9 19 0	8 14 0 to 10 16 0	12 8 3	10 4 10 to 1 0 0		
Extra prime and weighty ..	7 15 0	6 0 0 to 8 17 6	9 12 6	8 7 0 to 10 1 0		
<i>Baconers—</i>						
Extra prime ..	4 19 0	4 2 6 to 6 0 0	5 7 8	4 11 10 to 6 17 5		
Prime ..	4 3 6	3 12 0 to 4 15 0	4 11 11	4 0 10 to 5 9 5		
Porkers ..	2 6 3	2 2 0 to 2 11 6	2 15 9	2 6 6 to 3 4 9		

\* Not available.

The following is a statement of the stock slaughtered on farms and stations, as well as in municipal abattoirs, during the year ended 30th June, 1928 :—

## STOCK SLAUGHTERED, 1927-28.

Year ended June—	Number Slaughtered.		
	Sheep and Lambs.	Cattle.	Pigs.
1928 .. ..	4,732,494	469,610	358,135

The purposes for which the slaughtered animals were used were as follows :—

PURPOSES FOR WHICH STOCK WERE SLAUGHTERED,  
1927-28.

Year ended June—	For Butcher and Private Use.*			For Export.		
	Sheep.	Cattle.	Pigs.	Sheep.	Cattle.	Pigs.
1928 .. ..	3,800,938	460,668	147,224	915,545	4,877	81

  

Year ended June—	For Preserving and Salting.			For Boiling Down.		
	Sheep.	Cattle.	Pigs.	Sheep.	Cattle.	Pigs.
1928 .. ..	2,830	2,353	210,547	13,181	1,712	283

\* Including carcasses held in Cool Stores at end of year.

Of the 4,732,494 sheep and lambs slaughtered in Victoria in 1927-28, 915,545, or 19 per cent., were frozen. In 1927-28 the oversea exports included 6,001,205 lbs. of mutton, valued at £117,200, and 21,956,243 lbs. of lamb, valued at £639,486.

Mutton and  
Lamb frozen  
for Export.

The soil and climate of Victoria are well suited to the economical production of both mutton and lamb, and, as there is practically no limit to the demand for these products in Europe, the possibilities for those engaged in raising sheep for export are very great, especially as the number of sheep in the world is not keeping pace with the increase in population. The importance of this export trade to Victorian sheep owners is evidenced by the figures

in the appended statement showing the particulars of exports in each of the last fourteen years. In the four years 1915-16 to 1918-19 the quantity exported was small in comparison with earlier years. The chief reasons for this were, in 1915-16, a drought in the preceding year, and, in the three following years, the lack of shipping space. In the year 1919-20 the exports were much greater than in any previous year, due mainly to the accumulations of the previous three years. The quantities exported in 1920-21 were below the average, owing to the dry condition which had prevailed in the previous year. After a world-wide fall in values, the season 1922-23 was marked by exceptionally heavy exports of both mutton and lamb at improved prices. In the 1923-24 season the export of mutton practically ceased, while the number of lambs exported was only about 40 per cent. of that for the previous year. The abnormal activity in 1922-23 was, to some extent, responsible for the great reduction in exports in 1923-24. Other reasons were a tendency among owners to retain their flocks in expectation of high prices for wool, and the demand for breeding ewes from New South Wales, where a drought had depleted the flocks. The improvement manifested in 1924-25 and 1925-26 was not maintained in 1926-27 and 1927-28.

**FROZEN MUTTON AND LAMB EXPORTED.**

Year ended June.	Carcasses Exported.					
	Mutton.			Lamb.		
	Number.	Average Weight.	Value.	Number.	Average Weight.	Value.
		lbs.	£		lbs.	£
1914-15 ..	653,329	48	557,409	1,056,823	33	690,676
1915-16 ..	..	..	..	47,546	36	47,348
1916-17 ..	52,724	56	64,568	365,694	36	329,476
1917-18 ..	48,743	55	57,985	147,524	34	129,748
1918-19 ..	649,082	53	727,750	19,889	36	18,143
1919-20 ..	2,468,091	48	2,470,354	1,533,411	34	1,287,528
1920-21 ..	372,916	44	362,296	413,170	32	483,359
1921-22 ..	314,564	49	306,199	872,140	33	751,077
1922-23 ..	989,456	44	880,472	1,668,059	30	1,493,156
1923-24 ..	12,945	43	13,757	678,685	32	656,438
1924-25 ..	87,767	51	95,022	948,032	31	905,743
1925-26 ..	171,803	47	145,261	1,309,021	33	1,263,511
1926-27 ..	149,358	49	141,998	1,197,067	33	1,053,502
1927-28 ..	137,484	44	117,200	778,061	28	639,486

**Dairying.** The dairying industry is one of the principal sources of the wealth of the community. The value of dairy produce in 1928 was £11,186,070, as compared with £10,483,760 in 1927,

£10,364,790 in 1926, £10,381,175 in 1925, and £10,561,940 in 1924. The following table shows the numbers of cowkeepers and cows at the end of, and the total production of butter and cheese, in each of the last five years :—

## DAIRYING, 1923-24 to 1927-28.

Year ended March—			Number of Cow-keepers	Number of Dairy Cows.	Butter made.*	Cheese made.*
					lbs.	lbs.
1924	..	..	61,685	738,149	86,888,723	7,216,938
1925	..	..	61,549	760,207	100,849,382	6,193,135
1926	..	..	58,933	727,940	81,747,291	5,279,009
1927	..	..	56,935	673,089	81,995,815	5,997,648
1928	..	..	55,356	626,139	84,270,812	5,621,945

\* Year ended 30th June.

Of the 55,356 cowkeepers in 1927-28, 27,718 had less than 5 cows; 10,266 had from 5 to 9; 4,954 had from 10 to 14; 5,454 had from 15 to 24; and 6,964 had 25 and upwards.

Butter and cheese made on farms.

The next table shows the quantities of butter and cheese made on farms in the last five years :—

## BUTTER AND CHEESE MADE ON FARMS, 1923-24 to 1927-28.

Year ended June—					Butter.	Cheese.
					lbs.	lbs.
1924	..	..	..	..	5,597,128	420,552
1925	..	..	..	..	5,395,087	228,779
1926	..	..	..	..	4,734,669	389,893
1927	..	..	..	..	3,887,324	516,063
1928	..	..	..	..	3,592,264	217,495

Butter and cheese made in factories.

The quantities of butter, cheese, and concentrated, condensed, and powdered milk, casein, and milk sugar made, and of cream sold, in factories during the last five years were as follows :—

## BUTTER, CHEESE, ETC., MADE IN FACTORIES, 1923-24 to 1927-28.

Year ended June—	Butter made.	Cream sold.	Cheese made.	Concentrated, Condensed, and Powdered Milk made.	Casein made.	Milk Sugar made.
	lbs.	gallons.	lbs.	lbs.	lbs.	lbs.
1924	81,291,595	373,236	6,796,386	49,099,632	2,946,346	445,430
1925	95,454,295	495,458	5,964,356	45,693,120	2,716,042	415,753
1926	77,012,622	388,235	4,889,116	43,646,852	1,503,369	152,783
1927	78,108,491	344,605	5,481,585	48,186,040	1,803,049	350,570
1928	80,678,548	381,794	5,404,450	53,876,662	2,619,855	213,119



The quantities of milk, in gallons, received at factories and creameries were 193,507,110 in 1921-22, 196,171,380 in 1922-23, 206,915,180 in 1923-24, 240,114,430 in 1924-25, 197,804,300 in 1925-26, 205,441,560 in 1926-27, and 212,983,200 in 1927-28.

In 1927-28 there were exported from Victoria to countries outside Australia 32,412,438 lbs. of butter, valued at £2,447,774, all of which was Australian produce. The quantity sent to the United Kingdom was 24,117,404 lbs., valued at £1,806,740. The quantity of cheese exported to overseas countries was 156,091 lbs., and the value thereof, £7,032.

Information relating to the wool clip is obtained direct from the growers, and an allowance is made for the wool on Victorian skins, both stripped and exported. On this basis the production of wool in 1927-28 and earlier seasons was as follows:—

### VICTORIAN WOOL CLIP AND ESTIMATED TOTAL PRODUCTION.

Districts.	Wool Clip, 1927-28.			
	Sheep.	Lambs.	Total.	
	lbs.	lbs.	lbs.	
Central .. ..	5,986,494	348,183	6,334,677	
North-Central .. ..	7,638,220	459,630	8,097,850	
Western .. ..	29,227,317	1,842,618	31,069,935	
Wimmera .. ..	15,364,909	796,251	16,161,160	
Mallee .. ..	5,726,667	350,322	6,076,989	
Northern .. ..	13,654,221	1,313,197	14,967,418	
North-Eastern .. ..	5,948,656	460,059	6,408,715	
Gippsland .. ..	5,567,064	349,838	5,916,902	
Total Clip {	1927-28	89,113,548	5,920,098	95,033,646
	1926-27	92,043,642	6,133,520	98,177,162
	1925-26	84,101,370	6,512,929	90,614,299
	1924-25	83,932,699	6,819,164	90,751,863
	1923-24	63,806,820	3,519,735	67,326,555
—	1924-25.	1925-26.	1926-27.	1927-28.
	lbs.	lbs.	lbs.	lbs.
Wool clip .. ..	90,751,863	90,614,299	98,177,162	95,033,646
Wool stripped from Victorian skins and on Victorian skins exported (estimated) ..	16,036,034	20,646,515	23,122,459	23,769,390
Total production ..	106,787,897	111,260,814	121,299,621	118,803,036
Total value ..	£11,444,240	£7,082,820	£7,876,683	£9,701,660

In 1927-28 there were 12,809,537 sheep and 2,747,400 lambs shorn, as compared with 11,863,262 sheep and 2,671,435 lambs in 1926-27, 10,990,842 sheep and 2,899,787 lambs in 1925-26, 9,803,371 sheep and 2,790,054 lambs in 1924-25, and 9,463,675 sheep and 1,614,147 lambs in 1923-24.

Weight of  
a fleece.

The next table shows the production of wool per sheep and per lamb shorn in each of the last five years :—

#### WEIGHT OF A FLEECE, 1923-24 to 1927-28.

Year.	Weight of a Fleece.		
	Sheep.	Lambs.	Sheep and Lambs combined.
	lbs.	lbs.	lbs.
1923-24 .. .. .	6·74	2·18	6·08
1924-25 .. .. .	8·56	2·44	7·21
1925-26 .. .. .	7·65	2·25	6·52
1926-27 .. .. .	7·76	2·30	6·75
1927-28 .. .. .	6·96	2·15	6·11

The production of wool in Victoria, the quantity and value of that used locally for manufacturing purposes, and the balance available for export, in each of the last five years, were as follows :—

#### WOOL PRODUCTION : HOME CONSUMPTION AND EXPORTABLE BALANCE, 1923-24 to 1927-28.

Year.	Production.		Used in Manufactures.		Available for Export.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1923-24	82,513,361	7,695,000	17,067,647	1,617,871	65,445,714	6,077,129
1924-25	106,787,897	11,444,240	18,886,458	2,124,727	87,901,439	9,319,513
1925-26	111,260,814	7,082,820	22,967,529	1,579,018	88,293,285	5,503,802
1926-27	121,299,621	7,876,683	31,205,206	2,080,347	90,094,415	5,796,336
1927-28	118,803,036	9,701,660	25,346,066	2,090,343	93,456,970	7,611,317

Prices of  
wool.

The following information as to the average prices of wool per lb. which have prevailed during the last three seasons has been obtained from Melbourne wool brokers :—

## PRICES OF WOOL, 1925-26 to 1927-28.

Class of Wool.	Average Price per lb. in—		
	1925-26.	1926-27.	1927-28.
<b>GREASY MERINO.</b>			
Extra Super (Western District)	35d. to 38d.	32d. to 35d.	35d. to 37d.
Super .. .. .	28d. to 30d.	27d. to 30d.	32d. to 34d.
Good .. .. .	23d. to 25d.	23d. to 25d.	26d. to 28d.
Average .. .. .	19d. to 21d.	19d. to 21d.	22d. to 24d.
Wasty and Inferior .. .. .	15d. to 17d.	15d. to 17d.	18d. to 20d.
Extra Super Lambs .. .. .	32d. to 34d.	32d. to 34d.	36d. to 40d.
Super Lambs .. .. .	24d. to 27d.	24d. to 27d.	29d. to 31d.
Good Lambs .. .. .	18d. to 20d.	18d. to 20d.	22d. to 24d.
Average Lambs .. .. .	14d. to 17d.	15d. to 18d.	18d. to 20d.
Inferior Lambs .. .. .	8d. to 11d.	8d. to 10d.	11d. to 12d.
<b>GREASY CROSSBRED</b>			
Extra Super Comebacks .. .. .	30d. to 32d.	29d. to 31d.	31d. to 33d.
Super Comebacks .. .. .	26d. to 29d.	25d. to 28d.	28d. to 30d.
Fine Crossbred .. .. .	20d. to 22d.	20d. to 22d.	25d. to 26d.
Medium Crossbred .. .. .	16d. to 18d.	16d. to 18d.	18d. to 20d.
Coarse Crossbred and Lincoln .. .. .	11d. to 12d.	11d. to 12d.	13d. to 16d.
Super Fine Crossbred Lambs .. .. .	22d. to 24d.	22d. to 24d.	26d. to 30d.
Good Crossbred Lambs .. .. .	18d. to 19d.	18d. to 20d.	20d. to 22d.
Coarse and Lincoln Lambs .. .. .	13d. to 15d.	12d. to 14d.	15d. to 17d.
<b>SCOURED.</b>			
Extra Super Fleece .. .. .	45d. to 48d.	45d. to 48d.	46d. to 48d.
Super Fleece .. .. .	38d. to 42d.	38d. to 42d.	40d. to 44d.
Good Fleece .. .. .	34d. to 36d.	34d. to 36d.	36d. to 38d.
Average Fleece .. .. .	25d. to 27d.	25d. to 27d.	30d. to 32d.
<b>RECORD PRICES FOR THE SEASON.</b>			
Greasy Merino Fleece .. .. .	42½d.	41½d.	44½d.
„ Comeback Fleece .. .. .	34½d.	32½d.	34½d.
„ Merino Lambs .. .. .	33½d.	46½d.	51½d.
„ Comeback Lambs .. .. .	26½d.	30d.	39½d.
Scoured Fleece .. .. .	48½d.	47d.	51½d.

Flocks of  
sheep in  
districts.

Returns which were collected in March, 1925, give full information in regard to the flocks of sheep in Victoria. The numbers of flocks and of sheep at that time in the different districts were as follows :—

### NUMBERS OF FLOCKS AND OF SHEEP IN DISTRICTS, 1925.

District.	Number of—		Average Number of Sheep to a Flock.	Percentage of—	
	Flocks.	Sheep.		Flocks.	Sheep.
Central .. ..	2,291	990,194	432	9·66	7·84
North-Central .. ..	2,098	1,190,606	567	8·84	9·43
Western .. ..	5,003	4,122,779	824	21·08	32·66
Wimmera .. ..	4,220	2,125,327	504	17·78	16·84
Mallee .. ..	1,849	665,674	360	7·79	5·27
Northern .. ..	4,647	1,971,660	424	19·58	15·62
North-Eastern .. ..	2,073	865,435	417	8·74	6·86
Gippsland .. ..	1,550	691,340	446	6·53	5·48
Total .. ..	23,731	12,623,015	532	100·00	100·00

The figures do not include 26,883 sheep which were travelling on roads or were located in cities and towns. A comparison with figures based on collections made in 1919 and earlier years appears on page 551 of the *Year-Book* for 1924-25.

Sizes of  
flocks.

Excluding sheep travelling and those in cities and towns, the following table contains a classification for the whole State of sheep according to sizes of flocks :—

### SHEEP ACCORDING TO SIZES OF FLOCKS, 1925.

Size of Flocks.	Number of—		Percentage of—	
	Flocks.	Sheep.	Flocks.	Sheep.
Under 500 .. ..	17,187	2,939,575	72·42	23·29
500 and under 1,000 .. ..	3,692	2,519,857	15·56	19·96
1,000 " 2,000 .. ..	1,725	2,317,968	7·27	18·36
2,000 " 5,000 .. ..	851	2,428,522	3·59	19·24
5,000 " 10,000 .. ..	207	1,399,428	·87	11·09
10,000 " 20,000 .. ..	62	824,643	·26	6·53
20,000 and upwards .. ..	7	193,022	·03	1·53
Total .. ..	23,731	12,623,015	100·00	100·00

The above figures are compared with the corresponding ones for 1919 on page 552 of the *Year-Book* for 1924-25. Six of the 7 largest, 42 of the 62 second largest flocks, and 130 of the 207 flocks of between 5,000 to 10,000 sheep in 1925 were in the Western District.

Live Stock  
in Australia  
and  
New Zealand.

In the following statement are given the numbers of horses, cattle, sheep and pigs in the various Australian States and New Zealand, according to the latest available figures:—

LIVE STOCK IN AUSTRALASIA.

State, &c.	Horses.	Cattle.		Sheep.	Pigs.
		Dairy Cows.	Other.		
Victoria .. ..	428,666	626,139	700,938	15,557,067	212,785
New South Wales ..	598,247	1,002,804	1,845,649	50,510,000	301,808
Federal Capital Territory .. ..	1,208	1,417	4,771	213,659	69
Queensland .. ..	547,412	645,316	4,580,488	16,642,345	191,947
South Australia ..	224,027	117,580	198,734	7,542,345	69,733
Northern Territory	40,108	835,390		9,585	292
Western Australia ..	165,021	70,880	775,855	8,447,480	59,810
Tasmania .. ..	35,872	66,902	143,992	1,904,955	41,752
New Zealand .. ..	307,160	1,352,398	1,921,371	27,133,810	586,898

Bee-keeping.

The returns for 1927-28 show that there were in that year 2,521 bee-keepers, who owned 48,886 frame and 3,862 box hives, producing 2,966,334 and 26,526 lbs. of honey respectively, and 34,358 lbs. of beeswax. The number of bee-keepers owning 20 hives and upwards was 565, as compared with 584 in the previous season. In 1927-28, the quantity of honey produced in the Wimmera district was 1,785,813 lbs., in the Western district, 566,745 lbs., in the Northern district, 192,590 lbs., and in the Gippsland district, 102,597 lbs. The more important particulars of the industry for the last five years are given below:—

BEE-KEEPING, 1923-24 to 1927-28.

Season ended May—			Number of Bee-keepers.	Number of Hives.	Honey produced.	Beeswax produced.
					lbs.	lbs.
1924	..	..	3,535	60,760	2,110,713	25,371
1925	..	..	3,483	71,918	4,054,975	47,117
1926	..	..	3,799	66,192	2,114,807	28,812
1927	..	..	2,968	54,123	2,370,310	33,238
1928	..	..	2,521	52,748	2,992,860	34,358

State  
expenditure  
on rabbit  
destruction.

Active operations for the destruction of rabbits, &c., on Crown lands were first undertaken by the Government in 1880, and from that date to 30th June, 1928, sums amounting to £1,402,210 had been expended in connexion therewith, including subsidies to Shire Councils for the destruction

of wild animals. The following are the amounts spent since 1879 :—

### EXPENDITURE ON DESTRUCTION OF RABBITS, ETC.

	£		£
1879-80 to 1888-89 ..	142,963	1922-23 .. ..	47,410
1889-90 to 1898-99 ..	208,638	1923-24 .. ..	85,489
1899-1900 to 1908-09 ..	170,050	1924-25 .. ..	84,368
1909-10 to 1918-19 ..	283,693	1925-26 .. ..	88,874
1919-20 .. ..	36,672	1926-27 .. ..	91,929
1920-21 .. ..	36,158	1927-28 .. ..	85,200
1921-22 .. ..	40,766		

In addition to the expenditure of £1,402,210 referred to above, sums have frequently been advanced from Loan Funds for the purchase of wire netting for supply to municipalities and land owners. The amounts of these advances in the last five years were as follows :—£26,275 in 1923-24, £32,399 in 1924-25, £42,628 in 1925-26, £32,338 in 1926-27, and £37,887 in 1927-28. A complete system, administered by an officer called the Chief Inspector under the Vermin Destruction Act, exists for effectually keeping the rabbits under control.

The quantity of rabbits, hares, and wild-fowl sold at the Melbourne Fish Market in each of the last five years was as shown in the following statement :—

### RABBITS, HARES, AND WILD-FOWL SOLD AT THE MELBOURNE FISH MARKET, 1923-24 TO 1927-28.

Year ended June.	Rabbits.	Hares.	Wild-fowl.
	pairs.	brace.	brace.
1923-24 .. ..	448,656	42	8,148
1924-25 .. ..	937,704	74	11,640
1925-26 .. ..	1,916,460	783	14,784
1926-27 .. ..	1,640,028	78	20,406
1927-28 .. ..	1,697,316	*	9,054

\* Included with rabbits.

Large quantities of frozen rabbits and hares and of rabbit and hare skins have been exported to overseas countries, the numbers and values for each of the last five years being as follows :—

### RABBITS AND HARES AND RABBIT AND HARE SKINS EXPORTED OVERSEA, 1923-24 TO 1927-28.

Year ended June.	Frozen Rabbits and Hares.		Rabbit and Hare Skins.	
	Quantity.	Value.	Quantity.	Value.
	pairs.	£	lbs.	£
1923-24 .. ..	80,499	8,477	2,073,613	282,266
1924-25 .. ..	54,174	5,196	2,020,070	349,956
1925-26 .. ..	456,849	53,423	3,513,046	579,000
1926-27 .. ..	403,147	44,999	2,211,153	381,334
1927-28 .. ..	527,988	44,563	2,896,685	549,802

## FISHERIES.

The numbers of men and boats engaged in the fishing industry at the different fishing stations throughout the State are given in the following table for the year 1927-28 :—

VICTORIAN FISHERIES—MEN AND BOATS EMPLOYED,  
1927-28.

Fishing Stations.	Number of Men.	Boats.		Value of Nets and other Plant.
		Number.	Value.	
			£	£
Anderson's Inlet .. .. .	11	9	340	335
Barwon Heads and Ocean Grove .. .. .	9	5	1,000	65
Brighton .. .. .	7	6	99	52
Corner Inlet, Welshpool, Toora, and Port Franklin .. .. .	89	61	8,215	3,970
Dromana and Rosebud .. .. .	25	17	1,340	275
Frankston .. .. .	12	8	391	234
Geelong .. .. .	82	45	4,074	1,328
Gippsland Lakes .. .. .	159	112	8,598	4,529
Kerang .. .. .	7	7	35	153
Lake Boga .. .. .	1	1	7	55
Lorne .. .. .	7	4	141	65
Lindsay River .. .. .	3	3	25	65
Mallacoota .. .. .	4	3	525	120
Mentone .. .. .	7	6	121	107
Mordialloc, Chelsea, and Carrum .. .. .	65	42	2,726	1,052
Mornington .. .. .	58	37	3,178	920
Portarlington and St. Leonards .. .. .	49	28	1,680	532
Portland .. .. .	37	25	5,399	476
Port Albert .. .. .	96	52	4,614	1,662
Port Campbell .. .. .	6	4	250	108
Port Fairy .. .. .	43	36	6,800	385
Port Melbourne .. .. .	60	43	52	1,109
Queenscliff .. .. .	127	70	16,163	1,699
Rainbow .. .. .	2	2	15	7
Sandringham and Black Rock .. .. .	64	29	5,846	1,024
Sorrento, Portsea, and Rye .. .. .	72	45	4,725	908
St. Kilda .. .. .	15	11	484	238
Torquay .. .. .	8	4	65	44
Warrnambool .. .. .	9	8	577	77
Werribee .. .. .	8	5	419	145
Waranga Basin .. .. .	4	3	30	32
Western Port (Cowes, Hastings, Grantville, Flinders, San Remo, and Tooradin) .. .. .	137	102	14,710	2,239
Williamstown .. .. .	34	30	2,895	484
Wonthaggi .. .. .	5	4	440	26
<b>Total .. .. .</b>	<b>1,322</b>	<b>867</b>	<b>95,979</b>	<b>24,520</b>

**Melbourne Fish Market.** The quantities and values of fish sold in the Melbourne Fish Market during each of the years 1926-27 and 1927-28 were as shown in the next table:—

**FISH SOLD IN THE MELBOURNE FISH MARKET,  
1926-27 AND 1927-28.**

			1926-27.		1927-28.	
			Quantity.	Value.	Quantity.	Value.
Fresh Fish (Victorian)	lbs.		8,417,904	£ 140,298	10,726,600	£ 156,430
Crayfish .. ..	doz.		33,507	32,670	33,395	35,064
Imported Fish (fresh or frozen) ..	lbs.		3,987,782	99,695	1,532,608	38,315
Oysters .. ..	bags		10,804	8,643	9,831	7,865
Total .. ..				281,306		237,674

In addition to the above, 1,994 cwt. of smoked fish, and 1,736 boxes of prawns were sold in this market in 1927-28.

**Victorian fish sold.** The quantity and value of fish caught in Victorian waters and sold in the Melbourne and Ballarat markets and elsewhere in 1927-28 were as follows:—

**VICTORIAN FISH SOLD IN 1927-28.**

Markets.			Quantity.		Value.	
			Fish.	Crayfish.	Fish.	Crayfish.
			lbs.	doz.	£	£
Melbourne .. ..			10,726,600	12,071	156,430	12,675
Ballarat .. ..			572,624	1,077	8,350	1,023
Other .. ..			443,181	876	6,460	832
Total .. ..			11,742,405	14,024	171,240	14,530

**Fish imported.** In connexion with this subject, the quantities and values of the different classes of fish imported are of interest. Particulars of imports from oversea countries in each of the last two years are given in the following statement:—

**FISH IMPORTED, 1926-27 AND 1927-28.**

				1926-27.		1927-28.	
				Quantity.	Value.	Quantity.	Value.
Fish—					£		£
Fresh or Frozen ..	..	lbs.	2,810,565	70,421	3,265,187	88,920	
Smoked .. ..	..	..	31,019	2,478	33,627	2,289	
Fresh Oysters ..	..	cwt.	2,115	1,699	1,488	1,157	
Potted or Concentrated, &c. ..	..	..	..	23,306	..	26,239	
Preserved in tins, &c. ..	..	lbs.	8,797,022	414,628	6,133,531	289,655	
N.E.I. .. ..	..	cwt.	2,633	8,018	1,971	5,507	
Total .. ..	..	..	..	520,550	..	413,767	



The most important item in this table is fish preserved in tins and other air-tight vessels, of which 2,872,633 lbs. came from Canada, 1,158,683 lbs. from the United Kingdom, 1,150,761 lbs. from Norway, and 403,725 lbs. from the United States of America, in 1927-28.

The figures relating to agriculture and live stock in Victoria and Great Britain (England, Wales, and Scotland) in 1927 are, for comparative purposes, placed side by side in the table which follows:—

#### AGRICULTURE AND LIVE STOCK IN VICTORIA AND GREAT BRITAIN, 1927.

				Victoria.	Great Britain.
Area	..	..	acres	56,245,760	56,208,959
Wheat	..	..	bushels	26,160,814	55,652,000
Oats	..	..	..	4,682,724	109,984,000
Barley	..	..	..	1,552,109	42,829,000
Peas	..	..	..	139,621	1,889,600
Potatoes	..	..	tons	230,348	3,854,000
Turnips and swedes	..	..	..	1,629*	14,567,000
Mangolds	..	..	..	9,451	5,468,400
Hay	..	..	..	1,001,251	7,179,000
Horses	..	..	No.	428,666	1,249,323
Cattle	..	..	..	1,327,077	7,485,690
Sheep	..	..	..	15,557,067	24,607,752
Pigs	..	..	..	212,785	2,888,127

\* Includes beet, carrots, and parsnips.

#### MINING.

The supervision of mining and the inspection of mines are regulated by Act of Parliament. Authority for all mining operations, whether on Crown or private lands, must be obtained in the prescribed manner, and mining leases giving the right to enter on private land for mining purposes may be issued to another than the owner.

The taking out of a "miner's right" entitles the holder to prospect for gold on Crown lands. The right may be had on payment of a sum of 2s. 6d. per annum and remains in force for any number of years not exceeding fifteen. The holder is entitled to take possession for mining purposes of a defined parcel of Crown lands, which is called a "claim." The revenue in 1927-28 from miners' rights was £1,957.

Leases for the purpose of mining for gold are granted for a term not exceeding fifteen years at a yearly rental of 2s. 6d. per acre. For mining leases of land to be worked by means of dredging or hydraulic sluicing the yearly rent is 5s. per acre. Other mineral and coal mining leases are also issued at varying rates. The revenue from these sources in 1927-28 was £3,855.

The area of Crown and private lands under occupation for mining purposes on 31st December, 1927, was 41,079 acres. The subjoined table shows the area being worked for different minerals:—

Area  
occupied for  
Mining.

AREA UNDER OCCUPATION FOR MINING PURPOSES,  
31st DECEMBER, 1927 (CROWN LAND AND PRIVATE LAND).

Nature of Mineral, &c.	Area.
	acres.
Gold .. .. .	9,124
Coal (ordinary) .. .. .	12,094*
Coal (brown) .. .. .	2,013
Coal (Black and Brown) .. .. .	101
Antimony .. .. .	33
Bauxite .. .. .	30
Bluestone .. .. .	46
Clay .. .. .	53
Clay and Chalk .. .. .	6
Clay and Schist .. .. .	4
Clay and Slate .. .. .	3
Clay and Slum .. .. .	20
Dolomite and Clay .. .. .	1
Granite .. .. .	25
Gravel (Cement) .. .. .	6
Gypsum .. .. .	618
Hematite and Iron Ores .. .. .	8
Infusorial Earth, Clay and Pigments .. .. .	9
Kaolin .. .. .	22
Kaolin and Gold .. .. .	21
Kaolin and Quartz Grit .. .. .	10
Limestone .. .. .	92
Limestone and Clay .. .. .	27
Magnesite .. .. .	114
Manganese .. .. .	12
Manganese and Cobalt .. .. .	19
Marble .. .. .	6
Molybdenite .. .. .	268
Ochre .. .. .	5
Ochres, Chalks, and Gold .. .. .	5
Oil .. .. .	3,015
Oil and Gas .. .. .	11,051
Oil and Gypsum .. .. .	6
Pigments .. .. .	43
Quicksilver .. .. .	55
Sand .. .. .	27
Sand and Gravel .. .. .	5
Silicate of Alumina .. .. .	51
Silver and Gold .. .. .	129
Silver and Lead .. .. .	196
Slate .. .. .	117
Stone .. .. .	26
Sulphates and Oil .. .. .	223
Tin .. .. .	734
Tin and Gold .. .. .	22
Wolfram and Tin .. .. .	52
Tailings Licences .. .. .	81
Water-right Licences .. .. .	451
Total .. .. .	41,079

\* Includes State Coal Mine area.

Mining  
development.

The mining industry has been well fostered by the Government, not only in the way of financial assistance but also by means of geological surveys and boring. Apart from the annual expenditure of the Mines Department from consolidated revenue, of which a statement is appended, portions of surplus revenues of past years amounting to £85,000, had been expended or advanced for developmental purposes from 1st July, 1899, to 30th June, 1928. Since 1st July, 1899, £520,421 has been apportioned from loan receipts and expended on mining development; but, apart from £249,399 expended on the State Coal Mine during the years 1909-25, no loan money has been allotted for development for approximately 20 years.

## STATE EXPENDITURE ON MINING, 1923-24 TO 1927-28.

Item.	Expenditure from Consolidated Revenue.				
	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
	£	£	£	£	£
Mines Department .. ..	26,176	24,567	23,569	25,687	24,900
State Coal Mine .. ..	519,536	458,380	471,530	605,218	621,316
Brown Coal Mine .. ..	45,830	*	*	*	*
Coal Mines Regulation—Sinking Fund and Depreciation Fund	39,628	37,002	41,807	54,555	73,567
Diamond drills for prospecting ..	10,597	12,476	12,242	12,864	13,323
Testing plants .. ..	3,499	3,571	3,120	2,378	2,980
Geological and underground surveys of mines .. ..	3,436	3,591	3,595	3,791	3,973
Mining Development—					
Advances to companies, &c., boring for gold, coal, &c. ..	6,711	8,739	12,368	10,678	5,309
Miscellaneous .. ..	2,107	2,431	2,143	2,065	1,708
Total .. ..	657,520	550,757	570,374	717,236	747,076

\* The control of the Brown Coal Mine was transferred to the Electricity Commissioners on 1st April, 1924.

Yearly grants are also made to Schools of Mines, particulars of which will be found on page 392 of this work.

The advances from loan moneys and revenue to mining companies to 30th June, 1928, for the development of mining, totalled £283,980 (£62,740 from loan moneys, and £221,240 from revenue) of which sum £43,333 had up to that date been repaid, £53,025 realized, and £164,296 written off, leaving £23,326 outstanding. Interest received during 1927-28 amounted to £195, and interest outstanding on 30th June, 1928, to £3,069.

The mineral production of the State (excluding salt) is summarized in the subjoined statement, which contains particulars of the recorded production of all metals and minerals up to the end of the year 1927 :—

## TOTAL MINERAL PRODUCTION TO 31st DECEMBER, 1927.

Metals and Minerals.	Recorded during 1927.		Total Recorded to end of 1927.	
	Quantity.	Value.	Quantity.	Value.
Gold .. .. .	Fine ozs. 38,538	£ 163,699	Fine ozs. 71,264,613	£ 302,712,124
Silver.. .. .	1,471	172	1,465,279*	222,764
Platinum .. .. .	..	..	30,577	7,880
	..	..	311	1,671
	tons.		tons.	
Coal, black .. .. .	684,245	762,530	12,534,549	9,290,598
„ brown .. .. .	1,455,482	220,003	4,168,206	872,594
Ore—copper .. .. .	..	..	18,730	218,590
„ tin .. .. .	62½	11,454	16,986½	961,142
„ antimony .. .. .	..	..	104,272½†	612,035
„ silver-lead .. .. .	6	132	799	5,892
„ iron .. .. .	..	..	5,434	12,540
„ manganese .. .. .	15	60	422	2,009
Wolfram .. .. .	..	..	118	11,785
Diamonds .. .. .	..	..	..	128
Sapphires, &c. .. .. .	..	..	..	630
Gypsum .. .. .	20,835	11,388	122,308	88,043
Magnesite .. .. .	72	237	1,889	5,735
Kaolin .. .. .	2,473	3,334	33,826	44,053
Diatomaceous earth .. .. .	..	..	8,657	33,137
Pigment clays .. .. .	65	370	4,496	5,503
Phosphate rock .. .. .	..	..	15,781	16,704
Molybdenite .. .. .	..	..	868½†	30,911
Fluorspar .. .. .	..	..	623	1,888
Jarosite (Red Oxide) .. .. .	49	699	109	1,359
Bauxite .. .. .	921	2,300	921	2,300
Bluestone, freestone, granite, &c.‡	..	652,800	..	9,907,391
Limestone, &c.§	..	..	..	..
Total .. .. .	..	1,829,178	..	325,069,406

\* Extracted from gold at the Melbourne Mint. † Concentrates. ‡ From 1866 only.  
§ Record from 1900.

NOTE.—The value of gold as shown above is based on the average value of Victorian gold received at the Melbourne Mint.

Gold was first found in Victoria in 1849 in the Pyrenees Gold mining. Ranges, but it was not until 1851 that the first discovery of any importance took place. In the latter part of that year the Clunes, Anderson's Creek, Ballarat, and Bendigo fields were successively discovered, and over 200,000 ounces of gold were produced. Next year the gold rush took place, and it is estimated that, in 1852, 40,000 men were camped at Ballarat, 25,000 at Castlemaine, and 40,000 at Bendigo. The production of gold in 1852 amounted to 2,286,535 ounces,

and in the ten years 1852-1861 it totalled over 25,000,000 ounces. The largest quantity produced in any one year was 3,053,744 ounces in 1856. The annual value of the output for the ten years 1852-1861 averaged over £10,000,000 sterling. The estimated value of the gold produced from 1851 to 1927 was £302,712,124, as shown in the preceding statement.

The quantities of gold raised in Victoria in different periods are shown in the next table:—

GOLD RAISED IN VICTORIA, 1851 TO 1927.

Period.	Quantity * (Gross ozs.).	Period.	Quantity (Fine ozs.).
1851-60 .. ..	23,334,263	1911-15 .. ..	2,161,349
1861-70 .. ..	16,276,566	1916-20 .. ..	905,561
1871-80 .. ..	10,156,297	1921-25 .. ..	421,250
1881-90 .. ..	7,103,448	1926 .. ..	49,078
1891-1900 ..	7,476,038	1927 .. ..	38,538
1901-10 .. ..	7,095,061		

\* Gross ozs. 1851-1900.

The yield has been on the down grade since 1906, the return for the State for 1927 having been the lowest since 1851. The quantities raised in the other principal gold-producing States in 1927 were 408,353 ounces in Western Australia, 37,979 ounces in Queensland, and 18,032 ounces in New South Wales. The total production of gold in the world in 1926, as shown in the United States Mint Report, was 19,280,217 fine ounces.

The yield of gold for the last two years in each mining district of the State, as estimated by the mining registrars, is shown in the following table. The quantities represented by the aggregate figures, which are given in gross ounces, were 5 ounces more than the total output in 1926, and, in 1927, one ounce less:—

DISTRICT YIELDS OF GOLD, ALLUVIAL AND QUARTZ,  
1926 AND 1927.

Mining District.	1926.			1927.		
	Alluvial.	Quartz.	Total.	Alluvial.	Quartz.	Total.
	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Ararat and Stawell ..	1,492	35	1,527	94	63	157
Ballarat .. ..	712	1,474	2,186	494	1,730	2,224
Beechworth .. ..	3,384	15,905	19,289	4,586	9,292	13,878
Bendigo .. ..	367	16,415	16,782	287	12,658	12,945
Castlemaine .. ..	1,110	10,887	11,997	906	7,796	8,702
Gippsland .. ..	212	1,103	1,315	245	2,990	3,235
Maryborough .. ..	185	738	923	198	499	697
Total .. ..	7,462	46,557	54,019	6,810	35,028	41,838

Mining  
district  
gold yields.

The amount of the dividends declared in each of the last five years by gold-mining companies operating in each mining district of the State was as follows:—

**DIVIDENDS PAID BY GOLD MINING COMPANIES IN EACH MINING DISTRICT, 1923 to 1927.**

Mining District.	Amount Distributed.				
	1923.	1924.	1925.	1926.	1927.
	£	£	£	£	£
Ararat and Stawell .. ..	..	..	..	..	..
Ballarat .. ..	1,635	475	..	..	..
Beechworth .. ..	9,000	..	..	1,000	1,000
Bendigo .. ..	37,872	13,500	6,000	1,500	..
Castlemaine .. ..	12,459	..	..	..	..
Gippsland .. ..	..	..	..	..	..
Maryborough .. ..	..	..	..	..	..
Total .. ..	60,966	13,975	6,000	2,500	1,000

**Gold miners.** The average number of men employed in gold mining is estimated annually by the Mines Department. The figures for the last five years are given below:—

**NUMBER OF MEN EMPLOYED IN GOLD MINING, 1923 to 1927.**

Year.	Alluvial Miners.	Quartz Miners.	Total.
1923 .. ..	770	2,212	2,982
1924 .. ..	816	1,835	2,651
1925 .. ..	725	1,628	2,353
1926 .. ..	550	1,417	1,967
1927 .. ..	443	683	1,126

The number of men employed in each mining district in 1927 was as follows:—Ararat and Stawell, 98; Ballarat, 77; Bendigo, 241; Beechworth, 276; Castlemaine, 205; Gippsland, 126; and Maryborough, 103.

**Value of machinery on gold-fields.** The value of the mining plants employed in alluvial and quartz mining during each of the last five years was as shown hereunder:—

**VALUE OF MACHINERY ON GOLD-FIELDS, 1923 to 1927.**

Year.	Approximate Value of Machinery Employed in—		
	Alluvial Mining.	Quartz Mining.	Total.
	£	£	£
1923 .. ..	133,200	486,300	619,500
1924 .. ..	95,777	381,050	476,827
1925 .. ..	99,179	331,550	430,729
1926 .. ..	81,849	301,550	383,399
1927 .. ..	31,877	185,660	217,537

**Dredging and sluicing.** A feature of alluvial mining in Victoria for the last twenty-six years has been the treatment in bulk of low-grade auriferous alluvial deposits and their overburden by bucket dredges and pump hydraulic sluicing plants on barges. In 1927, the number of pump hydraulic sluices at work was 2, in addition to which 5 jet elevators and 2 gravitation plants were operating. Particulars relating to these dredging and sluicing plants for the last five years are as follows:—

## DREDGING AND SLUICING, 1923 to 1927.

Year.			Number of Plants.	Area Worked.	Quantity of Material Treated.	Gold Obtained.	Tin Obtained.
				acres.	cub. yds.	ozs.	tons.
1923	..	..	24	27	1,294,300	9,017	77
1924	..	..	17	13	1,198,900	5,260	38
1925	..	..	19	22	1,332,600	7,184	69
1926	..	..	19	11	539,200	3,554	29
1927	..	..	9	28	900,500	4,440	44

These plants employed 100 men in 1927. The yield of gold in that year per cubic yard of material was 2·4 grains. Since the inception of dredge mining 1,895,535 ounces of gold and 1,721 tons of tin have been won by this system.

**Cyanidation.** The quantity of tailings treated at old lode and alluvial mines by the cyanide process and the yield of gold therefrom are shown in the subjoined table for the last five years:—

## CYANIDATION, 1923 to 1927.

Year.			Number of Plants.	Quantity of Tailings Treated.	Yield of Gold.	Value of Yield.
				tons.	ozs.	£
1923	..	..	14	18,644	3,415	13,445
1924	..	..	14	12,108	2,052	7,637
1925	..	..	14	8,344	971	3,281
1926	..	..	7	7,748	1,323	5,028
1927	..	..	8	11,060	1,672	6,214

Records show that the total amount of tailings which have been treated by the cyanide and other processes is 16,021,691 tons, and that the gold which has been won thereby amounts to 1,284,724 ounces, which is equal to an average yield of 1 dwt. 14 grs. per ton.

A Sludge Abatement Board, appointed by the Government, is entrusted with the duty of regulating the disposal of mining sludge, and preventing the silting of streams and injury to lands by battery sand and infertile debris.

**Government batteries.** Batteries for testing small quantities of ore for prospectors have been erected by the Government in various mining districts. The number of these plants and their operations in the last five years were as follows :—

#### GOVERNMENT BATTERIES, 1923 to 1927.

Year.					Number of Batteries.	Quantity of Ore Treated.	Yield of Gold.
						tons.	ozs.
1923	..	..	..	..	34	1,000	649
1924	..	..	..	..	33	1,006	668
1925	..	..	..	..	31	895	776
1926	..	..	..	..	31	476	618
1927	..	..	..	..	31	643	999

Since 1897, the year in which the first battery was erected, 76,210 tons of ore have been crushed for 53,860 ounces of gold.

**Coal mining.** Bituminous coal is found in three main areas in the southern portion of the State, viz., the Wannon, the Otway, and South Gippsland. The Wannon area is comparatively unprospected, owing to almost the whole of the land having been sold. In the Otway area bores have been sunk without disclosing seams of payable thickness. The South Gippsland area occupies about 2,000 square miles, and coal mining is being carried on at Wonthaggi, Kilcunda, Outtrim, Jumbunna, and Korumburra.

**Brown coal.** The brown coal beds of Victoria have an approximate area of 1,200 square miles, and are reputed to be the thickest known. At Morwell, 780 feet of coal were passed through in a bore 1,010 feet deep. It is estimated that the average thickness of the coal in the deposits at Morwell, Alberton, and Altona is 50 feet, and that the total deposits in the State amount to 11,000,000,000 tons. These deposits are practically untouched, as the total output of brown coal for all years has been only 4,168,200 tons, valued at



£872,594, of which, 876,468 tons were obtained in 1925, 957,935 tons in 1926, and 1,455,482 tons in 1927. Of the total output for 1927, 356,170 tons valued at £104,927 were obtained from the State Brown Coal Mine at Morwell, and 1,097,444 tons valued at £114,496 from the State Mine at Yallourn.

A comprehensive statement of the activities controlled by the State Electricity Commission of Victoria will be found on page 645.

The State Coal Mine at Wonthaggi, on the Powlett River, was opened in November, 1909. In June, 1911, the control of the mine was transferred to the Railways Commissioners. The area reserved for mining is about 17 square miles. Boring has proved that about 28,000,000 tons of coal existed in the central area of 5 square miles. The output of coal for the year ended 31st December, 1927, was 610,618 tons, valued at £671,680. The total output up to the end of 1927 was 8,062,068 tons, valued at £6,467,657. The average number of men employed at the mine throughout the year ended 31st December, 1927, was 1,594.

The quantity of coal, exclusive of brown coal, raised in Victoria up to the end of 1927 was 12,534,549 tons, valued at £9,390,598. The total quantity raised prior to 1892, the average annual production for different periods from 1892 to 1920, and the production for each of the years 1921 to 1927, together with the value per ton at the pit's mouth, are given in the following table :—

COAL PRODUCTION AND VALUE PER TON.

Period.				Average Annual Production.	Average Annual Value per ton at pit's mouth.
				tons.	s. d.
Prior to 1892	..	..	..	*77,914	18 8
1892-1900	..	..	..	184,517	9 11
1901-10	..	..	..	168,548	11 8
1911-15	..	..	..	608,512	9 2
1916-20	..	..	..	437,833	15 11
1921	..	..	..	514,859	23 5
1922	..	..	..	559,284	23 9
1923	..	..	..	476,823	22 0
1924	..	..	..	518,315	22 0
1925	..	..	..	534,246	22 4
1926	..	..	..	591,001	22 3
1927	..	..	..	684,245	22 4

\* Total production up to date mentioned.

The quantities of coal produced in the other States in 1927 were as follows :—New South Wales, 11,126,114 tons; Queensland, 1,099,040 tons; Western Australia, 501,505 tons; and Tasmania, 112,056 tons.

Mining  
accidents.

The numbers of fatal and non-fatal accidents in gold and coal mines during the last five years are shown below.

Only those non-fatal accidents have been recorded which rendered the injured unfit for work for a period of at least fourteen days.

## MINING ACCIDENTS, 1923 to 1927.

Year.			Gold Mines.			Coal Mines.		
			Miners Employed.	Persons Killed.	Persons Injured.	Miners Employed.	Persons Killed.	Persons Injured.
1923	..	..	2,982	1	6	2,131	1	11
1924	..	..	2,651	..	2	2,289	3	17
1925	..	..	2,353	1	6	2,593	5	20
1926	..	..	1,967	5	14	2,939	2	6
1927	..	..	1,126	1	1	2,492	4	7

As a result of gold mining accidents during the last five years 8 persons were killed and 29 were injured and rendered unfit for work for a period of at least fourteen days. These numbers were equivalent to annual rates of 0·72 and 2·62 respectively per 1,000 employed. Coal mining accidents during the same period accounted for 15 deaths and 61 injuries resulting in disablement for at least fourteen days, these being equal to yearly rates of 1·21 and 4·90 respectively per 1,000 employees.

The record of boring operations conducted by the Boring for gold, coal, and other minerals. Mines Department during the last five years is as follows :—

## GOVERNMENT BORING OPERATIONS, 1923 to 1927.

Year.			Number of Machines.	Bores put down for—				Total Depth Bored.
				Gold.	Coal.	Other Minerals.	Total.	
1923	..	..	13	4	67	1	72	feet. 19,670
1924	..	..	14	16	74	2	92	34,300
1925	..	..	13	10	38	15	63	30,000
1926	..	..	14	29	45	14	88	20,000
1927	..	..	13	16	38	16	64	21,000

Note—The boring done at the State Coal Mine is not included.

**Antimony.** Up to the end of 1927 the quantity of antimony produced in Victoria was 104,272½ tons of concentrates valued at £612,035. The whole of it was obtained at Costerfield. No antimony was obtained in 1926 or 1927, but, for 1925, the yield was 120½ tons of concentrates valued at £5,380.

**Tin.** The production of tin ore in the State up to the end of 1927 was 16,986½ tons, valued at £961,142. In the year 1927 the quantity produced was 62½ tons, as against 29 tons in 1926, 69 tons in 1925, 38 tons in 1924, and 78 tons in 1923. Of the tin won during the last five years nearly the whole was obtained in the Beechworth district.

**Gypsum.** The quantity of gypsum produced in the State in 1927 was 20,835 tons, most of which was obtained at Tempy, Bolton and Chillingollah. The output for the previous year was 10,217 tons. Up to the end of 1927 the quantity raised in Victoria was 122,308 tons, valued at £88,043.

**Kaolin.** The quantity of kaolin produced in 1927 was 2,473 tons, and in the previous year, 3,153 tons. Up to the end of 1927 the total output was 33,826 tons, valued at £44,053.

**Molybdenite.** The total value of molybdenite produced in the State up to the end of 1927 was £30,911. No molybdenite was obtained in 1927, but in 1926 the output was valued at £7,350, and £5,545 in 1925. The whole of the output was obtained at Everton, near Beechworth.

**Quarries.** The quantity and value of stone raised from Victorian quarries during the last five years were as set forth in the following table :—

### QUARRIES, 1923-24 to 1927-28.

Year ended June—	Number of Quarries.	Quantity of Stone Operated on—				Approximate Value of Stone Raised.
		Bluestone.	Sand-stone.	Granite.	Limestone.	
1924 ..	105	c. yds. 1,429,719	c. yds. 2,536	tons. 4,922	c. yds. *	£ 436,175
1925 ..	117	1,504,093	1,926	5,251	221,171	497,270
1926 ..	127	1,650,461	6,000	5,377	300,708	587,910
1927 ..	116	1,941,739	8,368	6,848	308,095	700,200
1928 ..	108	1,797,523	3,904	5,091	289,478	652,800

\* Information not available.

In 1927-28 the number of persons employed in quarries was 2,376, and the wages paid amounted to £550,740. These figures include the employees and wages connected with stone-breaking and tar-paving works, most of which are carried on in conjunction with quarries and cannot be separated therefrom.

### MANUFACTURING IN VICTORIA.

It can be said with confidence that the State of Victoria has advantages which should make possible great development in manufacturing industries.

A comparatively compact territory with a temperate climate producing a rich variety of raw materials, an intelligent labour supply supported by almost unlimited power resources, and a growing home market served by an ever-increasing network of railways and other communications leave few other essential requirements except the attraction of capital into the industries, the efficient organization of production, and the extension of markets for the product.

**Industrial  
progress.**

Statistical records of factories date from 1850, when the number of factories in Victoria was 68. In 1900 the total had reached 3,097, employing 64,207 persons, and fairly regular expansion has since taken place concurrent with the increase in the population and consequent extension of the home market, until in 1927-28 the total number of factories was 8,245, employing 160,357 persons. Within the last ten years the number of factories has increased by 44 per cent., the number of persons employed by 31 per cent., the amount of salaries and wages paid by 114 per cent., the value of output by 60 per cent., the value of machinery and plant, land and buildings by 147 per cent., and the horse-power of factory machinery by 163 per cent. Within this period many new industries have been established, of which perhaps the most important is the opening of the brown coal deposits at Yallourn for the manufacture of briquettes and the generation of electricity, an undertaking which is likely to have the most far-reaching effect on the future development of Victorian manufacturing.

The appended table summarizes particulars which indicate the growth of manufacturing industry since 1911. The figures for 1927-28 have been increased by the inclusion of statistics relating to the bakery

industry (see page 635) which have been collected for the first time, and effective comparison with previous years cannot properly be made without a knowledge of these statistics.

## GROWTH IN THE MANUFACTURING INDUSTRIES.

Year.	Number of Factories	Number of Persons employed.	Value of Plant Machinery, Land, and Buildings.	Amount of Salaries and Wages paid.	Value of Materials used.	Value of Output.
			£	£	£	£
1911 ..	5,126	111,948	18,257,889	8,911,019	25,029,525	41,747,863
1912 ..	5,263	116,108	19,457,795	10,102,244	27,002,302	45,410,773
1913 ..	5,613	118,744	20,775,738	10,714,336	28,465,699	47,936,647
1914 ..	5,650	118,399	21,975,646	11,099,940	28,986,694	49,439,985
1915 ..	5,413	113,834	22,529,072	11,036,345	30,728,743	51,466,093
1916-17..	5,445	116,970	23,784,289	11,833,517	37,103,350	60,047,284
1917-18..	5,627	118,241	25,460,282	12,502,601	42,133,636	67,066,715
1918-19..	5,720	122,349	27,318,735	14,080,403	52,098,737	80,195,677
1919-20..	6,038	136,522	30,804,520	17,702,173	65,563,104	101,475,363
1920-21..	6,532	140,743	35,392,735	21,377,216	65,401,425	106,008,294
1921-22..	6,753	144,876	40,992,280	23,846,495	60,352,561	106,243,181
1922-23..	7,096	152,625	46,423,240	25,457,192	62,568,163	111,286,343
1923-24..	7,289	156,162	53,196,475	27,472,084	62,217,874	113,921,927
1924-25..	7,425	154,158	61,031,975	29,057,052	65,205,233	118,177,398
1925-26..	7,461	152,959	60,396,500	29,329,400	67,164,445	119,986,439
1926-27..	7,690	161,639	63,850,005	31,822,589	69,816,935	127,397,951
1927-28..	8,245	160,357	67,507,020	32,087,851	66,217,855	128,465,317

NOTE.—Up to the year 1915 inclusive the statistics relate to the calendar year; for subsequent years they relate to the year ending 30th June.

Prior to 1924-25, column 4, Salaries and Wages Paid, was not inclusive of amounts taken by working proprietors as drawings.

The first Factories Act in Victoria was passed in 1873, and since that year many other Acts dealing with the subject have been placed upon the statute-book. The *Factories and Shops Act* 1915 (No. 2650) consolidated all Acts passed prior to that date. The general provisions of factory legislation, including "Wages Boards," are fully dealt with in Part VIII., "Social Condition" of this *Year-Book*.

#### Added Value.

An idea of the relative importance in the productive scale of the various industries may be obtained by comparing the value added in the process of manufacture. A common basis is, of course, essential for year to year comparisons, and Australasian statisticians have recently decided upon a uniform method of arriving at this important concept. From the value of output of each industry are deducted the most important items of manufacturing expense such as costs of raw materials, containers, fuel and light, repairs to plant and buildings, replacement of tools and any other important costs of manufacture, the difference, after payment of minor expenses, being the value added to raw materials in the process of manufacture, and representing the fund available for the payment of wages, rent, interest, and profits, the reward of the different factors of production.

Added value therefore, should prove to be an important indicator of productive activity and, after elimination of price changes, when stated in relation to the number engaged, a good measure of industrial efficiency for comparative purposes.

With the recent extension of factory statistics resulting from the strong public and private demand, additions have been made to the material collected from year to year, and amendment became necessary in the methods of presentation. Whilst undoubtedly necessary, this precludes effective comparison, but comparable matter should be obtainable henceforward, and it is hoped that the table printed hereunder will be useful as a basis.

Class of Industry.	Average Number of Persons Employed.	Value Added.	Value Added per Employee.
		£	£ s. d.
1. Treating raw materials product of agricultural and pastoral pursuits, &c. . . . .	3,552	1,464,530	412 6 3
2. Treating oils and fats, animal vegetable, &c. . . . .	870	540,774	621 11 7
3. Processes in stone, glass, clay, &c. . . . .	5,855	2,339,530	399 11 7
4. Working in wood . . . . .	8,265	2,657,392	321 10 6
5. Metal works, machinery, &c. . . . .	27,819	9,311,234	334 14 2
6. Connected with food and drink, &c. . . . .	21,476	10,840,294	504 15 3
7. Clothing and textile fabrics, &c. . . . .	53,857	12,016,783	223 2 6
8. Books, paper, printing, and engraving . . . . .	11,618	4,100,484	352 18 10
9. Musical instruments, &c. . . . .	471	155,344	329 16 4
10. Arms and explosives . . . . .	511	191,517	374 15 10
11. Vehicles and fittings, saddlery, harness, &c. . . . .	7,845	2,180,952	278 0 1
12. Ship and boat building and repairing . . . . .	395	130,428	330 3 11
13. Furniture, bedding, upholstery . . . . .	5,199	1,538,318	295 17 9
14. Drugs, chemicals and by-products . . . . .	2,839	1,320,518	465 2 8
15. Surgical and scientific instruments . . . . .	269	84,123	312 14 6
16. Jewellery, time pieces and plated ware . . . . .	1,100	319,166	290 3 0
17. Heat, light and power . . . . .	3,029	2,272,561	750 5 4
18. Rubber and leatherware, n.e.i. . . . .	5,080	2,255,351	443 19 4
19. Minor wares, n.e.i. . . . .	307	78,971	257 4 9
Total . . . . .	160,357	53,798,270	(Av.) 335 9 9

Production of  
different  
industries,  
1927-28.

In the year 1902 the classification of industries for statistical purposes, as shown in the next table, was adopted by the Statisticians of Australia. A factory was defined as an establishment employing on the average four persons or more, or an establishment employing less than four persons where machinery is worked by other than manual power, whether the business carried on is that of making or repairing for the trade (wholesale or retail) or for export. The table shows for the year 1927-28 the number of factories in each industry, the horse-power used, the average number of persons employed, the wages paid, the values of materials and fuel and light used, and the value of articles produced or work done, and has been compiled from returns rendered compulsorily by all factory proprietors:—

# FACTORIES—POWER, WORKERS, WAGES, ETC., AND PRODUCTION, 1927-28.

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Nature of Industry.	Number of Factories.	Actual Horse-power of Engines used.	Average Number of Persons Employed.				Value of—			
			Males.		Females.		Wages paid.	Fuel and Light used.	Materials used, including Containers.	Articles Produced or Work Done.
			Working Proprietors.	Employees.	Working Proprietors.	Employees.				
							£	£	£	£
<i>Class I.—Treating Raw Material the product of Pastoral Pursuits, or Vegetable Products, not otherwise classed.</i>										
Boiling down, bone milling ..	21	1,024	20	275	..	3	81,876	27,095	226,919	371,581
Sausage skins .. ..	6	38	2	205	..	1	57,002	480	95,560	176,034
Tanning .. ..	42	3,948	61	1,814	..	24	476,559	39,905	1,724,767	2,623,798
Fellmongering .. ..	33	1,694	27	507	..	4	124,707	25,927	2,101,404	2,453,638
Chaffcutting and grain crushing ..	130	2,006	94	504	..	11	82,061	10,902	88,075	228,061
Total .. ..	232	8,710	204	3,305	..	43	822,205	104,309	4,236,725	5,853,112
<i>Class II.—Oils and Fats, Animal and Vegetable.</i>										
Oil, grease, glue .. ..	11	698	10	174	..	20	53,283	13,546	262,662	385,576
Soap and candle .. ..	17	824	12	496	..	158	141,241	35,461	635,309	1,140,394
Total .. ..	28	1,522	22	670	..	178	194,524	49,007	897,971	1,525,970



*Class III.—Processes relating to  
Stone, Clay, Glass, &c.*

Bricks, tiles, pipes, and pottery ..	83	8,827	52	2,340	..	132	576,593	240,254	156,492	1,326,205
Cement, including cement tiles and pipes	42	9,376	19	1,044	..	7	265,515	191,567	340,330	1,129,902
Glass, including bottles .. ..	3	1,037	4	639	..	11	174,267	63,714	97,513	522,625
Glass (ornamental) .. ..	25	137	21	251	..	8	68,092	1,277	91,919	195,376
Marble and stone dressing .. ..	46	765	58	410	..	8	121,068	3,953	74,297	257,600
Modelling .. ..	48	626	56	631	..	12	164,497	6,994	211,646	491,260
Lime and asbestos .. ..	14	576	7	145	..	..	36,681	22,723	23,086	97,609
Total .. ..	261	21,344	217	5,460	..	178	1,406,713	530,482	995,283	4,020,577

*Class IV.—Working in Wood.*

Boxes and cases .. ..	44	1,539	37	406	2	7	108,339	5,467	198,039	376,358
Cooperage .. ..	10	408	8	263	..	1	84,808	2,501	59,548	181,535
Saw-milling, joinery, &c. .. ..	323	11,027	240	3,992	..	58	1,017,760	32,812	1,448,882	2,948,803
Forest saw-mills .. ..	185	4,222	244	2,271	..	13	536,708	5,642	135,945	875,358
Wood carving, turning .. ..	88	1,353	79	606	1	37	158,167	5,773	172,434	409,906
Total .. ..	650	18,549	608	7,538	3	116	1,905,782	52,195	2,014,848	4,791,960

*Class V.—Metal Works, Machinery, &c.*

Agricultural implement .. ..	77	4,127	73	3,154	..	126	806,978	57,011	801,008	2,003,855
Art metal works .. ..	15	142	10	166	..	3	40,148	1,475	35,103	97,133
Brass and copper .. ..	93	1,040	106	1,184	..	50	307,918	16,466	269,652	735,900
Engineering .. ..	304	7,934	345	5,852	4	128	1,598,456	79,173	1,820,275	4,237,969
Ironworks and foundries .. ..	159	7,248	175	3,903	2	158	1,017,285	112,603	1,111,253	2,754,037
Railway workshops .. ..	21	7,554	..	6,864	..	8	1,719,663	79,671	1,572,078	3,876,511
Stoves, ovens .. ..	23	171	26	255	..	..	71,636	3,711	46,105	148,831
Tinsmithing .. ..	110	1,038	95	1,656	..	273	396,236	15,204	624,244	1,286,775
Wireworking .. ..	29	661	40	403	..	28	115,109	2,876	217,327	412,987
Other metal works .. ..	51	689	34	370	2	35	94,325	7,105	184,050	364,870
Electrical apparatus .. ..	108	1,417	87	1,386	..	133	329,610	10,066	303,941	838,175
Other .. ..	51	856	43	636	..	6	172,054	8,675	382,835	647,361
Total .. ..	1,041	32,877	1,034	25,829	8	948	6,669,418	394,036	7,367,871	17,404,404

# FACTORIES—POWER, WORKERS, WAGES, ETC., AND PRODUCTION, 1927-28—*continued.*

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*Victorian Year-Book, 1927-28.*

Nature of Industry.	Number of Factories.	Actual Horse-power of Engines used.	Average Number of Persons Employed.				Value of—			
			Males.		Females.		Wages paid.	Fuel and Light used.	Materials used, including Containers.	Articles Produced or Work Done.
			Working Proprietors.	Employees.	Working Proprietors.	Employees.				
							£	£	£	£
<i>Class VI.—Connected with Food and Drink, &amp;c.</i>										
Bacon .. .. .	21	1,825	26	487	..	26	145,452	21,507	1,097,918	1,426,533
Butter, cheese .. ..	179	6,943	24	2,094	..	308	572,907	153,063	6,936,897	8,681,454
Meat freezing, preserving .. ..	11	3,757	..	644	..	23	180,178	24,339	1,177,413	1,491,333
Confectionery .. .. .	136	7,457	123	1,541	17	1,628	582,516	81,207	1,657,995	2,827,996
Oatmeal, starch, &c. .. ..	13	2,165	8	322	3	232	111,298	24,023	592,574	909,959
Flour-milling, &c. .. ..	42	5,934	26	919	..	26	267,347	53,027	4,866,676	5,665,103
Jam, fruit, sauce, &c. .. ..	60	2,274	24	1,638	2	1,063	542,821	38,648	1,671,270	2,829,177
Aerated water, cordial, &c. ..	108	703	104	626	5	104	179,350	8,156	394,000	790,843
Brewing, &c. .. .. .	9	5,683	2	1,165	..	2	394,094	67,270	1,079,919	2,534,815
Condiments, coffee, cocoa ..	52	988	14	325	1	306	111,826	6,811	739,358	1,006,402
Distilling .. .. .	7	346	3	100	..	2	27,383	8,741	143,009	247,099
Ice, refrigerating .. .. .	48	4,323	38	233	..	7	71,809	38,748	14,599	194,987
Malt .. .. .	21	600	10	262	1	4	87,308	20,138	444,136	689,113
Tobacco, &c. .. .. .	12	616	19	1,023	..	583	351,728	9,014	1,120,640	1,941,689
Bread, pastry, and cake .. ..	519	1,774	440	2,459	74	394	772,704	86,592	2,218,452	3,575,645
Other .. .. .	19	4,000	9	1,382	..	575	371,834	83,910	4,030,334	5,200,674
Total .. .. .	1,257	49,388	870	15,220	103	5,283	4,770,555	725,194	28,185,190	40,012,822

*Class VII.—Clothing and Textile  
Fabrics, and Fibrous Material.*

Woollen, cotton, mills .. ..	39	13,918	21	3,053	..	4,049	1,140,393	143,780	2,592,806	4,925,230
Knitting, hosiery .. ..	167	1,962	108	999	73	4,701	789,747	31,857	1,645,418	3,037,223
Boots, shoes, and accessories .. ..	201	3,254	266	5,944	20	5,261	2,014,306	38,557	3,095,460	5,976,116
Boot repairs .. ..	305	347	278	260	..	8	102,592	2,460	84,602	244,997
Clothing .. ..	511	583	480	1,500	49	6,684	1,308,906	22,602	1,856,821	3,561,776
Waterproof clothing .. ..	9	58	7	69	..	238	48,125	865	75,100	160,897
Dressmaking and millinery .. ..	511	672	158	354	359	7,891	1,037,624	16,377	1,710,729	3,157,539
Fur .. ..	52	109	44	212	9	402	112,187	1,635	339,097	525,994
Hats and caps .. ..	56	536	47	496	9	1,092	264,759	9,691	358,629	761,835
Underclothing, shirt .. ..	187	1,307	102	487	70	6,469	861,433	16,086	1,972,890	3,365,501
Sail, tent, rope, twine, &c. .. ..	28	1,798	30	598	..	442	185,849	14,458	449,713	831,844
Other .. ..	42	387	37	232	4	245	101,518	6,214	114,164	287,061
Total .. ..	2,108	24,931	1,578	14,204	593	37,482	7,967,439	304,582	14,295,429	26,836,013

*Class VIII.—Books, Paper, Printing  
Engraving, &c.*

Paper-making, paper bags, &c. .. ..	47	4,610	28	857	4	924	322,212	64,397	555,618	1,253,266
Photo engraving .. ..	25	56	32	212	2	106	78,577	1,887	36,272	152,089
Printing .. ..	328	3,693	412	3,745	14	1,561	1,229,858	27,321	962,550	2,899,689
Newspapers .. ..	123	2,565	114	2,017	1	56	678,579	24,844	939,513	2,039,207
Die sinking, &c. .. ..	20	110	24	158	..	6	40,246	998	14,314	74,691
Bookbinding .. ..	38	625	34	695	..	616	234,604	5,645	287,843	665,653
Total .. ..	581	11,659	644	7,684	21	3,269	2,584,076	125,092	2,796,110	7,084,595

*Class IX.—Musical Instruments*

..	18	641	7	440	..	24	103,618	2,834	120,367	279,566
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*Class X.—Arms and Explosives*

..	8	691	..	305	..	206	111,874	15,630	234,765	449,500
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FACTORIES—POWER, WORKERS, WAGES, ETC., AND PRODUCTION, 1927-28—continued.

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Victorian Year-Book, 1927-28

Nature of Industry.	Number of Factories.	Actual Horse-power of Engines used.	Average Number of Persons Employed.				Value of—			
			Males.		Females.		Wages paid.	Fuel and Light used.	Materials used, including Containers.	Articles Produced or Work Done.
			Working Proprietors.	Employees.	Working Proprietors.	Employees.				
<i>Class XI.—Vehicles and Fittings, Saddlery, Harness, &amp;c.</i>							£	£	£	£
Coachbuilding .. ..	215	1,447	245	1,499	..	16	375,637	12,922	271,637	807,157
Motor body building and repairs ..	70	1,331	88	1,582	..	50	427,974	10,290	381,944	883,375
Motor, repairs and assembling ..	652	2,270	511	3,474	..	46	832,107	34,034	35,144	1,177,826
Saddle, harness .. ..	21	57	25	123	..	26	35,592	305	49,228	100,706
Perambulators .. ..	13	49	19	130	..	11	28,281	685	42,620	88,445
Total .. ..	971	5,154	888	6,808	..	149	1,699,591	58,236	780,573	3,057,509
<i>Class XII.—Shipbuilding, Fitting, &amp;c.</i>	12	1,480	14	377	..	4	100,575	6,041	32,074	169,627
<i>Class XIII.—Furniture, Bedding, &amp;c.</i>										
Bedding, upholstery, &c. ..	76	1,140	60	629	4	341	192,428	5,877	450,725	788,909
Furniture .. ..	343	3,614	424	2,781	..	90	646,496	18,723	749,338	1,734,777
Picture frame .. ..	16	46	16	65	..	8	18,979	363	20,810	47,569
Basket, wickerware .. ..	26	95	30	214	..	1	41,831	931	53,648	119,053
Other .. ..	38	255	27	284	3	222	94,588	2,391	197,896	362,000
Total .. ..	499	5,150	557	3,973	7	662	994,322	28,285	1,472,417	3,052,308

*Class XIV.—Drugs, Chemicals, and  
By-products.*

Chemicals, drugs, &c. .. ..	52	2,162	21	644	3	660	256,995	26,467	489,866	1,022,513
Paints and varnishes .. ..	21	568	14	81	..	16	23,498	2,052	89,018	146,035
Inks, polishes .. ..	26	493	9	201	1	148	69,640	3,404	297,191	462,324
Chemical fertilizers .. ..	9	2,623	1	976	..	6	257,445	44,508	1,141,011	1,838,984
Essential oils .. ..	13	7	7	47	3	1	8,616	617	30,703	53,781
Total .. ..	121	5,853	52	1,949	7	831	616,194	77,048	2,047,789	3,523,637

*Class XV.—Surgical and Scientific  
Appliances .. ..*

46	94	32	213	..	24	56,305	1,496	51,074	137,829
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*Class XVI.—Timepieces, Jewellery,  
and Plated-ware .. ..*

115	726	121	856	1	122	220,108	7,777	222,113	552,309
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*Class XVII.—Heat, Light, and  
Energy.*

Electric light .. ..	86	198,914	5	1,060	..	4	307,490	631,556	..	1,566,113
Gas, coke .. ..	34	3,028	..	1,003	..	10	290,190	146,315	912,083	2,077,058
Other .. ..	10	4,575	2	464	..	481	174,932	42,274	576,154	1,128,518
Total .. ..	130	206,517	7	2,527	..	495	772,612	820,145	1,488,237	4,771,689

*Class XVIII.—Rubber and Leather-  
ware (except Saddlery and Harness)*

Fancy leather, belting, &c. ..	59	333	64	438	1	372	137,696	2,834	282,899	514,531
Rubber goods .. ..	85	8,496	73	3,116	..	1,016	900,065	127,773	2,020,597	4,251,598
Total .. ..	144	8,829	137	3,554	1	1,388	1,037,761	130,607	2,303,496	4,766,129

FACTORIES—POWER, WORKERS, WAGES, ETC., AND PRODUCTION, 1927-28—*continued.*

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*Victorian Year-Book, 1927-28.*

Nature of Industry.	Number of Factories.	Actual Horse-power of Engines used.	Average Number of Persons Employed.				Value of—			
			Males.		Females.		Wages paid.	Fuel and Light used.	Materials used, including Containers.	Articles Produced or Work Done.
			Working Proprietors.	Employees.	Working Proprietors.	Employees.				
<i>Class XIX.—Wares, not elsewhere included.</i>							£	£	£	£
Umbrella .. .. .	5	13	4	57	..	128	29,320	269	61,426	107,313
Toys .. .. .	9	60	8	44	..	2	11,189	319	14,779	30,500
Other Industries .. .. .	9	122	6	45	1	12	12,870	339	19,241	37,948
Total .. .. .	23	195	18	146	1	142	53,379	927	95,446	175,761
Grand Total .. .. .	8,245	404,310	7,010	101,058	745	51,544	32,087,051	3,433,923	69,637,778	128,465,317

Increase in  
value of out-  
put of certain  
industries,  
1922-23 and  
1927-28.

Many of the important manufacturing industries in the State have shown a substantial increase in the value of output in the last five years. The output for the years 1922-23 and 1927-28 of a number of leading industries is shown in the following table, the industries being arranged in order of increase in value of output over the period.

### OUTPUT OF INDUSTRIES, 1922-23 AND 1927-28.

Industry.	Value of Output.		Increase in Five Years.	
	1922-23.	1927-28.	Value.	Per cent.
	£	£	£	
Rubber goods .. ..	1,434,236	4,251,598	2,817,362	196·4
Woollen mills .. ..	3,264,025	4,680,704	1,416,679	43·4
Engineering, ironworks and foundries	5,809,039	6,992,006	1,182,967	20·4
Jams, pickles, sauces ..	1,660,783	2,829,177	1,168,394	70·4
Motor, &c. .. ..	1,185,775	2,061,201	875,426	73·8
Knitting, hosiery .. ..	2,201,783	3,037,223	835,440	37·9
Underclothing, shirts, &c. ..	2,666,312	3,365,501	699,189	26·2
Chemical fertilizers .. ..	1,161,811	1,838,984	677,173	58·3
Railway workshops .. ..	3,213,280	3,876,511	663,231	20·6
Fellmongeries .. ..	1,802,440	2,453,638	651,198	36·1
Butter, cheese, &c. .. ..	8,071,692	8,681,454	609,762	7·6
Cement and cement goods ..	612,348	1,129,902	517,554	84·5
Agricultural implements ..	1,511,724	2,003,855	492,131	32·6
Electrical apparatus .. ..	372,994	838,175	465,181	124·7
Confectionery .. ..	2,454,519	2,827,996	373,477	15·2
Furniture, cabinet-making ..	1,462,627	1,734,777	272,150	18·6
Modelling, plaster sheet making	241,028	491,260	250,232	103·8
Breweries .. ..	2,322,814	2,534,815	212,001	9·1
Upholstery, bedding .. ..	604,755	788,909	184,154	30·5
Dressmaking, millinery ..	3,000,713	3,157,539	156,826	5·2

## INDIVIDUAL INDUSTRIES.

The salient features of the chief industries are set forth in the succeeding pages.

The development of the tanning industry during the past ten years is shown by the particulars contained in the next two tables:—

## TANNERIES, 1918-19 to 1927-28.

Year.	Number of Establishments.	Horse-power of Engines.	Value of Machinery and Plant in Use.	Persons Employed.	Number of Working Proprietors	Amount of Wages Paid.
			£			£
1918-19 .. ..	45	2,588	181,200	1,916	44	303,925
1919-20 .. ..	48	3,081	216,445	2,111	50	420,848
1920-21 .. ..	48	3,179	277,160	2,076	61	446,231
1921-22 .. ..	48	3,568	319,015	2,320	64	501,604
1922-23 .. ..	49	3,858	338,160	2,368	75	520,487
1923-24 .. ..	51	4,217	383,820	2,403	77	550,153
1924-25 .. ..	47	4,365	401,375	2,289	67	*559,822
1925-26 .. ..	46	4,591	422,650	2,365	67	*573,928
1926-27 .. ..	44	4,203	426,250	2,239	65	*570,283
1927-28 .. ..	42	3,948	399,160	1,838	61	*476,559

\* Including amounts drawn by working proprietors.

The quantity of bark used in connexion with tanning operations in 1927-28 was 9,792 tons.

## OUTPUT, ETC., OF TANNERIES, 1918-19 to 1927-28.

Year.	Number Tanned—			Value of Materials Used.	Value of Articles produced or Work done.
	Hides and Skins.				
	Cow and Ox.	Calf.	Sheep and other Skins.		
				£	£
1918-19 .. ..	670,956	234,548	1,742,388	2,104,410	2,796,351
1919-20 .. ..	738,907	251,973	2,780,017	3,111,015	4,150,876
1920-21 .. ..	694,322	308,542	1,406,472	2,096,554	2,943,173
1921-22 .. ..	792,974	512,515	2,042,817	1,779,168	2,740,429
1922-23 .. ..	780,221	663,813	2,403,940	1,825,999	2,775,224
1923-24 .. ..	788,942	526,818	2,387,235	1,795,692	2,794,944
1924-25 .. ..	783,115	557,354	1,849,575	1,778,843	2,020,893
1925-26 .. ..	775,972	546,166	1,896,652	1,842,507	2,786,278
1926-27 .. ..	660,905	645,945	1,487,458	1,814,634	2,760,910
1927-28 .. ..	539,327	465,543	1,275,843	1,724,767	2,623,798

The value of the leather, mostly glaze kid, imported into Victoria from oversea countries during the year ended 30th June, 1928, was £142,105, and the value of leather exported for the same period was £151,771.



Particulars in regard to the soap and candle works in the State for the past ten years are given below :—

## SOAP AND CANDLE WORKS, 1918-19 to 1927-28.

Year.	Number of Establishments.	Value of Machinery and Plant in Use.	Persons Employed.	Amount of Wages Paid.	Products.		Value of Output.
					Soap.*	Candles.	
		£		£	cwt.	cwt.	£
1918-19	15	140,600	681	92,663	206,429	39,680	957,295
1919-20	16	143,310	738	103,333	243,156	40,908	1,321,112
1920-21	16	164,110	696	115,749	225,748	32,662	1,134,820
1921-22	17	174,460	742	139,519	267,858	31,613	1,096,955
1922-23	19	196,355	769	142,685	296,888	39,519	1,152,270
1923-24	17	210,270	741	147,124	289,364	34,424	937,148
1924-25	17	201,400	714	143,779†	295,672	29,415	1,176,919
1925-26	17	214,125	700	147,161†	295,930	28,048	1,185,722
1926-27	18	235,705	705	145,502†	331,728	25,359	1,111,040
1927-28	17	231,700	666	141,241†	328,853	23,226	1,140,394

\* Not including soap made in small soap works not classified as factories, viz., 1,054 cwt. in 1918-19, 907 cwt. in 1919-20, 996 cwt. in 1920-21, 859 cwt. in 1921-22, 1,346 cwt. in 1922-23, 1,258 cwt. in 1923-24, 736 cwt. in 1924-25, 920 cwt. in 1925-26, 853 cwt. in 1926-27, and 874 cwt. in 1927-28.

† Including amounts drawn by working proprietors.

The quantity of tallow used in 1927-28 in the manufacture of soap and candles was 196,304 cwt. in factories, and 436 cwt. in minor works.

The imports from oversea countries in 1927-28 included 272,090 lbs. of soap valued at £22,021, and 47,459 lbs. of candles, &c., valued at £3,137.

Particulars relating to brickyards and potteries for the ten years 1918-19 to 1927-28 are shown in the following statement. The value of the land, plant, buildings, &c., used in connexion with such works in 1927-28 was £1,064,970 :—

### BRICKS, POTTERY, PIPES, AND TILES, 1918-19 TO 1927-28.

Year.	Number of Establishments.	Persons Employed.	Amount of Wages Paid	Number of Bricks Made.*	Value of—	
					Pipes and Tiles.	Pottery.
			£		£	£
1918-19 ..	84	2,361	314,452	133,176,000	246,763	121,286
1919-20 ..	93	2,569	336,295	119,142,000	255,562	97,844
1920-21 ..	92	2,794	481,352	203,425,000	362,495	177,410
1921-22 ..	93	2,655	495,288	169,715,000	355,784	185,293
1922-23 ..	92	3,201	631,454	227,183,000	439,159	203,828
1923-24 ..	104	3,540	735,719	247,598,000	541,796	241,821
1924-25 ..	102	3,069	655,034†	201,440,000	427,522	296,551
1925-26 ..	98	2,902	621,631†	190,505,000	423,113	205,874
1926-27 ..	95	2,721	631,362†	230,914,000	493,627	158,071
1927-28 ..	83	2,524	576,593†	204,277,000	386,555	177,225

\* In addition, there are bricks made in small brickyards not tabulated as factories.

† Including amounts drawn by working proprietors.

The estimated value of bricks made in 1927-28 was £716,363, being a decrease of £77,529 on the value of those made in the preceding year.

Detailed information in regard to the forest saw-mills of the State for the ten years 1918-19 to 1927-28 is given in the table which follows :—

### FOREST SAW-MILLS, 1918-19 TO 1927-28.

Year.	Number of Mills.	Value of Machinery and Plant in Use.	Persons Employed.	Amount of Wages Paid.	Victorian Timber Sawn.	
					Quantity.	Value.
		£		£	super ft.	£
1918-19 ..	187	315,670	2,506	319,547	91,540,000	503,470
1919-20 ..	203	366,355	2,884	405,335	99,142,000	693,995
1920-21 ..	246	473,275	3,509	563,627	113,215,000	905,720
1921-22 ..	239	517,725	3,356	627,432	112,008,000	896,070
1922-23 ..	227	516,800	3,230	616,680	118,366,000	946,930
1923-24 ..	241	624,590	3,587	686,419	134,639,000	942,476
1924-25 ..	234	559,450	3,318	667,684*	114,705,000	745,582
1925-26 ..	215	642,140	2,955	579,795*	109,534,000	711,971
1926-27 ..	207	573,550	2,862	597,744*	115,813,000	914,334
1927-28 ..	185	516,800	2,528	536,708*	100,567,000	782,700

\* Including amounts drawn by working proprietors.

In addition to the forest saw-mills there were 465 other factories working in wood. Particulars relating to these for the year 1927-28 are given on page 623.

**Firewood.**

The quantity of timber sawn for firewood consumption in the year 1927-28 was 261,597 tons valued at the saw-mills at £280,032. There is also a large amount of firewood taken from the forests which does not pass through these sawmills, and its value cannot be reliably estimated. The increased use of brown coal briquettes and the extension of the use of gas and electricity for cooking and heating has caused a reduction in the demand for firewood in recent years.

**Agricultural and Dairy Machinery Works.**

Owing to a revision of the classification of Victorian statistics, Dairy Machinery has now been amalgamated with Agricultural Implements, and the main particulars are shown hereunder for the two past years :—

**AGRICULTURAL AND DAIRY MACHINERY WORKS,  
1926-27 AND 1927-28.**

Year.	No. of Factories.	Persons Employed.	Salaries and Wages Paid.	Value of—		
				Fuel and Light Used.	Materials Used.	Output.
			£	£	£	£
1926-27 ..	73	3,820	931,404	51,620	891,930	2,228,570
1927-28 ..	77	3,353	806,978	57,011	791,974	2,003,855

The stripper-harvester, which is a Victorian invention, is one of the principal implements manufactured.

In the following table particulars of bacon and ham curing establishments are given for the ten years 1918-19 to 1927-28. The value of the machinery, plant, land and buildings in connexion with these establishments was £176,450 in 1918-19 and £340,820 in 1927-28.

**BACON CURING, 1918-19 TO 1927-28.**

Year.	Number of Establishments.	Persons Employed.	Amount of Wages Paid.	Pigs Slaughtered for Curing.	Weight of Bacon and Hams Cured.	Value of Output.
			£	number	lbs.	£
1918-19 ..	21	503	76,308	201,770	18,343,400	1,107,910
1919-20 ..	21	549	92,736	182,320	16,675,090	1,334,351
1920-21 ..	22	442	90,394	139,881	13,369,107	1,335,186
1921-22 ..	22	477	103,783	163,917	15,583,960	1,366,832
1922-23 ..	24	494	104,841	186,524	17,293,395	1,289,267
1923-24 ..	24	534	118,751	217,847	20,458,243	1,602,615
1924-25 ..	21	531	129,474*	218,158	20,431,914	1,571,357
1925-26 ..	21	546	142,515*	222,487	19,739,326	1,520,272
1926-27 ..	21	560	151,622*	230,391	19,739,524	1,425,509
1927-28 ..	21	539	145,452*	210,547	19,628,277	1,426,533

\* Including amounts drawn by working proprietors.

In addition, the following quantities of bacon and hams were returned as having been cured on farms :—3,403,776 lbs. in 1917-18, 3,859,205 lbs. in 1918-19, 2,698,919 lbs. in 1919-20, 1,755,993 lbs. in 1920-21, 1,812,838 lbs. in 1921-22, 1,975,729 lbs. in 1922-23, 2,082,731 lbs. in 1923-24, 1,561,955 lbs. in 1924-25, 1,474,599 lbs. in 1925-26, 1,212,786 lbs. in 1926-27, and 976,871 lbs. in 1927-28. The total quantity of bacon and hams cured in 1927-28 was thus 20,605,148 lbs.—a decrease of 347,162 lbs. as compared with 1926-27.

The number of butter, cheese, and kindred factories in 1927-28 was 179. Of these 144 were making butter, 24 cheese, 3 concentrated milk, 4 condensed milk, 11 powdered milk, 9 casein, and 1 milk sugar. There were also 24 creameries attached to the factories. The following table gives some indication of the value of this industry to the State :—

#### BUTTER AND CHEESE FACTORIES, 1918-19 to 1927-28.

Year.	Number of Factories.	Value of Machinery, Plant, Land, and Buildings.	Persons Employed.	Amount of Wages Paid.	Value of Output.
		£		£	£
1918-19 .. ..	180	786,275	1,918	273,335	6,056,342
1919-20 .. ..	181	1,025,325	2,054	338,507	6,365,927
1920-21 .. ..	184	1,238,745	2,127	414,420	9,194,654
1921-22 .. ..	188	1,395,425	2,351	492,446	7,115,642
1922-23 .. ..	182	1,509,545	2,278	497,816	7,899,377
1923-24 .. ..	184	1,685,530	2,280	511,001	7,974,676
1924-25 .. ..	186	1,812,525	2,427	565,422*	8,212,788
1925-26 .. ..	183	1,889,475	2,213	528,310*	7,631,400
1926-27 .. ..	182	1,969,280	2,320	552,659*	7,813,409
1927-28 .. ..	179	2,021,330	2,426	572,907*	8,681,454

\* Including amounts drawn by working proprietors.

Further particulars relating to butter and cheese factories will be found under the heading of Dairying on page 598.

BAKERIES (INCLUDING BREAD, PASTRY, AND CAKES, ETC.), 1927-28.

The proprietors of all establishments engaged primarily in the manufacture of bread, pastry, and cakes were called upon to supply statistical returns for the year ended 30th June, 1928.

The response was good, but in many cases schedules had to be sent back for revision owing to incompleteness and faulty compilation.

The number of returns received totalled 1,188, including 669 from small factories employing less than four hands, and without power installation for driving machinery. As the latter do not come within the Australian statistical definition of a factory they have been excluded from the tabulation. The details shown in the following table relate only to the remaining 519 factories.

The main item of output, viz., bread, has alone been tabulated in detail, and is shown in its equivalent in 4-lb. loaves. The total value of output of the industry as stated hereunder includes the value of all articles produced, but data relating to output of pastry, cakes, pies, &c., have not been collected for the year under review. It must be explained that the value quoted is the wholesale selling value of the goods at the factory exclusive of all delivery costs.

No statistics have previously been obtained concerning the bread-making industry in Victoria, therefore there are no figures to enable comparisons to be made.

BAKERIES, 1927-28.

Number of factories ..	519	Fuel, light and power ..	£86,592
Average number of employees ..	3,367	Lubricating oil and water used ..	£4,601
Actual horse-power used ..	1,774	Value of total output ..	£3,575,645
Value of land and buildings ..	£1,025,220	Added value ..	£1,251,524
Value of plant and machinery ..	£344,970	Flour used—tons ..	89,135
Salaries and wages paid ..	£772,704	Bread made—4-lb. loaves ..	52,812,500
Materials used ..	£2,218,452	Added value per employee ..	£371

Small factories not included above used 32,889 tons of flour, and produced, among other items, 20,851,188 4-lb. loaves of bread.

Meat freezing and preserving works numbered eleven in 1927-28, and gave employment to 667 hands, the wages amounting to £180,178. The approximate value of machinery, plant, land and buildings in that year was £902,040. The output for each of the last ten years is given in the following table:—

### MEAT FREEZING AND PRESERVING, 1918-19 to 1927-28.

Year.			Frozen.			
			Cattle.	Sheep.	Rabbits and Hares.	Poultry.
			qrs.	number.	number.	number.
1918-19	..	..	8,640	668,971	2,352,212	2,700
1919-20	..	..	177,230	4,001,510	5,451,384	2,736
1920-21	..	..	49,372	786,086	2,189,378	9,468
1921-22	..	..	55,355	1,186,704	908,104	8,856
1922-23	..	..	17,006	2,657,515	282,624	5,284
1923-24	..	..	16,044	691,630	160,998	6,776
1924-25	..	..	25,690	1,035,799	108,338	6,386
1925-26	..	..	102,432	1,480,824	913,698	6,906
1926-27	..	..	41,890	1,346,425	806,294	1,764
1927-28	..	..	19,500	915,545	1,055,976	6,234

  

Year.			Preserved.			
			Beef.	Mutton.	Rabbits and Hares.	Other Meats, &c.
			cwt.	cwt.	cwt.	cwt.
1918-19	..	..	75,790	118,520	9,625	9,850
1919-20	..	..	104,725	60,850	7,580	1,860
1920-21	..	..	3,641	443	1	764
1921-22	..	..	8,808	4,419	29	30
1922-23	..	..	9,500	2,092	16	3,925
1923-24	..	..	8,098	564	32	1,411
1924-25	..	..	13,895	954	4	1,467
1925-26	..	..	23,202	2,084	..	4,327
1926-27	..	..	14,880		29	3,700
1927-28	..	..	12,890		4	3,335

Imports and  
exports of  
meats.

The following statement shows the imports from and exports to oversea countries of frozen and preserved meats, other than bacon and ham, during the year ended 30th June, 1928 :—

### MEATS IMPORTED AND EXPORTED OVERSEA, 1927-28.

Meats.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
		£		£
<b>Frozen—</b>				
Mutton .. ..	3,808 lbs.	118	6,001,205 lbs.	117,200
Lamb .. ..	..	..	21,956,243 ..	639,486
Beef .. ..	..	..	2,010,760 ..	32,564
Pork .. ..	648,916 lbs.	20,249	160 ..	4
Rabbits and Hares ..	..	..	527,988 prs.	44,563
Poultry .. ..	3,861 lbs.	279	3,117 ..	1,330
Game .. ..	5,956 lbs.	665	30 lbs.	3
Potted and Concentrated ..	..	47,511	..	3,316
Preserved in tins ..	210,992 lbs.	12,182	702,007 lbs.	23,780
Sausage Casings ..	3,758 cwt.	83,379	8,165 cwt.	147,359
Not elsewhere included ..	..	92	..	5,997
<b>Total value ..</b>	..	164,475	..	1,015,602

The value of the machinery, plant, land and buildings used in connexion with flour mills was estimated at £538,000 in 1918-19 and at £1,116,700 in 1927-28. Particulars of the industry for the ten years 1918-19 to 1927-28 are as follows :—

### FLOUR MILLS, 1918-19 to 1927-28.

Year.	Number of Mills.	Persons Employed.	Amount of Wages Paid.	Wheat Ground into Flour.	Flour Made.	Value of Total Output.
			£	bushels.	tons.	£
1918-19 ..	53	1,063	169,233	16,621,290	347,840	4,656,403
1919-20 ..	51	1,064	189,224	16,920,890	353,682	6,082,741
1920-21 ..	51	947	191,688	12,387,960	260,032	5,745,507
1921-22 ..	45	997	228,195	14,697,290	308,532	5,759,281
1922-23 ..	47	1,089	244,436	16,601,530	352,002	5,415,067
1923-24 ..	47	1,114	266,540	18,552,540	382,204	5,495,110
1924-25 ..	46	1,064	267,034*	17,165,253	359,597	6,218,248
1925-26 ..	45	1,039	258,112*	15,909,787	336,704	5,995,735
1926-27 ..	44	1,094	267,873*	17,052,350	360,051	5,789,618
1927-28 ..	42	971	267,347*	17,659,570	367,383	5,665,103

\* Including amounts drawn by working proprietors.

In addition to the flour made, the wheat ground in 1927-28 produced 7,987,930 bushels of bran and 7,264,370 bushels of pollard. Other grain operated on amounted to 40,113 bushels in 1918-19, 39,235 bushels in 1919-20, 40,094 bushels in 1920-21, 65,788 bushels in 1921-22, 44,363 bushels in 1922-23, 34,283 bushels in 1923-24, 59,825 bushels in 1924-25, 47,659 bushels in 1925-26, 32,158 bushels in 1926-27, and 28,857 bushels in 1927-28.

**Exports of  
bread stuffs.**

During the year 1927-28, 2,211,067 lbs. of biscuits valued at £65,247, and 158,524 tons of flour valued at £2,115,398, were exported from Victoria to countries beyond Australia.

**Jam, pickle,  
and sauce  
works.**

In 1927-28 there were 35 establishments in which the manufacture of jams, pickles, and sauces was carried on, and the number of persons employed therein was 2,361, of whom 19 were working proprietors. The wages paid amounted to £466,016, and the value of machinery, plant, land and buildings was £739,190. The quantities of fruit and sugar used and the output for each of the last ten years were as shown below :—

**JAM, PICKLE, AND SAUCE WORKS, 1918-19 to 1927-28.**

Year.	Fruit Used.	Sugar Used.	Jams and Jellies Made.	Fruit Preserved.	Fruit Pulped.	Sauce Made.	Pickles Made.
	cwt.	cwt.	cwt.	cwt.	cwt.	pints.	pints.
1918-19..	496,690	314,645	495,575	133,230	91,550	4,913,050	2,137,730
1919-20..	628,721	262,585	323,452	181,562	225,522	6,546,610	1,874,240
1920-21..	465,349	171,706	231,297	61,542	178,786	6,601,330	1,239,250
1921-22..	384,214	148,886	157,712	239,656	100,317	6,600,530	1,056,430
1922-23..	450,199	177,334	206,966	221,157	114,615	8,439,440	2,106,950
1923-24..	552,262	191,216	197,850	239,077	208,688	10,696,190	2,361,250
1924-25..	537,246	190,675	220,174	282,360	151,416	7,893,760	2,057,480
1925-26..	674,793	209,648	236,345	350,363	168,906	9,305,590	2,686,500
1926-27..	792,233	246,170	300,822	335,798	110,420	7,385,438	2,615,267
1927-28..	960,004	295,331	341,017	474,267	121,060	7,320,599	1,489,481

Some of these establishments also candied fruit peel, the quantities being 8,449 cwt. in 1918-19, 10,466 cwt. in 1919-20, 13,306 cwt. in 1920-21, 10,743 cwt. in 1921-22, 6,831 cwt. in 1922-23, 3,820 cwt. in 1923-24, 7,263 cwt. in 1924-25, 4,973 cwt. in 1925-26, 4,508 cwt. in 1926-27, and 429 cwt. in 1927-28. The value of the output in 1927-28 of the whole of the establishments whose produce is shown in the above table was £2,660,244.

**Beet Sugar  
Industry.**

In 1896 Parliament made available £62,000 to assist in the establishment of the beet sugar industry at Maffra, in Gippsland. On receiving a guarantee that 1,500 acres of beet would be sown by local land-holders, a company erected a



large building and plant, and operated for two seasons. Although a good quality of sugar was produced, various climatic, financial, and other difficulties compelled the company to close down the works, and the Government, as chief creditor, took control.

In 1910 a definite campaign to revive the industry was commenced, and the mill was re-opened; since that time it has operated from year to year. Estates were purchased by the Government at Boisdale and Kilmany, and land was allotted to settlers, subject to the proviso that each would grow a certain quantity of beet. The compulsory system of securing acreage was not found satisfactory, and all crops are now grown voluntarily. Recently the financial results have been sufficiently favorable to more than compensate for all losses; the by-products have been found to be of great value to the dairying industry, and the sugar has become a most important item of Gippsland's food supply.

The State Rivers and Water Supply Commission have advanced their irrigation scheme on the Macallister River, which provides water for the district. Under irrigation it is anticipated that the beet supply will increase, and that the industry will expand on more favorable lines than in the past.

The following particulars summarize the results of the industry for the last ten seasons:—

Season.				Area Harvested.	Sugar Beet Harvested.	Sugar Produced.
				acres.	tons.	tons.
1917-18	..	..	..	1,200	14,487	1,650
1918-19	..	..	..	1,009	12,289	1,263
1919-20	..	..	..	1,080	13,084	1,551
1920-21	..	..	..	1,180	7,147	833
1921-22	..	..	..	1,602	16,578	1,872
1922-23	..	..	..	2,045	20,444	2,784
1923-24	..	..	..	1,937	29,512	3,499
1924-25	..	..	..	1,897	24,468	3,017
1925-26	..	..	..	1,880	21,194	2,315
1926-27	..	..	..	2,024	9,851	1,177
1927-28	..	..	..	2,353	25,439	2,349

Last season 42s. 6d. a ton was paid for Sugar Beets. Owing to weather conditions root rot was experienced throughout the district and this lowered the sugar content and purity of the beets to a most unfavorable degree.

Particulars regarding breweries for the ten years 1918-19 to 1927-28 are set forth in the next table. Machinery and plant were valued at £434,040 in 1918-19 and at £858,800 in 1927-28, whilst land and buildings were valued at £473,680 and £641,590 respectively in those years. The wages paid in 1927-28 amounted to £394,094.

## BREWERIES, 1918-19 TO 1927-28.

Year.	Number of Breweries.	Persons Employed.	Materials Used—			Beer and Stout Made.	Value of Output.
			Sugar.	Malt.	Hops.		
			cwt.	bushels.	lbs.	gallons.	£
1918-19	17	940	112,080	625,770	722,590	20,963,000	1,476,335
1919-20	17	1,016	110,020	720,515	769,765	22,610,000	1,830,548
1920-21	16	1,054	104,140	753,260	736,580	22,257,000	2,098,720
1921-22	15	1,053	107,160	688,090	717,950	22,388,000	2,200,882
1922-23	14	1,091	110,051	723,511	768,870	23,212,000	2,322,814
1923-24	14	1,186	112,840	743,131	796,769	23,907,000	2,412,387
1924-25	14	1,263	113,729	744,048	784,080	23,286,000	2,479,619
1925-26	11	1,113	118,310	777,041	811,063	24,347,000	2,594,835
1926-27	10	1,156	121,666	814,298	831,317	26,484,000	2,605,704
1927-28	9	1,169	116,890	815,882	814,812	25,870,000	2,534,815

**Distilleries.** The number of distilleries working in 1927-28 was 7, and the persons employed numbered 105, of whom three were working proprietors. The estimated value of the machinery, plant, land and buildings was £176,400. The quantities of materials used in manufacture and of spirits distilled in each of the last ten years were as follows:—

## DISTILLERIES, 1918-19 TO 1927-28.

Year.	Materials Used.				Spirits Distilled.
	Wine.	Malt.	Other Grain.	Molasses.	
	gallons.	bushels.	bushels.	lbs.	proof gals.
1918-19	1,206,530	385,690	397	5,604,480	1,185,629
1919-20	1,524,860	180,306	..	3,230,080	702,586
1920-21	1,041,890	125,414	1,422	2,682,960	572,671
1921-22	671,162	58,848	..	1,167,600	390,840
1922-23	1,100,568	77,717	..	85,120	473,152
1923-24	1,114,590	121,691	..	2,350,880	730,158
1924-25	1,117,370	92,124	..	2,727,650	561,153
1925-26	1,849,920	94,784	..	2,094,880	785,595
1926-27	1,874,370	212,022	..	2,437,920	995,708
1927-28	803,517	113,404	..	1,513,792	709,031

Spirits made by vine-growers for fortifying wine are not included in the foregoing table. The following quantities were distilled in vineyards for that purpose during the last ten years:—2,232 gallons in 1918-19, 5,141 gallons in 1919-20, 15,486 gallons in 1920-21, 23,020 gallons in 1921-22, 14,930 gallons in 1922-23, 13,792 gallons in 1923-24, 19,245 gallons in 1924-25, 14,850 gallons in 1925-26, 11,259 gallons in 1926-27, and 10,110 gallons in 1927-28.

**Tobacco factories.**

The number of tobacco, cigar, and cigarette factories licensed in 1927-28 was twenty-five, of which thirteen were too small to be classified as ordinary factories and were consequently not included in the statistical tabulation on page 624. In the year mentioned the remaining twelve gave employment to 1,625 persons who were paid £351,728 in wages, and used machinery, plant, land and buildings valued at £442,070. The subjoined table shows the quantity of tobacco leaf used by and the output of the full number of licensed establishments for the last ten years:—

TOBACCO FACTORIES, 1918-19 to 1927-28.

Year.	Unmanufactured Leaf Operated on.		Quantity Manufactured.			
	Australian.	Imported.	Tobacco.	Snuff.	Cigars.	Cigarettes.
	lbs.	lbs.	lbs.	lbs.	number.	number.
1918-19 ..	405,625	5,096,176	5,842,142	1,049	27,973,908	125,372,900
1919-20 ..	573,932	5,189,098	6,164,126	426	35,232,399	143,374,400
1920-21 ..	751,137	5,290,854	6,443,480	228	35,549,722	109,686,950
1921-22 ..	535,590	5,250,641	6,345,508	232	33,893,695	152,908,600
1922-23 ..	540,322	5,628,555	6,709,060	231	32,699,019	99,771,650
1923-24 ..	471,862	4,998,680	5,833,903	99	29,244,981	87,896,350
1924-25 ..	427,152	5,222,496	5,998,437	50	30,794,864	77,840,200
1925-26 ..	449,575	5,055,260	5,879,683	100	29,595,805	70,135,500
1926-27 ..	527,807	4,662,288	5,520,998	—	27,657,963	70,314,868
1927-28 ..	462,279	4,579,586	5,511,072	—	26,688,939	68,537,354

**Woollen mills.**

There were twenty-nine woollen mills working in 1927-28, and the number of persons employed therein was 6,752, of whom sixteen were working proprietors. The wages paid amounted to £1,087,006, and the approximate value of the machinery, plant, land and buildings was £3,015,320. The value of the raw materials used during the year was £2,432,953, and that of the goods manufactured in the same period, £4,680,704. The quantities of wool and cotton used and of goods manufactured in each of the last ten years were as follows:—

## WOOLLEN MILLS, 1918-19 TO 1927-28.

Year.	Quantity of Scoured Wool Used.	Quantity of Cotton Used.	Goods Manufactured—				Value of Output.
			Tweed and Cloth.	Flannel.	Blankets.	Shawls and Rugs.	
	lbs.	lbs.	yards.	yards.	pairs.	number	£
1918-19	4,614,585	513,800	1,429,200	5,047,490	191,130	19,430	1,126,119
1919-20	7,285,570	578,542	2,212,202	3,667,816	165,794	51,637	1,976,428
1920-21	7,702,055	553,282	2,503,198	4,035,238	224,745	47,179	2,397,610
1921-22	8,015,650	583,836	1,872,512	5,759,987	297,700	51,598	2,482,761
1922-23	9,640,760	621,490	1,714,460	6,622,350	314,803	71,073	3,264,025
1923-24	7,936,456	848,812	1,927,298	6,095,442	377,354	115,443	3,561,480
1924-25	8,782,203	544,364	1,893,647	3,594,427	319,026	130,094	3,433,231
1925-26	10,679,901	285,482	3,438,142	3,618,260	250,943	93,766	3,976,224
1926-27	14,510,421	1,013,077	4,854,389	6,213,860	327,113	116,855	4,581,445
1927-28	11,960,882	972,455	6,236,623*	6,879,796*	375,125	126,603	4,680,740

\* Square Yards.

During the period 1918-19 to 1927-28 the value of the output of woollen mills increased by 315 per cent. Steady progress is indicated by the above table, the year 1927-28 having shown a further increase in output of all articles of manufacture.

**Boot factories.**

The development which has taken place in the boot industry in recent years is exhibited in the following tables :—

## BOOT FACTORIES, 1918-19 TO 1927-28.

Year.	Number of Factories.		Persons Employed.	Value of Machinery, Plant, Land, and Buildings.	Wages Paid.
				£	£
1918-19	..	238	8,961	627,770	987,203
1919-20	..	264	10,357	716,305	1,252,004
1920-21	..	304	9,212	927,310	1,208,760
1921-22	..	334	11,714	1,130,425	1,760,589
1922-23	..	371	12,434	1,338,555	1,922,345
1923-24	..	400	12,434	1,529,615	1,941,075
1924-25	..	430	12,099	1,748,815	2,054,563*
1925-26	..	431	12,262	1,764,685	2,088,244*
1926-27	..	204	12,192	1,470,440	2,140,054*
1927-28	..	179	11,017	1,376,180	1,996,127*

\* Including amounts drawn by working proprietors.

Since the year 1926-27 the boot repair factories have been excluded from this classification. To enable a comparison to be made the following figures relating to boot repair establishments are given :—

## BOOT REPAIR FACTORIES.

Year.	Number of Factories.	Persons Employed.	Value of Machinery Plant, Land and Buildings.	Value of Materials Used.	Wages Paid.	Value of Output.
			£	£	£	£
1926-27 ..	272	536	414,350	74,633	101,738	227,636
1927-28 ..	305	546	418,310	84,479	102,592	244,997

## OUTPUT OF BOOT FACTORIES, 1918-19 TO 1927-28.

Year.	Goods Manufactured—		Value of Materials Used.	Value of Output.
	Boots and Shoes.	Slippers.*		
	pairs.	pairs.	£	£
1918-19 .. ..	6,073,117	243,383	2,563,423	4,040,550
1919-20 .. ..	6,774,267	552,652	3,909,570	5,996,639
1920-21 .. ..	5,447,504	559,213	2,911,852	4,964,462
1921-22 .. ..	7,571,231	903,992	3,109,863	6,043,172
1922-23 .. ..	7,591,946	851,239	3,059,769	6,157,132
1923-24 .. ..	7,063,385	1,107,257	2,879,194	5,888,699
1924-25 .. ..	7,496,004	1,167,581	2,913,105	5,832,625
1925-26 .. ..	7,860,638	1,724,418	2,995,490	6,045,226
1926-27 .. ..	8,147,282	2,100,228	3,036,256	6,105,072
1927-28 .. ..	7,792,702	2,188,608	2,887,363	5,657,318

\* Includes canvas shoes and house-boots.

The value of the output of establishments connected with the manufacture of dress, i.e., clothing, tailoring, dressmaking, millinery, underclothing, hats and caps, &c., but exclusive of boots and shoes, was £14,707,061 in 1927-28, as compared with £8,599,603 in 1918-19. During the period 1918-19 to 1927-28 the persons employed increased by 22 per cent., the wages paid by 134 per cent., the value of materials used by 53 per cent., and the value of the output by 71 per cent. Particulars of the industry for each of the last ten years are as follows :—

Dress (exclusive of boot) factories.

## DRESS (EXCLUSIVE OF BOOT) FACTORIES, 1918-19 to 1927-28.

Year.	Number of Factories.	Number of Persons Employed.			Amount of Wages Paid.	Value of Materials Used.	Value of Output.
		Males.	Females.	Total.			
					£	£	£
1918-19	1,210	3,776	23,505	27,281	1,915,096	5,205,460	8,599,603
1919-20	1,252	4,123	25,490	29,613	2,490,549	6,628,276	11,407,324
1920-21	1,346	4,383	25,980	30,363	2,872,171	7,804,264	12,994,011
1921-22	1,424	4,674	27,370	32,044	3,328,326	7,689,101	13,429,230
1922-23	1,526	4,951	28,595	33,546	3,554,303	7,456,539	13,354,238
1923-24	1,501	4,751	26,772	31,523	3,574,059	7,181,029	13,118,477
1924-25	1,500	4,823	26,295	31,118	3,837,919*	7,388,950	13,584,190
1925-26	1,491	4,862	26,458	31,320	4,022,168*	7,833,863	14,199,570
1926-27	1,535	5,348	28,941	34,289	4,492,778*	8,530,529	15,517,404
1927-28	1,517	5,241	28,212	33,453	4,493,366*	7,975,259	14,707,061

\* Including amounts drawn by working proprietors.

Electric light and power works. Particulars relating to the electric light and power works of the State are given in the next table:—

## ELECTRIC LIGHT AND POWER WORKS, 1918-19 to 1927-28.

Year.	Number of Stations.	Horse-power of Machinery.	Value of Machinery and Plant.	Persons Employed.	Wages Paid.	Electricity Supplied.	Value of Output.
			£		£	British units.	£
1918-19	77	48,777	2,135,310	1,149	190,280	83,778,000	835,190
1919-20	78	49,241	2,632,665	1,215	217,995	100,838,000	953,039
1920-21	79	54,189	2,660,945	1,242	283,309	115,105,000	1,131,331
1921-22	84	57,481	3,166,750	1,350	334,805	136,021,000	1,407,268
1922-23	88	72,106	4,042,910	1,451	377,048	157,728,000	1,614,139
1923-24	90	154,622	5,864,065	1,752	462,172	405,108,000	2,176,551
1924-25	84	205,777	7,900,455	2,011	549,849	413,556,000	2,382,582
1925-26	83	188,342	5,035,460	1,149	338,807	460,710,000	1,648,113
1926-27	86	219,626	5,144,035	1,120	323,286	580,221,000	1,768,514
1927-28	86	198,914	5,513,630	1,069	307,490	630,880,000	1,566,113

The decrease in the number of persons and the value of machinery and plant and output in electric supply undertakings for the last three years is due to a change in the method of compilation. In previous years, the figures related to both generation and distribution, but since 1924-25 only those relating to the former are given.

The particulars relating to the power houses at Newport under the control of the Victorian Railways Commissioners and the State Electricity Commission are included for the last five years in the figures which appear in the above table. This largely accounts for the seeming discrepancy between the quantity and value of the output for the years mentioned. The quantity of electricity generated in these power houses in 1927-28 was 233,414,000 units; the value of this has been estimated at bulk rates by the respective departments.

## STATE ELECTRICITY COMMISSION ACTS 1918 AND 1920.

When it was first appointed in 1919, the operations of the State Electricity Commission of Victoria were carried on under the provisions of the *Electricity Commissioners' Act* 1918, which provided for the appointment by the Governor in Council of three Commissioners to administer the Act. By an amending Act of the 24th December, 1920, the name of the Act was changed to the *State Electricity Commission Act* 1918, and provision was made, *inter alia*, for the appointment of four Commissioners for a period of seven years, one of whom would devote the whole of his time to the Commission's works as permanent chairman. In addition to the Acts mentioned above, the Commission administers the *Electric Light and Power Act* 1915, the provisions of which give it control over all electrical undertakings in the State.

The duties of the Commission include the following:—

- (1) To inquire into and report to the Government as to the steps which should be taken to co-ordinate and concentrate all electrical undertakings in Victoria, and to secure the efficient inter-connexion of such undertakings by the adoption of the necessary standards of plant, pressure, &c.
- (2) To encourage and promote the use of electricity for industrial and manufacturing purposes, and to report to the Government on the prospects of establishing new industries in Victoria requiring large quantities of electrical energy.
- (3) To carry out investigations of coal deposits or of water power in connexion with the generation of electricity.

The Commission is vested with the following powers in relation to electrical undertakings:—

- (1) To erect and operate electrical undertakings.
- (2) To supply electricity in bulk to any corporation.
- (3) To supply electricity to any person outside any area in which there is an existing undertaking.
- (4) To carry on any business associated with an electric undertaking.
- (5) To make regulations as to precautions to be adopted in the use of electricity, and to arrange for the licensing of electric wiremen.

Authority is also given to the Commission to establish and operate State Coal Mines.

The Commission has complete control over all officers and employees required for the carrying out of the provisions of the Act.

In accordance with the instructions contained in the Act, the Commission has constructed a coal winning plant and an electric generating station in the neighbourhood of Morwell, for the purpose of utilizing the practically unlimited supplies of brown coal in that area. The scheme provides for the winning of coal on the open cut system by means of mechanical appliances, for the erection of a power station close to the site of the open cut, having an installed capacity of 75,000 kilowatts, with provision for triplication,

and for the erection at Yarraville of a receiving station with the necessary switch and transforming gear. Both stations are now complete and in operation, as is also the initial installation of briquetting plant at Yallourn, which produces, approximately, 100,000 tons of brown coal briquettes annually.

The Commission has also installed at Newport a station with an initial capacity of 15,000 kw. This station, which was built mainly to meet the urgent need for electricity pending the completion of the Yallourn plant, is now regarded as a peak load station. A second metropolitan station, of 15,000 kw., is being established at Richmond, where the single-phase power house of the Melbourne Electric Supply Company Ltd., has been taken over and is in process of conversion to three-phase supply.

Supply of electricity from the Commission's generating station at Yallourn is already being given to the following towns in the Gippsland district (in addition to the Commission's township of Yallourn):—Morwell, Traralgon, Moe, Trafalgar, Yarragon, Maffra, Sale, Tyers, Heyfield, Mirboo North, Drouin, Korumburra, Leongatha, Cowwarr, Boclarra, Rosedale, Bairnsdale, Stratford, Newry, Darnum, Ruby, Yinnar, Nilma and Tinamba. Ultimately, supply will be given to other towns throughout Gippsland.

A transmission line has been built from Geelong, stretching through the western and south-western district of Victoria to the city of Warrnambool (a distance of 117 miles), giving supply to the latter town and to the following towns *en route*:—Colac, Camperdown, Terang, Mortlake, Warrion, Beeac, Cobden, Noorat, Alvie, Allansford, Winchelsea, Cororooke, Pomborneit, Kolora, Bellarine, Moolap, Larpent, Nalangil, Ryan's Lane, Wool Wool and Birregurra. It is expected that supply will be made available to Korcit and Port Fairy early in December, 1928.

Supply has also been given to the towns of Point Lonsdale, Queenscliff, Portarlington, Drysdale, Ocean Grove and Barwon Heads by another transmission line from Geelong.

The energy is generated at the Melbourne Electric Supply Company's Power House at Geelong under an agreement between that body and the Electricity Commission until such time as energy is available from the Commission's main power station at Yallourn.

The Commission is supplying energy in bulk to the Melbourne City Council, the Melbourne Electric Supply Company, the Melbourne Harbour Trust, the municipalities of Box Hill, Brunswick, Coburg, Williamstown, Footscray, Heidelberg, Northcote, Port Melbourne, Preston, Braybrook, Doncaster and Carrum, and has built a subsidiary line operating at 22,000 volts which encircles the eastern half of the outer metropolitan area, passing through and giving service to Ringwood, Dandenong, Frankston and the Mornington Peninsula. It has taken over the supply and retail distribution of energy to Dandenong, Werribee, Altona, Point Cook, Laverton, Sunbury, Glenroy, Pascoe Vale and Essendon-Flemington. Also Sassafra, Sherbrooke, Tremont, Ferny Creek, Olinda, Dromana, Sorrento-Portsea, Rosebud,



Rye, Tyabb, Silvan, Evelyn, Tally-Ho, Glen Waverley, Pakenham, Beaconsfield, Berwick, Kallista and Lower Plenty. At the 30th June, 1928, the Commission was supplying either in retail or in bulk, over 120 Victorian towns or centres, apart from the metropolitan area.

The Commission is empowered to develop hydro-electric resources, and with this object to maintain survey parties constantly in the field for the purpose of obtaining data relative to stream flow, volume, &c.

Four hydro-power stations (Royston, Rubicon, Rubicon Lower and Rubicon Falls) have been erected and are in operation. A fifth station at Sugarloaf, of 18,000 horse-power will be completed in January, 1929. A sixth station, at Snobb's Creek, is included in the scheme, but its construction is being deferred for the present. All stations feed into a common sub-station about eight miles from Sugarloaf. The total capacity of hydraulic turbines to be installed in these stations is 40,250 brake horse-power. The construction of the transmission line from Sugarloaf to Thomastown, and from Sugarloaf to Albury and Corowa (New South Wales), via Benalla and Wangaratta, is complete, and supply is being given to the north-eastern portions of the State from the Sugarloaf scheme, over the transmission line which links up the north-eastern scheme with Yallourn via Yarraville and Thomastown Terminal Stations. This line also serves Echuca, Shepparton, Wahgunyah, Yarrawonga, Springhurst, Mooropna, Tatura, Merrigum, Benalla, Chiltern, Tongala, Rutherglen, Kyabram, Thornton, Mansfield, and Barnawartha. Bulk supply is given to the Wodonga Electric Supply Company. The electrical undertakings at Euroa and Cobram have been taken over from the Tungamah Shire Council by the Commission, and local plants are in operation pending extension of transmitted energy.

Particulars in regard to gasworks are given below for each of the last ten years, but the figures in columns 2 and 3 for the last three years are not comparable with those of preceding years owing to the exclusion of all particulars relating to distribution. Prior to 1925-26 the published figures included both manufacture and distribution.

#### GASWORKS, 1918-19 to 1927-28.

Year.	Number of Works.	Persons Employed.	Wages Paid.	Coal Used.	Gas Made.	Coke Produced.	Value of Output.
	1	2	3	4	5	6	7
			£	tons.	cubic feet.	tons.	£
1918-19 ..	46	2,270	420,597	353,584	4,904,351,000	220,287	1,373,608
1919-20 ..	45	2,267	472,855	331,149	4,592,305,000	206,245	1,395,320
1920-21 ..	45	2,213	576,515	339,250	4,499,088,000	216,771	1,608,999
1921-22 ..	45	2,309	609,600	383,092	5,151,380,000	239,755	1,953,936
1922-23 ..	45	2,444	639,954	402,537	5,443,993,000	260,526	1,941,808
1923-24 ..	45	2,561	699,173	410,517	5,407,962,000	259,080	2,093,571
1924-25 ..	45	2,464	668,006	406,868	5,608,313,000	226,436	2,087,356
1925-26 ..	35	933	258,764	422,783	5,801,335,000	273,773	1,433,090
1926-27 ..	33	959	264,918	442,391	5,855,817,000	283,998	1,967,485
1927-28 ..	34	1,013	290,190	437,947	6,326,887,000	291,077	2,077,058

Oil was used as well as coal in the manufacture of gas, the number of gallons consumed each year being 355,933 in 1918-19, 343,764 in 1919-20, 360,876 in 1920-21, 300,188 in 1921-22, 248,481 in 1922-23, 223,986 in 1923-24, 175,127 in 1924-25, 114,947 in 1925-26, 88,601 in 1926-27, and 68,567 in 1927-28.

The facilities afforded in the metropolitan area have had the effect of bringing within that area the more important of the manufacturing industries. The distribution of factories by classes between the metropolis and the remainder of the State, for 1918-19 and each of the last three years, is exhibited in the following statement:—

### NUMBER AND LOCATION OF FACTORIES.

Class of Industry.	Number of Factories.							
	Metropolis.				Remainder of State.			
	1918-19	1925-26.	1926-27.	1927-28.	1918-19	1925-26.	1926-27.	1927-28.
Treating raw material, product of pastoral pursuits, &c. . .	94	80	83	83	218	187	160	149
Treating oils and fats, animal, vegetable, &c. . .	15	20	21	19	9	10	10	9
Processes in stone, clay, glass, &c. . .	101	152	168	163	79	112	109	98
Working in wood . .	218	364	336	331	263	330	342	319
Metal works, machinery, &c. . .	545	721	807	819	182	229	216	222
Connected with food and drink, &c. . .	247	268	267	592	404	448	465	665
Clothing and textile fabrics, &c. . .	1,193	1,629	1,719	1,750	307	364	368	358
Books, paper, printing, &c. . .	298	393	410	407	150	171	172	174
Musical instruments, &c. . .	12	19	19	18	..	..	..	..
Arms and explosives	10	7	7	7	1	1	1	1
Vehicles, saddlery, harness, &c. . .	268	449	468	465	303	423	481	506
Ship and boat building and repairing..	10	10	11	10	2	1	2	2
Furniture, upholstery and bedding . .	258	390	448	445	28	39	48	54
Drugs, chemicals, and by-products . .	73	89	92	98	39	28	22	23
Surgical and other scientific appliances	30	36	40	43	2	3	4	3
Jewellery, time-pieces and plated-ware . .	90	109	112	108	5	5	5	7
Heat, light, and power	61	109	26	26	105	107	103	104
Rubber and Leather-ware . .	40	56	106	116	..	2	24	28
Minor wares, n.s.i. . .	58	84	18	23	2	16	..	..
Total . .	3,621	4,985	5,158	5,523	2,099	2,476	2,532	2,722

Since 1918-19 the number of factories in the State has increased by 2,522, the greatest numerical increase in the classes being that of the clothing and textile factories, of which there were 608 more in 1927-28 than in 1918-19. Increase or decrease in the number of

factories is not by itself a good indicator of the growth of manufacturing industry, since a lessening of the number by absorption or amalgamation may result in greater economy in manufacture and increased output.

The employment afforded in each class of industry is set forth in the next statement:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN FACTORIES.

Class of Industry.	1918-19.	1924-25.	1925-26.	1926-27.	1927-28.
Treating raw materials, product of pastoral pursuits, &c. ..	4,204	4,077	4,209	4,112	3,552
Treating oils and fats, animal, vegetable, &c. ..	807	950	891	941	870
Processes in stone, clay, glass, &c. ..	4,436	6,181	5,975	6,117	5,855
Working in wood ..	7,669	10,198	9,685	9,134	8,265
Metal works, machinery, &c. ..	16,261	24,464	25,663	28,563	27,819
Connected with food and drink, &c. ..	19,185	19,344	18,813	18,881	21,476
Clothing and textile fabrics, &c. ..	39,739	49,633	50,188	55,101	53,857
Books, paper, printing, &c. ..	9,051	11,703	11,374	11,720	11,618
Musical instruments, &c. ..	255	467	529	532	471
Arms and explosives ..	864	428	471	537	511
Vehicles, saddlery, harness, &c. ..	4,974	6,984	7,386	8,236	7,845
Ship and boat building and repairing ..	692	432	388	388	395
Furniture, bedding, and upholstery ..	3,023	4,782	4,527	5,460	5,199
Drugs, chemicals, and by-products ..	2,268	2,774	2,713	2,811	2,839
Surgical and other scientific appliances..	159	236	230	269	269
Jewellery, time-pieces, and plated-ware ..	1,199	1,069	1,097	1,044	1,100
Heat, light, and power ..	4,289	6,311	4,186	2,984	3,029
Rubber and Leatherware, n.e.i. ..	762	940	919	4,496	5,080
Minor wares, n.e.i. ..	2,512	3,185	3,715	313	307
Total ..	122,349	154,158	152,959	161,639	160,357

The total increase in the number of hands employed during the period covered by the above table was 38,008, which represented an advance of about 31 per cent. An increase of 3 per cent. is, however, due to the addition of a new industry in class 6, viz., bakeries, &c., included for the first time in 1927-28. The greatest development had taken place in clothing factories, vehicles &c. and metal works, which showed increases of 14,118, 2,871, and 11,558 respectively in the number of persons employed in 1927-28 as compared with the number in 1918-19. The increase in rubber and leatherware since 1925-26 is mainly due to an alteration in classification by which rubber goods have been transferred from minor wares.

An examination of the five-year table hereunder reveals the fact that the greatest and most consistent increase in the number of factories has taken place in the two classes of factories employing four and under four hands.

The abnormal increases in 1927-28 in the smaller classes of factories is largely due to the inclusion for the first time of bakeries.

### FACTORIES ACCORDING TO NUMBER OF HANDS EMPLOYED.

		Showing Annual Percentage Increase or Decrease.									
		1923-24.	Increase.	1924-25.	Increase.	1925-26.	Increase.	1926-27.	Increase.	1927-28.	Increase.
			%		%		%		%		%
<b>Under 4 hands—</b>											
Number of Factories	1,636	5.75	1,787	9.23	1,879	5.15	2,051	9.15	2,397	16.87	
Employees	3,643	-4.48	3,372	6.28	4,011	3.59	4,315	7.58	5,056	17.17	
<b>4 hands—</b>											
Number of Factories	729	6.11	764	4.80	797	4.32	811	1.76	955	17.75	
Employees	2,916	6.11	3,056	4.80	3,188	4.32	3,244	1.76	3,820	17.75	
<b>5 to 10 hands—</b>											
Number of Factories	2,333	4.29	2,259	-3.17	2,210	-2.17	2,215	0.22	2,301	3.88	
Employees	15,567	1.12	15,706	0.89	15,304	-2.56	15,465	1.05	15,861	2.56	
<b>11 to 20 hands—</b>											
Number of Factories	1,202	5.07	1,169	-2.75	1,142	-2.31	1,125	-1.49	1,101	-2.13	
Employees	17,368	4.98	17,068	-1.73	16,615	-2.65	16,479	-0.81	16,160	-1.93	
<b>21 to 50 hands—</b>											
Number of Factories	939	2.96	902	-3.94	883	-2.11	900	1.92	922	2.44	
Employees	29,960	4.32	28,661	-4.33	28,066	-2.08	28,774	2.52	28,960	0.64	
<b>51 to 100 hands—</b>											
Number of Factories	311	-8.53	312	0.32	303	-2.88	346	12.21	320	-5.88	
Employees	21,623	-7.30	21,960	1.56	20,838	-5.11	24,177	16.02	22,433	-7.21	
<b>Over 100 hands—</b>											
Number of Factories	239	4.37	232	-2.93	247	6.46	248	0.40	249	0.40	
Employees	65,085	4.17	63,835	-1.92	64,937	1.73	69,185	16.54	68,067	-1.61	

### PROPORTION OF FACTORIES OF DIFFERENT SIZES.

[illegible]

**Occupations in factories.** In the following table the persons employed in factories are grouped according to their occupational status :—

**OCCUPATIONS OF PERSONS EMPLOYED IN FACTORIES.**

Occupations.	1918-19.	1923-24.	1924-25	1925-26.	1926-27.	1927-28.
Working proprietors ..	5,471	7,500	7,255	7,254	7,334	7,755
Managers, overseers ..	3,793	4,929	5,043	5,213	5,580	5,891
Accountants, clerks ..	4,919	6,966	6,827	6,034	6,519	6,677
Engine-drivers, firemen	1,914	2,197	2,142	2,065	2,036	1,945
Workers in factory or works ..	101,608	129,617	128,706	128,948	137,025	135,425
Outworkers ..	1,022	870	728	736	592	380
Carters, messengers ..	2,816	3,378	2,766	2,394	2,065	1,703
Others ..	806	705	691	315	488	581
Total ..	122,349	156,162	154,158	152,959	161,639	160,357

**Outworkers.** The term "outworker" used in the above table relates to factory workers working in their own homes, but does not include individuals working for themselves. The employment of outworkers is regulated by a special provision of the Factories and Shops Act. They are required to register their names and addresses with the Chief Inspector of Factories, and factory proprietors are forbidden to give work to those who are not registered.

**Sex distribution in factories.** The average numbers of males and females employed in factories and their proportions to the male and female populations, for the years 1918-19 to 1927-28, were as follows :—

**EMPLOYMENT OF MALES AND FEMALES IN FACTORIES.**

Year.	Males.		Females.		Total.	
	Number.	Average per 10,000 of Male Population.	Number.	Average per 10,000 of Female Population.	Number.	Average per 10,000 of Total Population.
1918-19 ..	81,357	1,188	40,992	550	122,349	855
1919-20 ..	92,101	1,243	44,421	588	136,522	913
1920-21 ..	96,379	1,277	44,364	580	140,743	926
1921-22 ..	97,789	1,279	47,087	599	144,876	934
1922-23 ..	103,092	1,307	49,533	618	152,625	960
1923-24 ..	107,578	1,334	48,584	593	156,162	961
1924-25 ..	105,984	1,286	48,174	578	154,158	930
1925-26 ..	104,512	1,246	48,447	573	152,959	908
1926-27 ..	108,969	1,278	52,670	613	161,639	944
1927-28 ..	108,068	1,246	52,289	598	160,357	921

Males formed 66·5 per cent. in 1918-19 and 67·4 per cent. in 1927-28 of the total persons employed. The increase during the period 1918-19 to 1927-28 in the number of males employed was 26,711, or 32·8 per cent., and in the number of females employed, 11,297, or 27·5 per cent.

Of the total females in factories 72·8 per cent. are engaged in the textile and clothing industries, and 10·3 per cent. in the preparation of food and drink. The extent of female employment in certain industries is shown in the next table:—

#### FEMALE EMPLOYMENT IN FACTORIES, 1927-28.

Industry.	Number Employed.		Females per 100 Males.
	Males.	Females.	
Oatmeal, etc. . . . .	330	235	71·21
Biscuit . . . . .	694	529	76·22
Jam, fruit, and vegetable canning . .	1,215	902	74·23
Confectionery . . . . .	1,654	1,645	99·45
Tobacco, etc. . . . .	1,042	583	55·95
Woollen mills . . . . .	2,967	3,785	127·57
Clothing, tailoring, etc. . . . .	2,056	6,680	324·90
Dressmaking, millinery . . . . .	512	8,250	1,611·32
Underclothing, shirts, ties, etc. . .	589	6,539	1,110·19
Hats, caps, etc. . . . .	543	1,101	202·76
Hosiery . . . . .	1,107	4,774	431·25
Fur . . . . .	256	411	160·54
Boots and shoes . . . . .	5,883	5,134	87·26
Printing, newspapers, etc. . . . .	6,288	1,632	25·97
Bookbinding, etc. . . . .	729	616	84·49
Paper making, Paper bag, etc. . . .	885	928	104·85
Sail, tent, rope, twine . . . . .	628	442	70·38
Chemicals . . . . .	665	663	99·68
Ammunition and Explosives . . . . .	305	206	67·54
Upholstery, bedding, etc. . . . .	689	345	50·07
Match . . . . .	183	480	262·29
Fancy leather . . . . .	502	373	74·30
Rubber goods . . . . .	3,189	1,016	31·86
All other factories . . . . .	75,157	5,020	6·67
Total . . . . .	108,068	52,289	48·38

A favorable feature of factory statistics has been the small proportion of children engaged in factories. Of the male and female employees, boys and girls under 16 constituted 4·18 and 7·74 per cent. respectively in 1927-28, as against 3·85 and 5·83 per cent. in 1918-19. The number of children

employed in factories and their proportions to the total employees are given in the subjoined table for the years 1918-19 to 1927-28 :—

## CHILDREN EMPLOYED IN FACTORIES.

Year.	Boys under 16.	Girls under 16.	Total Children.	Proportion per cent. of—		
				Boys to Male Employees.	Girls to Female Employees.	Children to Total Employees.
1918-19 ..	3,137	2,389	5,526	4·15	5·90	4·73
1919-20 ..	3,721	2,872	6,593	4·04	6·47	4·83
1920-21 ..	3,715	2,798	6,513	4·11	6·39	4·86
1921-22 ..	3,780	3,120	6,900	4·13	6·71	5·00
1922-23 ..	4,031	3,163	7,194	4·18	6·48	4·95
1923-24 ..	4,057	3,422	7,479	4·03	7·15	5·03
1924-25 ..	4,027	3,223	7,250	4·05	6·78	4·94
1925-26 ..	3,980	3,489	7,469	4·06	7·30	5·13
1926-27 ..	4,567	4,041	8,608	4·46	7·77	5·58
1927-28 ..	4,231	3,992	8,223	3·91	7·63	5·13

**Machinery in factories.** In the following table are shown the number of factories using mechanical power, the total horse-power of the engines used, and the value of the machinery and plant for the ten years 1918-19 to 1927-28 :—

## MACHINERY IN FACTORIES.

Year.	Number of Factories equipped with Machinery.	Value of Machinery and Plant.	Horse-power of Engines.
		£	
1918-19 .. ..	4,470	13,645,220	153,408
1919-20 .. ..	4,737	15,846,935	166,803
1920-21 .. ..	5,161	18,179,385	182,143
1921-22 .. ..	5,473	21,182,110	191,881
1922-23 .. ..	5,762	23,994,715	216,427
1923-24 .. ..	6,030	28,223,915	314,561
1924-25 .. ..	6,168	32,563,815	374,064
1925-26 .. ..	6,321	30,549,130	367,318
1926-27 .. ..	6,637	31,580,350	414,992
1927-28 .. ..	7,209	32,745,680	403,770

The nature of the power used and the capacity of the machinery in the factories of the State are set out in the next table. Establishments using more than one kind of mechanical power are included once only in the upper half of the table, usually under the power which is principally used. The lower half of the table shows the total horse-power of engines used.

### POWER USED IN FACTORIES, 1918-19 to 1927-28.

Year.	Number of Factories using—					
	Steam.	Gas.	Electricity.	Oil.	Water, Wind, or Horses.	Manual Labour.
1918-19 ..	875	782	2,481	297	35	1,250
1919-20 ..	910	761	2,712	315	29	1,301
1920-21 ..	941	705	3,128	360	27	1,371
1921-22 ..	935	666	3,474	364	34	1,280
1922-23 ..	910	655	3,795	372	30	1,334
1923-24 ..	885	540	4,174	402	29	1,259
1924-25 ..	812	476	4,448	403	29	1,257
1925-26 ..	736	413	4,709	432	31	1,140
1926-27 ..	678	334	5,141	467	17	1,053
1927-28 ..	618	334	5,701	509	12	1,036

Year.	Actual Horse-power of Engines.				
	Steam.	Gas.	Electricity.	Oil.	Total.
1918-19 .. ..	91,245	18,929	40,791	2,443	153,408
1919-20 .. ..	95,747	19,183	48,814	3,059	166,803
1920-21 .. ..	103,048	19,331	56,602	3,162	182,143
1921-22 .. ..	106,882	19,327	62,663	3,009	191,881
1922-23 .. ..	112,547	18,968	81,679	3,233	216,427
1923-24 .. ..	195,744	18,394	95,340	5,083	314,561
1924-25 .. ..	233,290	17,869	117,525	5,380	374,064
1925-26 .. ..	235,872	15,422	107,812	8,212	367,318
1926-27 .. ..	268,061	13,548	123,359	10,024	414,992
1927-28 .. ..	241,956	12,326	137,692	11,796	403,770

Although steam is the principal motive power, and was used to supply 60 per cent. of the total mechanical power employed in factories in 1927-28, a remarkable development is shown in the use of electricity, which in 1918-19 was used by 2,481, and in 1927-28 by 5,701 factories, the actual horse-power increasing from 40,791 to 137,692 in the same period.



Wages in  
Factories.

The total amount and the average amount of salaries and wages paid to persons employed in factories are given in the following table for each of the last ten years :—

## SALARIES AND WAGES PAID IN FACTORIES.

Year.	Drawings by Working Proprietors (excluding Profits).		Salaries paid to Managers and Clerks.		Wages paid to Factory Workers.		Total Salaries and Wages paid.
	Males.	Females.	Males.	Females.	Males.	Females.	

## Aggregate Amounts.

	£	£	£	£	£	£	£
1918-19	..	..	1,625,584	208,524	9,906,082	2,340,213	14,080,403
1919-20	..	..	1,967,959	270,875	12,515,207	2,948,132	17,702,173
1920-21	..	..	2,384,372	310,024	15,284,545	3,398,275	21,377,216
1921-22	..	..	2,563,467	357,691	16,933,984	3,991,353	23,846,495
1922-23	..	..	2,761,045	394,366	18,038,101	4,353,680	25,547,192
1923-24	..	..	3,003,855	436,425	19,577,822	4,453,982	27,472,084
1924-25	1,538,868	74,043	3,055,257	443,676	19,460,304	4,484,904	29,057,052
1925-26	1,590,771	80,876	2,996,929	448,387	19,547,974	4,664,463	29,329,400
1926-27	1,837,094	95,938	3,268,208	495,735	20,931,037	5,194,577	31,822,589
1927-28	1,954,036	102,663	3,358,582	532,265	20,915,338	5,229,167	32,087,051

## Average Amounts.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1918-19	..	..	244 5 4	101 7 5	141 19 8	60 19 0	120 9 5	
1919-20	..	..	264 8 1	118 6 9	157 16 9	70 17 5	135 10 5	
1920-21	..	..	298 19 7	124 15 2	185 12 4	82 5 11	159 8 4	
1921-22	..	..	316 18 11	133 16 4	202 19 11	91 2 11	172 16 9	
1922-23	..	..	331 10 9	134 14 8	204 12 2	94 16 5	175 15 9	
1923-24	..	..	339 19 1	142 13 5	212 19 0	99 7 1	184 15 11	
1924-25	233 8 11	111 13 7	347 18 0	143 13 7	214 15 5	100 19 4	186 16 4*	
1925-26	240 18 4	124 4 8	363 7 11	149 9 3	218 0 4	104 2 6	189 16 5*	
1926-27	275 18 6	141 18 5	369 19 2	151 16 8	223 18 1	106 12 0	193 14 1*	
1927-28	278 14 11	137 16 0	367 14 4	154 7 7	227 11 3	108 14 5	196 15 9*	

\* These figures are based on numbers of persons employed and the wages, etc., paid to all persons employed, excluding working proprietors.

The particulars appearing in the above table reveal continued increases from year to year in the average earnings of all groups. In the average wage of all employees, the largest increase was from the year 1919-20 to 1920-21. The figures for the year 1927-28 show an advance of £3 1s. 8d. in the average wage paid per employee.

The average wage for 1927-28 (£196 15s. 9d.) was probably below the average according to the determinations of Wages Boards, and would be mainly accounted for by the fact that the former sum is based on the actual payments to workers, while the latter represents the average of the sums to which they would have been entitled if they had

worked throughout the whole year. There is, of necessity, a difference between the two averages, as all hands are not continuously employed, nor are all factories working throughout the whole year.

The cost of production and the value of the output in each class of manufacturing industry during the year 1927-28 are given in the subjoined statement:—

### FACTORY COSTS AND OUTPUT, 1927-28.

Class of Industry.	Cost of—				Value of Output.
	Raw Materials Used (including Containers).	Fuel, Light, and Power Used.	Salaries and Wages Paid.	Tools replaced, Repairs to Plant, Oil and Water Used.	
	1.	2.	3.	4.	5.
	£	£	£	£	£
Treating raw material, product of pastoral pursuits, &c. . .	4,236,725	104,309	822,205	47,548	5,853,112
Treating oils and fats, animal, vegetable, &c. . .	897,971	49,007	194,524	38,218	1,525,970
Processes in stone, clay, glass, &c. . .	995,283	530,482	1,406,713	155,282	4,020,577
Working in wood . . .	2,014,848	52,195	1,905,782	67,525	4,791,960
Metal works, machinery, &c. . .	7,367,871	394,036	6,669,418	331,263	17,404,404
Connected with food and drink, &c. . .	28,185,190	725,194	4,770,555	262,144	40,012,822
Clothing and textile fabrics, &c. . .	14,295,429	304,582	7,967,439	219,219	26,836,013
Books, paper, printing, &c. . .	2,796,110	125,092	2,584,076	62,909	7,084,595
Musical instruments, &c. . .	120,367	2,834	103,618	1,021	279,566
Arms and explosives . . .	234,765	15,630	111,874	7,588	449,500
Vehicles, saddlery, harness, &c. . .	780,573	58,236	1,699,591	37,748	3,057,509
Ship and boat building and repairing . . .	32,074	6,041	100,575	1,084	169,627
Furniture, upholstery, and bedding . . .	1,472,417	28,285	994,322	13,293	3,052,308
Drugs, chemicals, and by-products . . .	2,047,789	77,048	616,194	78,282	3,525,637
Surgical and other scientific instruments . . .	51,074	1,496	56,305	1,136	137,829
Jewellery, time-pieces, and plated-ware . . .	222,113	7,777	220,108	3,253	552,309
Heat, light, and power . . .	1,488,237	820,145	772,612	190,746	4,771,639
Rubber and leatherware, n.e.l. . .	2,303,496	130,607	1,037,761	76,675	4,766,129
Minor wares, n.e.l. . .	95,446	927	53,379	417	175,761
Total . . .	69,637,778	3,433,923	32,087,051	1,595,351	128,467,317

The difference between the sum of the first four columns and the last column represents the amount available for miscellaneous expenses, interest, and profit. The proportions which this margin and the chief items of the cost of production bear to the total value

of production in each class of industry are shown in the following table :—

PROPORTIONATE VALUE OF COSTS, ETC., TO PRODUCTION  
IN FACTORIES, 1927-28.

Class of Industry.	Percentage of Costs, &c., to Total Value of Production.				
	Materials Used, including Containers.	Fuel, Light, &c.	Wages.	Tools Replaced, Repairs to Plant, Oil and Water Used.	All other Expendi- ture, Interest and Profit.
	%	%	%	%	%
1. Treating raw material, product of pastoral pur- suits, &c. . . . .	72·4	1·8	14·0	0·8	11·0
2. Treating oils and fats, animal, vegetable, &c. . .	58·8	3·2	12·8	2·5	22·7
3. Processes in stone, clay, glass, &c. . . . .	24·8	13·2	35·0	3·8	23·2
4. Working in wood . . . .	42·0	1·1	39·8	1·4	15·7
5. Metal works, machinery, &c. . . . .	42·3	2·3	38·3	1·9	15·2
6. Connected with food and drink, &c. . . . .	70·4	1·8	11·9	0·7	15·2
7. Clothing and textile fabrics, &c. . . . .	53·3	1·1	29·7	0·8	29·7
8. Books, paper, printing, &c.	39·4	1·8	36·5	0·9	21·4
9. Musical instruments, &c.	43·0	1·0	37·1	0·4	18·5
10. Arms and explosives . . .	52·2	3·5	24·9	1·7	17·7
11. Vehicles, saddlery, harness, &c. . . . .	25·5	1·9	55·6	1·2	15·8
12. Ship and boat building and repairing . . . . .	18·9	3·6	59·3	0·6	17·6
13. Furniture, upholstery, and bedding . . . . .	48·2	0·9	32·6	0·5	17·8
14. Drugs, chemicals, and by- products . . . . .	58·1	2·2	17·5	2·2	20·0
15. Surgical and other scientific instruments . . . . .	37·1	1·1	40·8	0·8	20·2
16. Jewellery, time-pieces, and plated-ware . . . . .	40·2	1·4	39·9	0·6	17·9
17. Heat, light, and power . .	31·2	17·2	16·2	4·0	31·4
18. Rubber and leatherware, n.e.i. . . . .	48·3	2·8	21·8	1·6	25·5
19. Minor wares, n.e.i. . . .	54·3	0·5	30·4	0·2	14·6
Total . . . . .	54·2	2·7	25·0	1·2	16·9

There are considerable variations in the proportions which the cost of materials and the expenditure on wages bear to the value of the output in the different classes of industries. These are, of course, due to the difference in the treatment required to present the raw material in its manufactured form. Thus in class three the sum paid in wages represents 35 per cent. and the cost of raw materials 25 per cent. of the value of the finished article, whilst in class six the expenditure on wages amounts to 11 per cent. and that on raw materials to 70 per cent. of the value of the output.

Cost of  
production,  
1918-19 to  
1927-28.

In the next table the cost of production, the value of the output of factories, and the balance available for profit and miscellaneous expenses are compared for the years 1918-19 to 1927-28 :—

### COST OF PRODUCTION AND VALUE OF OUTPUT OF FACTORIES, 1918-19 to 1927-28.

Year.	Cost of Production.				Total Value of Output.
	Materials.	Fuel, Light, and Power.	Salaries and Wages.	All other Expenditure, Interest, and Profit.	
	£	£	£	£	£
1918-19 ..	52,098,737	1,457,124	14,080,403	12,559,413	80,195,677
1919-20 ..	65,563,104	1,723,220	17,702,173	16,486,866	101,475,363
1920-21 ..	65,401,425	2,184,096	21,377,216	17,045,557	106,008,294
1921-22 ..	60,352,561	2,329,760	23,846,495	19,714,365	106,243,181
1922-23 ..	62,658,163	2,443,681	25,547,192	20,637,307	111,286,343
1922-23 ..	62,217,874	2,803,239	27,472,084	21,428,730	113,921,927
1923-24 ..	65,205,233	2,964,635	29,057,052	20,950,478	118,177,398
1924-25 ..	67,164,445	3,156,382	29,329,400	20,336,212	119,983,439
1925-26 ..	69,816,935	3,392,448	31,822,589	22,365,979	127,397,951
1926-27 ..	69,637,778	3,433,923	32,087,051	23,306,565	128,465,317
1927-28 ..					

These figures are reduced in the appended statement to their proportionate value of the total output.

### PROPORTION OF OUTLAY TO OUTPUT OF FACTORIES, 1918-19 to 1927-28.

Year.	Proportion of Outlay to Output.				Total.
	Materials.	Fuel, Light, and Power.	Salaries and Wages.	Other Expenditure, Interest, and Profit.	
	%	%	%	%	%
1918-19 ..	65·0	1·8	17·5	15·7	100·0
1919-20 ..	64·6	1·7	17·4	16·3	100·0
1920-21 ..	61·7	2·0	20·2	16·1	100·0
1921-22 ..	56·8	2·2	22·4	18·6	100·0
1922-23 ..	56·3	2·2	23·0	18·5	100·0
1923-24 ..	54·6	2·5	24·1	18·8	100·0
1924-25 ..	55·2	2·5	24·6	17·7	100·0
1925-26 ..	56·0	2·6	24·4	17·0	100·0
1926-27 ..	54·8	2·7	25·0	17·5	100·0
1927-28 ..	54·2	2·7	25·0	18·1	100·0

The apparent decrease since 1923-24 in the percentage available for profit and miscellaneous expenses, as shown in the last table, is due to the fact that the amount of salaries and wages includes for those years the sums drawn regularly by working proprietors

amounting in the successive years to £1,612,911, £1,671,647, £1,933,032, and £2,056,699.

The ratio of salaries and wages to the value of the output of factories was 24·6 per cent. on the average of the last five years, as against 20·1 per cent. in the period 1918-19 to 1922-23. The cost of materials was 54·9 per cent. of the value of output in the period 1923-24 to 1927-28, as compared with 60·9 per cent. in the years 1918-19 to 1922-23. The proportionate outlay on fuel, light, and power was 1·9 per cent. in the former and 2·6 per cent. in the latter period. The balance available for miscellaneous expenses, rent, interest, and manufacturers' profit was £17 16s. 4d. in every £100 of the total output value in the period 1923-24 to 1927-28, as compared with £17 0s. 9d. in the preceding five-year period.

**Capital invested in manufacturing plant and premises.** In the following statement the amount of capital invested in machinery and plant and land and buildings used in connexion with the various classes of manufacturing industries is shown for the year 1927-28 :—

### MACHINERY, PLANT, LAND AND BUILDINGS USED IN MANUFACTURING INDUSTRIES, 1927-28.

Class of Industry.	Value of Machinery and Plant.	Value of Land and Buildings.
	£	£
Treating raw material, product of pastoral pursuits, &c. . . . .	748,690	929,800
Treating oils and fats, animal, vegetable, &c. . . . .	319,070	316,360
Processes in stone, clay, glass, &c. . . . .	1,354,420	1,270,820
Working in wood . . . . .	1,126,890	1,137,400
Metal works, machinery, &c. . . . .	4,016,260	4,678,140
Connected with food and drink, &c. . . . .	6,205,530	6,982,550
Clothing and textile fabrics, &c. . . . .	4,298,270	7,346,410
Books, paper, printing, &c. . . . .	2,831,640	3,034,750
Musical instruments, &c. . . . .	17,370	182,470
Arms and explosives . . . . .	306,300	427,010
Vehicles, saddlery, harness, &c. . . . .	875,300	2,417,590
Ship and boat building and repairing . . . . .	105,630	186,840
Furniture, upholstery, and bedding . . . . .	276,640	1,075,450
Drugs, chemicals, and by-products . . . . .	1,024,500	889,380
Surgical and other scientific instruments . . . . .	23,250	89,980
Jewellery, time-pieces, and plated-ware . . . . .	71,510	275,460
Heat, light, and power . . . . .	8,103,100	2,378,660
Rubber and Leatherware, n.e.i. . . . .	994,170	1,075,760
Minor wares, n.e.i. . . . .	17,140	66,510
Total . . . . .	32,745,680	34,761,340

The capital invested in plant, buildings, &c., used in connexion with three classes of industries—food and drink; clothing and textile fabrics; and heat, light and power—amounted, in the year under review, to £38,983,689, or more than one-half of the total for all manufacturing industries.

The values of machinery and plant and of land and buildings used in connexion with manufacturing industries are shown in the next table for the years 1918-19 to 1927-28 :—

**MACHINERY, PLANT, LAND AND BUILDINGS USED IN  
MANUFACTURING INDUSTRIES, 1918-19 to 1927-28.**

Year.						Value of Machinery and Plant.	Value of Land and Buildings.
						£	£
1918-19	..	..	..	..	..	13,645,220	13,673,515
1919-20	..	..	..	..	..	15,846,935	14,957,595
1920-21	..	..	..	..	..	18,179,385	17,313,350
1921-22	..	..	..	..	..	21,182,110	19,810,170
1922-23	..	..	..	..	..	23,994,715	22,428,525
1923-24	..	..	..	..	..	28,223,915	24,972,560
1924-25	..	..	..	..	..	32,563,815	28,468,160
1925-26	..	..	..	..	..	30,549,130	29,847,370
1926-27	..	..	..	..	..	31,580,350	32,269,655
1927-28	..	..	..	..	..	32,745,680	34,761,340

It will be seen from these figures that the values of machinery and plant and land and buildings increased by 147 per cent. between 1918-19 and 1927-28.

In the appended table the number of accidents in factories is given for the last ten years. The particulars in the table relate to establishments which came within the scope of the Factories Acts in force in the years specified, and not to those classified for statistical purposes in the preceding tables.

The large increase shown in the number of accidents since 1919 is mainly attributable to an amendment of the law, which made compulsory the reporting of accidents. Previously, only those of a serious nature were reported.

**ACCIDENTS IN FACTORIES, 1918 to 1927.**

Year.				Number of Employees.	Number of Accidents.	Percentage of Accidents to Number of Employees.
1918	..	..		104,242	459	·440
1919	..	..		116,369	362	·311
1920	..	..		116,846	862	·737
1921	..	..		117,633	830	·705
1922	..	..		126,630	787	·621
1923	..	..		128,915	1,034	·802
1924	..	..		129,147	1,052	·814
1925	..	..		128,013	996	·778
1926	..	..		135,510	1,252	·924
1927	..	..		136,022	1,348	·991

**Manufactures—  
Penal  
Department  
and Blind  
Institute.**

The foregoing tables do not include particulars relating to work of various kinds done by the Penal Department at Pentridge and the Royal Victorian Institute for the Blind.

At the former establishment the manufacture of wire netting, clothing, brushware, boots, mats, blankets, flannel, underclothing, bread, and printing are carried on. The estimated value of the output for 1927-28 was £56,028, and of the materials used, £43,042. The articles produced are used principally by Government Departments. The work carried on by the latter is the manufacture of brushware, basketware, mats and matting, and knitted goods, and gives employment to 133 persons (110 males and 23 females). The value of the work turned out for the period under review was £28,650.

**Value of  
Victorian  
production.**

The value of all articles produced or manufactured in Victoria has been compiled from actual returns or estimates in the office of the Government Statist, and the results are set forth in the following table:—

### VALUE OF VICTORIAN PRODUCTION, 1923-24 to 1927-28.

Produce.	Value in—				
	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
<i>Cultivation.</i>	£	£	£	£	£
Wheat .. ..	8,189,069	11,993,546	6,665,150	9,546,812	4,724,369
Oats .. ..	1,455,331	934,538	684,320	653,291	688,804
Barley, malting ..	195,545	258,263	202,206	192,349	184,824
" other ..	66,665	95,743	87,960	103,360	112,603
Maize .. ..	253,276	137,948	172,825	152,055	121,368
Other Cereals ..	71,173	53,227	58,525	58,483	48,995
Grass and Clover					
Seed .. ..	3,880	3,886	2,749	2,350	2,076
Potatoes .. ..	701,229	682,878	1,309,470	671,673	388,537
Onions .. ..	215,444	209,803	267,793	110,839	188,186
Other Root Crops	15,082	12,340	18,297	15,161	14,759
Hay .. ..	5,229,162	3,639,496	3,497,253	4,719,925	3,683,272
Straw .. ..	66,677	66,920	63,988	47,970	66,904
Green Forage* ..	536,855	497,655	539,365	436,205	474,475
Tobacco .. ..	41,880	49,120	47,160	57,700	35,280
Grapes, not made into wine, raisins, &c. .. ..	45,589	45,372	77,323	74,889	81,421
Raisins, ordinary ..	27,420	57,867	73,452	99,080	76,100
" sultanas ..	122,775	733,919	676,965	1,195,183	623,241
Currants .. ..	57,027	110,099	93,972	182,536	152,171
Wine .. ..	217,713	153,986	177,371	254,184	152,212
Hops .. ..	29,772	53,000	54,193	16,074	50,262
Other Crops .. ..	104,066	78,848	125,788	109,022	168,618
Fruit grown for sale in orchards and gardens .. ..	1,193,689	1,091,508	1,247,723	970,831	1,189,356
Fruit in private orchards and gar- dens .. ..	10,505	9,945	12,070	9,570	10,520
Market Gardens ..	810,600	731,000	830,450	887,550	949,200
Less Deductions ..	..	-3,535,135	-3,283,560	-4,822,130	-5,616,588
<b>Total .. ..</b>	<b>19,660,374</b>	<b>18,165,772</b>	<b>13,702,818</b>	<b>15,744,992</b>	<b>8,570,865</b>

\* Exclusive of area under sown grasses.

## VALUE OF VICTORIAN PRODUCTION, 1923-24 TO 1927-28—continued.

Produce.	Value in—				
	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
<i>Dairying and Pastoral.</i>	£	£	£	£	£
Milk consumed in natural state ..	2,130,345	1,784,590	2,333,000	2,326,800	2,184,900
Butter made ..	6,491,310	6,618,240	6,182,120	6,233,400	6,675,700
Cheese made ..	253,795	204,890	227,660	270,620	244,140
Cream made (not for butter) ..	177,090	190,540	184,350	154,880	174,610
Condensed, and Powdered Milk ..	1,509,400	1,582,915	1,437,660	1,498,060	1,906,720
Cattle ..	1,413,310	3,538,240	3,707,000	2,330,830	3,308,880
Pigs ..	1,507,600	1,588,620	1,720,740	1,343,750	1,189,410
Sheep (without wool) ..	2,600,450	4,390,880	3,316,660	2,585,770	3,740,310
Wool ..	7,695,000	11,440,240	7,082,820	7,876,683	9,701,660
Less Deductions ..	..	-1,723,178	-1,771,800	-2,340,426	-2,701,780
Total ..	23,778,300	29,615,977	24,420,210	22,280,367	26,424,600
<i>Mining.</i>					
Gold ..	405,245	285,316	200,958	208,778	163,699
Coal ..	563,289	610,671	762,521	846,697	982,533
Stone from Quarries (including limestone) ..	518,064	530,820	666,765	700,200	652,860
Other Metals and Minerals ..	45,829	41,848	37,284	124,567	156,246
Total ..	1,532,427	1,468,655	1,667,528	1,880,242	1,955,278
<i>Forest Produce.</i>					
Timber (Forest Saw-mills only) ..	942,480	745,580	711,970	863,493	782,700
Firewood (estimated) ..	1,033,700	1,053,870	1,071,000	888,400	910,000
Bark for Tanning ..	180,660	132,935	129,490	136,906	107,700
Total ..	2,106,840	1,932,385	1,912,460	1,888,799	1,800,400
<i>Miscellaneous.</i>					
Honey and Beeswax ..	45,559	78,981	41,694	47,282	60,140
Poultry production (estimated) ..	4,587,560	4,443,200	4,515,400	4,819,500	4,760,000
Rabbits and Hares ..	310,930	403,680	697,665	508,340	679,230
Fish ..	161,905	164,296	187,851	167,461	185,840
Total ..	5,105,954	5,090,157	5,442,610	5,542,583	5,685,210
Total Value of Primary Products ..	52,183,895	56,272,946	47,145,626	47,336,983	44,436,353
Manufacturing—Added Value* ..	49,141,526	45,271,348	46,006,461	51,005,430	51,565,291
Grand Total ..	101,325,421	101,544,294	93,152,087	98,342,413	96,001,644

\* Exclusive of value of output of butter and cheese factories, and forest saw-mills (as regards Victorian timber), which is included above under the headings "Dairying and Pastoral" and "Forest Produce," respectively.

The figures for the last four years in the above table under the headings "Cultivation" and "Dairying and Pastoral" are not strictly comparable with those of previous years owing to certain deductions



(in addition to freight and handling charges) having been made consisting chiefly of cost of bags, cases, seed, manure, spraying material, and produce used in the production of crops in the former, and of hay, bran and pollard, green fodder, and root crops used as fodder in the case of the latter.

Similarly the basis for the calculation of added value in manufacturing has been altered since the year 1923-24. Added value is now obtained by deducting from the total value of output the cost of materials used, fuel and light, tools replaced, repairs to plant, &c., whereas prior to 1924-25 the value of materials used was the only deduction. This explains the apparent decrease under this head for 1924-25. The inclusion of bakeries in 1927-28 has resulted in an increase in added value in manufacturing of £1,251,524, for which allowance must be made when comparing these figures with those of previous years.

The values of different kinds of production per head of the total population in each of the last five years were as follows:—

VALUE OF PRODUCTION PER HEAD OF POPULATION,  
1923-24 to 1927-28.

Produce.	Value of Produce per head in—				
	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Cultivation ..	12 1 11	10 19 3	8 2 9	9 4 0	4 18 5
Dairying and Pastoral	14 12 7	17 17 5	14 10 0	13 0 4	15 3 6
Mining .. ..	0 18 10	0 17 9	0 19 10	1 1 11	1 2 5
Forest .. ..	1 5 11	1 3 4	1 2 8	1 2 1	1 0 8
Miscellaneous ..	3 2 10	3 1 5	3 4 8	3 4 9	3 5 4
Total Primary Production	32 2 1	33 19 2	27 19 11	27 13 1	25 10 4
Manufactures ..	30 4 8	27 6 5	27 6 5	29 15 11	29 12 3
Grand Total	62 6 9	61 5 7	55 6 4	57 9 0	55 2 7

Monthly  
employment  
in factories.

Factory schedules for the year 1927-28 called for data days nearest the 15th day of each month, including and all others engaged in work connected with manufacture. The information has been tabulated and the monthly totals for

## MONTHLY EMPLOYMENT

Industry.	Average Number			
	July.	August.	Septem-ber.	October.
Boiling down .. .. .	277	279	280	281
Sausage skins .. .. .	175	177	192	251
Tanneries .. .. .	2,021	2,023	2,018	1,952
Fellmongeries .. .. .	401	379	373	500
Chaffcutting .. .. .	305	312	305	287
Oil and grease .. .. .	192	194	192	199
Soap and candle .. .. .	648	649	653	659
Bricks .. .. .	1,199	1,189	1,119	1,159
Tiles .. .. .	575	596	609	629
Pipes and pottery .. .. .	730	721	721	741
Glass .. .. .	877	866	878	868
Monumental .. .. .	417	422	432	438
Modelling, plaster sheets	623	655	639	650
Lime .. .. .	137	147	143	140
Cement and cement goods	1,067	1,106	1,046	964
Boxes and cases .. .. .	381	362	358	390
Cooperage .. .. .	275	269	270	269
Joinery, sawmilling .. .. .	4,170	4,150	4,176	4,160
Forest saw-mills .. .. .	1,844	1,943	1,999	1,964
Wood turning, &c. .. .. .	665	660	673	676
Agricultural implements	3,734	3,581	3,576	3,170
Art metal works .. .. .	182	191	193	186
Brass and copper .. .. .	1,232	1,220	1,256	1,257
Cutlery .. .. .	110	112	114	111
Engineering .. .. .	6,001	6,078	6,068	5,963
Ironworks and foundries	4,309	4,158	4,207	3,955
Nails .. .. .	171	170	172	172
Railway workshops .. .. .	7,103	7,042	7,021	7,036
Stoves, ovens .. .. .	246	253	244	242
Tinsmithing .. .. .	1,889	1,930	1,965	1,950
Wireworking .. .. .	422	421	420	416
Meters .. .. .	269	262	274	276
Other metal works .. .. .	358	369	381	395
Electrical apparatus .. .. .	1,502	1,512	1,475	1,471
Bacon .. .. .	502	491	493	484
Butter, cheese, &c. .. .. .	2,013	2,084	2,323	2,557
Margarine .. .. .	54	49	48	50
Meat preserving .. .. .	496	494	586	891
Biscuits .. .. .	1,261	1,253	1,281	1,275
Confectionery .. .. .	3,396	3,325	3,322	3,278
Cornflour, oatmeal, &c. .. .. .	524	525	521	531
Flour mills .. .. .	964	946	935	862
Jam, fruit preserving .. .. .	1,213	1,187	1,254	1,329
Dried fruit .. .. .	233	210	225	213

relating to the number of employees on factory pay-rolls on pay managers, clerks, engine-drivers, operatives, carters and messengers turing.

each industry are set out in the following table :—

IN FACTORIES, 1927-28.

of Employees in—

November.	December.	January.	February.	March.	April.	May.	June.
275	270	273	276	272	267	269	273
257	244	210	197	174	192	198	203
1 903	1,814	1,801	1,877	1,748	1,687	1,566	1,537
547	555	504	499	478	514	491	452
319	304	333	350	328	334	329	332
198	177	181	183	187	174	196	166
652	638	631	648	660	667	667	685
1,130	1,131	1,076	1,029	1,035	1,023	1 048	1,016
637	612	598	581	574	506	512	505
740	735	697	750	772	775	756	758
1,011	1,029	999	919	852	926	833	824
449	433	418	394	389	415	414	405
649	637	613	609	585	612	609	607
129	120	127	128	131	137	134	125
970	921	945	933	962	963	1,006	1,010
388	389	397	420	448	438	439	403
268	274	270	268	245	242	245	248
4,068	3,952	3,912	3,962	3,948	3,896	3,844	3,829
2,058	1,983	1,928	2,042	2,011	1,939	1,883	1,822
666	664	650	647	642	614	609	595
2,767	2,856	2,966	3,185	3,346	3,385	3,415	3,526
162	160	159	163	165	161	161	166
1,245	1,285	1,273	1,243	1,242	1,214	1,174	1,160
110	112	113	111	113	112	116	115
6,100	5,967	6,075	6,038	5,922	5,836	5,747	5,726
4,119	4,178	4,001	3,948	3,902	3,884	3,931	3,942
178	177	173	176	175	175	180	179
7,015	6,978	6,735	6,647	6,631	6,679	6,784	6,743
238	243	244	241	249	247	254	251
2,009	2,004	1,912	1,908	1,884	1,823	1,871	1,881
425	425	429	429	429	425	431	430
280	282	279	284	287	289	283	287
409	404	390	405	411	401	403	412
1,503	1,500	1,363	1,384	1,394	1,403	1,404	1,384
528	537	506	507	509	508	523	526
2,701	2,606	2,432	2,317	2,370	2,315	2,301	2,261
51	51	51	51	51	52	51	52
1,083	800	674	597	614	618	550	602
1,248	1,251	1,099	1,196	1,169	1,183	1,210	1,197
3,151	3,028	2,797	2,930	2,898	2,870	3,050	3,119
534	528	518	529	548	564	610	606
854	945	1,111	1,013	940	879	940	921
1,458	1,739	3,102	4,106	4,504	2,293	1,721	1,273
193	198	235	332	737	699	432	243

## MONTHLY EMPLOYMENT IN

Industry.	Average Number			
	July.	August.	Septem-ber.	October.
Pickles, sauces, vinegar .. ..	231	200	210	225
Aerated waters .. ..	555	602	632	745
Breweries .. ..	1,129	1,126	1,155	1,183
Condiments, coffee, &c. .. ..	621	667	678	677
Distilleries .. ..	98	91	88	88
Ice refrigerating .. ..	157	159	163	220
Malt .. ..	283	287	285	285
Tobacco .. ..	1,668	1,646	1,647	1,649
Bakeries .. ..	2,647	2,656	2,677	2,695
Woollen mills .. ..	6,799	6,854	6,848	6,846
Knitting, hosiery .. ..	5,705	5,584	5,539	5,527
Cotton mills .. ..	219	224	239	333
Boots and shoes .. ..	10,997	11,269	11,294	11,167
Boot repairs .. ..	259	259	254	258
Boot accessories .. ..	454	467	472	457
Clothing .. ..	7,886	7,943	8,150	8,255
Waterproof clothing .. ..	293	287	294	299
Dressmaking .. ..	7,966	8,173	8,352	8,418
Dyeworks .. ..	281	276	285	297
Furriers .. ..	545	560	593	599
Hats and caps .. ..	1,796	1,823	1,828	1,724
Shirts, ties, &c. .. ..	3,083	3,163	3,203	3,189
Underclothing, corset .. ..	3,799	3,890	3,998	4,050
Rope, cordage .. ..	868	870	870	829
Sail, tent, tarpaulin .. ..	209	213	222	221
Bags and sacks .. ..	167	158	162	155
Paper, paper bags, &c. .. ..	1,750	1,783	1,790	1,828
Photo engraving .. ..	287	290	289	307
Printing .. ..	5,310	5,293	5,356	5,358
Newspapers .. ..	2,034	2,035	2,047	2,061
Die-sinking .. ..	164	167	167	171
Bookbinding .. ..	1,288	1,291	1,308	1,307
Musical instruments .. ..	503	494	501	464
Arms and ammunition .. ..	217	213	207	200
Industrial explosives .. ..	307	310	305	306
Coachbuilding .. ..	1,511	1,521	1,520	1,523
Motor repairs and assembling .. ..	3,464	3,344	3,449	3,531
Motor body building .. ..	1,712	1,684	1,713	1,650
Perambulators .. ..	136	140	145	149
Saddlery, harness .. ..	174	168	168	153
Docks and slips, ship-building .. ..	303	356	368	289
Aircraft building .. ..	69	67	67	56
Bedding upholstery .. ..	986	985	1,006	1,017
Furnishing, drapery .. ..	195	186	192	188
Furniture, cabinet .. ..	2,970	2,909	2,928	2,897
Picture frame .. ..	68	70	73	74
Basket, wickerware .. ..	220	211	218	222
Brooms, brushware .. ..	255	259	260	251
Chemicals, drugs and medicines .. ..	1,318	1,312	1,298	1,324
Paints and varnishes .. ..	92	91	92	95

## FACTORIES, 1927-28—continued.

of Employees in—

November.	December.	January.	February.	March.	April.	May.	June.
243	256	276	261	243	228	235	225
851	908	944	845	804	652	579	562
1,210	1,229	1,193	1,167	1,159	1,157	1,145	1,134
699	682	655	625	607	594	620	618
87	96	79	108	110	113	115	87
256	281	293	281	263	223	186	178
274	264	217	229	208	253	276	283
1,655	1,650	1,564	1,574	1,584	1,537	1,560	1,568
2,696	2,725	2,724	2,756	2,768	2,779	2,810	2,829
6,835	6,741	6,619	6,804	6,608	6,587	6,597	6,503
5,548	5,507	5,419	5,681	5,850	5,690	5,886	5,958
340	339	351	364	366	381	398	400
11,045	10,130	8,698	10,071	10,482	10,152	9,889	9,754
257	260	257	254	256	255	260	257
441	388	300	393	428	428	425	420
8,310	8,261	7,577	7,868	8,031	7,829	7,821	7,678
310	300	294	306	326	323	326	296
8,257	7,938	6,657	7,909	8,240	7,945	7,767	7,456
325	321	319	322	329	334	343	332
589	602	529	649	685	658	638	544
1,611	1,425	1,183	1,433	1,483	1,395	1,493	1,470
3,206	3,087	2,923	2,926	2,886	2,110	2,590	2,532
4,024	3,981	3,609	3,825	3,855	3,774	3,796	3,774
825	812	768	798	800	772	807	822
232	236	219	230	219	212	217	217
149	152	145	148	145	145	148	134
1,778	1,770	1,736	1,800	1,813	1,766	1,781	1,758
328	334	344	343	340	339	331	321
5,354	5,307	5,264	5,237	5,188	5,129	5,224	5,227
2,027	2,017	1,985	1,983	2,008	2,005	1,977	1,977
172	162	164	167	174	169	171	168
1,323	1,320	1,299	1,322	1,304	1,303	1,312	1,306
449	452	434	432	429	451	458	461
199	198	195	213	215	201	205	194
303	305	305	304	304	308	305	292
1,520	1,541	1,524	1,529	1,516	1,499	1,490	1,486
3,549	3,576	3,391	3,424	3,522	3,500	3,486	3,347
1,633	1,697	1,577	1,503	1,412	1,478	1,499	1,654
153	153	142	141	134	133	137	130
142	152	143	145	147	145	157	150
293	323	361	295	321	285	301	353
56	53	50	48	43	47	49	50
995	985	938	962	961	954	952	937
188	176	204	221	220	214	220	209
2,851	2,806	2,655	2,751	2,817	2,776	2,812	2,760
71	69	68	70	76	76	76	73
223	225	216	210	200	207	208	199
256	248	245	249	253	214	247	248
1,316	1,290	1,258	1,267	1,270	1,253	1,281	1,282
91	91	91	87	91	90	93	94

## MONTHLY EMPLOYMENT IN

Industry.	Average Number			
	July.	August.	September.	October.
Inks, polishes, &c. .. ..	334	344	341	350
Chemical fertilizers .. ..	855	866	879	857
Surgical instruments .. ..	99	93	93	91
Optical and scientific instruments ..	134	132	132	131
Electroplating .. ..	427	425	432	437
Jewellery .. ..	496	531	552	563
Electric light and power .. ..	1,062	1,065	1,057	1,058
Gas .. ..	1,020	1,027	1,026	1,027
Matches .. ..	570	566	535	542
Rubber goods .. ..	4,186	4,241	4,156	4,122
Leather belting, fancy leather, &c. ..	787	790	809	811
Umbrella .. ..	209	203	179	170

**Factories, 1927-28—continued.**

of Employees in—

November.	December.	January.	February.	March.	April.	May.	June.
344	345	327	331	327	324	337	345
886	852	1,029	1,074	1,334	1,314	991	884
95	94	95	99	101	100	98	99
131	132	131	136	132	131	132	132
440	444	418	430	425	419	428	420
582	572	510	504	505	448	496	460
1,055	1,056	1,049	1,050	1,063	1,062	1,039	1,035
1,035	1,014	987	1,002	1,011	1,014	977	981
561	573	582	575	603	606	648	635
4,231	4,199	4,166	4,154	4,129	4,072	4,022	3,885
808	811	698	729	733	709	684	624
185	186	178	184	179	177	177	180